Traffic Simulation Report

U-4738—Cape Fear Crossing

Brunswick & New Hanover County, North Carolina

September 2015

Prepared For:
North Carolina Department of Transportation
Project Development and Environmental Analysis
Prepared By:
URS Corporation—North Carolina

U-4738 - CAPE FEAR CROSSING

BRUNSWICK & NEW HANOVER COUNTY, NORTH CAROLINA

TRAFFIC SIMULATION REPORT

Prepared for:

Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

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1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) proposes to construct a project known as the Cape Fear Crossing, which would be a limited access road extending from the vicinity of US 17 Bypass and I-140 in Brunswick County to US 421 in New Hanover County, including a crossing of the Cape Fear River. The western portion of the study area is located near the communities of Bishop and Spring Hill, in northern Brunswick County just west of US 17. The study area continues through Leland, crosses NC 133, and ends in the City of Wilmington just east of US 421. It should be noted that the study area runs along US 17, US 74/76, and 3rd Street/US 421 (Carolina Beach Road); however, for reporting purposes it will be referred to as the travel time study corridor and is shown in Figure 1.

1.1 PROJECT DESCRIPTION

The NCDOT is proposing State Transportation Improvement Program (STIP) project U-4738, termed Cape Fear Crossing (formerly Cape Fear Skyway), and is described as a new route from "US 17 to the (US 421) Independence Boulevard-Carolina Beach Road Intersection. Construct a new facility with structure over the Cape Fear River (9.5 miles)." The *Wilmington Urban Area 2030 Long Range Transportation Plan* (2030 LRTP) was adopted by the Wilmington Urban Area Metropolitan Planning Organization (WMPO) in 2005. The Cape Fear Crossing is listed as a priority project in the 2030 LRTP. The 2030 LRTP describes the Cape Fear Crossing as a project that extends east from US 17 at the proposed I-140 (Wilmington Bypass) interchange, across the Cape Fear River, to Independence Boulevard at US 421. The project is further described as a four-lane, median divided freeway that would include a bridge with 225 feet of vertical clearance over the Cape Fear River. An update to the current LRTP, titled the *Cape Fear Commutes 2035 Transportation Plan* (2035 LRTP), was finalized in 2010. The 2035 LRTP plan lists the development of the Cape Fear Crossing as an important connector to improving the freight movement in the WMPO area. The proposed design speed of the project is 70 mph (mph).

The Wilmington Bypass will be designated as an Interstate (I-140), while the Cape Fear Crossing will not necessarily receive an Interstate designation. The U-4738 project purpose is to improve traffic flow and enhance freight movements beginning in the vicinity of US 17 and future I-140 in Brunswick County across the Cape Fear River to US 421 near the Port of Wilmington in southern New Hanover County. At this stage in the project planning process, there are twelve (12) build alternatives: two (2) upgrade existing, four (4) on new location, and six (6) hybrids of upgrade existing and new location. None of the alternatives have an alignment completely exclusive to themselves, but each is the result of a combination of various segments of proposed alignments. In other words, a segment of a proposed alignment may be included in multiple alternatives, but each alternative has a unique set of segments, making each alternative different. The project vicinity is shown in Figure 1.

1.2 PURPOSE OF TECHNICAL MEMORANDUM

The purpose of this technical memorandum is to analyze the traffic operations for the proposed Cape Fear Crossing Project (U-4738). Each of the proposed alternatives will have a unique effect on the traffic network in New Hanover and Brunswick Counties. Traffic conditions for each proposed alternative including the major roadways in the surrounding roadway network will be simulated. This memorandum will compile the simulation results of each alternative, assess the impacts the project will have to traffic operations in the project area, and rank those alternatives in order of traffic impact to the network to the extent possible. The results are summarized and further described in Section 7.

The goal of the study is to provide decision makers with a comparison of the ability of the existing transportation system to accommodate the future travel demand versus the performance of the transportation system with the inclusion of each of the proposed build alternatives.

2.0 DESCRIPTION OF FUTURE YEAR SCENARIOS

As noted above there are a total of 12 Future Year Build Alternatives in the 2040 Build Scenario and one Future Year No-Build Alternative. These scenarios are shown in Figures 3-14, and a brief description of each scenario is included below. It should be noted that each of the future year scenarios assumed the construction of fiscally constrained projects listed in the 2035 WMPO LRTP that are located in the U-4738 study area. All of the projects listed in the 2035 WMPO LRTP were coded in the future build networks; however, for clarification they are broken into three separate categories and can be found in Tables 1a, 1b, and 1c. Roadway design plans were used to code future projects into the future no-build and build networks, if available. The following projects had available roadway design plans: R-2633, R-3601, U-3338 and U-4434. Locations where roadway design plans were not available, the projects descriptions listed in the STIP or LRTP were used in conjunction with engineering judgment to code future projects into the network.

Table 1a – Current STIP Projects (June 2015)

Project No.	Current STIP Projects (June 2015)	Horizon Year
R-2633B	Wilmington Bypass – Section B (I-140/US 17) from US 74-76 to US 421 – 4 lane divided freeway on new location	2010-2025
U-3338	North and South Kerr Avenue - Widen between Martin Luther King, Jr Parkway (US 74) and Randall Parkway (Sections B & C) – Widen to Multi-lanes	2010-2025
R-3601	US 17/US 74/US 76/NC 133 – Widen from river Road SE (NC 133) to US 421 – Add additional lanes on NB/SB lanes and widen bridge	2010-2025
U-4434	Independence Boulevard – Extend to Martin Luther King, Jr Parkway (US 74) – Multi-lanes on new location	2016-2025
U-3831	Gordon Road – Widen from north College road (US 117/NC 132) to Market Street (US 17 Business) – Widen to multi-lanes	2010-2035

Table 1b – Listed in WMPO LRTP but not included in Current STIP (June 2015)

Project No.	Listed in WMPO LRTP But Not Included in Current STIP (June 2015)	Horizon Year
R-4063	Village Road – Widen from South Navassa Road to Lanvale Road – Widen to multi-lanes	2010-2025
U-3337	Convert grade separation at US 74-76 at Old Fayetteville Road to an Interchange – Convert grade separation to interchange	2010-2035
R-4732	Ocean Highway (US 17) Access Management	2010-2025
U-2724	North College Road (US 17/NC 132) – Upgrade to freeway between I-40 and north of Martin Luther King, Jr Parkway (US 74)	2010-2025
U-4436	Wilmington Bypass – I-140/US 17 at Blue Clay Road Interchange – Construct an interchange	2016-2025

Table 1c – LRTP Projects

Project No.	LRTP Projects	Horizon Year
C015	Castle Hayne Road (NC 133) – Widen between Wilmington Bypass (I-40/US 17) and Division Drive – 2 general purpose lanes; turn lanes; 2 bicycles lanes; 2 sidewalks; pedestrian crossings	2026-2035
C100	South Front Street (US 421 Truck) – Widen between Cape Fear Memorial Bridge (US 17 Business/US 421) and Burnett Boulevard (US 421) – 4 general purpose lanes; turn lanes; multiuse path; pedestrian crossings	2026-2035
C039	Martin Luther King, Jr Parkway (US 74) at Market Street (US 17 Business) – Flyovers – 1 lane EB US 74 to NB US 17 Business general purpose flyover; 1 lane WB US 74 to SB US 17 Business general purpose flyover	2026-2035
C069	North 23rd Street – Widen between Castle Hayne Road (NC 133) and Martin Luther King, Jr Parkway (US 74)- 4 general purpose lanes; turn lanes; median; 2 bicycle lanes; 2 sidewalks; pedestrian crossings	2026-2035
C010	Carolina Beach Road (US 421) at South College Road (NC 132) – Flyovers – 1 lane NB US 241 general purpose flyover; 1 lane SB NC 132 general purpose flyover	2026-2035
C029	Isabel Holmes Bridge (US 74/NC 133) at US 17/US 421 Interchange – 1 general purpose WB US 74 flyover; 1 general purpose lane EB US 74 free-flow ramp	2026-2035
C105	South Kerr Avenue – Extend to Oleander Drive (US 76) - 4 general purpose lanes; turn lanes; median; multiuse path; 1 sidewalk; pedestrian crossings	2026-2035
C104	South College Road (US 117/NC 132) – Widen from Wilshire Boulevard to Shipyard Boulevard (US 117) – 6 general purpose lanes; turn lanes; 2 sidewalks; pedestrian crossings	2026-2035
C106	South Kerr Avenue – Widen between Patrick Avenue and Wrightsville Avenue - 4 general purpose lanes; turn lanes; median; multiuse path; 1 sidewalk; pedestrian crossings	2026-2035
Q11	Market Street (US 17 Business) – Road diet between North and South 17th Street and Covil Avenue – Reduce to 2 general purpose lanes, two-way left-turn lane, 2 bicycle lanes, 2 sidewalks	2016-2025

It should be noted that the superstreet configuration at US 17 and Hewitt Burton Road/Goodman Road is currently unsignalized. Future improvements are not included in the 2035 LRTP; however, based on the projected traffic volumes the left-over intersections and U-Turns were signalized for the future build scenarios.

2.1 2040 NO-BUILD SCENARIO

This scenario will determine what the traffic operations will be in the vicinity of the proposed project if the proposed project is not constructed. The No-Build Alternative assumes the local transportation system would evolve as currently planned, but without implementation of the proposed project.

2.2 2040 BUILD SCENARIO

A total of 12 Build Alternatives are included in the 2040 Build Scenario. A brief description of each is below.

2.2.1 DETAILED STUDY ALTERNATIVE B

This new location alternative constructs a four-lane controlled-access freeway, originates at I-140 between US 74/76 and US 17, crosses US 17, travels between the Brunswick Forest and Mallory Creek developments, crosses the Cape Fear River and terminates at Shipyard Boulevard.

2.2.2 DETAILED STUDY ALTERNATIVE C

This new location alternative constructs a four-lane controlled-access freeway, originates at I-140 between US 74/76 and US 17, crosses US 17, parallels Wire Road, crosses the Cape Fear River and terminates at Independence Boulevard. This alternative includes an upgrade of US 421 northward to Shipyard Boulevard.

2.2.3 DETAILED STUDY ALTERNATIVE F

This "upgrade existing" alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six/eight-lane controlled-access freeway, crosses the Cape Fear River, reconstructs the Cape Fear Memorial Bridge to eight lanes and terminates at US 17 Business/US 421/3rd Street. This alternative includes an upgrade of US 421 southward to Shipyard Boulevard.

2.2.4 DETAILED STUDY ALTERNATIVE G

This hybrid alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six-lane controlled-access freeway for approximately two miles, continues on new location as a four-lane freeway between the Brunswick Forest and Mallory Creek developments, crosses the Cape Fear River and terminates at Independence Boulevard. This alternative includes an upgrade of US 421 northward to Shipyard Boulevard.

2.2.5 DETAILED STUDY ALTERNATIVE J

This hybrid alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six-lane controlled-access freeway for approximately two miles, continues on new location as a four-lane freeway parallel to Wire Road, crosses the Cape Fear River and terminates at Shipyard Boulevard.

2.2.6 DETAILED STUDY ALTERNATIVE M AVOIDANCE

This new location alternative constructs a four-lane controlled-access freeway, originates at the I-140 and US 17 interchange, avoids the Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, crosses the Cape Fear River and terminates at Independence Boulevard. This alternative includes an upgrade of US 421 northward to Shipyard Boulevard.

2.2.7 DETAILED STUDY ALTERNATIVE N AVOIDANCE

This new location alternative constructs a four-lane controlled-access freeway, originates at the I-140 and US 17 interchange, avoids Snee Farm/Stoney Creek subdivisions, travels south of Brunswick Forest, crosses the Cape Fear River and terminates at Shipyard Boulevard.

2.2.8 DETAILED STUDY ALTERNATIVE P

This "upgrade existing" alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six/eight-lane arterial, crosses the Cape Fear River as a freeway, replaces the Cape Fear Memorial Bridge with an

eight-lane bridge and terminates at US 17 Business/US 421/3rd Street. This alternative includes an upgrade of US 421 southward to Shipyard Boulevard.

2.2.9 DETAILED STUDY ALTERNATIVE Q

This hybrid alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six-lane arterial for approximately two miles, continues on new location as a four-lane freeway between the Brunswick Forest and Mallory Creek developments, crosses the Cape Fear River and terminates at Independence Boulevard. This alternative includes an upgrade of US 421 northward to Shipyard Boulevard.

2.2.10 DETAILED STUDY ALTERNATIVE T

This hybrid alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six-lane arterial for approximately two miles, continues on new location as a four-lane freeway parallel to Wire Road, crosses the Cape Fear River and terminates at Shipyard Boulevard.

2.2.11 DETAILED STUDY ALTERNATIVE V (ARTERIAL)

This hybrid alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six/eight-lane arterial/freeway until the US 17/US 421 interchange, constructs a new location four-lane freeway/bridge traveling south along Eagle Island, crosses the Cape Fear River and terminates at US 421 just north of the Port of Wilmington.

2.2.12 DETAILED STUDY ALTERNATIVE V (FREEWAY)

This hybrid alternative originates at the I-140 and US 17 interchange, upgrades US 17 to a six/eight-lane controlled-access freeway until the US 17/US 421 interchange, constructs a new location four-lane freeway/bridge traveling south along Eagle Island, crosses the Cape Fear River and terminates at US 421 just north of the Port of Wilmington.

3.0 METHODOLOGY

The traffic simulation was completed using TransModeler (Version 4.0, Build 5770). TransModeler was selected as it was most able to accommodate the large network size that needed to be analyzed and was able to model uninterrupted flow facilities. It was determined that other traffic capacity analysis tools would not be sufficient to determine the effectiveness of each of the Detailed Study Alternatives (DSAs) due to the very large area the project encompasses and the various ways this project can be deemed either effective or ineffective from a traffic mobility standpoint.

A *Traffic Forecast Technical Memorandum* for *U-4738 – Cape Fear Crossing* was provided on October 15, 2014. The report includes forecasts for 2013 Existing Conditions, 2020 No-Build and Build Conditions, and 2040 No-Build and Build Conditions. Only 2013 and 2040 Scenarios were analyzed as part of this study and as such only the forecasts from 2013 and 2040 were utilized. Each of these forecasts provided Average Annual Daily Traffic (AADT) volumes, with Peak Hour (K) percentage, Peak Hour Direction (D) percentage, PM Peak Hour direction, and heavy vehicle (d, t) percentage. In all, the traffic forecast report provided the following 27 traffic forecasts:

- 2013 Base Year No-Build
- 2020 Intermediate Year No-Build
- 2020 Intermediate Year Build DSA B
- 2020 Intermediate Year Build DSA C

- 2020 Intermediate Year Build DSA F
- 2020 Intermediate Year Build DSA G
- 2020 Intermediate Year Build DSA J
- 2020 Intermediate Year Build DSA M Avoidance
- 2020 Intermediate Year Build DSA N Avoidance
- 2020 Intermediate Year Build DSA P
- 2020 Intermediate Year Build DSA Q
- 2020 Intermediate Year Build DSA T
- 2020 Intermediate Year Build DSA V Freeway
- 2020 Intermediate Year Build DSA V Arterial
- 2040 Future Year No-Build
- 2040 Future Year Build DSA B
- 2040 Future Year Build DSA C
- 2040 Future Year Build DSA F
- 2040 Future Year Build DSA G
- 2040 Future Year Build DSA J
- 2040 Future Year Build DSA M Avoidance
- 2040 Future Year Build DSA N Avoidance
- 2040 Future Year Build DSA P
- 2040 Future Year Build DSA Q
- 2040 Future Year Build DSA T
- 2040 Future Year Build DSA V Freeway
- 2040 Future Year Build DSA V Arterial

A copy of the forecast is included in Appendix A.

A second tool used to assist in obtaining traffic volume data was the most recent version of the WMPO Travel Demand Model. This is a TransCAD based regional travel demand model, complete with current year and future year traffic volume and vehicle fleet mix projections.

Because of the scale and complexity of this task, two separate methodologies were used to determine traffic volume data for the networks in TransModeler. The first methodology was developed to look closely at the existing US 17 corridor, and a second methodology was developed to examine the impacts on a region wide basis. For the first methodology there are 12 different alternatives, one for each of the forecasts. For the second methodology there are 14 alternatives: one for each of the Base Year conditions, one for the Future Year No-Build conditions, and one for each of the 12 Future Year Build Alternatives. This dual approach was done in order to preserve the integrity of the traffic forecast along the study corridor while at the same time examining the overall network effects of the proposed alternatives. The following sections detail each of the dual methodologies.

3.1 TRAVEL TIME STUDY CORRIDOR METHODOLOGY

Obtaining traffic data for the travel time study corridor involved using the traffic forecasts and applying the Origin Destination Matrix Estimation (ODME) process. For each forecast, daily traffic volumes at each of the major intersections along the corridor were broken into AM and PM Peak Hour turning movement volumes utilizing the NCDOT Intersection Analysis Utility (IAU) worksheet, which can be found in Appendix B. The ODME was created by assigning the traffic forecast turning movement volumes to a seed matrix based on engineering judgment. The seed matrix was arranged so the turning movements would match the forecast volumes.

The turning movement counts were coded into the TransModeler network for each alternative. The ODME process also requires balanced AM and PM peak link volumes to be coded into the TransModeler network. These were also coded into all of the TransModeler networks. The ODME process requires peak hour seed matrices for each alternative. Seed matrices were created through a combination of engineering judgment and sub-area assignments from the WMPO Travel Demand Model. Once the ODME process was completed, the models were run using the Dynamic Traffic Assignment (DTA) function of TransModeler until the models reach a convergence point of .001. The DTA runs produced output files required for the final 12 batch simulation runs of each alternative. In lieu of creating a separate matrix for heavy vehicles, the traffic forecast was analyzed and it was determined that six percent heavy vehicles would be applied to the overall OD matrix. The final batch simulation runs were used to produce the following products of the ODME and DTA process:

- ODME peak hour matrices
- Historic Travel Times
- Turning Delay by Node

Once the final batch simulation runs were completed, travel times were extracted for selected segments using the VRC sensor tool of TransModeler. The averages of the 12 runs for each peak period were then used to compare the effectiveness of each Build Alternative when compared to the No-Build Alternative.

3.2 REGION WIDE NETWORK METHODOLOGY

"Region wide" refers to the project study area which includes the greater Wilmington metropolitan area and also adjacent areas in Brunswick County including Leland, Bishop, and Spring Hill. The first step in the region wide network methodology was developing a network. The WMPO Travel Demand Model network was utilized as a starting point for this process. Only facilities included in the WMPO Travel Demand network were utilized for the region wide network simulation. A subset of the roads in the network that were deemed regionally significant was included in the region wide network simulation. As such, many roads in the rural areas of the project study area were eliminated from consideration. Additionally, many roads within the downtown Wilmington core were replaced with centroids as they were found to be utilized only for local traffic, not pass-through traffic. The region wide network is shown in Figure 2. Fiscally constrained projects in the WMPO Travel Demand Model future-year network and the appropriate alternatives were added to this network to create the network utilized for future-year analysis.

Obtaining traffic data for the region wide Network runs involved using the WMPO Travel Demand Model. Using TransCAD, the sub-area analysis tool was run to obtain information for only the sub-area used in the region wide network simulation. The sub-area analysis requires only the files necessary to run the daily model and a selection set identifying the sub-area. The Future Year No-Build and Build Alternatives were all run using the same AM and PM OD matrices. Results of the Regional analysis can be found in Section 6.2.

4.0 MEASURES OF EFFECTIVENESS

Measures of Effectiveness (MOEs) are system performance statistics that best characterize the degree to which a particular alternative meets the project Purpose and Need. The MOEs for microscopic simulation can be abundant due to the nature of the type of analysis. The primary MOEs for uninterrupted flow facilities are typically average speed and density for individual segments as well as average travel time and speed for individual origin-destination pairs within the network. For interrupted facilities the primary MOEs are intersection LOS, queuing, and travel speeds. For overall network level MOEs, average system speed and average system delay can provide overall indications of the operations of a network.

No one MOE is capable of providing all the information necessary to compare alternatives. In light of this, the following MOEs are being presented:

- Travel times between selected points within the network (Travel Time Study Corridor)
- Travel speeds between selected points within the network (Travel Time Study Corridor)
- Total number of trips (Region Wide Network)
- Vehicle Miles Traveled (VMT) (Region Wide Network)
- Total Travel Time (Region Wide Network)
- Average speed (Region Wide Network)
- Total delay (Region Wide Network)
- Average delay (Region Wide Network)

Intersection LOS is not included as an MOE in this study. Intersection LOS would not be applicable to the region wide Network as the data is not fine enough to accurately predict Future Year LOS. Intersection LOS was also not useful for the travel time study corridor. The Upgrade Existing alternatives could not be compared to the other alternatives because intersection LOS is not applicable on uninterrupted flow facilities.

5.0 NETWORK DEVELOPMENT

5.1 GEOMETRY

The basis for developing the geometric data was the WMPO Travel Demand network and aerial photographs. Aerial photography was used as a background to digitize the network into the simulation model. The WMPO Travel Demand Model network was used as a starting point for the development of the model.

The geometry in the Base Year network and the Future Year No-Build network is based on the current roadway laneages and configurations. The network was created using aerials from NC OneMap and project orthophotography, Google Maps, and field verification. The geometry of the Future Year Build networks is based on the functional design of the various alternatives.

5.2 TRAFFIC CONTROL

Signal and coordination plans were obtained from NCDOT for the signals included in the study area. These plans were used to input timing, phasing, and detectors for the following intersections in the Base Year.

Spot field verification of the signal timings were performed at high priority locations along the existing US 17 corridor and other locations with high volumes in the Leland and Wilmington metro area. The signalized intersections for the Future Year networks were optimized in TransModeler utilizing built-in tools. In general, the region wide network was created for each alternative and then the US 17 corridor was copied in to a new project file to create the networks for the existing US 17 corridor simulations.

5.3 SPEED DATA

The average speeds for segments in the Brunswick County and Wilmington area roadway networks were collected from historic INRIX speed data for off peak periods with low volumes. This data was used to develop desired speed distributions. In addition to these speed distribution curves, data collected from roadway facilities in North Carolina was used to create supplemental desired speed distributions. The desired speed distribution for turning vehicle at intersections were assumed to be 10 mph with a standard deviation of 3 mph for right turns, and 15 mph with a standard deviation of 3 mph for left turns.

5.4 DRIVING BEHAVIOR PARAMETERS

The driver behavior parameters are used to guide vehicles through the network during the simulation models. TransModeler's driver behavior parameters include an acceleration model, lane changing models, crossing, merging and yielding, and response to traffic controls. All of these use an extensive range of parameters, some of which may be adapted by the user to change basic driving behavior. Initially, the default values were used in developing the base model, and any modifications made to the parameters are documented in the calibration section of this report.

5.5 VOLUME DATA

Volume data was created in accordance with the methodology described in Section 3 of this report.

5.6 TRAVEL TIME STUDY CORRIDOR BASE YEAR CALIBRATION

In order for the results of the model to be validated, the model requires calibration. The preferred method of calibrating a model is through using an existing model and replicating the observed conditions in the model then using the same methodology to develop the Future Year models. It should be noted for study purposes the 2013 Base Year traffic volumes from the *U-4738 – Cape Fear Crossing Forecast* (dated October 15, 2014) would be used as base year traffic for calibration. Based on conversations with NCDOT, It was determined that additional field data collection was not necessary and the forecast volumes were sufficient to use for calibration.

The means of calibrating the base year study corridor model included comparing the corridor travel time modeled in TransModeler to the speed data from the INRIX historic data. INRIX speed data is collected by utilizing vehicle probes that collect and transmit the locations of probe vehicles within the highway network. Historic data was extracted for the corridor within the study area for the AM and PM peak periods during all weekdays in October 6-8, 2014. The average speed and corresponding travel time for each direction along the corridor was determined from the data. A summary of this data is included in Appendix C. It should be noted that INRIX data displays link based speeds (as opposed to spot speeds taken at a fixed point). The model network should be developed as close as possible to match the same extents as the INRIX data; however, this is not feasible in all instances. The sensor locations were placed as close as possible to the INRIX data collection points; however, in some situations exact matches could not be made. This explains the small discrepancies between the 2013 No-Build model results and INRIX data.

According to an internally produced report by INRIX, "Benchmarking Traffic Data Quality: Best Practices for Analyzing the Quality of Traffic Information", INRIX speed data is accurate to within 5 mph of actual travel speed 85 percent of the time. Although this report was based on information collected along I-95, the NCDOT has allowed the use of INRIX data on arterials. Therefore, to be considered calibrated, the average speeds for the base model must be within 5 mph of the INRIX speeds. The calibration process used for this study has some limitations as the traffic data is for average daily traffic throughout the year and assumes that the AM and PM peak periods are mirror images of one another. Although the target value of ± 5 mph seems like a large range when trying to get both directions of US 17 in both peak periods within the allotted ranges, it is slightly more difficult due to the variability of data used in the calibration process. For the calibration effort, the average travel time was determined by averaging a statistically adequate number (see Section 5.7) of model runs.

It should be noted that the desired speed distributions used for this study were based on information provided by the NCDOT which was developed for the SPOT Mobility Projects. These desired speed distributions were used for passenger vehicles and heavy vehicles for all alternatives.

As previously noted, the calibration process focused mainly on the travel time along the study corridor. Although, calibrating for specific localized congestion was not part of calibration process, we have included locations of existing and future congestion in Appendix D.

Also, calibrating to specific volumes was not part of the calibration process; however, we have included in Appendix E, a comparison between the balanced forecast network volumes and the actual model run volumes at critical locations. Most of the critical points analyzed show a relatively small difference between the balanced forecast network and the actual model run volumes, which validates that the TransModeler ODME estimation tool is working reasonably.

Calibrating the base year model requires the simulation to replicate the existing field conditions as closely as possible. Several field observations suggested that actual drivers were slightly more aggressive than default TransModeler values. It was noted that many vehicles traveled in excess of the posted speed limit throughout the corridor. Also, it was noted that vehicles accepted smaller gaps when merging on US 74, especially under peak conditions. It was noted at several signalized intersections that the trailing vehicle allowed very little spacing between them and the vehicle in front of them. Based on the field observations and collected travel time data, the following changes were made to default values:

- Driving behavior factors were changed to account for the slightly more aggressive driving observed in the field.
    - Desired speed distributions – During post processing of the model results, it was determined that the default model parameter values are on the conservative side. This was also supported by the INRIX speed data. Hence, desired speed distribution was updated.
    - Vehicle stopped times between which the acceptable headway shrinks adjusted to 10-30 seconds
    - Headway threshold distribution for merging and street crossing was adjusted to decrease the acceptable headway times
    - Stopped gaps were reduced to reflect more accurate field observations.
    - Compliance probabilities for not blocking intersections was changed to 1 for controlled and uncontrolled intersections

A listing of the parameter changes are listed in Appendix F.

5.7 SIMULATION SETTINGS AND REPETITIONS

Each simulation model was empty in their initial state and a ten-minute warm-up period was part of the one-hour model run. This approach does not include any data produced during the warm-up time when summarizing the trip statistics. The random seed was set at five for the initial simulation with each run's random seed increasing by an increment of five.

The number of simulation runs is based on the process described in Appendix B of the FHWA Traffic Analysis Toolbox. The average speed of each simulation run was used as a basis for determining the number of required repetitions, with a confidence level of 95% and a confidence interval of 5 mph. It was calculated that each alternative would need to be run with 12 repetitions each for both the AM and PM peaks. The number of runs calculations and methodology are included in Appendix G.

5.8 OUTPUT

The output data was extracted from the TransModeler model using the Output Manager tool. The Travel Time evaluation provides average travel times for user defined start and end points within the network. Trip statistics provides overall VMT, VHT, average speeds, total stops, stop time, and delay information.

6.0 SIMULATION RESULTS

Simulation results are presented below in two sets: one for the travel time study corridor and one for the region wide network.

6.1 TRAVEL TIME STUDY CORRIDOR RESULTS

Results for the simulation runs on the existing travel time study corridor are detailed below. It should be noted that the eastbound corridor is 11.97 miles and the westbound corridor is 11.99 miles in length, with the differences in length due to the interchange configuration at US 74/76 and US 17.

It should be noted that the intersection of US 17 and NC 87 (Maco Rd) is a metering point for the westbound direction due to the excessive volumes in the future build scenarios. Queuing and delay in the westbound direction are present at this intersection, which increases travel time along US 17. This intersection is at the western edge of the corridor limits and was outside of the limits of improvement for all but two scenarios (Alternative M and N). The westbound travel time along US 17 would be decreased if future improvements are made at this intersection, including additional through lanes and turn lanes. As part of Alternative M and N, the NC 87 (Maco Rd) intersection was realigned due to the interchange at Cape Fear Crossing and I-140. As part of the realignment, additional lanes were added which improved the travel time in the westbound direction for Alternatives M and N. The improvements in Alternative M and N make the westbound travel times lower than any of the other scenarios, most notably in the PM peak period.

6.1.1 2013 NO-BUILD RESULTS

The 2013 No-Build Conditions model was developed and calibrated as described in Section 5.6 above. The INRIX speed data, taken from the travel time study corridor, showed the following average speeds and corresponding travel times:

- Study Corridor Eastbound – AM Peak
  - Average Speed 40.8 mph;
  - Average Travel Time = 17:35
- Study Corridor Westbound – AM Peak
  - Average Speed 44.0 mph;
  - Average Travel Time = 16:22
- Study Corridor Eastbound – PM Peak
  - Average Speed 44.6 mph;
  - Average Travel Time = 16:05
- Study Corridor Westbound – PM Peak
  - Average Speed 43.7 mph;
  - Average Travel Time = 16:27

Therefore, based on the calibration criteria of ± 5 mph with a desired target range of ±2.5 mph the following calibration ranges were established:

- Study Corridor Eastbound – AM Peak
  - Avg. Speed = 45.8-35.8 mph (acceptable)
    Avg. Speed = 43.3-38.3 mph (desirable)
  - Avg. Travel Time = 15:40-20:03 (acceptable)
    Avg. Travel Time = 16:35-18:45 (desirable)
- Study Corridor Westbound – AM Peak
  - Avg. Speed = 49.0-39.0 mph (acceptable)
    Avg. Speed = 46.5-41.5 mph (desirable)
  - Avg. Travel Time = 14:41-18:28 (acceptable)
    Avg. Travel Time = 15:28-17:20 (desirable)
- Study Corridor Eastbound – PM Peak
  - Avg. Speed = 49.6-39.6 mph (acceptable)
    Avg. Speed = 47.1-42.1 mph (desirable)
  - Avg. Travel Time = 14:28-18:07 (acceptable)
    Avg. Travel Time = 15:15-17:03 (desirable))
- Study Corridor Westbound – PM Peak
  - Avg. Speed = 48.7-38.7 mph (acceptable)
    Avg. Speed = 46.2-41.2 mph (desirable)
  - Avg. Travel Time = 14:46-18:35 (acceptable)
    Avg. Travel Time = 15:34-17:28 (desirable)

The simulation results along the travel time study corridor for the 2013 No-Build Alternative are detailed in Table 2.

Table 2 – Travel Time Study Corridor – 2013 No-Build Results

Average Speed Summary					
Segment	**Time Period**	**Calibration Targets (mph)**		**TransModeler**	
		(Acceptable)		**Average Speed (mph)**	**Calibrated**
		Desirable			
Study Corridor Eastbound	AM Peak	(45.8)	(35.8)	37.0	Within Acceptable
		43.3	*38.3*		
Study Corridor Eastbound	PM Peak	(49.6)	(39.6)	42.6	Within Desirable
		47.1	*42.1*		
Study Corridor Westbound	AM Peak	(49.0)	(39.0)	45.7	Within Desirable
		46.5	*41.5*		
Study Corridor Westbound	PM Peak	(48.7)	(38.7)	46.4	Within Acceptable
		46.2	*41.2*		
Travel Time Summary					
Segment	**Time Period**	**Calibration Targets (mm:ss)**		**TransModeler**	
		(Acceptable)		**Travel Time (mm:ss)**	**Calibrated**
		Desirable			
Study Corridor Eastbound	AM Peak	(15:40)	(20:03)	19:26	Within Acceptable
		16:35	*18:45*		
Study Corridor Eastbound	PM Peak	(14:28)	(18:07)	16:52	Within Desirable
		15:15	*17:03*		
Study Corridor Westbound	AM Peak	(14:41)	(18:28)	15:44	Within Desirable
		15:28	*17:20*		
Study Corridor Westbound	PM Peak	(14:46)	(18:35)	15:31	Within Acceptable
		15:34	*17:28*		

Based on the data included in Table 2 the base model is considered to be calibrated and can be utilized as a basis for developing the Future Year No-Build and Build Scenarios. For the Base Year, two of the values fell within the acceptable range and two fell within the desirable range.

6.1.2 2040 NO-BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 No-Build Alternative are detailed in Table 3.

Table 3 – Travel Time Study Corridor – 2040 No-Build Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	32:56	21.80	11.97
	PM	26:20	27.26	11.97
US 17 from NC 87 to US 74/76	AM	17:11	20.08	5.75
	PM	11:34	29.82	5.75
US 74/76 from US 17 to US 421	AM	09:31	24.21	3.84
	PM	05:50	39.49	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	06:14	22.86	2.38
	PM	08:56	15.95	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	24:20	29.55	11.99
	PM	36:55	19.48	11.99
US 17 from NC 87 to US 74/76	AM	11:28	30.07	5.75
	PM	12:49	26.91	5.75
US 74/76 from US 17 to US 421	AM	05:12	44.49	3.86
	PM	10:24	22.25	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	07:40	18.61	2.38
	PM	13:41	10.41	2.38

As shown in Table 3, the study corridor is expected to see degradation in conditions in the 2040 No-Build Alternative in both the AM and PM peak periods. The projected traffic volumes will oversaturate the study corridor without additional improvements. It is anticipated that most of the corridor will experience excessive delays and queuing in the 2040 No-Build Scenario, except for US 74/76 in the off peak direction.

6.1.3 2040 DETAILED STUDY ALTERNATIVE B BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative B are detailed in Table 4.

Table 4 – Travel Time Study Corridor – 2040 Detailed Study Alternative B Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	21:03	34.12	11.97
	PM	21:27	33.48	11.97
US 17 from NC 87 to US 74/76	AM	09:23	36.78	5.75
	PM	08:37	40.05	5.75
US 74/76 from US 17 to US 421	AM	05:50	39.49	3.84
	PM	05:11	44.40	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	05:50	24.46	2.38
	PM	07:39	18.65	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	19:22	37.12	11.99
	PM	22:00	32.68	11.99
US 17 from NC 87 to US 74/76	AM	08:52	38.88	5.75
	PM	11:26	30.18	5.75
US 74/76 from US 17 to US 421	AM	04:55	47.10	3.86
	PM	05:10	44.85	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	05:35	25.54	2.38
	PM	05:25	26.35	2.38

As shown in Table 4, Alternative B provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative B has lower travel times when compared to Alternative C and also slightly lower travel times when compared to the other alternatives that tie in at Shipyard Boulevard. Alternative B has the lowest travel time out of any of the bypass/hybrid alternatives.

6.1.4 2040 DETAILED STUDY ALTERNATIVE C BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative C are detailed in Table 5.

Table 5 – Travel Time Study Corridor – 2040 Detailed Study Alternative C Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	23:16	30.86	11.97
	PM	22:46	31.53	11.97
US 17 from NC 87 to US 74/76	AM	10:34	32.67	5.75
	PM	09:09	37.69	5.75
US 74/76 from US 17 to US 421	AM	07:03	32.70	3.84
	PM	06:08	37.53	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	05:39	25.20	2.38
	PM	07:28	19.07	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	20:03	35.88	11.99
	PM	21:49	32.95	11.99
US 17 from NC 87 to US 74/76	AM	08:54	38.75	5.75
	PM	11:06	31.10	5.75
US 74/76 from US 17 to US 421	AM	05:06	45.36	3.86
	PM	05:19	43.54	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	06:02	23.62	2.38
	PM	05:25	26.33	2.38

As shown in Table 5, Alternative C provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative C has higher travel times when compared to Alternative B and also slightly higher travel times when compared to Alternatives M and G. Alternative C does have lower travel times when compared to Alternative Q.

6.1.5 2040 DETAILED STUDY ALTERNATIVE F BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative F are detailed in Table 6.

Table 6 – Travel Time Study Corridor – 2040 Detailed Study Alternative F Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	16:14	44.26	11.97
	PM	14:45	48.67	11.97
US 17 from NC 87 to US 74/76	AM	05:51	58.98	5.75
	PM	05:31	62.52	5.75
Us 74/76 from US 17 to US 421	AM	04:57	46.59	3.84
	PM	04:50	47.59	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	05:26	26.29	2.38
	PM	04:24	32.48	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	16:39	43.20	11.99
	PM	19:31	36.87	11.99
US 17 from NC 87 to US 74/76	AM	07:14	47.65	5.75
	PM	10:36	32.55	5.75
Us 74/76 from US 17 to US 421	AM	04:38	50.03	3.86
	PM	04:40	49.68	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	04:47	29.86	2.38
	PM	04:15	33.57	2.38

As shown in Table 6, Alternative F provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative F has the lowest travel time amongst the build alternatives, closely followed by Alternative V (Freeway). The majority of Alternative F is uninterrupted flow; therefore, this alternative provides more travel time savings when compared to the bypass/hybrid alternatives.

6.1.6 2040 DETAILED STUDY ALTERNATIVE G BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative G are detailed in Table 7.

Table 7 – Travel Time Study Corridor – 2040 Detailed Study Alternative G Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	23:40	30.34	11.97
	PM	20:41	34.72	11.97
US 17 from NC 87 to US 74/76	AM	11:29	30.03	5.75
	PM	09:25	36.61	5.75
US 74/76 from US 17 to US 421	AM	06:32	35.22	3.84
	PM	05:37	41.00	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	05:38	25.29	2.38
	PM	05:38	25.30	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	18:52	38.12	11.99
	PM	21:42	33.15	11.99
US 17 from NC 87 to US 74/76	AM	08:31	40.47	5.75
	PM	11:28	30.09	5.75
US 74/76 from US 17 to US 421	AM	05:10	44.88	3.86
	PM	05:20	43.49	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	05:11	27.50	2.38
	PM	04:54	29.06	2.38

As shown in Table 7, Alternative G provides improvements along the study corridor as compared to the 2040 No-Build Alternative. By a very small margin, Alternative G has the lowest travel times of the alternatives that that tie in at Independence Boulevard. Alternative G and M have almost identical overall travel times, followed closely by Alternative C.

6.1.7 2040 DETAILED STUDY ALTERNATIVE J BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative J are detailed in Table 8.

Table 8 – Travel Time Study Corridor – 2040 Detailed Study Alternative J Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	22:47	31.53	11.97
	PM	20:08	35.68	11.97
US 17 from NC 87 to US 74/76	AM	09:54	34.87	5.75
	PM	07:39	45.05	5.75
US 74/76 from US 17 to US 421	AM	06:07	37.65	3.84
	PM	05:24	42.65	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	06:46	21.12	2.38
	PM	07:04	20.20	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	18:23	39.15	11.99
	PM	22:36	31.83	11.99
US 17 from NC 87 to US 74/76	AM	08:22	41.25	5.75
	PM	11:23	30.30	5.75
US 74/76 from US 17 to US 421	AM	05:08	45.13	3.86
	PM	05:16	43.77	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	04:53	29.24	2.38
	PM	05:57	24.00	2.38

As shown in Table 8, Alternative J provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative J has lower travel times when compared to Alternative M and T; however, it has slightly higher travel times when compared to Alternative B. Alternative J has the third lowest travel time out of the bypass/hybrid alternatives, behind Alternatives B and M.

6.1.8 2040 DETAILED STUDY ALTERNATIVE M AVOIDANCE BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative M Avoidance are detailed in Table 9.

Table 9 – Travel Time Study Corridor – 2040 Detailed Study Alternative M Avoidance Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	24:43	29.06	11.97
	PM	23:08	31.03	11.97
US 17 from NC 87 to US 74/76	AM	10:55	31.59	5.75
	PM	09:41	35.60	5.75
US 74/76 from US 17 to US 421	AM	06:28	35.59	3.84
	PM	05:06	45.11	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	07:19	19.49	2.38
	PM	08:20	17.10	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	17:42	40.62	11.99
	PM	19:24	37.08	11.99
US 17 from NC 87 to US 74/76	AM	08:09	42.33	5.75
	PM	08:31	40.54	5.75
US 74/76 from US 17 to US 421	AM	04:57	46.73	3.86
	PM	05:00	46.25	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	04:36	31.01	2.38
	PM	05:53	24.25	2.38

As shown in Table 9, Alternative M Avoidance provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative M Avoidance has lowest travel times of the alternatives that tie in at Independence Boulevard and also the second lowest travel time of any of the hybrid/bypass alternatives.

6.1.9 2040 DETAILED STUDY ALTERNATIVE N AVOIDANCE BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative N Avoidance are detailed in Table 10.

Table 10 – Travel Time Study Corridor – 2040 Detailed Study Alternative N Avoidance Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	25:28	28.18	11.97
	PM	22:31	31.88	11.97
US 17 from NC 87 to US 74/76	AM	11:38	29.64	5.75
	PM	09:35	35.99	5.75
US 74/76 from US 17 to US 421	AM	06:49	33.77	3.84
	PM	05:42	40.38	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	07:01	20.34	2.38
	PM	07:14	19.73	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	18:38	38.59	11.99
	PM	21:18	33.76	11.99
US 17 from NC 87 to US 74/76	AM	07:45	44.56	5.75
	PM	08:10	42.22	5.75
US 74/76 from US 17 to US 421	AM	04:41	49.37	3.86
	PM	05:09	44.98	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	06:12	22.98	2.38
	PM	07:59	17.86	2.38

As shown in Table 10, Alternative N Avoidance provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative N Avoidance has higher travel times when compared to Alternative B; however, it has slightly lower travel times when compared to Alternative Q and T.

6.1.10 2040 DETAILED STUDY ALTERNATIVE P BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative P are detailed in Table 11.

Table 11 – Travel Time Study Corridor – 2040 Detailed Study Alterative P Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	19:40	36.52	11.97
	PM	16:53	42.53	11.97
US 17 from NC 87 to US 74/76	AM	07:54	43.65	5.75
	PM	07:20	47.08	5.75
US 74/76 from US 17 to US 421	AM	04:55	46.88	3.84
	PM	04:53	47.13	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	06:50	20.84	2.38
	PM	04:40	30.55	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	20:22	35.32	11.99
	PM	20:19	35.40	11.99
US 17 from NC 87 to US 74/76	AM	10:45	32.09	5.75
	PM	10:43	32.21	5.75
US 74/76 from US 17 to US 421	AM	05:03	45.87	3.86
	PM	05:12	44.57	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	04:34	31.25	2.38
	PM	04:25	32.31	2.38

As shown in Table 11, Alternative P also provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative P and Alternative V (Arterial) have travel times that are on par with one another. The only alternatives that had lower travel times were Alternatives F and V (Freeway). The differences in travel time are mainly due to US 17 having signalized intersections in Alternative P and V(Arterial), while Alternatives F and V (Freeway) have uninterrupted flow facilities.

6.1.11 2040 DETAILED STUDY ALTERNATIVE Q BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative Q are detailed in Table 12.

Table 12 – Travel Time Study Corridor – 2040 Detailed Study Alternative Q Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	25:08	28.57	11.97
	PM	23:12	30.94	11.97
US 17 from NC 87 to US 74/76	AM	12:43	27.13	5.75
	PM	10:27	33.02	5.75
US 74/76 from US 17 to US 421	AM	07:08	32.30	3.84
	PM	06:04	37.97	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	05:17	26.99	2.38
	PM	06:41	21.33	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	19:54	36.13	11.99
	PM	22:34	31.87	11.99
US 17 from NC 87 to US 74/76	AM	09:29	36.35	5.75
	PM	11:52	29.06	5.75
US 74/76 from US 17 to US 421	AM	05:05	45.61	3.86
	PM	05:21	43.25	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	05:20	26.71	2.38
	PM	05:20	26.69	2.38

As shown in Table 10, Alternative Q provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative Q has the highest travel times when compared to all of the build alternatives.

6.1.12 2040 DETAILED STUDY ALTERNATIVE T BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative T are detailed in Table 13.

Table 13 – Travel Time Study Corridor – 2040 Detailed Study Alternative T Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	25:13	28.48	11.97
	PM	22:24	32.07	11.97
US 17 from NC 87 to US 74/76	AM	12:42	27.17	5.75
	PM	09:23	36.75	5.75
US 74/76 from US 17 to US 421	AM	06:08	37.56	3.84
	PM	05:27	42.30	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	06:23	22.37	2.38
	PM	07:34	18.88	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	17:59	39.99	11.99
	PM	22:33	31.91	11.99
US 17 from NC 87 to US 74/76	AM	08:51	38.96	5.75
	PM	12:06	28.51	5.75
US 74/76 from US 17 to US 421	AM	04:41	49.41	3.86
	PM	05:17	43.88	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	04:27	32.10	2.38
	PM	05:10	27.64	2.38

As shown in Table 10, Alternative T provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative T has the second highest travel times when compared to all of the build alternatives.

6.1.13 2040 DETAILED STUDY ALTERNATIVE V (ARTERIAL) BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative V (Arterial) are detailed in Table 14.

Table 14 – Travel Time Study Corridor – 2040 Detailed Study Alternative V (Arterial) Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	19:04	37.68	11.97
	PM	17:32	40.98	11.97
US 17 from NC 87 to US 74/76	AM	07:33	45.69	5.75
	PM	07:03	48.95	5.75
US 74/76 from US 17 to US 421	AM	05:30	41.94	3.84
	PM	05:07	45.09	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	06:01	23.67	2.38
	PM	05:22	26.53	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	20:31	35.08	11.99
	PM	20:22	35.34	11.99
US 17 from NC 87 to US 74/76	AM	10:52	31.75	5.75
	PM	11:12	30.80	5.75
US 74/76 from US 17 to US 421	AM	04:39	49.87	3.86
	PM	04:33	50.92	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	05:00	28.49	2.38
	PM	04:37	30.93	2.38

As shown in Table 14, Alternative V (Arterial) provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative P and Alternative V (Arterial) have travel times that are on par with one another. The only alternatives that had lower travel times were Alternatives F and V (Freeway). The differences in travel time are mainly due to US 17 having signalized intersections in Alternative P and V(Arterial), while Alternatives F and V (Freeway) have uninterrupted flow facilities.

6.1.14 2040 DETAILED STUDY ALTERNATIVE V (FREEWAY) BUILD RESULTS

The simulation results along the travel time study corridor for the 2040 Detailed Study Alterative V (Freeway) are detailed in Table 15.

Table 15 – Travel Time Study Corridor – 2040 Detailed Study Alternative V (Freeway) Results

Eastbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	17:09	41.88	11.97
	PM	16:44	42.90	11.97
US 17 from NC 87 to US 74/76	AM	05:49	59.36	5.75
	PM	05:31	62.47	5.75
US 74/76 from US 17 to US 421	AM	05:28	42.17	3.84
	PM	04:30	51.20	3.84
US 421 from US 74/76 to Shipyard Blvd	AM	05:52	24.31	2.38
	PM	06:43	21.26	2.38
Westbound				
Segment	**Peak Period**	**Travel Time (mm:ss)**	**Speed (mph)**	**Distance (mi)**
Overall Study Corridor	AM	16:01	44.92	11.99
	PM	19:22	37.15	11.99
US 17 from NC 87 to US 74/76	AM	07:04	48.79	5.75
	PM	10:14	33.69	5.75
US 74/76 from US 17 to US 421	AM	04:09	55.71	3.86
	PM	04:24	52.71	3.86
US 421 from US 74/76 to Shipyard Blvd	AM	04:47	29.82	2.38
	PM	04:44	30.21	2.38

As shown in Table 15, Alternative V (Freeway) provides improvements along the study corridor as compared to the 2040 No-Build Alternative. Alternative V (Freeway) has the second lowest travel time amongst the build alternatives, just behind Alternative V (Freeway). The majority of Alternative V (Freeway) is uninterrupted flow; therefore, this alternative provides more travel time savings when compared to the bypass/hybrid alternatives.

6.2 REGION WIDE NETWORK CORRIDOR RESULTS

Results for the simulation runs on the region wide network are detailed below.

Completed trips are the number of vehicles that successfully reached their destination during the analysis period. Incomplete trips are vehicles that had entered the network during the analysis period; however, they did not reach their end destination and were still in the network when the period ended. These values are used to show how an alternative allows traffic to operate in a region. Alternatives with greater regional impacts have higher percentages of total trips that are classified as complete.

Queued trips are trips that did not enter the network due to excessive queuing at points within the network. There were queued trips reported; however, they were not reported since the region wide study area was so large. It was determined that this value would not be as beneficial as others when comparing the alternatives.

6.2.1 2013 NO-BUILD RESULTS

The results of the simulation of the region wide network for the 2013 No-Build Alternative are detailed in Table 16.

Table 16 – Region Wide Network – 2013 No-Build Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	38,791	136,244	276,522	29.56	129,427	2.69
Incomplete	10,731	36,237	206,507	11.10	154,353	14.40
Total	49,522	172,481	483,028	25.56	283,781	5.22
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	44,306	168,011	344,122	29.29	161,046	2.74
Incomplete	9,557	34,024	139,335	16.51	85,090	5.93
Total	53,863	202,035	483,457	27.03	246,136	3.30

As shown in Table 16, the 2013 No-Build PM peak period has a slightly higher average speed than the AM peak period, but also has roughly 9% more trips. This is mainly because westbound traffic on the study corridor is able to cross the existing Cape Fear Memorial Bridge at greater speeds due to less queuing on Wooster Street than experienced on US 17 by the eastbound traffic using the bridge in the AM peak period.

6.2.2 2040 NO-BUILD RESULTS

The results of the simulation of the region wide network for the 2040 No-Build Alternative are detailed in Table 17.

Table 17 – Region Wide Network – 2040 No-Build Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	45,474	164,007	423,536	23.23	252,350	4.45
Incomplete	22,814	82,822	549,200	9.33	443,704	14.14
Total	68,288	246,830	972,736	18.59	696,054	7.69
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	47,915	182,874	490,154	22.39	300,851	4.88
Incomplete	24,816	88,360	575,955	9.60	453,378	15.98
Total	72,731	271,234	1,066,108	18.02	754,229	8.66

As shown in Table 17, the 2040 No-Build Alternative shows increased amounts of delay when compared to existing conditions, particularly in the PM peak period. Total delay and travel time increase compared to the 2013 Base Year.

6.2.3 2040 DETAILED STUDY ALTERNATIVE B BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative B are detailed in Table 18.

Table 18 – Region Wide Network – 2040 Detailed Study Alternative B Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	49,119	197,623	434,963	27.26	229,328	3.60
Incomplete	19,622	86,263	410,247	13.24	300,928	10.71
Total	68,741	283,887	845,210	23.26	530,256	5.63
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	50,032	201,009	452,979	26.63	244,688	3.89
Incomplete	23,453	96,093	503,216	12.05	373,394	14.30
Total	73,485	297,102	956,195	21.98	618,082	7.21

As shown in Table 18, the 2040 Alternative B shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 24% in the AM peak period and 18% in the PM peak period. Average network speeds are increased by approximately 4 mph in both the AM peak period and PM peak period.

6.2.4 2040 DETAILED STUDY ALTERNATIVE C BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative C are detailed in Table 19.

Table 19 – Region Wide Network – 2040 Detailed Study Alternative C Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	48,257	185,969	414,440	26.92	222,097	3.64
Incomplete	20,370	88,543	447,544	12.39	337,971	11.36
Total	68,627	274,511	861,984	22.61	560,068	5.94
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	50,782	204,911	463,367	26.53	252,326	3.76
Incomplete	22,662	96,089	481,026	12.63	353,240	13.40
Total	73,444	300,999	944,393	22.24	605,566	6.74

As shown in Table 19, the 2040 Alternative C shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 20% in both the AM peak period and the PM peak period. Average network speeds are increased by approximately 4 mph in both the AM peak period and PM peak period.

6.2.5 2040 DETAILED STUDY ALTERNATIVE F BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative F are detailed in Table 20.

Table 20 – Region Wide Network – 2040 Detailed Study Alternative F Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	53,703	197,229	534,792	27.99	329,816	3.94
Incomplete	17,074	68,703	330,995	13.17	239,958	11.38
Total	70,777	265,931	865,787	24.41	569,775	5.74
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	59,872	211,583	654,362	28.42	434,433	3.41
Incomplete	18,829	72,847	356,956	13.08	254,537	12.78
Total	78,701	284,430	1,011,318	24.75	688,970	5.65

As shown in Table 20, the 2040 Alternative F shows improved conditions relative to the 2040 No-Build Alternative. Alternative F was also able to process the highest number of trips through the regional network, compared to the other alternatives. Total delay is reduced by approximately 18% in the AM peak period and 9% in the PM peak period. Average network speeds are increased by approximately 6 mph in the AM peak period and 7 mph in the PM peak period.

6.2.6 2040 DETAILED STUDY ALTERNATIVE G BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative G are detailed in Table 21.

Table 21 – Region Wide Network – 2040 Detailed Study Alternative G Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	49,880	202,237	440,248	27.56	229,289	3.67
Incomplete	18,493	83,194	379,722	13.84	275,280	10.31
Total	68,374	285,431	819,971	23.85	504,569	5.47
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	51,778	210,851	471,165	26.85	251,824	3.76
Incomplete	21,227	87,046	436,350	12.68	317,754	12.30
Total	73,004	297,897	907,515	22.73	569,578	6.24

As shown in Table 21, the 2040 Alternative G shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 27% in the AM peak period and 25% in the PM peak period. Average network speeds are increased by approximately 5 mph in both the AM peak period and PM peak period.

6.2.7 2040 DETAILED STUDY ALTERNATIVE J BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative J are detailed in Table 22.

Table 22 – Region Wide Network – 2040 Detailed Study Alternative J Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	48,345	197,373	424,922	27.87	219,745	3.66
Incomplete	19,119	86,302	402,394	13.51	293,531	10.01
Total	67,464	283,674	827,316	23.80	513,276	5.46
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	48,962	199,062	440,200	27.13	234,507	3.76
Incomplete	22,237	94,189	483,718	12.31	356,899	12.34
Total	71,199	293,251	923,918	22.50	591,407	6.44

As shown in Table 22, the 2040 Alternative J shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 26% in the AM peak period and 22% in the PM peak period. Average network speeds are increased by approximately 5 mph in the AM peak period and 4 mph in the PM peak period.

6.2.8 2040 DETAILED STUDY ALTERNATIVE M AVOIDANCE BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative M Avoidance are detailed in Table 23.

Table 23 – Region Wide Network – 2040 Detailed Study Alternative M Avoidance Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	49,332	211,720	491,136	24.74	272,920	4.31
Incomplete	20,640	89,765	469,620	11.76	364,826	13.15
Total	69,971	301,485	960,756	20.91	637,745	6.91
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	49,635	209,484	504,220	24.44	288,250	4.41
Incomplete	24,142	100,064	561,460	11.05	435,198	16.20
Total	73,777	309,548	1,065,681	20.06	723,447	8.27

As shown in Table 23, the 2040 Alternative M Avoidance shows improved conditions relative to the 2040 No-Build Alternative. However, Alternative M Avoidance produces the fewest improvements to the regional delay and average speeds. Total delay is reduced by approximately 8% in the AM peak period and 4% in the PM peak period. Average network speeds are increased by approximately 2 mph in both the AM peak period and the PM peak period.

6.2.9 2040 DETAILED STUDY ALTERNATIVE N AVOIDANCE BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative N Avoidance are detailed in Table 24.

Table 24 – Region Wide Network – 2040 Detailed Study Alternative N Avoidance Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	48,930	185,887	550,979	26.78	362,055	4.51
Incomplete	17,749	70,140	377,657	11.42	294,315	12.65
Total	66,679	256,028	928,636	22.69	656,370	6.67
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	52,824	188,892	682,720	26.45	491,199	4.57
Incomplete	20,643	77,063	447,382	10.66	222,559	15.26
Total	73,466	265,955	1,130,102	22.01	713,759	7.58

As shown in Table 24, the 2040 Alternative N Avoidance shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 6% in the AM peak period and 5% in the PM peak period. Average network speeds are increased by approximately 4 mph in both the AM peak period and the PM peak period.

6.2.10 2040 DETAILED STUDY ALTERNATIVE P BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative P are detailed in Table 25.

Table 25 – Region Wide Network – 2040 Detailed Study Alternative P Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	49,523	217,182	486,117	25.31	260,952	4.28
Incomplete	19,622	81,337	440,451	11.47	338,414	13.43
Total	69,145	298,519	926,568	21.38	599,366	6.87
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	51,961	232,021	534,411	24.81	293,742	4.28
Incomplete	21,723	86,202	483,626	11.21	367,457	15.86
Total	73,684	318,223	1,018,036	20.80	661,199	7.69

As shown in Table 25, the 2040 Alternative P shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 14% in the AM peak period and 12% in the PM peak period. Average network speeds are increased by approximately 3 mph in the AM peak period and 2 mph in the PM peak period.

6.2.11 2040 DETAILED STUDY ALTERNATIVE Q BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative Q are detailed in Table 26.

Table 26 – Region Wide Network – 2040 Detailed Study Alternative Q Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	45,957	166,906	372,431	26.89	199,155	3.72
Incomplete	20,776	79,139	498,230	9.90	392,672	14.18
Total	66,732	246,045	870,661	21.60	591,827	6.98
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	47,849	177,928	402,791	26.50	218,941	3.83
Incomplete	25,052	90,729	586,756	9.68	459,180	15.30
Total	72,901	268,657	989,547	20.72	678,121	7.77

As shown in Table 26, the 2040 Alternative Q shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 15% in the AM peak period and 10% in the PM peak period. Average network speeds are increased by approximately 3 mph in both the AM peak period and the PM peak period.

6.2.12 2040 DETAILED STUDY ALTERNATIVE T BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative T are detailed in Table 27.

Table 27 – Region Wide Network – 2040 Detailed Study Alternative T Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	48,937	195,265	433,458	27.03	229,933	3.68
Incomplete	19,639	86,246	411,016	13.19	302,365	10.66
Total	68,576	281,511	844,474	23.06	532,298	5.68
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	50,271	199,463	452,322	26.46	245,044	3.83
Incomplete	23,218	94,696	493,669	12.11	365,632	13.70
Total	73,488	294,159	945,991	21.93	610,676	6.95

As shown in Table 27, the 2040 Alternative T shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 23% in the AM peak period and 19% in the PM peak period. Average network speeds are increased by approximately 4 mph in both the AM peak period and the PM peak period.

6.2.13 2040 DETAILED STUDY ALTERNATIVE V (ARTERIAL) BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative V (Arterial) are detailed in Table 28.

Table 28 – Region Wide Network – 2040 Detailed Study Alternative V (Arterial) Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	46,469	175,828	364,930	28.91	184,159	3.37
Incomplete	21,468	88,433	483,838	11.42	370,873	11.13
Total	67,937	264,261	848,769	23.38	555,032	5.82
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	45,508	173,049	371,000	27.99	194,711	4.18
Incomplete	26,006	98,420	611,035	10.06	476,214	14.21
Total	71,514	271,469	982,034	21.47	670,925	7.83

As shown in Table 28, the 2040 Alternative V (Arterial) shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 20% in the AM peak period and 11% in the PM peak period. Average network speeds are increased by approximately 5 mph in the AM peak period and 3 mph in the PM peak period.

6.2.14 2040 DETAILED STUDY ALTERNATIVE V (FREEWAY) BUILD RESULTS

The results of the simulation of the region wide network for the 2040 Detailed Study Alternative V (Freeway) are detailed in Table 29.

Table 29 – Region Wide Network – 2040 Detailed Study Alternative V (Freeway) Results

AM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	49,152	141,502	538,165	25.61	391,683	4.43
Incomplete	20,780	121,664	353,443	8.35	162,515	19.09
Total	69,932	263,166	891,608	23.54	554,197	5.99
PM Peak Period Results						
Interval	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)
Completed	55,341	150,276	692,052	25.09	454,468	4.77
Incomplete	21,266	145,552	301,693	8.53	223,842	21.04
Total	76,607	295,827	993,745	24.11	678,310	6.14

As shown in Table 29, the 2040 Alternative V (Freeway) shows improved conditions relative to the 2040 No-Build Alternative. Total delay is reduced by approximately 20% in the AM peak period and 10% in the PM peak period. Average network speeds are increased by approximately 5 mph in the AM peak period and 6 mph in the PM peak period.

7.0 SUMMARY OF RESULTS

The following sections summarize the travel time results of the study in a side by side manner to better interpret the results.

7.1 TRAVEL TIME STUDY CORRIDOR SUMMARY

The travel time study corridor travel time data is summarized below in Table 30.

Table 30 – Travel Time Study Corridor Summary

Eastbound Travel Time Summary (min:sec))														
Segment	Peak Period	2040 NB	Alt B	Alt C	Alt F	Alt G	Alt J	Alt M Avoid.	Alt N Avoid.	Alt P	Alt Q	Alt T	Alt Va	Alt Vf
Overall Study Corridor	AM	32:56	21:03	23:16	16:14	23:40	22:47	24:43	25:28	19:40	25:08	25:13	19:04	17:09
	PM	26:20	21:27	22:46	14:45	20:41	20:08	23:08	22:31	16:53	23:12	22:24	17:32	16:44
US 17 from NC 87 to US 74/76	AM	17:11	09:23	10:34	05:51	11:29	09:54	10:55	11:38	07:54	12:43	12:42	07:33	05:49
	PM	11:34	08:37	09:09	05:31	09:25	07:39	09:41	09:35	07:20	10:27	09:23	07:03	05:31
US 74/76 from US 17 to US 421	AM	09:31	05:50	07:03	04:57	06:32	06:07	06:28	06:49	04:55	07:08	06:08	05:30	05:28
	PM	05:50	05:11	06:08	04:50	05:37	05:24	05:06	05:42	04:53	06:04	05:27	05:07	04:30
US 421 from US 74/76 to Shipyard Blvd	AM	06:14	05:50	05:39	05:26	05:38	06:46	07:19	07:01	06:50	05:17	06:23	06:01	05:52
	PM	08:56	07:39	07:28	04:24	05:38	07:04	08:20	07:14	04:40	06:41	07:34	05:22	06:43

Westbound Travel Time Summary (min:sec))														
Segment	Peak Period	2040 NB	Alt B	Alt C	Alt F	Alt G	Alt J	Alt M Avoid.	Alt N Avoid.	Alt P	Alt Q	Alt T	Alt Va	Alt Vf
Overall Study Corridor	AM	24:20	19:22	20:03	16:39	18:52	18:23	17:42	18:38	20:22	19:54	17:59	20:31	16:01
	PM	36:55	22:00	21:49	19:31	21:42	22:36	19:24	21:18	20:19	22:34	22:33	20:22	19:22
US 17 from NC 87 to US 74/76	AM	11:28	08:52	08:54	07:14	08:31	08:22	08:09	07:45	10:45	09:29	08:51	10:52	07:04
	PM	12:49	11:26	11:06	10:36	11:28	11:23	08:31	08:10	10:43	11:52	12:06	11:12	10:14
US 74/76 from US 17 to US 421	AM	05:12	04:55	05:06	04:38	05:10	05:08	04:57	04:41	05:03	05:05	04:41	04:39	04:09
	PM	10:24	05:10	05:19	04:40	05:20	05:16	05:00	05:09	05:12	05:21	05:17	04:33	04:24
US 421 from US 74/76 to Shipyard Blvd	AM	07:40	05:35	06:02	04:47	05:11	04:53	04:36	06:12	04:34	05:20	04:27	05:00	04:47
	PM	13:41	05:25	05:25	04:15	04:54	05:57	05:53	07:59	04:25	05:20	05:10	04:37	04:44

Table 31 shows the percent decrease in travel time for each alternative when compared to the 2040 No-Build scenario. The eastbound and westbound travel times were totaled for the 2040 No-Build and each build alternative and the percent decrease was calculated by using the equation below:

$$\text{Percent Decrease} = \frac{\text{2040 No-Build Travel Time} - \text{2040 Alternative Travel Time}}{|\text{2040 No-Build Travel Time}|} \times 100\%$$

Table 31 – Percent Decrease in Travel Time

Percent Decrease in Travel Time Compared to 2040 No-Build (%)												
Segment	**Alt B**	**Alt C**	**Alt F**	**Alt G**	**Alt J**	**Alt M Avoid.**	**Alt N Avoid.**	**Alt P**	**Alt Q**	**Alt T**	**Alt Va**	**Alt Vf**
% Decrease Compared to 2040 NB	30.41	27.07	44.28	29.54	30.38	29.51	27.04	35.92	24.66	26.86	35.71	42.52

As shown in Table 31, the upgrade existing alternatives provide the largest decrease in travel time along the study corridor when compared to the 2040 No-Build. Alternatives F and V (Freeway) provide the largest decrease in travel time along the study corridor when compared to the 2040 No-Build. This is expected as these alternatives convert most of the corridor to an uninterrupted flow facility. Alternatives P and V (Arterial) provided the next largest decrease in travel time.

All of the build alternatives provide some travel time savings along the study corridor when compared to the 2040 No-build conditions, particularly along the US 74/76 corridor. Alternatives B and J provided the largest decrease in travel time amongst the bypass/hybrid alternatives, followed closely by Alternatives G and M Avoidance. Generally, the alternatives that tie in at Shipyard Boulevard provided larger decreases in travel times as compared to the alternatives that tie in at Independence Boulevard.

7.2 REGION WIDE NETWORK SUMMARY

The results from the region wide network simulations are summarized below in Table 32. In addition to the data presented in Section 6 this table also includes a Network MOE. For this study the network MOE is defined as:

$$\text{Network MOE} = \frac{(\text{Average Speed} * \text{\# of Trips}/10{,}000) - \text{Average Delay}}{\text{\# of Trips}} * 100{,}000$$

This formula utilizes unitless values and is not intended to be a measure of density. It is only a method for comparing one alternative to another. Higher values are better than lower values as higher values relate to a higher average speed and a lower average delay. Difference in values between alternatives should not be utilized to infer or suggest that one alternative is a certain percentage better than another. Differences should only be utilized for ranking. Utilizing number of trips as a divisor allows for alternatives to be compared to one another even across varying numbers of trips. The multiplication factor on the end serves only to produce values that are easier to compare.

Table 32 – Region Wide Network Summary

AM Peak Period Results							
Alternative	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)	Network MOE
2013 BY	49,522	172,481	483,028	25.56	283,781	5.22	245.06
2040 No Build	68,288	246,830	972,736	18.59	696,054	7.69	174.61
Alt B	68,741	283,887	845,210	23.26	530,256	5.63	224.38
Alt C	68,627	274,511	861,984	22.61	560,068	5.94	223.93
Alt F	**70,777**	**265,931**	**865,787**	**24.41**	**569,775**	**5.74**	**236.04**
Alt G	68,374	285,431	819,971	23.85	504,569	5.47	230.50
Alt J	67,464	283,674	827,316	23.80	513,276	5.46	229.91
Alt M Avoid.	69,971	301,485	960,756	20.91	637,745	6.91	199.25
Alt N Avoid.	66,679	256,028	928,636	22.69	656,370	6.67	216.87
Alt P	69,145	298,519	926,568	21.38	599,366	6.87	203.89
Alt Q	66,732	246,045	870,661	21.60	591,827	6.98	205.55
Alt T	68,576	281,511	844,474	23.06	532,298	5.68	222.36
Alt V(Arterial)	67,937	264,261	848,768	23.38	555,032	5.82	225.27
Alt V(Freeway)	69,932	263,166	891,608	23.54	554,197	5.99	226.82

PM Peak Period Results							
Alternative	Number Trips	VMT	Total Travel Time (min)	Average Speed (mph)	Total Delay (min)	Average Delay (min/trip)	Network MOE
2013 BY	53,862	202,035	483,457	27.03	246,135	3.30	264.12
2040 No Build	72,731	271,234	1,066,108	18.02	754,229	8.66	168.33
Alt B	73,485	297,102	956,195	21.98	618,082	7.21	209.94
Alt C	73,444	300,999	944,393	22.24	605,566	6.74	213.27
Alt F	**78,701**	**284,430**	**1,011,318**	**24.75**	**688,970**	**5.65**	**240.29**
Alt G	73,004	297,897	907,515	22.73	569,578	6.24	218.75
Alt J	71,199	293,251	923,918	22.50	591,407	6.44	215.97
Alt M Avoid.	73,777	309,548	1,065,680	20.06	723,447	8.27	189.36
Alt N Avoid.	73,466	265,955	1,130,102	22.01	713,759	7.58	209.79
Alt P	73,684	318,223	1,018,036	20.80	661,199	7.69	197.56
Alt Q	72,901	268,657	989,547	20.72	678,121	7.77	196.56
Alt T	73,488	294,159	945,991	21.93	610,676	6.95	209.81
Alt V(Arterial)	71,514	271,469	982,034	21.47	670,925	7.83	203.76
Alt V(Freeway)	76,607	295,827	993,745	24.11	678,310	6.14	233.09

8.0 CONCLUSIONS

8.1 TRAVEL TIME STUDY CORRIDOR CONCLUSIONS

As shown in Table 33, Alternative F will have the most positive impact on the existing US 17 Corridor in terms of travel speed and travel time for both peak periods. Of the remaining alternatives, Alternatives V (Freeway), P, and V (Arterial) will have the most positive impacts on the Existing US 17 Corridor. The Hybrid Arterial Alternatives Q and T have the least impact amongst the build alternatives in terms of improving the corridor's travel speed and travel time.

Table 33 – Travel Time Rank

Overall CorridorTravel Time Summary (mm:ss)													
Segment	2040 NB	Alt B	Alt C	Alt F	Alt G	Alt J	Alt M Avoid.	Alt N Avoid.	Alt P	Alt Q	Alt T	Alt Va	Alt Vf
Overall Study Corridor	120:31	83:52	87:54	67:09	84:55	83:54	84:57	87:56	77:14	90:48	88:09	77:29	69:16
Travel Time Rank	13	5	9	1	8	6	7	10	3	12	11	4	2

- Upgrade existing alternatives have the most improvements in travel time when compared to the 2040 No-Build, with the freeway alternatives (Alt F and V (Freeway)) providing the most travel time benefit, followed closely by the arterial options (Alt P and V (Arterial)).

- Generally, the alternatives that tie in at Shipyard Boulevard provided larger decreases in travel times as compared to the alternatives that tie in at Independence Boulevard.

- As expected, the alternatives that have an interchange at Lanvale Road are projected to have lower travel times due to the fact that several signalized intersections would be removed in those scenarios.

8.2 REGION WIDE NETWORK CONCLUSIONS

Based on the results of the region wide network simulation it appears that Alternative F will provide the most benefit to the roadway network in both the AM and PM peak periods. Alternatives G, J, V (Freeway), and V (Arterial) provide the most positive regional impacts of the remaining alternatives in the peak periods. Alternative M Avoidance has the fewest positive impacts in both time periods.

- The AM and PM peak period region wide network speeds increase by approximately 6 mph with Alternative F in place. This is a 25% increase in the average speed of the No-Build Alternative. Alternative V (Freeway) has the second highest impacts to the regional speeds with improvements only slightly lower than Alternative F. Alternative M Avoidance provided the least improvements to the regional speeds with increases of approximately 2 mph in both the AM and PM peak periods.

- The freeway hybrid alternatives (G and J) ranked third and fourth in regional network speed improvements. Of the strictly new location alternatives, Alternative B provided the most improvement in the AM peak period, and Alternative C ranked highest in the PM peak period.

- Comparisons of Average Delay provided similar results. Alternatives F and Vf reduced the average trip time by approximately three minutes (38 percent decrease from the No-Build Alternative) in both peak periods. Alternative M Avoidance had the least improvements by only reducing average trip times by less than one minute (12 percent decrease from the No-Build Alternative). The freeway hybrid alternatives (G and J) also ranked highly in reducing the average trip times.

Figures

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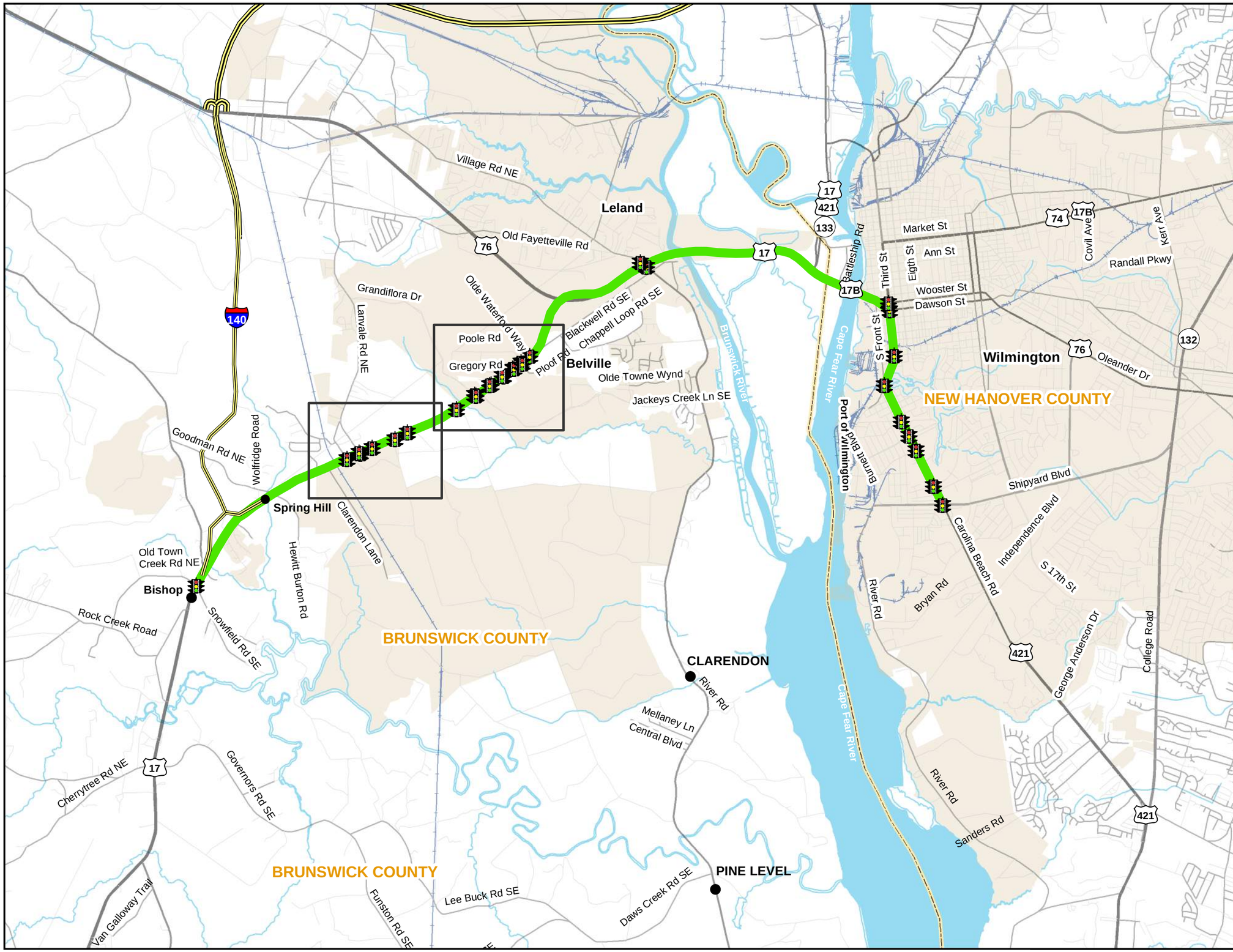
Project No. U-4738



Legend

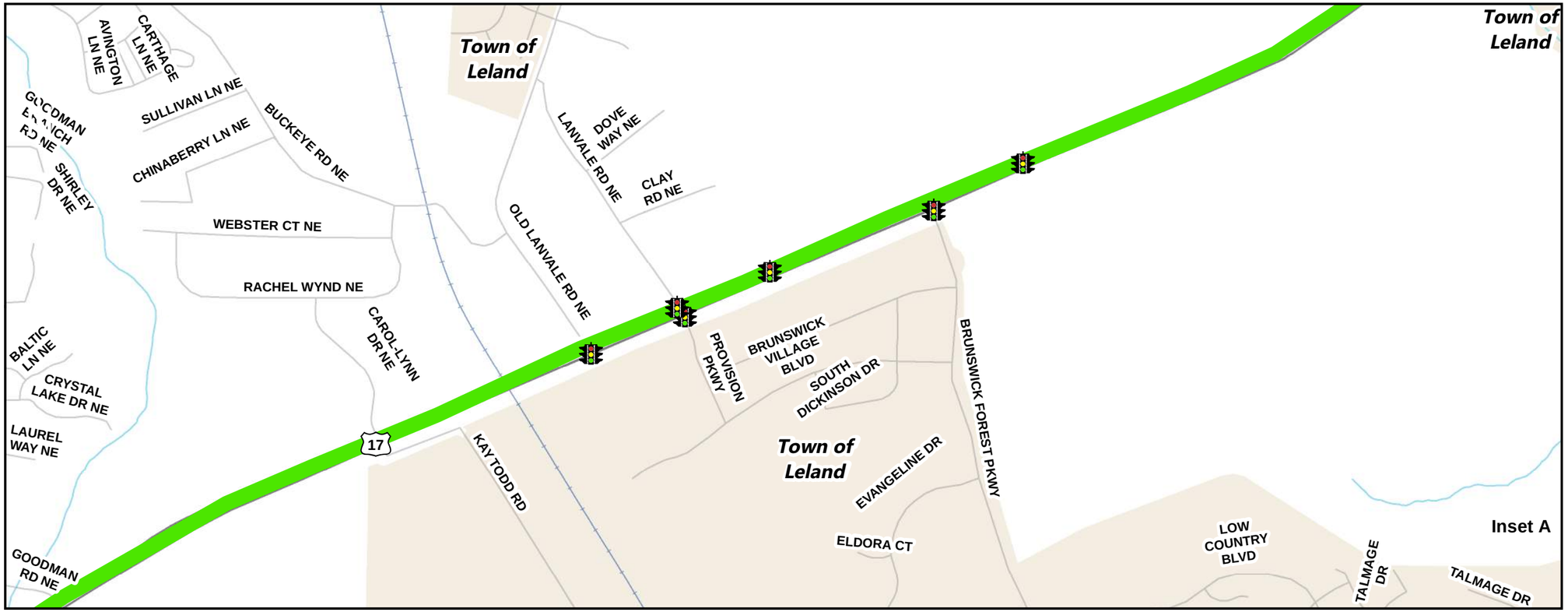
- Travel Time Study Corridor
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

N

0 0.5 1
Miles

Figure 1a
Project Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.



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State Transportation Improvement Program
Project No. U-4738

Legend

- Travel Time Study Corridor
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

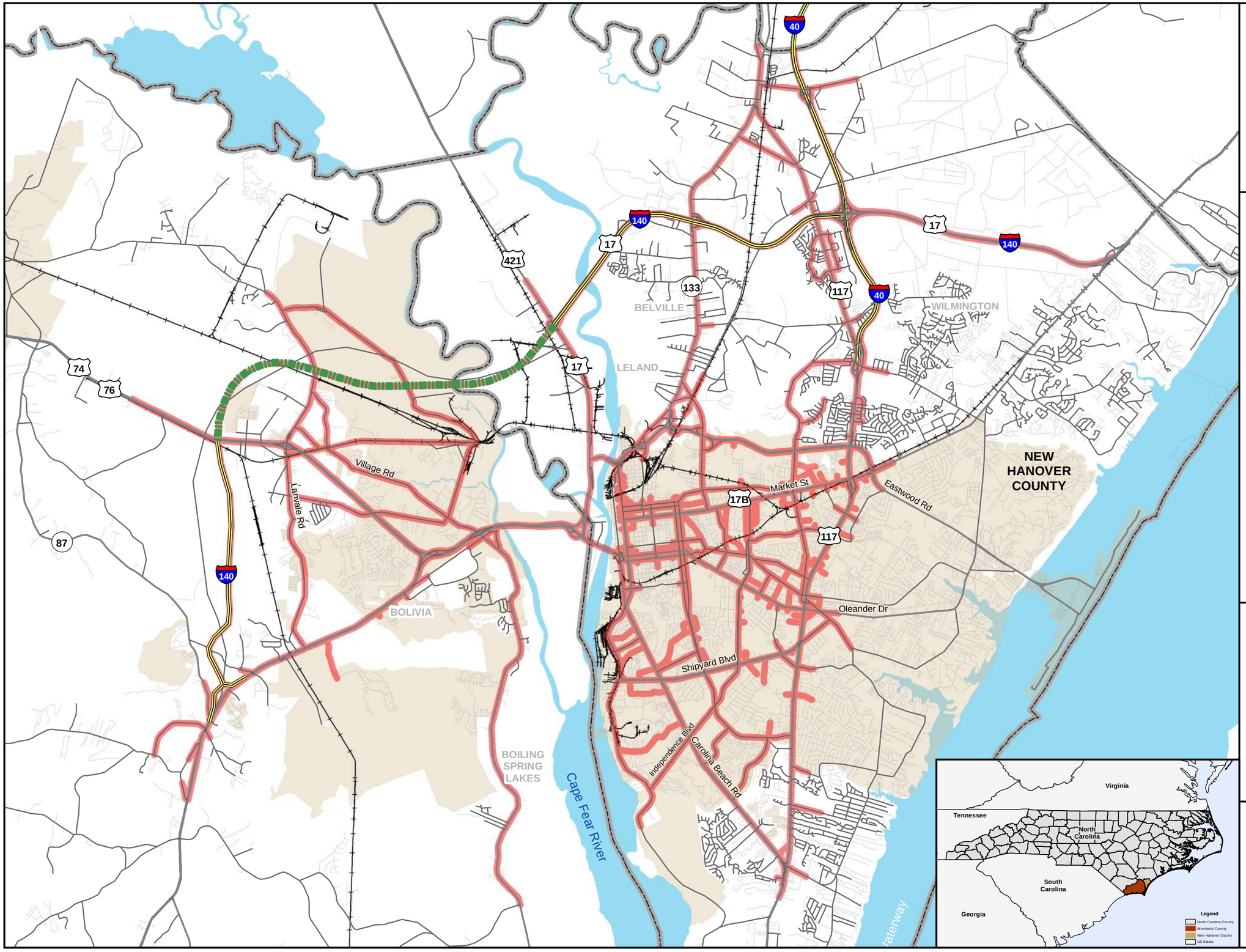
0 0.25 0.5
Miles

Figure 1b
Project Vicinity Map Insets

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

- Proposed Wilmington Bypass (I-140)
- Interstate
- US Highway
- NC Highway
- State Roads
- Local Roads
- Traffic Simulation Network
- Railroad
- County Boundary
- Municipal

N

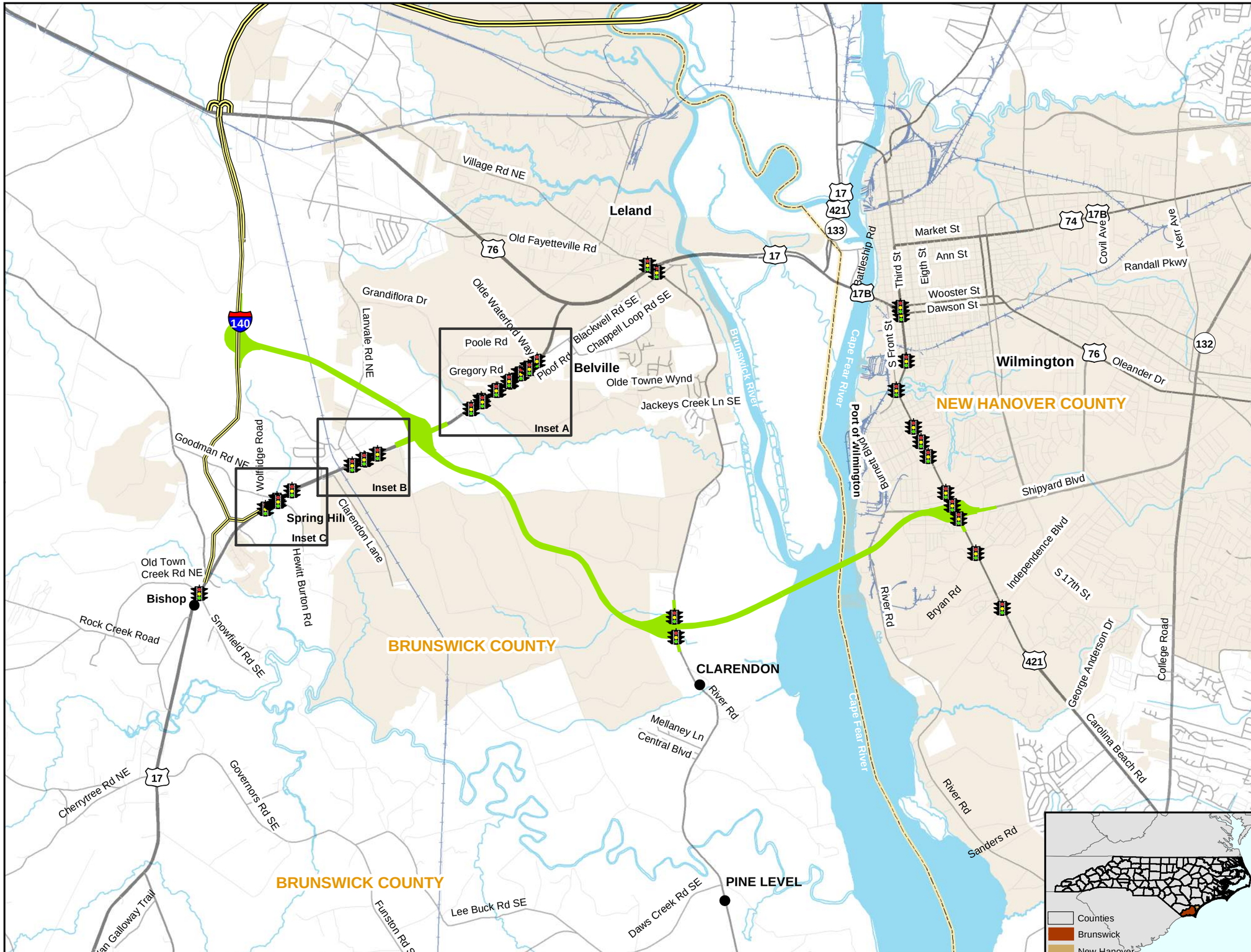
0 0.5 1 2 3
Miles

Figure 2
Region Wide Simulation Network

Date: February, 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738



Legend

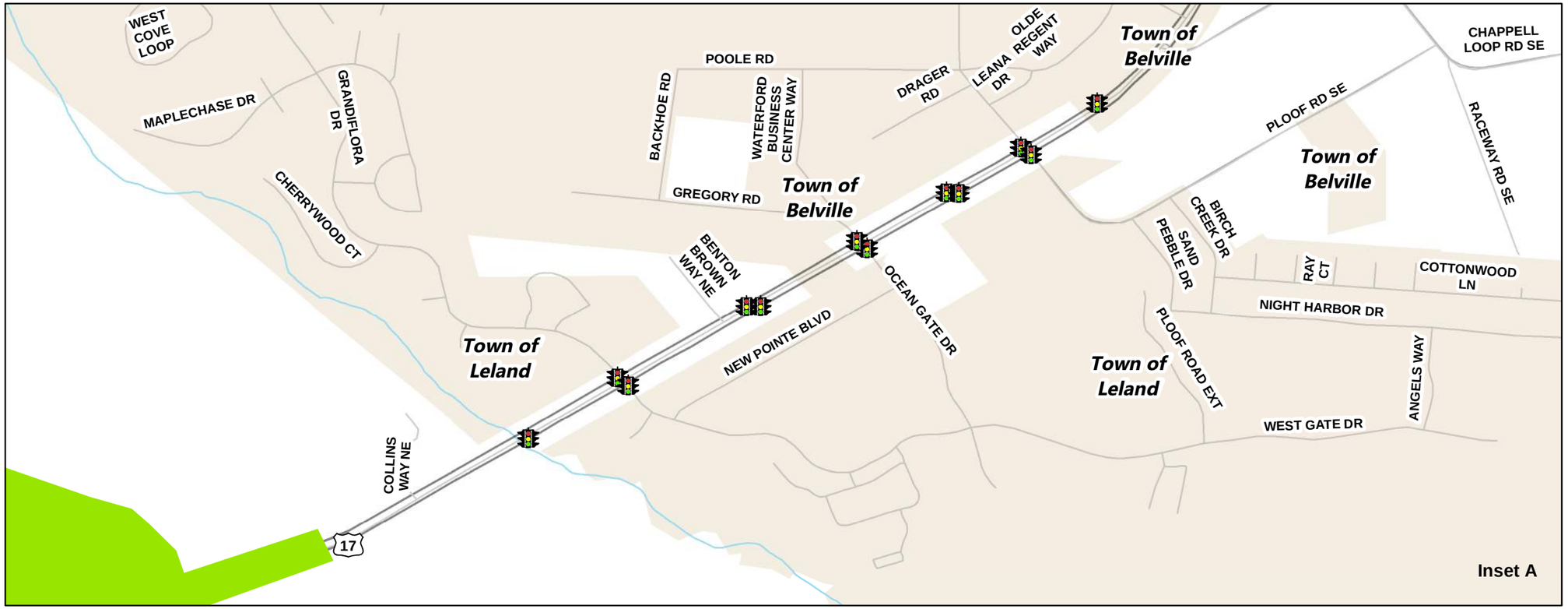
- Detailed Study Alternative B
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

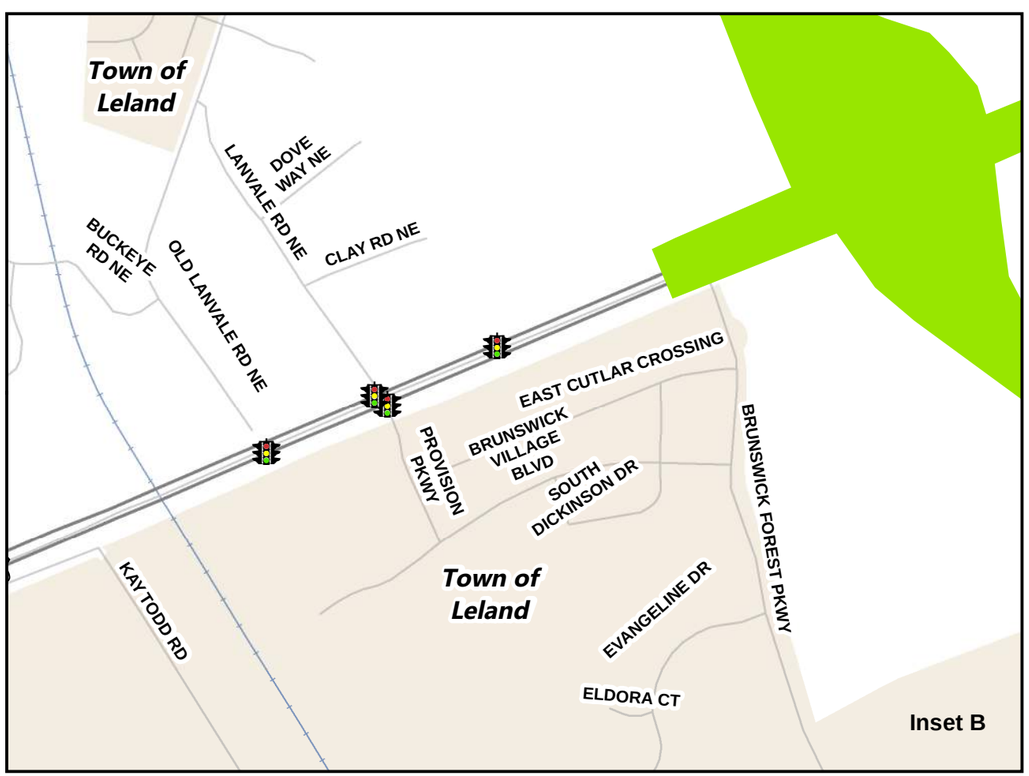
N

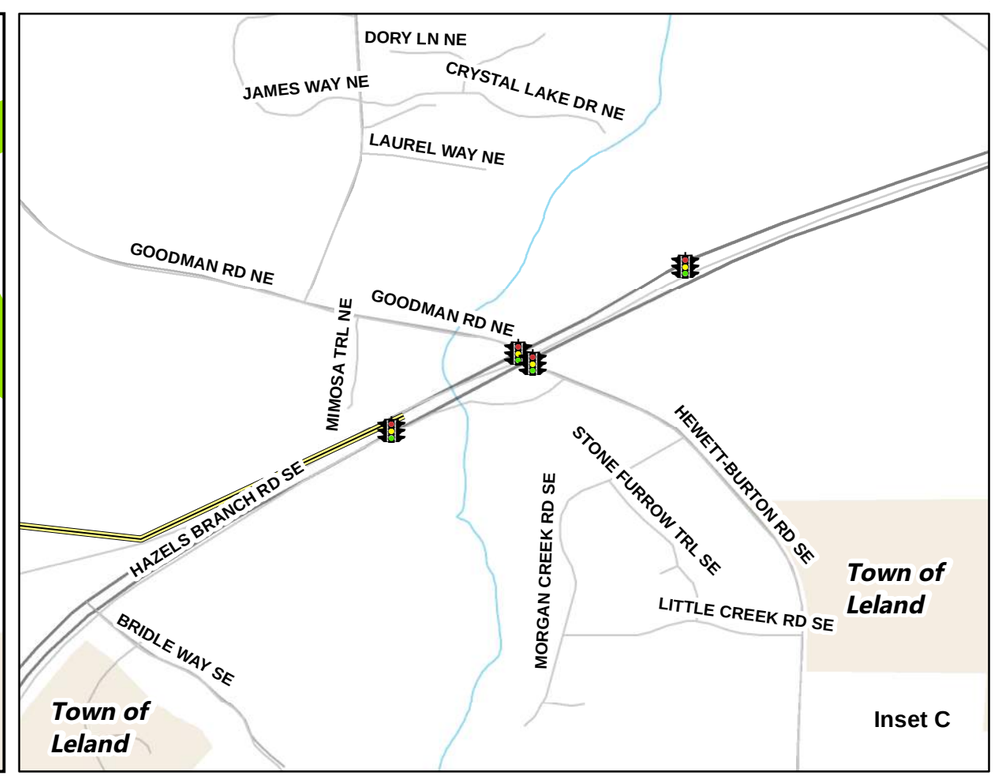
0 0.5 1
Miles

Figure 3a
Detailed Study Alternative B
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.







CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative B
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 3b
Detailed Study Alternative B
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

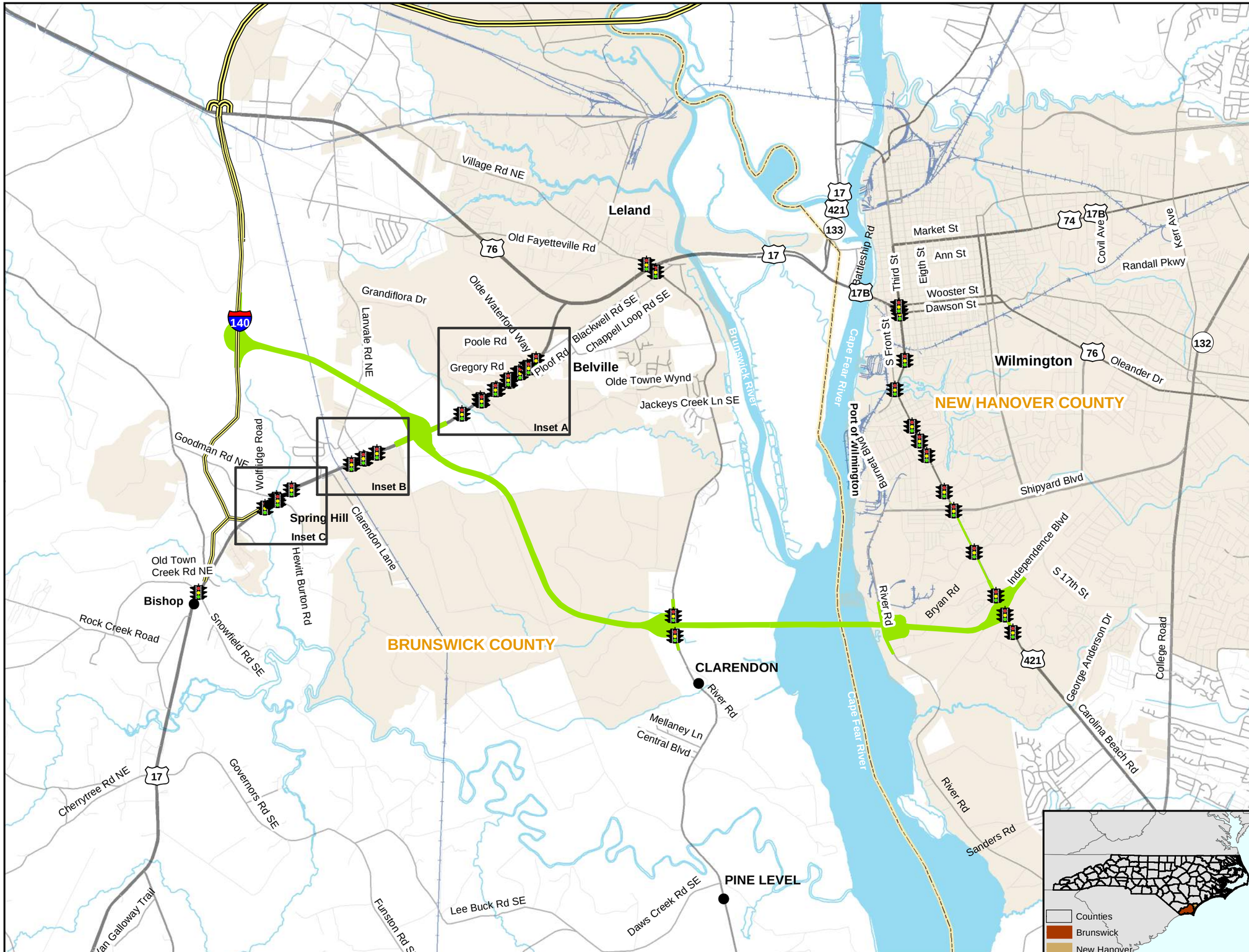
Legend

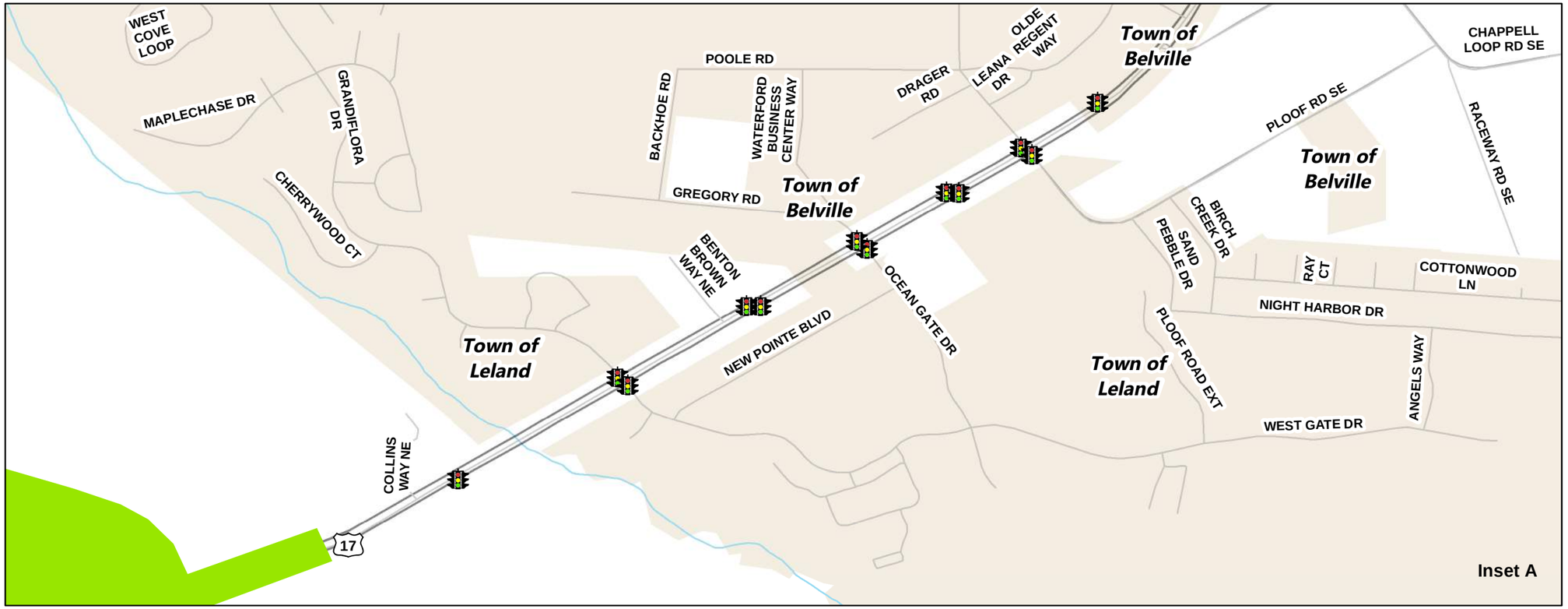
- Detailed Study Alternative C
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

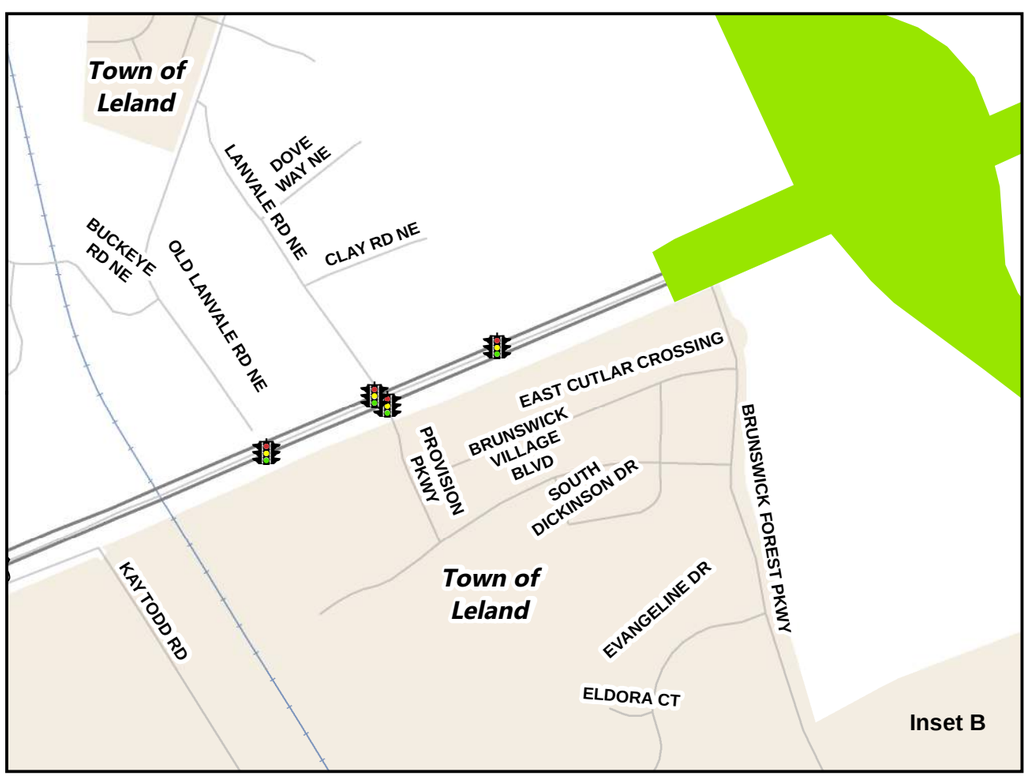
0 0.5 1
Miles

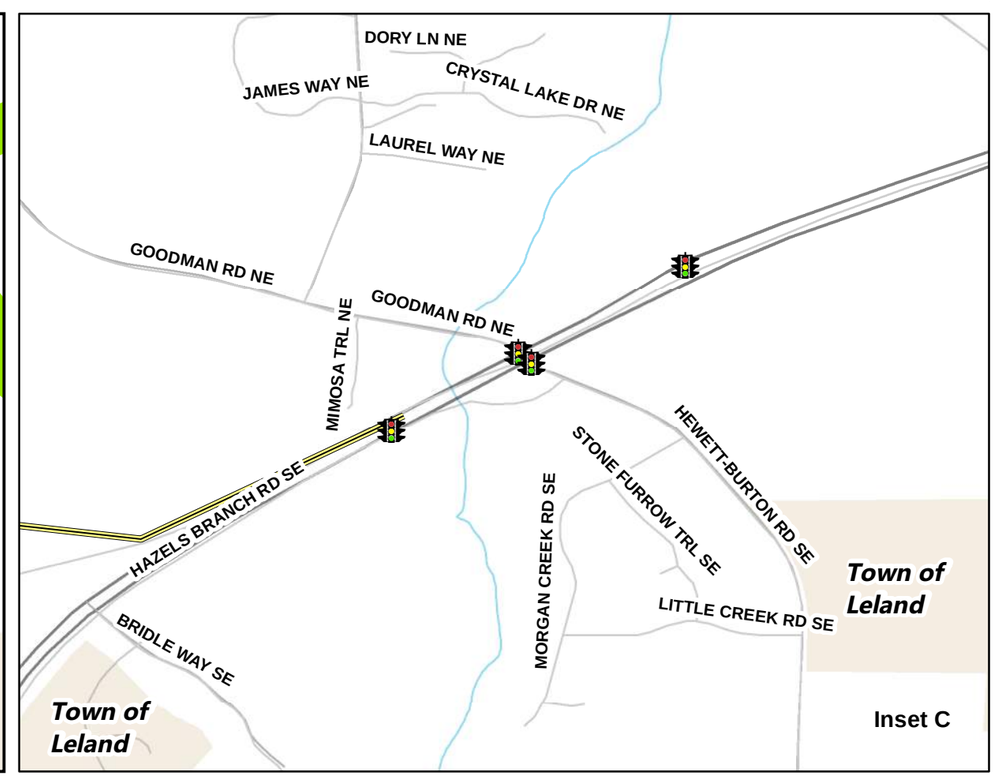
Figure 4a
Detailed Study Alternative C
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.









CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative C
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 4b
Detailed Study Alternative C
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

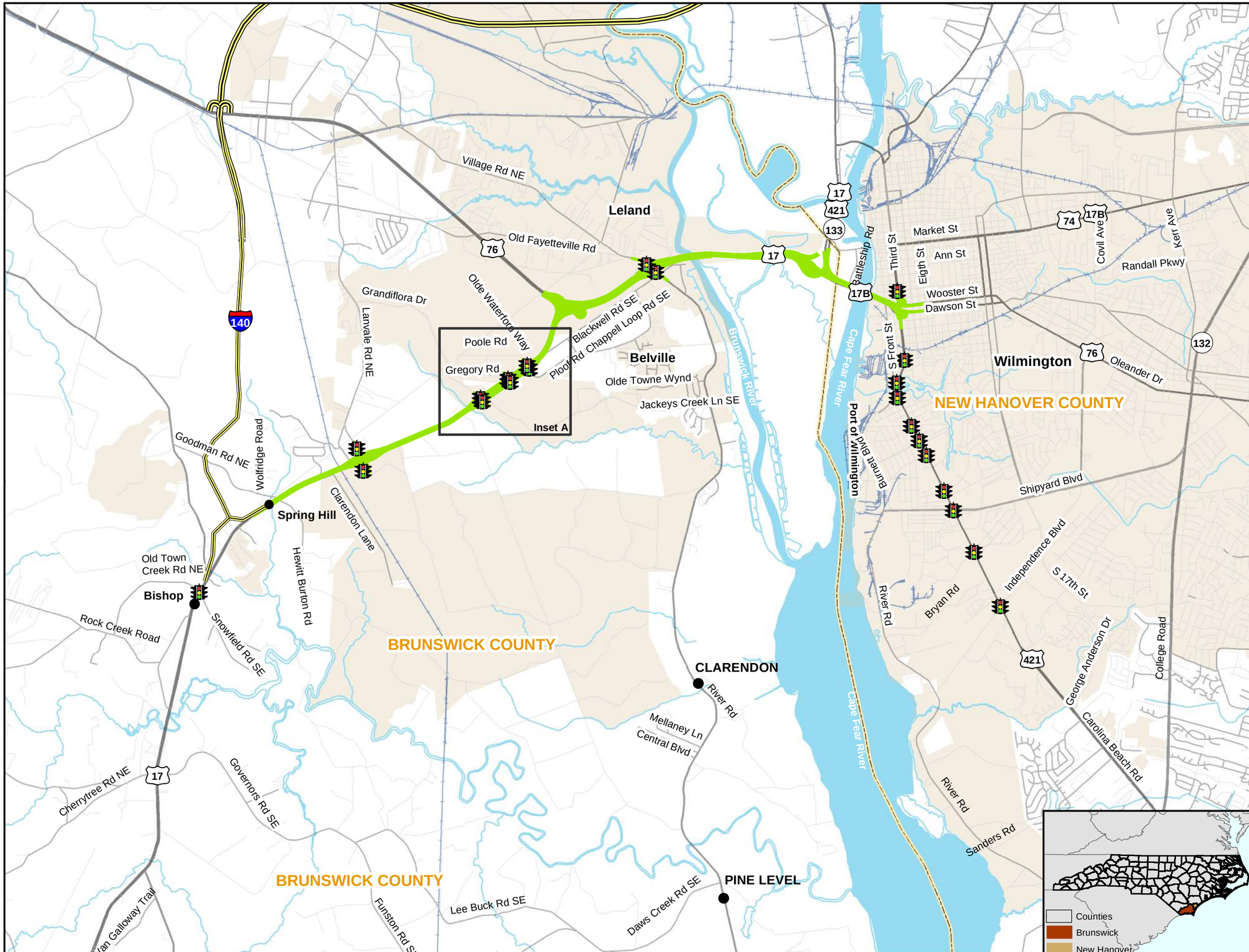
Legend

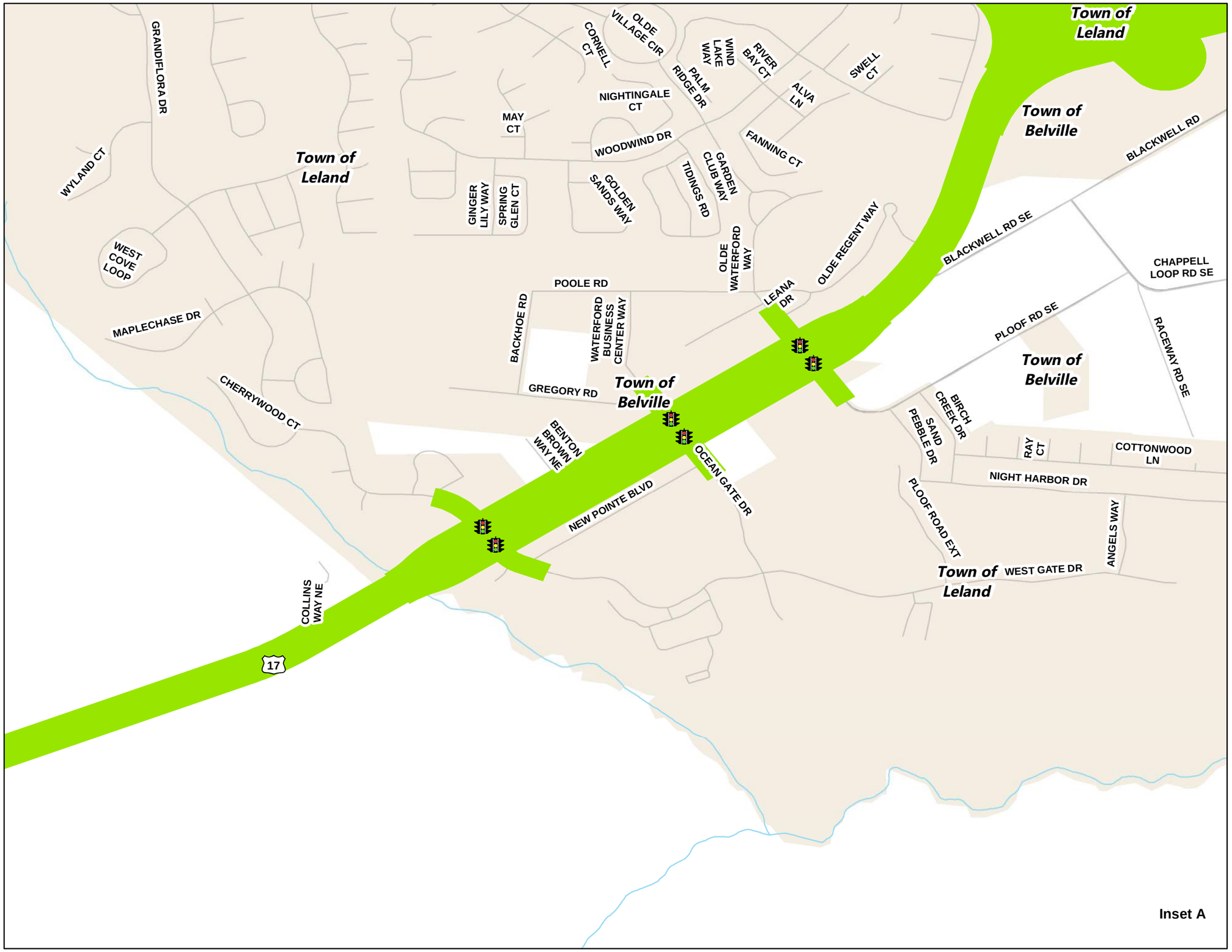
- Detailed Study Alternative F
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal Area
- Open Water

0 0.5 1
Miles

Figure 5a
Detailed Study Alternative F
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.





CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative F
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 5b
Detailed Study Alternative F
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative G
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal Area
- Open Water

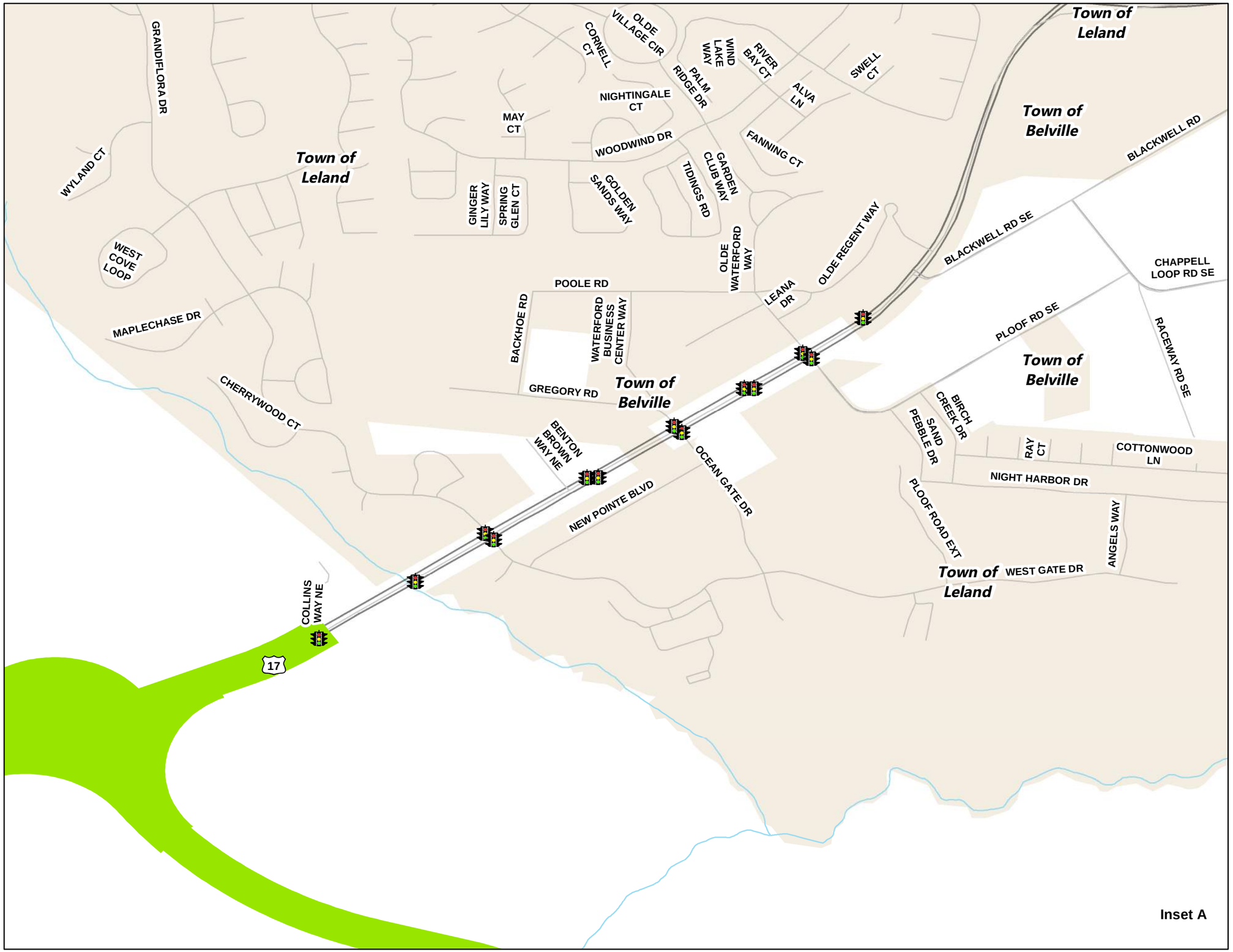
0 0.5 1
Miles

Figure 6a
Detailed Study Alternative G
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover

Leland
Belville
Wilmington
Spring Hill
Bishop
CLARENDON
PINE LEVEL
BRUNSWICK COUNTY
BRUNSWICK COUNTY
NEW HANOVER COUNTY
Inset A
Village Rd NE
Old Fayetteville Rd
Grandiflora Dr
Olde Waterford Way
Lanvale Rd NE
Poole Rd
Gregory Rd
Blackwell Rd SE
Chappell Loop Rd SE
Ploof Rd
Olde Towne Wynd
Jackeys Creek Ln SE
Goodman Rd NE
Wolfridge Road
Clarendon Lane
Hewitt Burton Rd
Old Town Creek Rd NE
Rock Creek Road
Snowfield Rd SE
Chernytree Rd NE
Governors Rd SE
Van Galloway Trail
Funston Rd SE
Lee Buck Rd SE
Daws Creek Rd SE
Mellaney Ln
Central Blvd
River Rd
Mallory Creek
Brunswick River
Cape Fear River
Port of Wilmington
Bunnett Blvd
Battleship Rd
Market St
Ann St
Wooster St
Dawson St
Third St
Eighth St
S Front St
Covil Ave
Kerr Ave
Randall Pkwy
Oleander Dr
Shipyard Blvd
Independence Blvd
S 17th St
Bryan Rd
George Anderson Dr
College Road
Carolina Beach Rd
Sanders Rd
17
421
133
76
140
74
17B
132



CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative G
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 6b
Detailed Study Alternative G
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

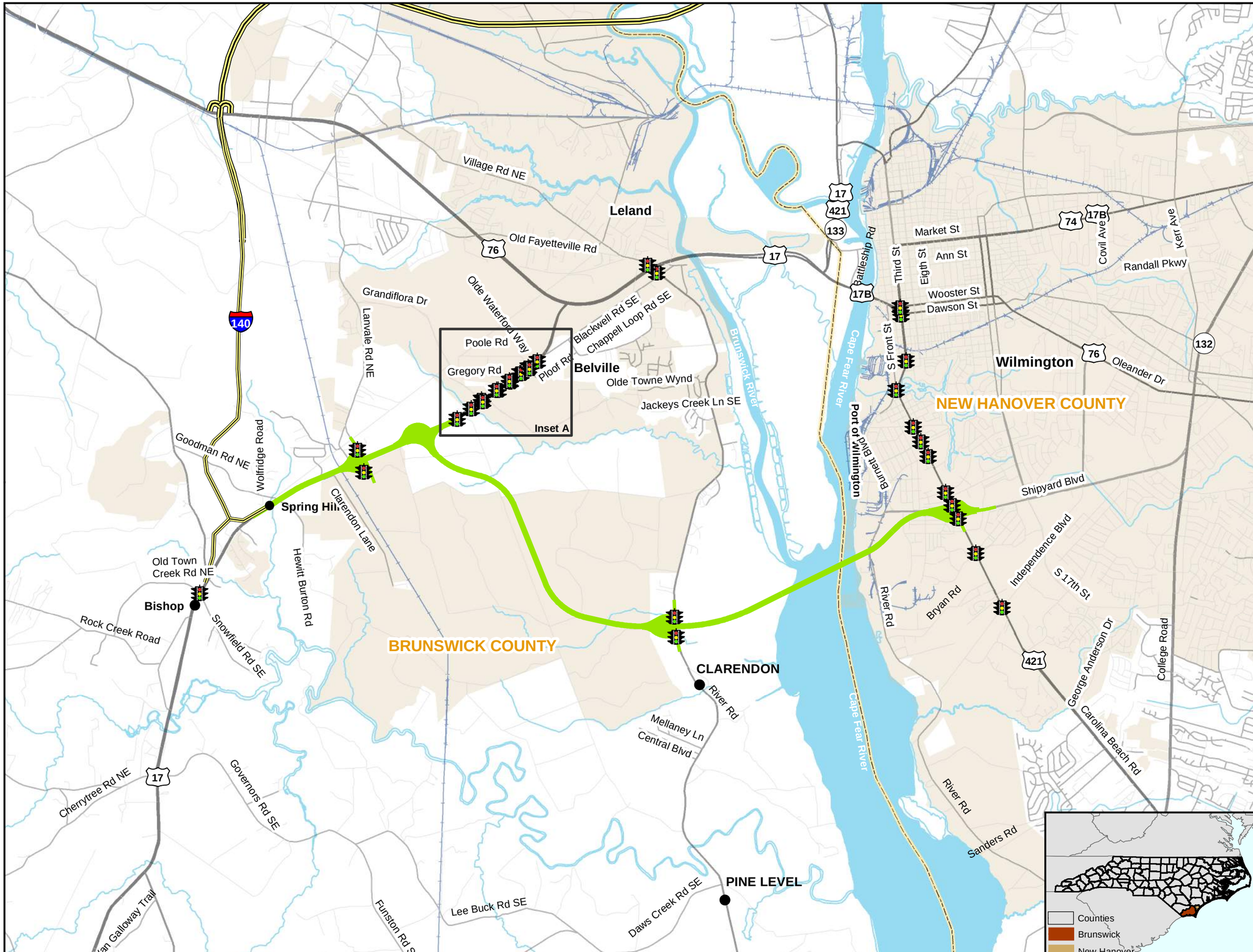
Legend

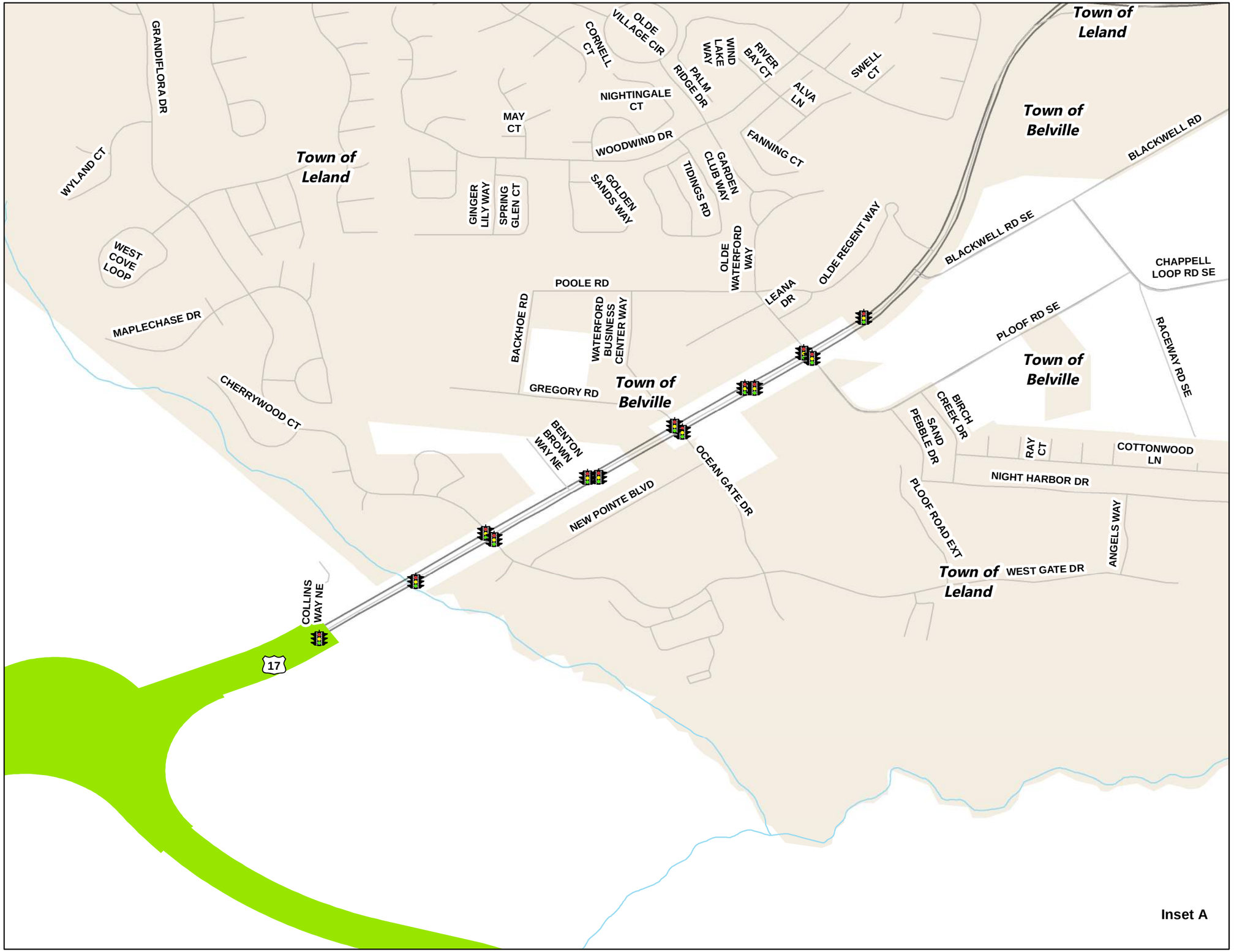
- Detailed Study Alternative J
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

0 0.5 1
Miles

Figure 7a
Detailed Study Alternative J
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.





CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative J
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 7b
Detailed Study Alternative J
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative M Avoidance
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

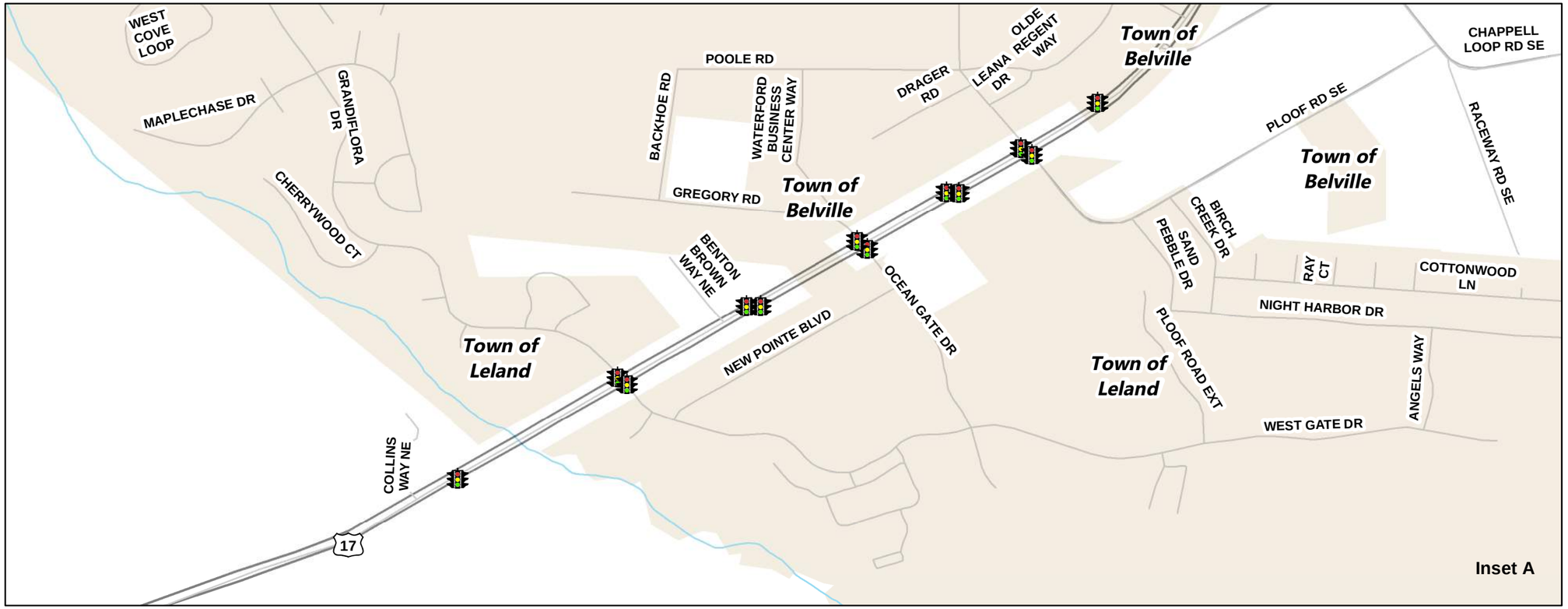
0 0.5 1
Miles

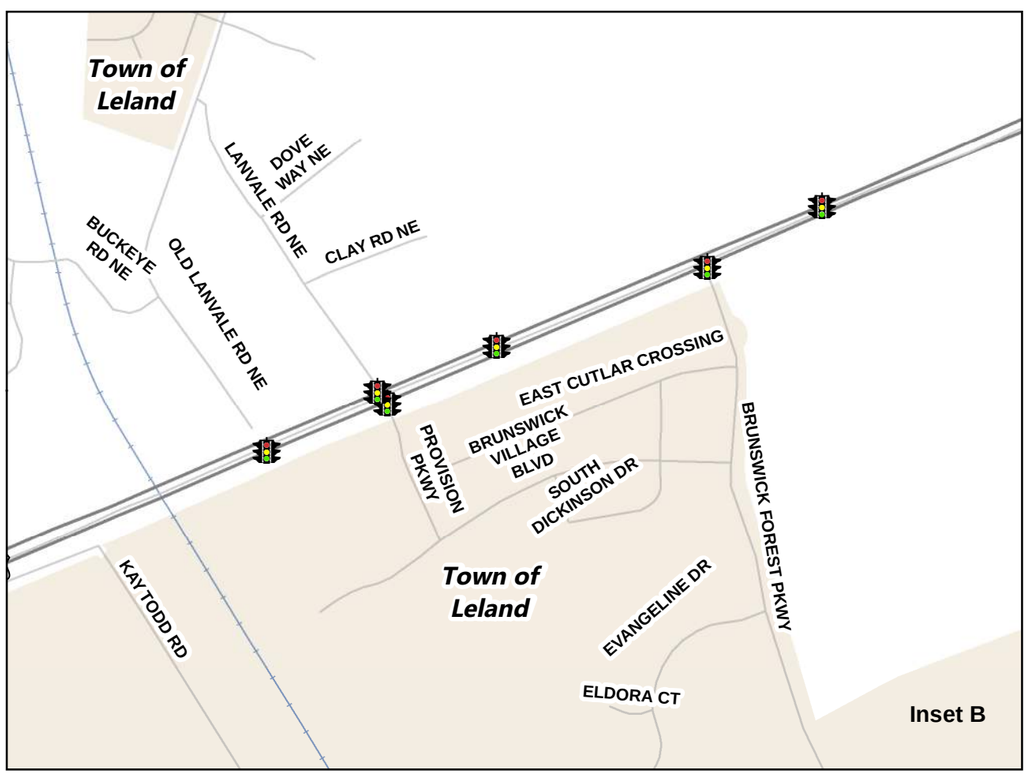
Figure 8a
Detailed Study Alternative
M Avoidance
Vicinity Map

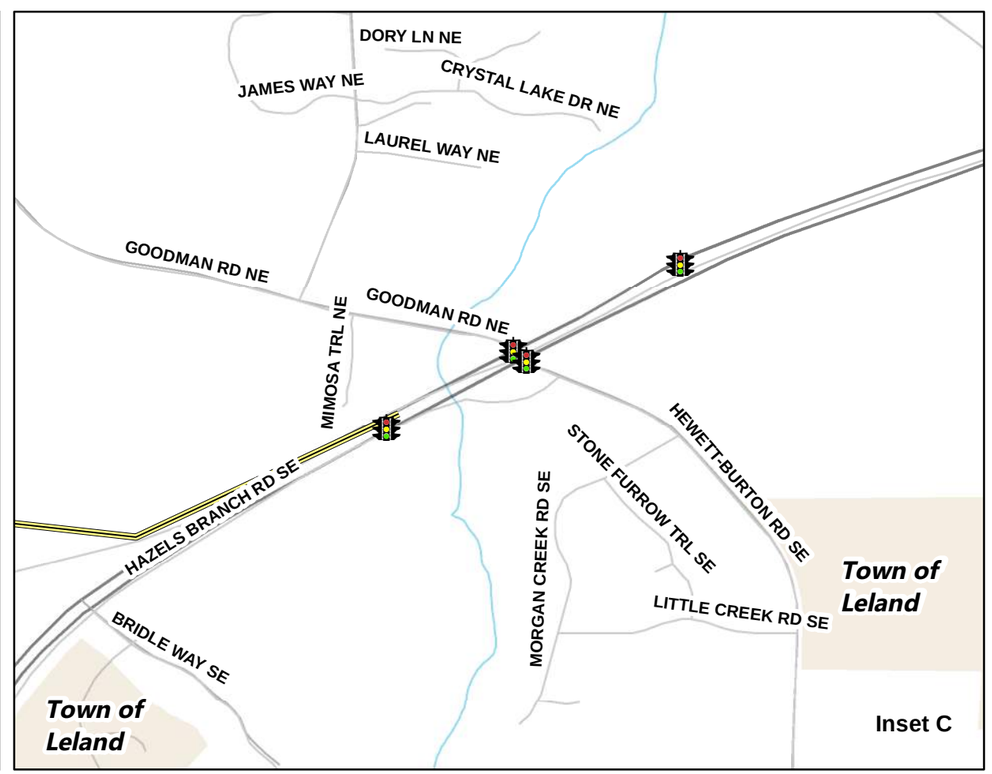
Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover

Leland
Belville
Wilmington
NEW HANOVER COUNTY
BRUNSWICK COUNTY
Spring Hill
Bishop
CLARENDON
PINE LEVEL
Inset A
Inset B
Inset C
Cape Fear River
Brunswick River
Port of Wilmington
Village Rd NE
Old Fayetteville Rd
Grandiflora Dr
Olde Waterford Way
Lanvale Rd NE
Poole Rd
Gregory Rd
Ploof Rd
Blackwell Rd SE
Chappell Loop Rd SE
Olde Towne Wynd
Jackeys Creek Ln SE
Goodman Rd NE
Wolfridge Road
Clarendon Lane
Hewitt Burton Rd
Old Town Creek Rd NE
Rock Creek Road
Snowfield Rd SE
Cherrytree Rd NE
Governors Rd SE
Van Galloway Trail
Furnston Rd SE
Lee Buck Rd SE
Daws Creek Rd SE
Mellaney Ln
Central Blvd
River Rd
Battleship Rd
Third St
Eighth St
Market St
Ann St
Wooster St
Dawson St
S Front St
Burnett Blvd
Shipyard Blvd
Independence Blvd
S 17th St
Bryan Rd
George Anderson Dr
Carolina Beach Rd
College Road
Covil Ave
Kerr Ave
Randall Pkwy
Oleander Dr
Sanders Rd
140
17
421
133
76
17B
74
132







CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative M Avoidance
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal
- Open Water

N

0 0.25 0.5
Miles

Figure 8b
Detailed Study Alternative
M Avoidance
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative N Avoidance
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

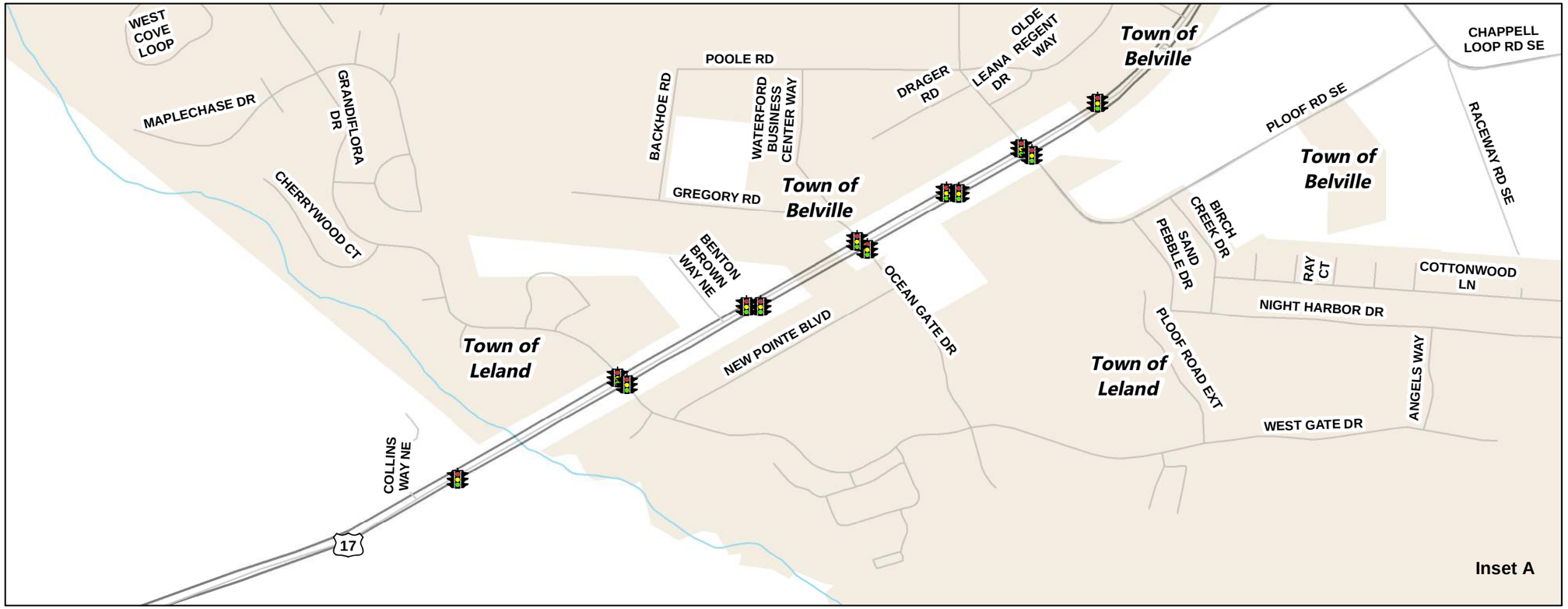
0 0.5 1
Miles

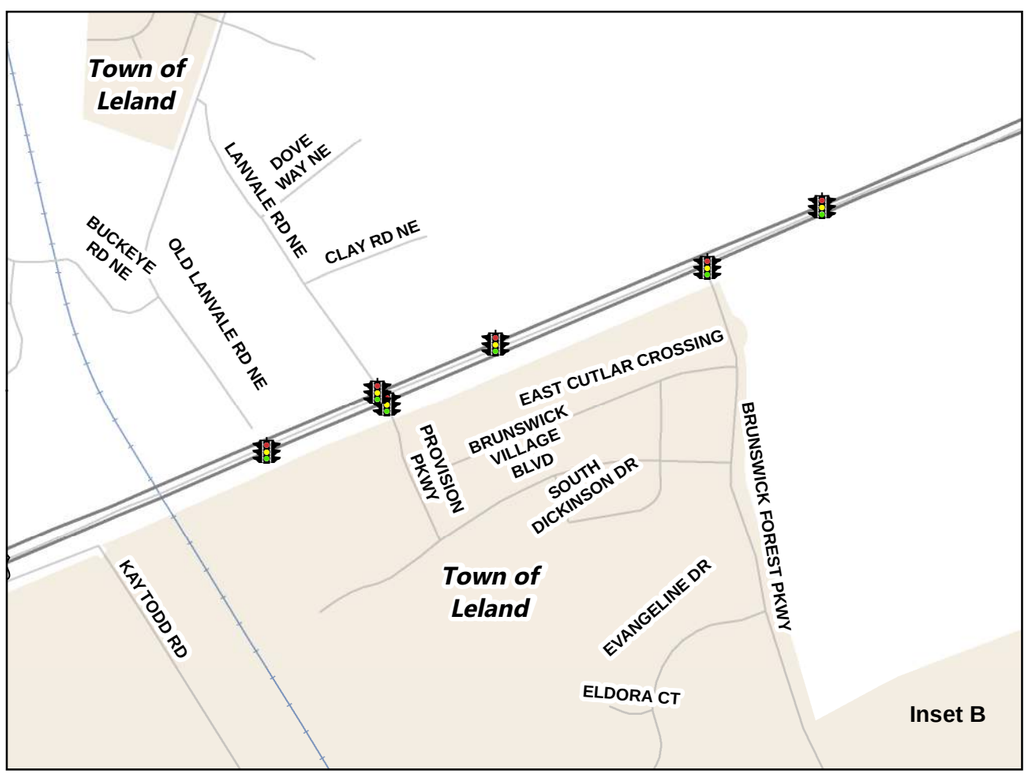
Figure 9a
Detailed Study Alternative
N Avoidance
Vicinity Map

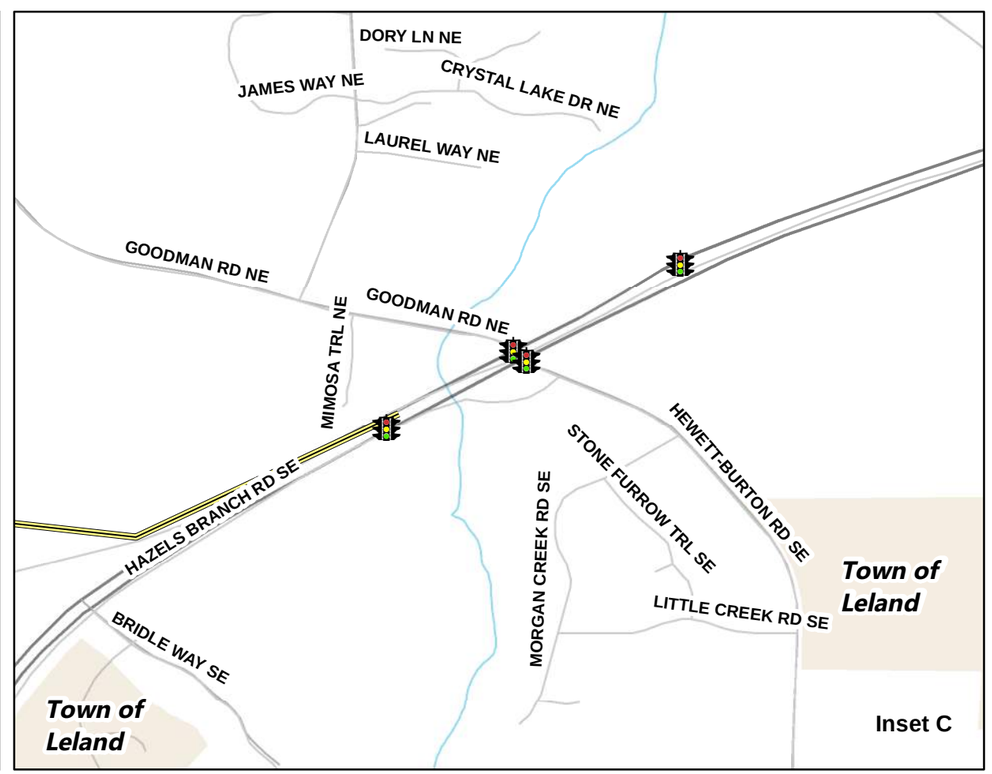
Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover

Leland
Belville
Wilmington
NEW HANOVER COUNTY
BRUNSWICK COUNTY
CLARENDON
PINE LEVEL
Bishop
Spring Hill
Inset A
Inset B
Inset C
Cape Fear River
Brunswick River
Port of Wilmington
Village Rd NE
Old Fayetteville Rd
Olde Waterford Way
Grandiflora Dr
Lanvale Rd NE
Poole Rd
Gregory Rd
Ploof Rd
Blackwell Rd SE
Chappell Loop Rd SE
Olde Towne Wynd
Jackeys Creek Ln SE
Goodman Rd NE
Wolfridge Road
Clarendon Lane
Hewitt Burton Rd
Old Town Creek Rd NE
Rock Creek Road
Snowfield Rd SE
Chernytree Rd NE
Governors Rd SE
Van Galloway Trail
Furnston Rd SE
Lee Buck Rd SE
Daws Creek Rd SE
Mellaney Ln
Central Blvd
River Rd
Battleship Rd
Market St
Ann St
Wooster St
Dawson St
Third St
Eighth St
S Front St
Covil Ave
Kerr Ave
Randall Pkwy
Oleander Dr
Shipyard Blvd
Independence Blvd
S 17th St
Bryan Rd
George Anderson Dr
College Road
Carolina Beach Rd
Sanders Rd
Burnett Blvd
140
17
421
133
76
17B
74
132







CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative N Avoidance
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 9b
Detailed Study Alternative
N Avoidance
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

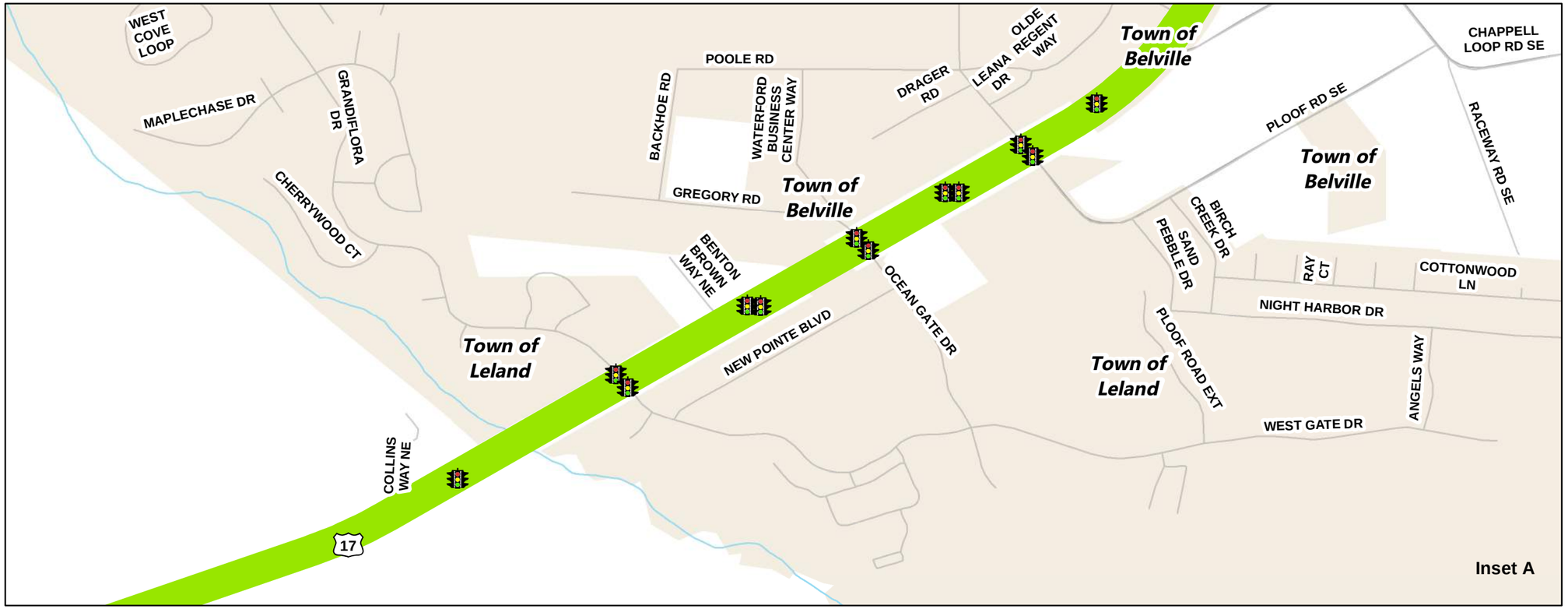
- Detailed Study Alternative P
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal Area
- Open Water

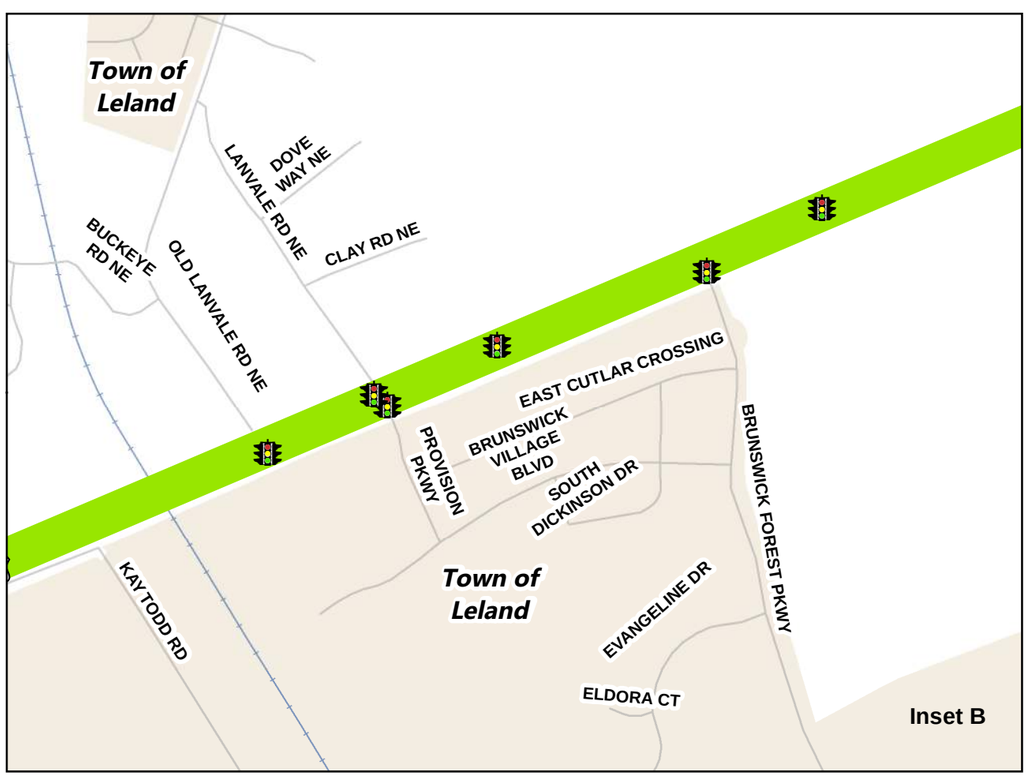
0 0.5 1
Miles

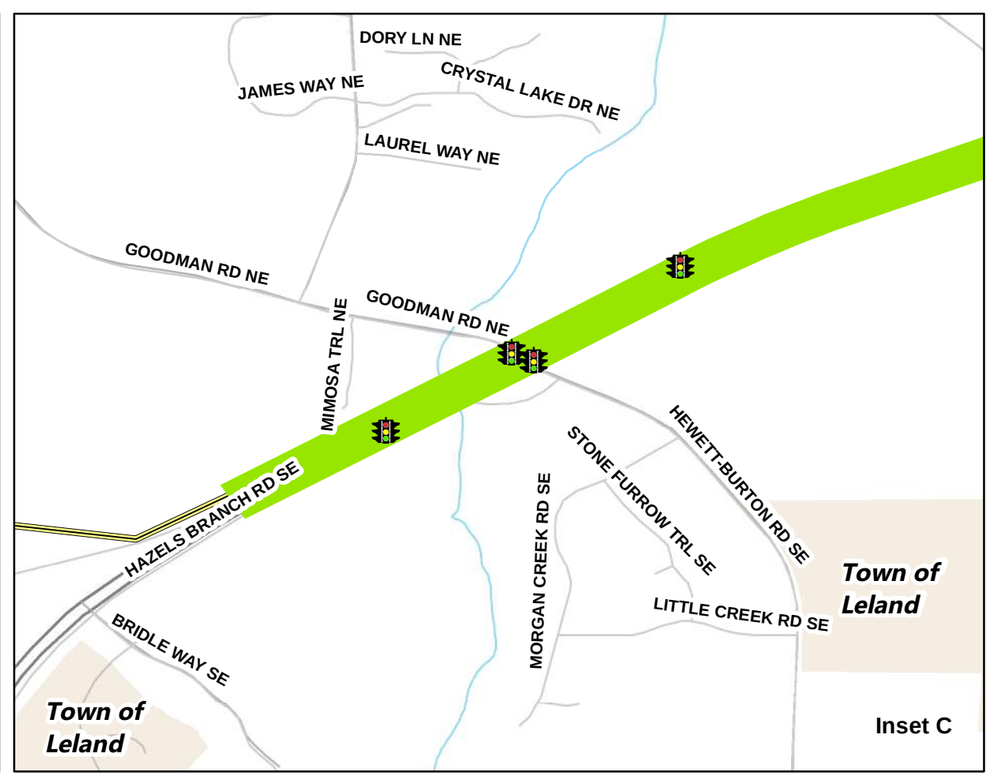
Figure 10a
Detailed Study Alternative P
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover







CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative P
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 10b
Detailed Study Alternative P
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

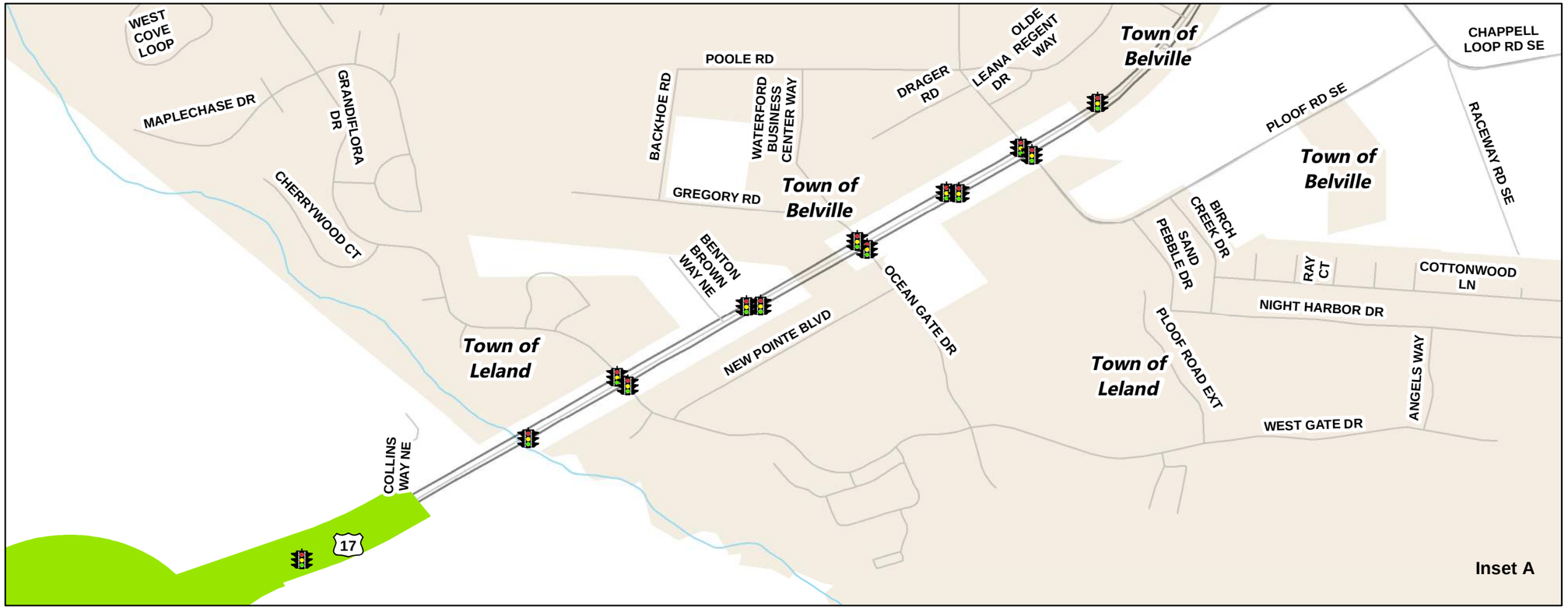
- Detailed Study Alternative Q
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

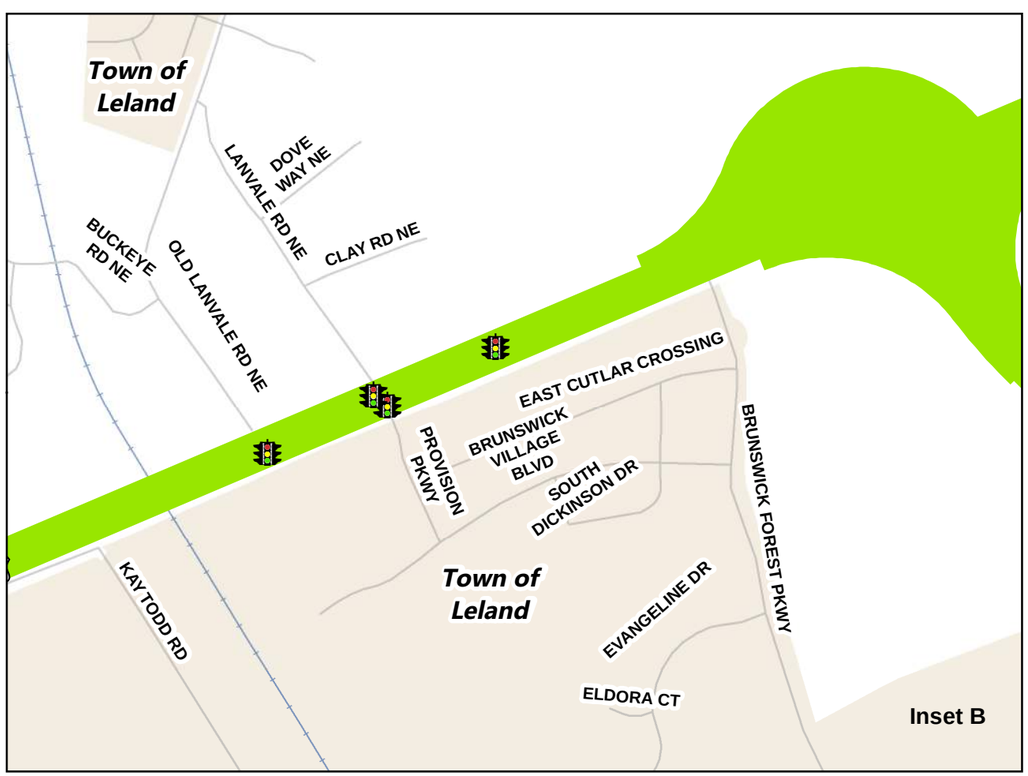
0 0.5 1
Miles

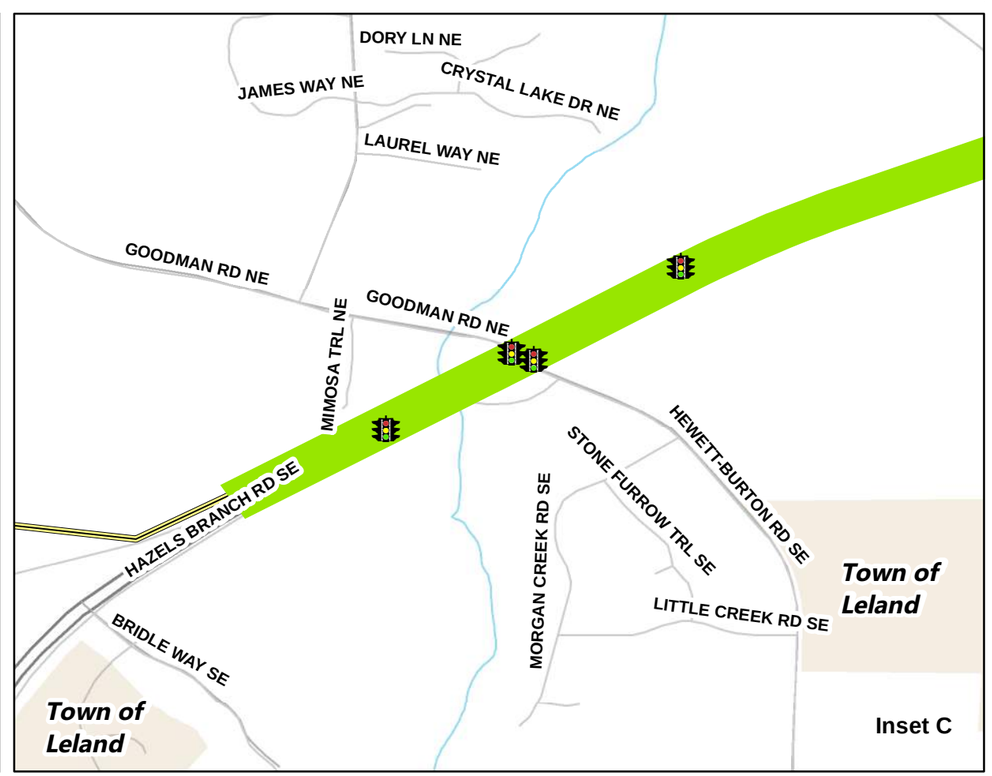
Figure 11a
Detailed Study Alternative Q
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover







CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative Q
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 11b
Detailed Study Alternative Q
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

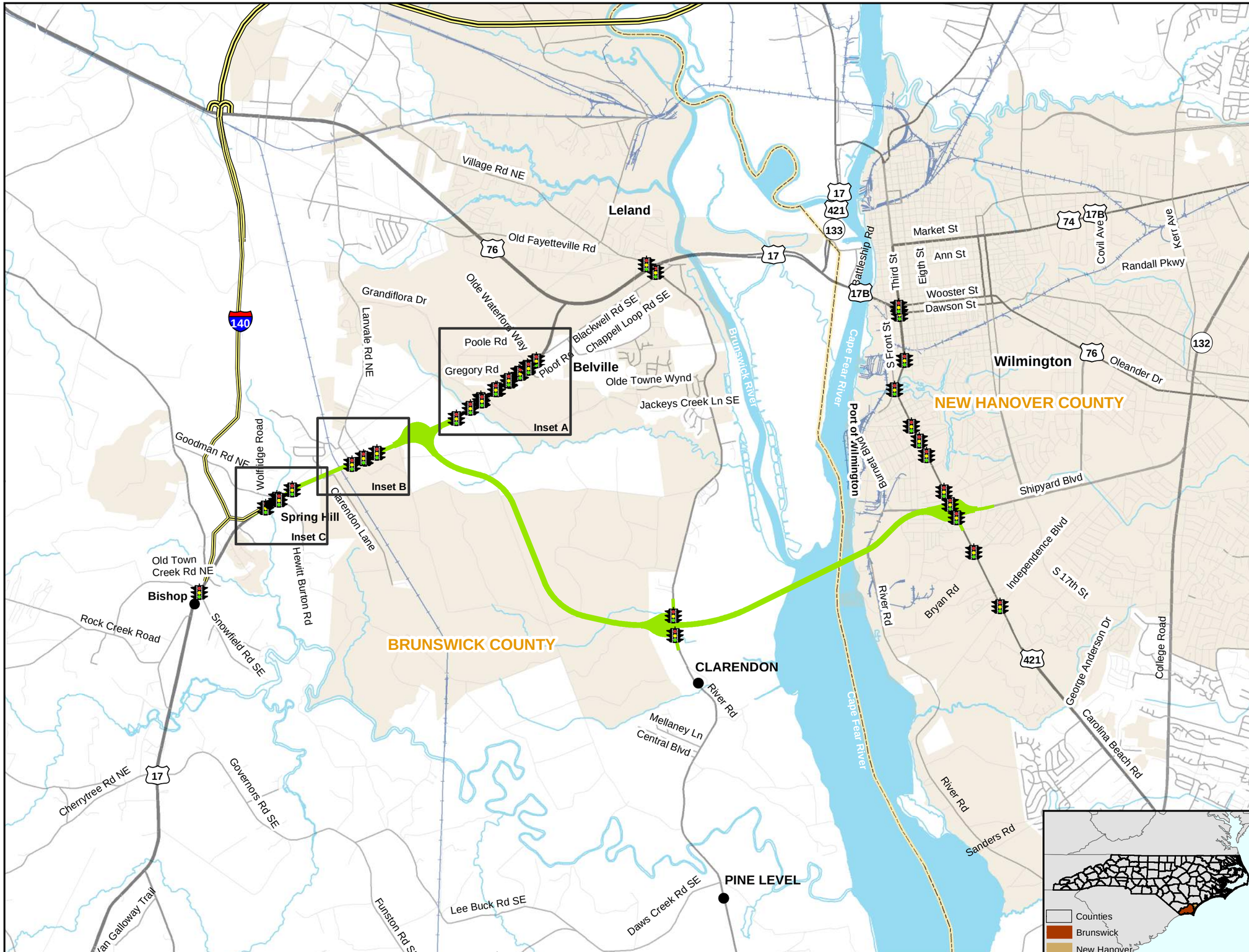
Legend

- Detailed Study Alternative T
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

0 0.5 1
Miles

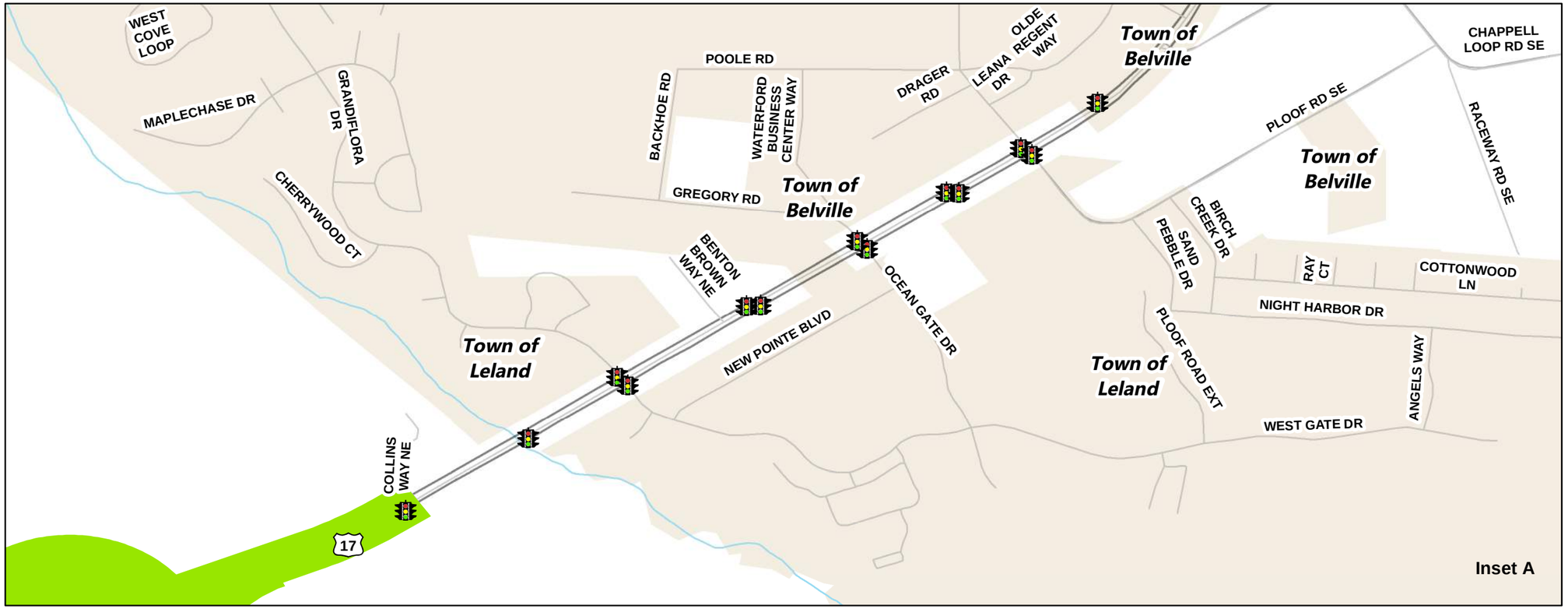
Figure 12a
Detailed Study Alternative T
Vicinity Map

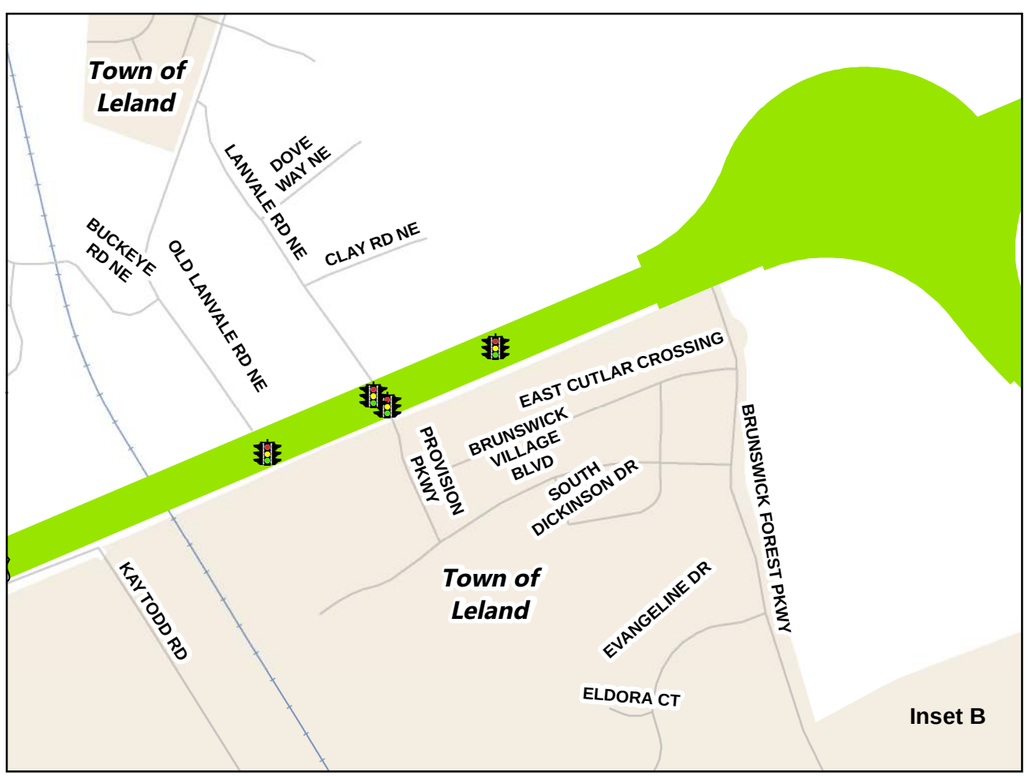
Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

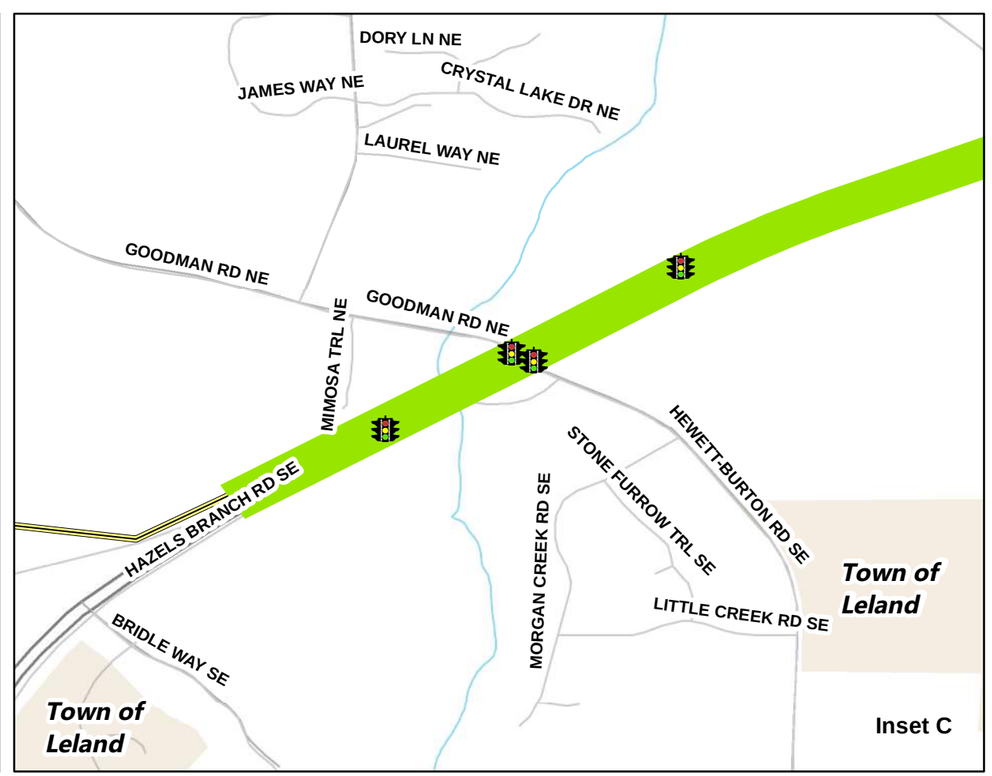


CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738







Legend

- Detailed Study Alternative T
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 12b
Detailed Study Alternative T
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative V (Freeway)
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

0 0.5 1
Miles

Figure 14a
Detailed Study Alternative V(Freeway)
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternative V (Freeway)
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 14b
Detailed Study Alternative V(Freeway)
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

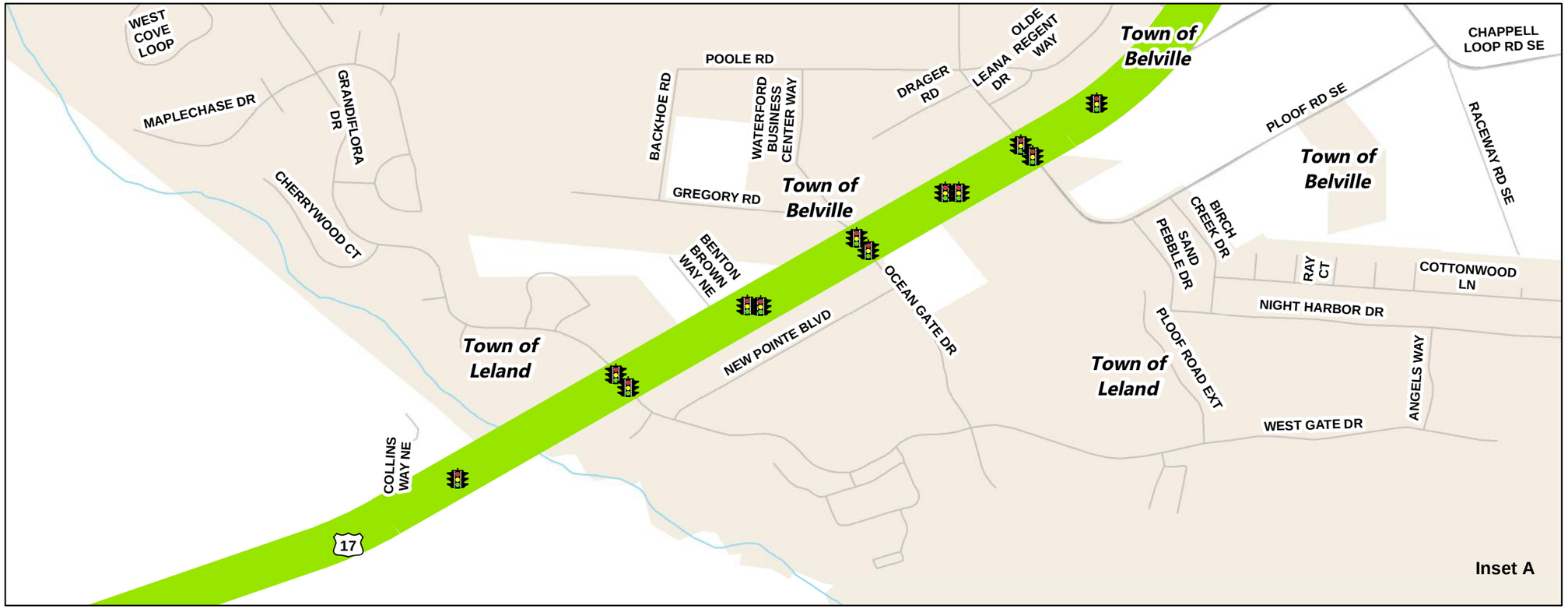
- Detailed Study Alternative V (Arterial)
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- State Highway
- Local Roads
- Railroad
- County Boundary
- Municipal
- Open Water

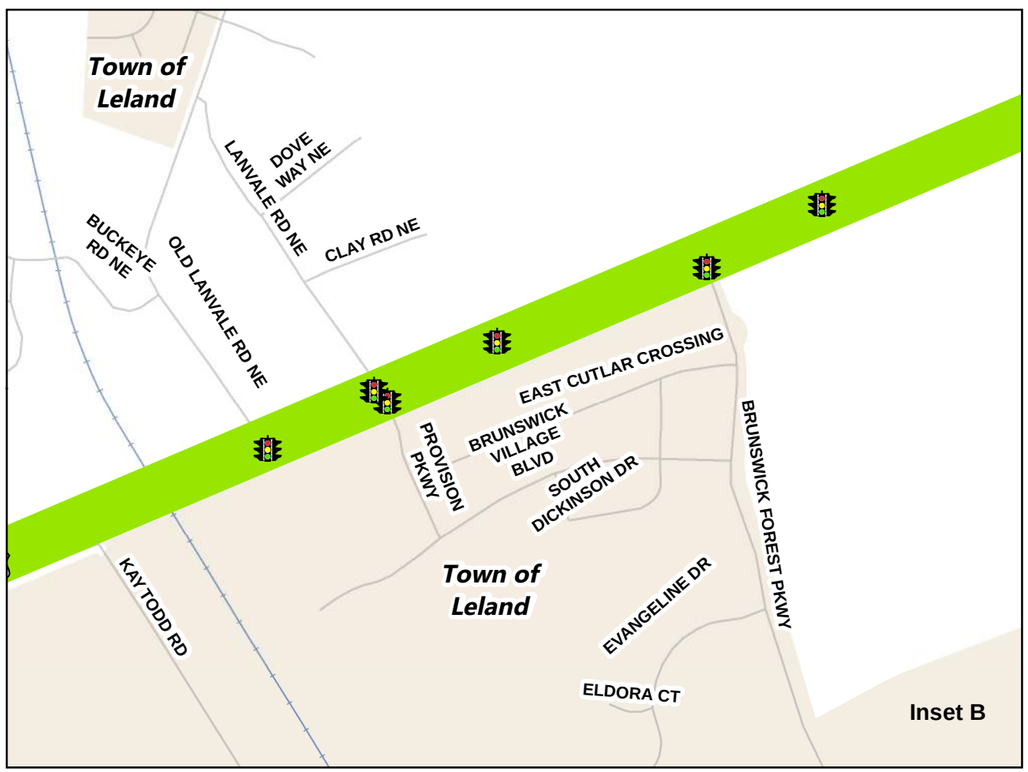
0 0.5 1
Miles

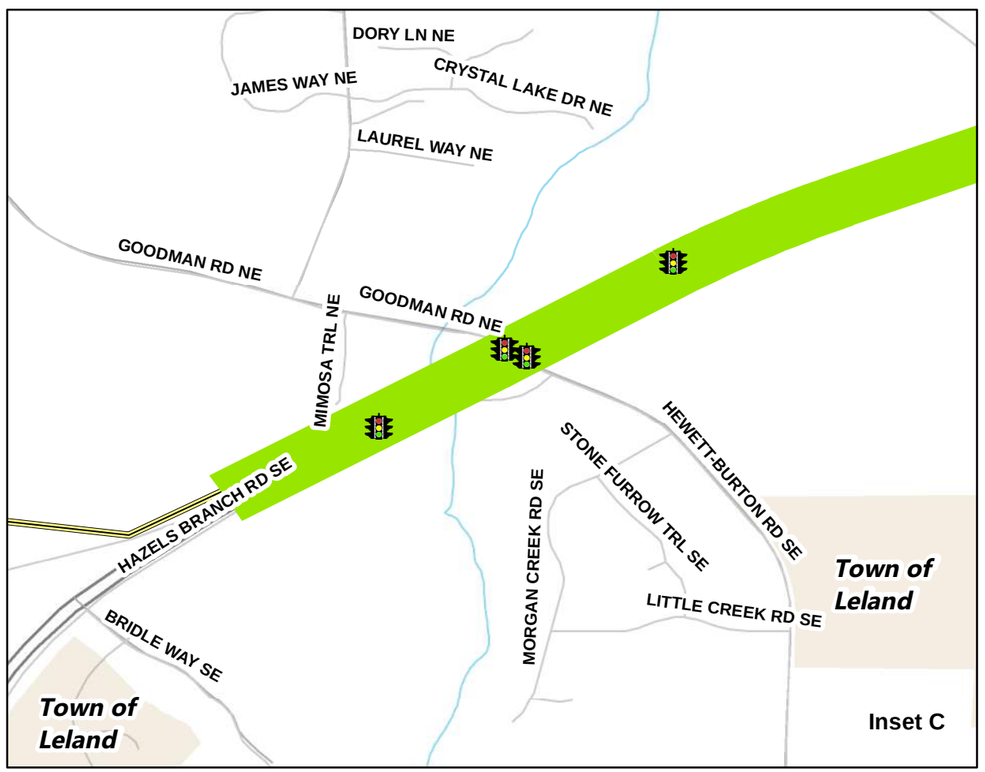
Figure 13a
Detailed Study Alternative V (Arterial)
Vicinity Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

Counties
Brunswick
New Hanover







CAPE FEAR CROSSING

State Transportation Improvement Program
Project No. U-4738

Legend

- Detailed Study Alternatived V (Arterial)
- Signalized Intersections
- Interstate
- US Highway
- NC Highway
- Local Road
- Railroad
- County Boundary
- Municipal Area
- Open Water

N

0 0.25 0.5
Miles

Figure 13b
Detailed Study Alternative V (Arterial)
Inset Map

Date: July 2015
This map is for reference only.
Sources: ESRI Inc., CGIA, NCDOT, and URS.

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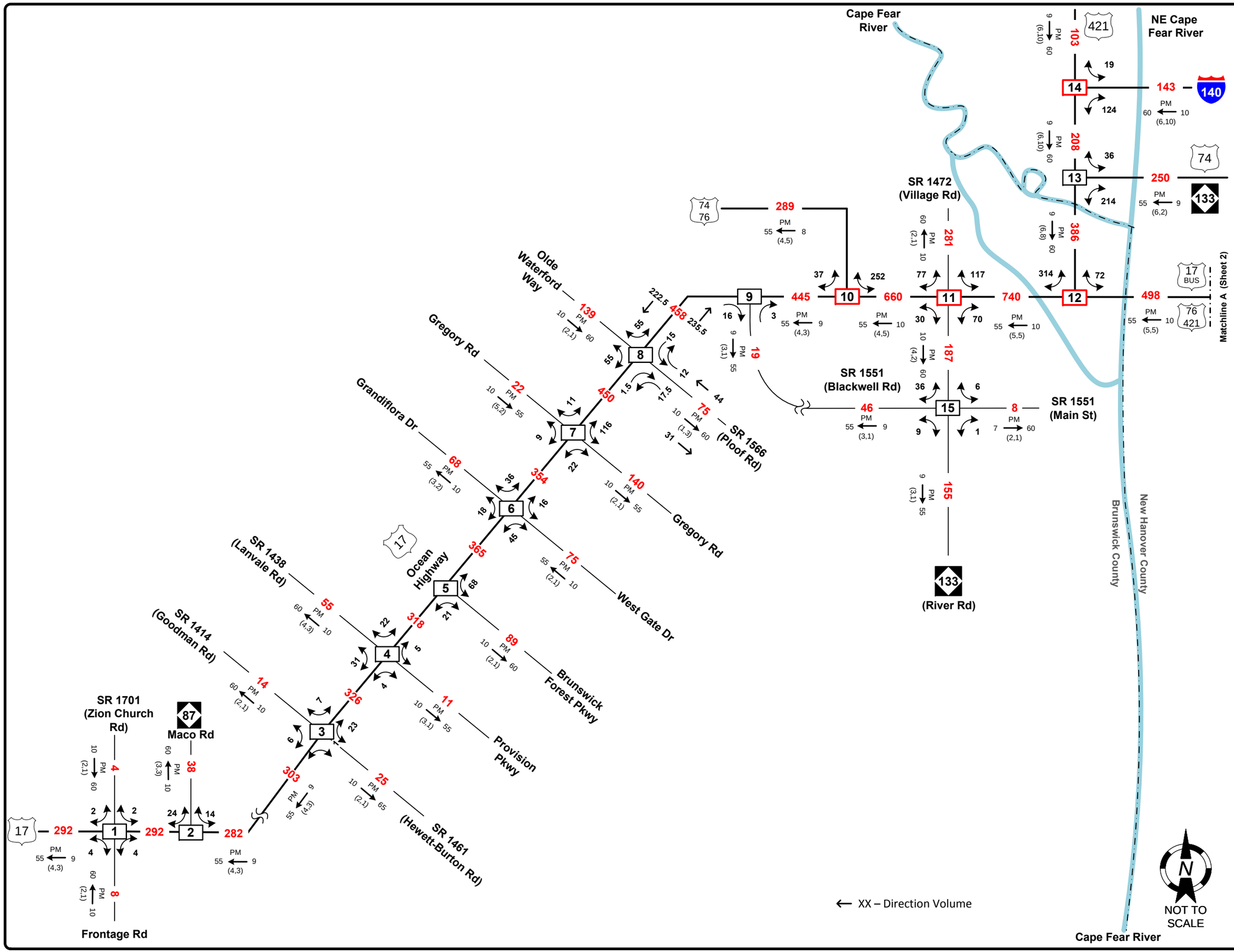
Appendix A

U-4738 - NCDOT Traffic Forecast – October 2014



2013

ANNUAL AVERAGE DAILY TRAFFIC

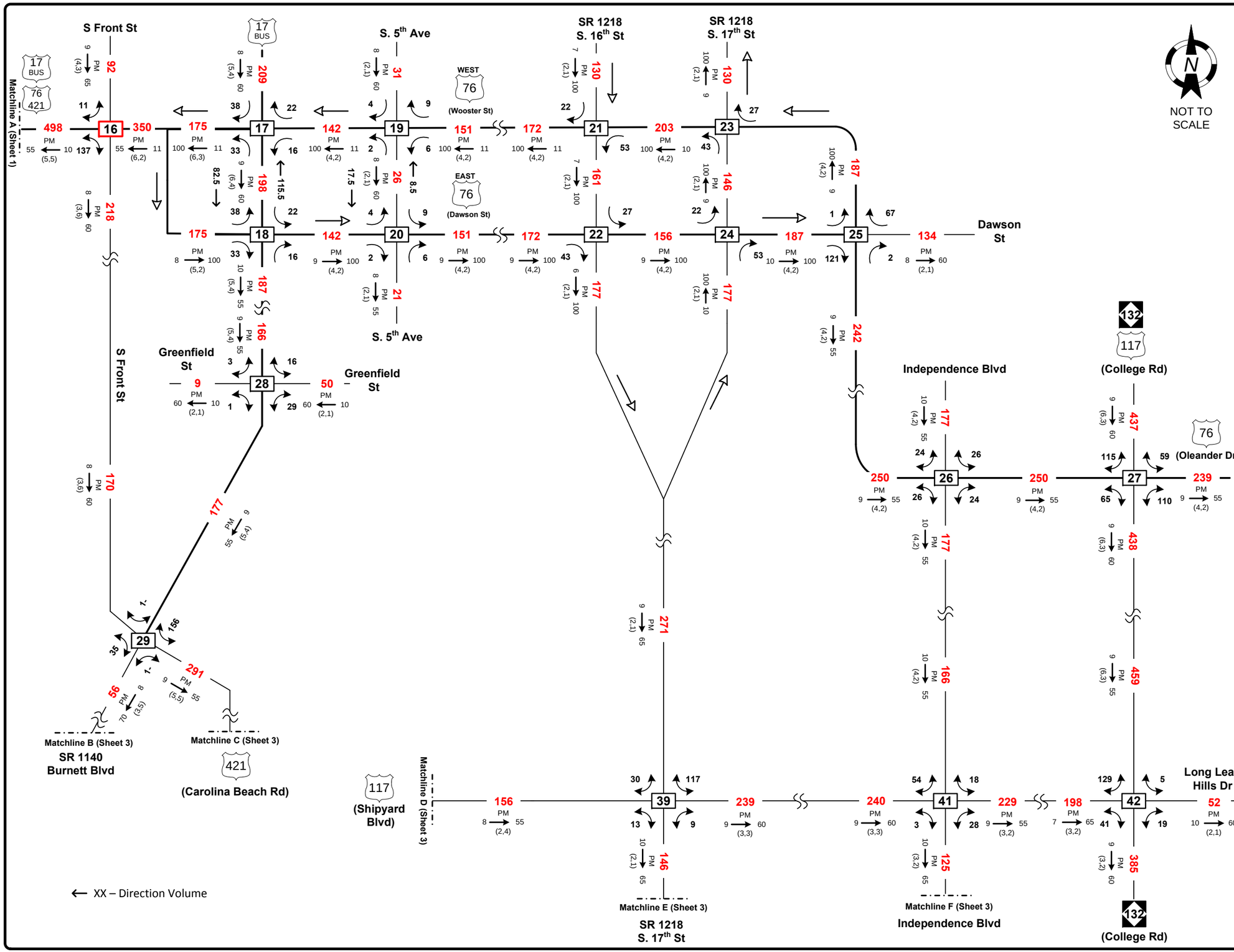
NO-BUILD

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	Daily Turn Movement
	DSA Corridor
	Roadway Realignment
	One-way Streets
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 7**



2013

ANNUAL AVERAGE DAILY TRAFFIC

NO-BUILD

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738 | **WBS:** 40114.1.TA1

COUNTY: Brunswick, New Hanover | **DIVISION:** 3

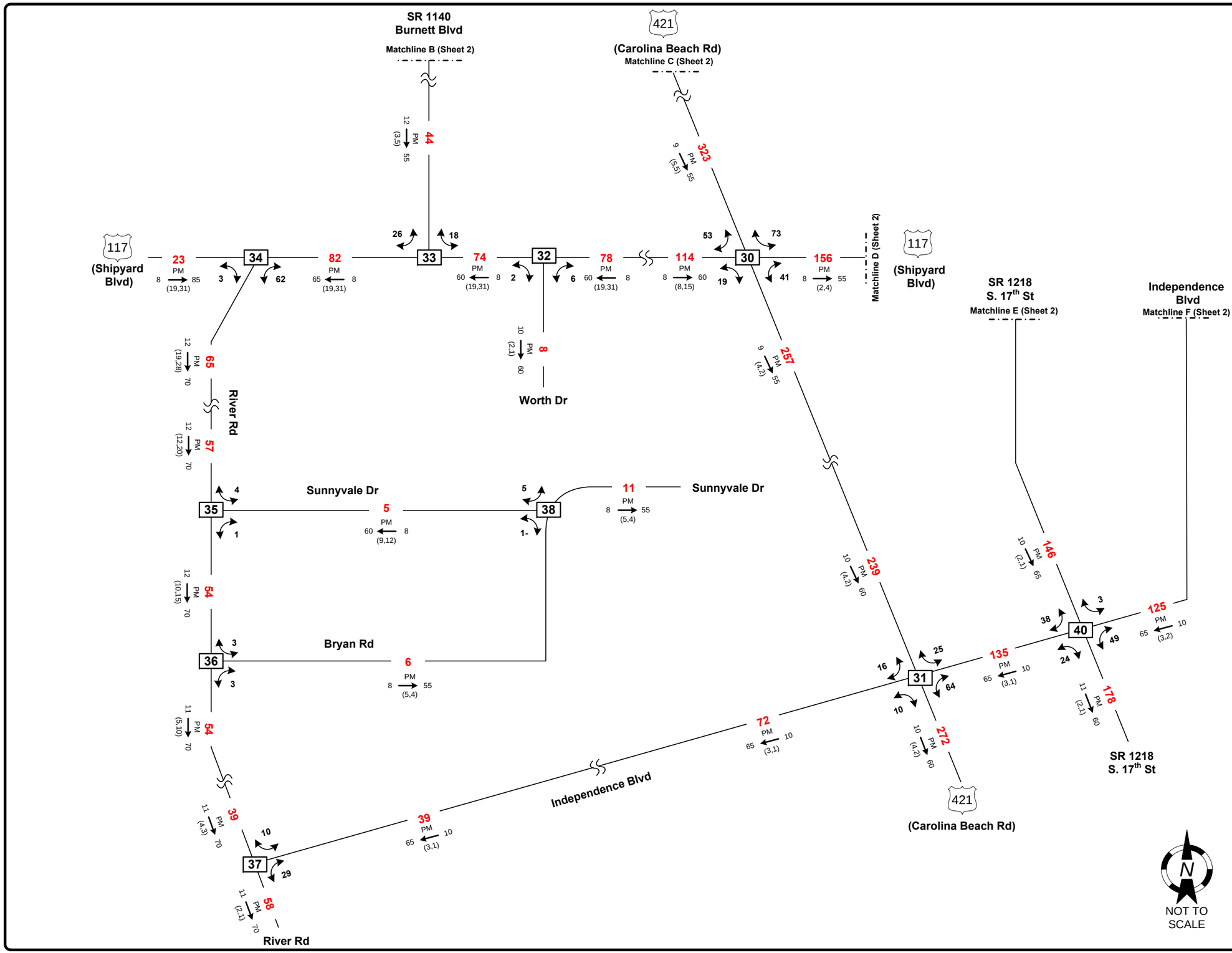
PROJECT: Cape Fear Crossing

PREPARED BY: HNTB — HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609

LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection

DATE: October 2014

FIGURE 7



2013

ANNUAL AVERAGE DAILY TRAFFIC

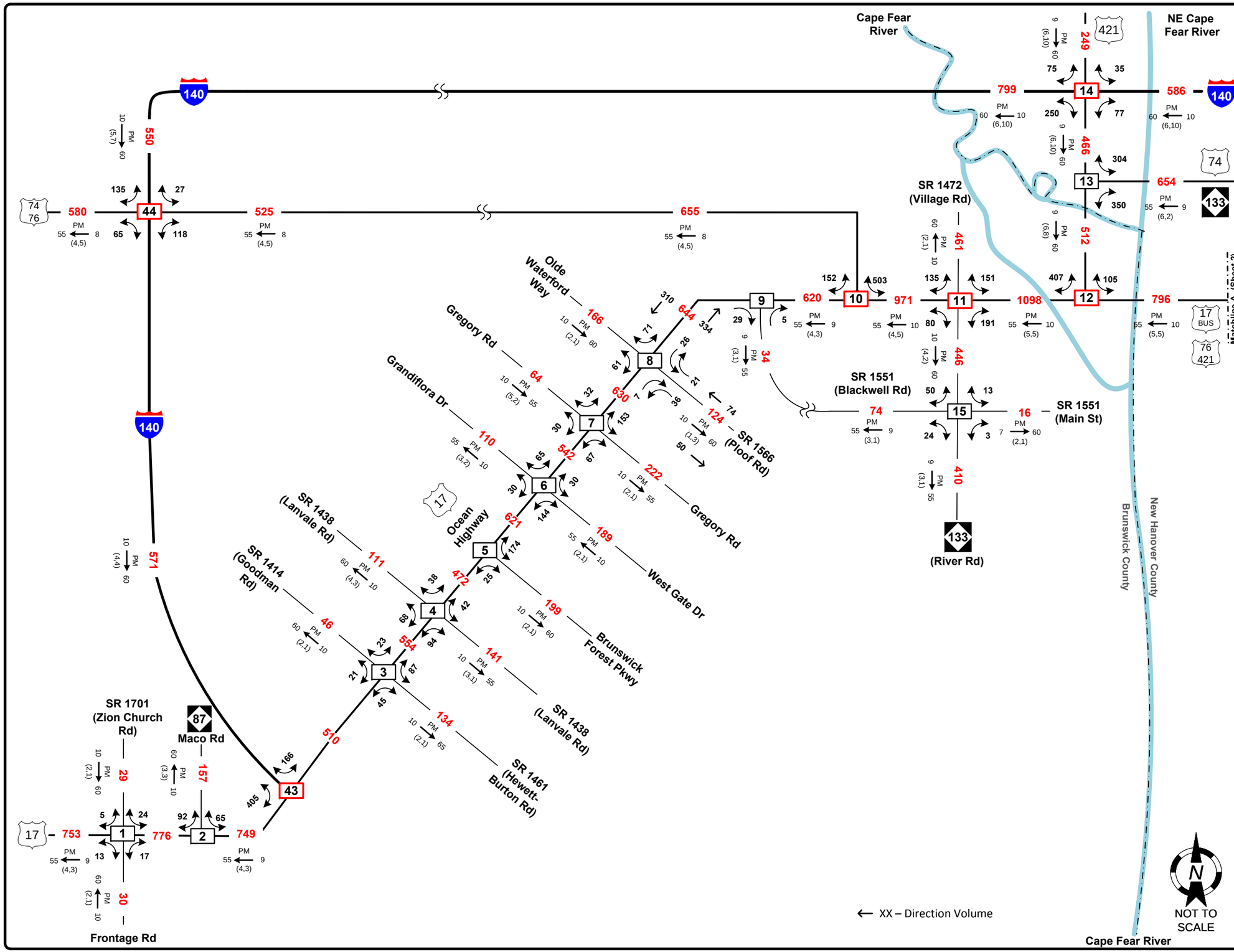
NO-BUILD

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 7**



2040

ANNUAL AVERAGE DAILY TRAFFIC

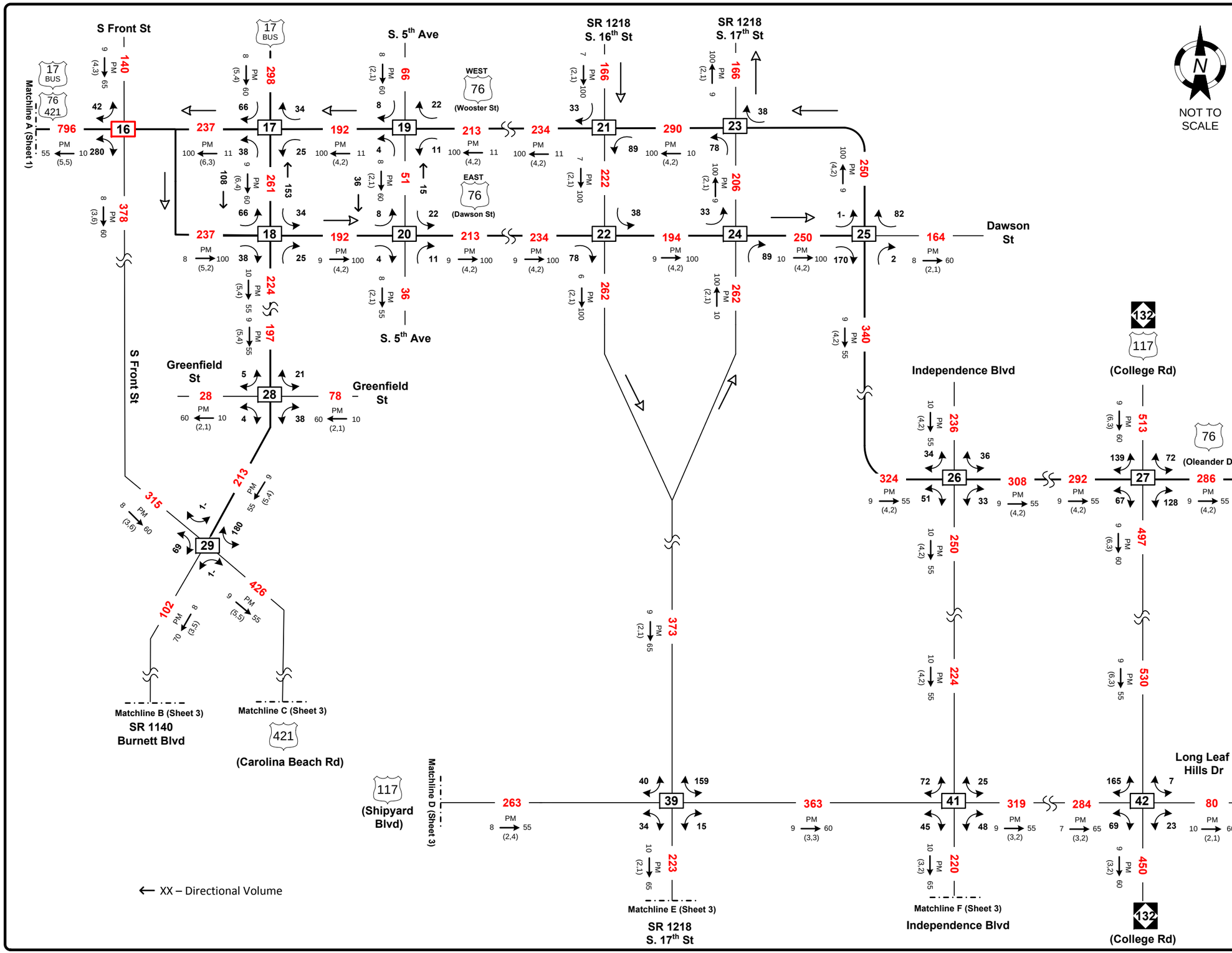
No-Build

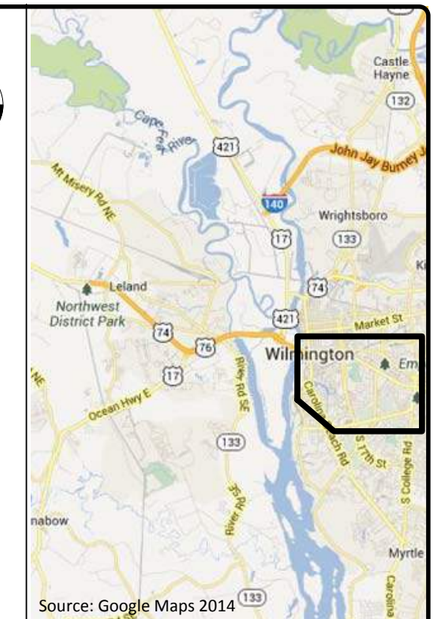
SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 21**





2040

ANNUAL AVERAGE DAILY TRAFFIC

No-Build

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738 | **WBS:** 40114.1.TA1

COUNTY: Brunswick, New Hanover | **DIVISION:** 3

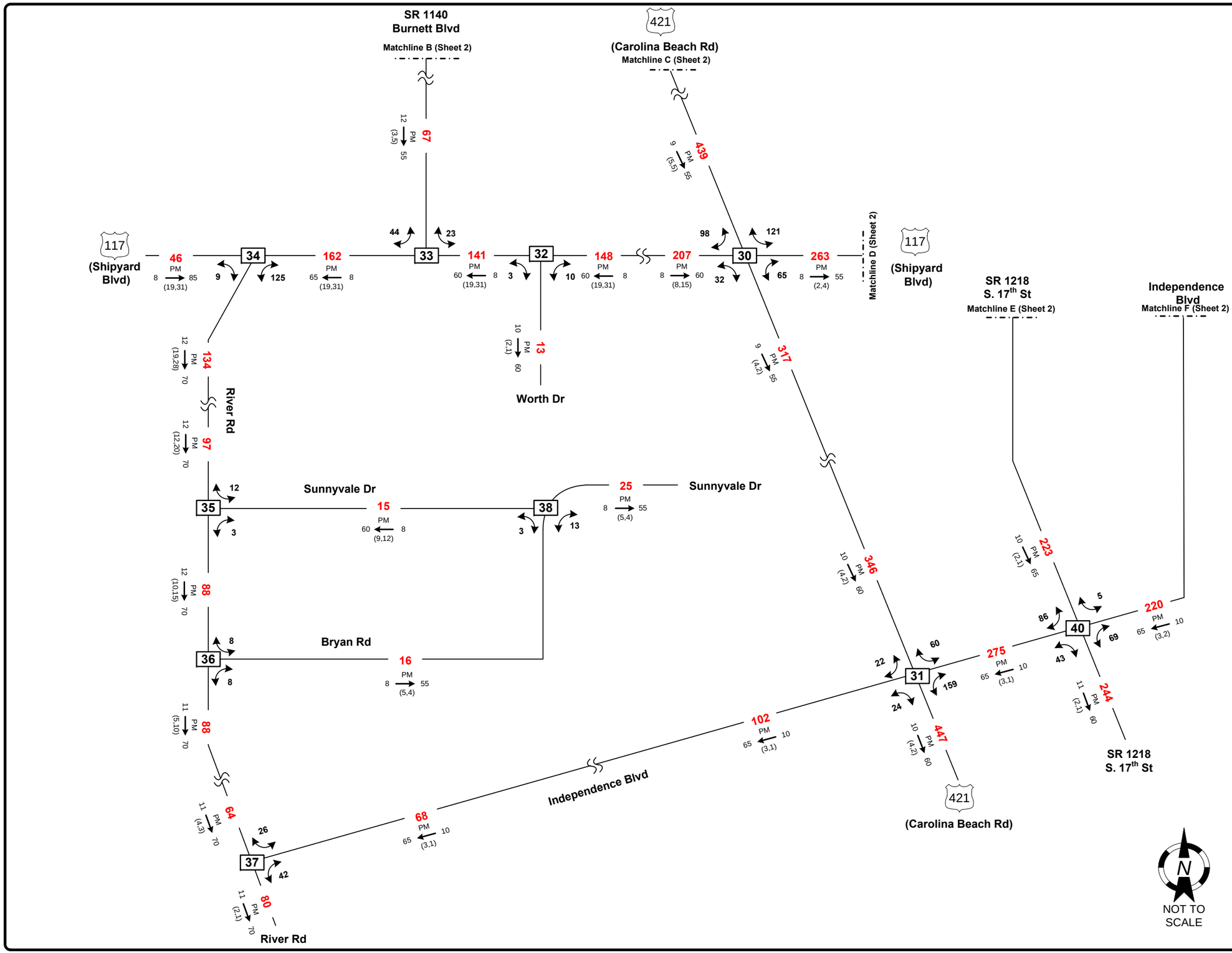
PROJECT: Cape Fear Crossing

PREPARED BY: HNTB — HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609

LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection

DATE: October 2014

FIGURE 21



2040

ANNUAL AVERAGE DAILY TRAFFIC

No-Build

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738 | **WBS:** 40114.1.TA1

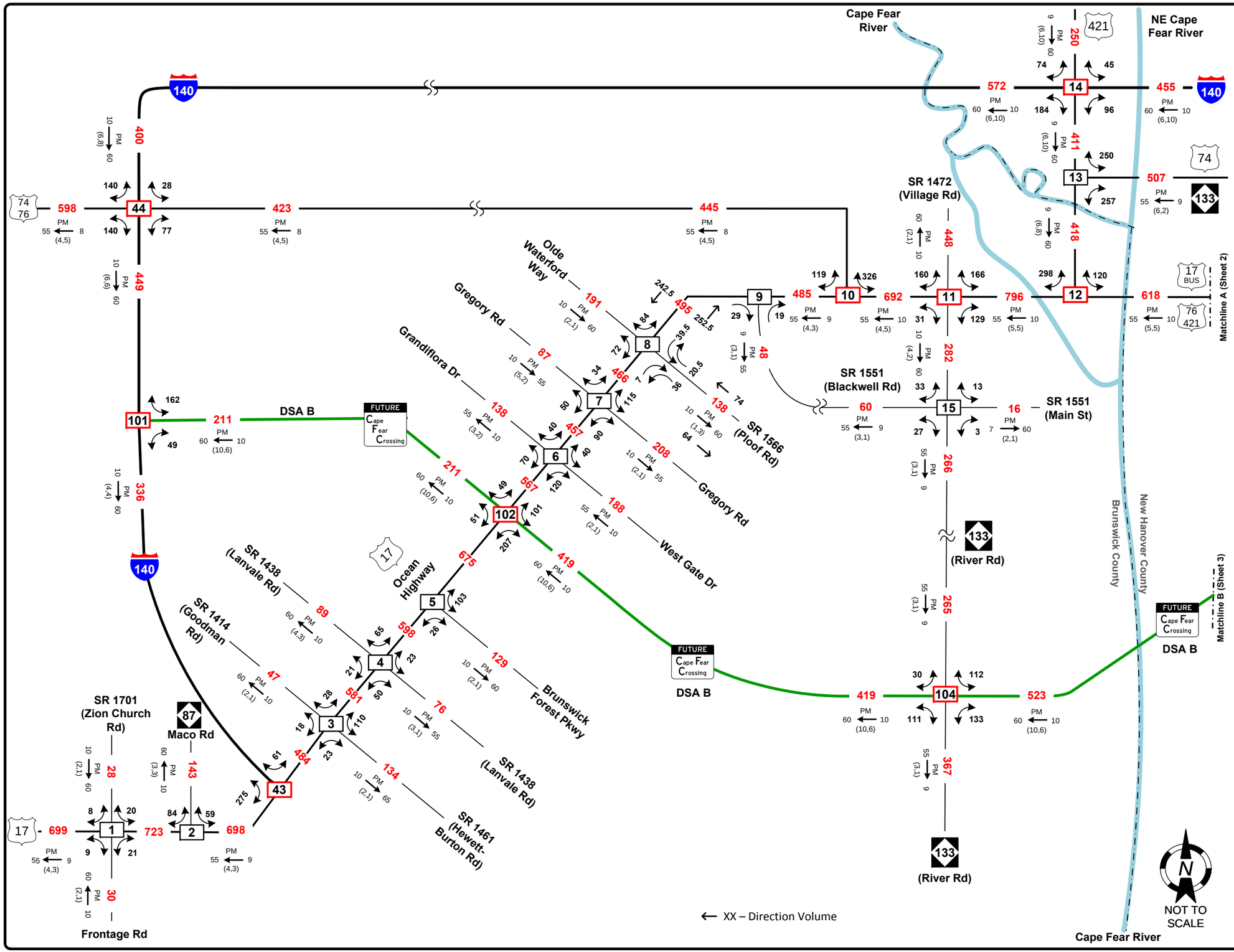
COUNTY: Brunswick, New Hanover | **DIVISION:** 3

PROJECT: Cape Fear Crossing

PREPARED BY: HNTB — HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609

LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection

DATE: October 2014 | **FIGURE 21**



2040

ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA B

SHEET 1 OF 3

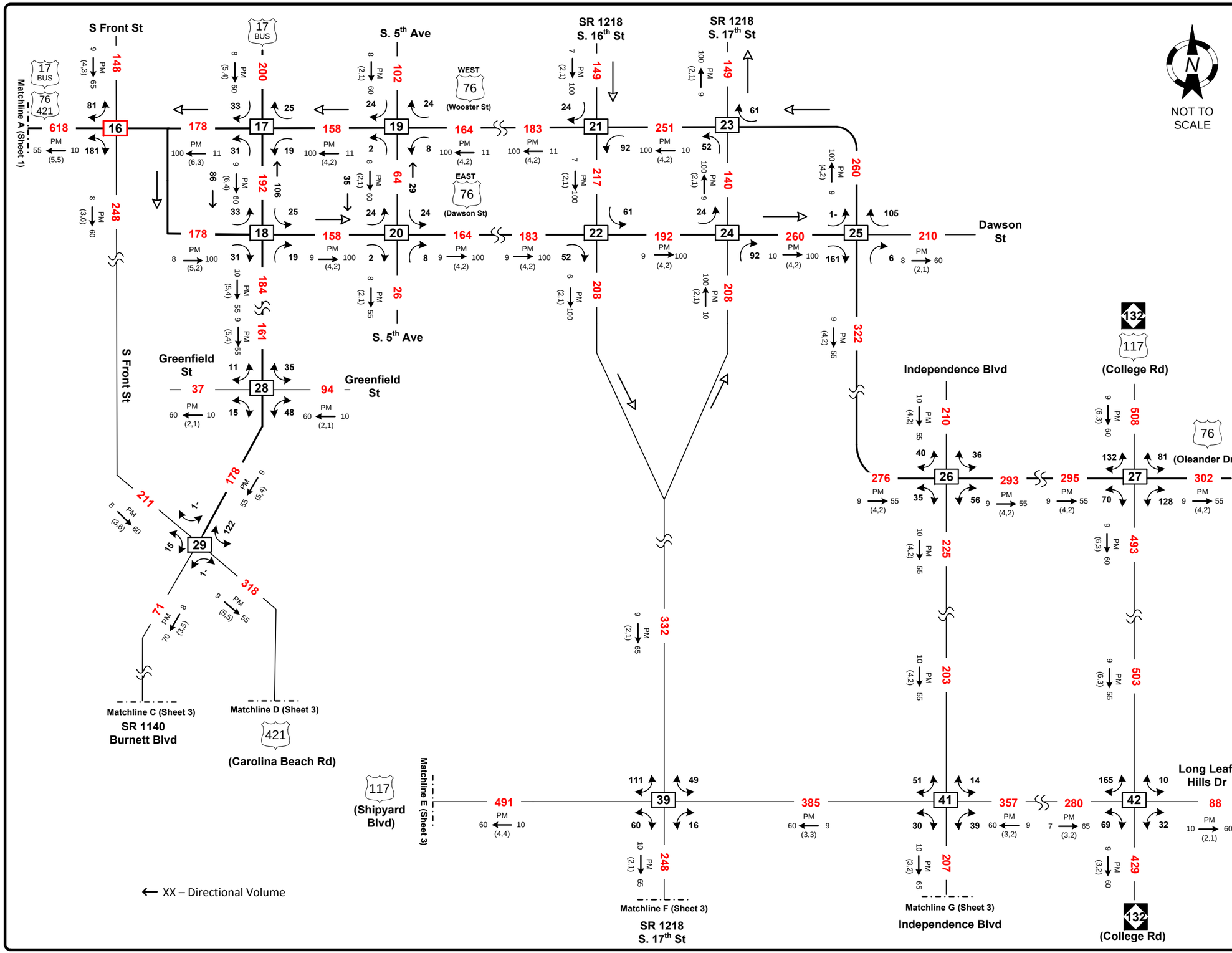
LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment

DHV $\xrightarrow[(d,t)]{PM}$ D

DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 22**



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ANNUAL AVERAGE DAILY TRAFFIC

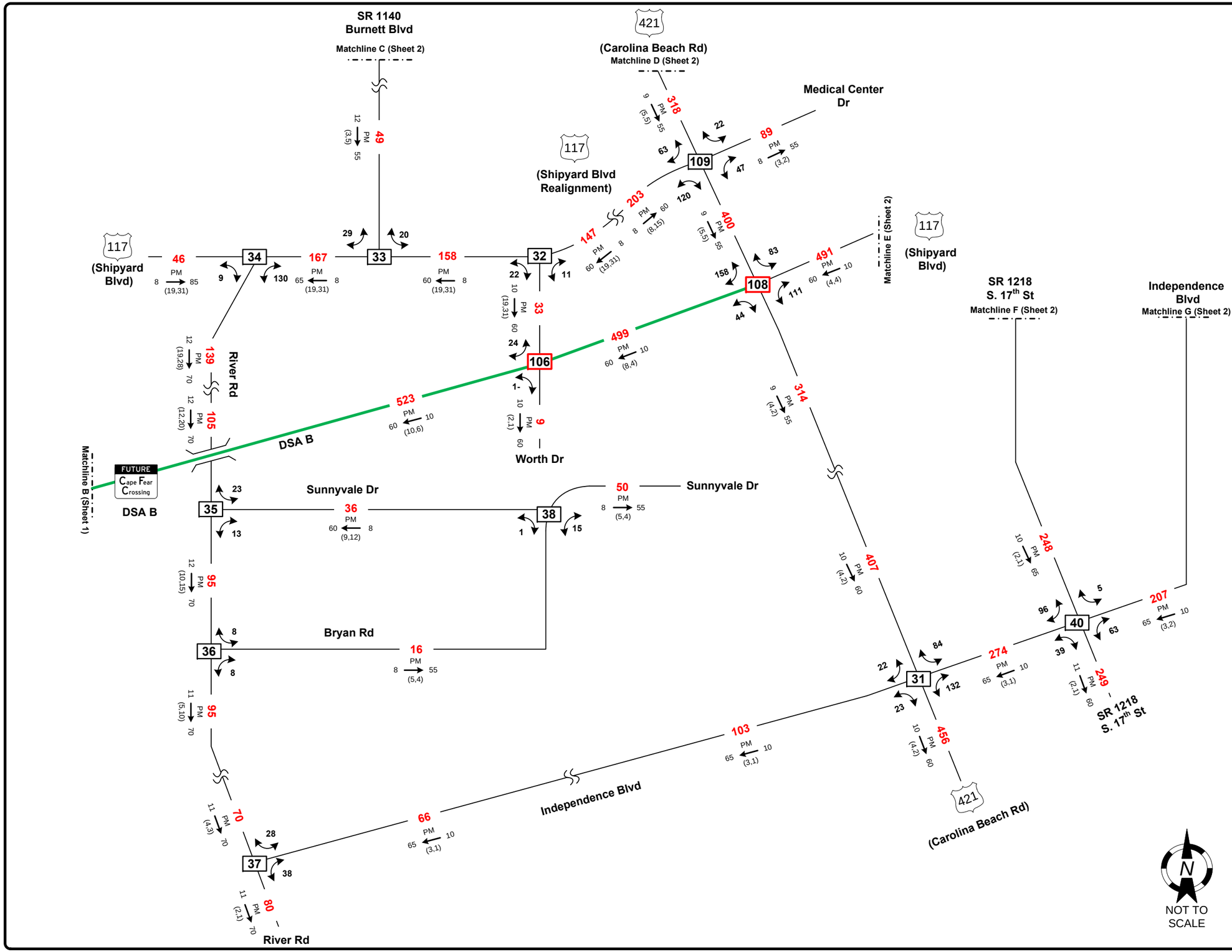
Build Non-Toll DSA B

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 22**



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ANNUAL AVERAGE DAILY TRAFFIC

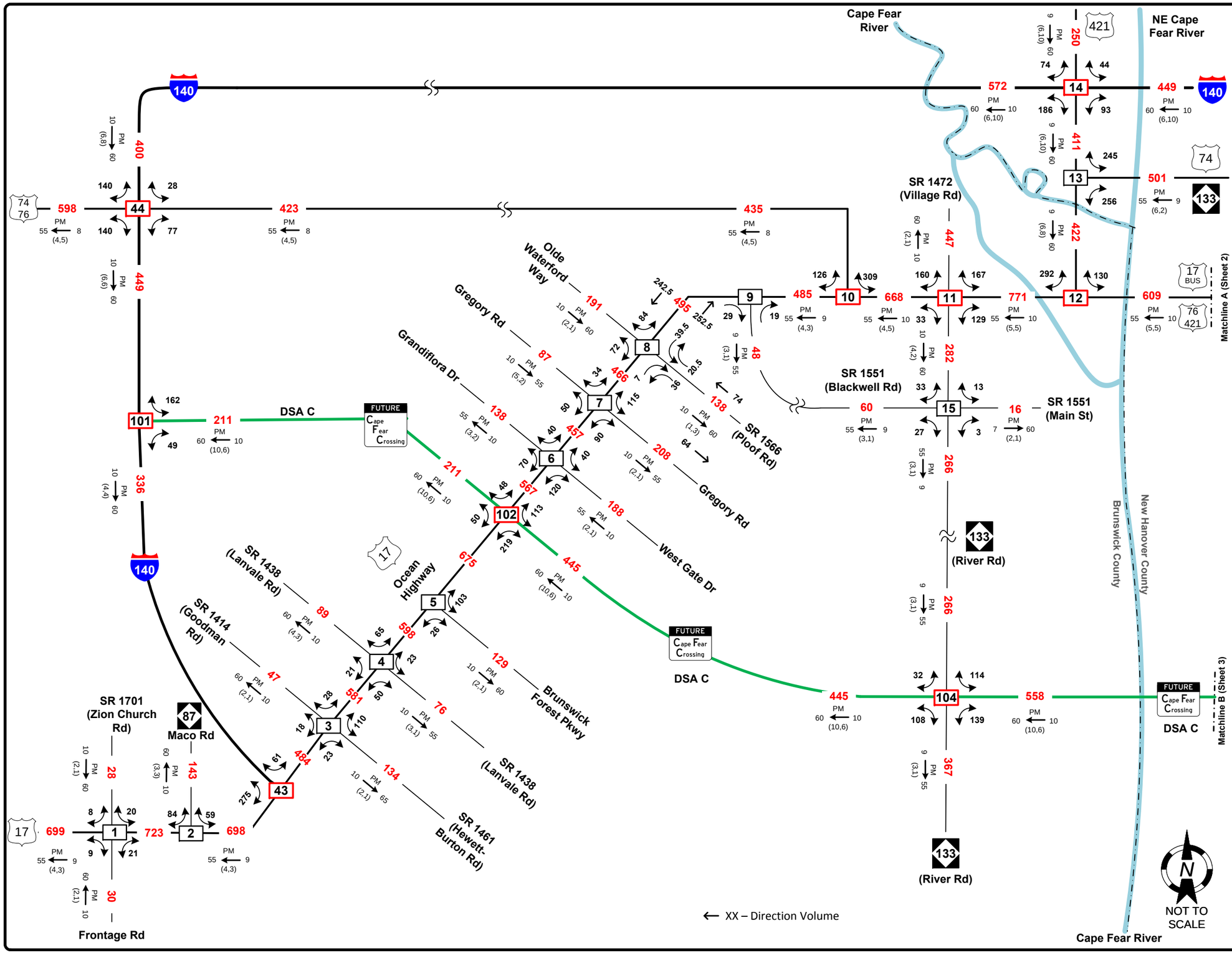
Build Non-Toll DSA B

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 22**



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ANNUAL AVERAGE DAILY TRAFFIC

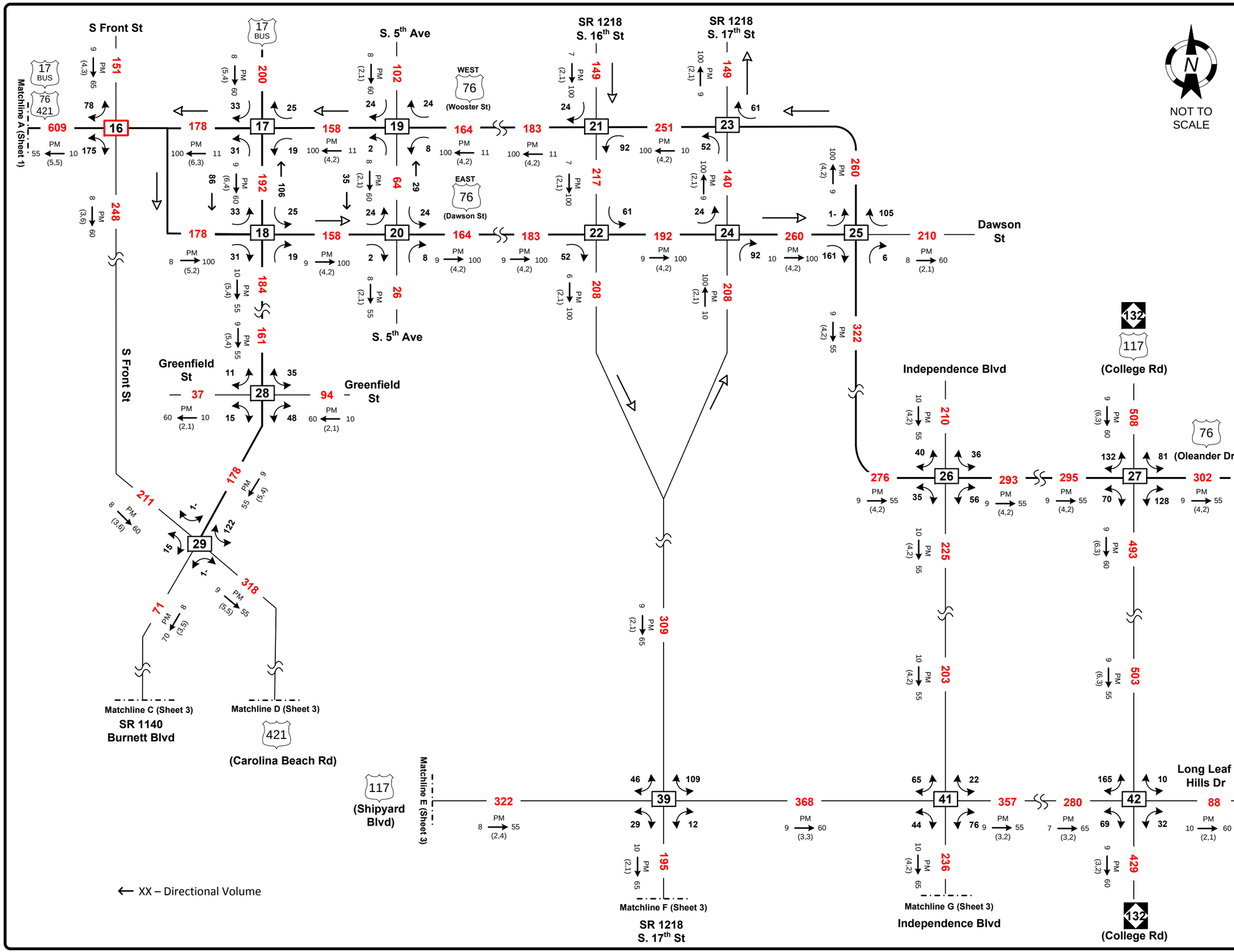
Build Non-Toll DSA C

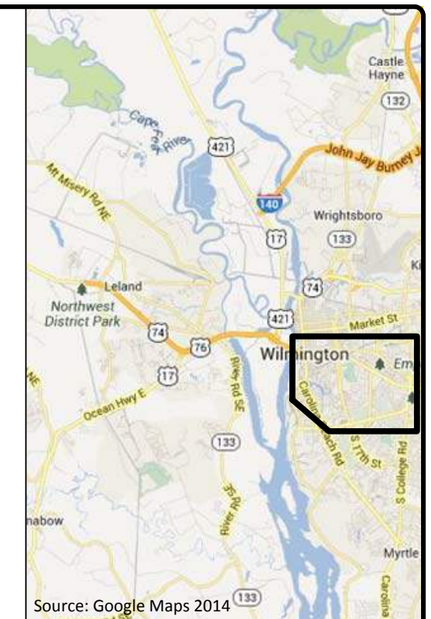
SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 23**





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ANNUAL AVERAGE DAILY TRAFFIC

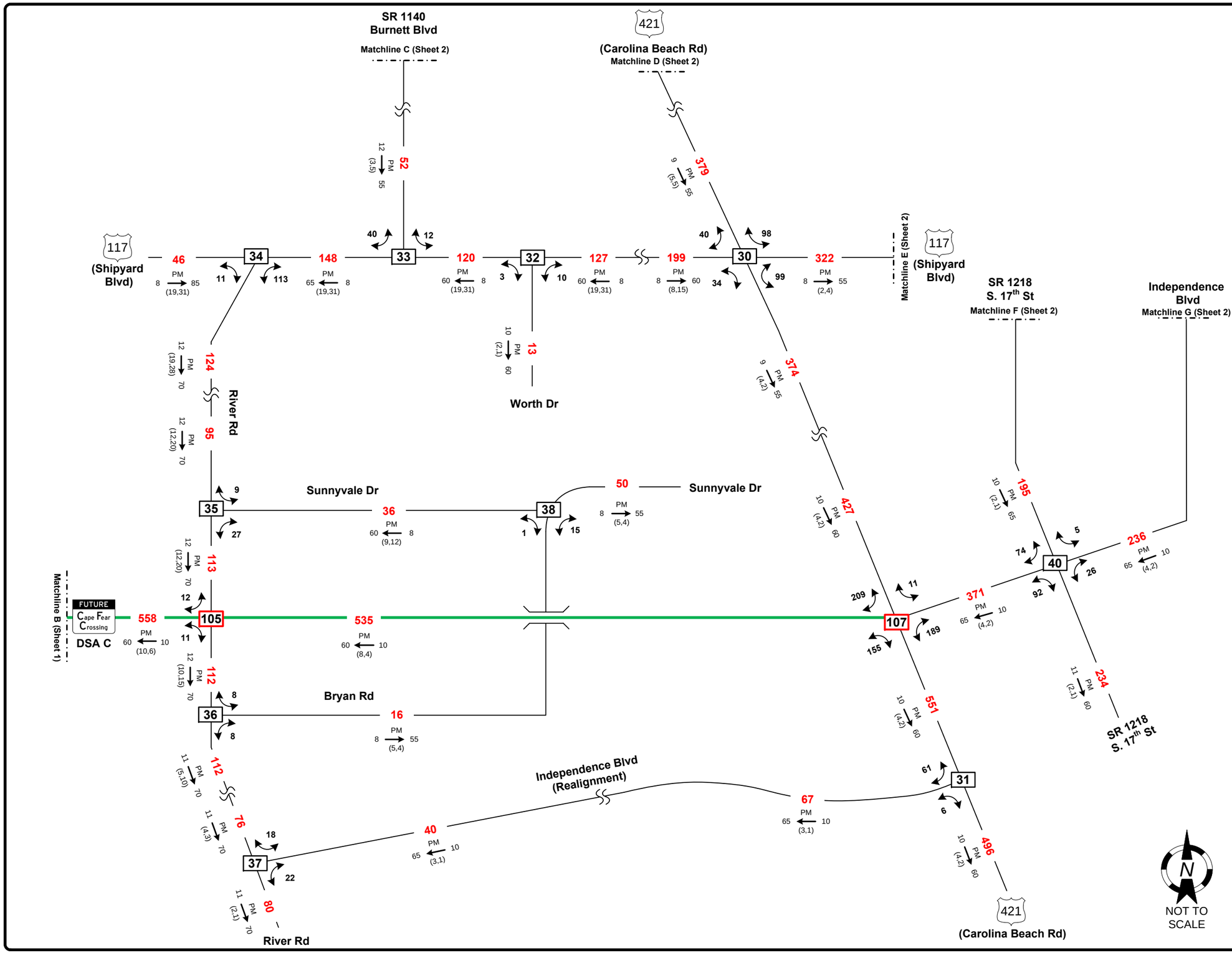
Build Non-Toll DSA C

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 23**



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ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA C

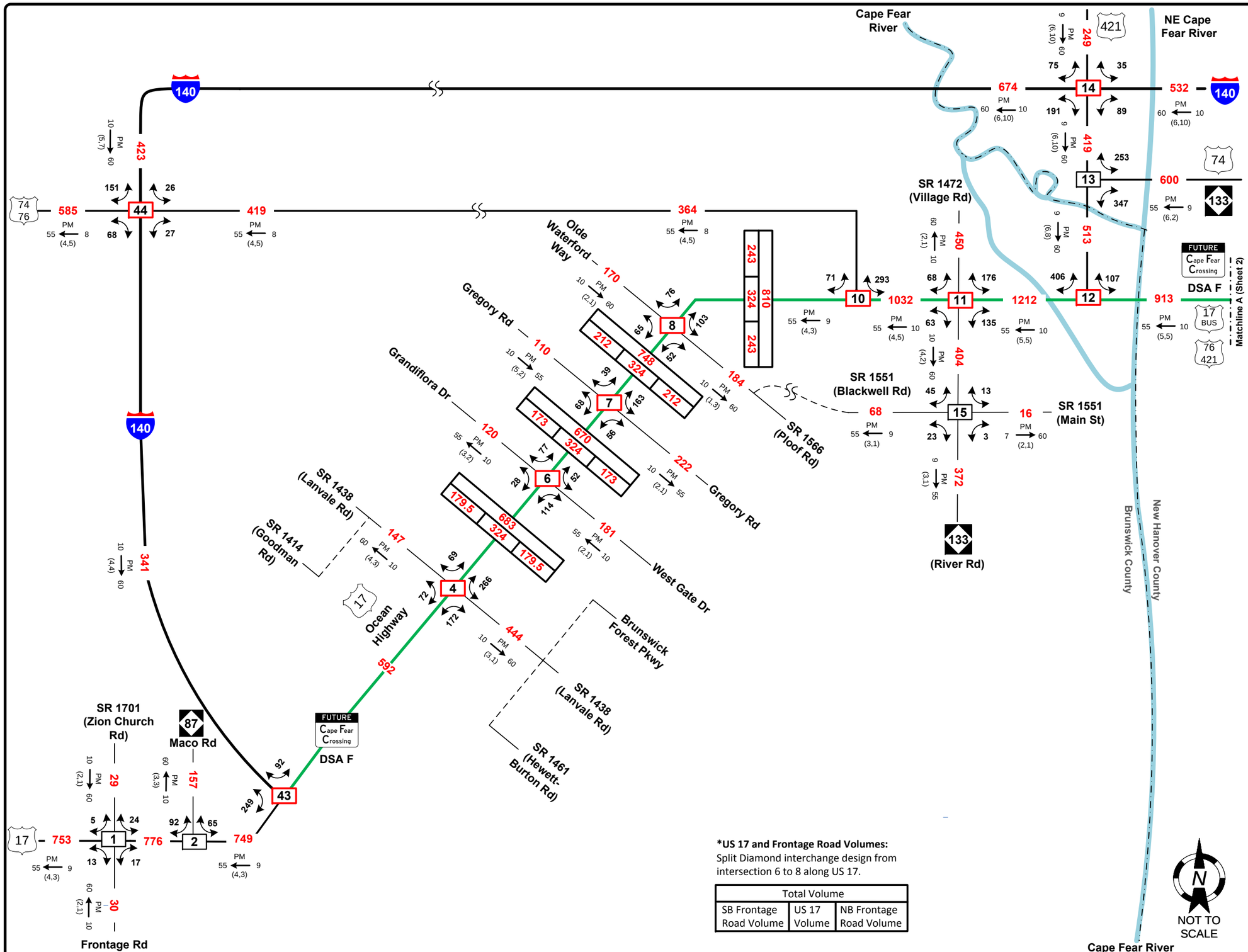
SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV (PM, d, t) D	

DHV Design Hourly Volume (%) = K30
PM PM Peak Period
D Peak Hour Directional Split (%)
→ Indicates Direction of D
(d, t) Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 23**



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ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA F (Freeway)

SHEET 1 OF 3

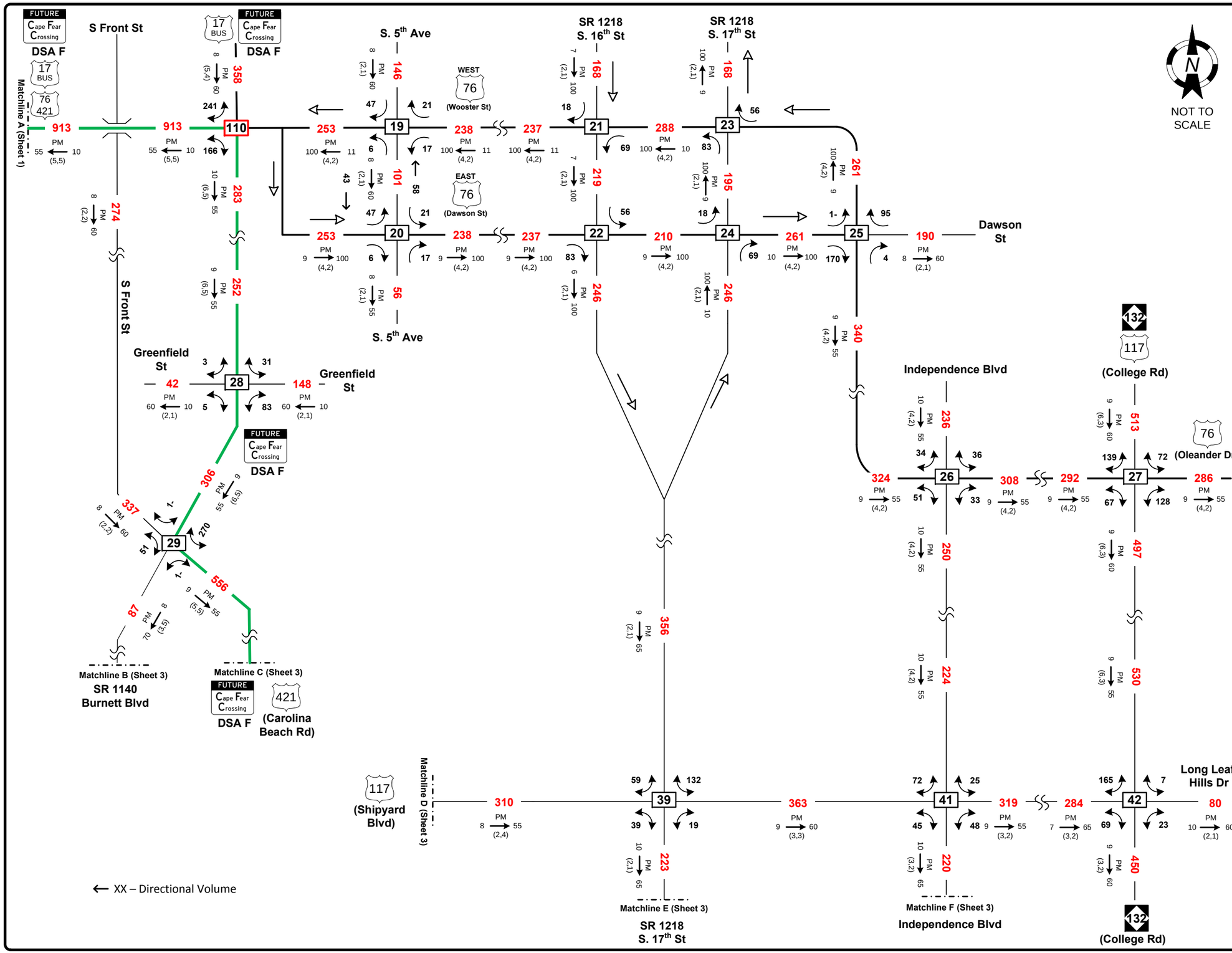
LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

***US 17 and Frontage Road Volumes:**
Split Diamond interchange design from intersection 6 to 8 along US 17.

Total Volume		
SB Frontage Road Volume	US 17 Volume	NB Frontage Road Volume

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 24**



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ANNUAL AVERAGE DAILY TRAFFIC

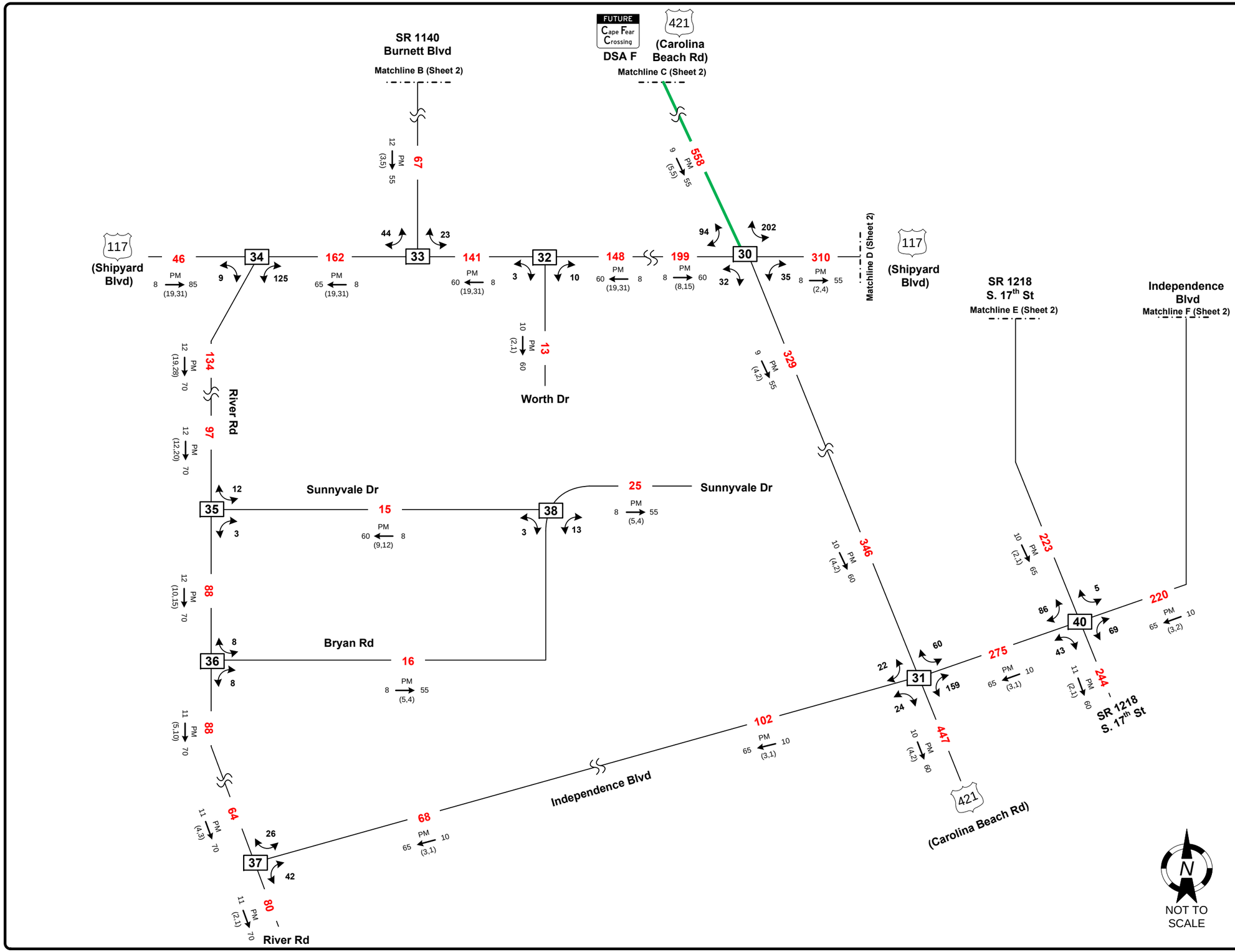
Build Non-Toll DSA F (Freeway)

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	Daily Turn Movement
	One-way Streets
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 24**



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ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA F (Freeway)

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
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(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
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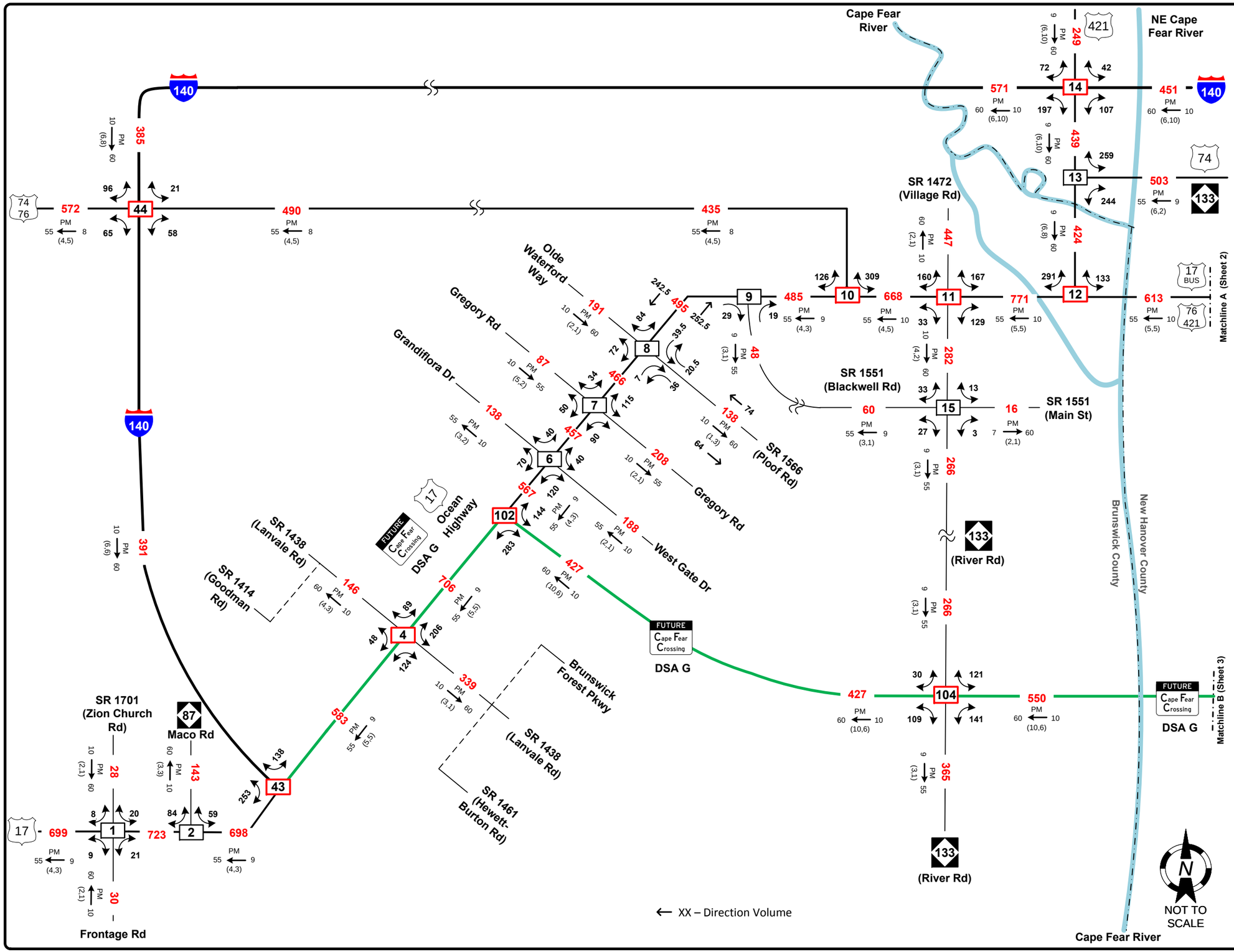
DATE: October 2014	**FIGURE 24**



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ANNUAL AVERAGE DAILY TRAFFIC

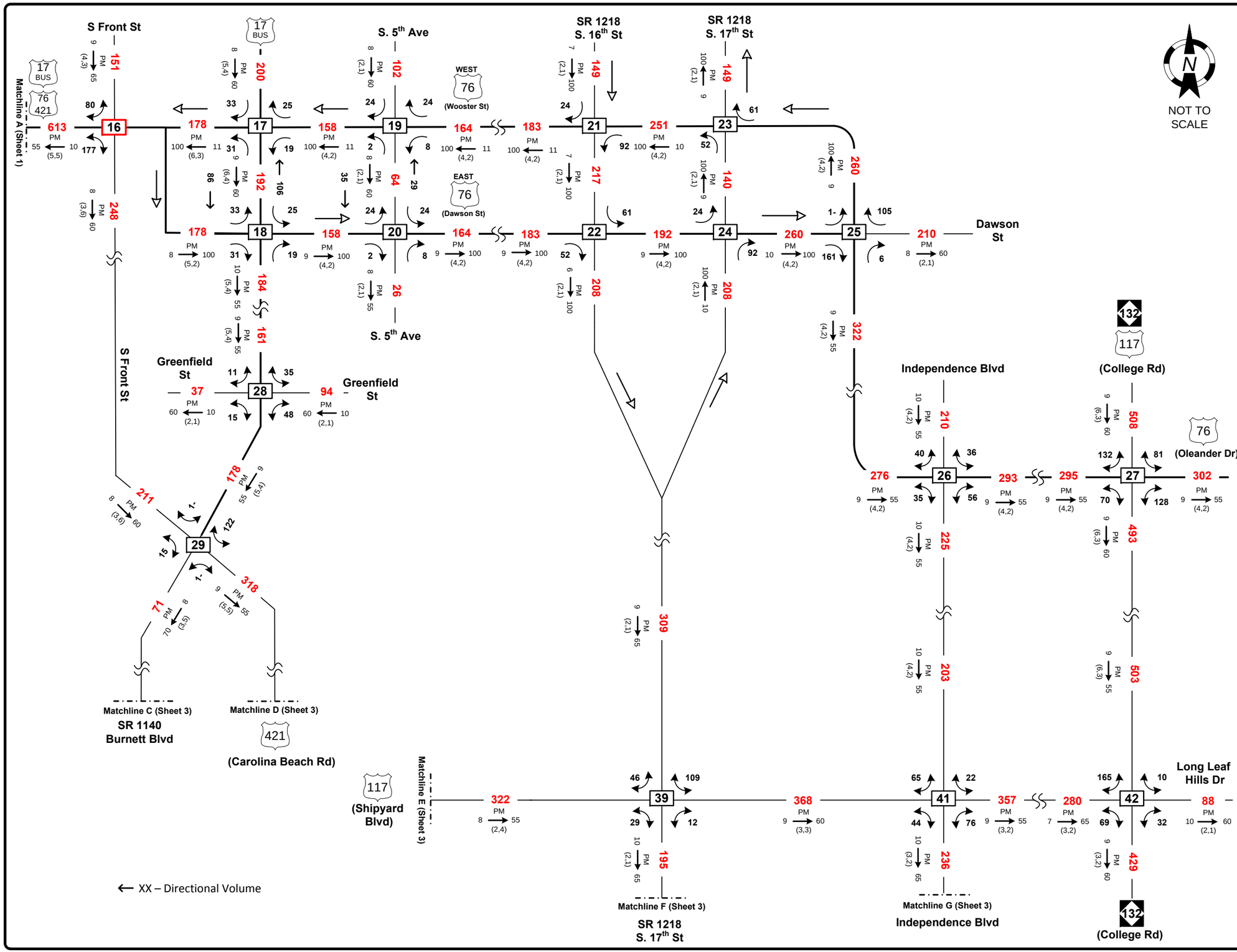
Build Non-Toll DSA G

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV (PM, d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 25**



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ANNUAL AVERAGE DAILY TRAFFIC

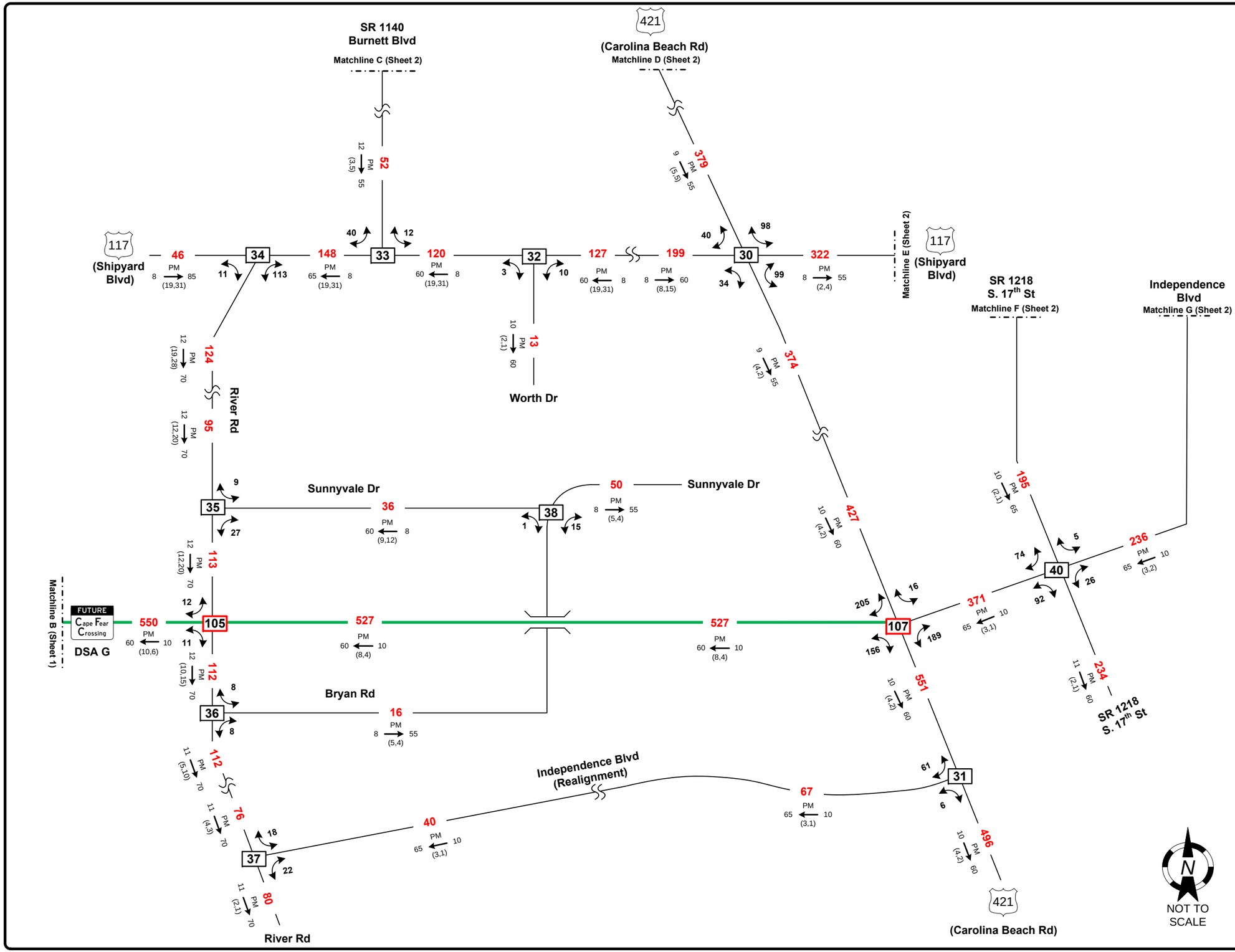
Build Non-Toll DSA G

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 25**



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ANNUAL AVERAGE DAILY TRAFFIC

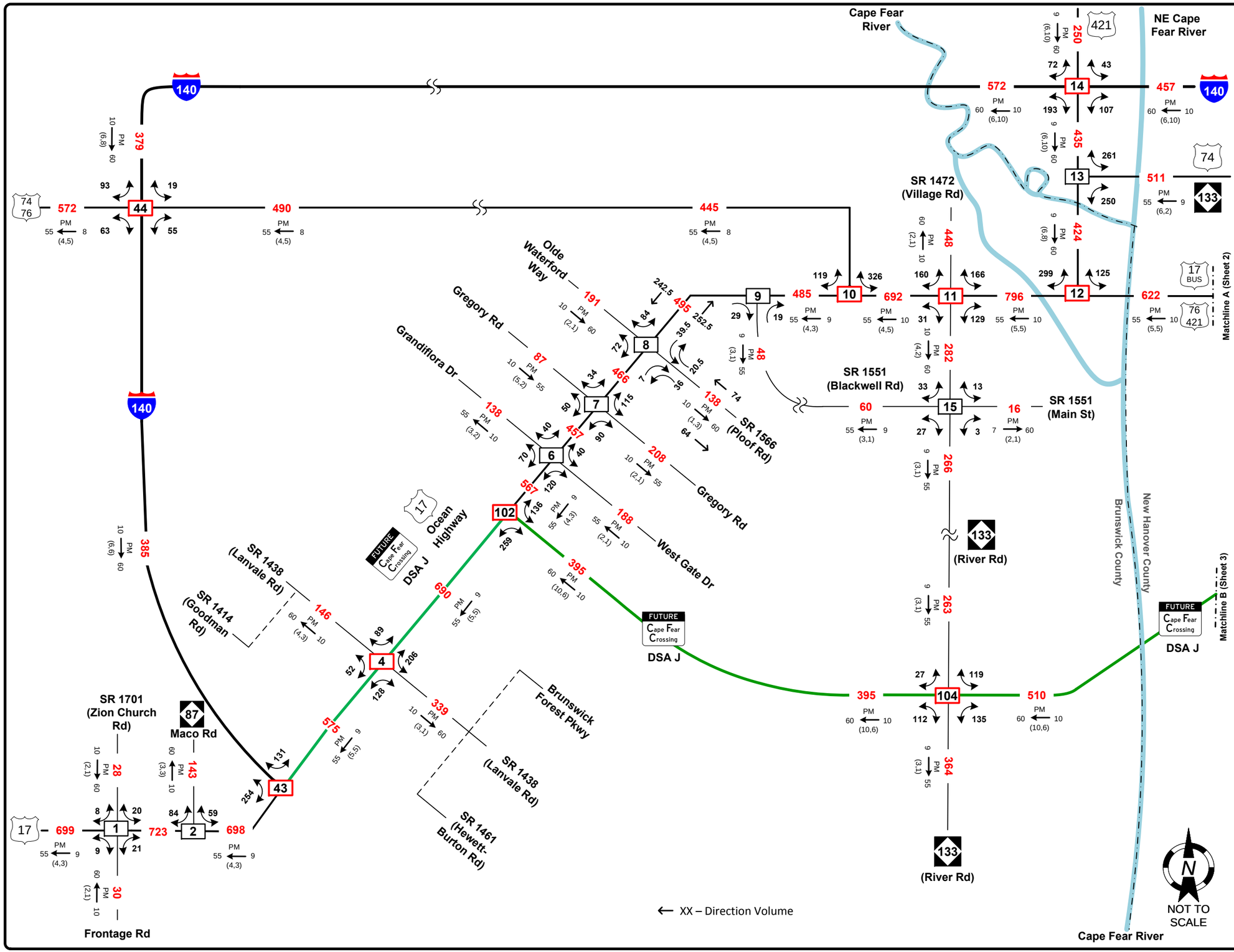
Build Non-Toll DSA G

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 25**



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ANNUAL AVERAGE DAILY TRAFFIC

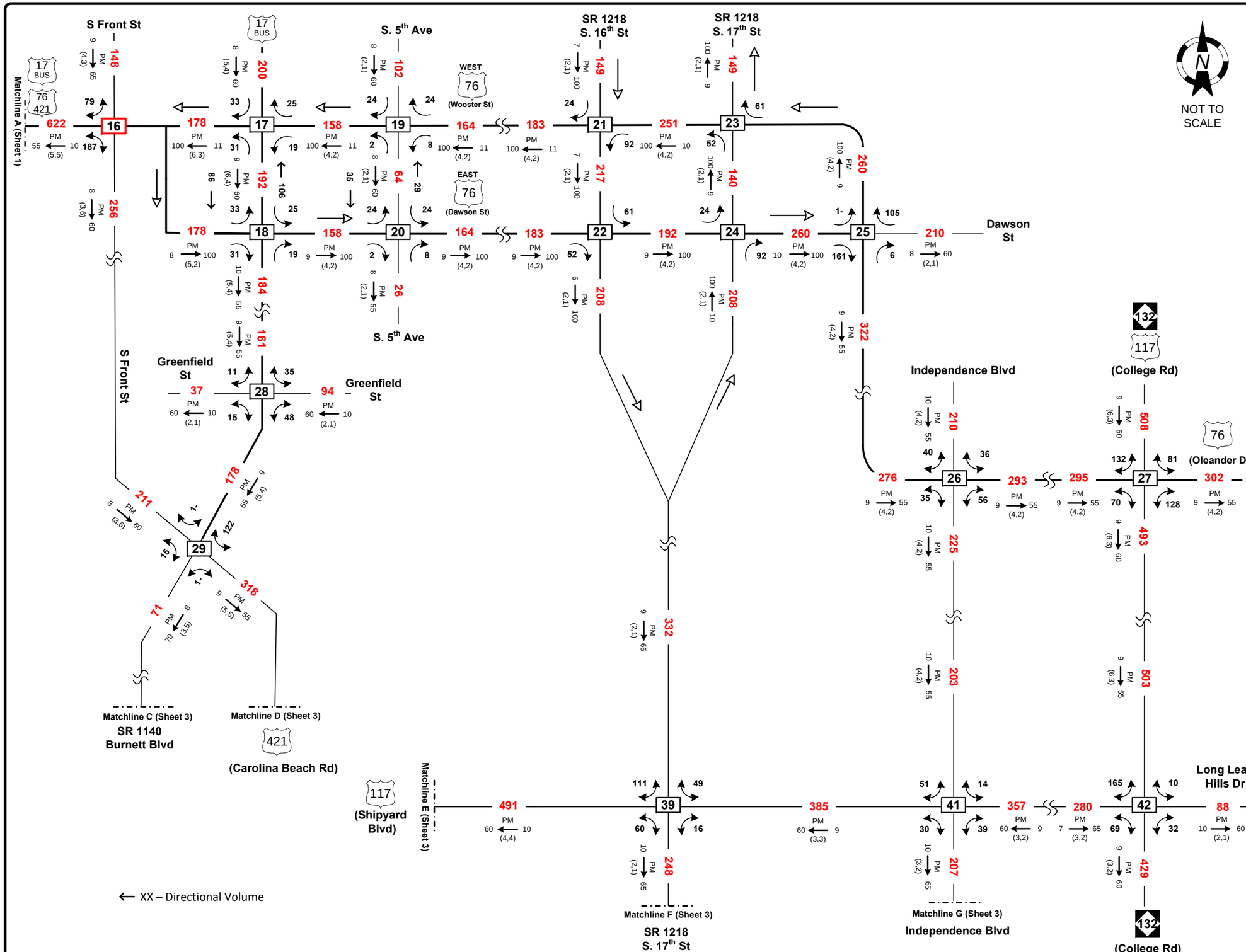
Build Non-Toll DSA J

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 26**



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ANNUAL AVERAGE DAILY TRAFFIC

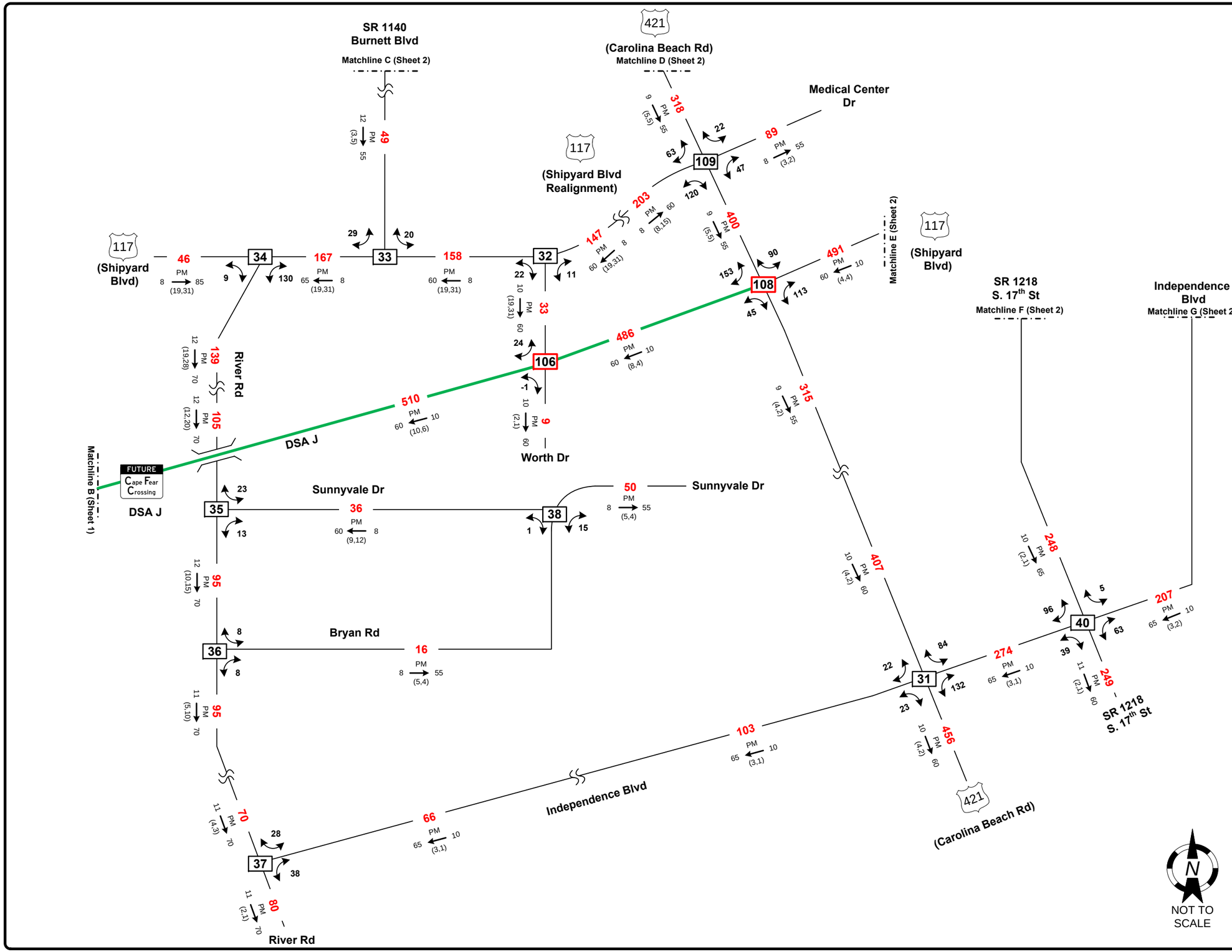
Build Non-Toll DSA J

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 26**



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ANNUAL AVERAGE DAILY TRAFFIC

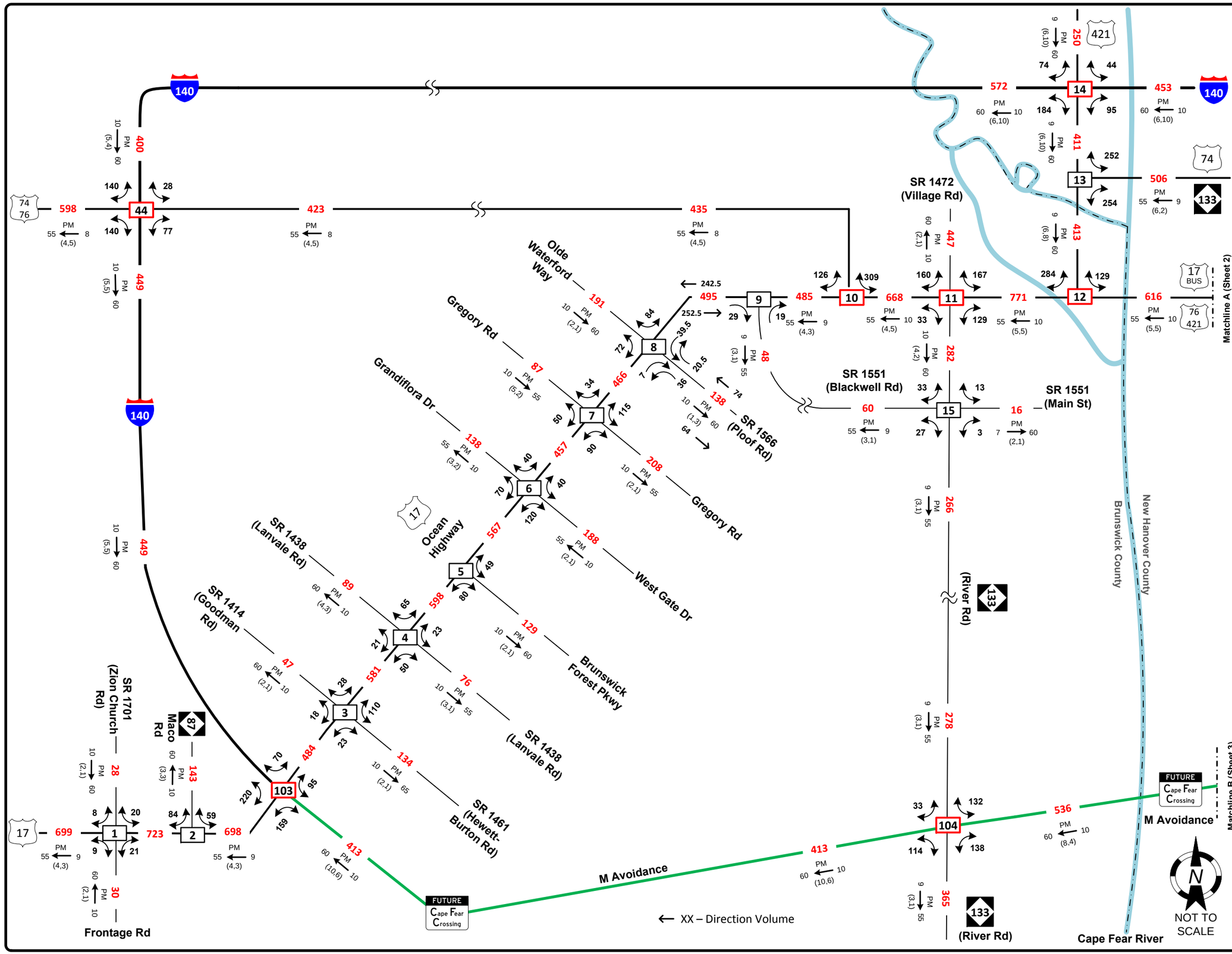
Build Non-Toll DSA J

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV (PM / (d, t)) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 26**



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ANNUAL AVERAGE DAILY TRAFFIC

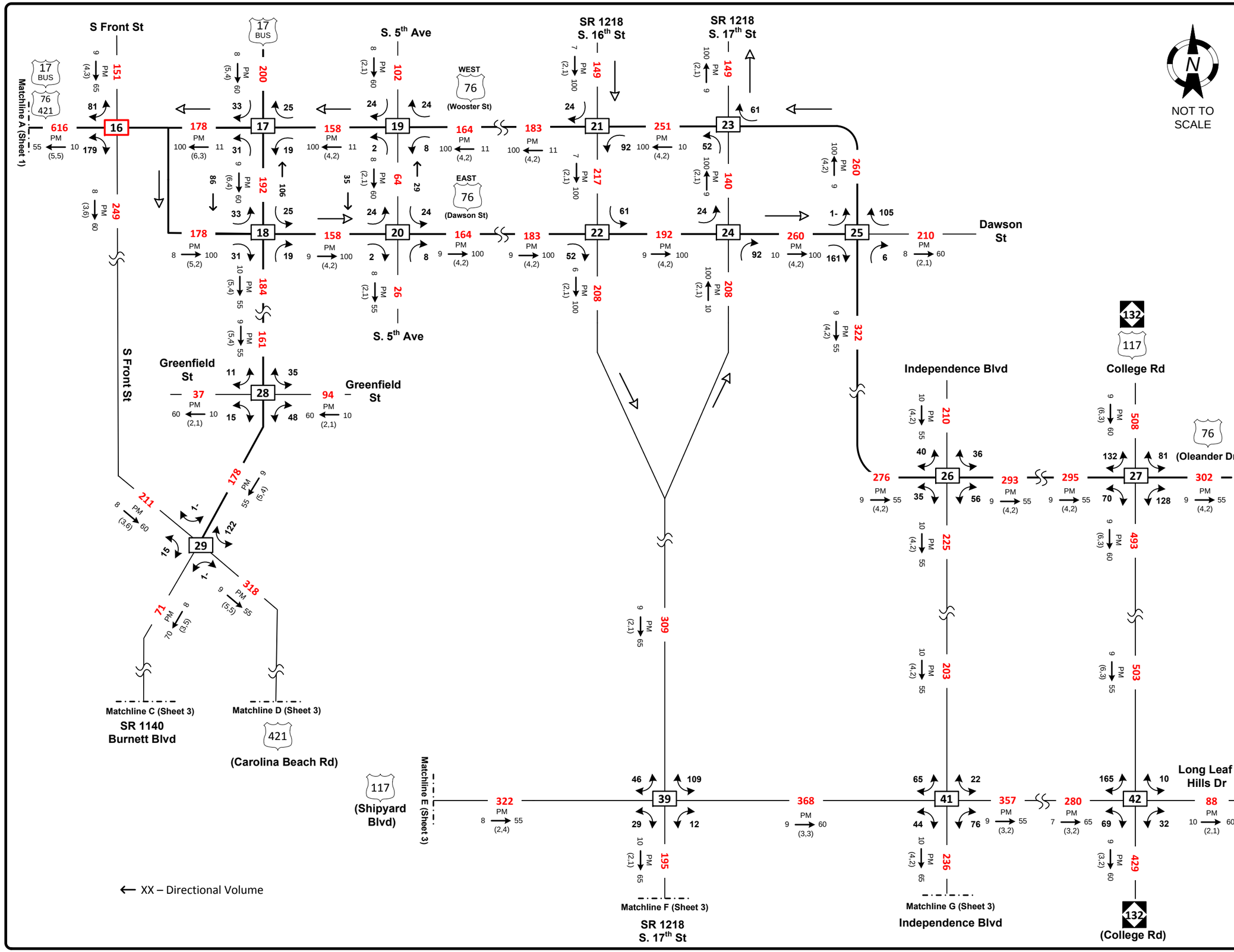
Build Non-Toll DSA M Avoidance

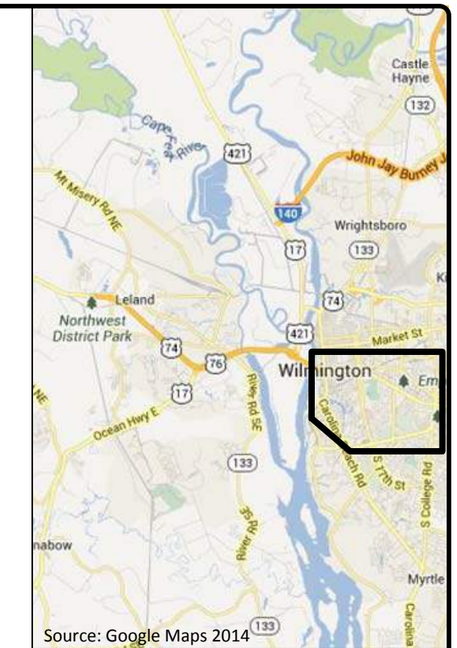
SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	WBS: 40114.1.TA1
COUNTY: Brunswick, New Hanover	DIVISION: 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	FIGURE 27





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ANNUAL AVERAGE DAILY TRAFFIC

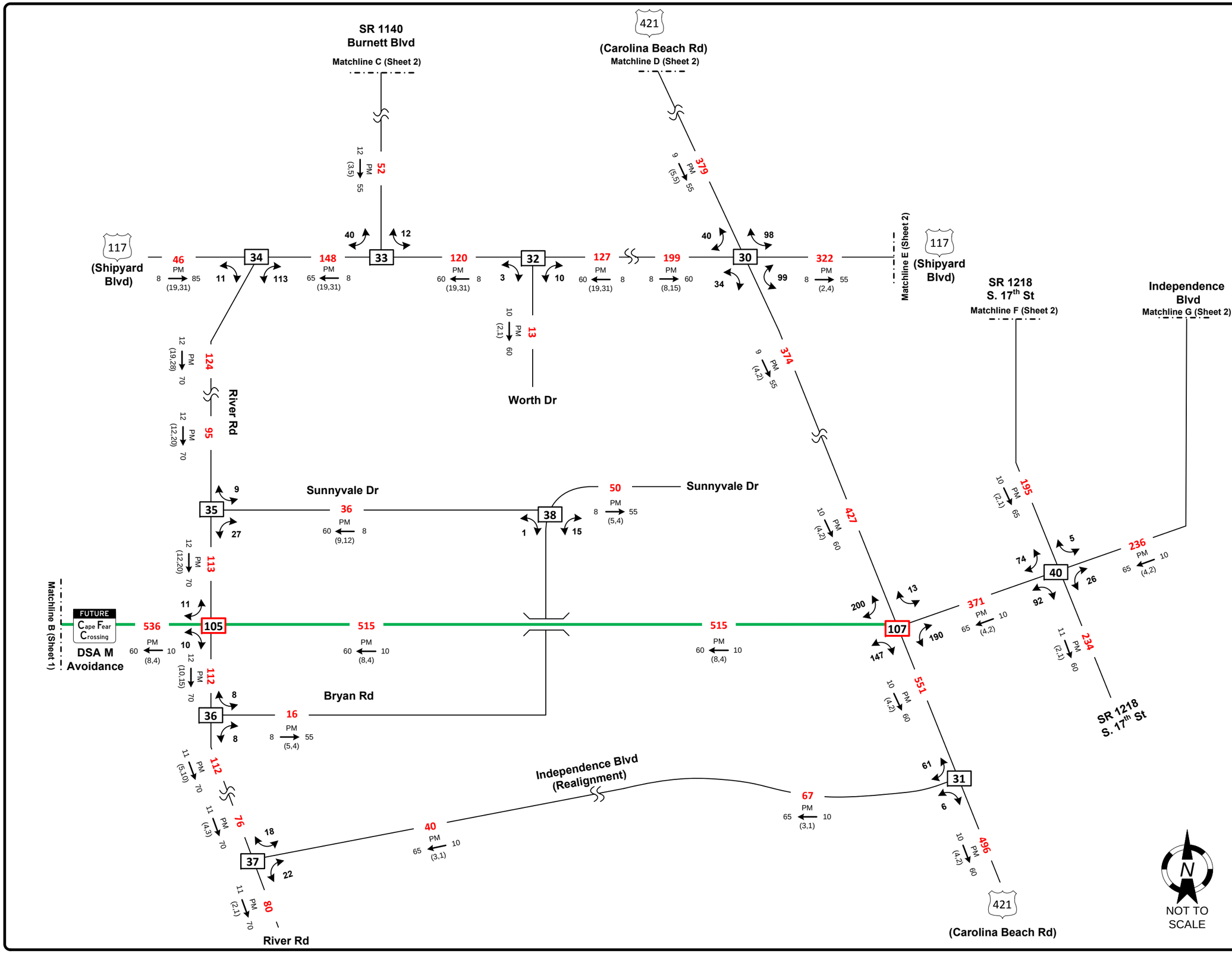
Build Non-Toll DSA M Avoidance

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	WBS: 40114.1.TA1
COUNTY: Brunswick, New Hanover	DIVISION: 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	FIGURE 27



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ANNUAL AVERAGE DAILY TRAFFIC

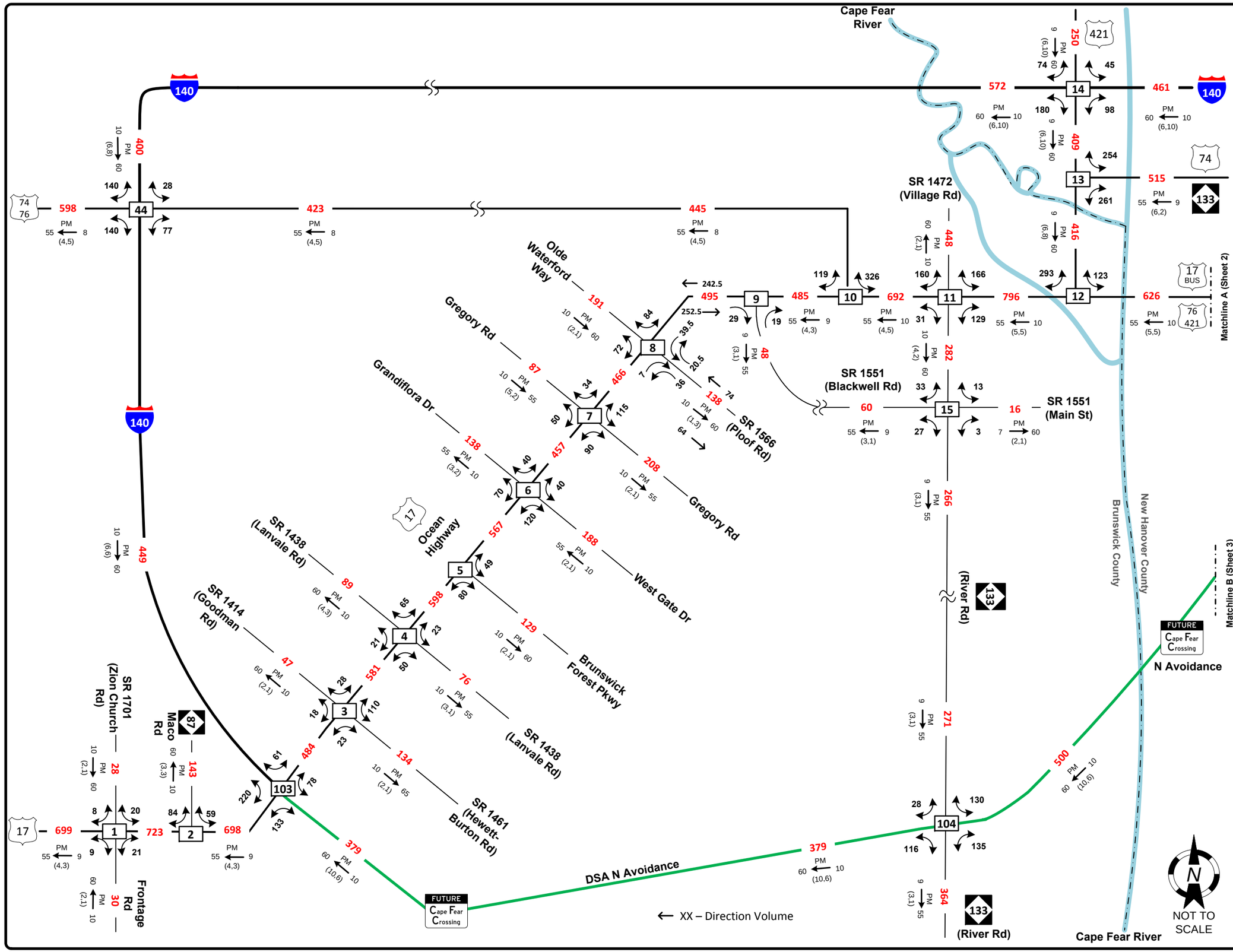
Build Non-Toll DSA M Avoidance

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	WBS: 40114.1.TA1
COUNTY: Brunswick, New Hanover	DIVISION: 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	FIGURE 27



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ANNUAL AVERAGE DAILY TRAFFIC

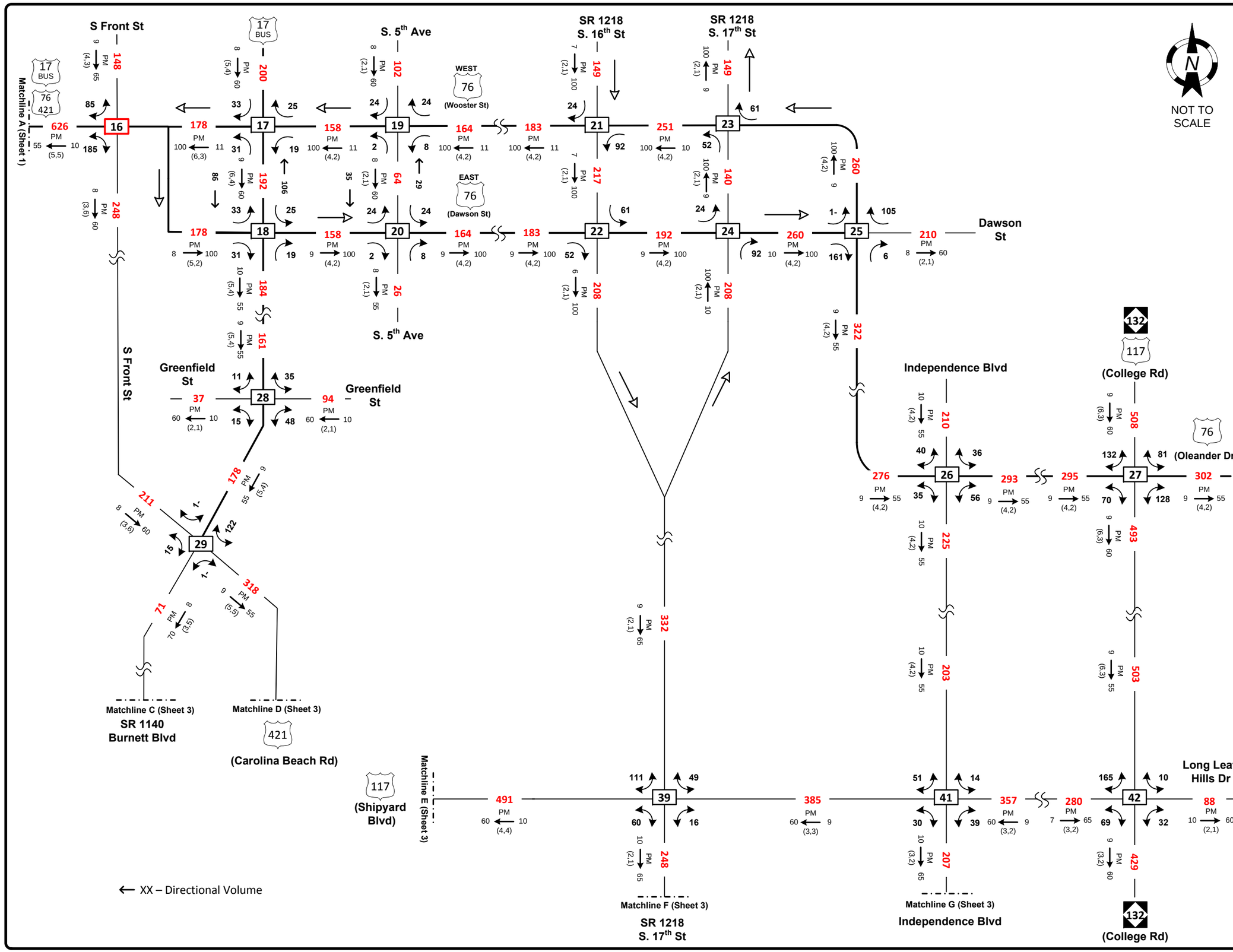
Build Non-Toll DSA N Avoidance

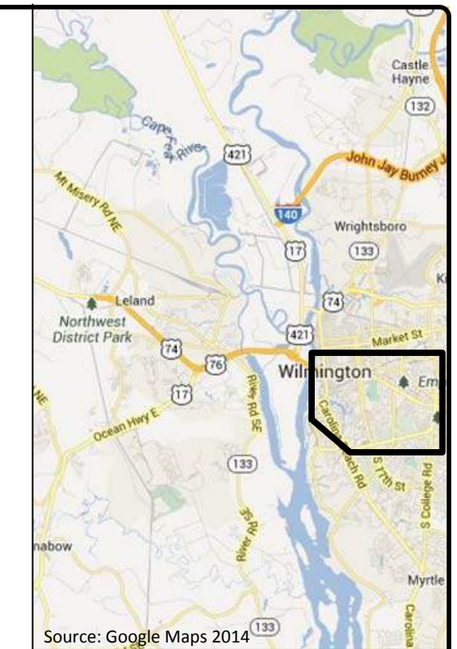
SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	WBS: 40114.1.TA1
COUNTY: Brunswick, New Hanover	DIVISION: 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	FIGURE 28





2040

ANNUAL AVERAGE DAILY TRAFFIC

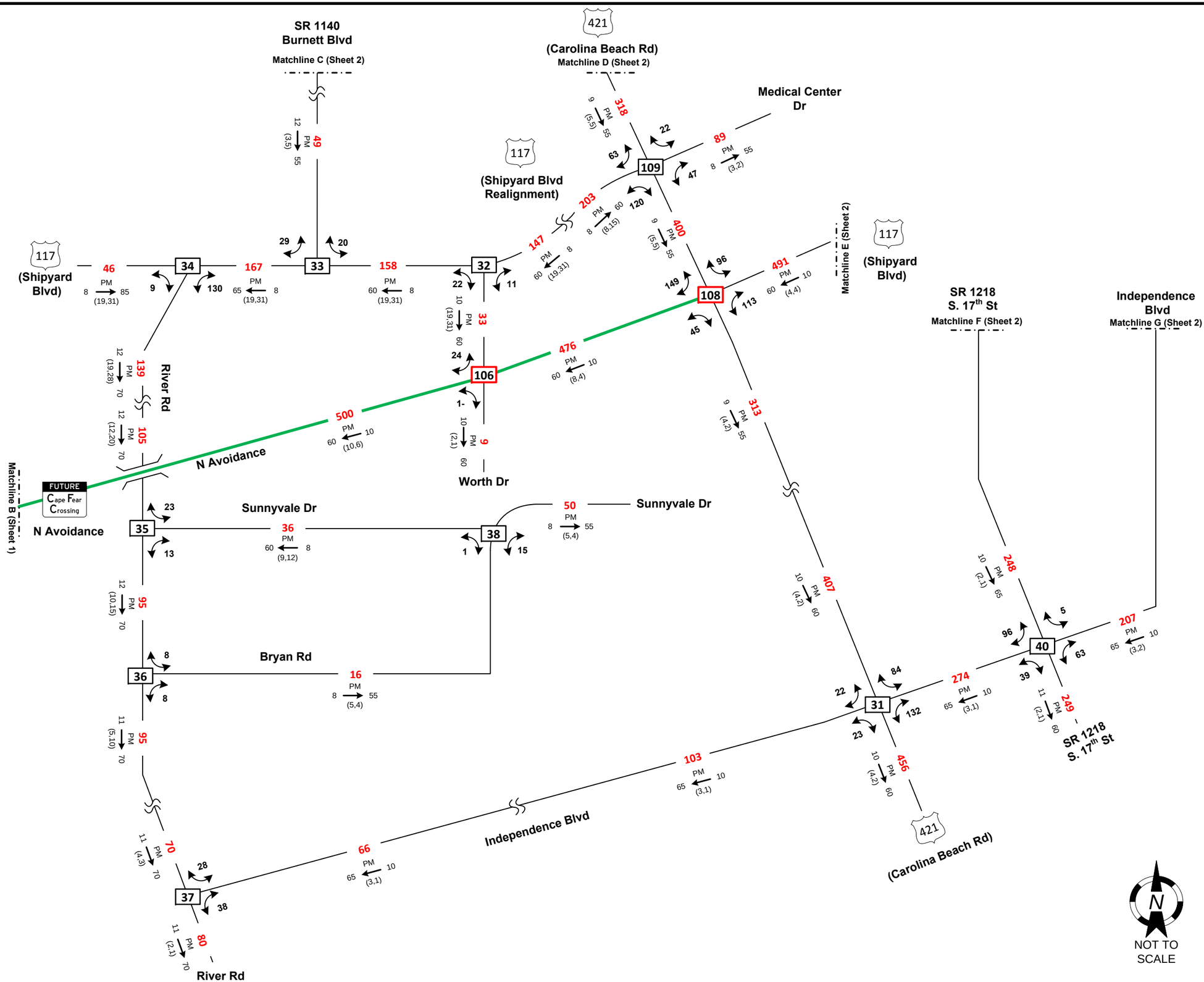
Build Non-Toll DSA N Avoidance

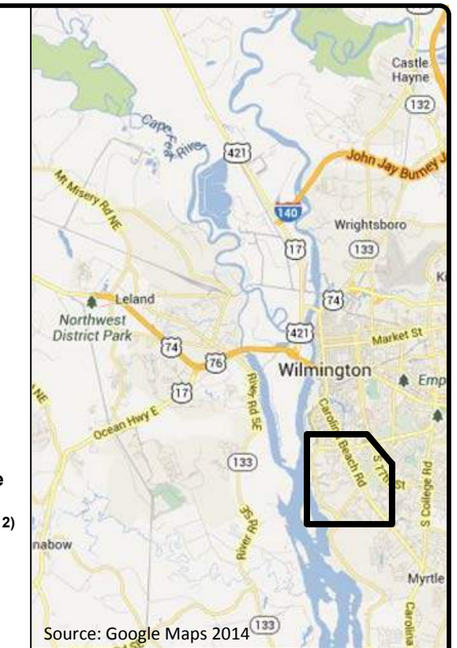
SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) → D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	WBS: 40114.1.TA1
COUNTY: Brunswick, New Hanover	DIVISION: 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	FIGURE 28





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ANNUAL AVERAGE DAILY TRAFFIC

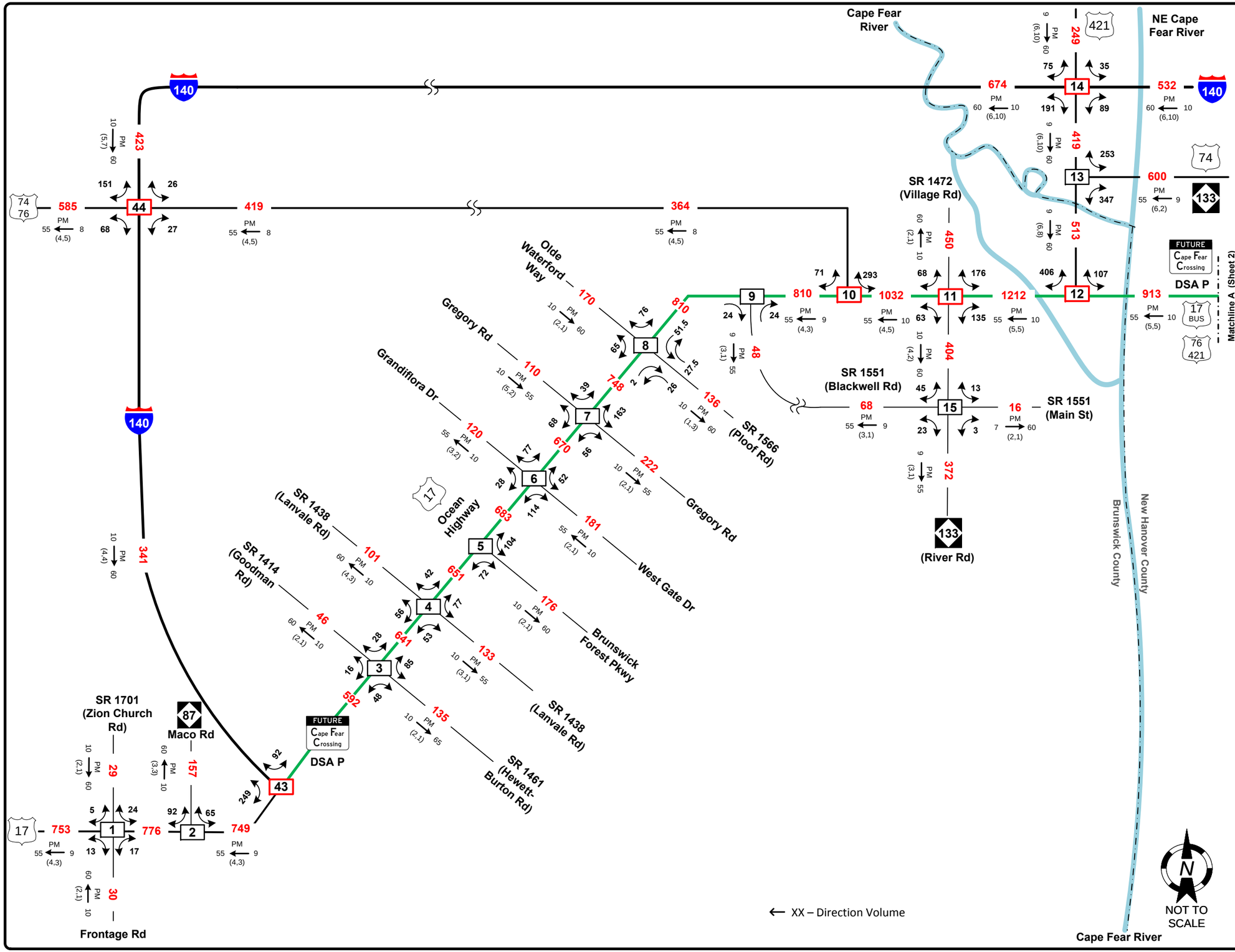
Build Non-Toll DSA N Avoidance

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	WBS: 40114.1.TA1
COUNTY: Brunswick, New Hanover	DIVISION: 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	FIGURE 28



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ANNUAL AVERAGE DAILY TRAFFIC

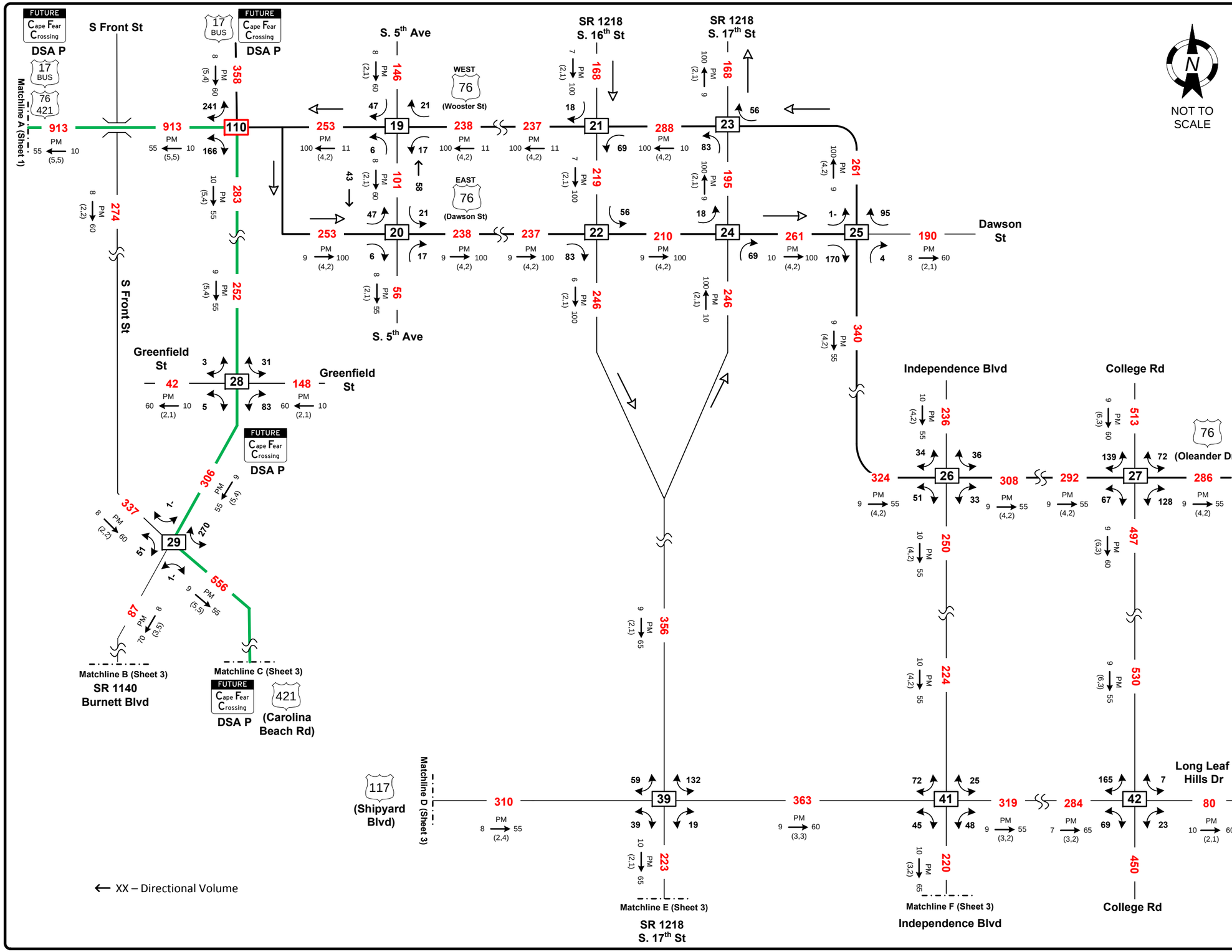
Build Non-Toll DSA P (Arterial)

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 29**



NOT TO SCALE

2040

ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA P (Arterial)

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) → D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
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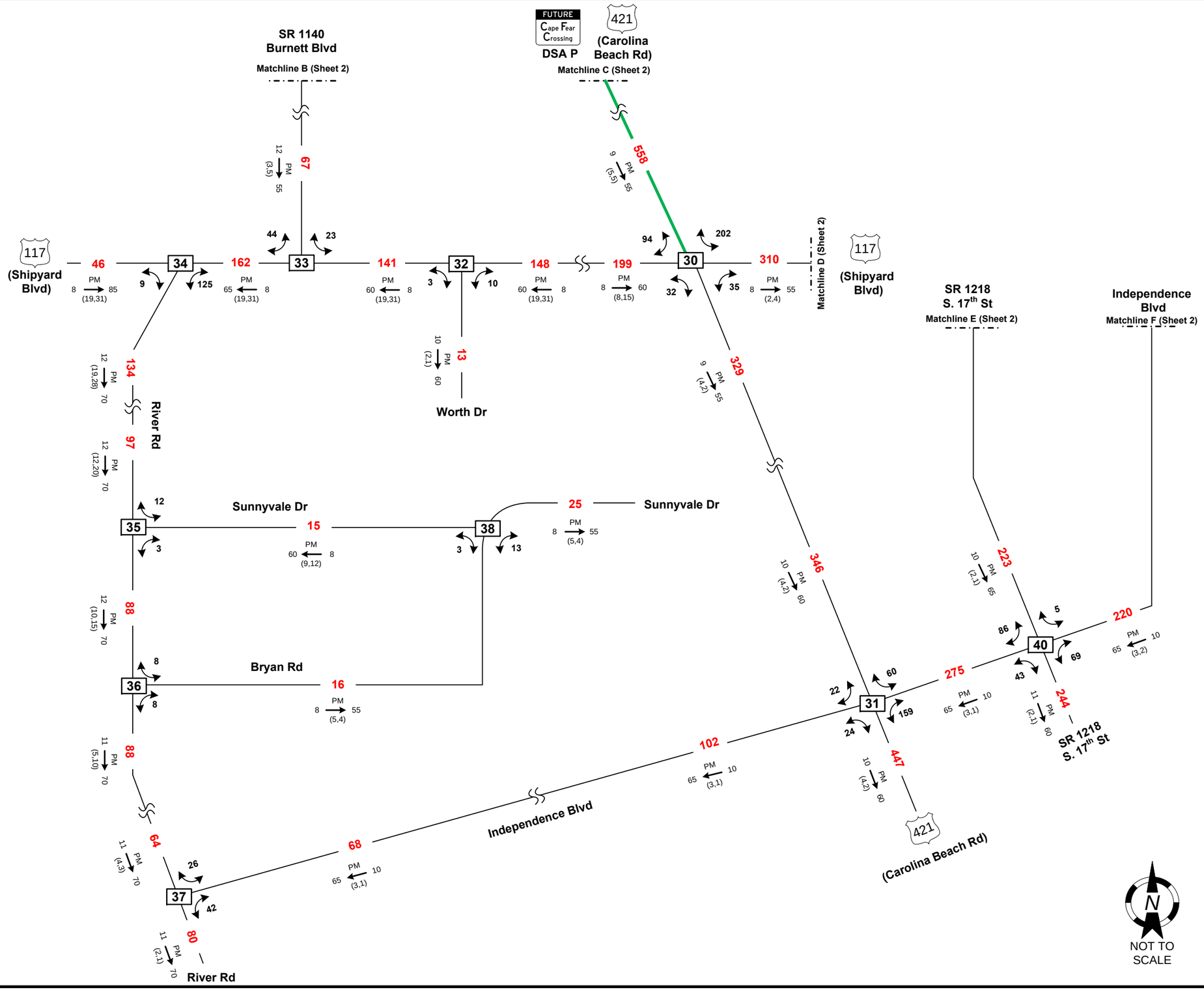
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 29**



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ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA P (Arterial)

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) → D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738 | **WBS:** 40114.1.TA1

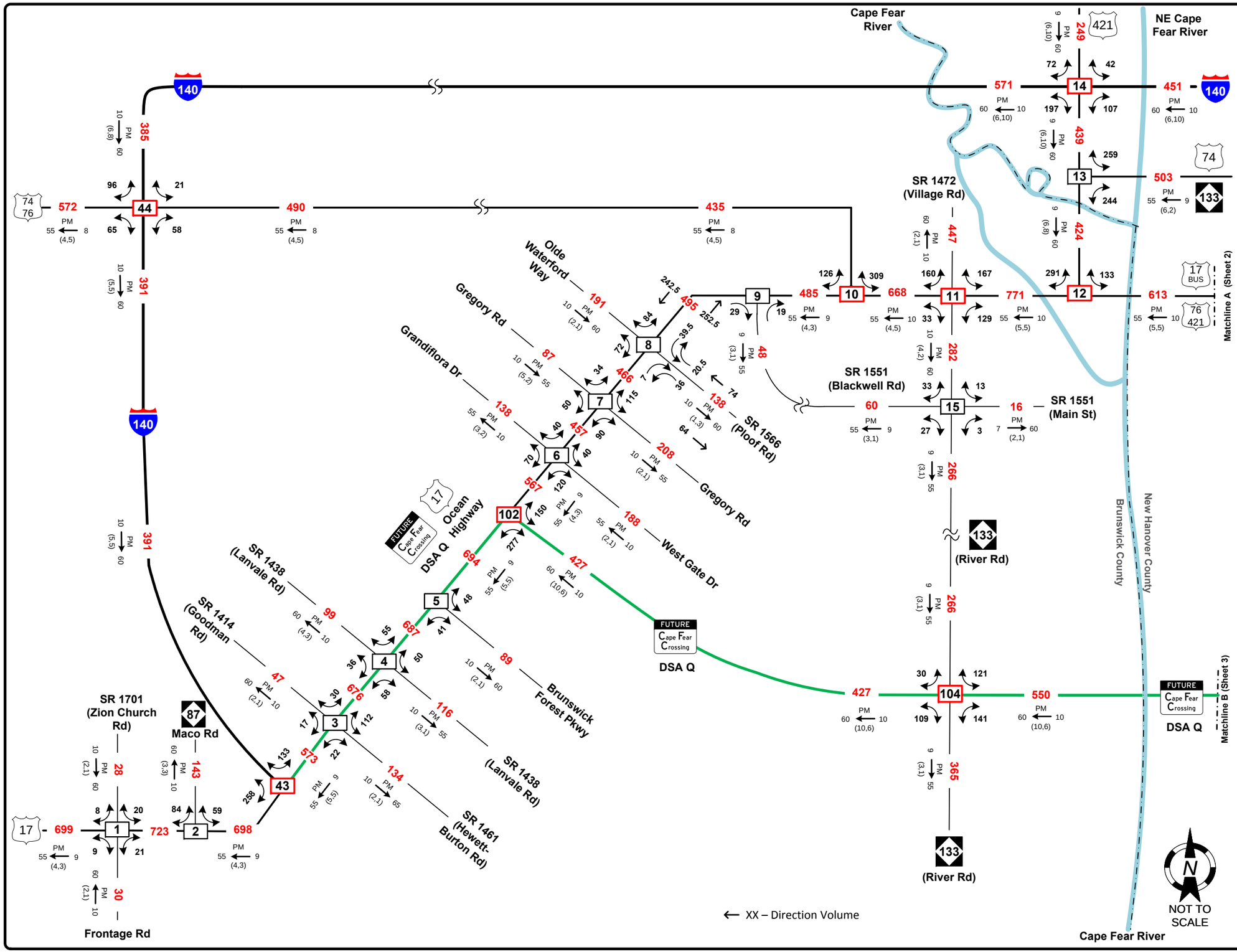
COUNTY: Brunswick, New Hanover | **DIVISION:** 3

PROJECT: Cape Fear Crossing

PREPARED BY: HNTB — HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609

LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection

DATE: October 2014 | **FIGURE 29**



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ANNUAL AVERAGE DAILY TRAFFIC

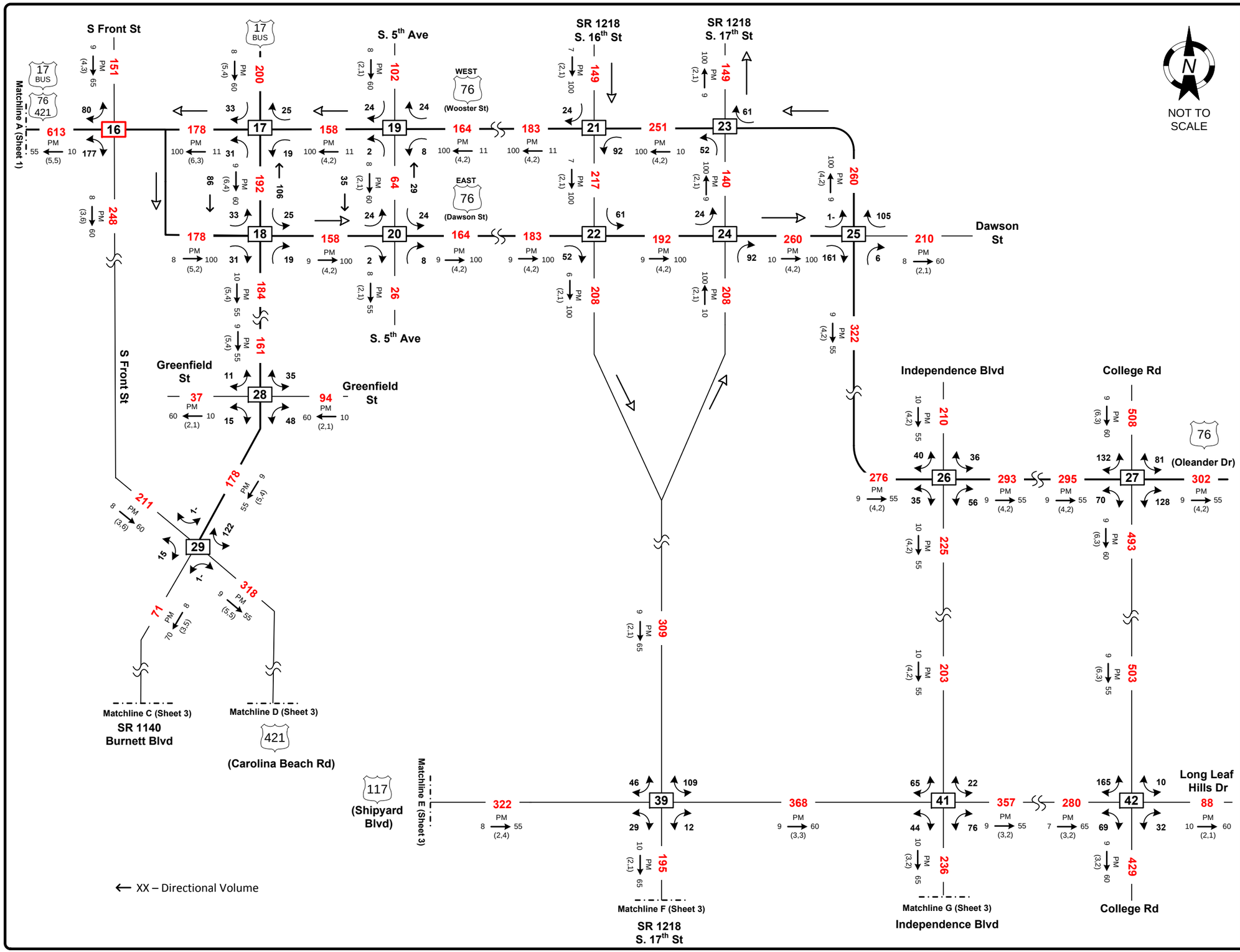
Build Non-Toll DSA Q

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 30**



Source: Google Maps 2014

2040

ANNUAL AVERAGE DAILY TRAFFIC

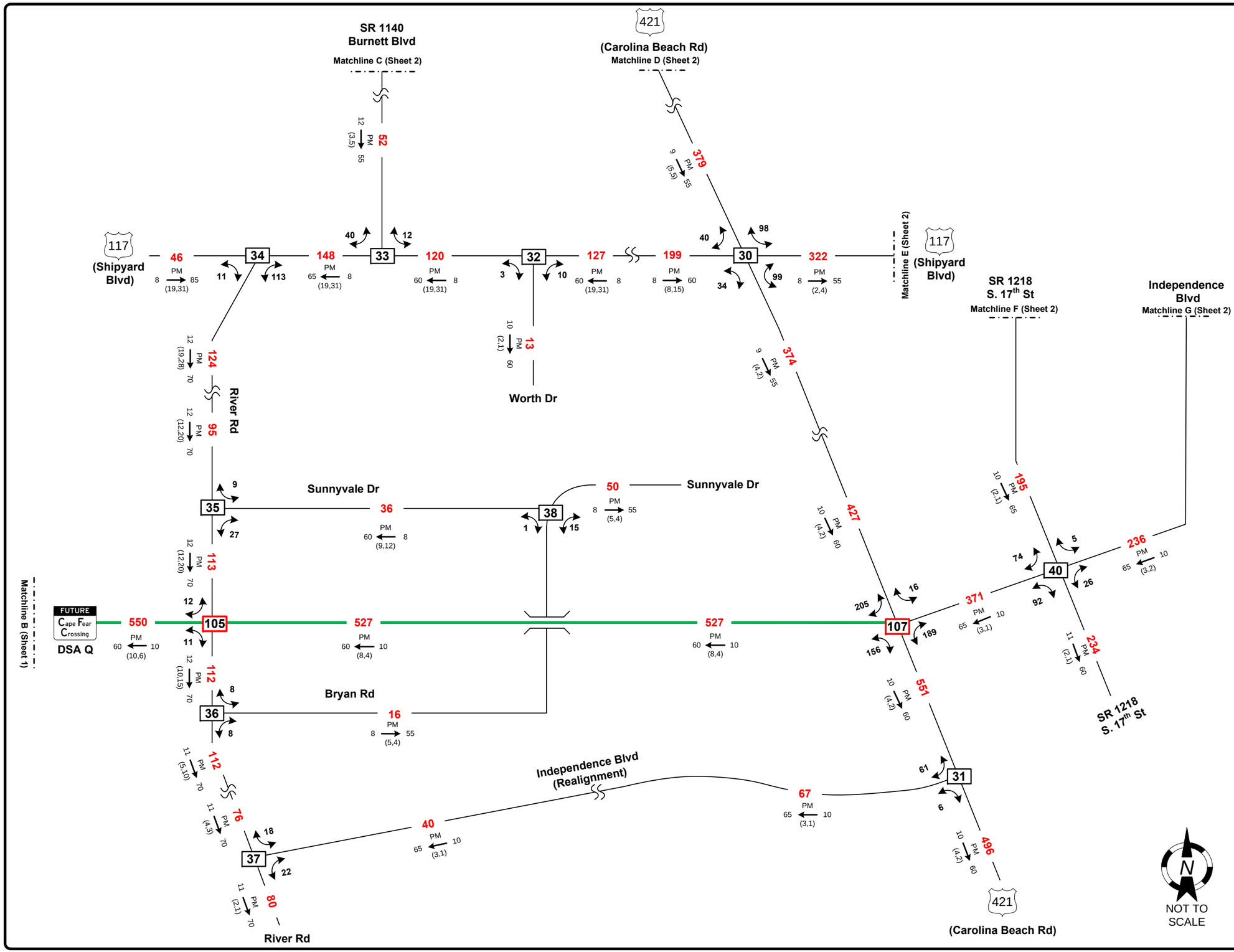
Build Non-Toll DSA Q

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) → D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 30**



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ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA Q

SHEET 3 OF 3

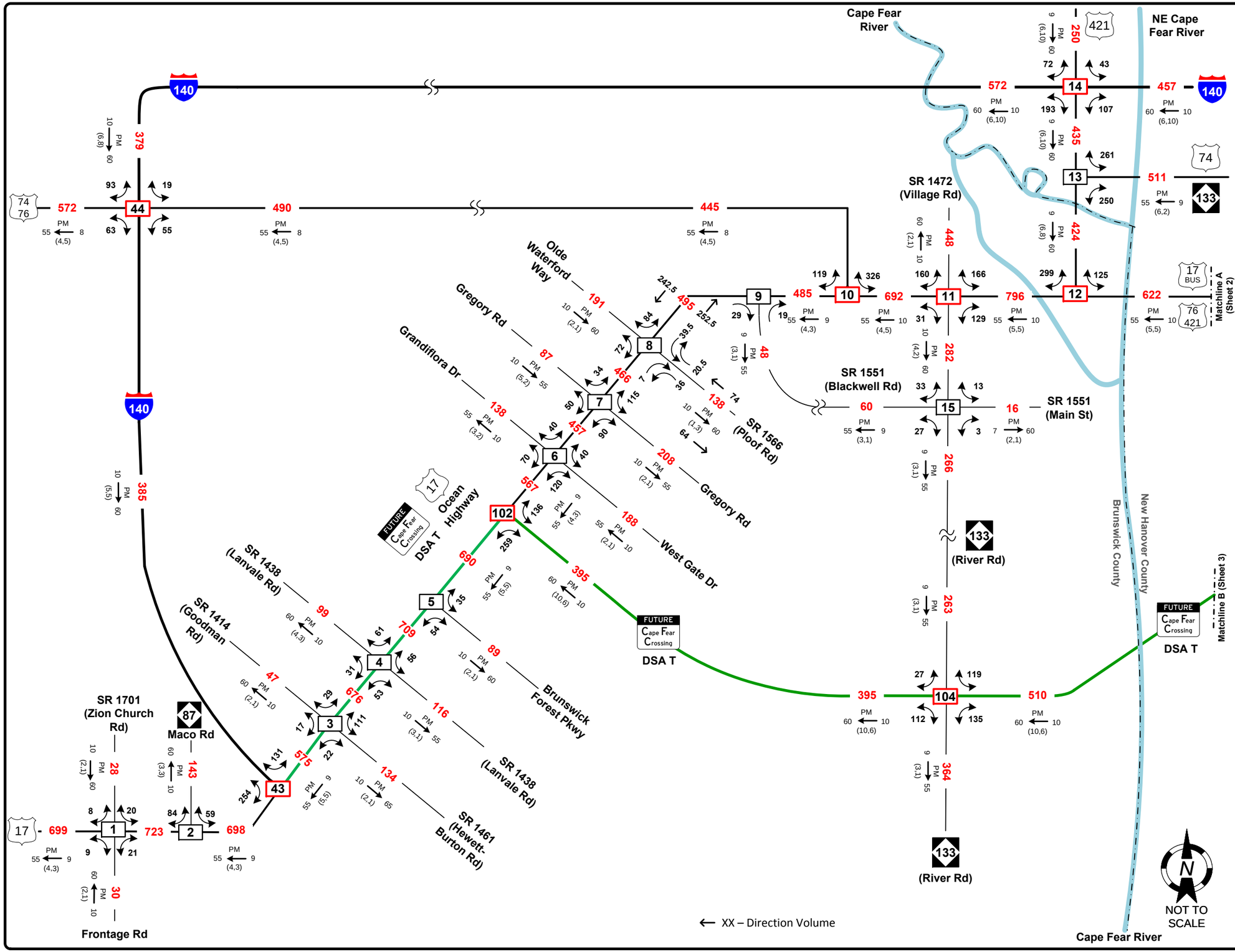
LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment

DHV $\frac{PM}{(d,t)}$ D

DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS: 40114.1.TA1**
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 30**



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ANNUAL AVERAGE DAILY TRAFFIC

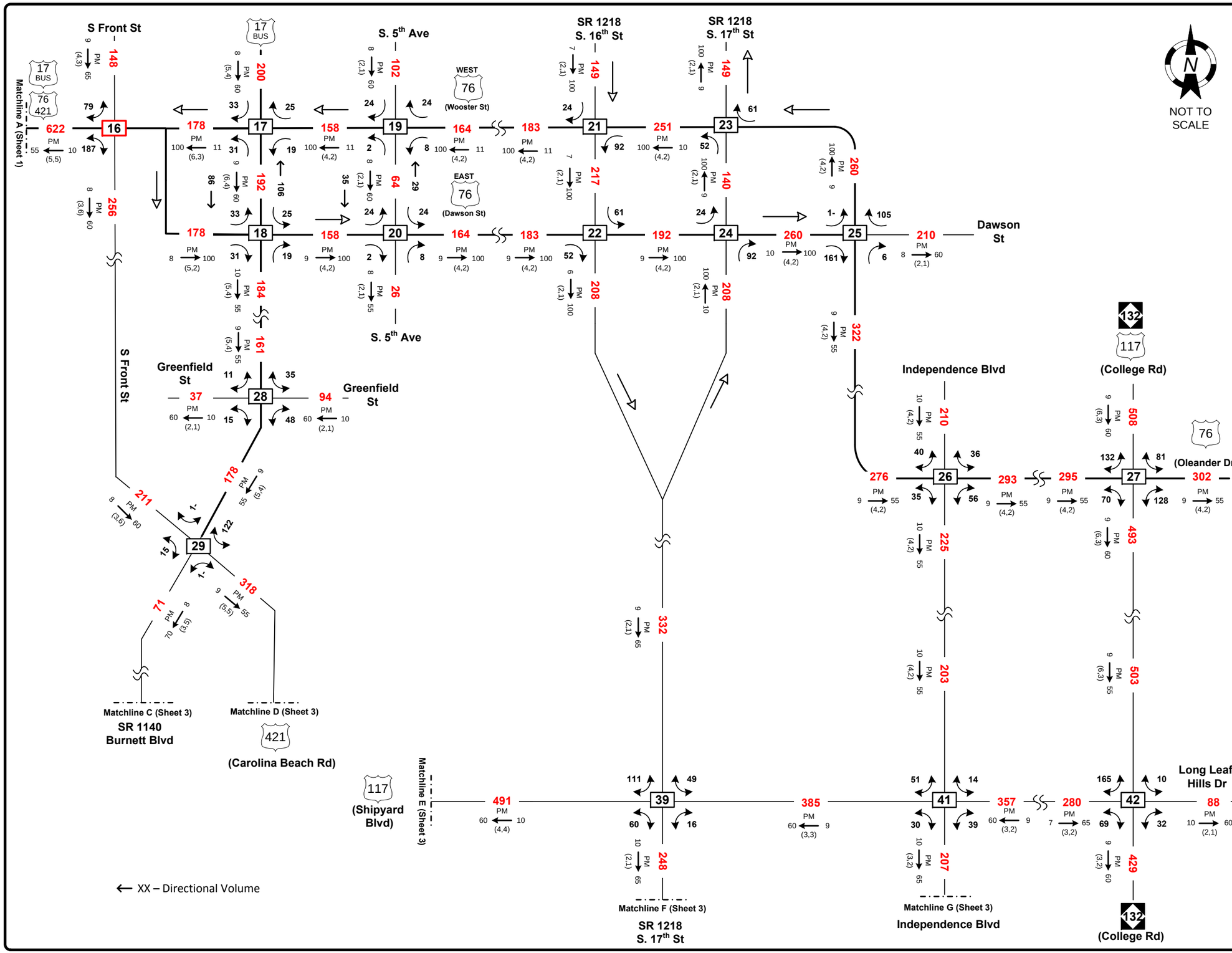
Build Non-Toll DSA T

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 31**



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ANNUAL AVERAGE DAILY TRAFFIC

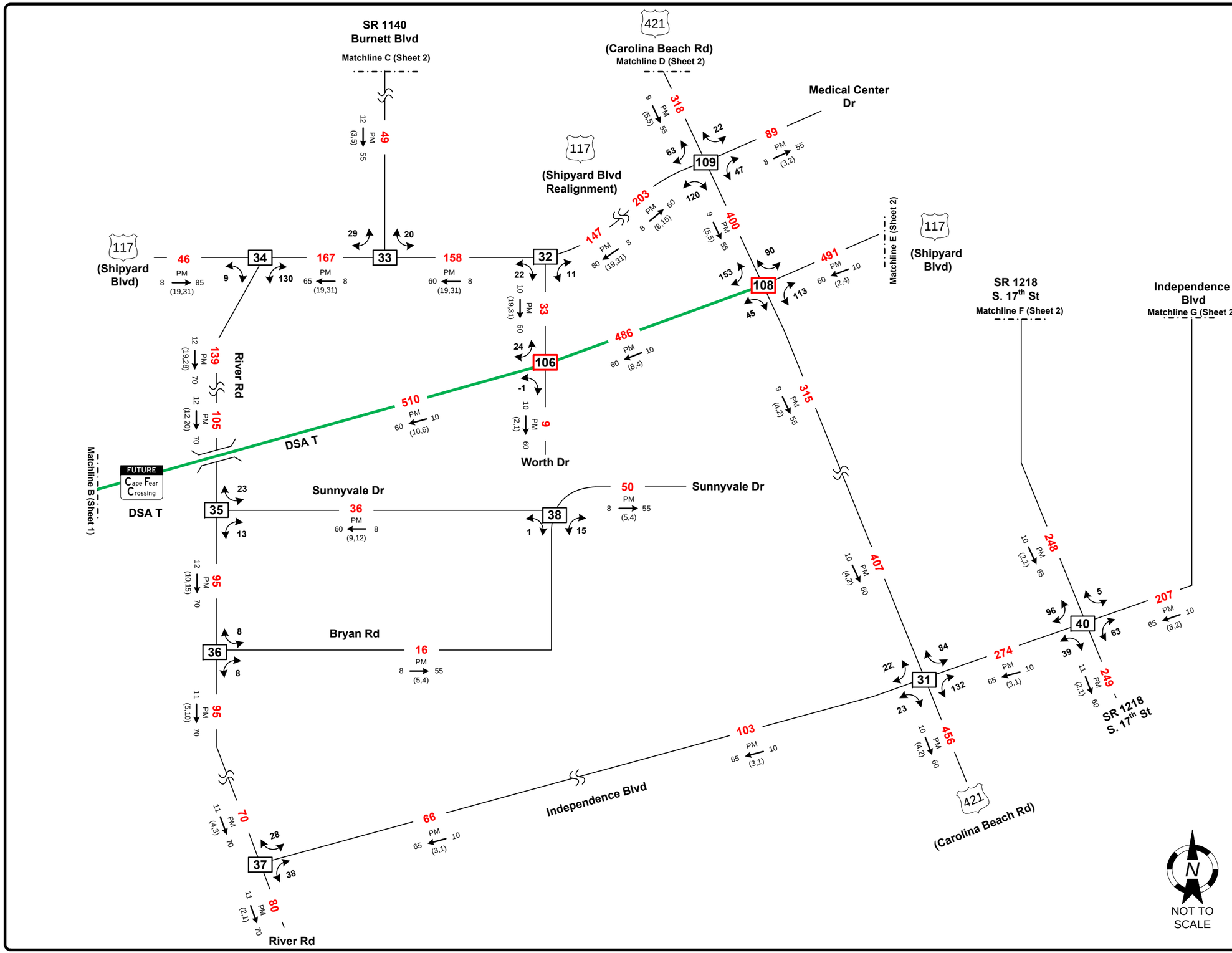
Build Non-Toll DSA T

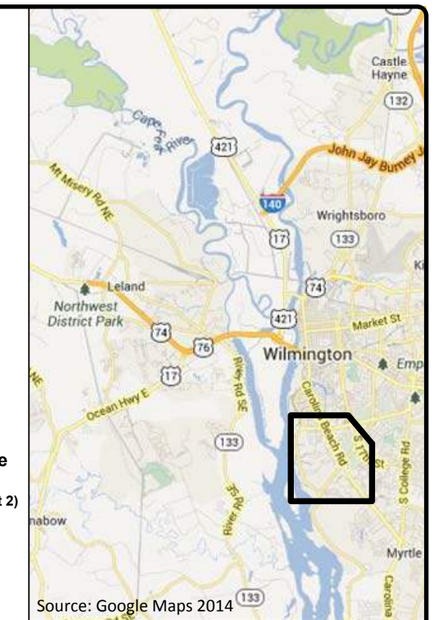
SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 31**





2040

ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA T

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
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(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
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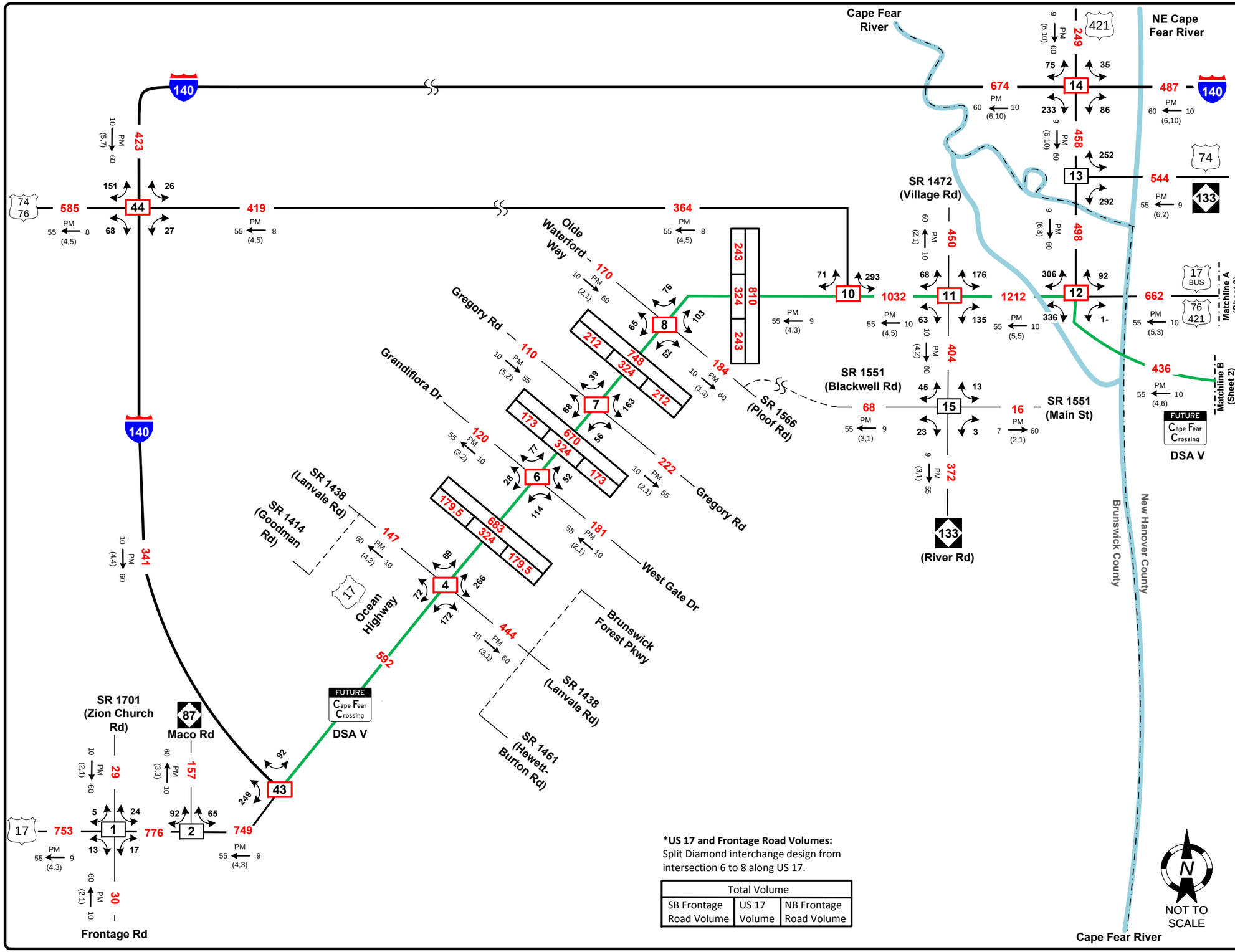
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 31**



*US 17 and Frontage Road Volumes:
Split Diamond interchange design from intersection 6 to 8 along US 17.

Total Volume		
SB Frontage Road Volume	US 17 Volume	NB Frontage Road Volume

Source: Google Maps 2014

2040

ANNUAL AVERAGE DAILY TRAFFIC

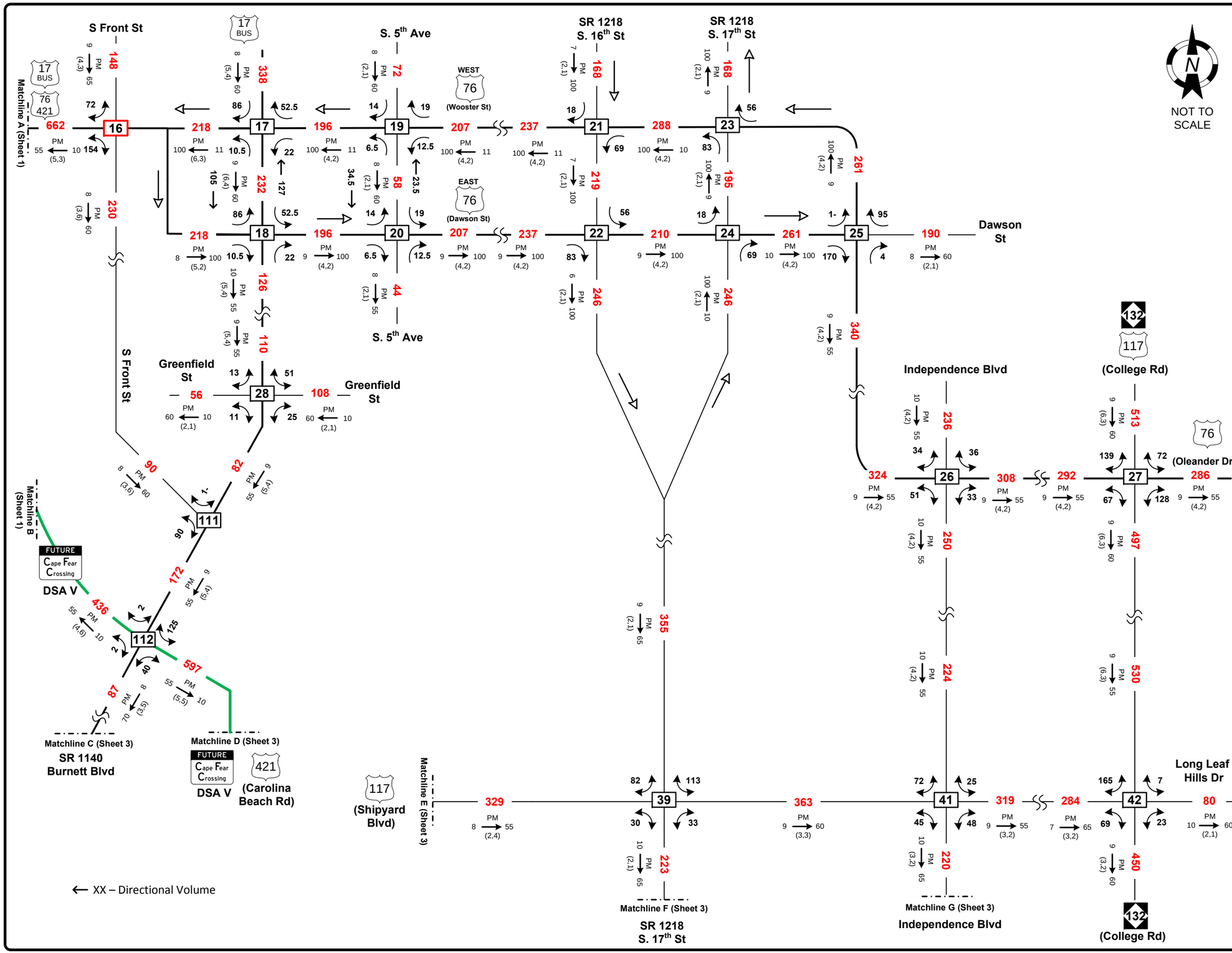
Build Non-Toll DSA V (Freeway)

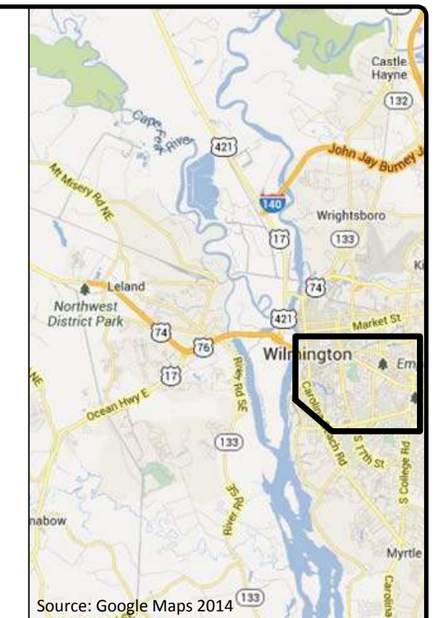
SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS: 40114.1.TA1**
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 32**





2040

ANNUAL AVERAGE DAILY TRAFFIC

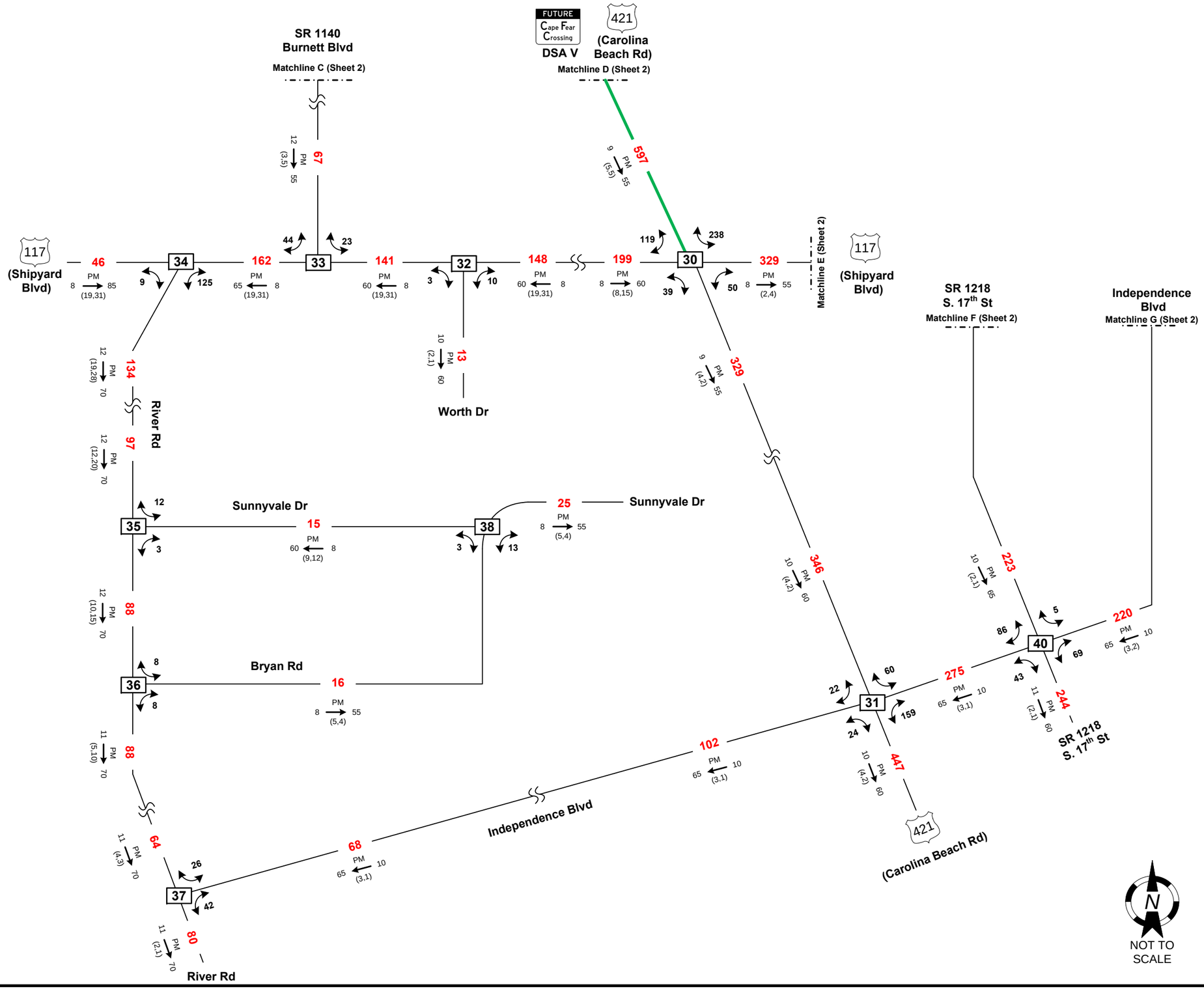
Build Non-Toll DSA V (Freeway)

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 32**



2040

ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA V (Freeway)

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
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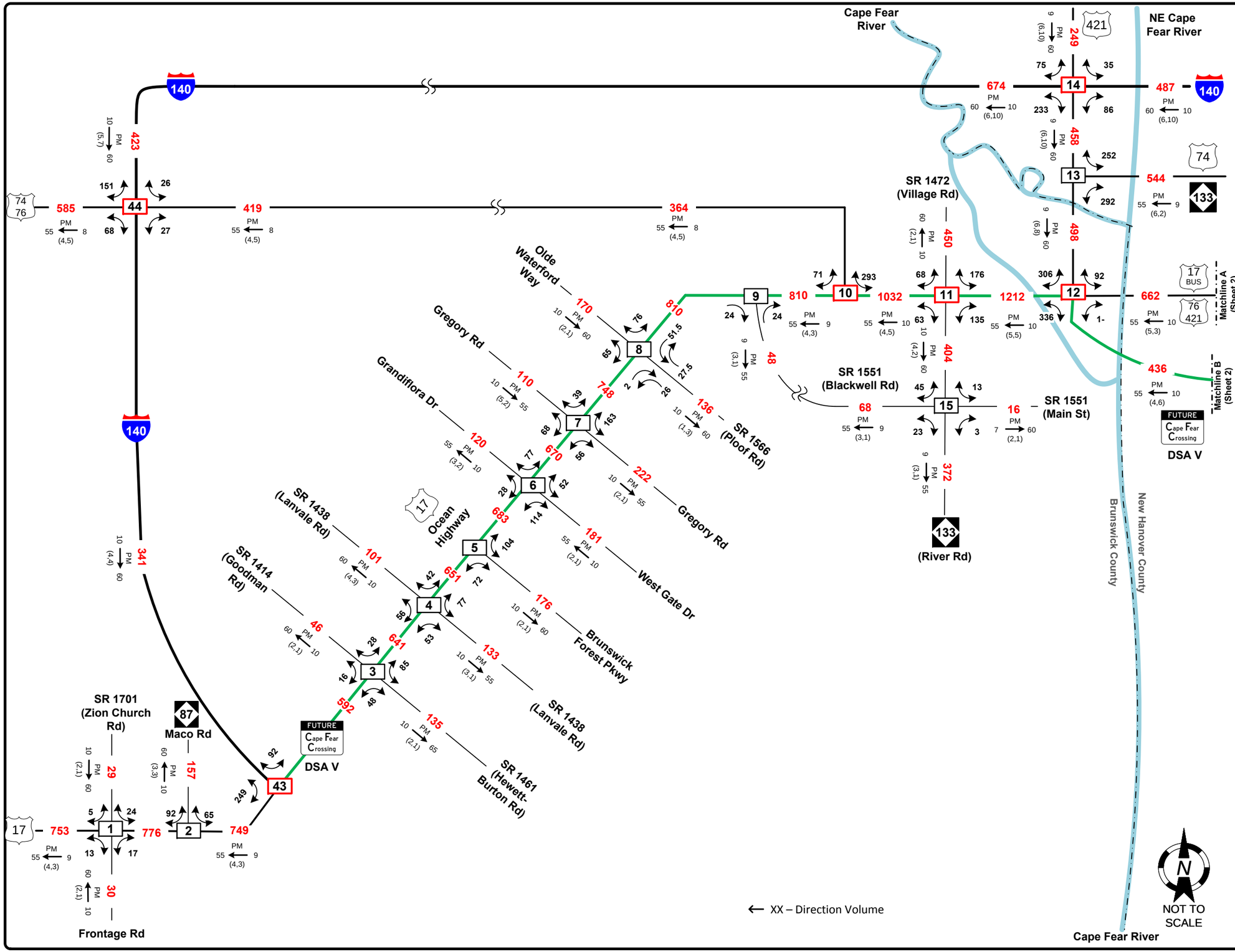
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 32**



2040

ANNUAL AVERAGE DAILY TRAFFIC

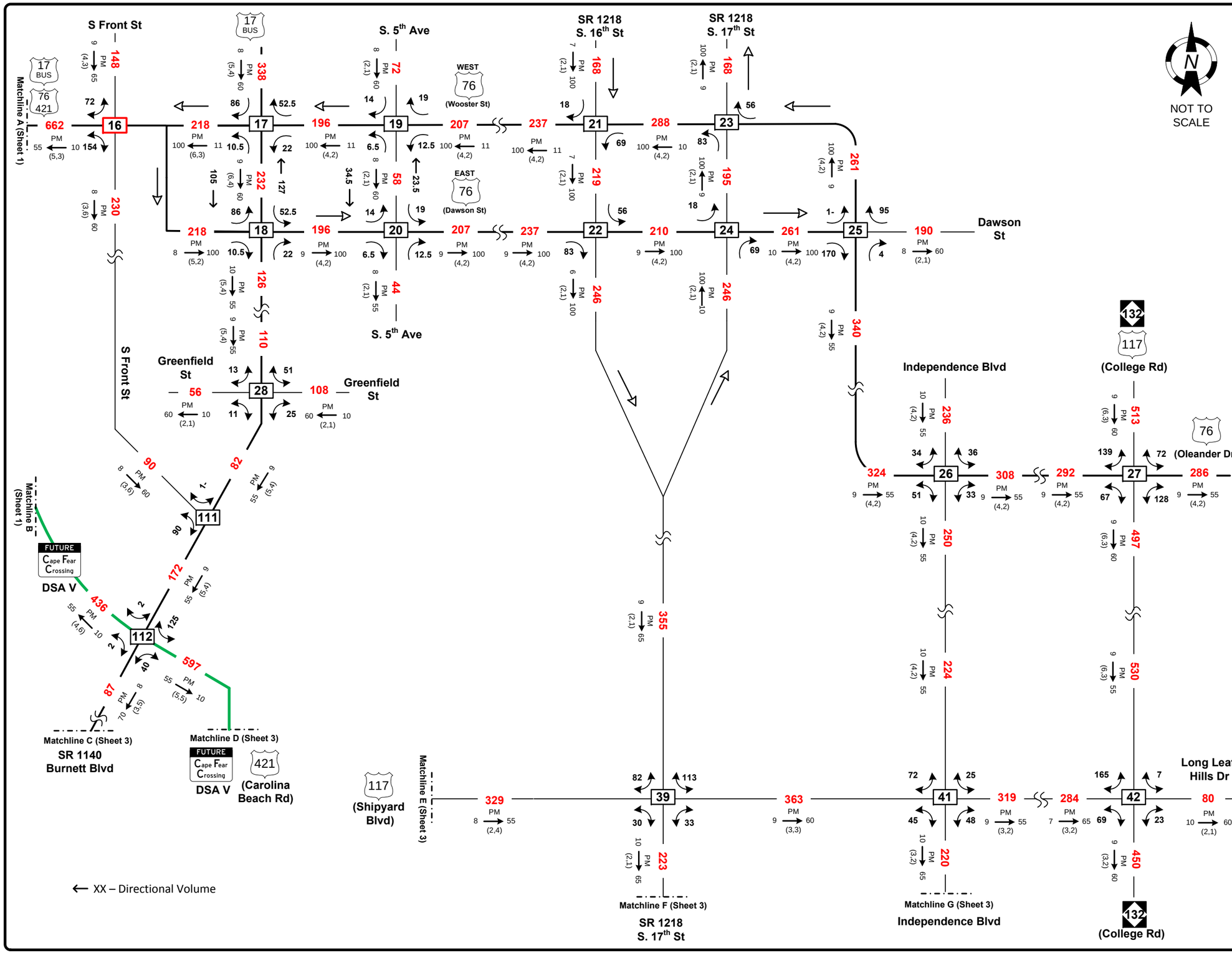
Build Non-Toll DSA V (Arterial)

SHEET 1 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
	DSA Corridor
	One-way Streets
	Daily Turn Movement
	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 33**



NOT TO SCALE

2040

ANNUAL AVERAGE DAILY TRAFFIC

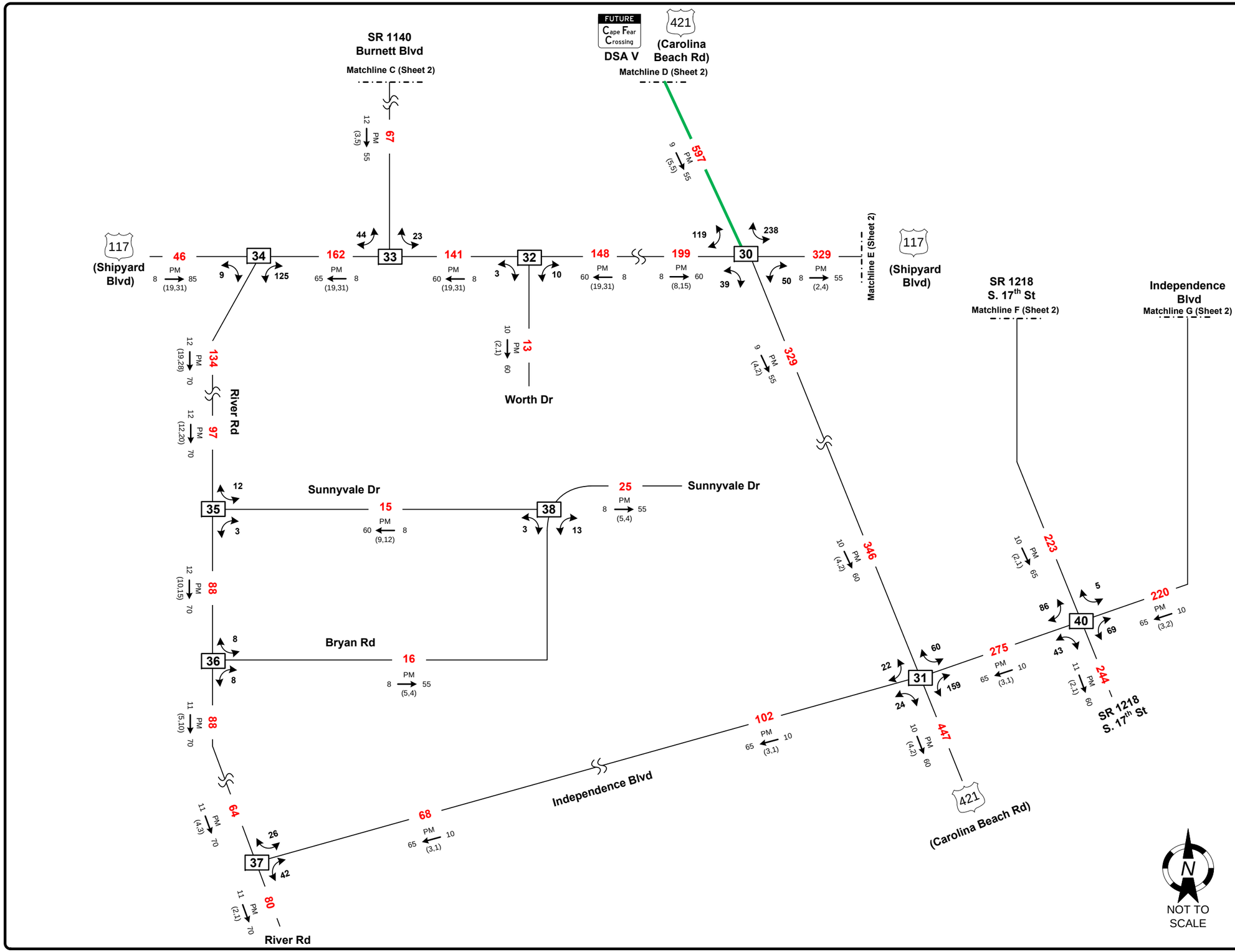
Build Non-Toll DSA V (Arterial)

SHEET 2 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
→	Indicates Direction of D
(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 33**



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ANNUAL AVERAGE DAILY TRAFFIC

Build Non-Toll DSA V (Arterial)

SHEET 3 OF 3

LEGEND

###	No. of Vehicles Per Day (VPD) in 100s
1-	Less than 50 VPD
XX	Intersection ID#
XX	Interchange ID#
DSA Corridor	Daily Turn Movement
One-way Streets	Roadway Realignment
DHV PM (d, t) D	
DHV	Design Hourly Volume (%) = K30
PM	PM Peak Period
D	Peak Hour Directional Split (%)
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(d, t)	Duals, TT-STs (%)

TIP: U-4738	**WBS:** 40114.1.TA1
COUNTY: Brunswick, New Hanover	**DIVISION:** 3
PROJECT: Cape Fear Crossing	
PREPARED BY: HNTB	HNTB North Carolina, P.C. 343 E. Six Forks Rd., Suite 200 Raleigh, North Carolina 27609
LOCATION: I-140 to US 421 and Shipyard Boulevard Intersection	
DATE: October 2014	**FIGURE 33**

Appendix B

IAU Output by Alternative

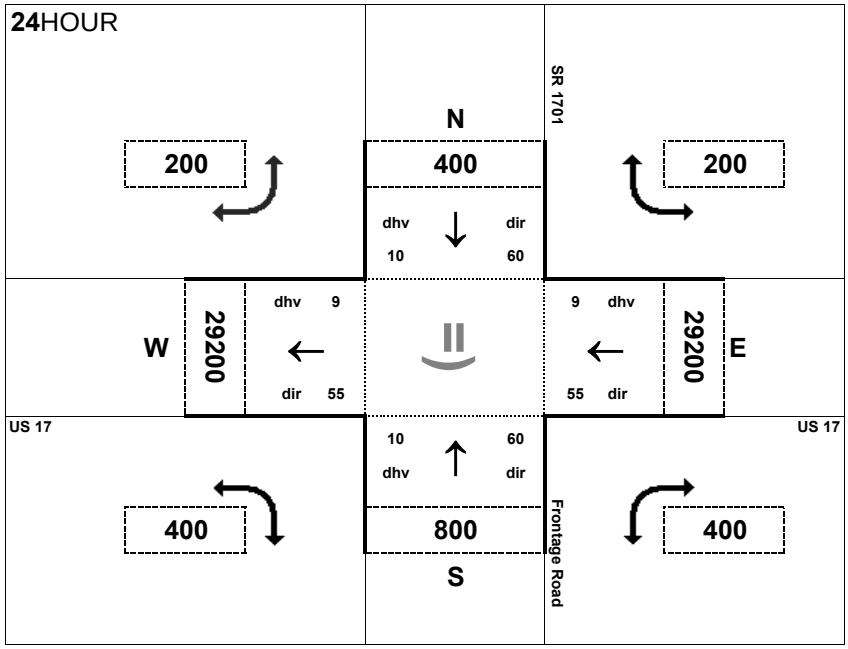
20MO NoπBuild

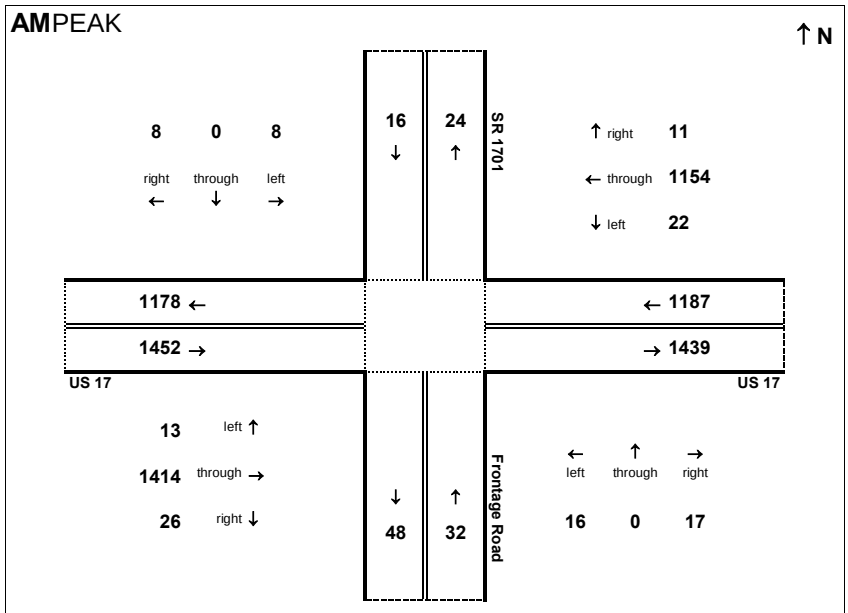
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

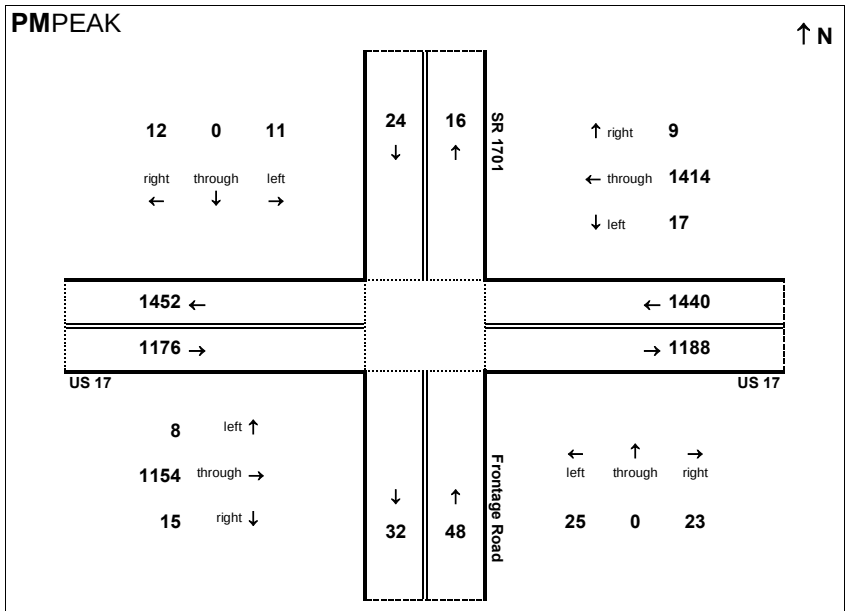
Traffic Data Year:
2013 No Build

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 2687 vehicles. AM peak hour outflow is 2689 vehicles.



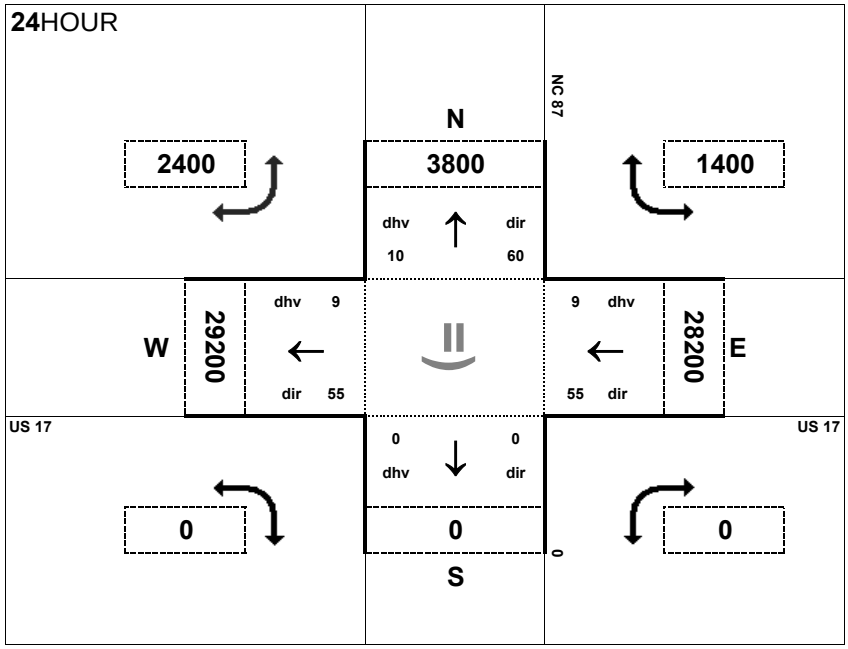
PM peak hour inflow is 2688 vehicles. PM peak hour outflow is 2688 vehicles.

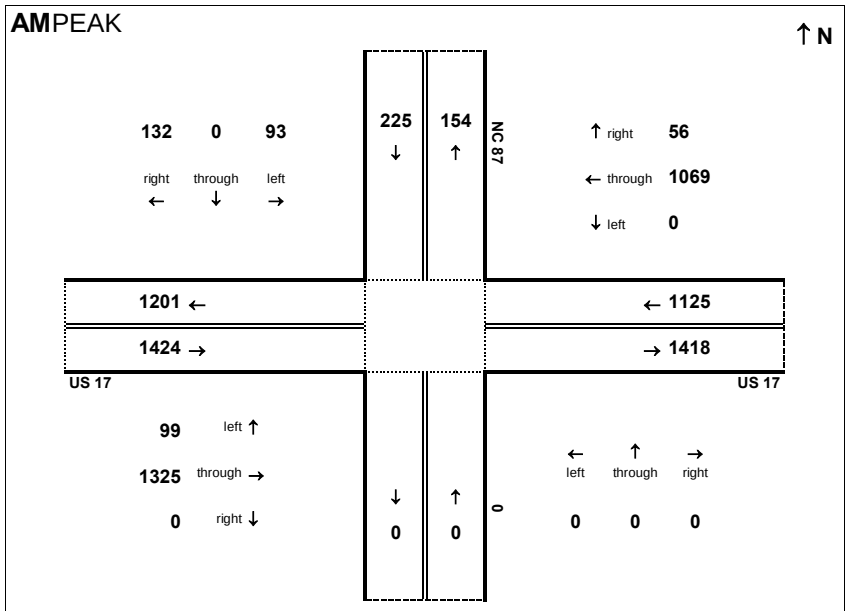
Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

Traffic Forecast Release Date:
Oct. 2014

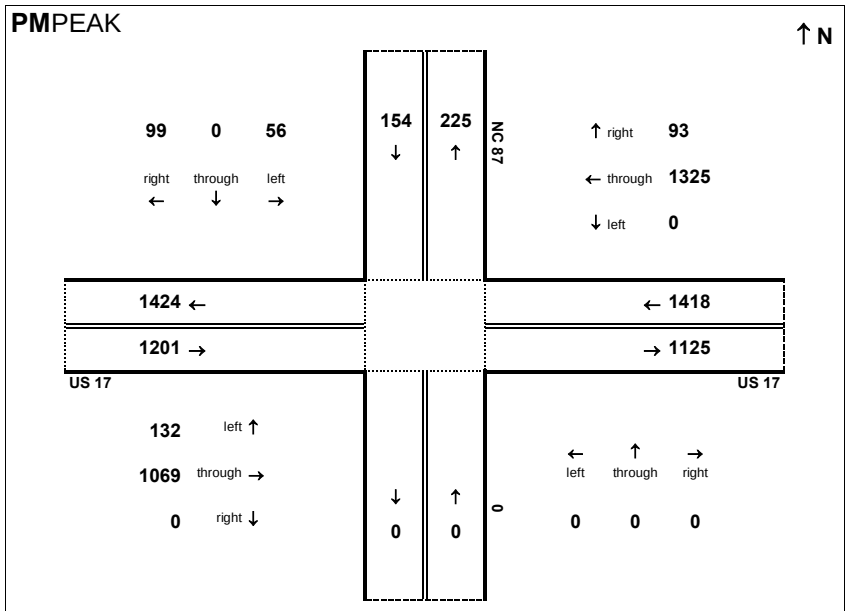
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 2774 vehicles. AM peak hour outflow is 2773 vehicles.



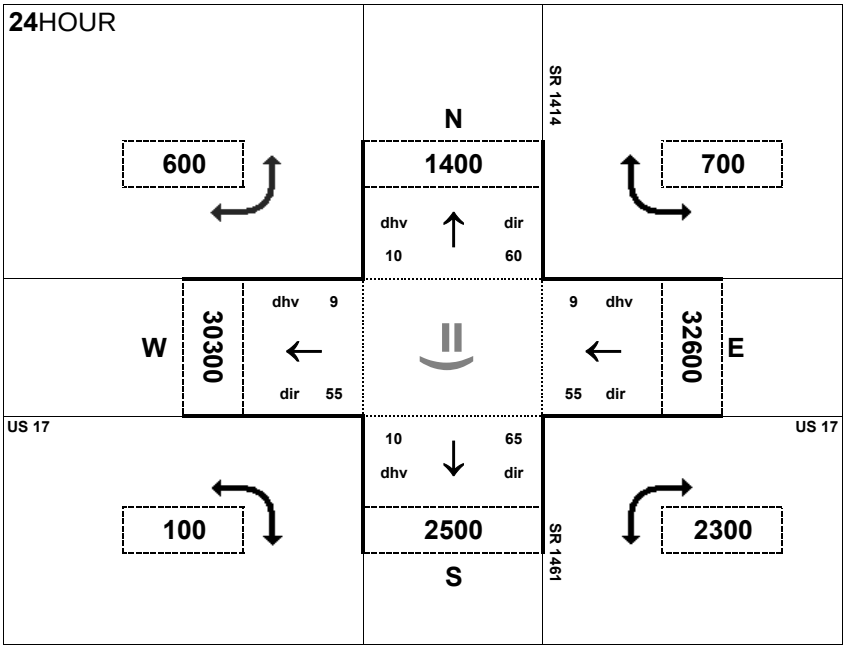
PM peak hour inflow is 2773 vehicles. PM peak hour outflow is 2774 vehicles.

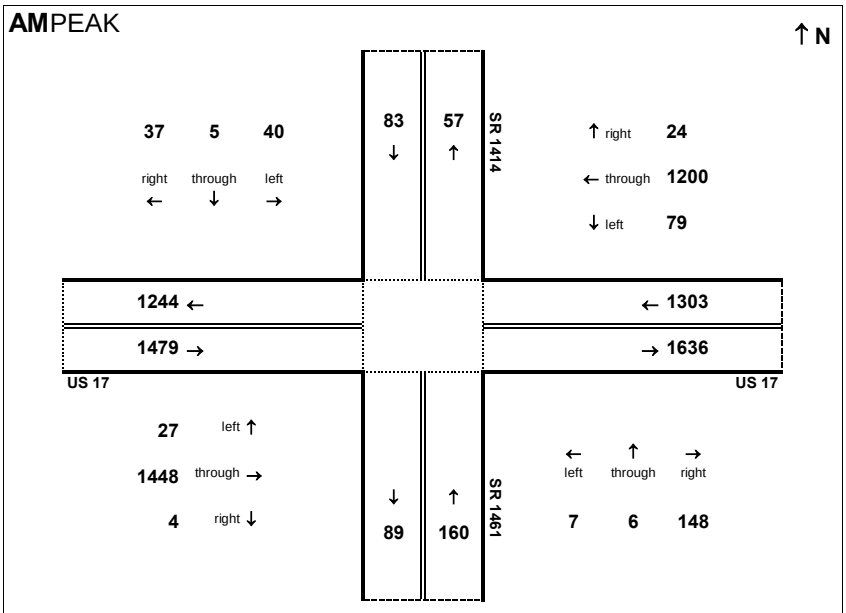
Peak Hour Volume Breakouts Report:
03 - Intersection of US 17 & SR 1414 - Goodman Road and SR 1461 - Hewett-Burton Road

Traffic Forecast Release Date:
Oct. 2014

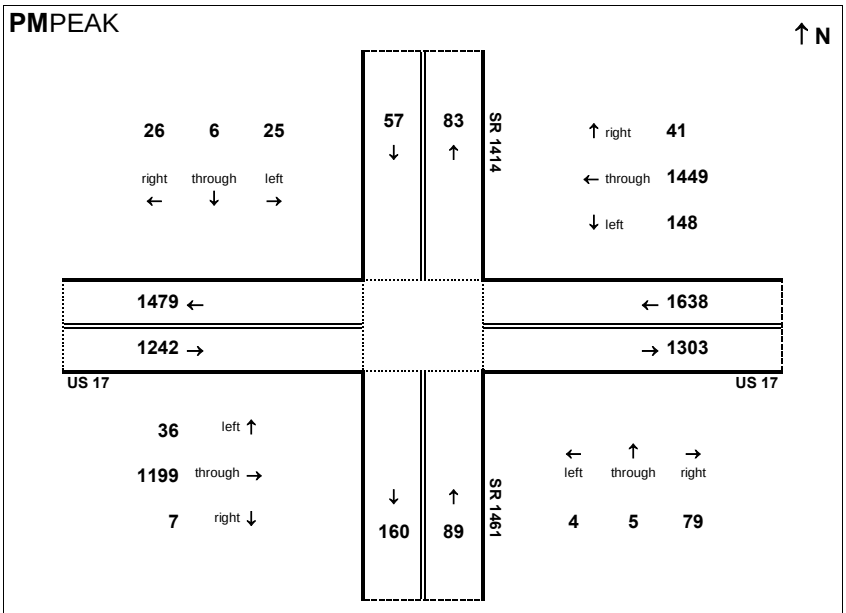
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 3025 vehicles. AM peak hour outflow is 3026 vehicles.



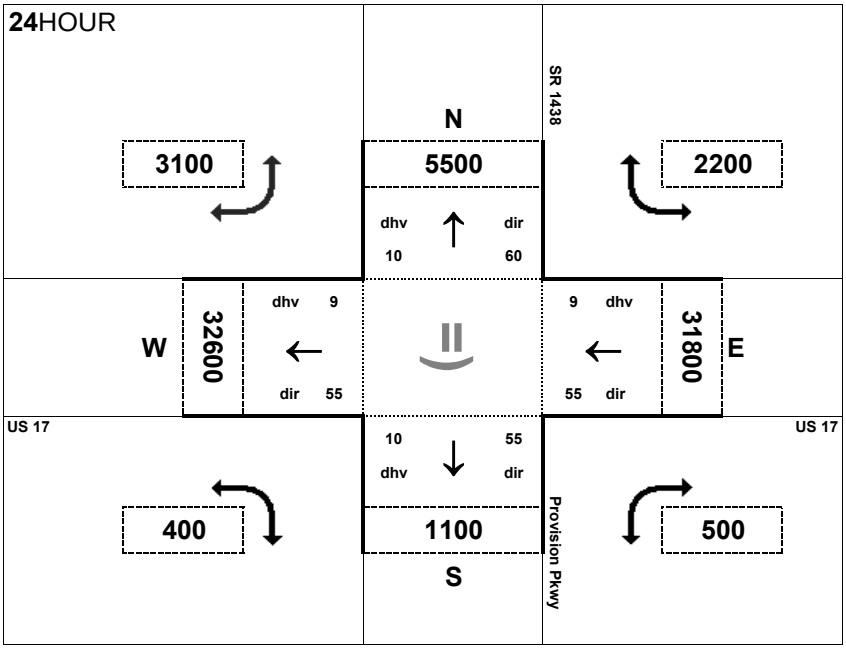
PM peak hour inflow is 3026 vehicles. PM peak hour outflow is 3025 vehicles.

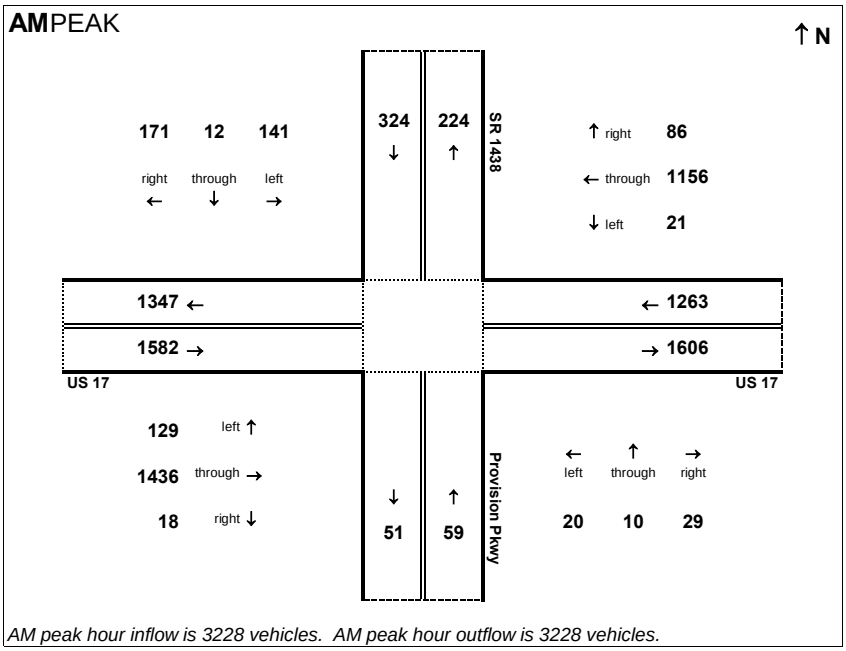
Peak Hour Volume Breakouts Report:
04 - Intersection of US 17 & SR 1438 - Lanvale Road and Provision Parkway

Traffic Forecast Release Date:
Oct. 2014

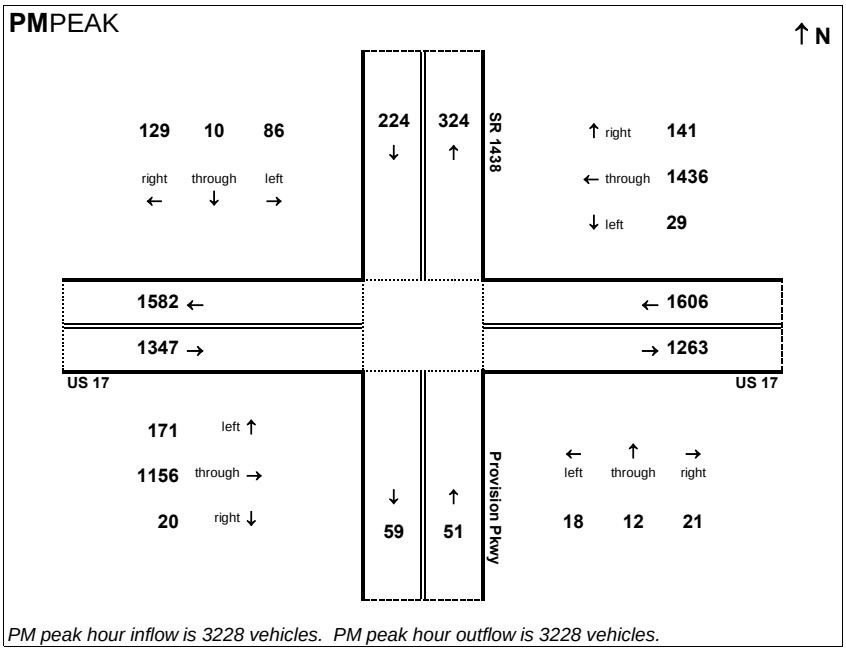
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 3228 vehicles. AM peak hour outflow is 3228 vehicles.



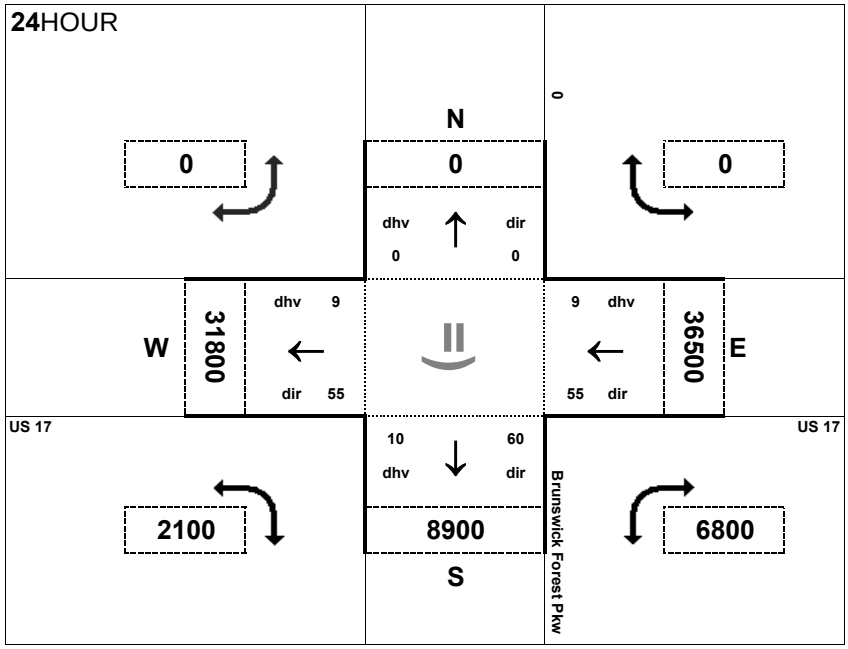
PM peak hour inflow is 3228 vehicles. PM peak hour outflow is 3228 vehicles.

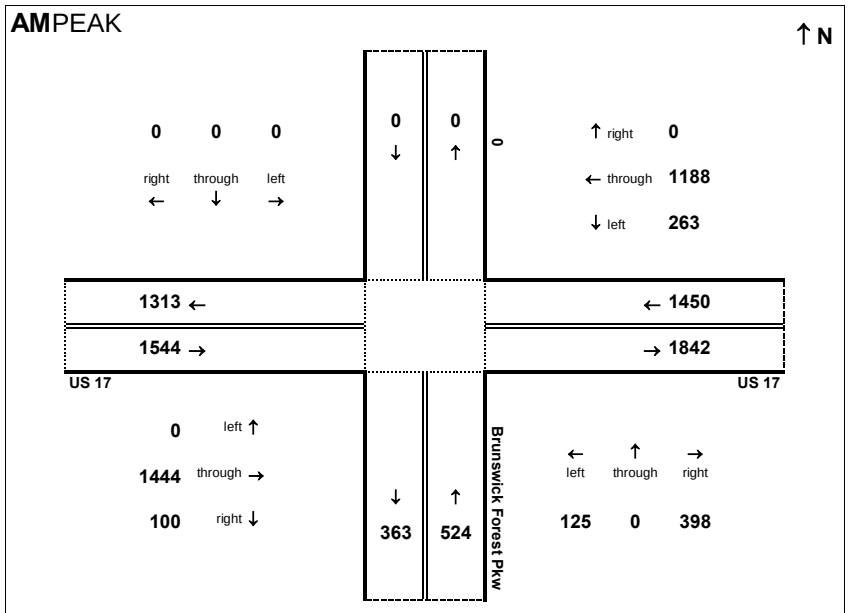
Peak Hour Volume Breakouts Report:
05 - Intersection of US 17 and Brunswick Forest Parkway

Traffic Forecast Release Date:
Oct. 2014

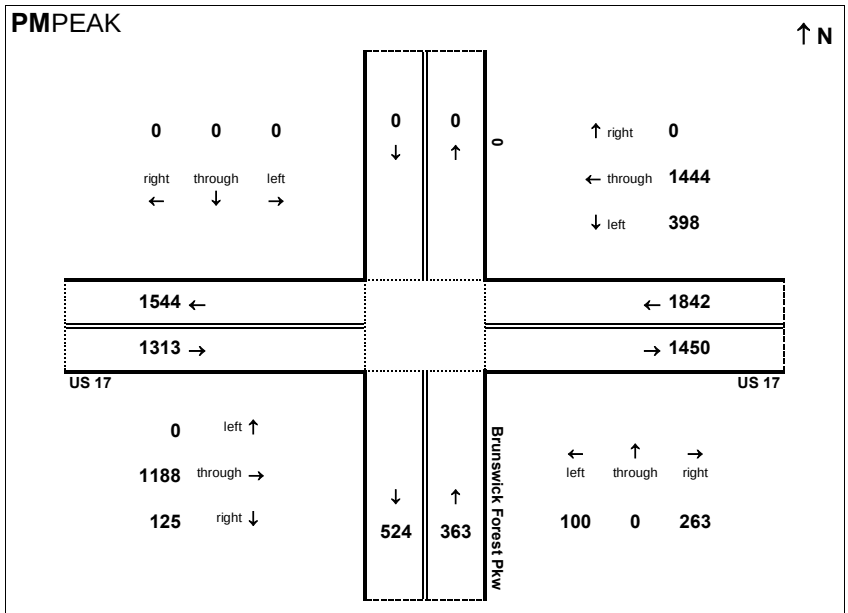
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 3518 vehicles. AM peak hour outflow is 3518 vehicles.



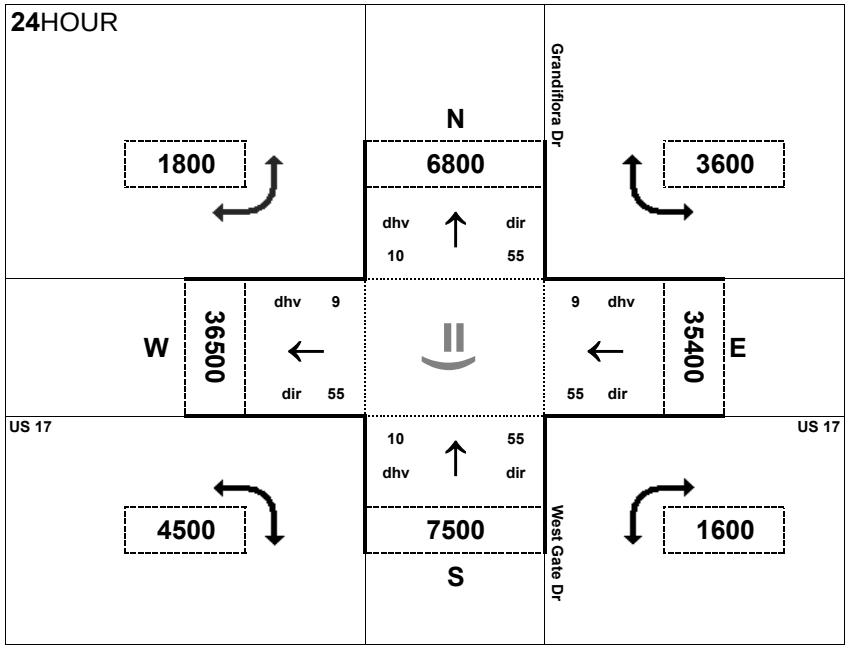
PM peak hour inflow is 3518 vehicles. PM peak hour outflow is 3518 vehicles.

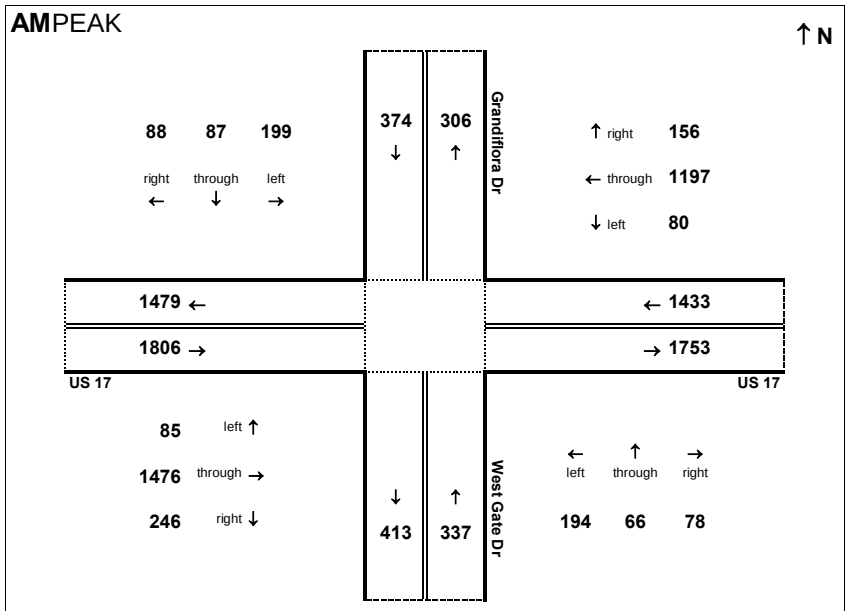
Peak Hour Volume Breakouts Report:
06 - Intersection of US 17 and Grandiflora Dr and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

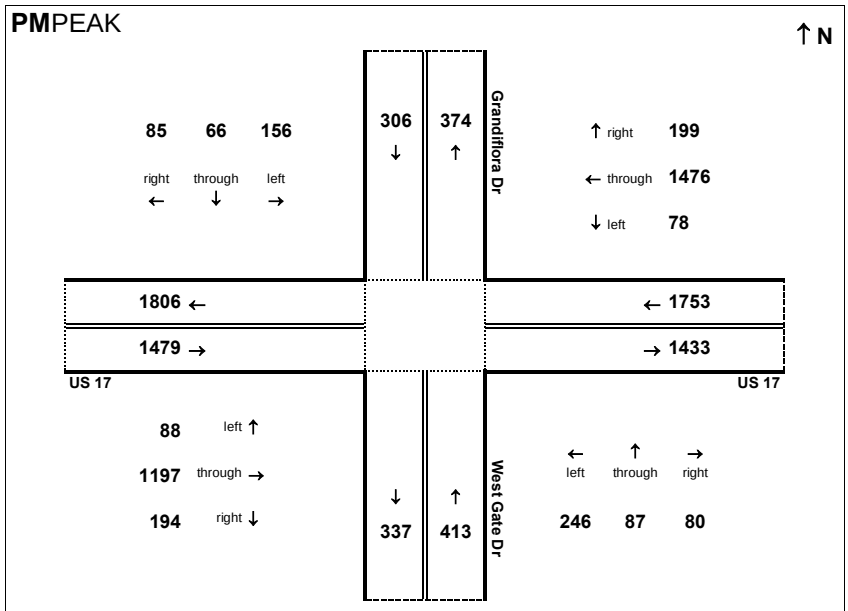
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 3950 vehicles. AM peak hour outflow is 3951 vehicles.



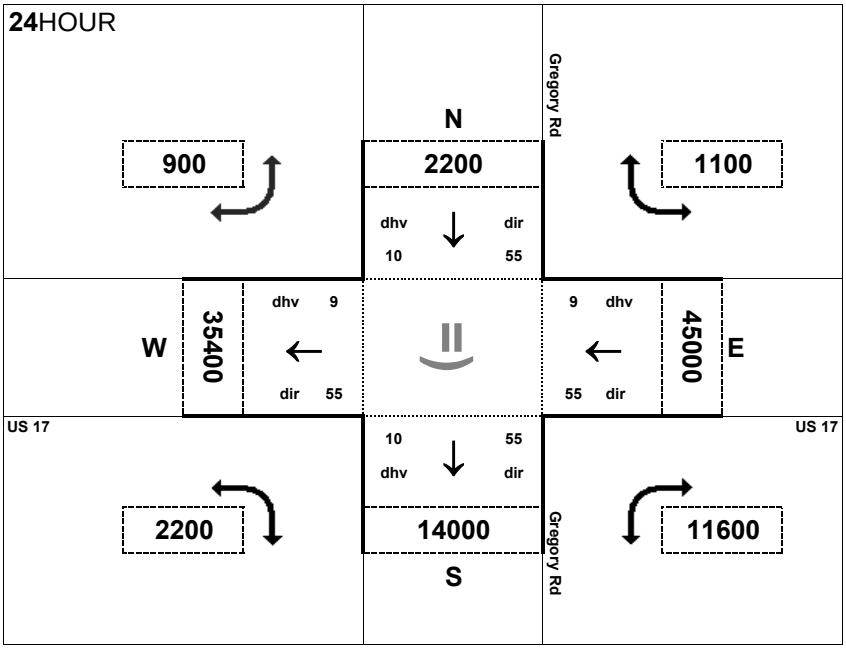
PM peak hour inflow is 3951 vehicles. PM peak hour outflow is 3950 vehicles.

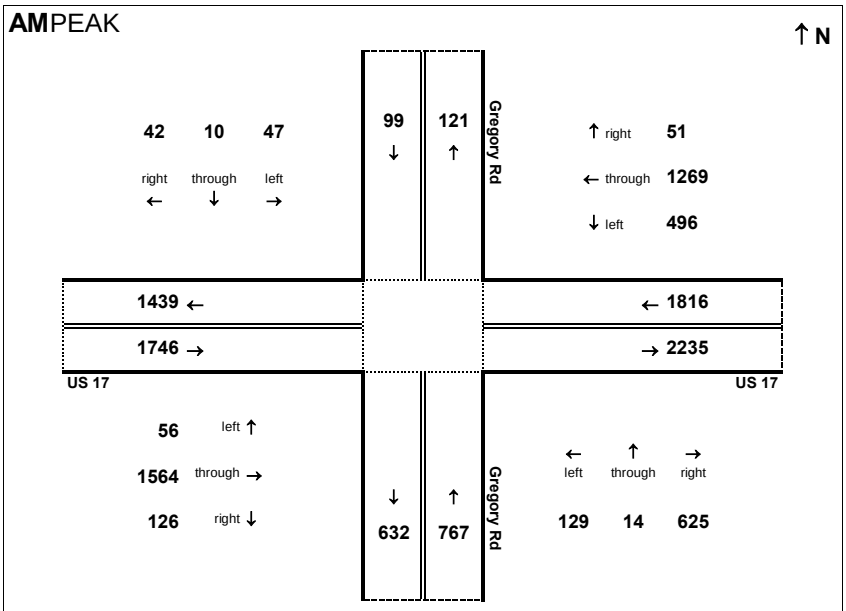
Peak Hour Volume Breakouts Report:
07 - Intersection of US 17 and Gregory Road

Traffic Forecast Release Date:
Oct. 2014

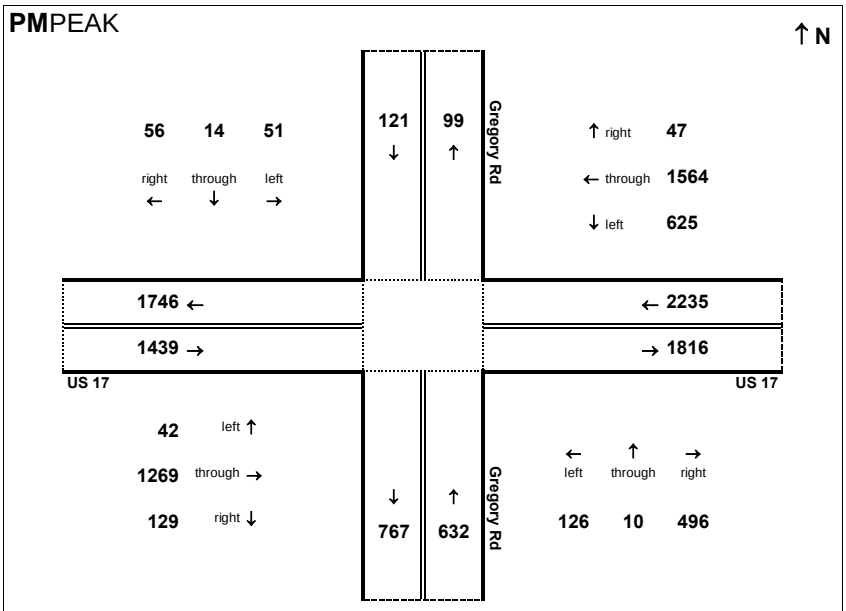
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 4428 vehicles. AM peak hour outflow is 4427 vehicles.

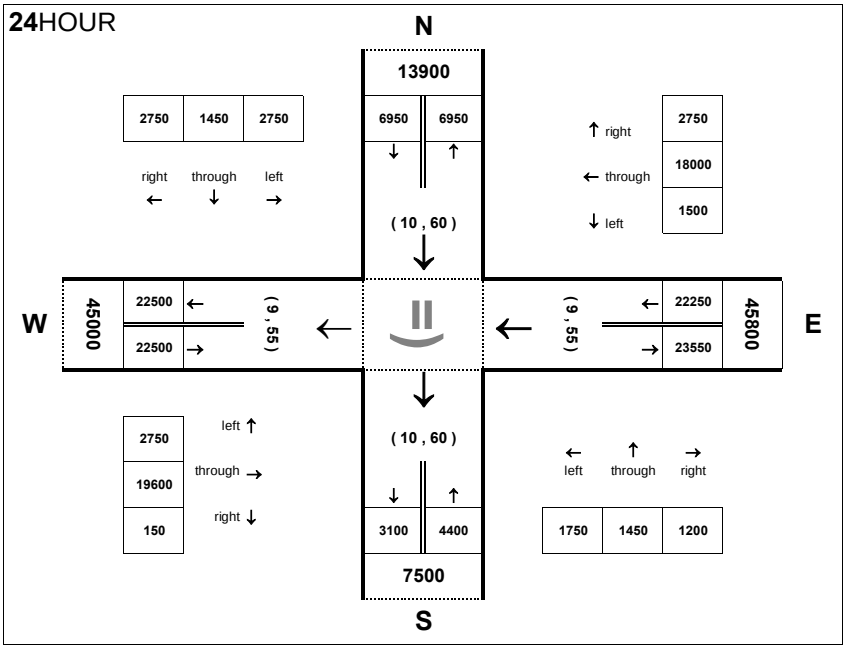


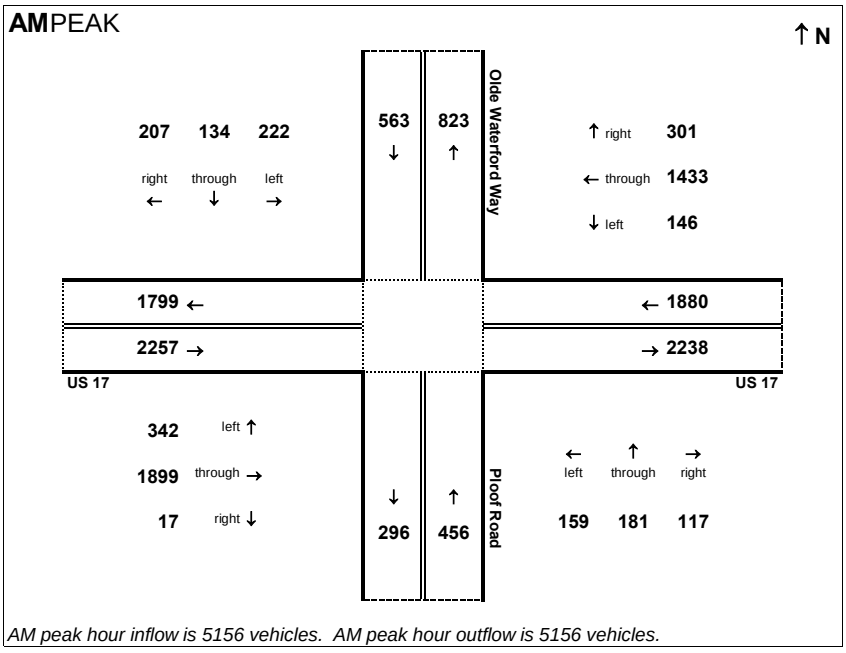
PM peak hour inflow is 4427 vehicles. PM peak hour outflow is 4428 vehicles.

Peak Hour Volume Breakouts Report:
08 Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

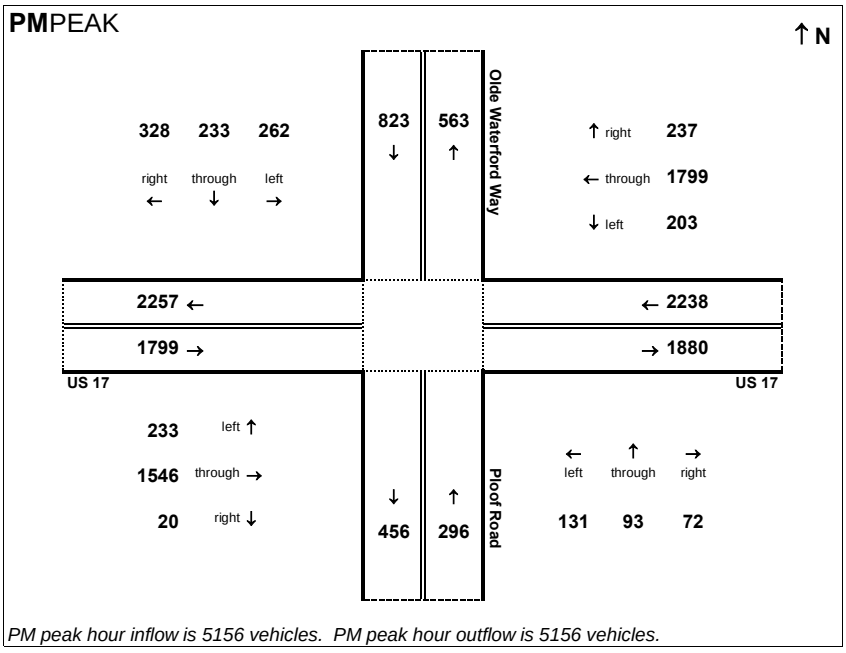
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2013 No Build





AM peak hour inflow is 5156 vehicles. AM peak hour outflow is 5156 vehicles.



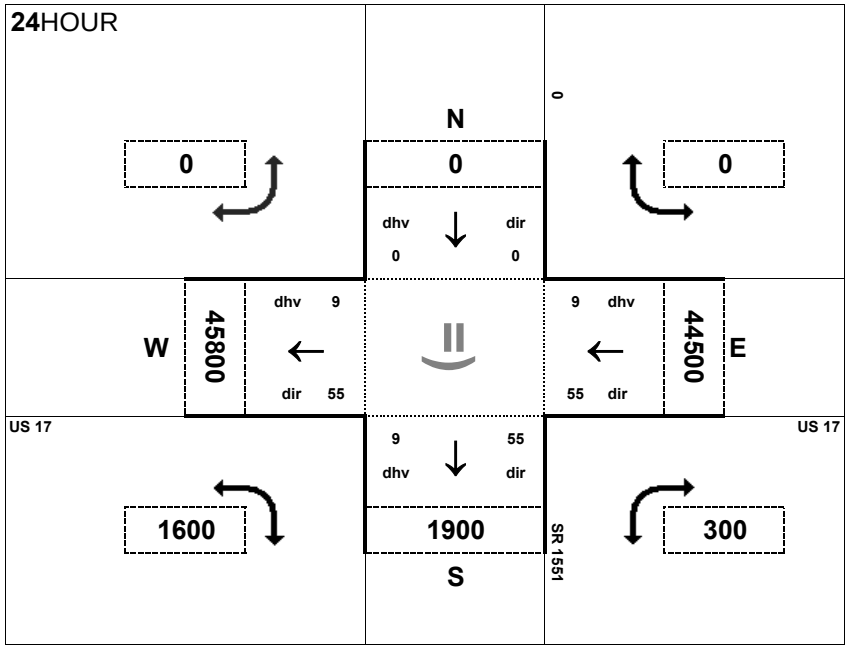
PM peak hour inflow is 5156 vehicles. PM peak hour outflow is 5156 vehicles.

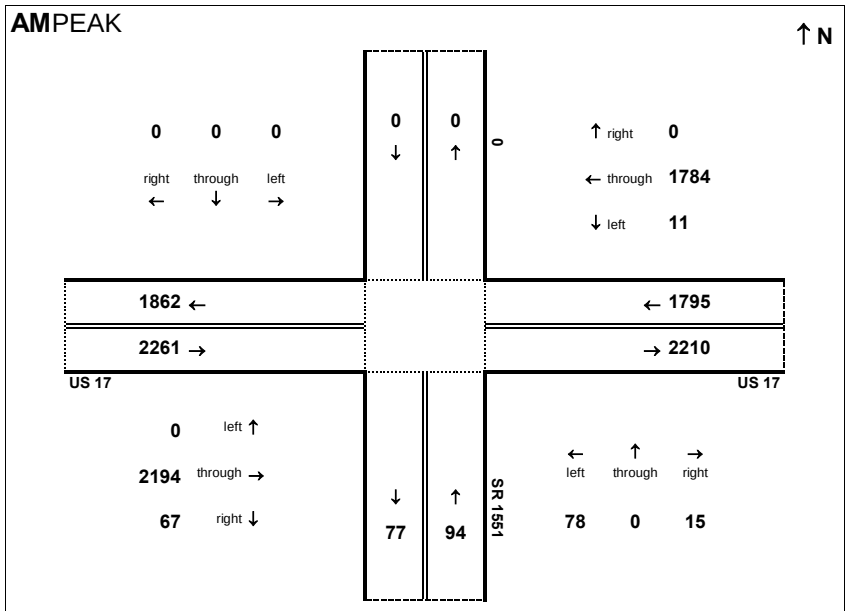
Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

Traffic Forecast Release Date:
Oct. 2014

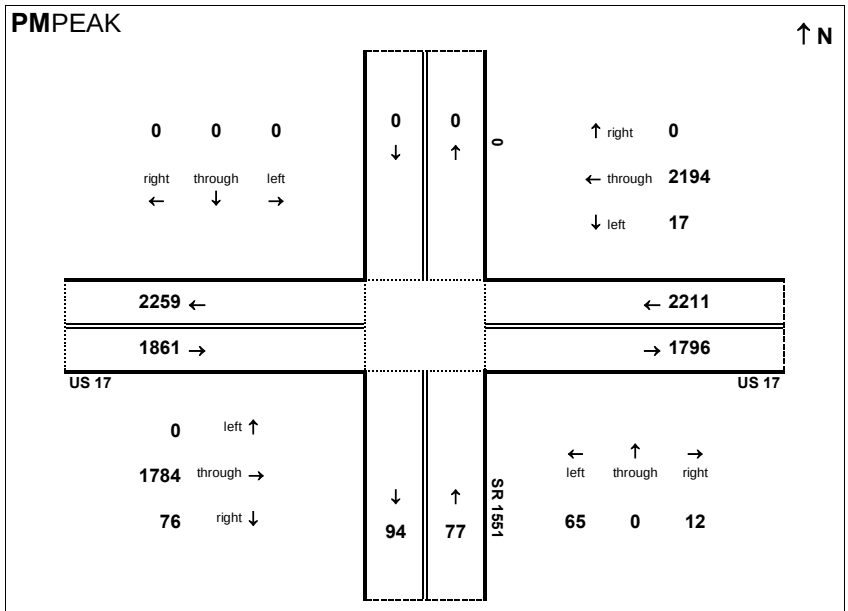
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 4150 vehicles. AM peak hour outflow is 4149 vehicles.



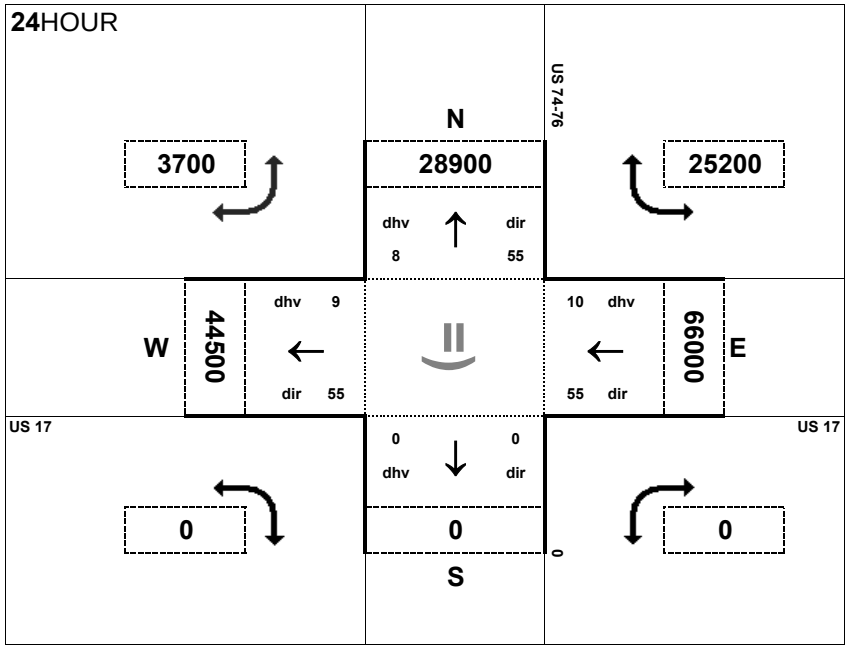
PM peak hour inflow is 4149 vehicles. PM peak hour outflow is 4149 vehicles.

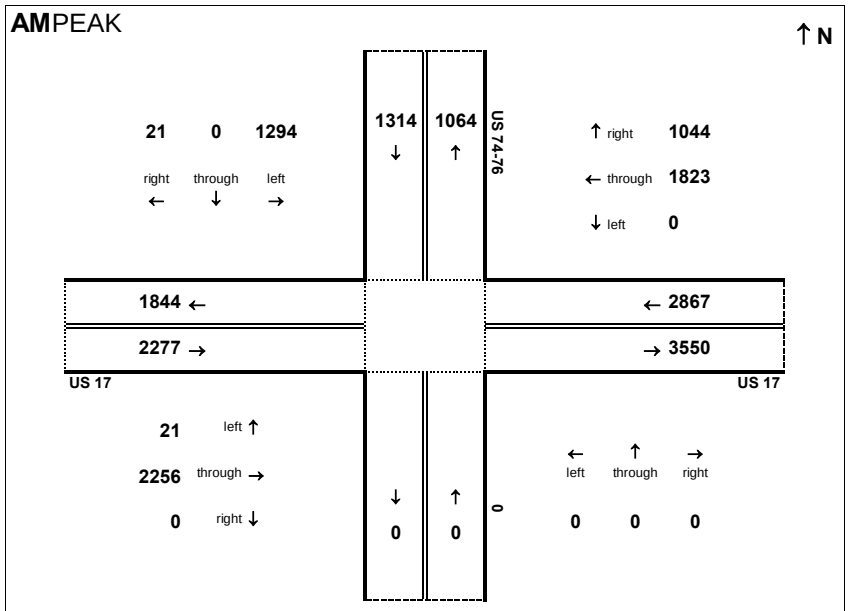
Peak Hour Volume Breakouts Report:
10 - Intersection of US 17 & US 74-76

Traffic Forecast Release Date:
Oct. 2014

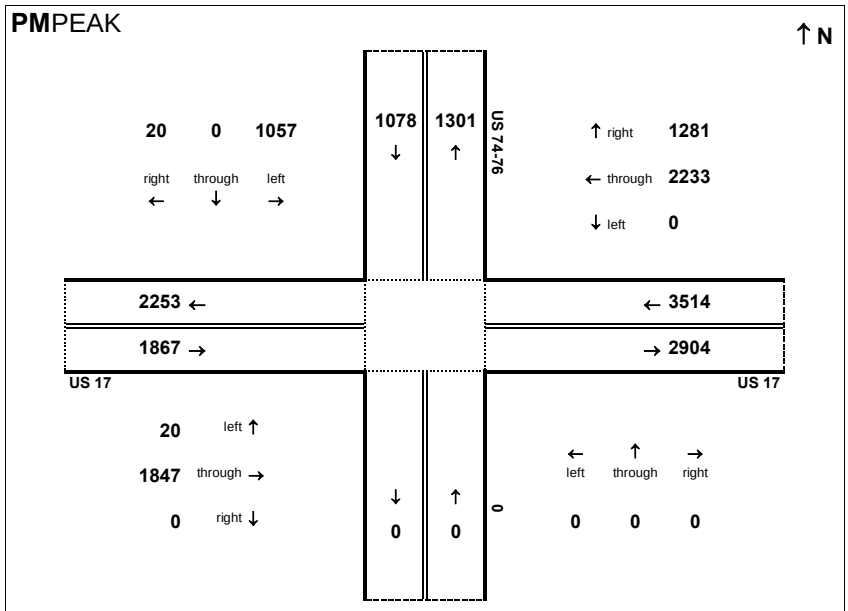
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 6458 vehicles. AM peak hour outflow is 6458 vehicles.



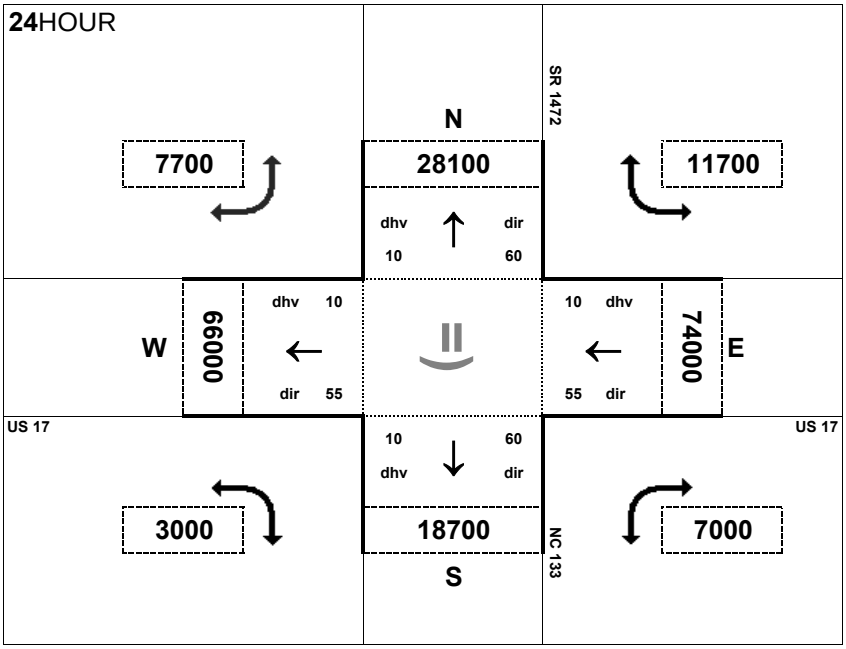
PM peak hour inflow is 6459 vehicles. PM peak hour outflow is 6458 vehicles.

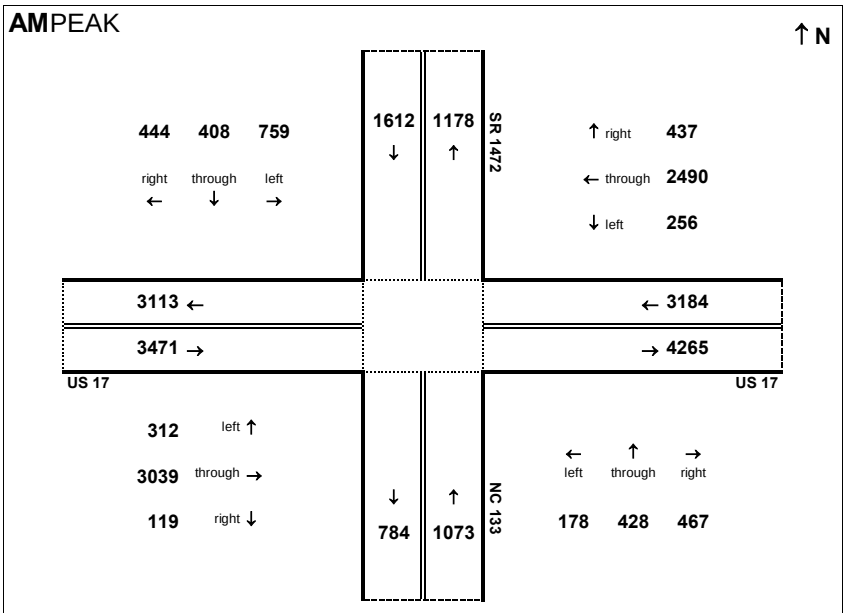
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

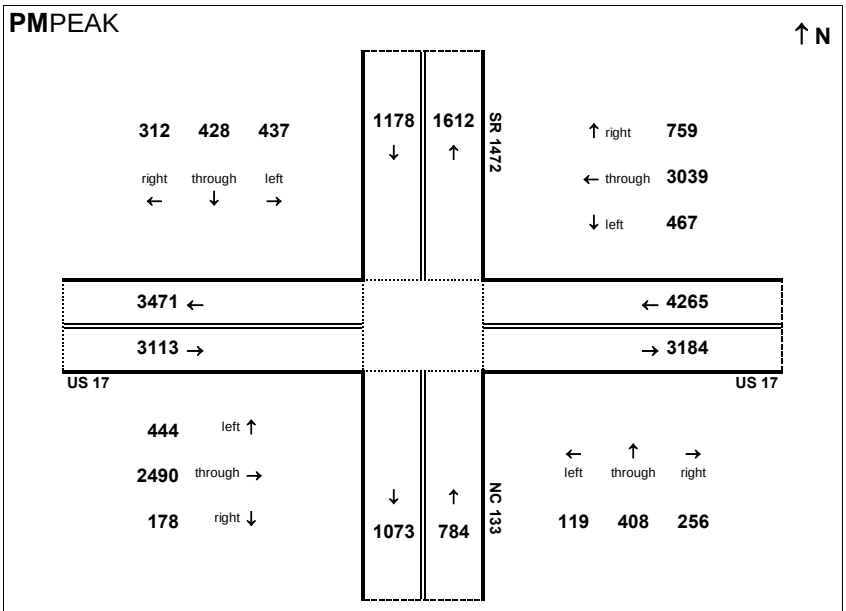
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 9340 vehicles. AM peak hour outflow is 9340 vehicles.



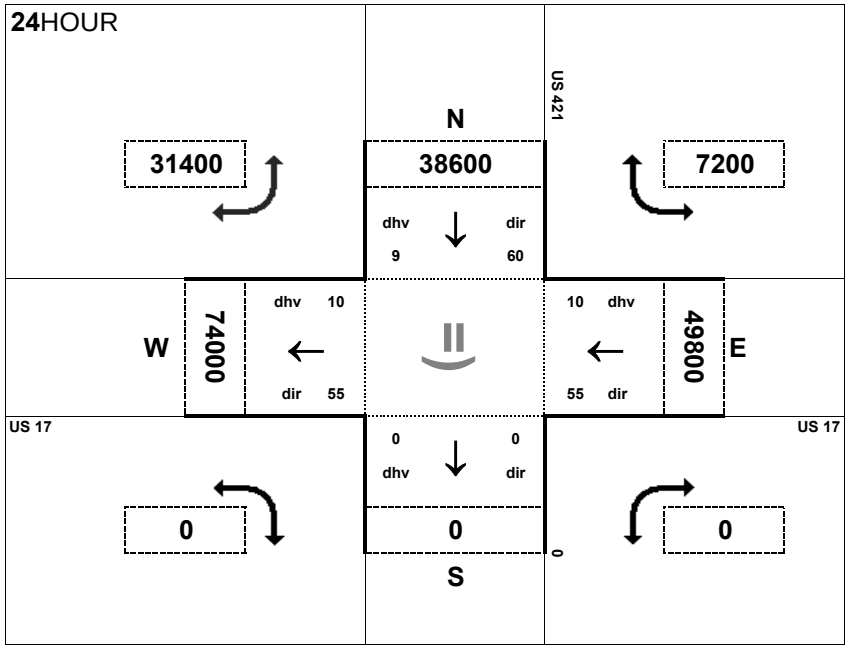
PM peak hour inflow is 9340 vehicles. PM peak hour outflow is 9340 vehicles.

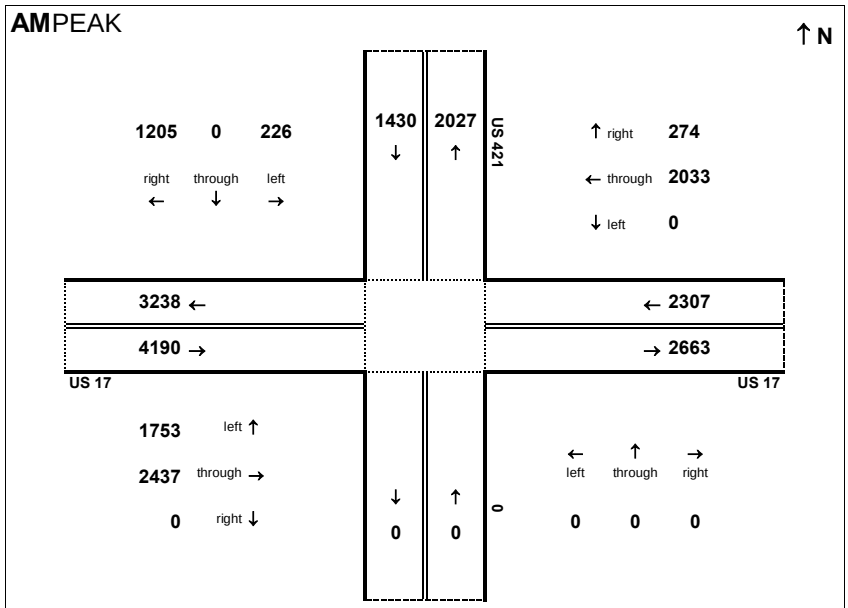
Peak Hour Volume Breakouts Report:
12 - Intersection of US 17 & US 421

Traffic Forecast Release Date:
Oct. 2014

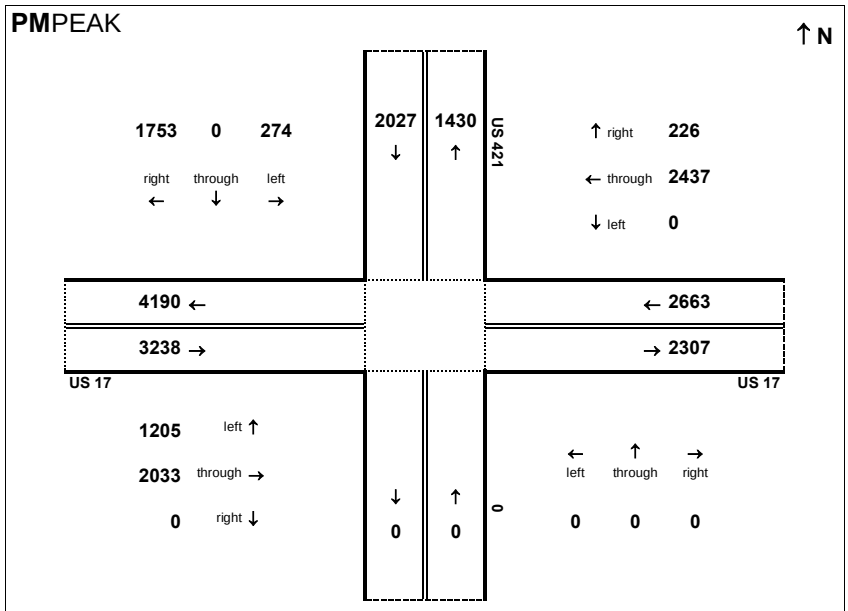
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 7927 vehicles. AM peak hour outflow is 7928 vehicles.



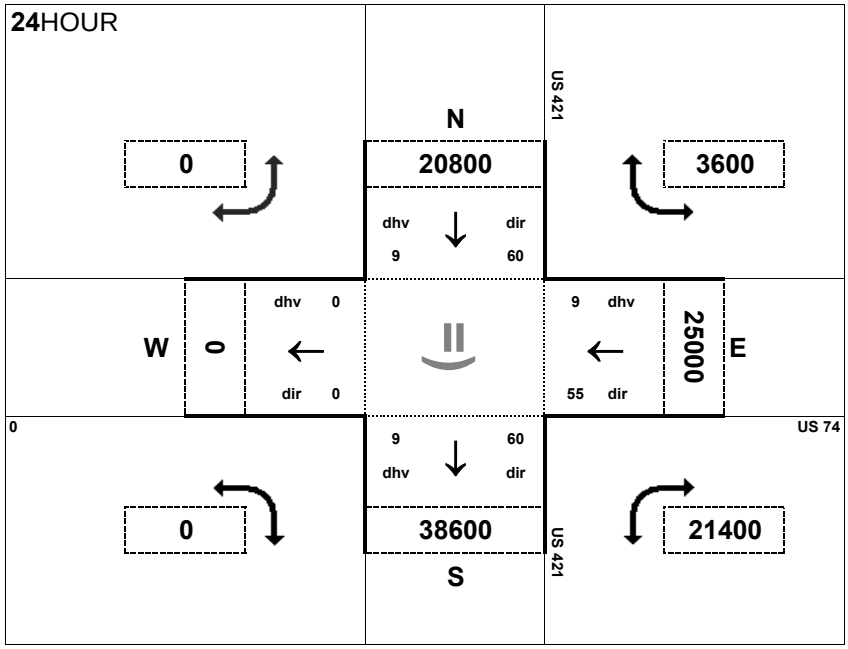
PM peak hour inflow is 7928 vehicles. PM peak hour outflow is 7927 vehicles.

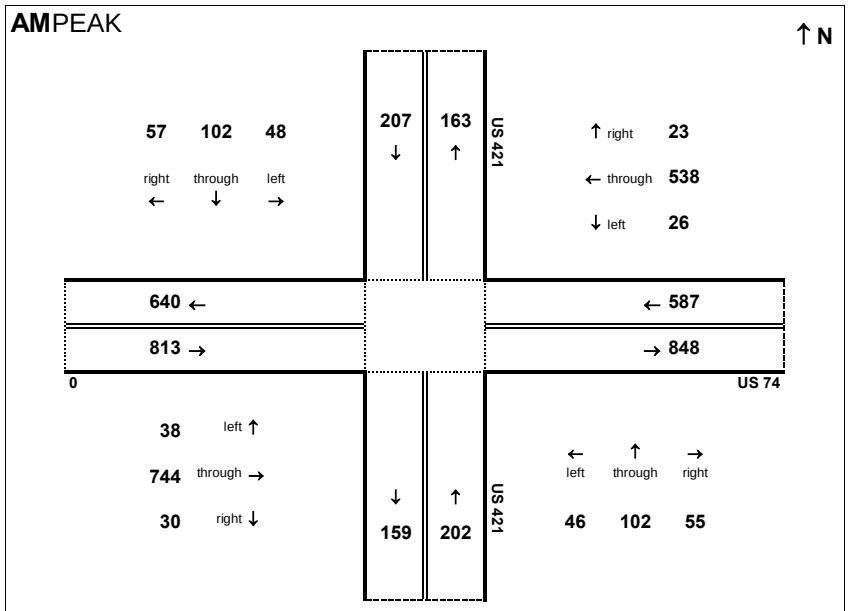
Peak Hour Volume Breakouts Report:
13 - Intersection of US 421 & US 74

Traffic Forecast Release Date:
Oct. 2014

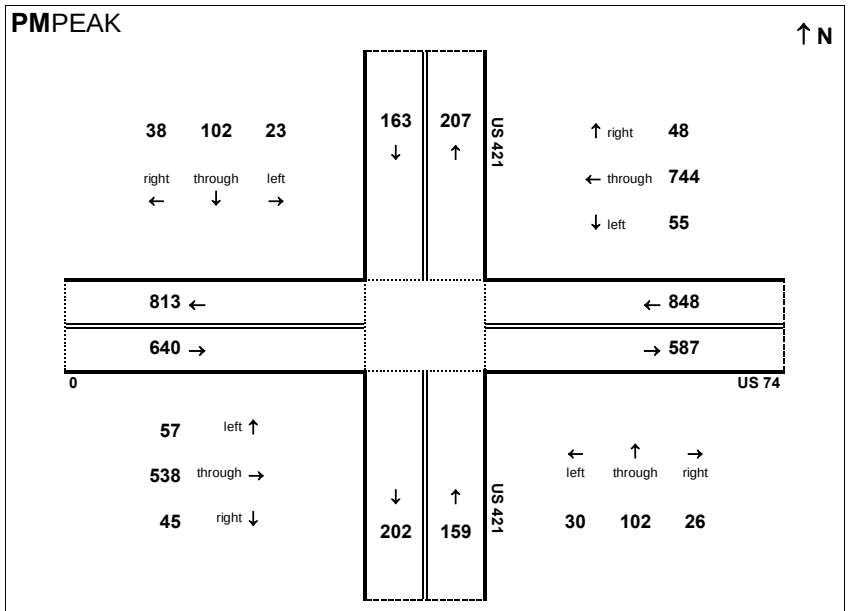
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



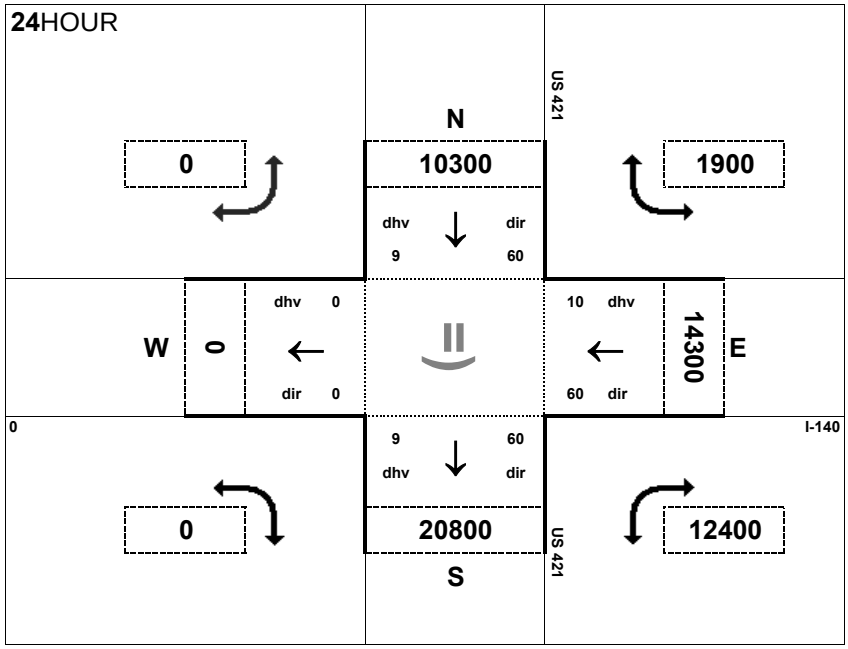
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

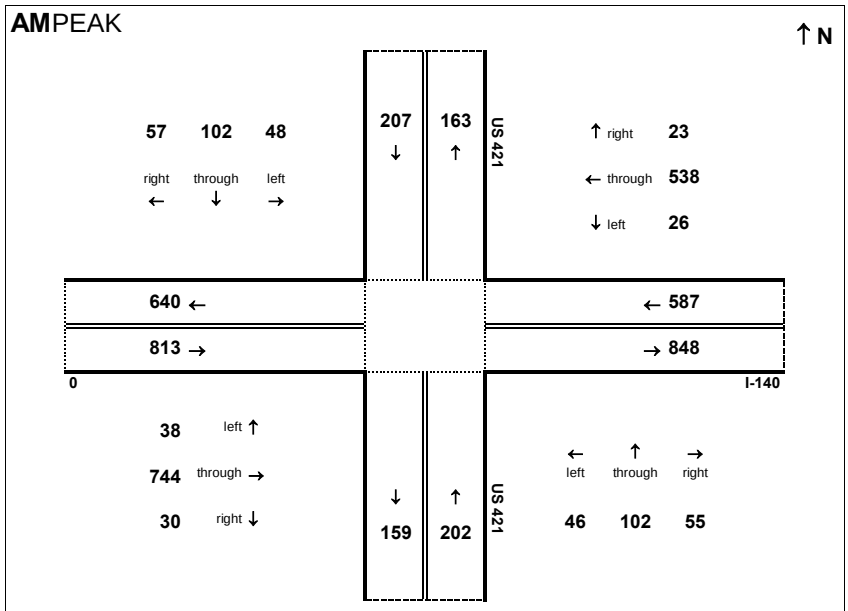
Peak Hour Volume Breakouts Report:
14 - Intersection of US 421 & I-140

Traffic Forecast Release Date:
Oct. 2014

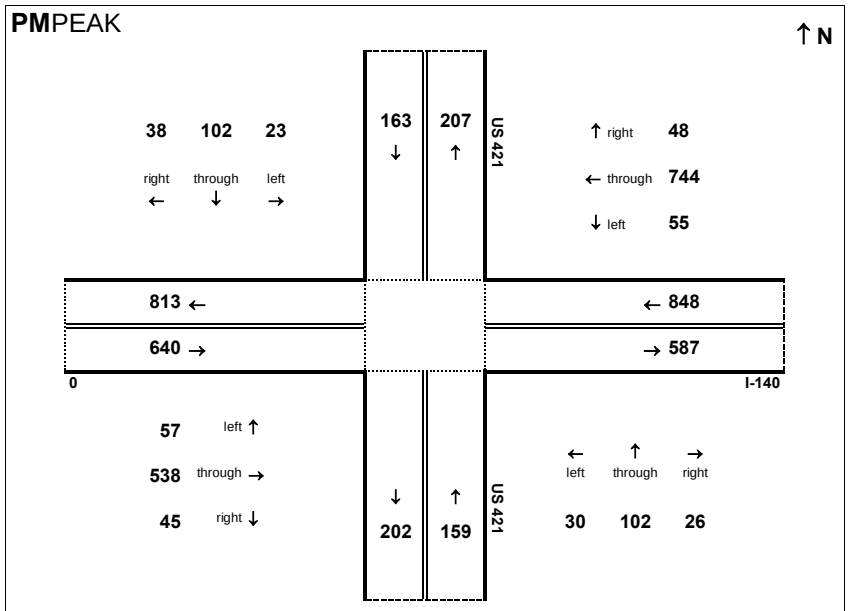
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



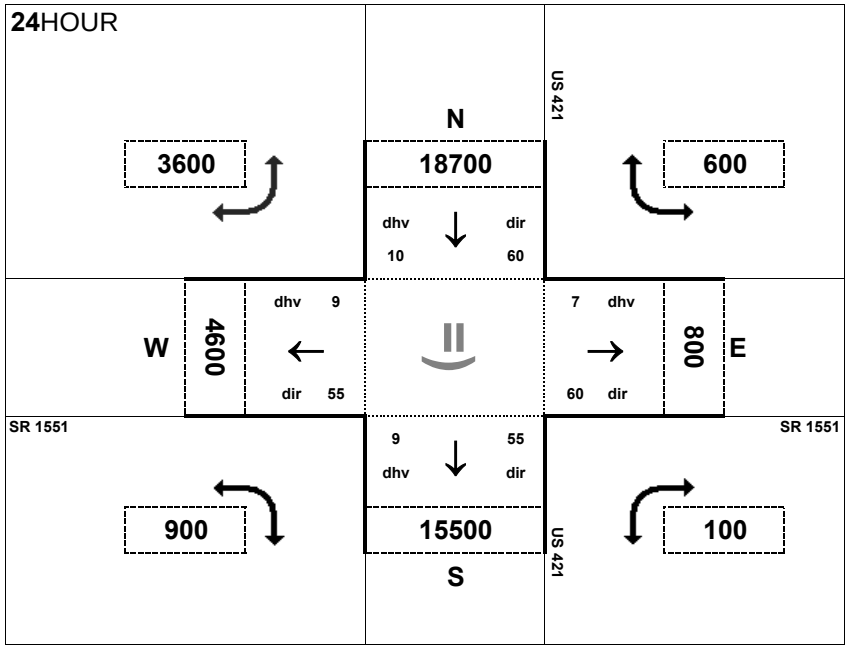
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

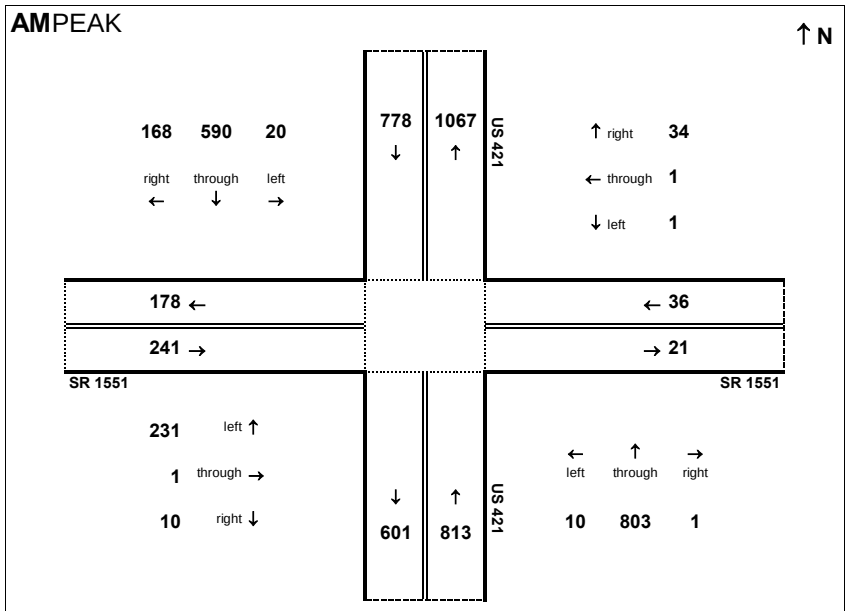
Peak Hour Volume Breakouts Report:
15 - Intersection of US 421 & SR 1551 - Blackwell Street/ Main Street

Traffic Forecast Release Date:
Oct. 2014

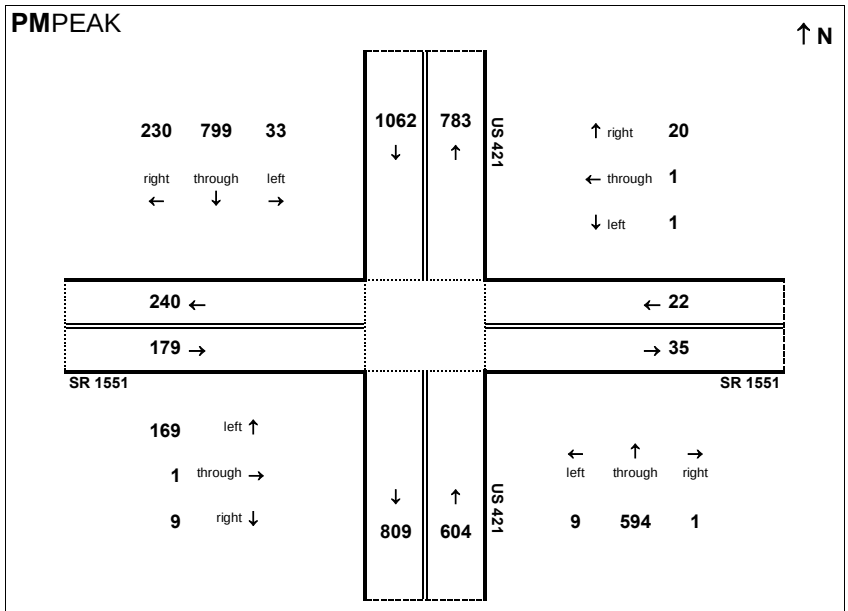
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build

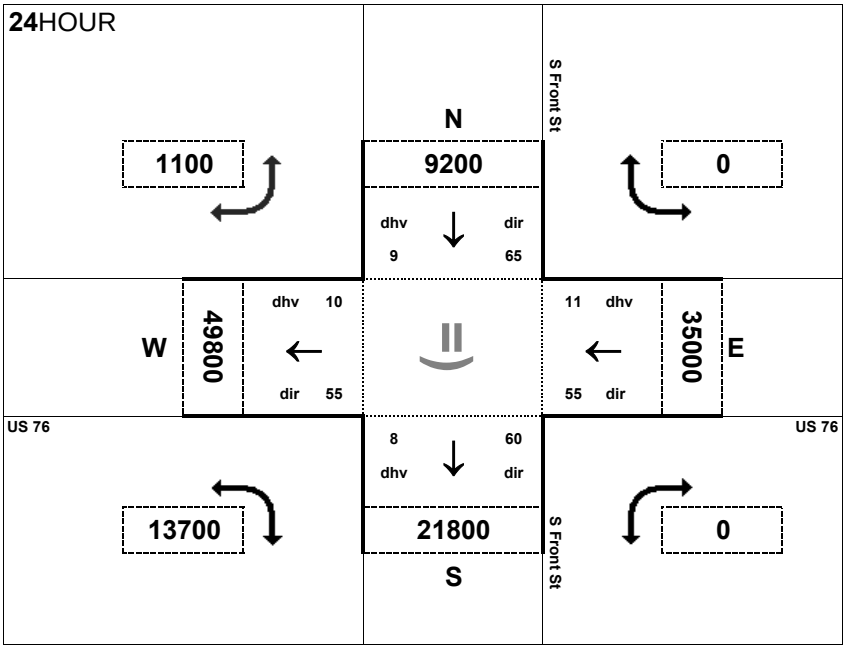




AM peak hour inflow is 1868 vehicles. AM peak hour outflow is 1867 vehicles.



PM peak hour inflow is 1867 vehicles. PM peak hour outflow is 1867 vehicles.

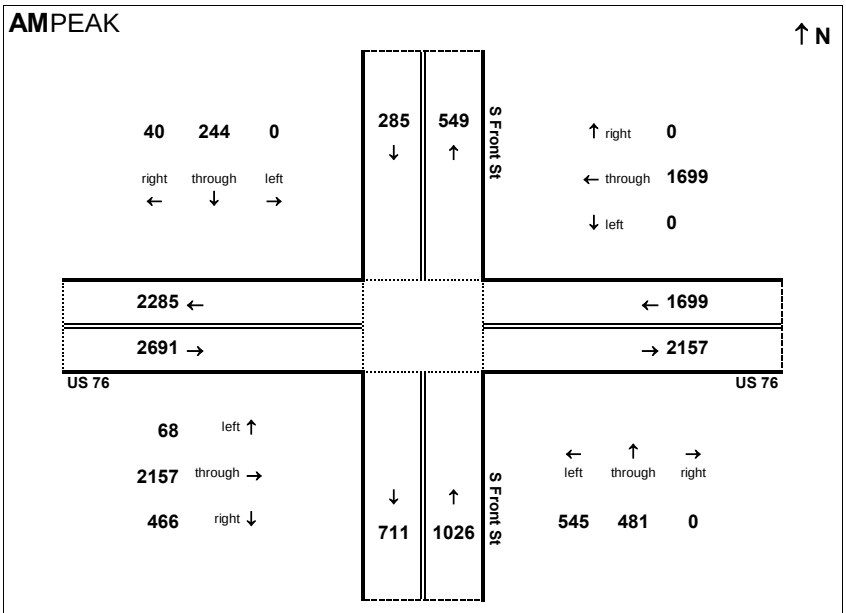


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

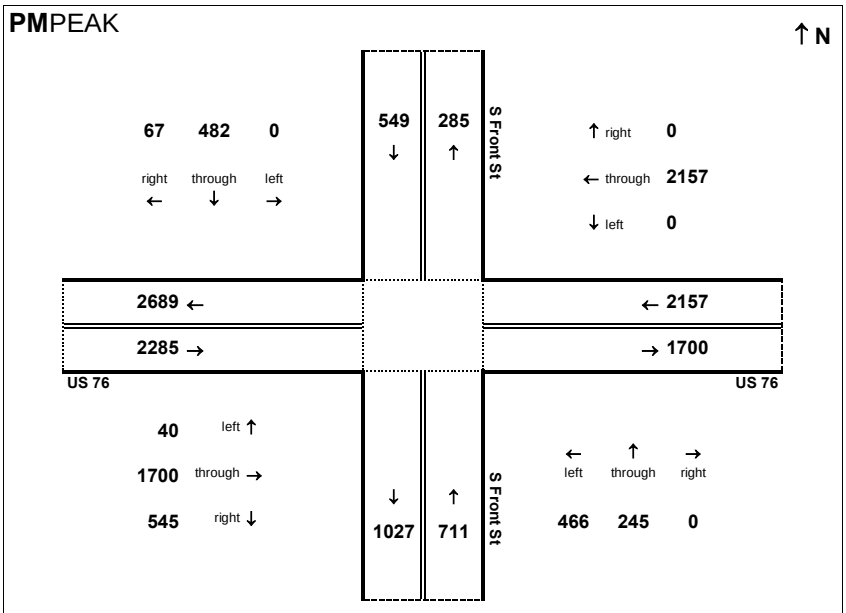
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2013

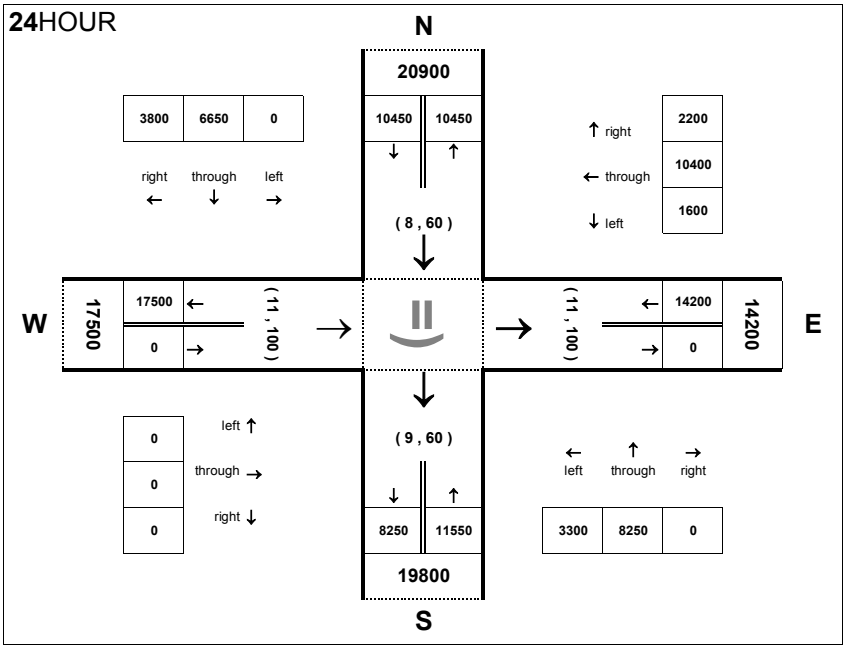
Project:
Cape Fear Crossing - No Build



AM peak hour inflow is 5701 vehicles. AM peak hour outflow is 5702 vehicles.



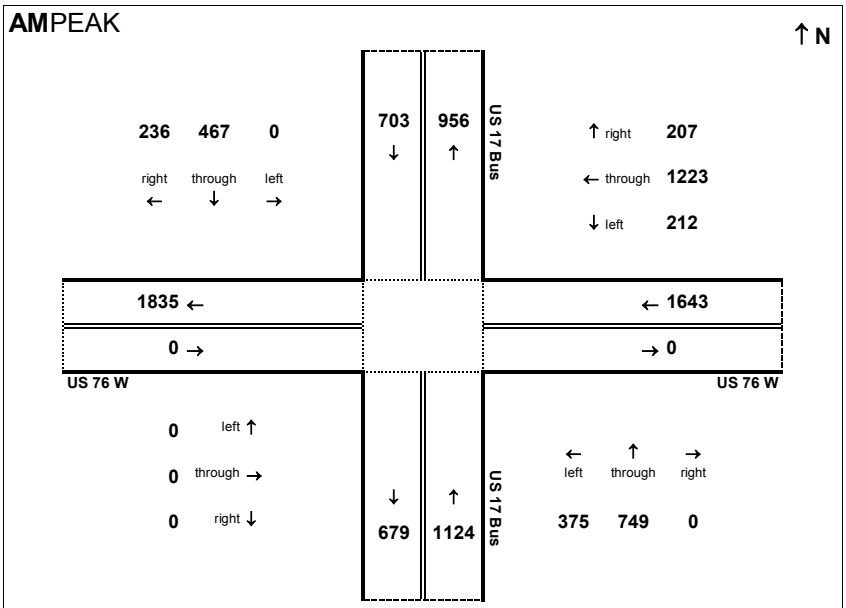
PM peak hour inflow is 5702 vehicles. PM peak hour outflow is 5701 vehicles.



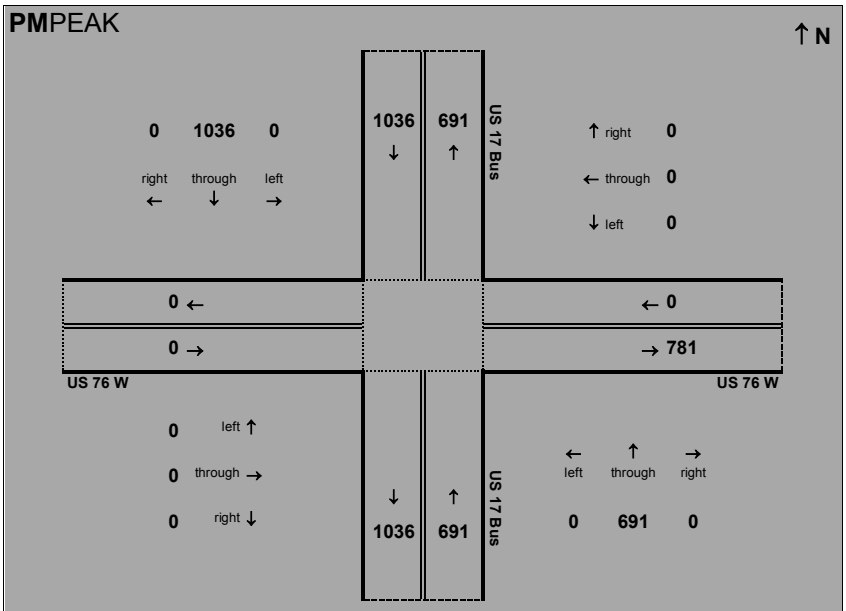
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

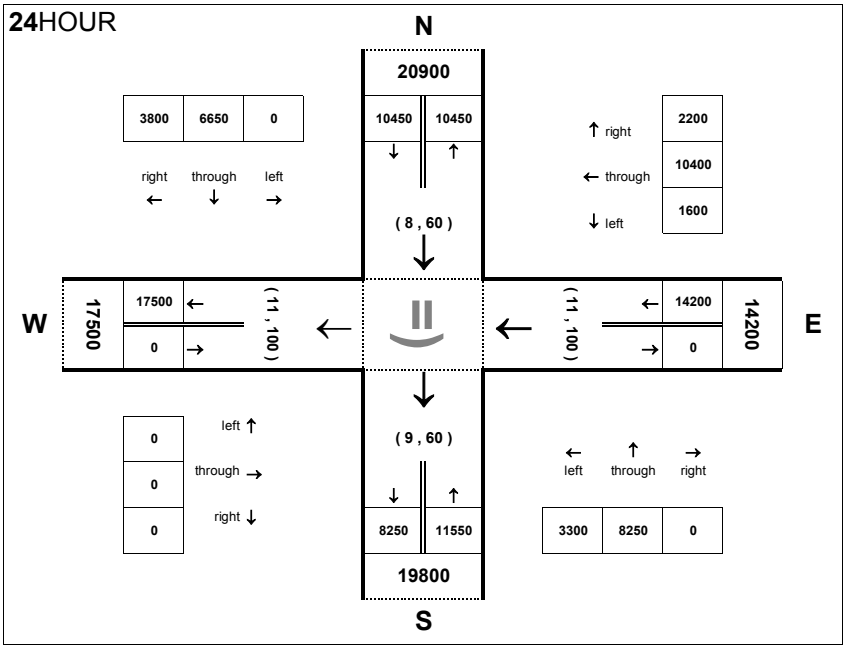
Traffic Data Year:
2013 No Build



AM peak hour inflow is 3470 vehicles. AM peak hour outflow is 3470 vehicles.



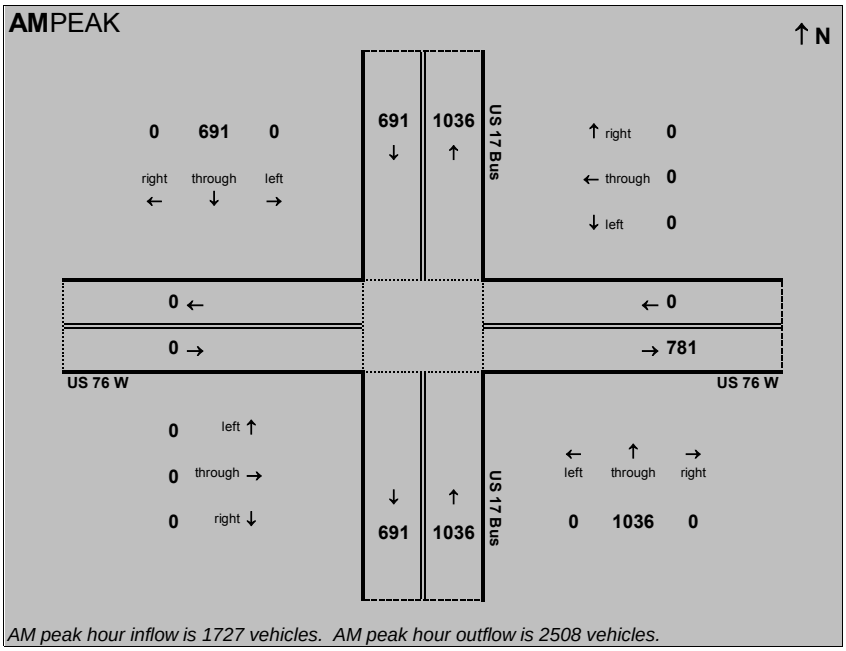
PM peak hour inflow is 1727 vehicles. PM peak hour outflow is 2508 vehicles.



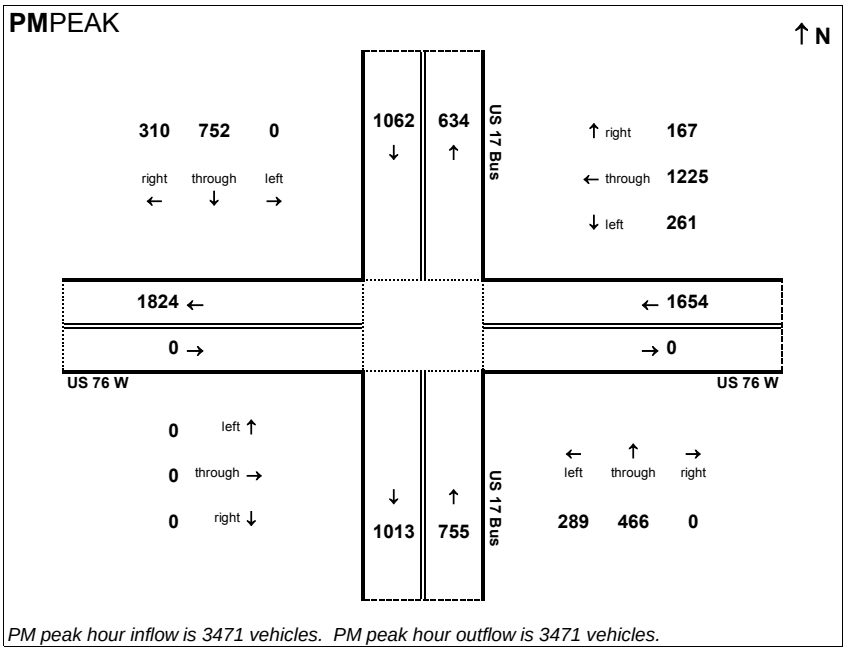
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

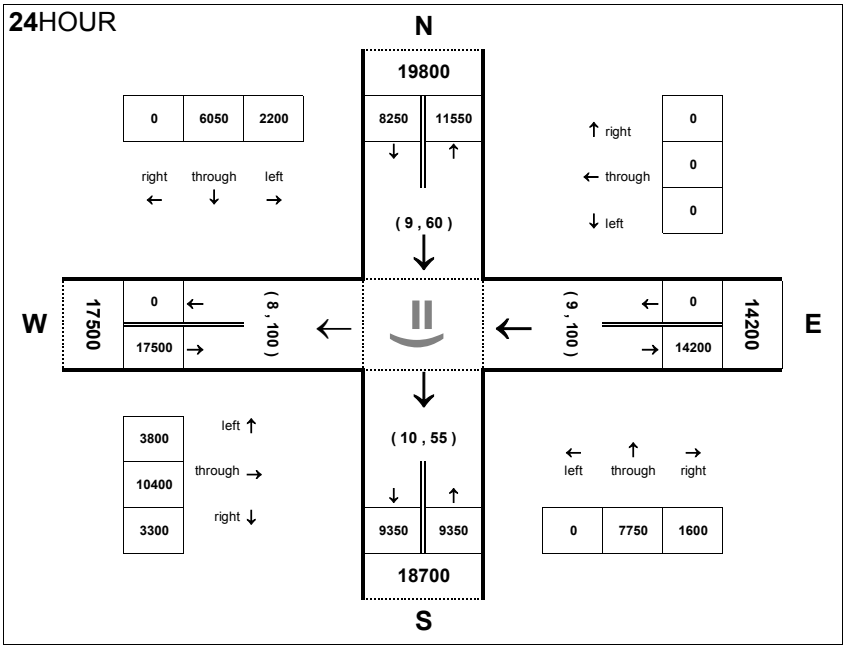
Traffic Data Year:
2013 No Build



AM peak hour inflow is 1727 vehicles. AM peak hour outflow is 2508 vehicles.



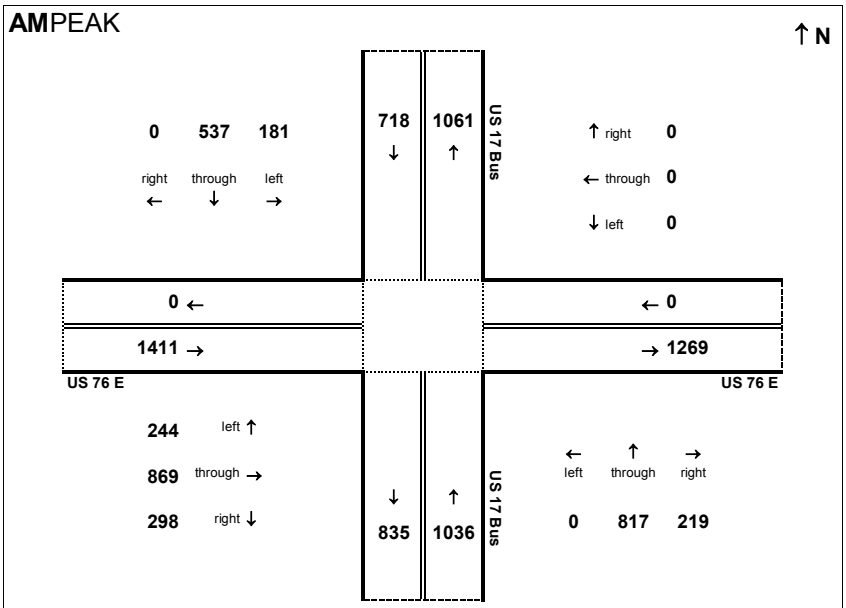
PM peak hour inflow is 3471 vehicles. PM peak hour outflow is 3471 vehicles.



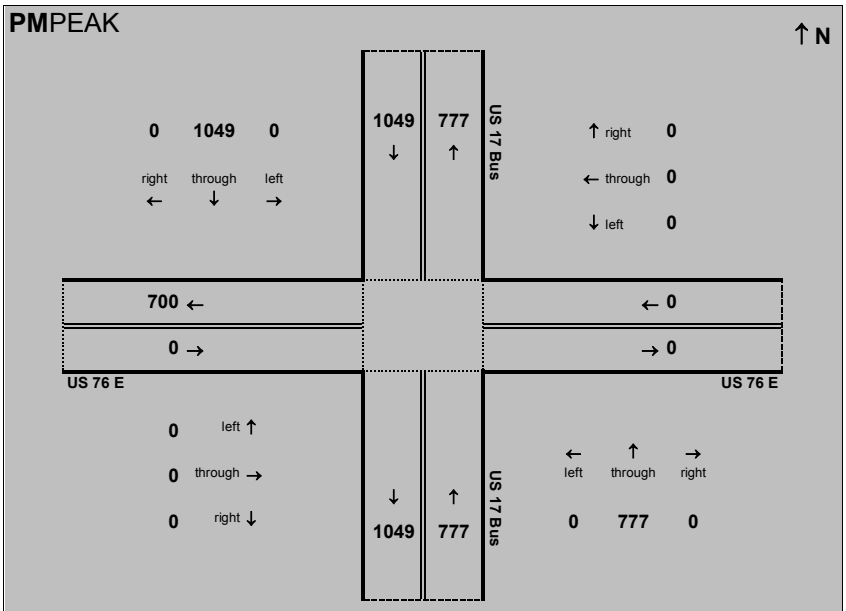
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

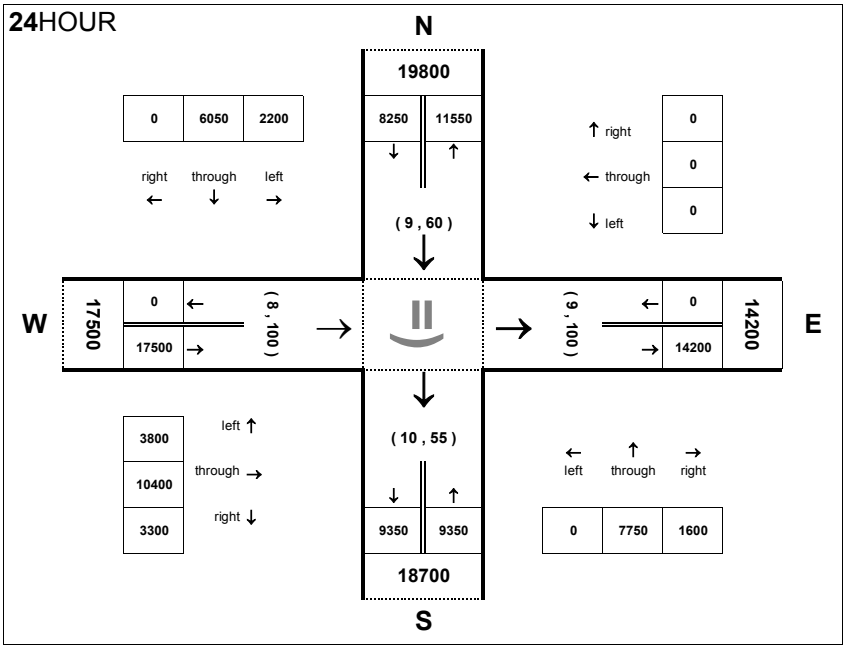
Traffic Data Year:
2013 No Build



AM peak hour inflow is 3165 vehicles. AM peak hour outflow is 3165 vehicles.



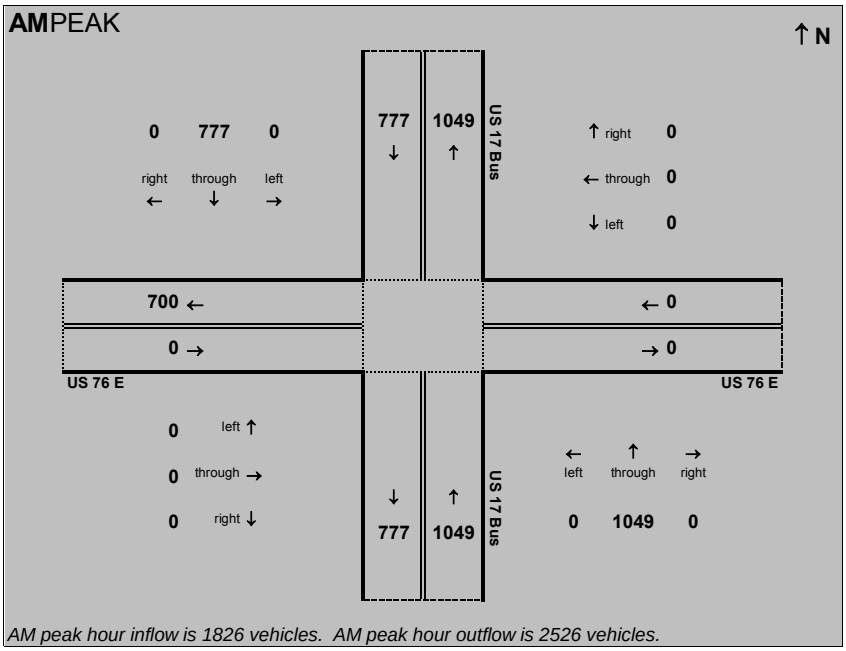
PM peak hour inflow is 1826 vehicles. PM peak hour outflow is 2526 vehicles.



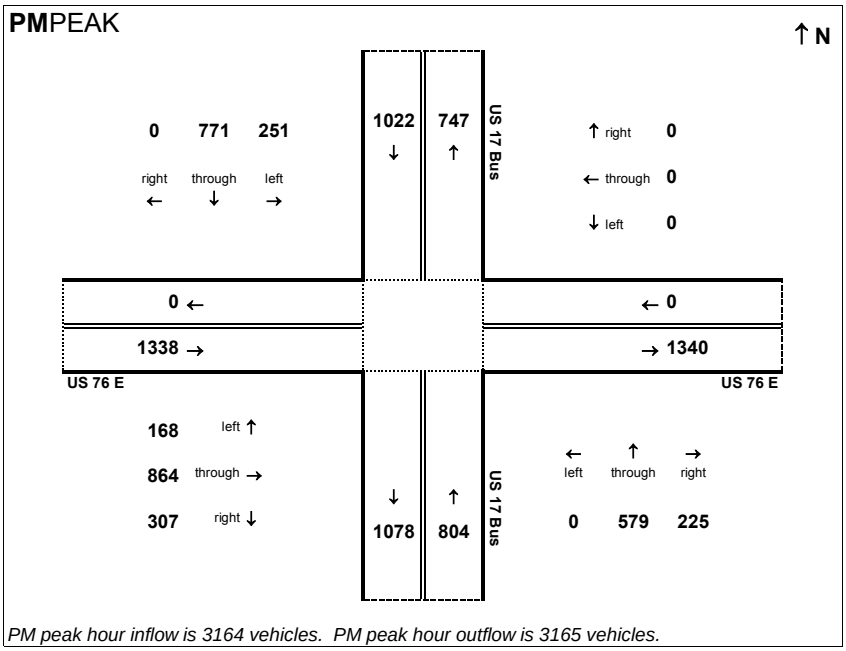
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2013 No Build



AM peak hour inflow is 1826 vehicles. AM peak hour outflow is 2526 vehicles.



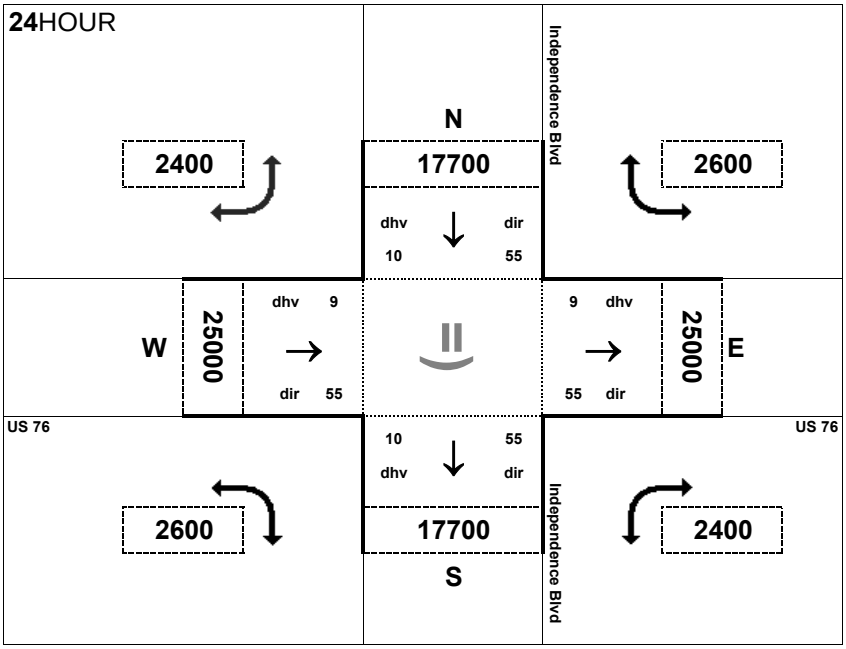
PM peak hour inflow is 3164 vehicles. PM peak hour outflow is 3165 vehicles.

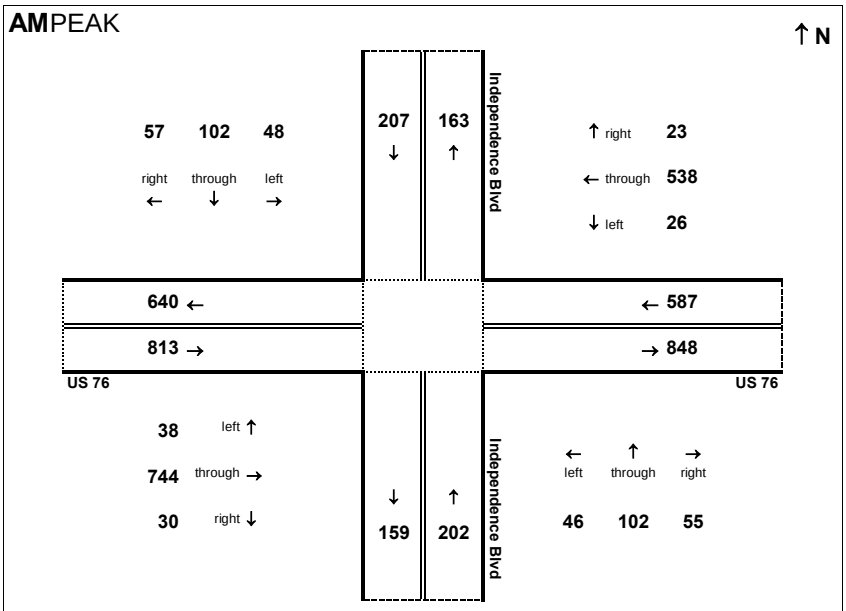
Peak Hour Volume Breakouts Report:
26 - Intersection of US 76 & Independence Blvd

Traffic Forecast Release Date:
Oct. 2014

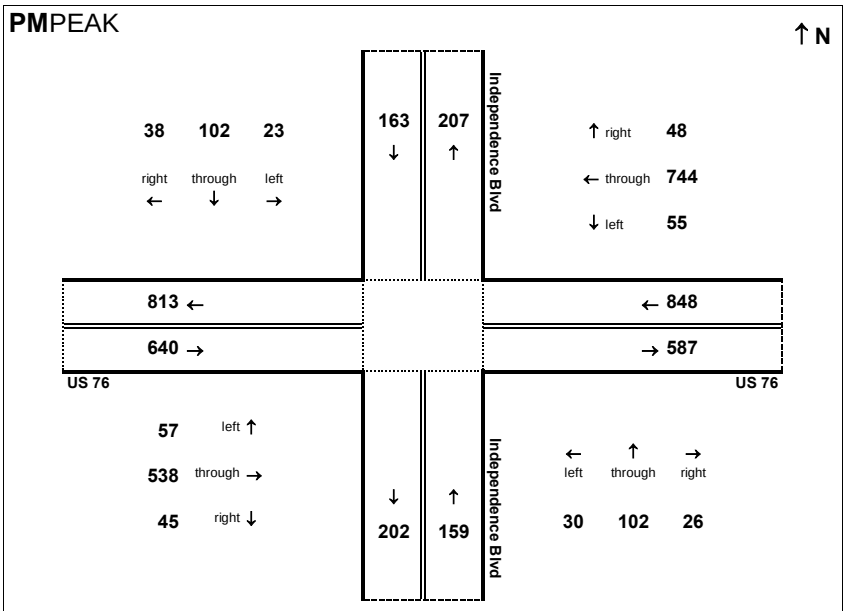
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



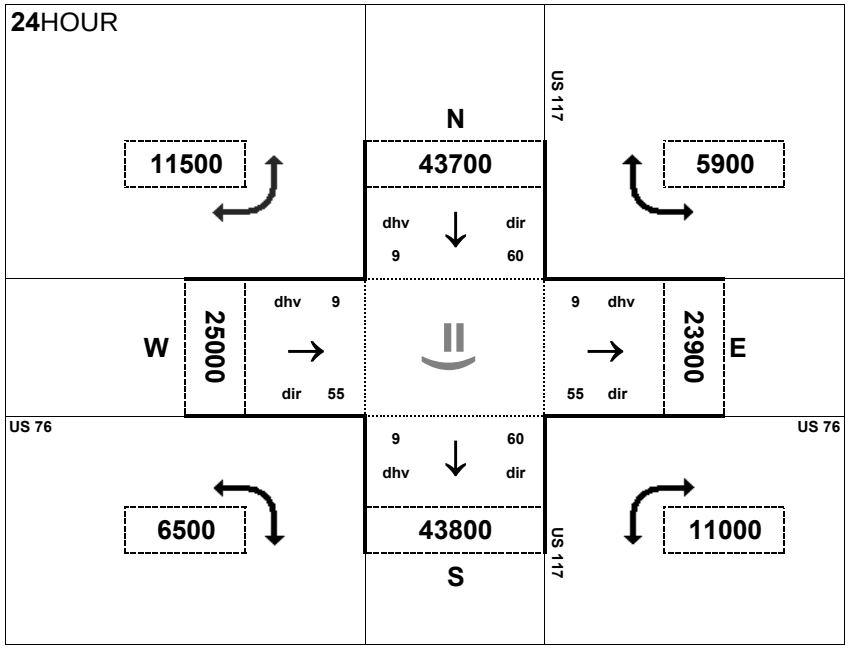
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

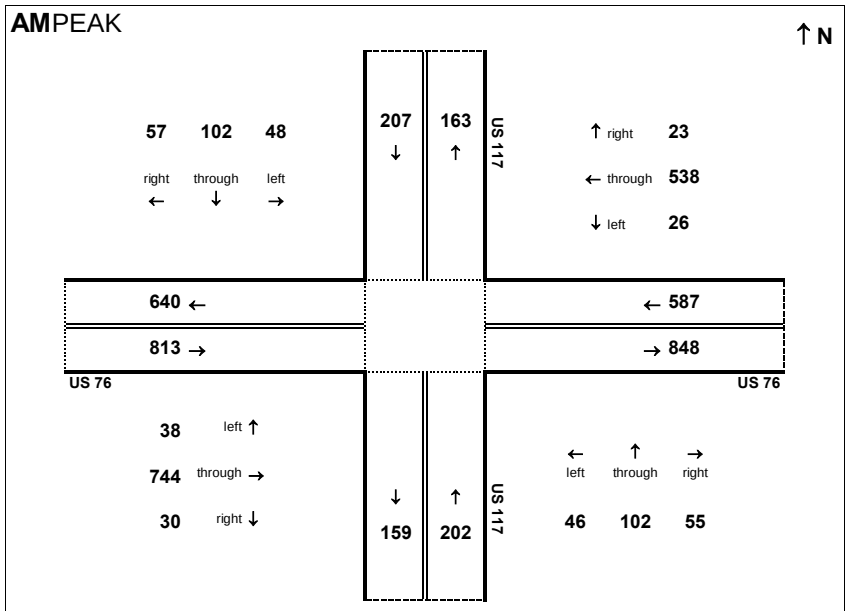
Peak Hour Volume Breakouts Report:
27 - Intersection of US 76 and US 117

Traffic Forecast Release Date:
Oct. 2014

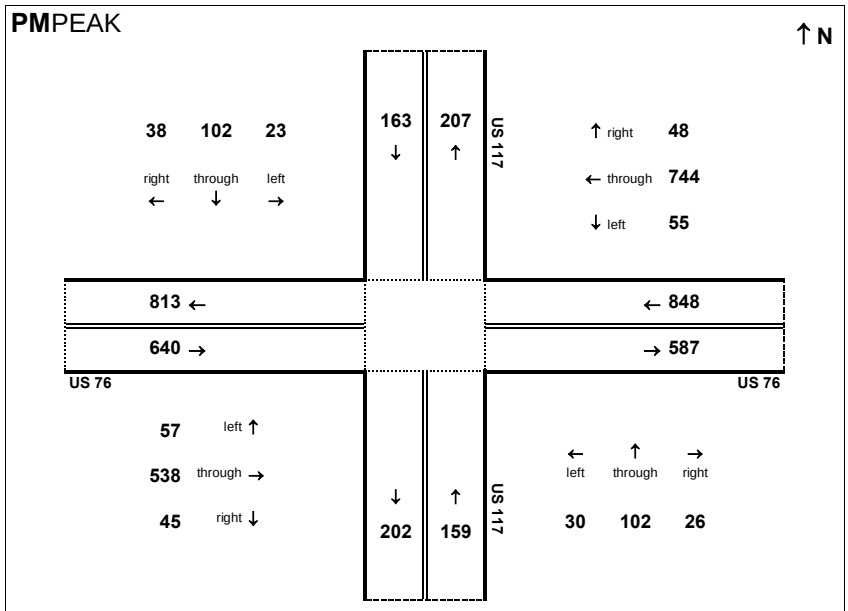
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



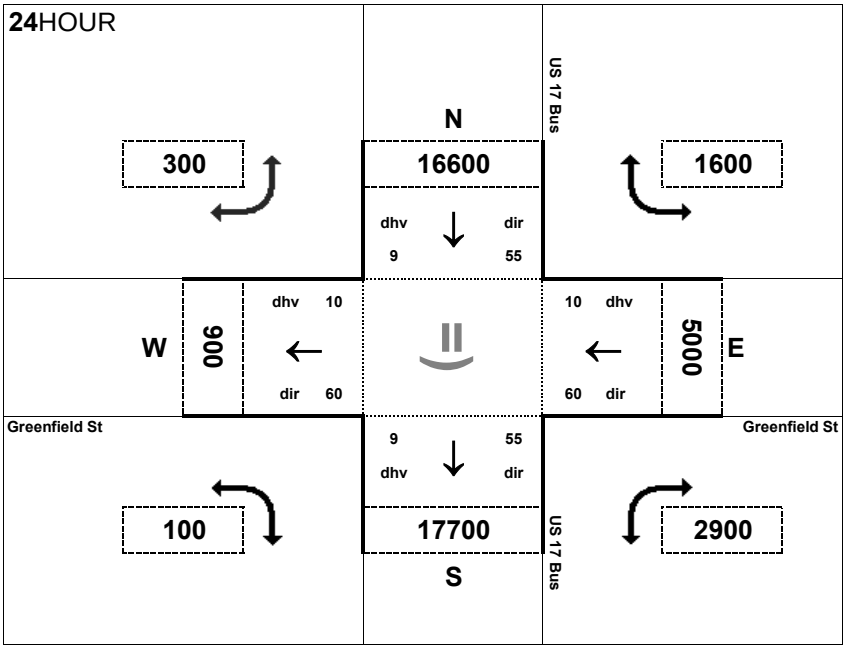
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

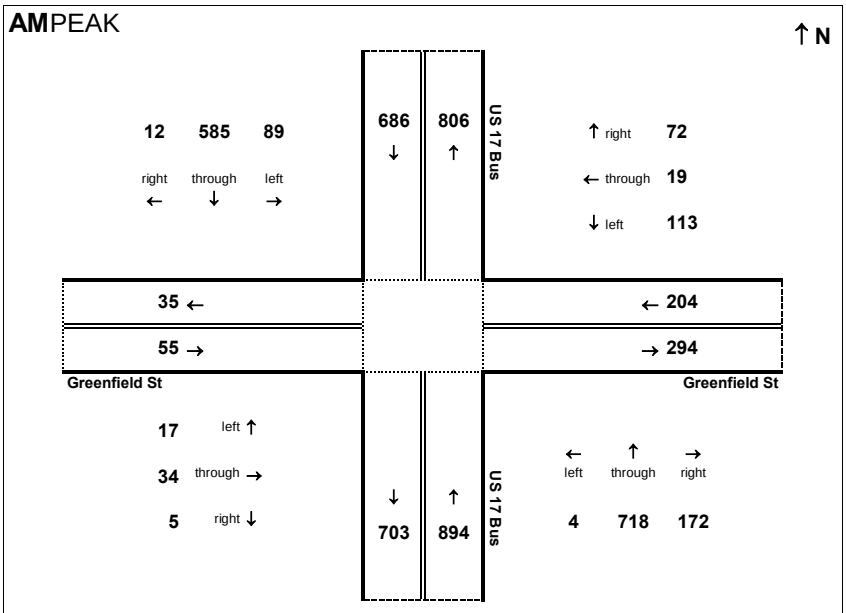
Peak Hour Volume Breakouts Report:
28 - Intersection of US 17 Business and Greenfield Street

Traffic Forecast Release Date:
Oct. 2014

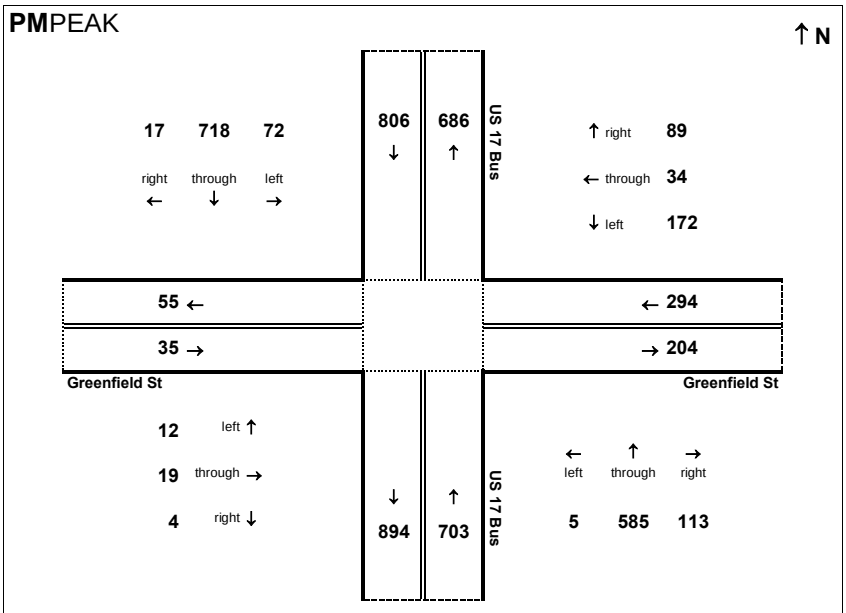
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1839 vehicles. AM peak hour outflow is 1838 vehicles.



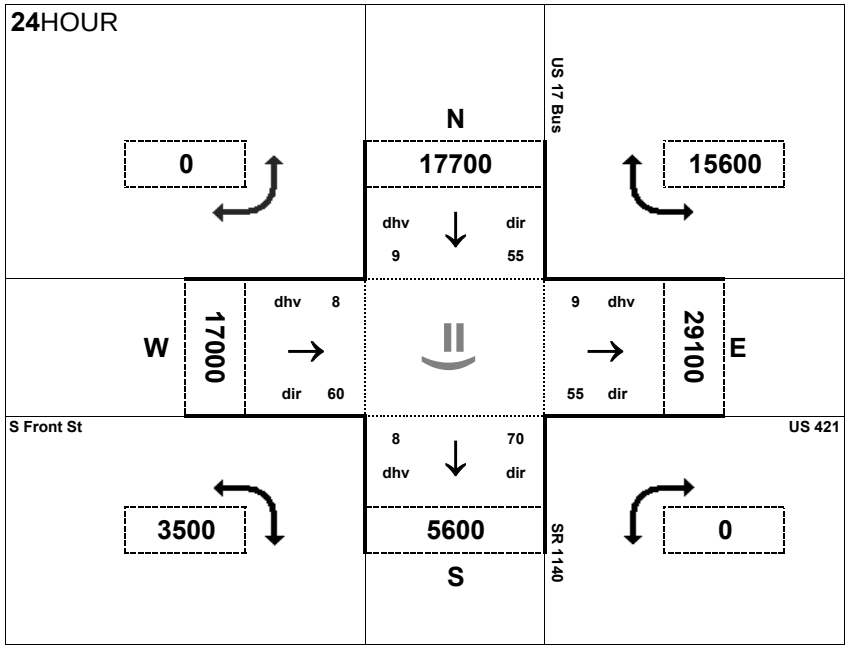
PM peak hour inflow is 1838 vehicles. PM peak hour outflow is 1839 vehicles.

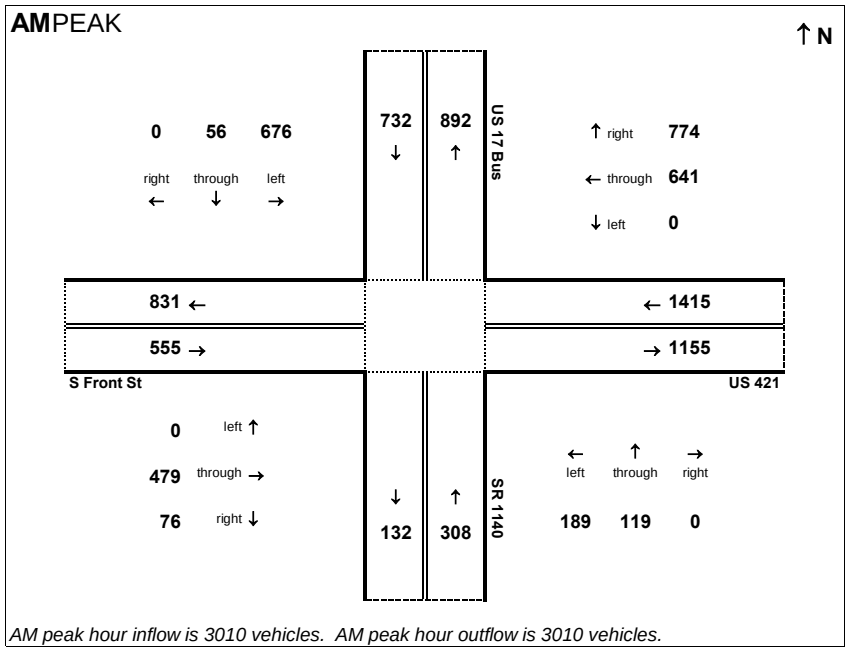
Peak Hour Volume Breakouts Report:
29 - Intersection of US 17 Business & S Front Street and US 421

Traffic Forecast Release Date:
Oct. 2014

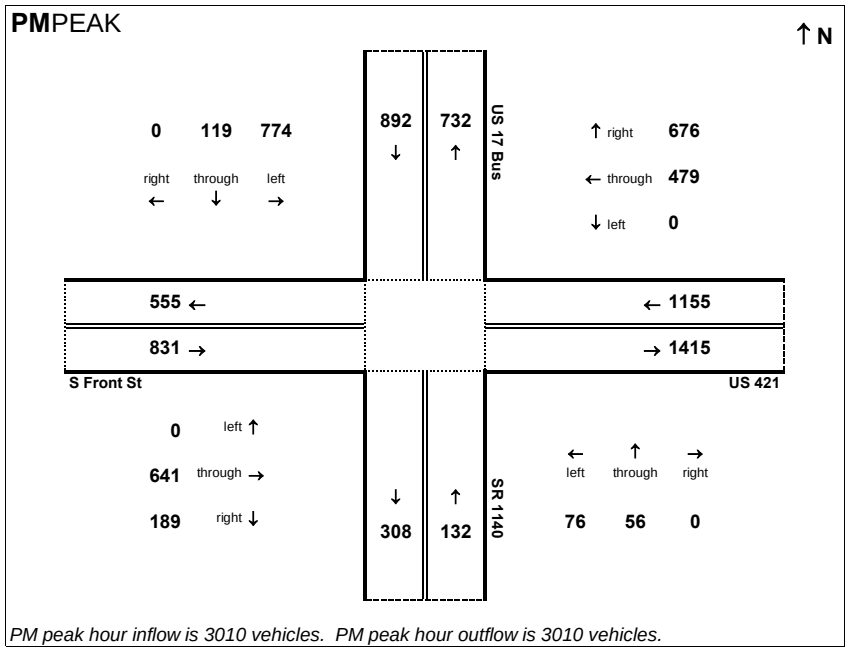
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 3010 vehicles. AM peak hour outflow is 3010 vehicles.



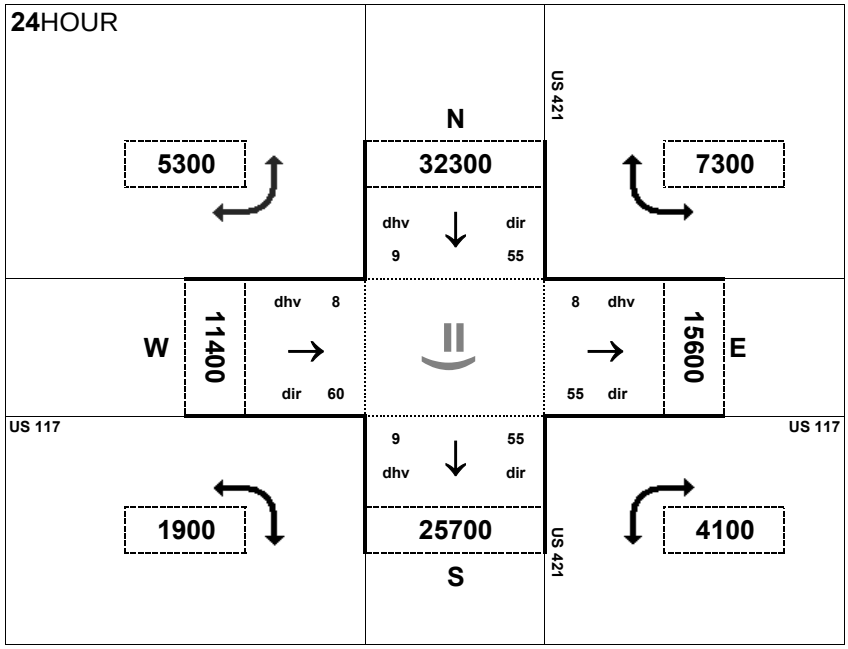
PM peak hour inflow is 3010 vehicles. PM peak hour outflow is 3010 vehicles.

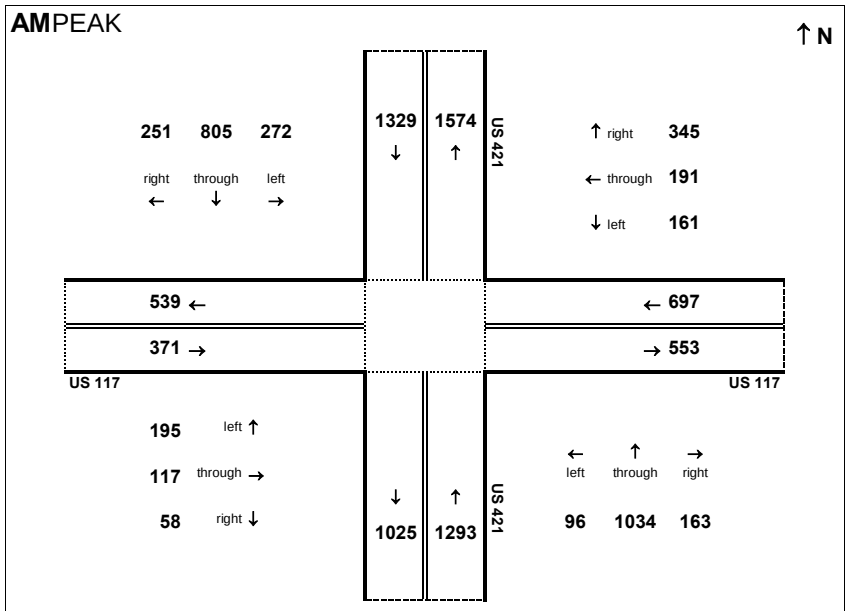
Peak Hour Volume Breakouts Report:
30 - Intersection of US 421 and US 117

Traffic Forecast Release Date:
Oct. 2014

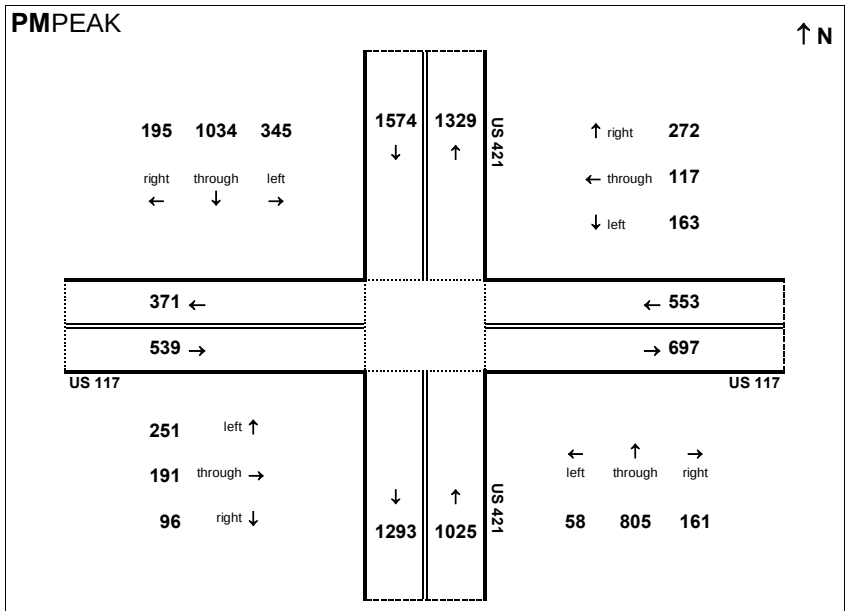
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 3690 vehicles. AM peak hour outflow is 3691 vehicles.



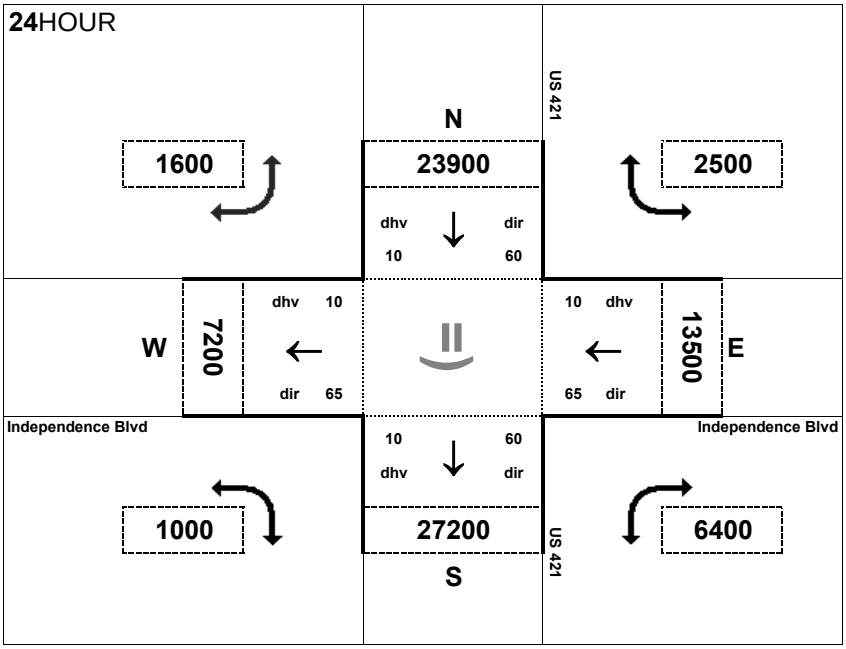
PM peak hour inflow is 3691 vehicles. PM peak hour outflow is 3690 vehicles.

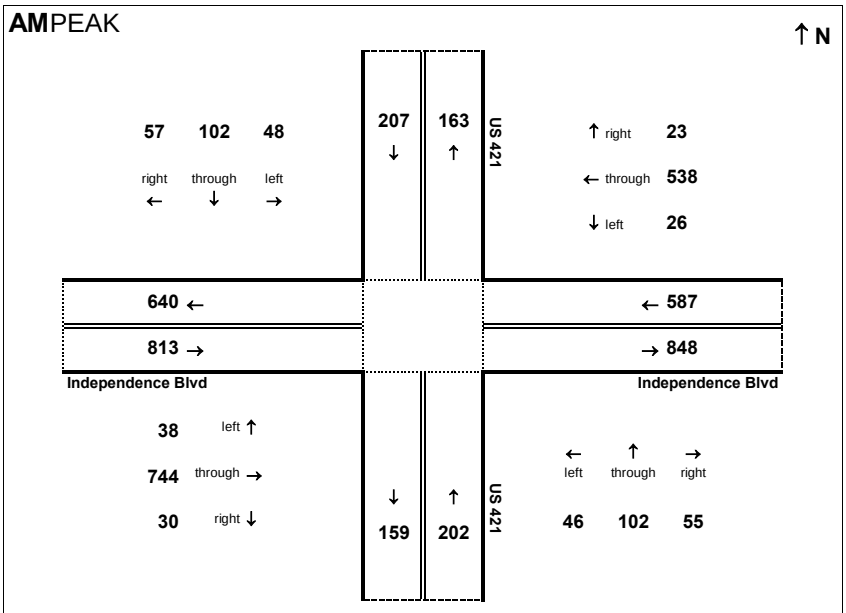
Peak Hour Volume Breakouts Report:
31 - Intersection of US 421 and Independence Blvd

Traffic Forecast Release Date:
Oct. 2014

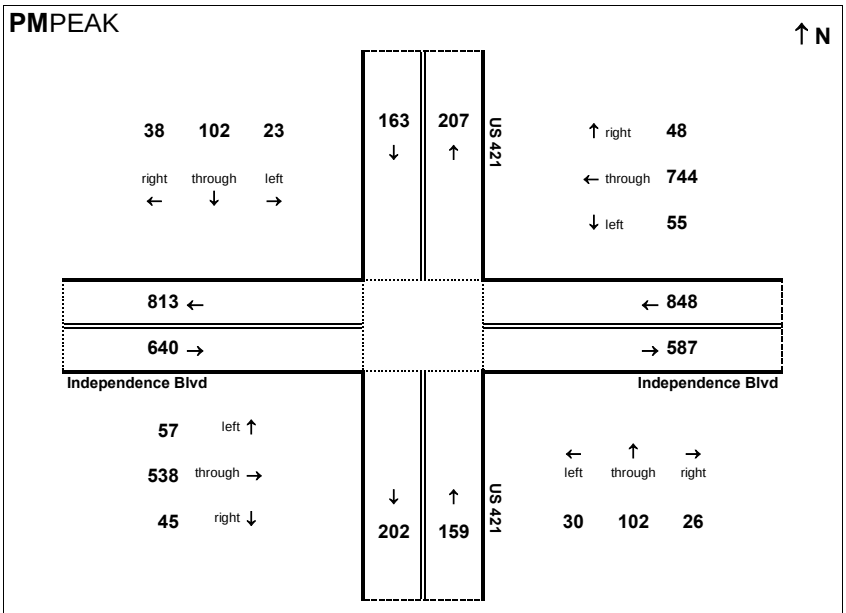
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



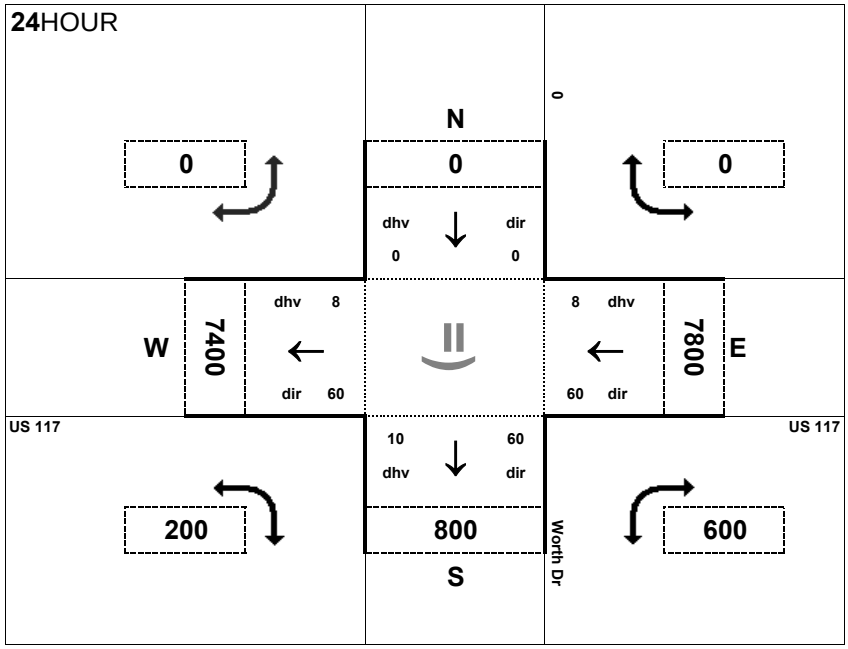
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

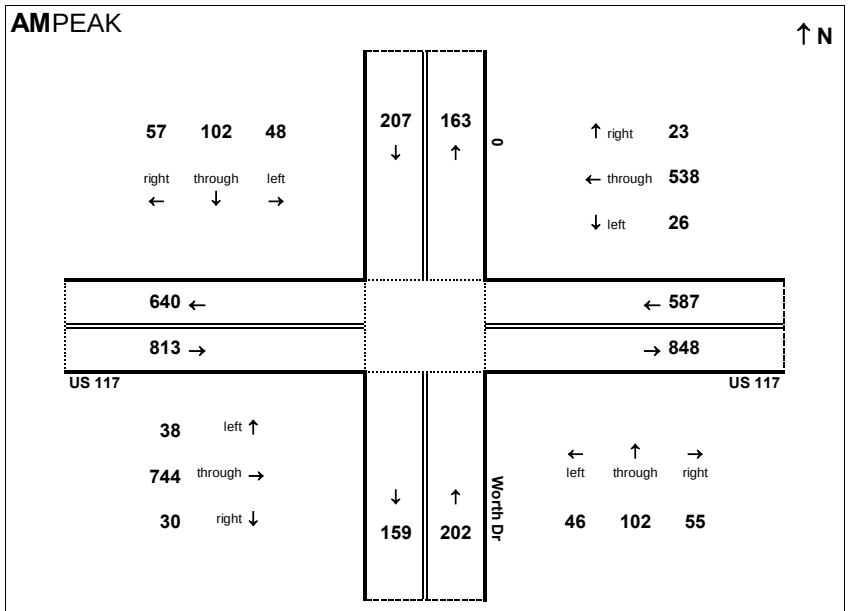
Peak Hour Volume Breakouts Report:
32 - Intersection of US 117 and Worth Drive

Traffic Forecast Release Date:
Oct. 2014

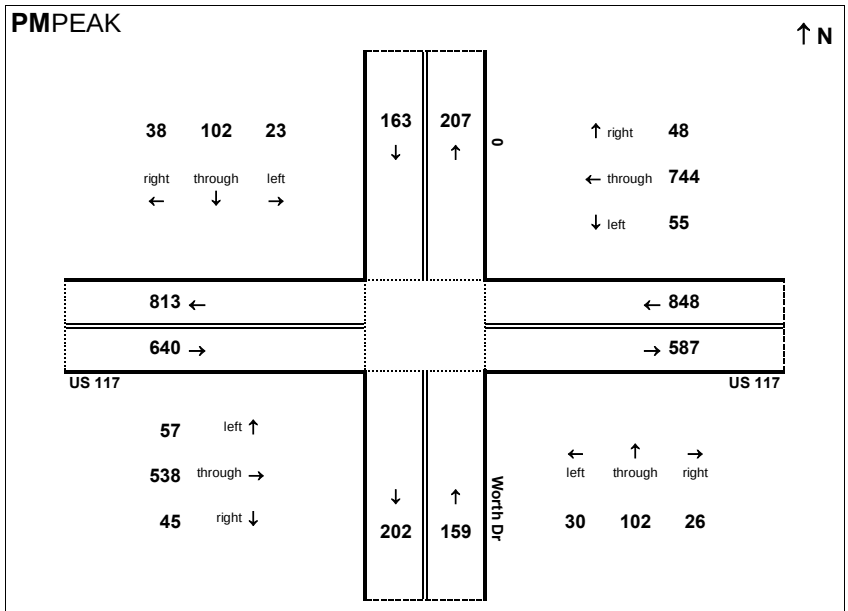
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



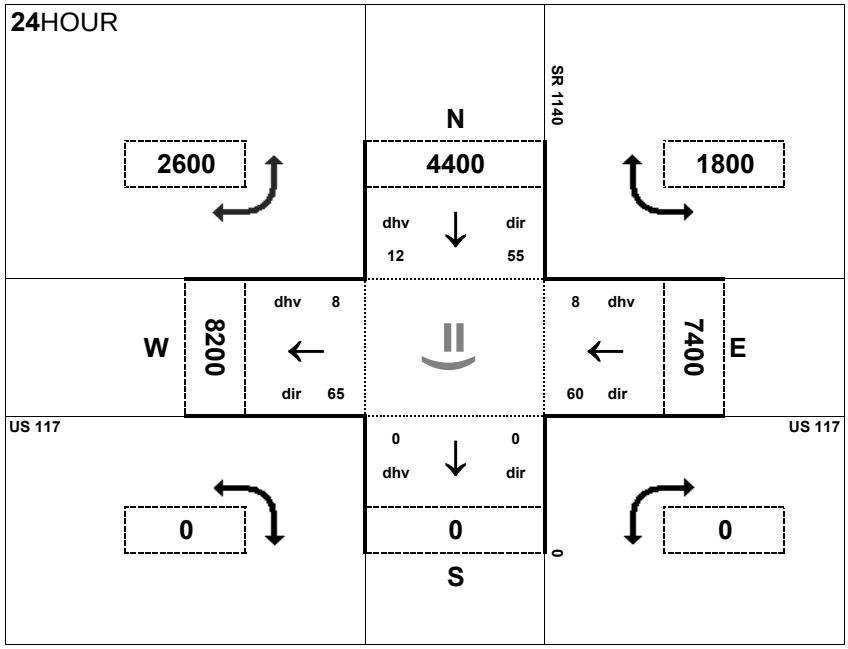
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

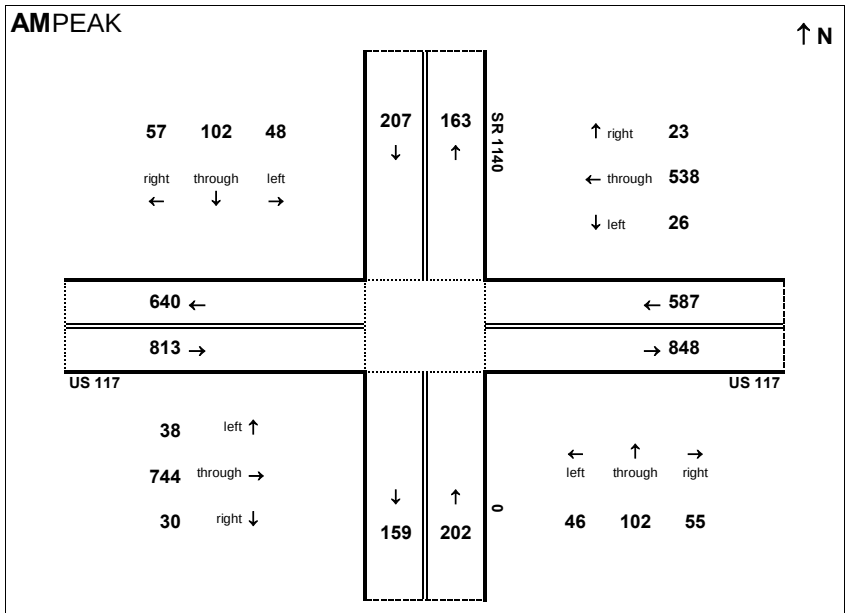
Peak Hour Volume Breakouts Report:
33 - Intersection of SR 1140 - Burnett Boulevard and US 117

Traffic Forecast Release Date:
Oct. 2014

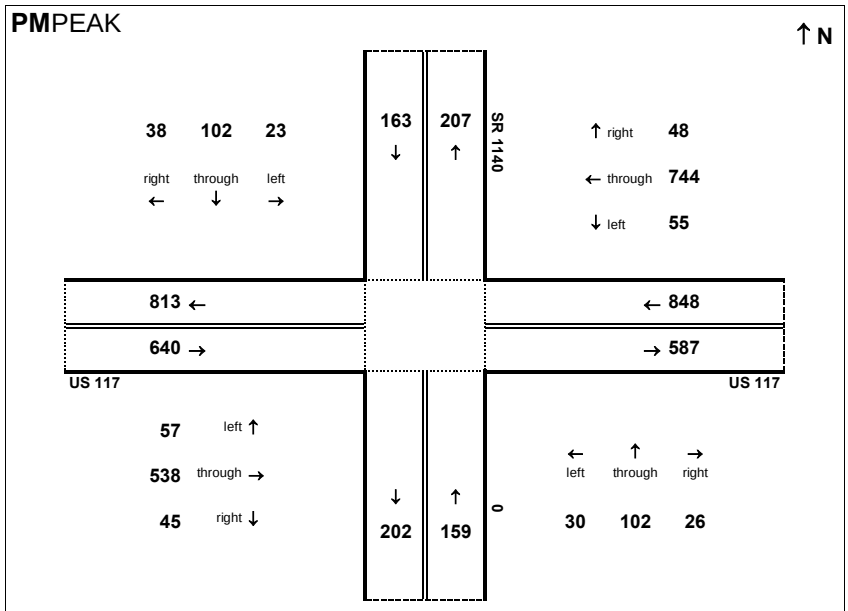
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



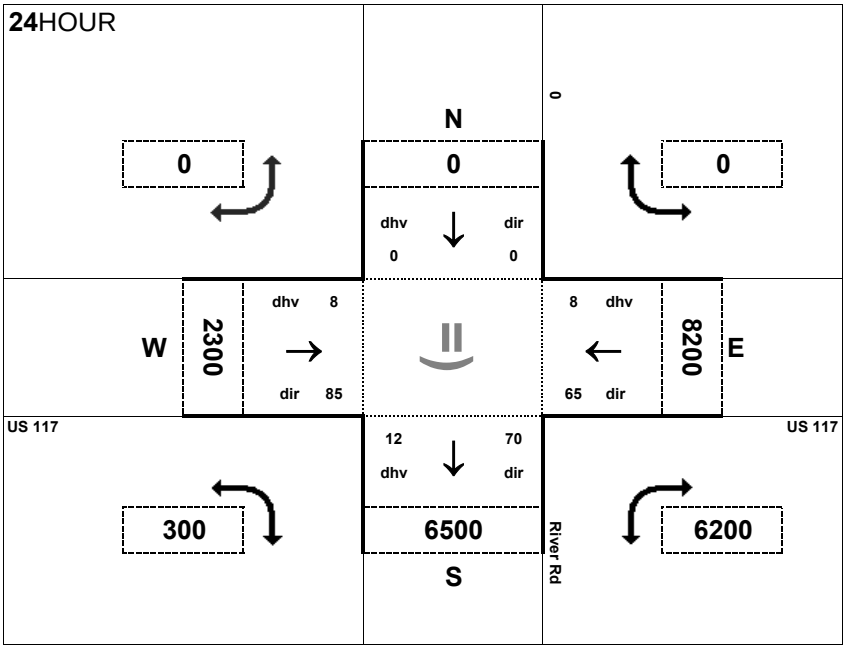
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

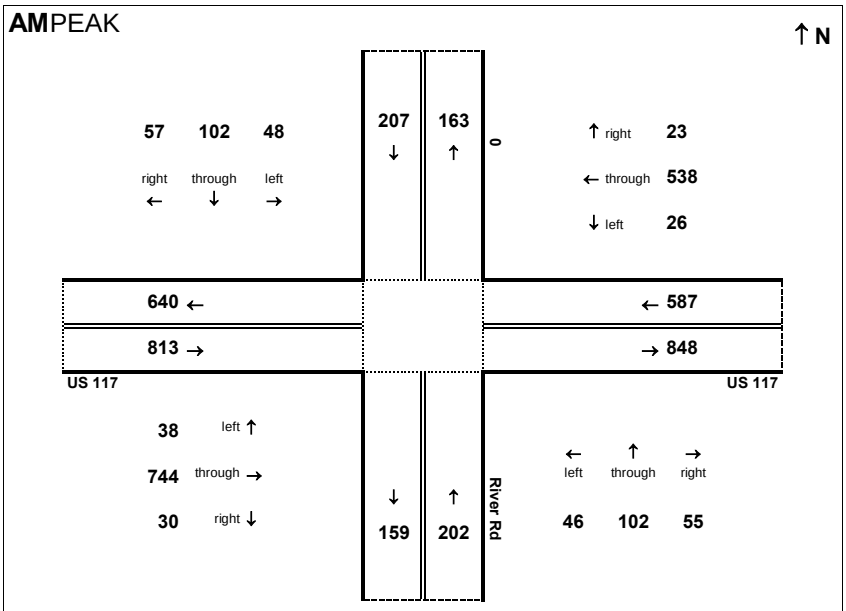
Peak Hour Volume Breakouts Report:
34 - Intersection of US 117 and River Road

Traffic Forecast Release Date:
Oct. 2014

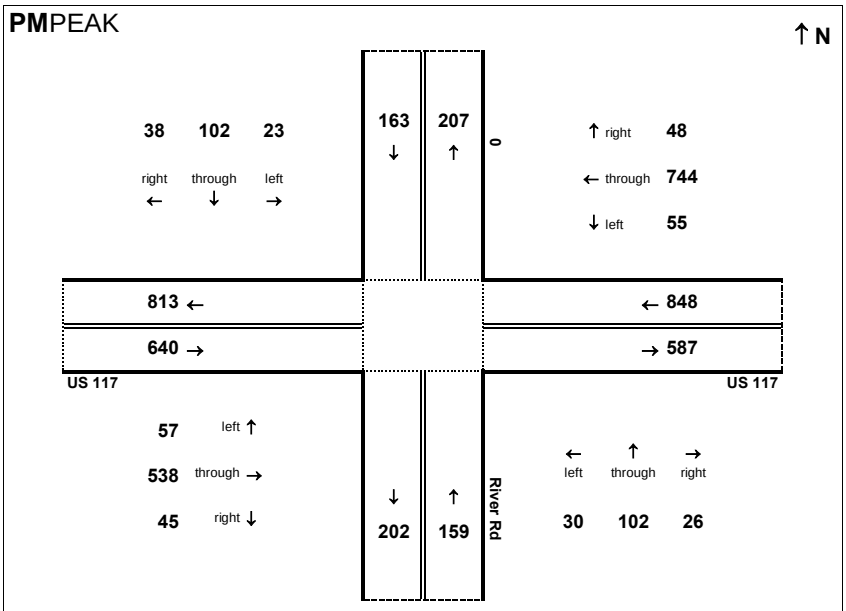
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



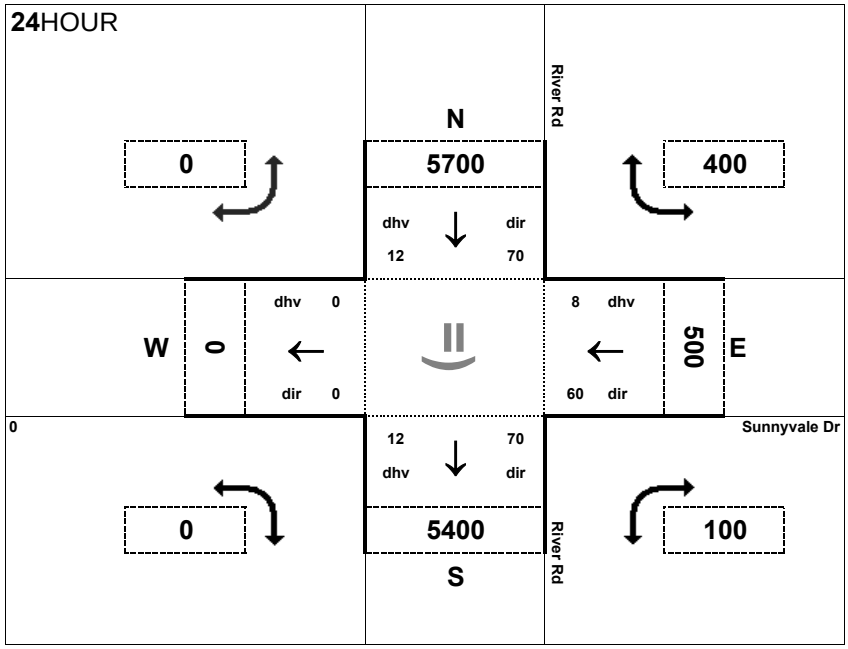
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

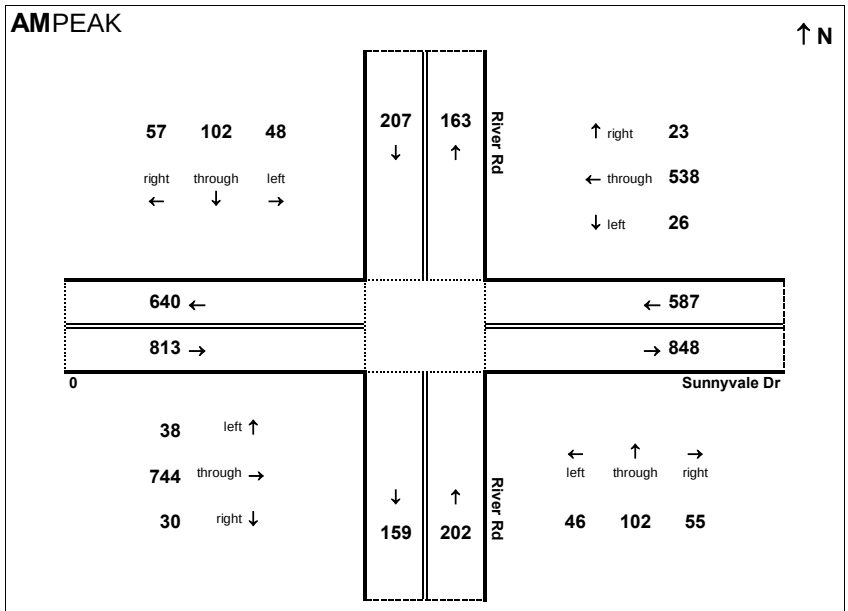
Peak Hour Volume Breakouts Report:
35 - Intersection of River Road and Sunnyvale Drive

Traffic Forecast Release Date:
Oct. 2014

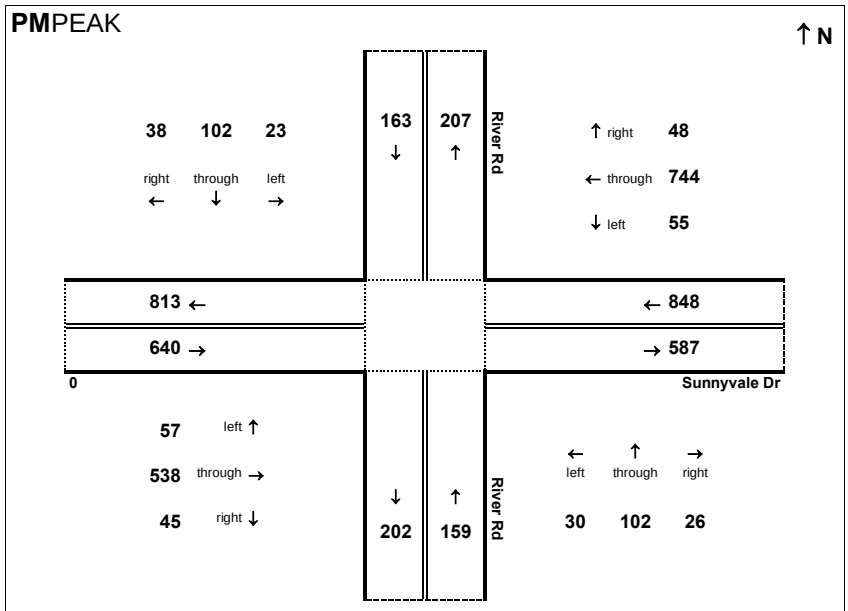
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



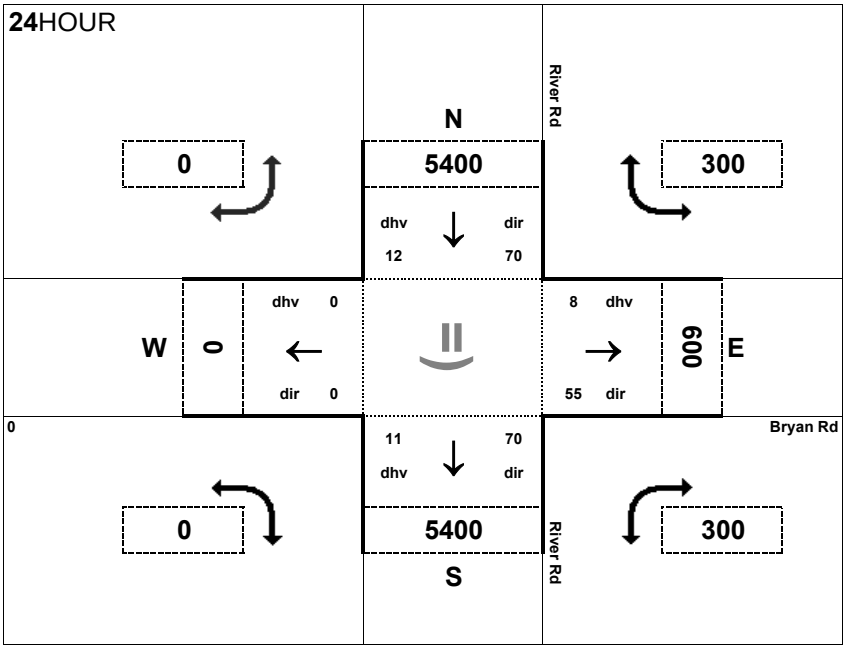
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

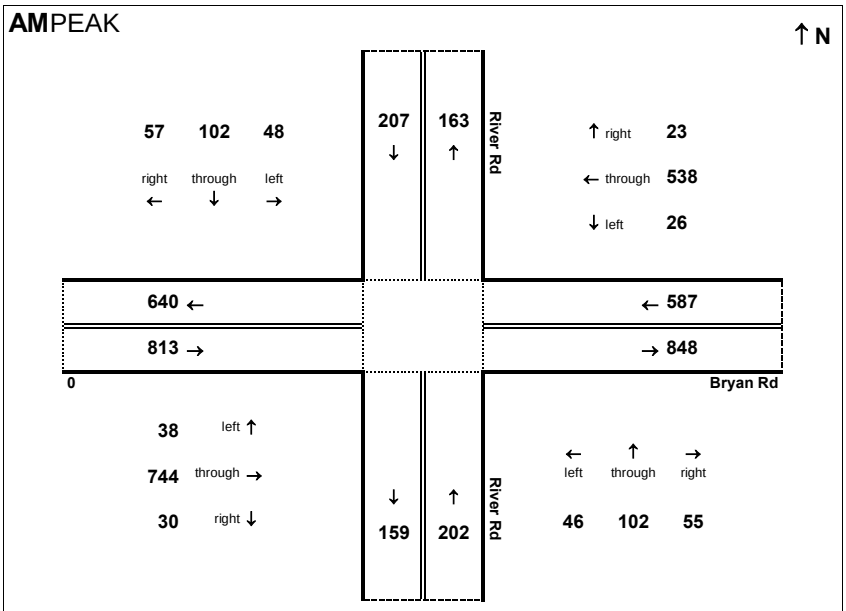
Peak Hour Volume Breakouts Report:
36 - Intersection of River Road and Bryan Road

Traffic Forecast Release Date:
Oct. 2014

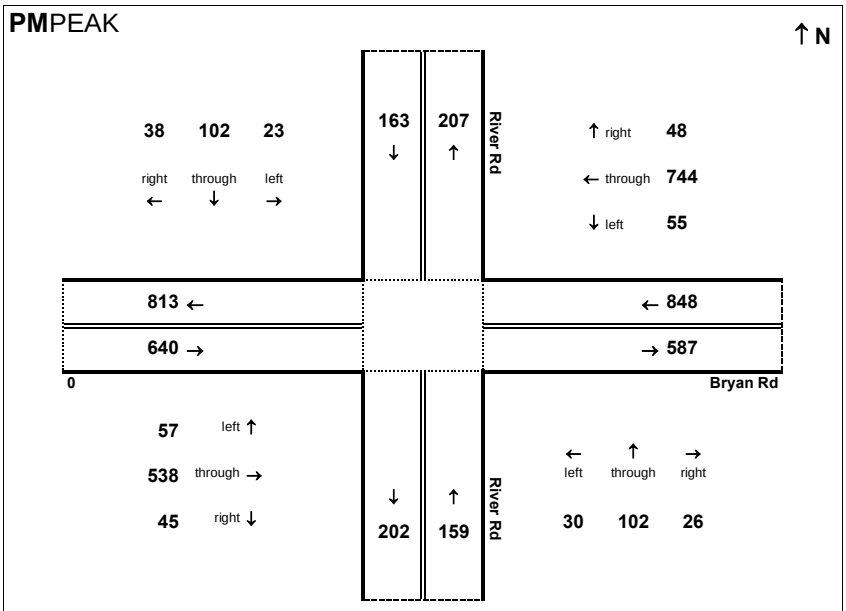
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



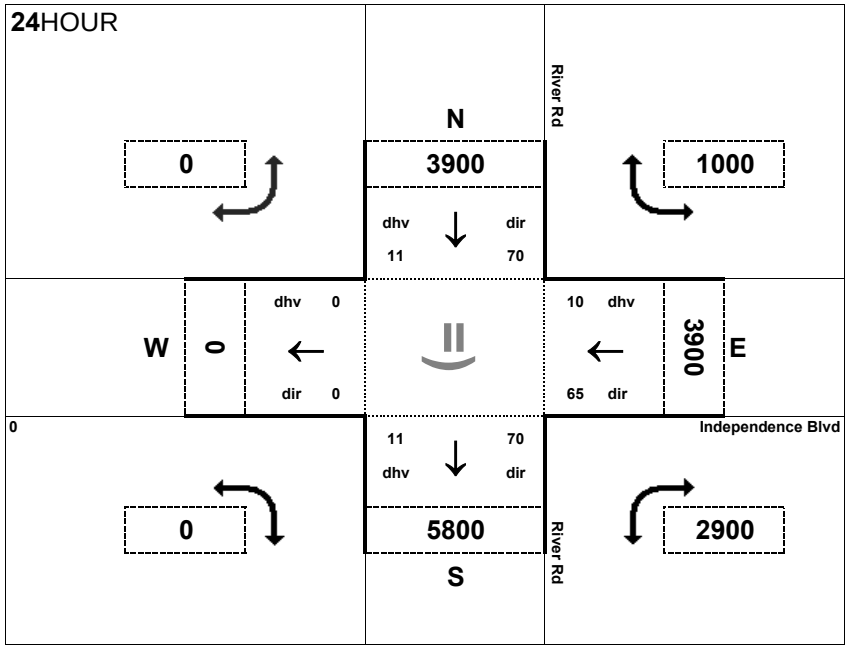
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

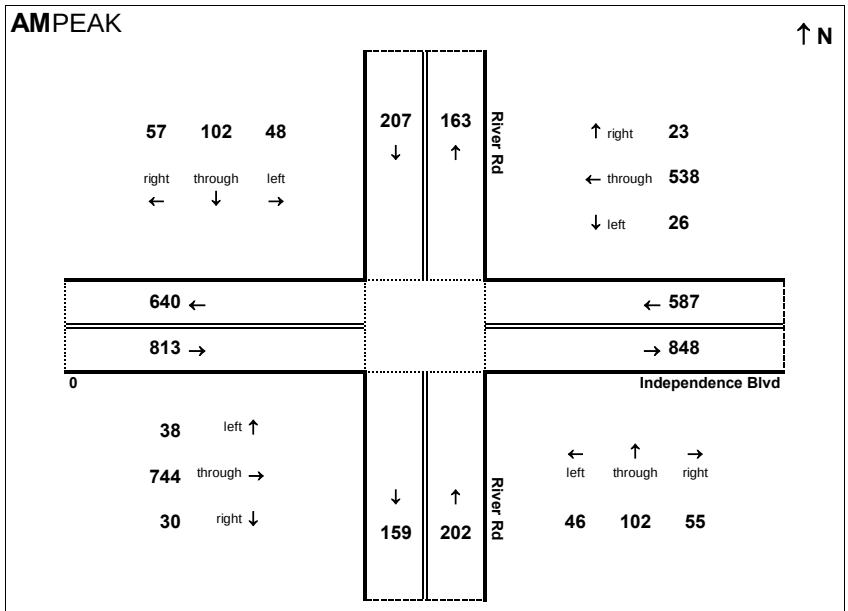
Peak Hour Volume Breakouts Report:
37 - Intersection of River Road and Independence Blvd

Traffic Forecast Release Date:
Oct. 2014

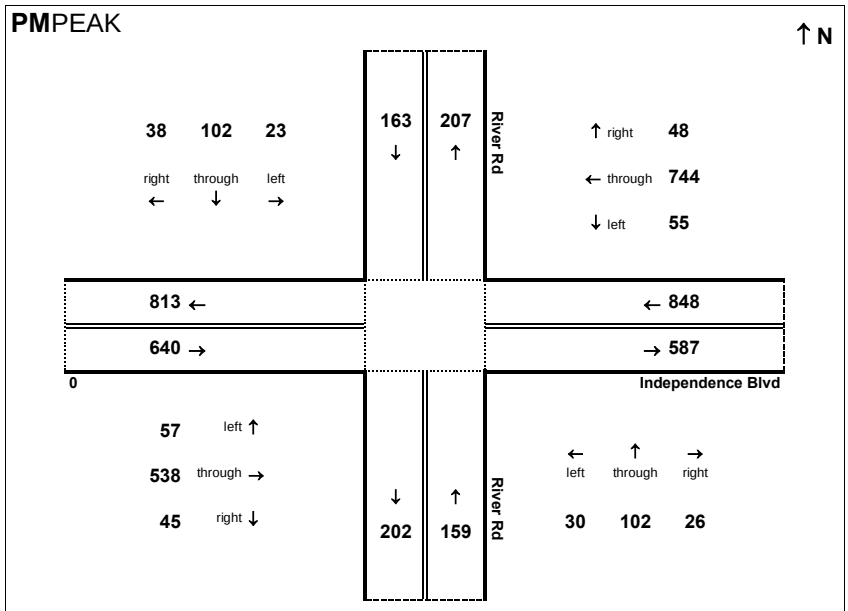
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build

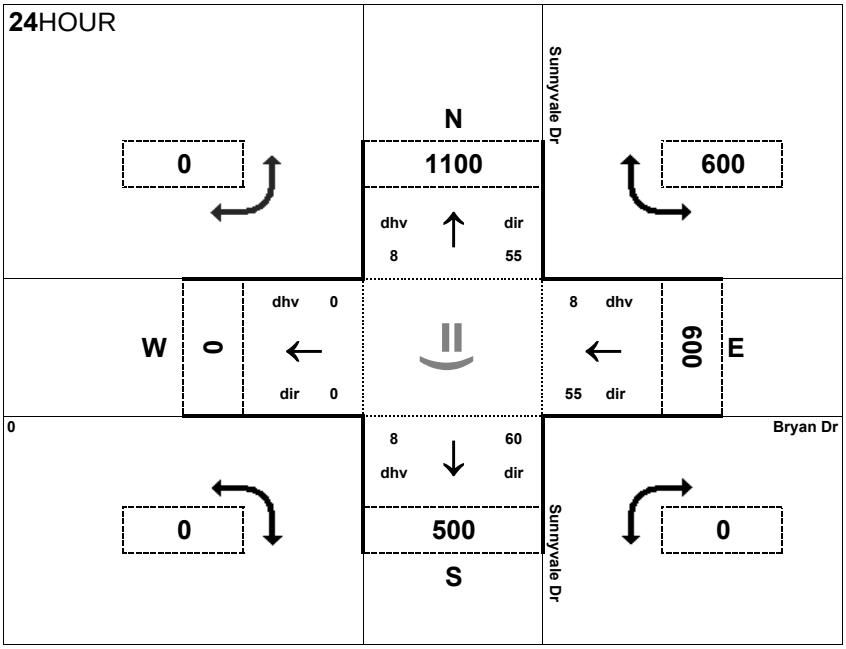




AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

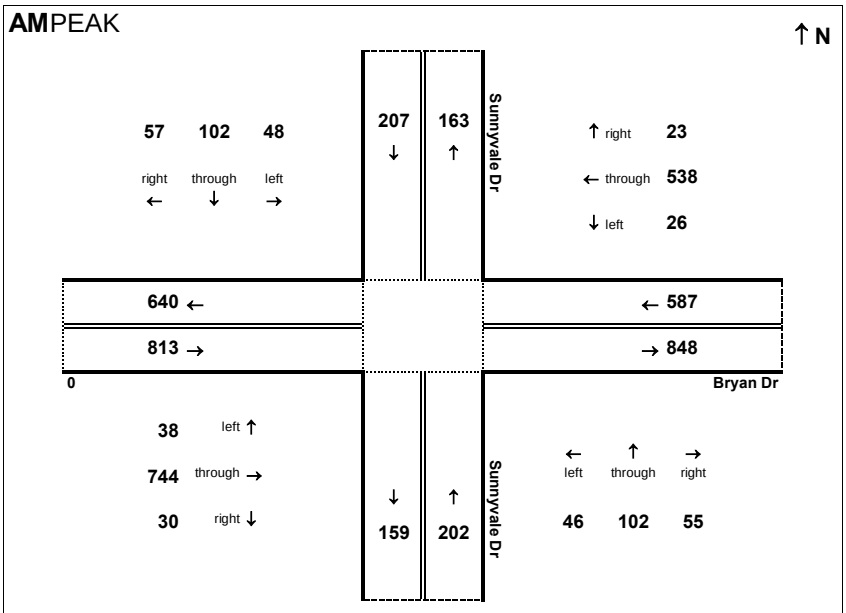


Peak Hour Volume Breakouts Report:
38 - Intersection of Sunnyvale Drive and Bryan Road

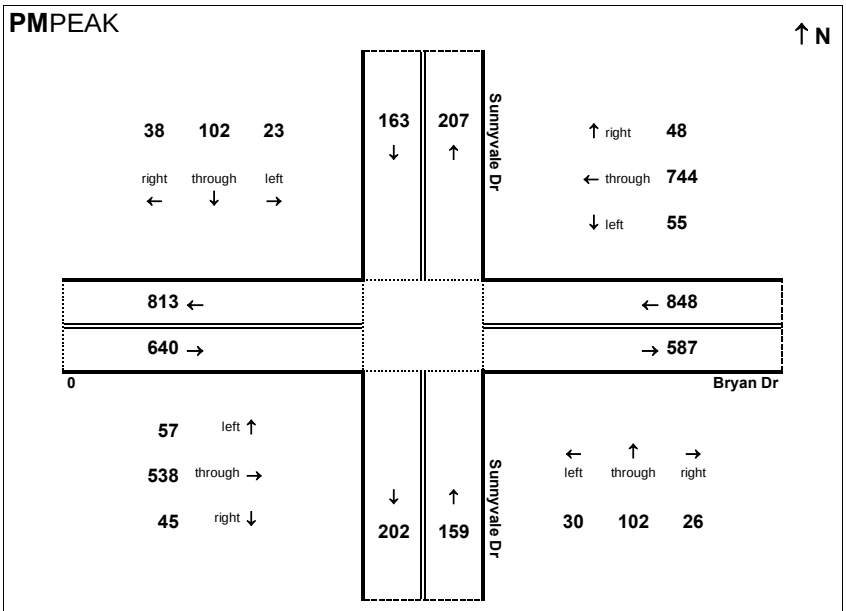
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build



AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



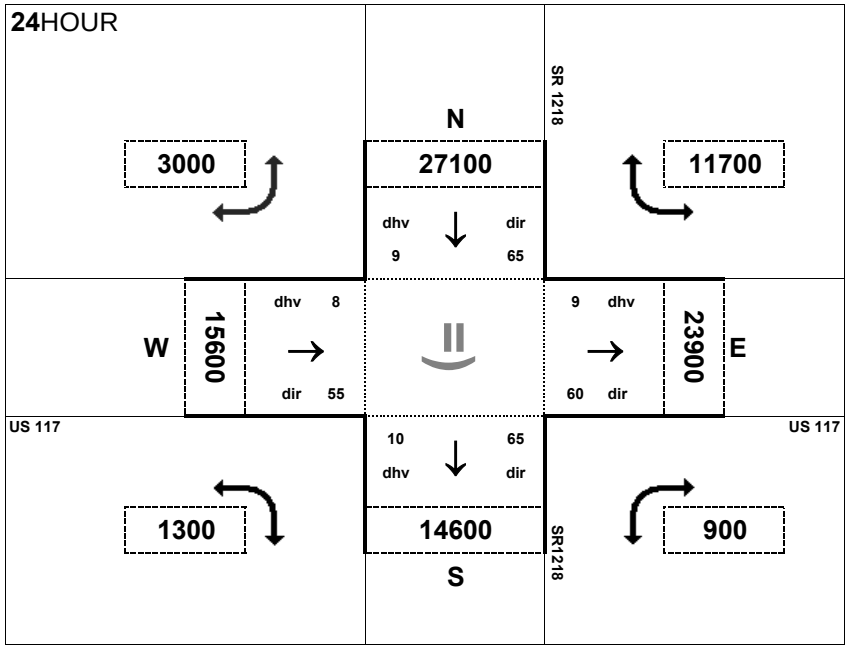
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

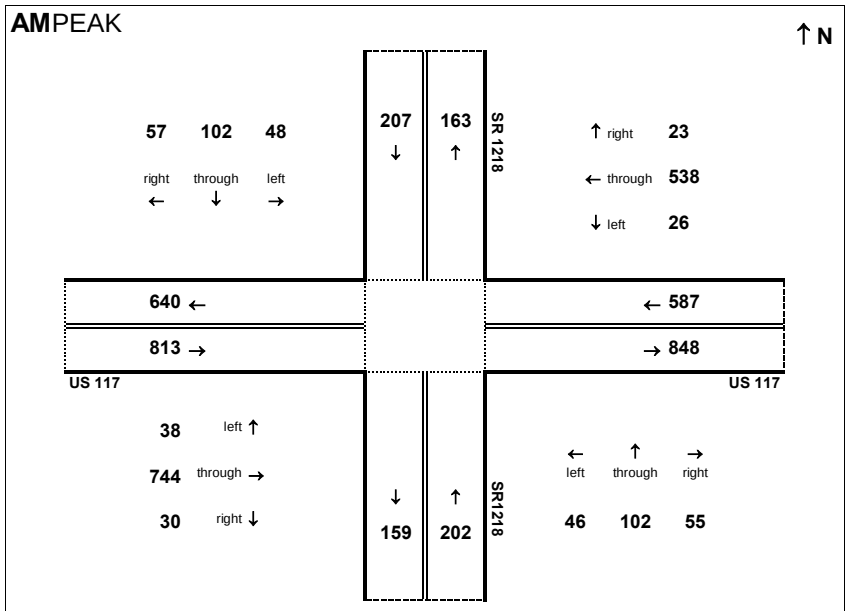
Peak Hour Volume Breakouts Report:
39 - Intersection of SR 1218 - S 17th Street & US 117

Traffic Forecast Release Date:
Oct. 2014

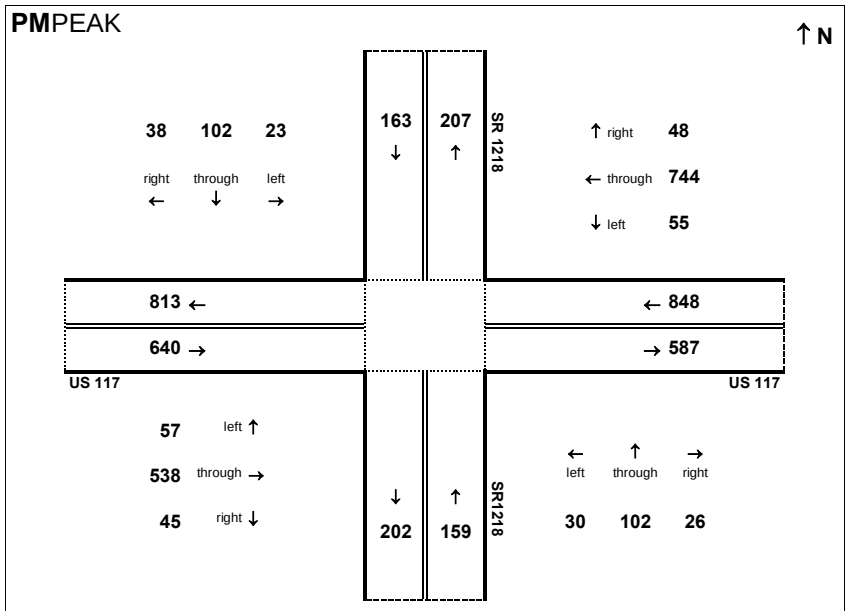
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



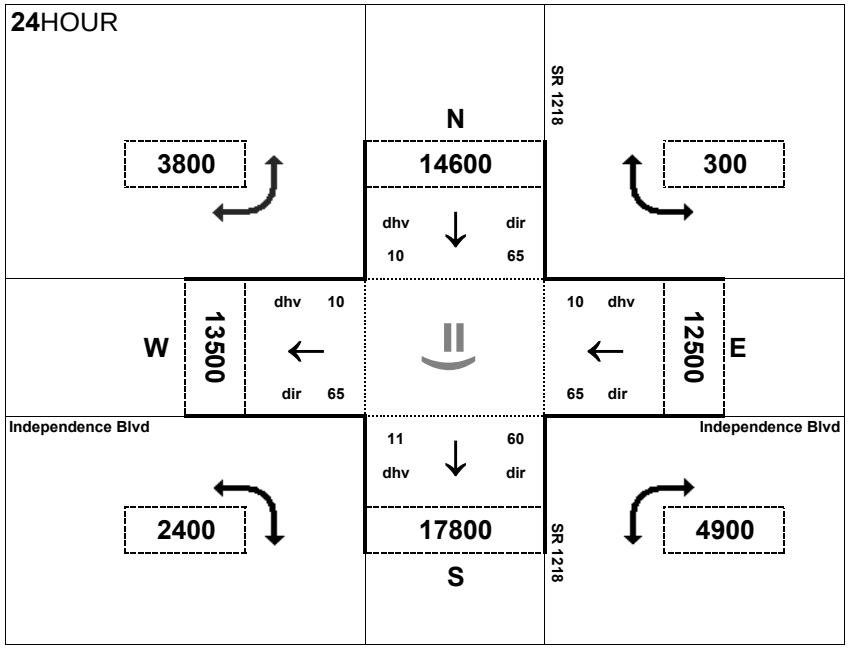
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

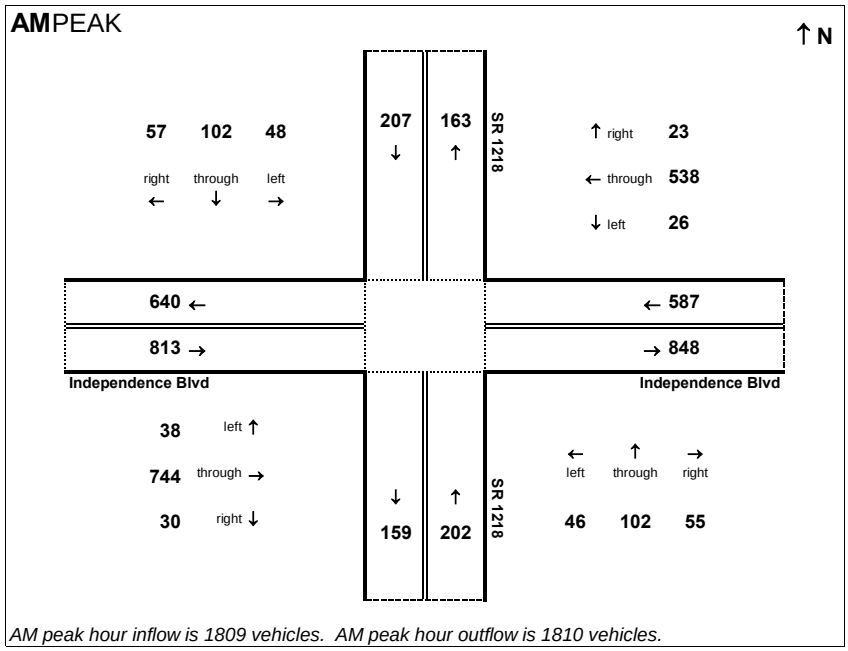
Peak Hour Volume Breakouts Report:
40 - Intersection of SR 1218 - S. 17th Street and Independence Blvd

Traffic Forecast Release Date:
Oct. 2014

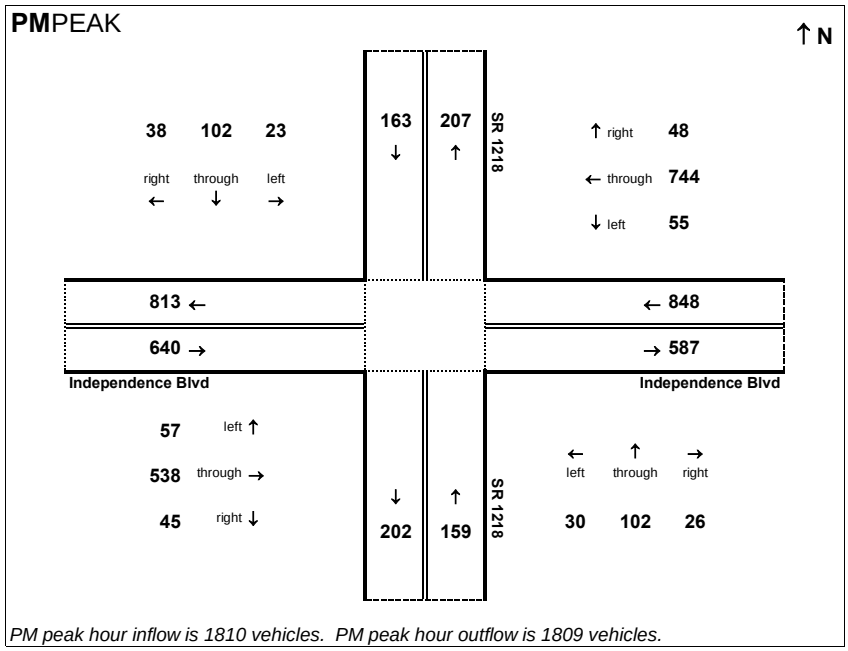
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build

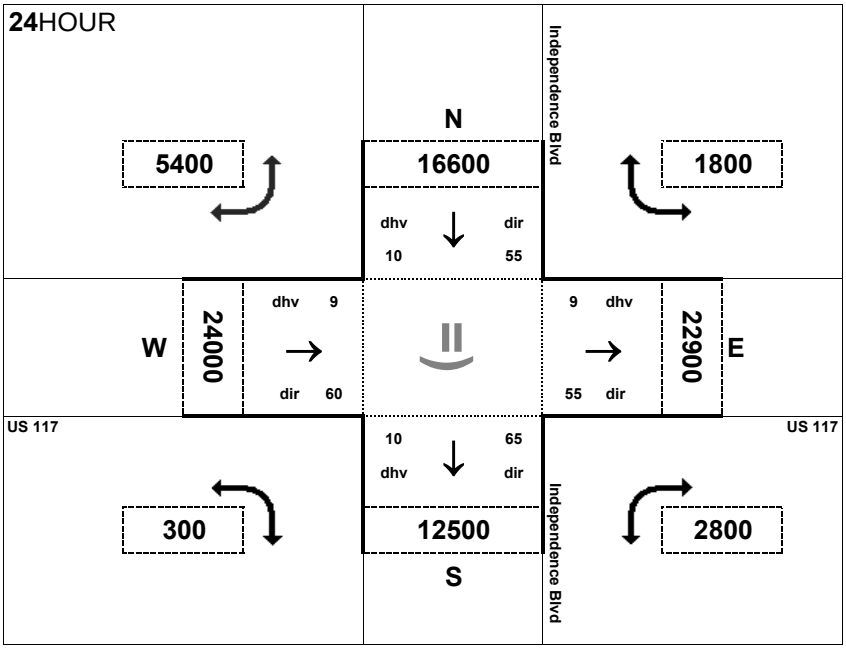




AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

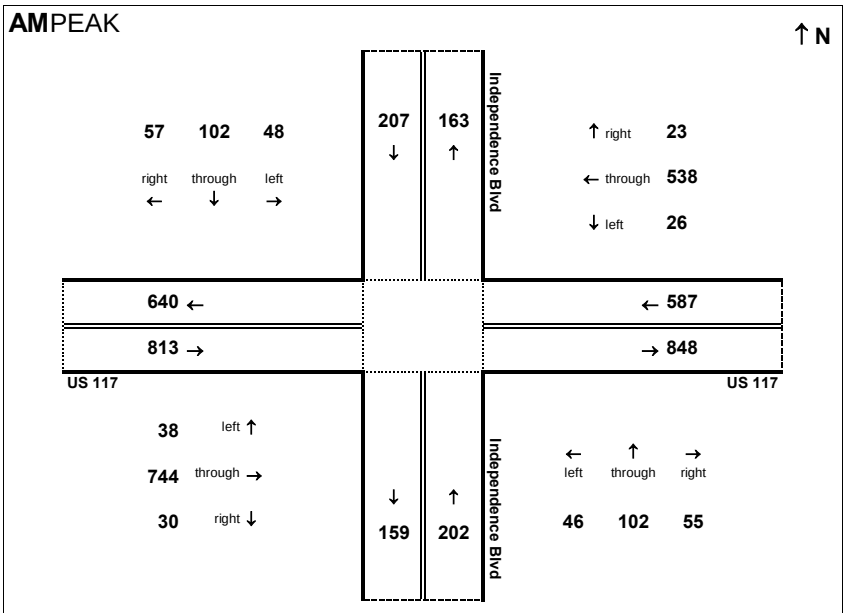


Peak Hour Volume Breakouts Report:
41 - Intersection of Independence Blvd & US 117

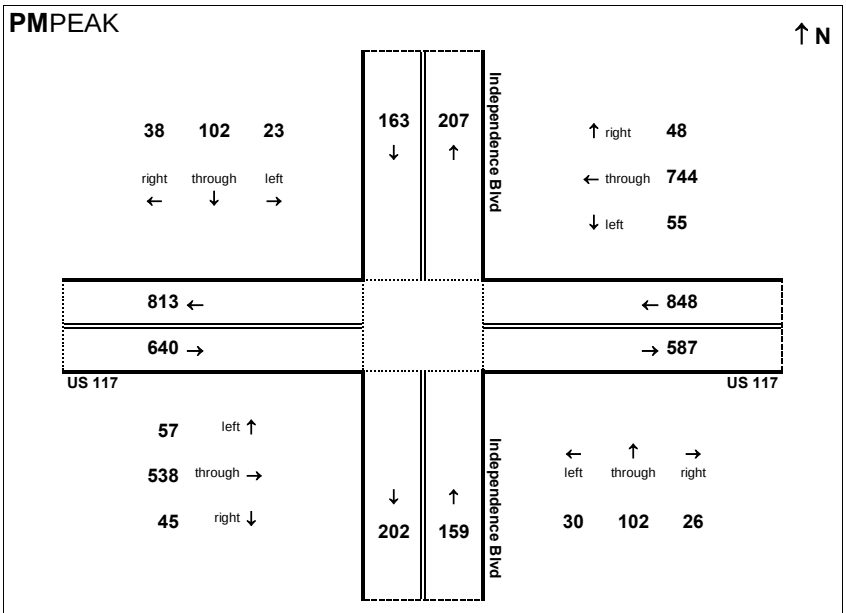
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build



AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



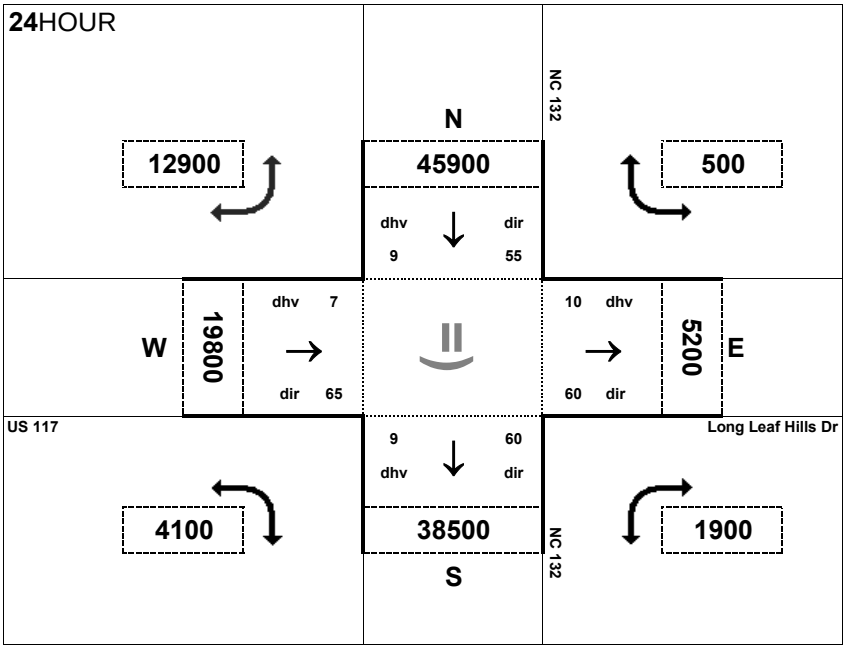
PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

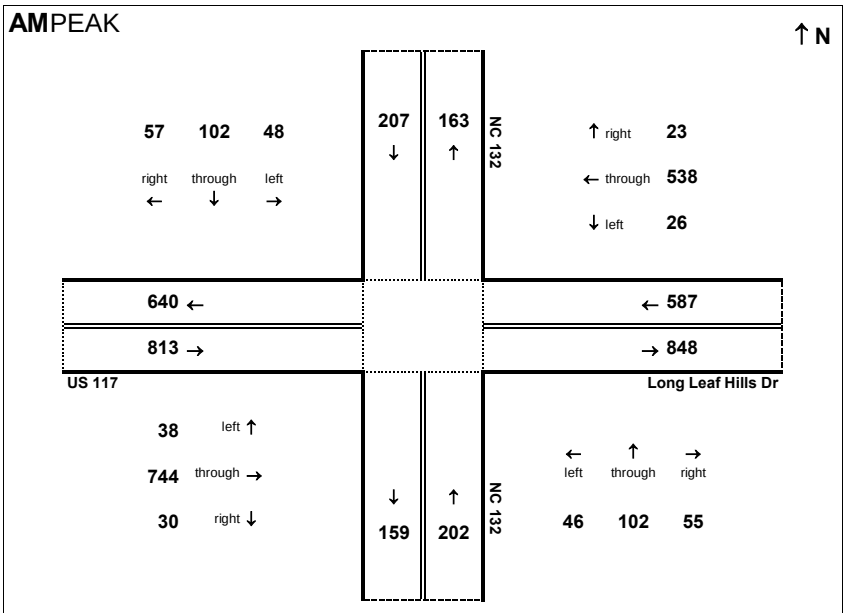
Peak Hour Volume Breakouts Report:
42 - Intersection of NC 132 & US 117

Traffic Forecast Release Date:
Oct. 2014

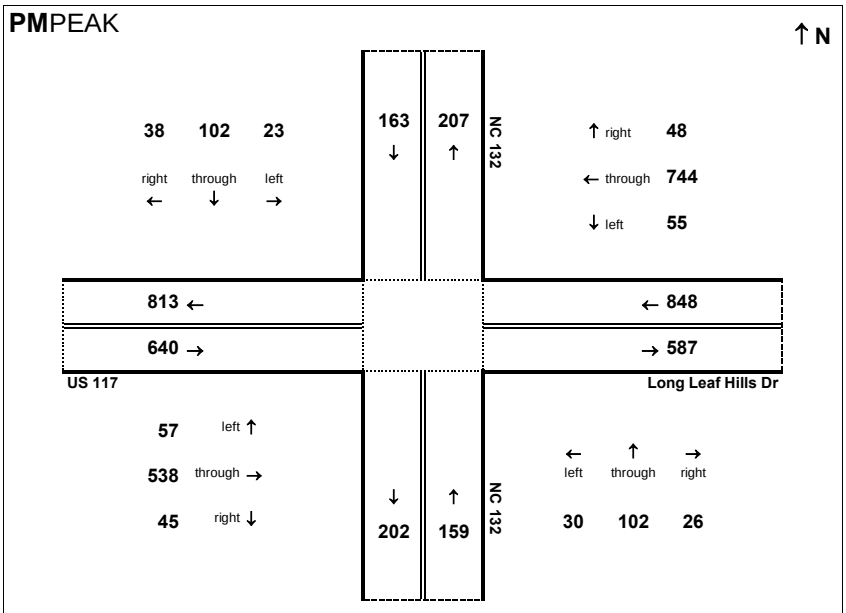
Traffic Data Year:
2013

Project:
Cape Fear Crossing - No Build





AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

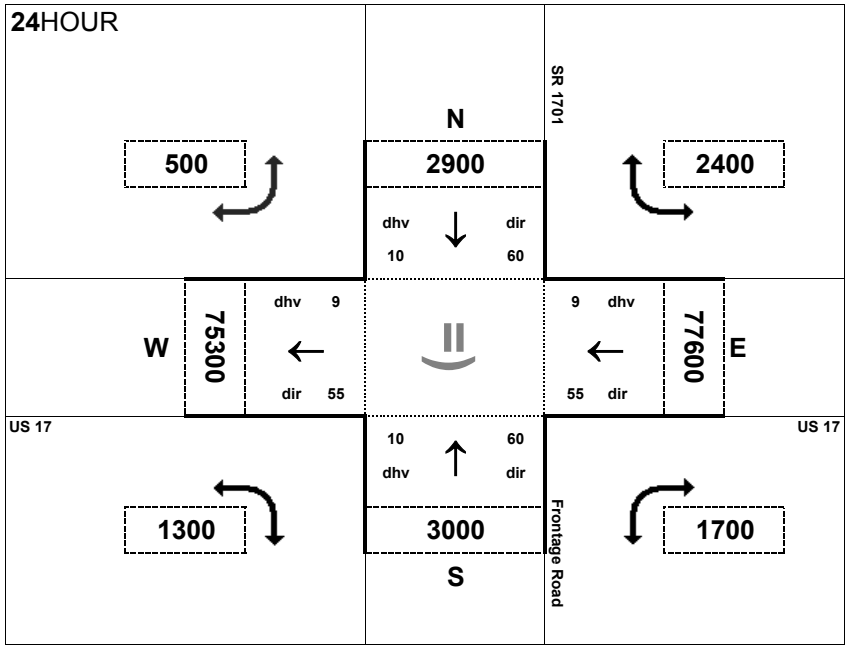
2040 No-Build

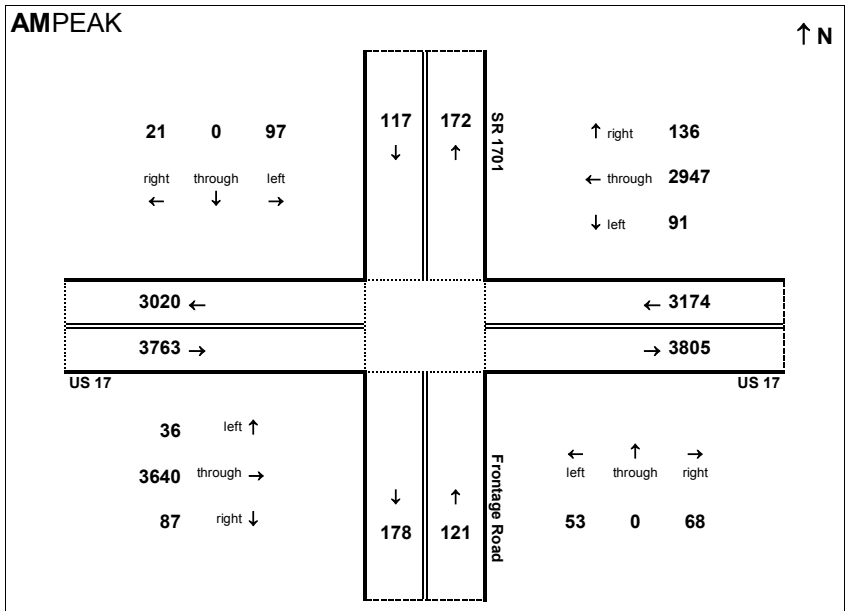
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

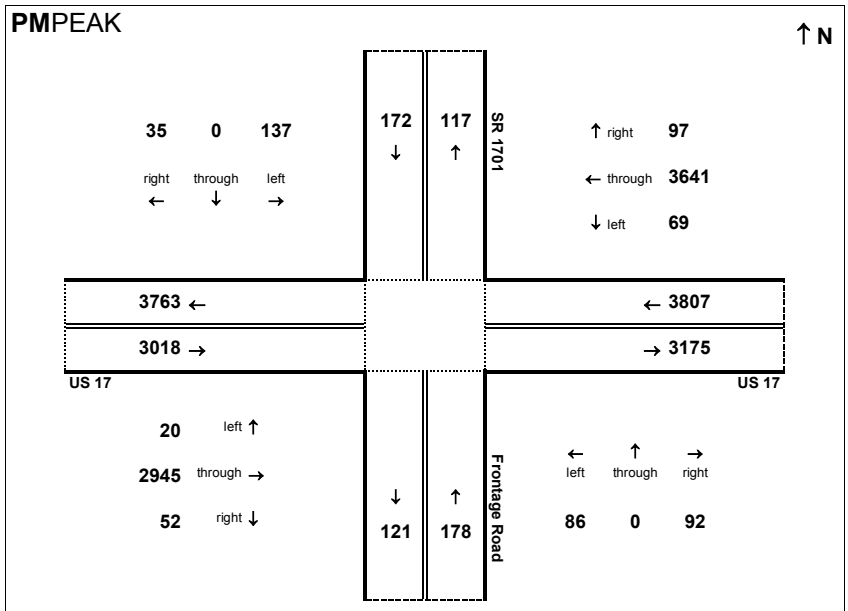
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 7175 vehicles. AM peak hour outflow is 7175 vehicles.



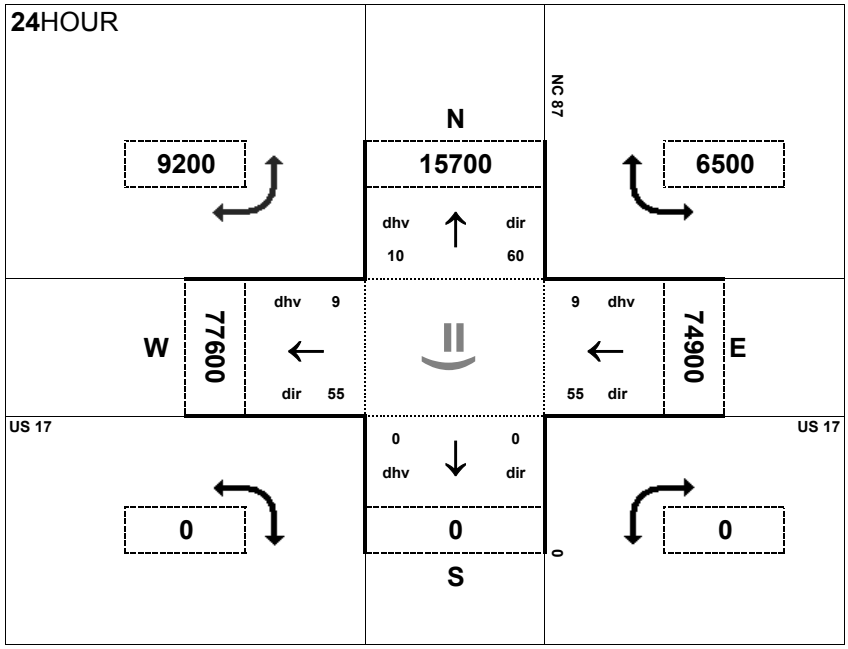
PM peak hour inflow is 7175 vehicles. PM peak hour outflow is 7176 vehicles.

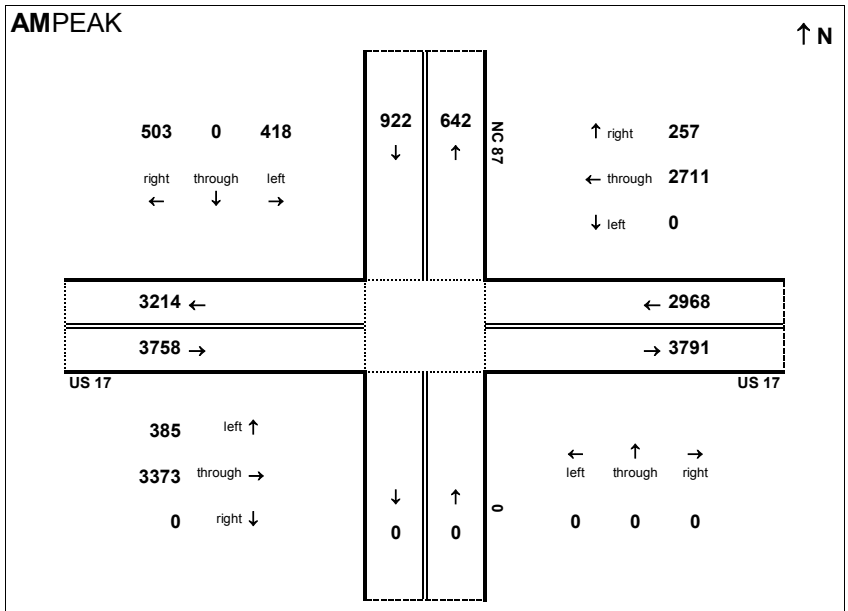
Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

Traffic Forecast Release Date:
Oct. 2014

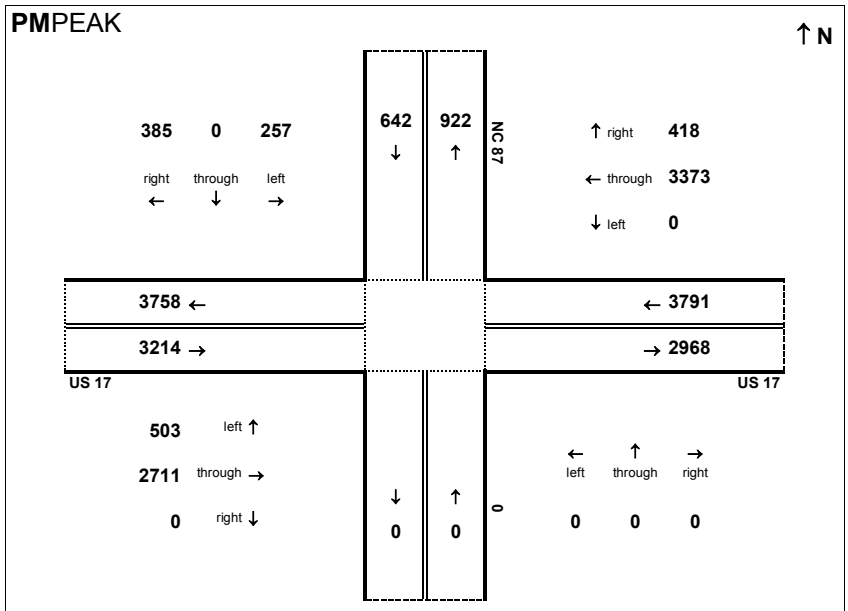
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 7648 vehicles. AM peak hour outflow is 7647 vehicles.



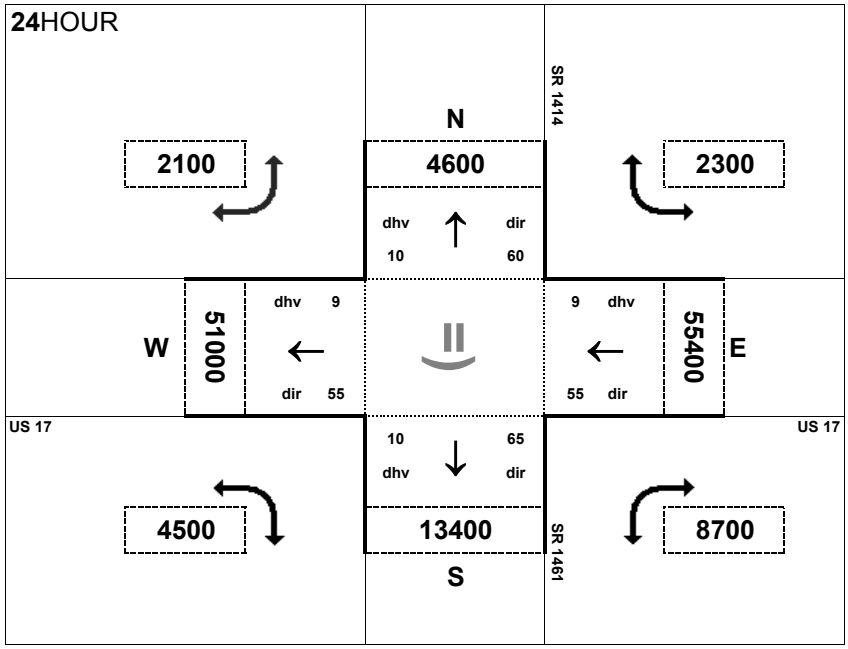
PM peak hour inflow is 7647 vehicles. PM peak hour outflow is 7648 vehicles.

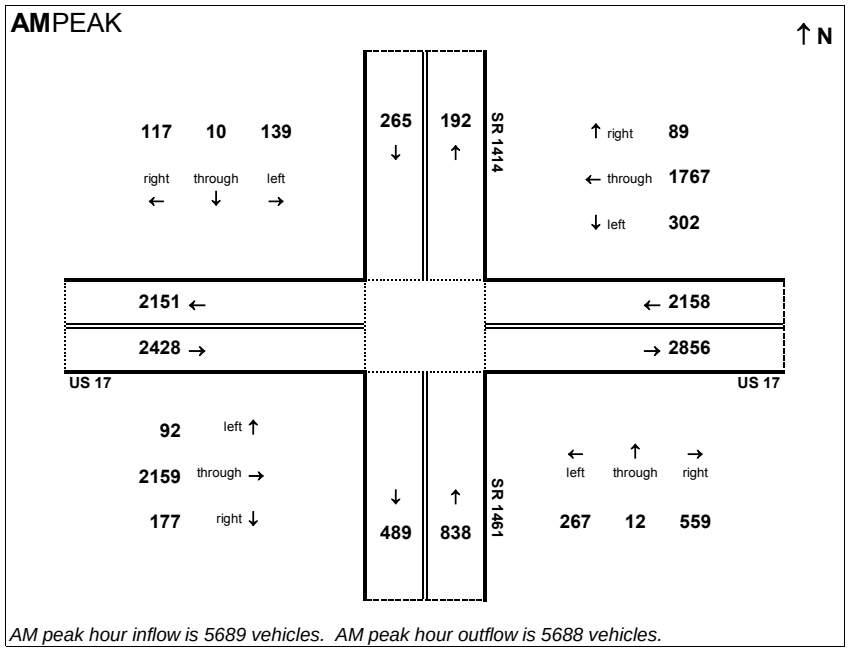
Peak Hour Volume Breakouts Report:
03 - Intersection of US 17 & SR 1414 - Goodman Road and SR 1461 - Hewett-Burton Road

Traffic Forecast Release Date:
Oct. 2014

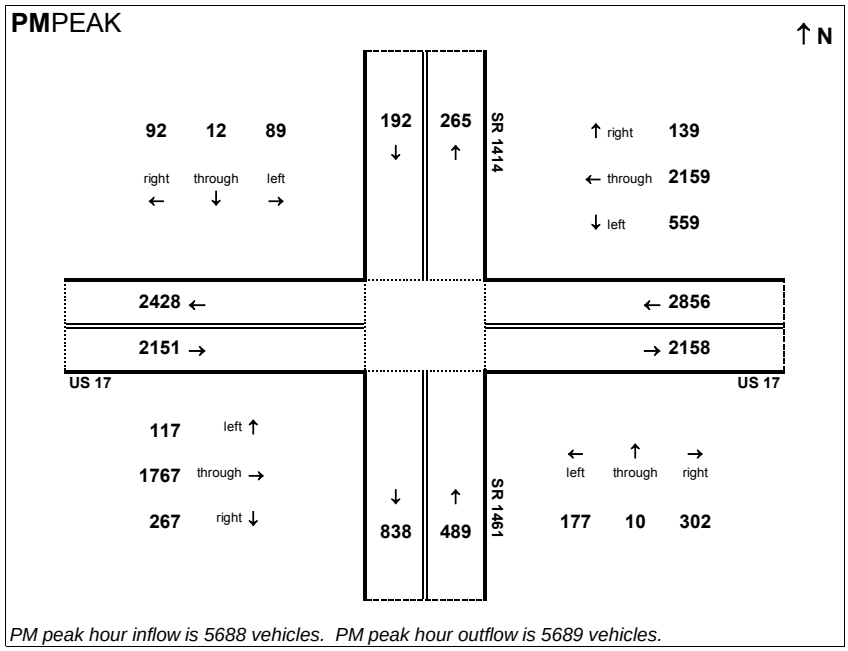
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 5689 vehicles. AM peak hour outflow is 5688 vehicles.



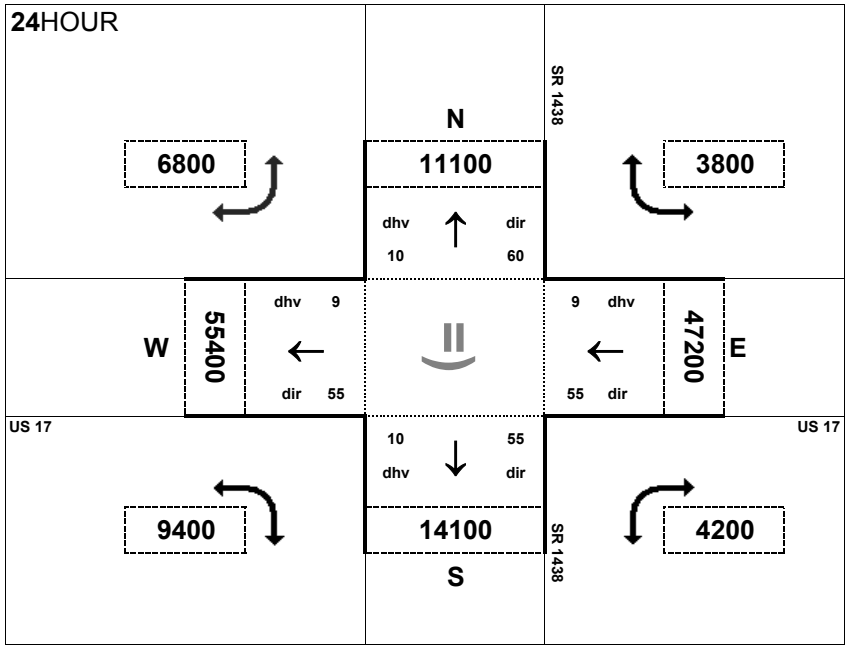
PM peak hour inflow is 5688 vehicles. PM peak hour outflow is 5689 vehicles.

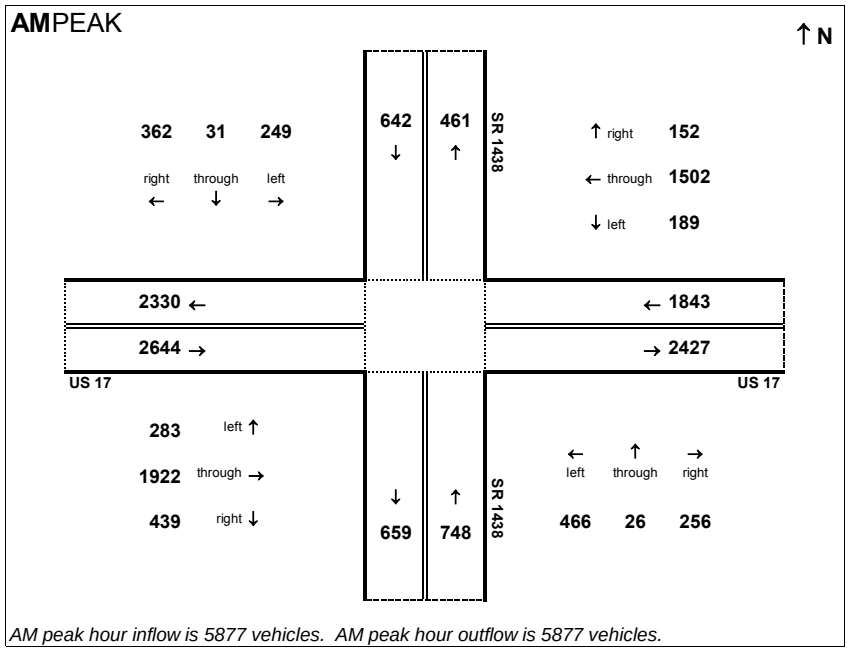
Peak Hour Volume Breakouts Report:
04 - Intersection of US 17 & SR 1438 - Lanvale Road

Traffic Forecast Release Date:
Oct. 2014

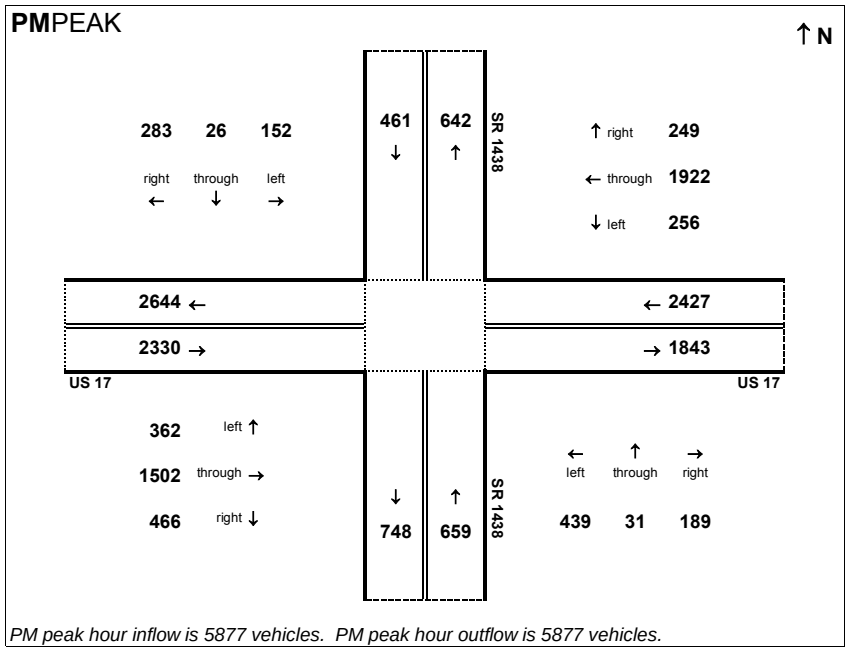
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 5877 vehicles. AM peak hour outflow is 5877 vehicles.



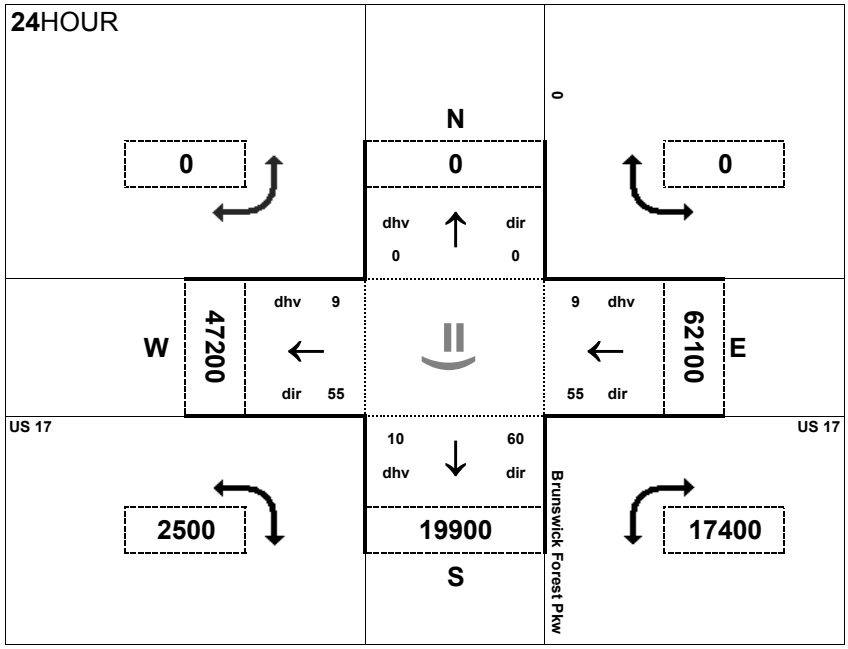
PM peak hour inflow is 5877 vehicles. PM peak hour outflow is 5877 vehicles.

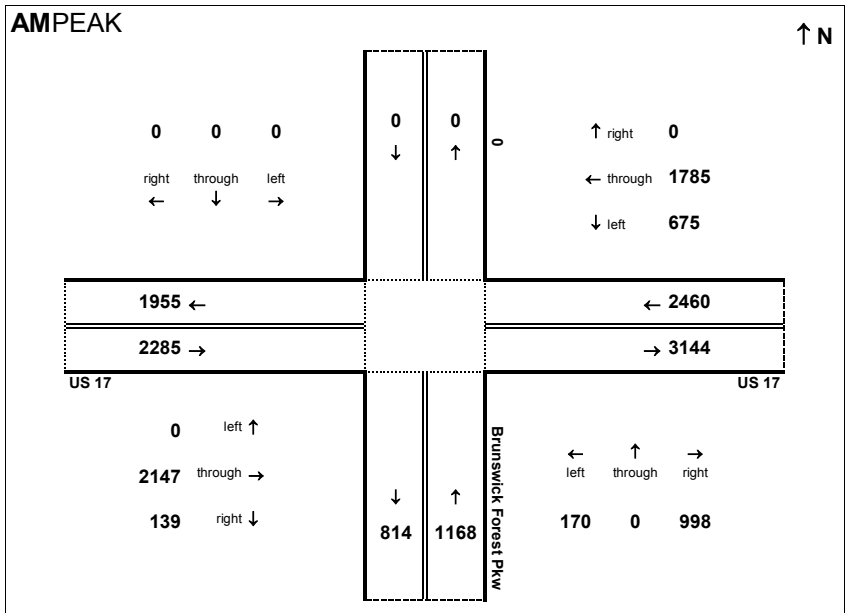
Peak Hour Volume Breakouts Report:
05 - Intersection of US 17 and Brunswick Forest Parkway

Traffic Forecast Release Date:
Oct. 2014

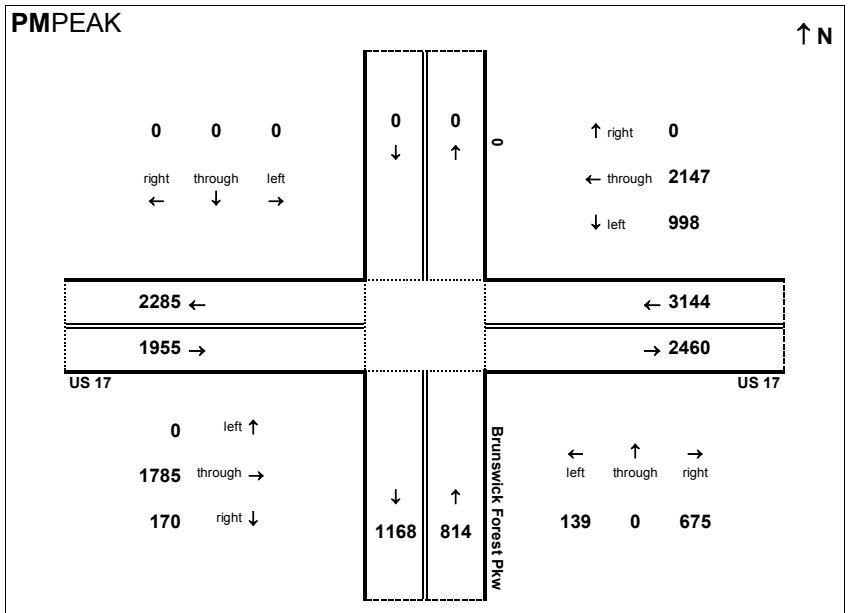
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 5913 vehicles. AM peak hour outflow is 5913 vehicles.



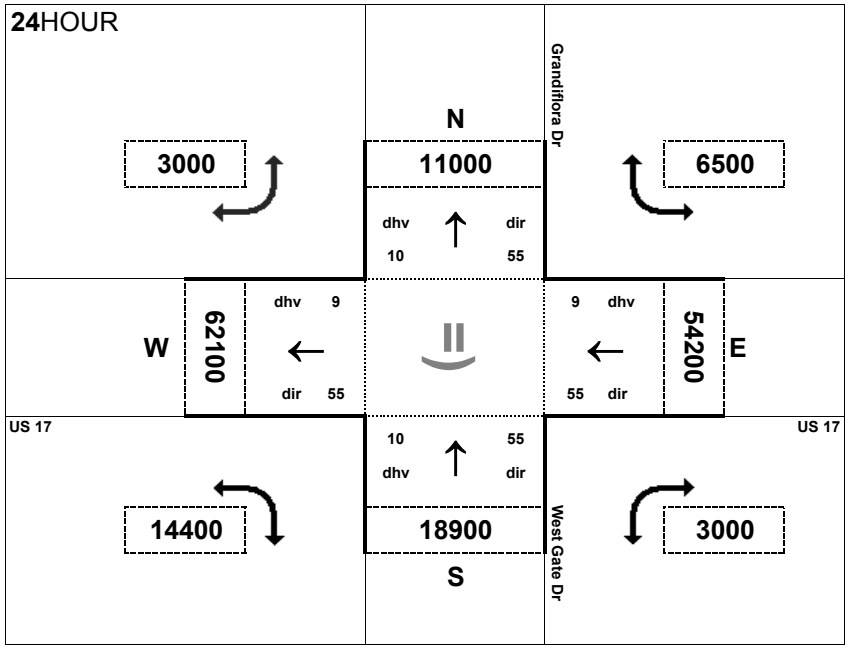
PM peak hour inflow is 5913 vehicles. PM peak hour outflow is 5913 vehicles.

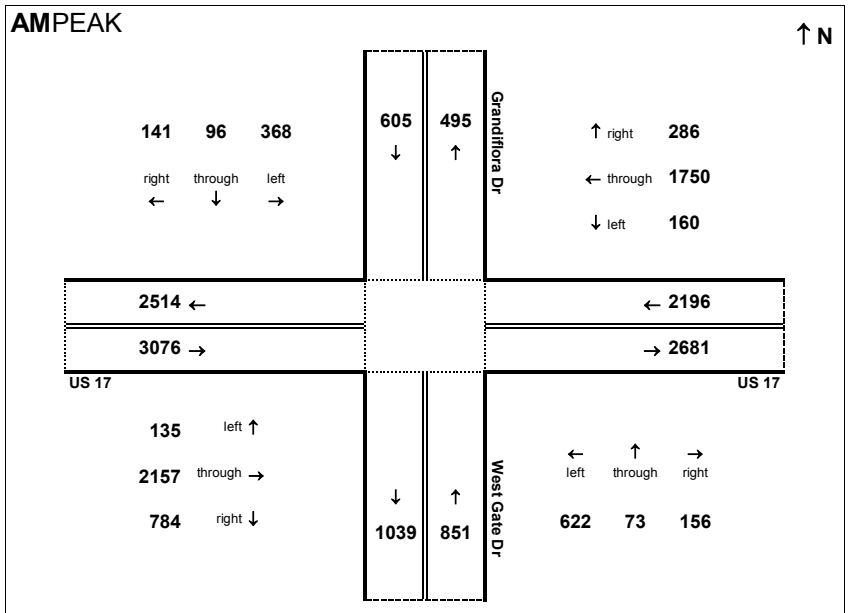
Peak Hour Volume Breakouts Report:
06 - Intersection of US 17 and Grandiflora Dr and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

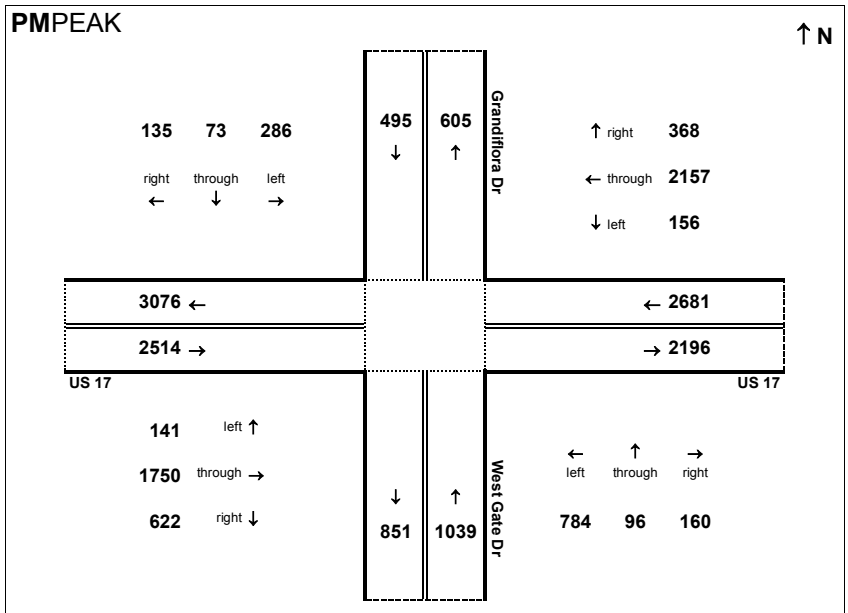
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing

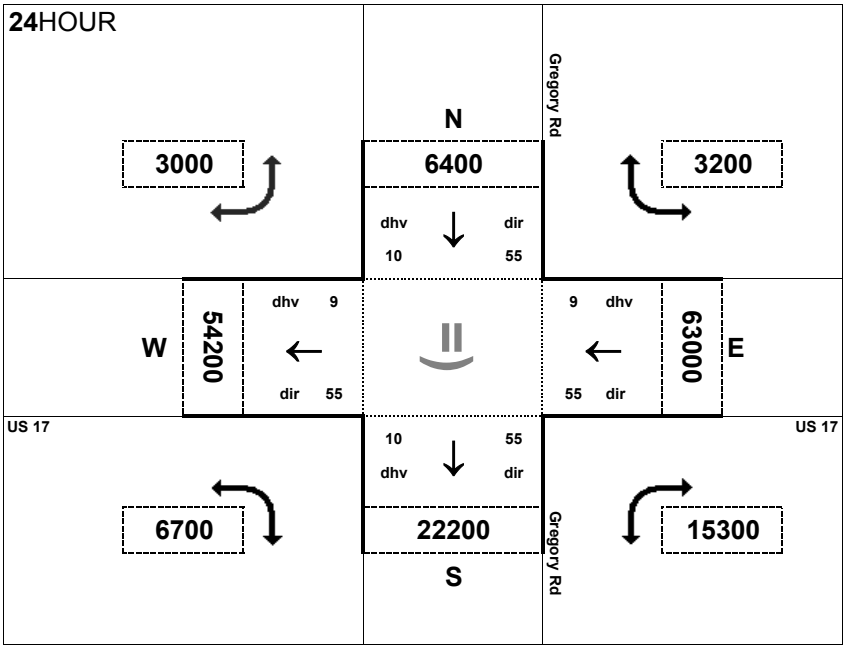




AM peak hour inflow is 6728 vehicles. AM peak hour outflow is 6729 vehicles.



PM peak hour inflow is 6729 vehicles. PM peak hour outflow is 6728 vehicles.

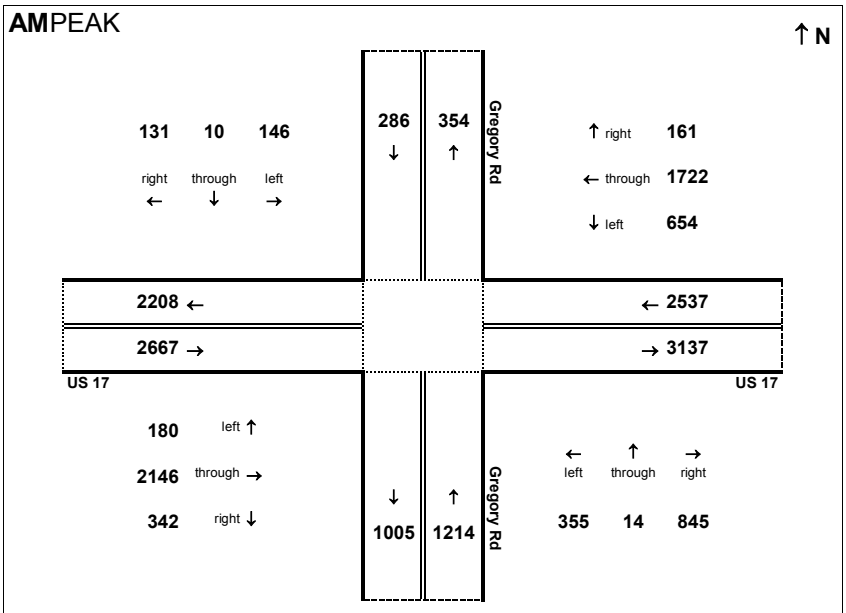


Peak Hour Volume Breakouts Report:
07 - Intersection of US 17 and Gregory Road

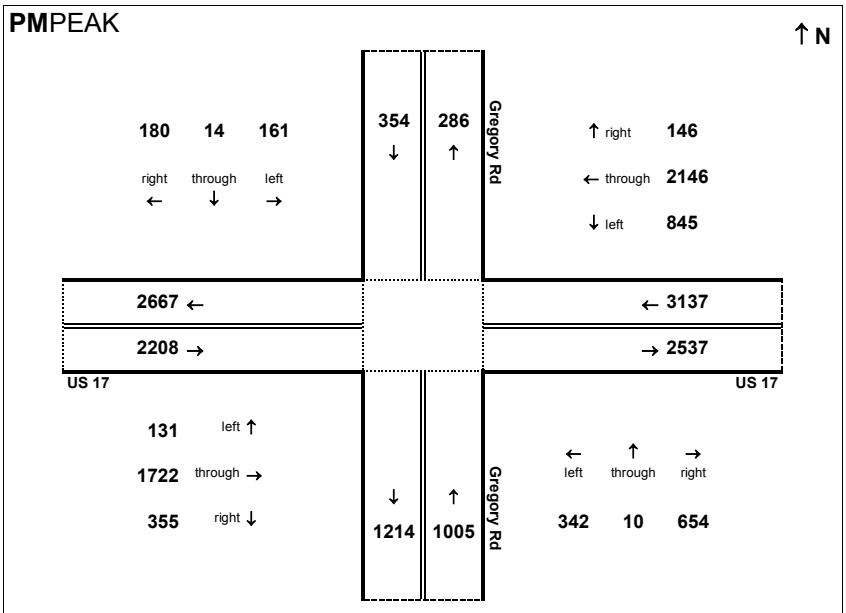
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing



AM peak hour inflow is 6704 vehicles. AM peak hour outflow is 6704 vehicles.

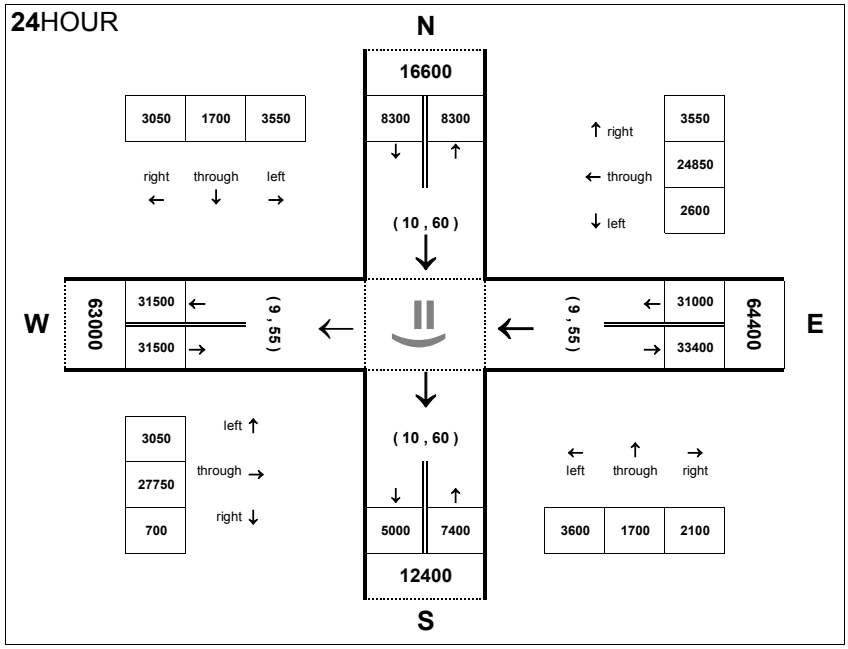


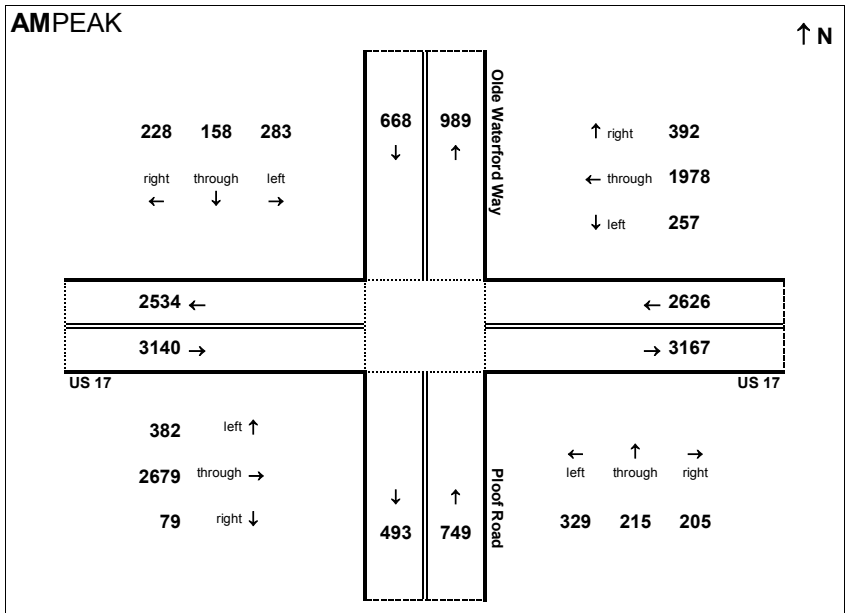
PM peak hour inflow is 6704 vehicles. PM peak hour outflow is 6704 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

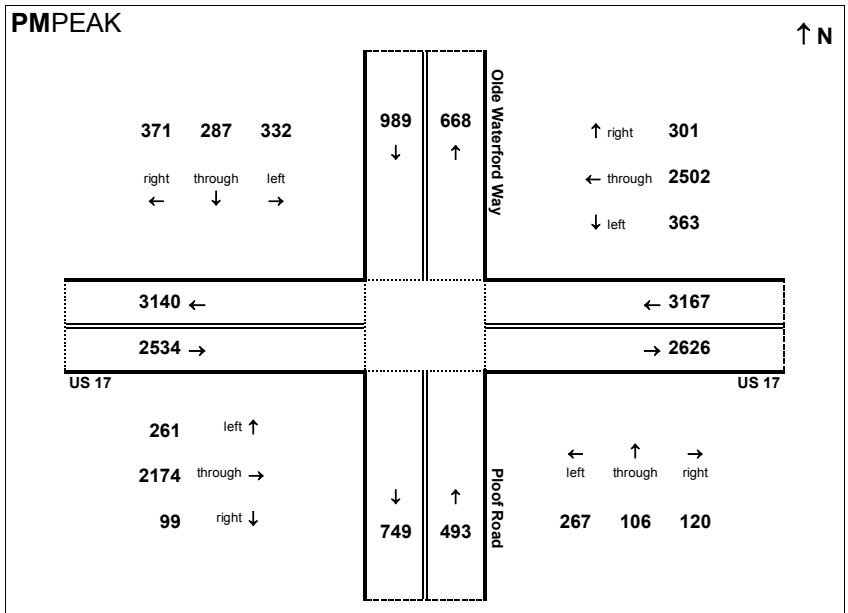
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 NB

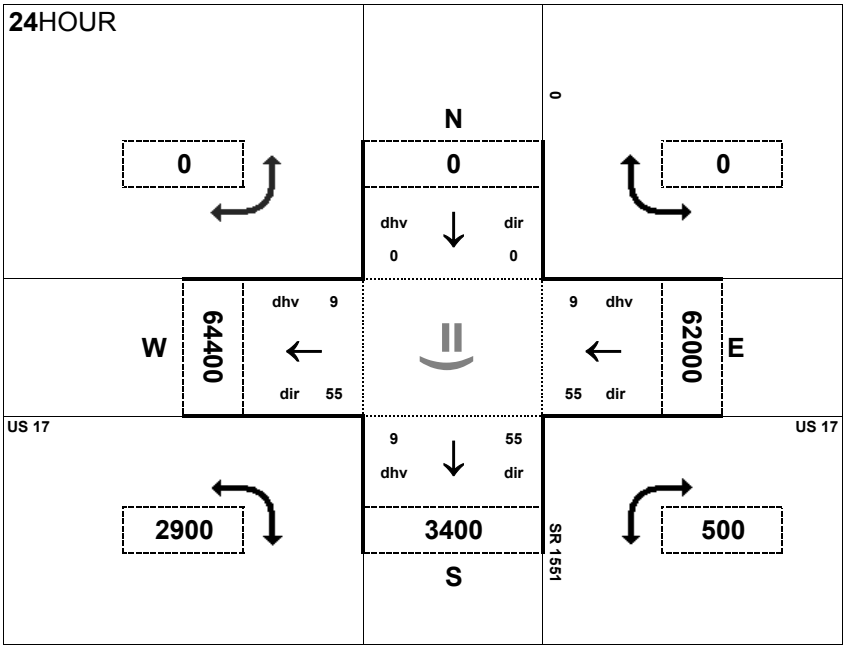




AM peak hour inflow is 7183 vehicles. AM peak hour outflow is 7183 vehicles.



PM peak hour inflow is 7183 vehicles. PM peak hour outflow is 7183 vehicles.

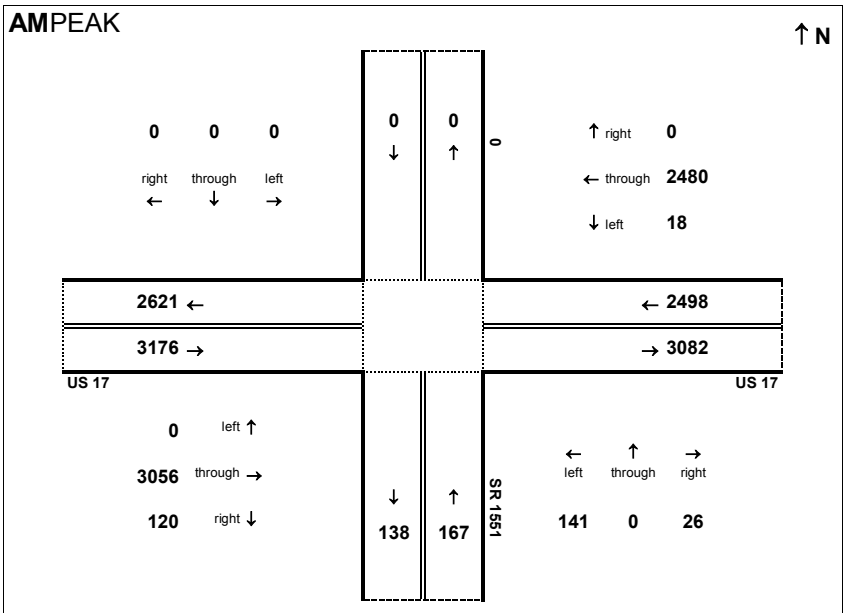


Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

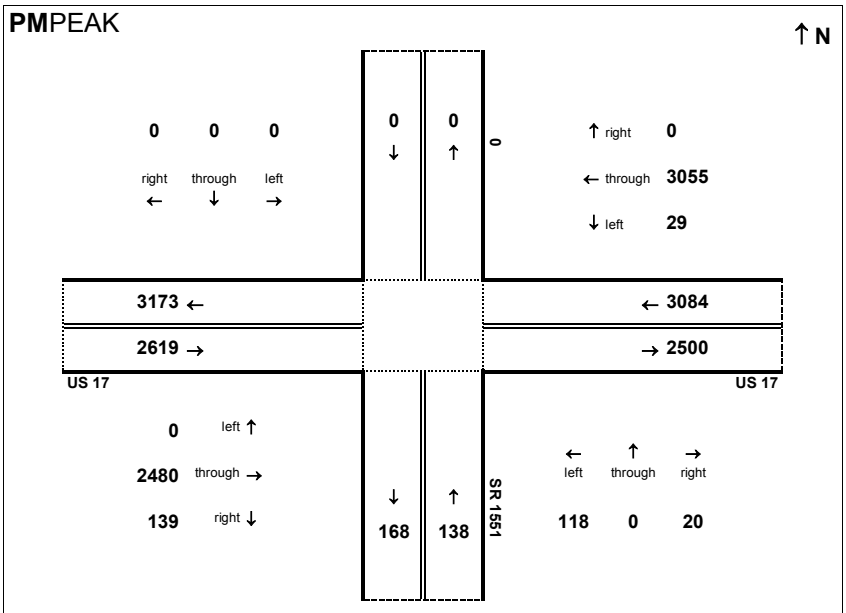
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing



AM peak hour inflow is 5841 vehicles. AM peak hour outflow is 5841 vehicles.



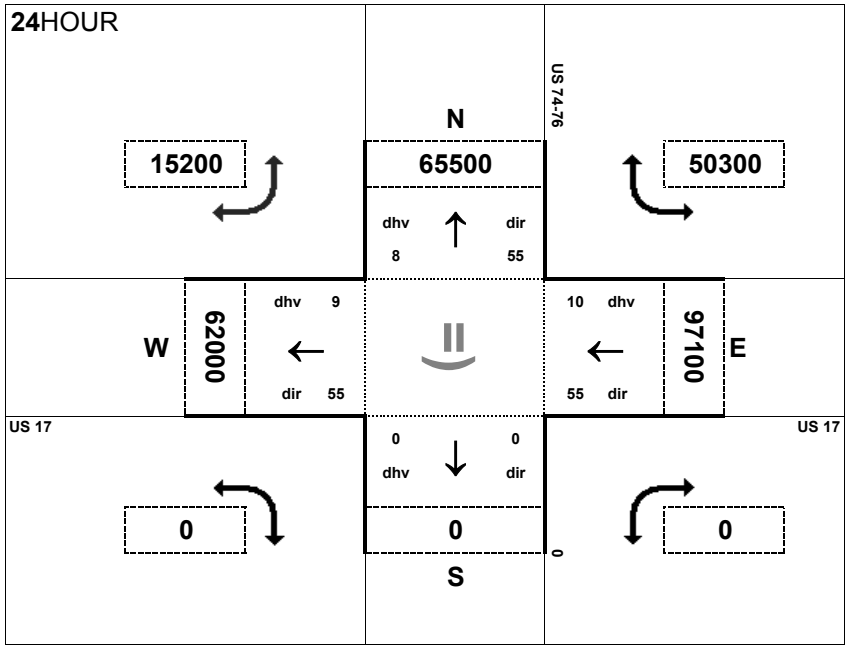
PM peak hour inflow is 5841 vehicles. PM peak hour outflow is 5841 vehicles.

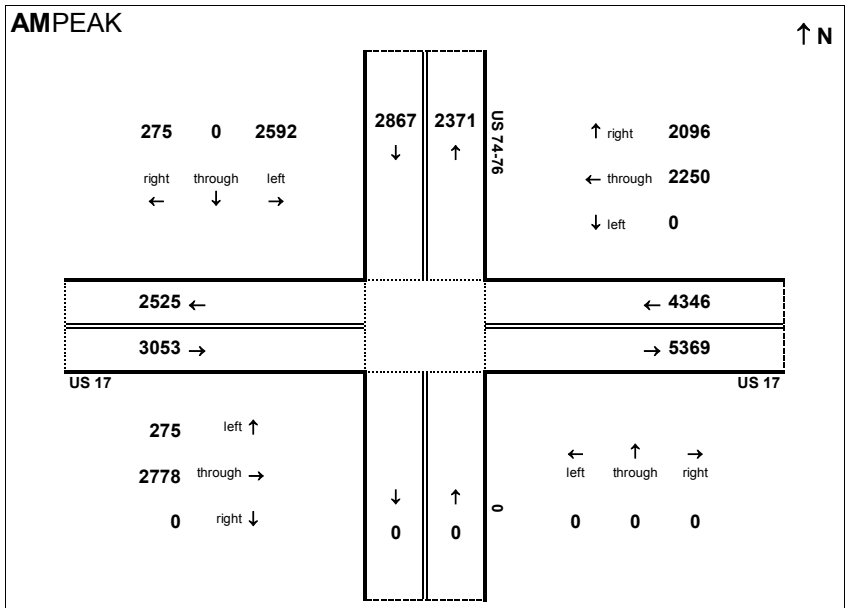
Peak Hour Volume Breakouts Report:
10 - Intersection of US 17 & US 74-76

Traffic Forecast Release Date:
Oct. 2014

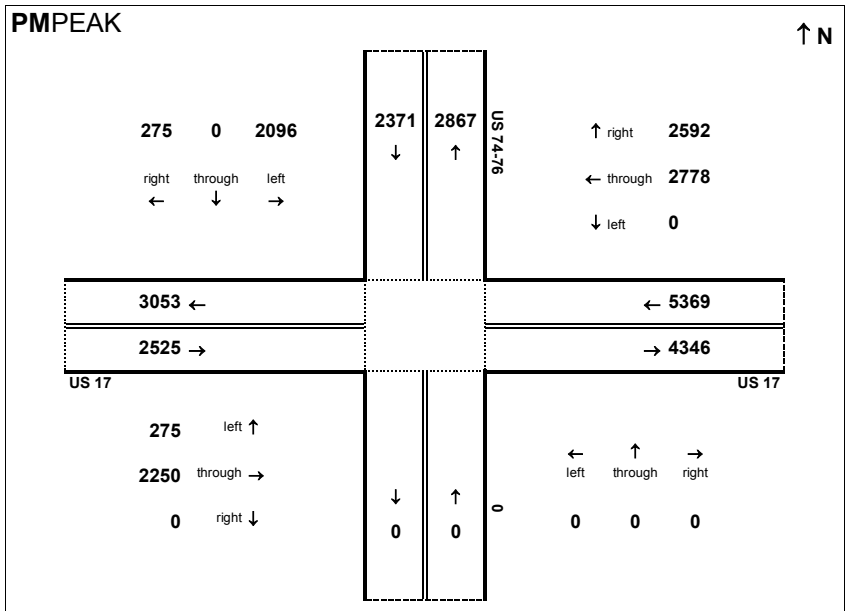
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 10266 vehicles. AM peak hour outflow is 10265 vehicles.



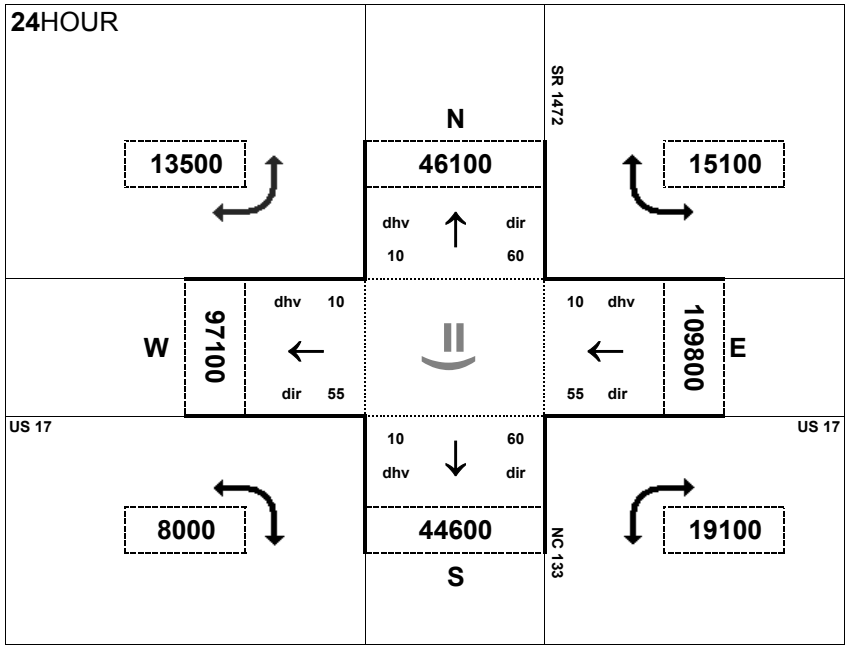
PM peak hour inflow is 10265 vehicles. PM peak hour outflow is 10266 vehicles.

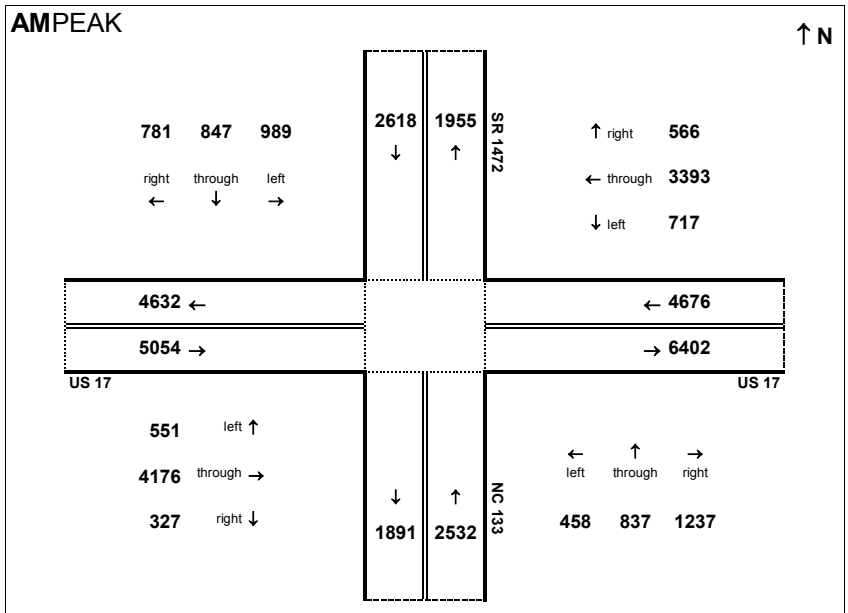
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

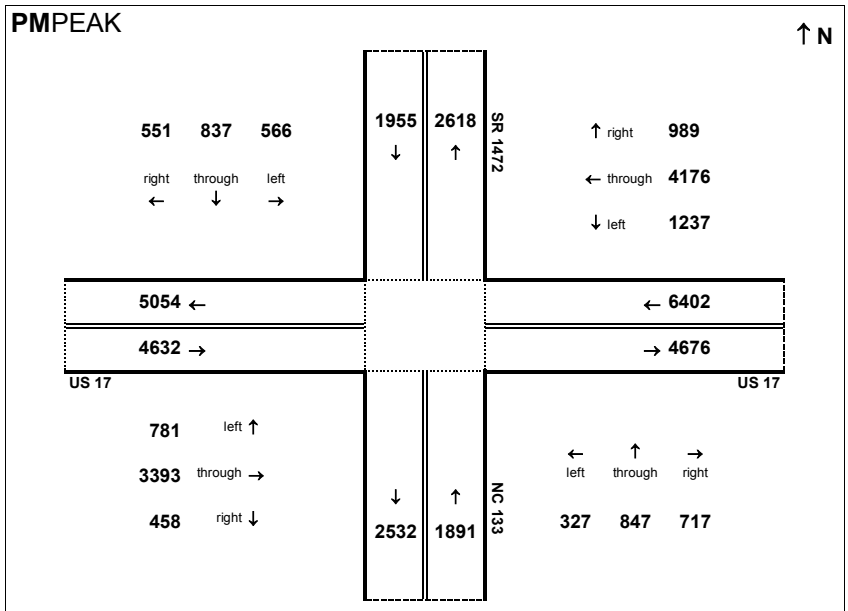
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 14880 vehicles. AM peak hour outflow is 14880 vehicles.



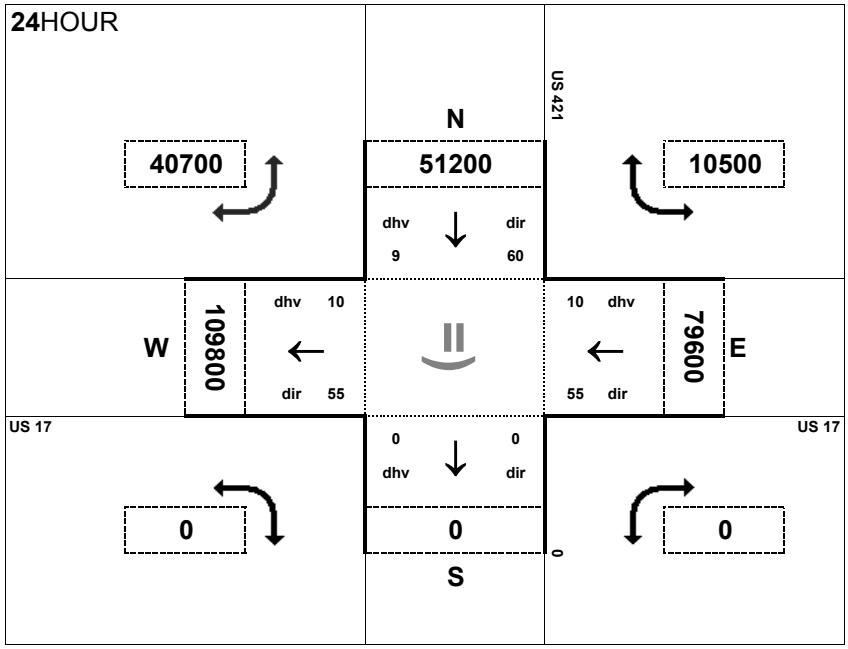
PM peak hour inflow is 14880 vehicles. PM peak hour outflow is 14880 vehicles.

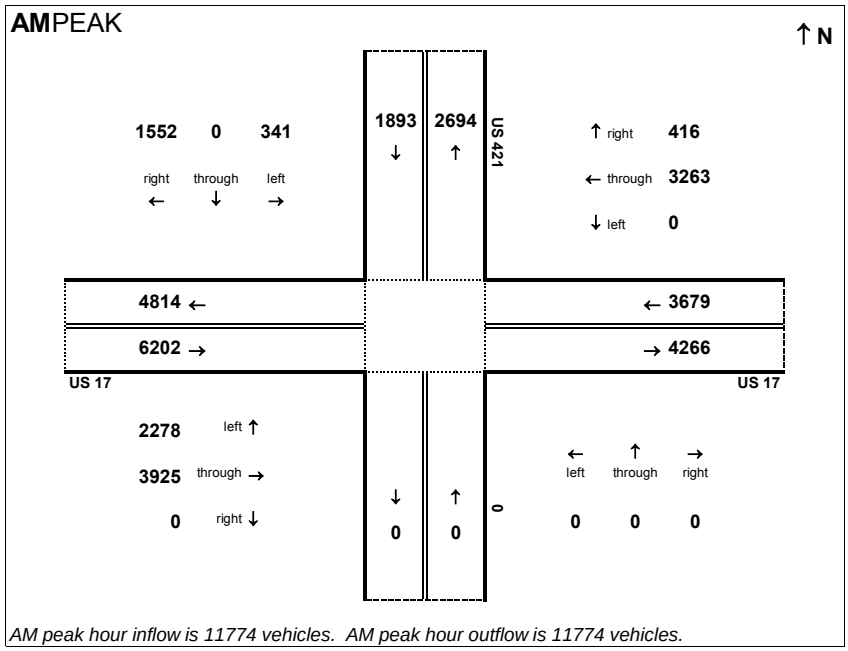
Peak Hour Volume Breakouts Report:
12 - Intersection of US 17 & US 421

Traffic Forecast Release Date:
Oct. 2014

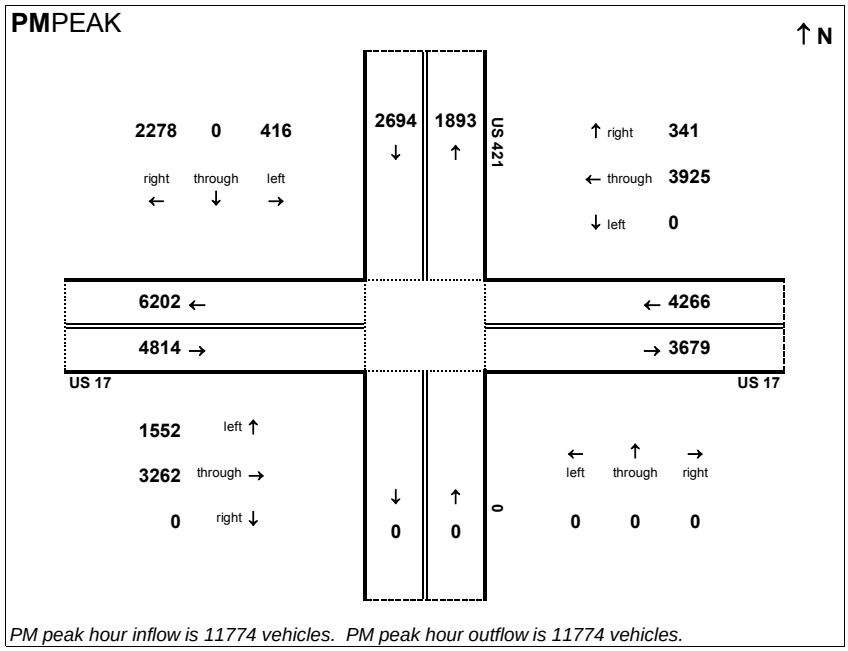
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing

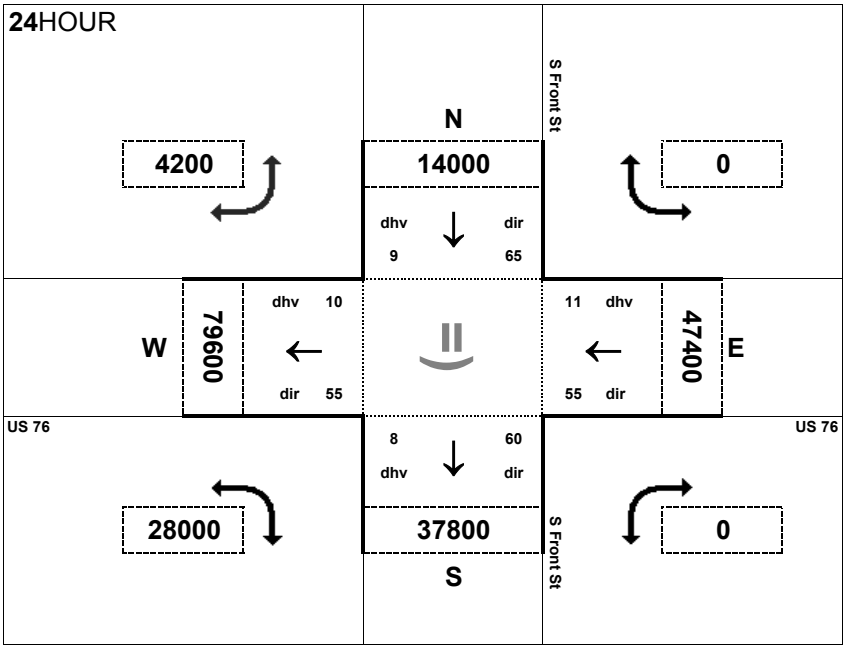




AM peak hour inflow is 11774 vehicles. AM peak hour outflow is 11774 vehicles.



PM peak hour inflow is 11774 vehicles. PM peak hour outflow is 11774 vehicles.

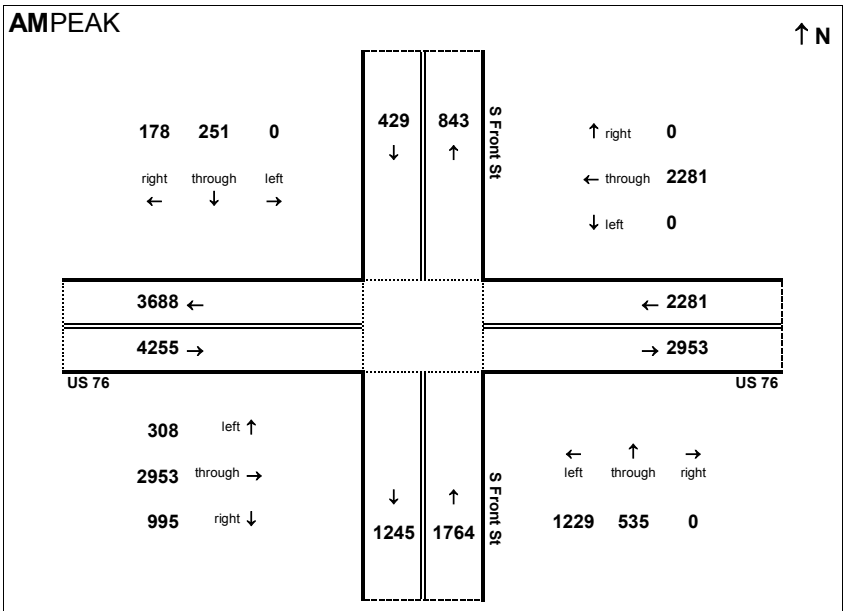


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

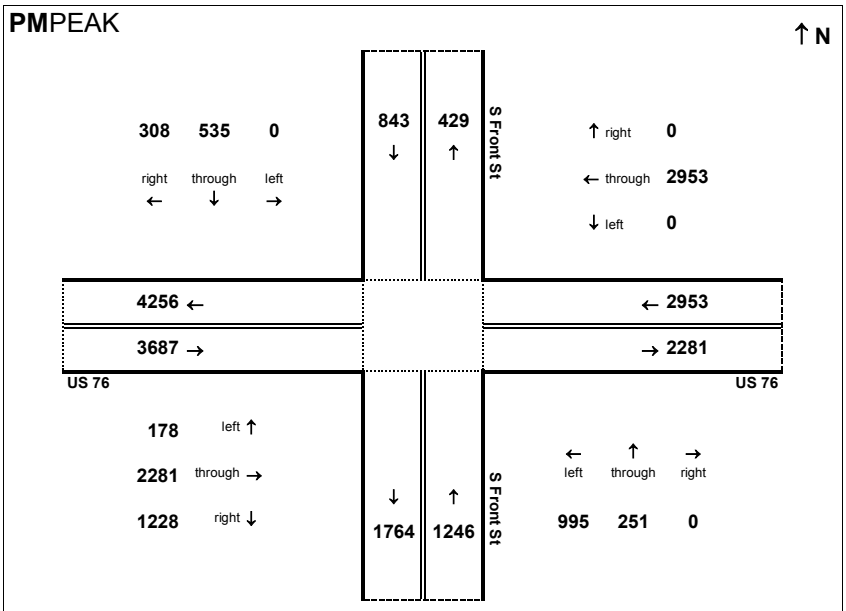
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing



AM peak hour inflow is 8729 vehicles. AM peak hour outflow is 8729 vehicles.

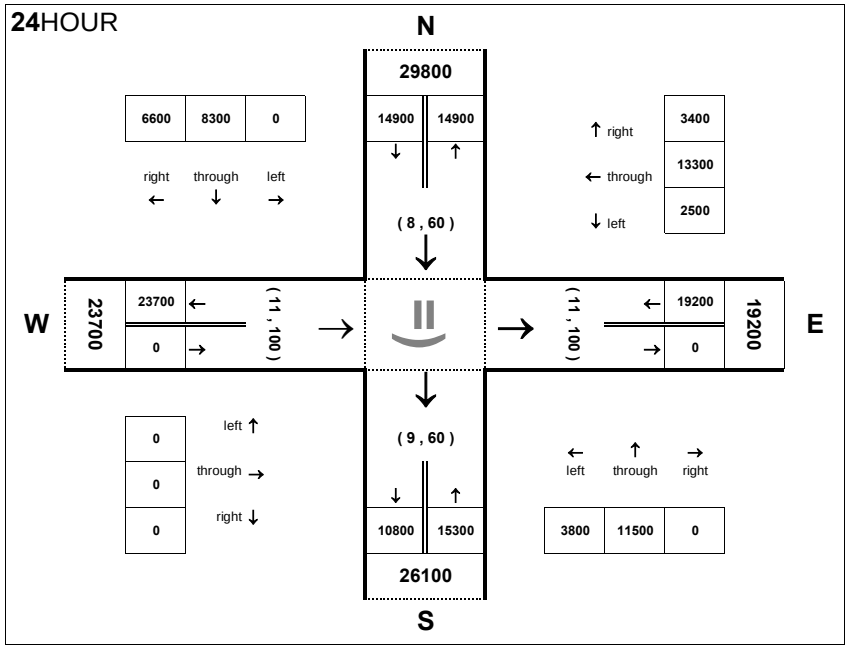


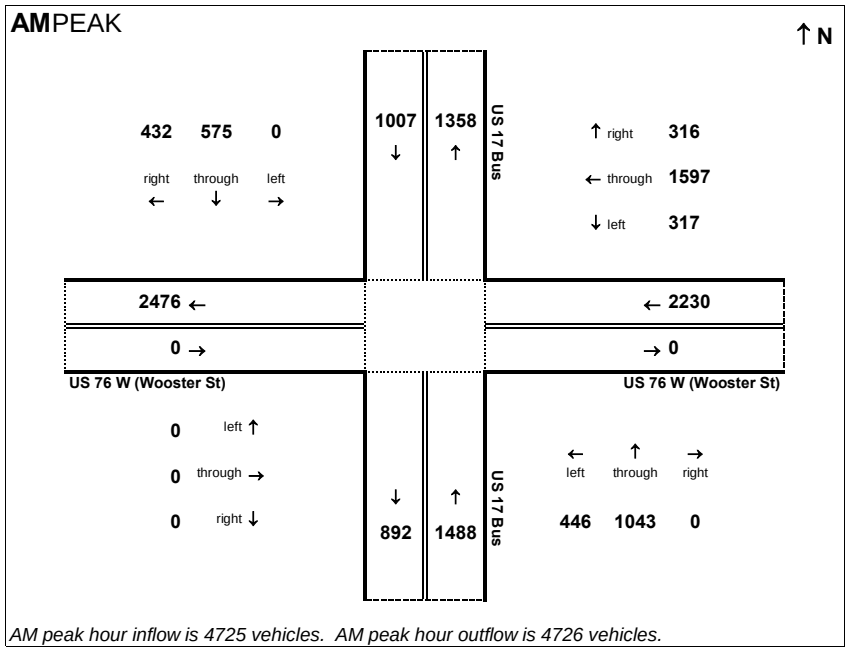
PM peak hour inflow is 8729 vehicles. PM peak hour outflow is 8730 vehicles.

Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

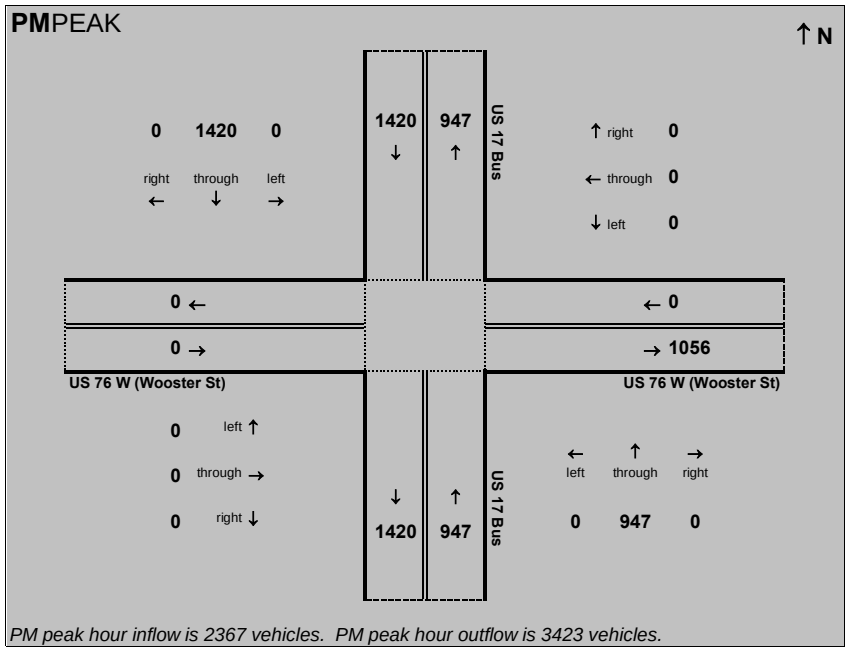
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 NB

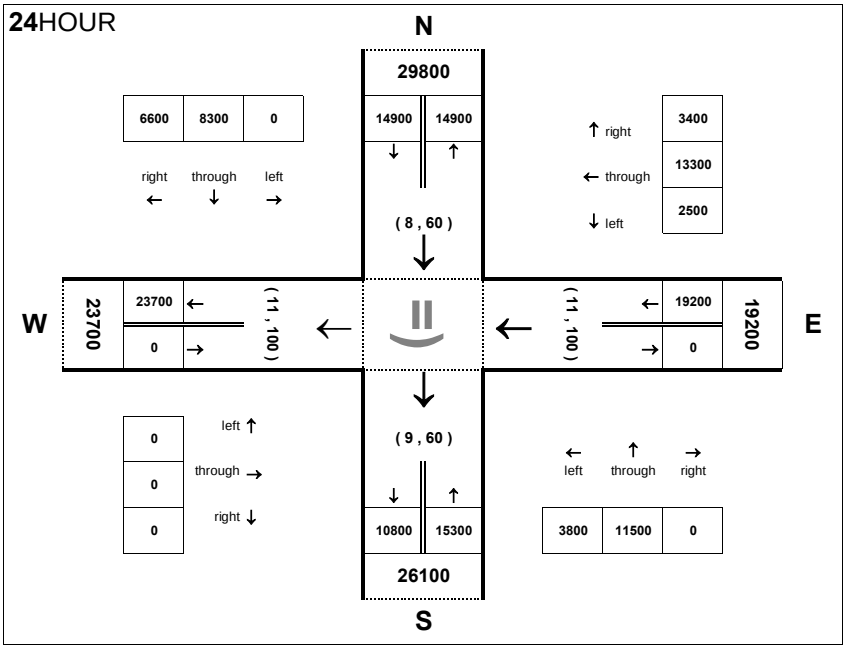




AM peak hour inflow is 4725 vehicles. AM peak hour outflow is 4726 vehicles.



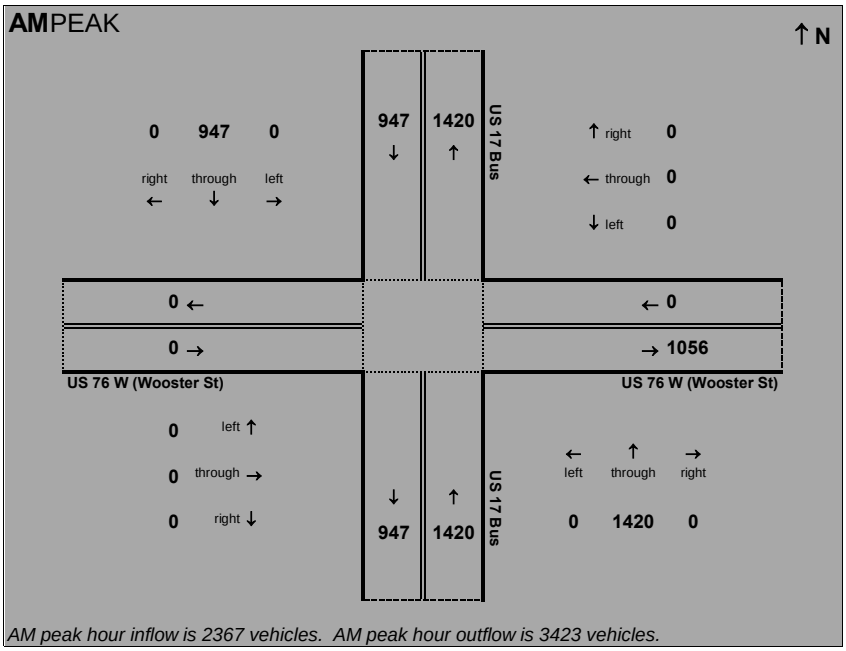
PM peak hour inflow is 2367 vehicles. PM peak hour outflow is 3423 vehicles.



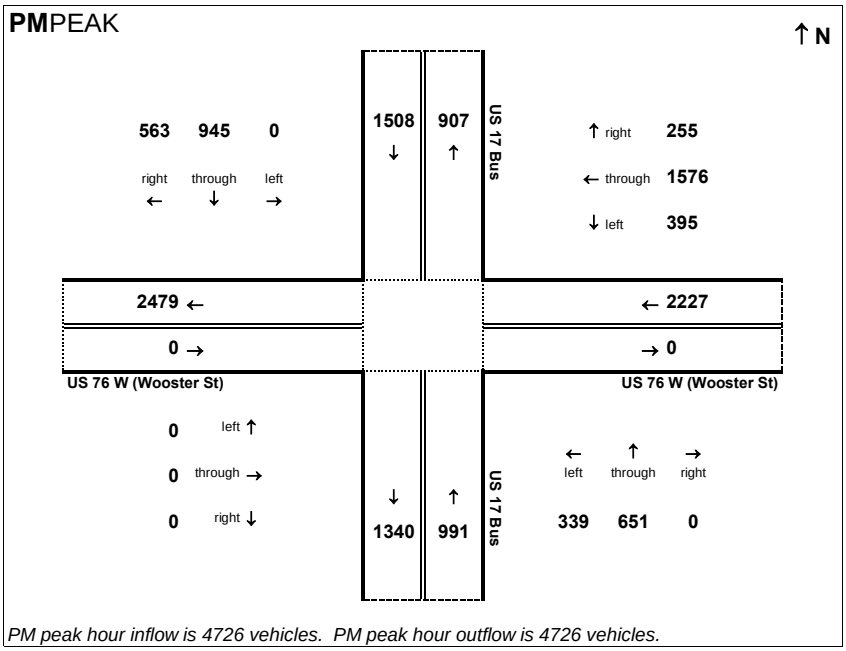
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

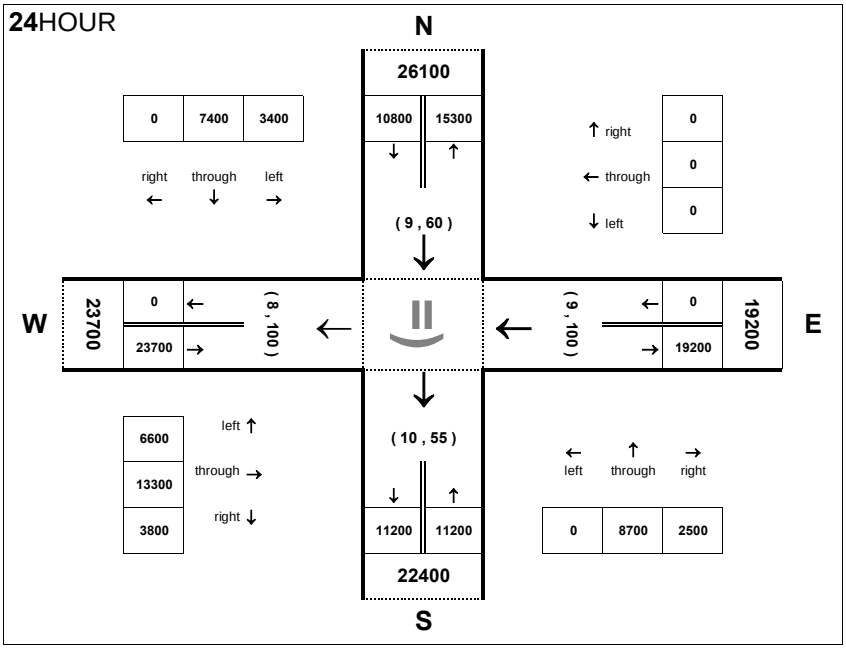
Traffic Data Year:
2040 NB



AM peak hour inflow is 2367 vehicles. AM peak hour outflow is 3423 vehicles.



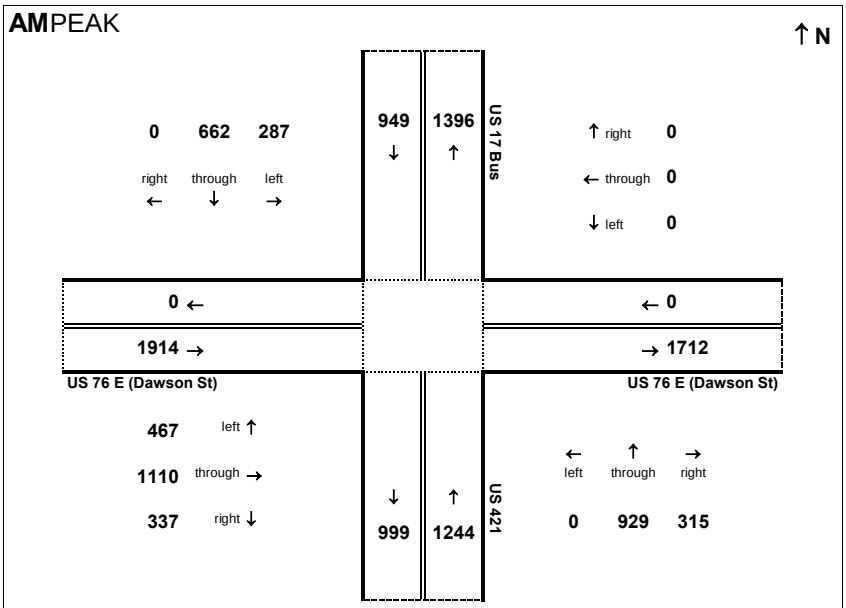
PM peak hour inflow is 4726 vehicles. PM peak hour outflow is 4726 vehicles.



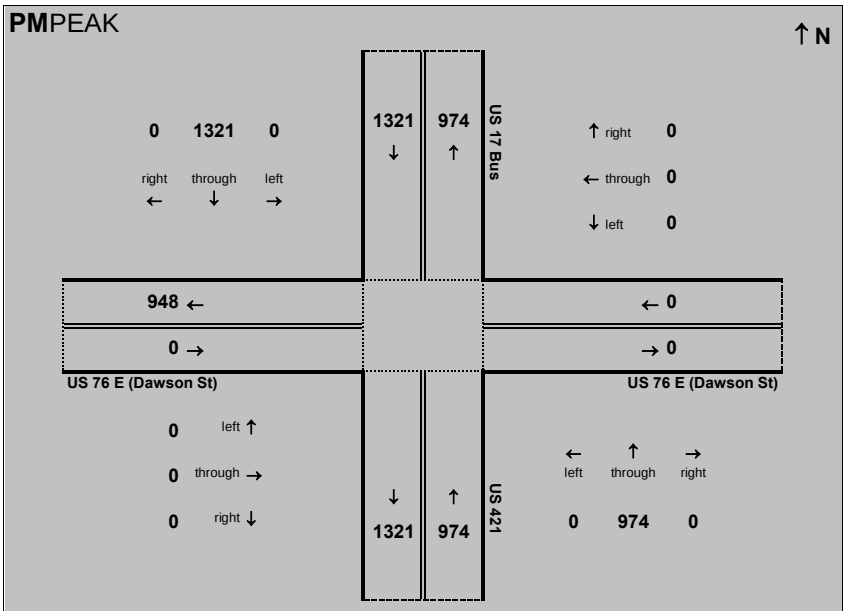
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

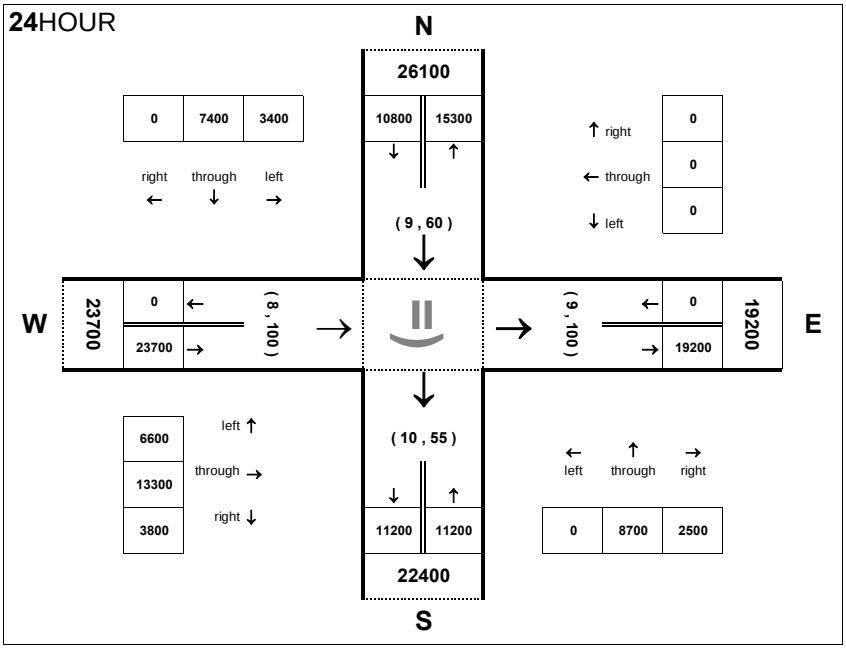
Traffic Data Year:
2040 NB



AM peak hour inflow is 4107 vehicles. AM peak hour outflow is 4107 vehicles.



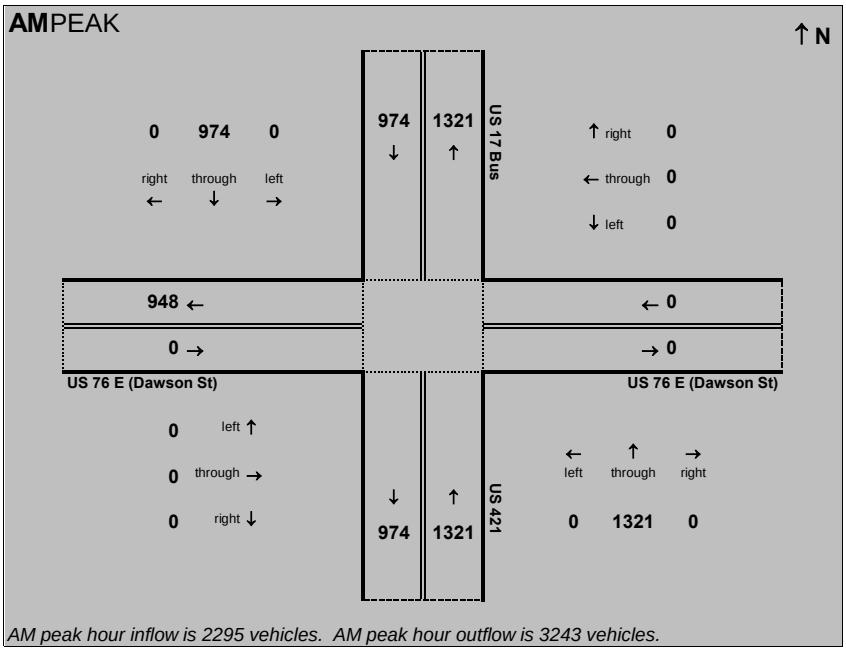
PM peak hour inflow is 2295 vehicles. PM peak hour outflow is 3243 vehicles.



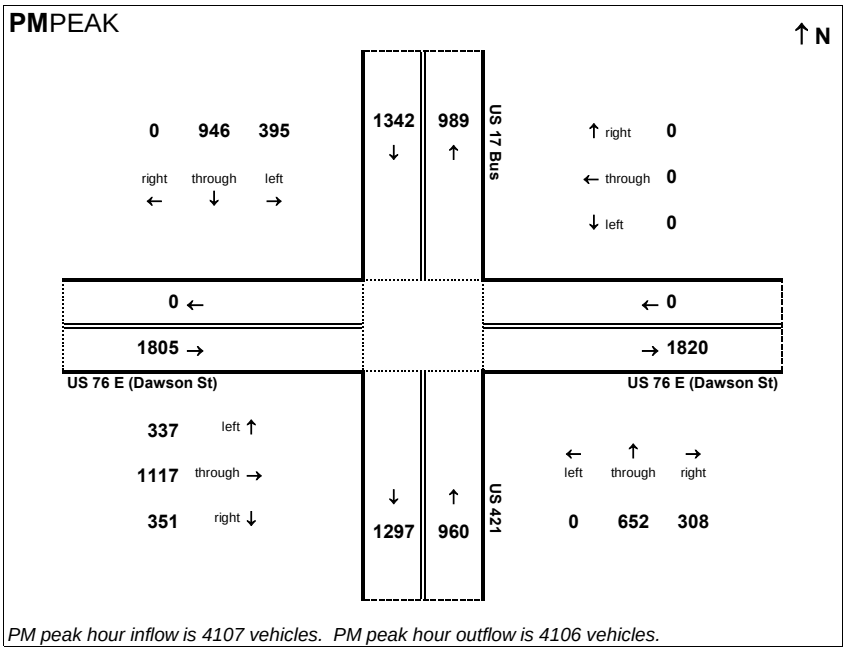
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 NB



AM peak hour inflow is 2295 vehicles. AM peak hour outflow is 3243 vehicles.



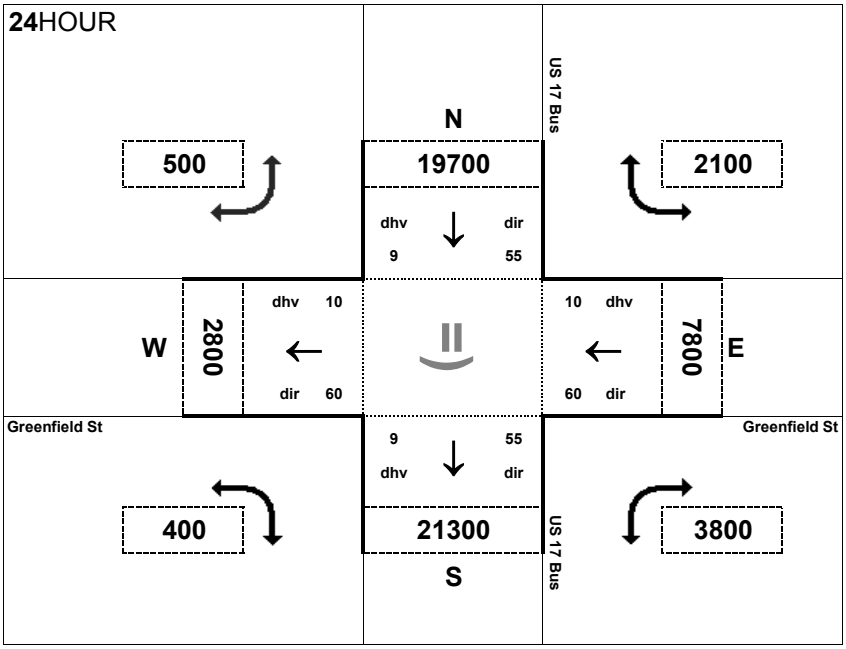
PM peak hour inflow is 4107 vehicles. PM peak hour outflow is 4106 vehicles.

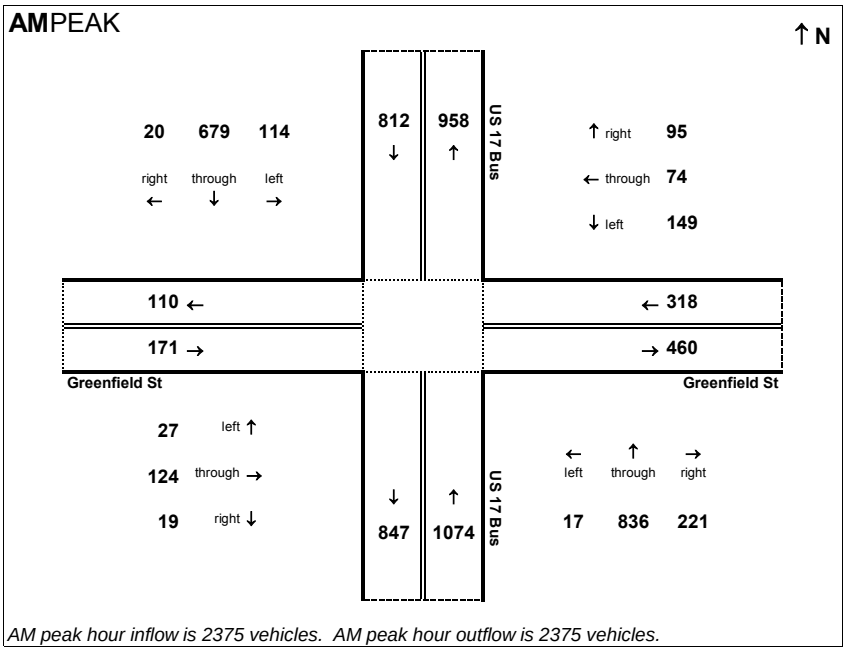
Peak Hour Volume Breakouts Report:
28 - Intersection of US 17 Business and Greenfield Street

Traffic Forecast Release Date:
Oct. 2014

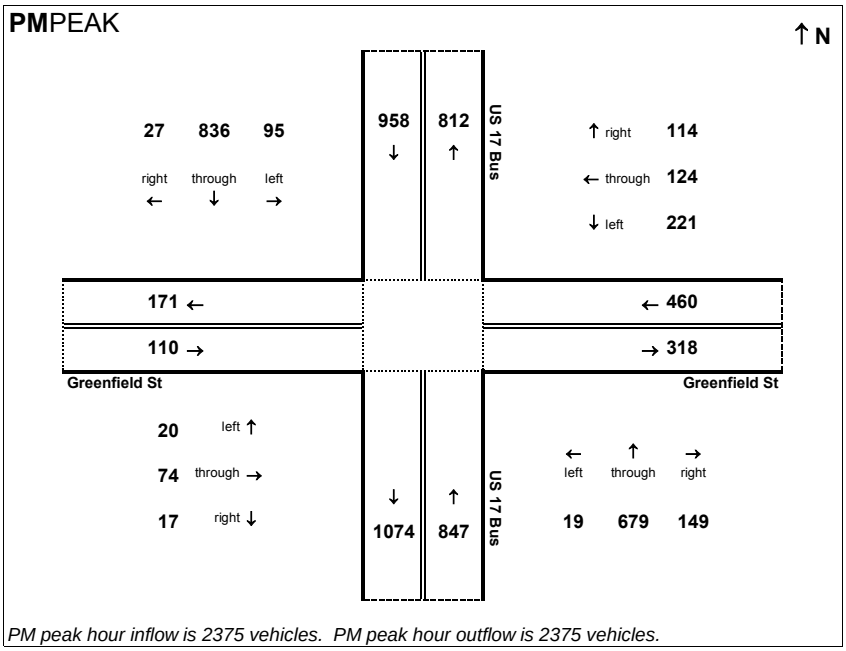
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 2375 vehicles. AM peak hour outflow is 2375 vehicles.



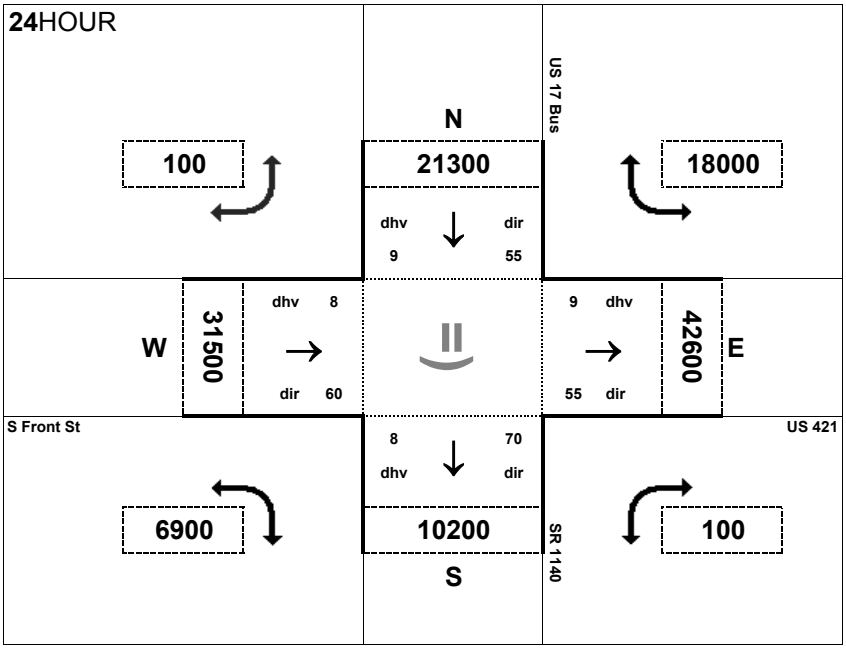
PM peak hour inflow is 2375 vehicles. PM peak hour outflow is 2375 vehicles.

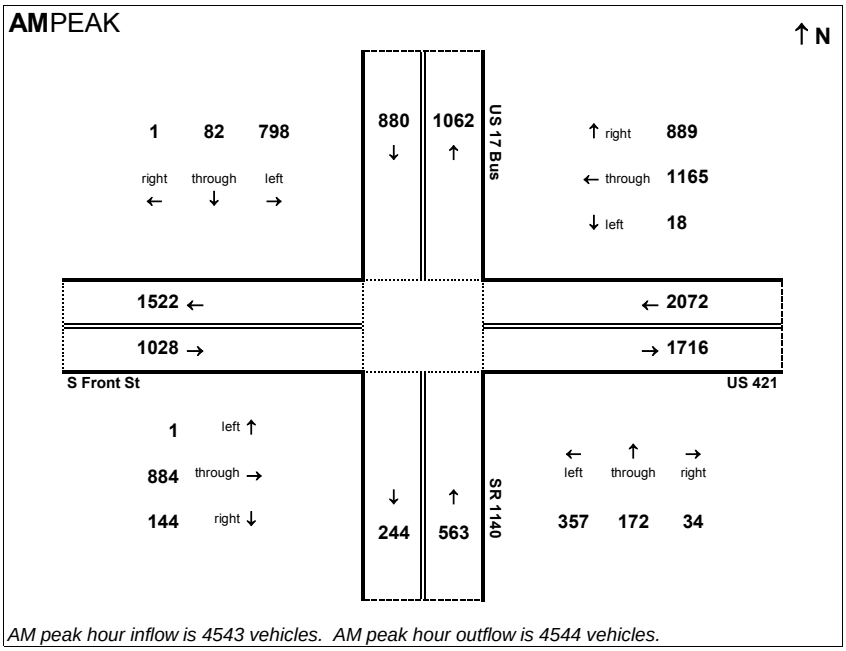
Peak Hour Volume Breakouts Report:
29 - Intersection of US 17 Business & S Front Street and US 421

Traffic Forecast Release Date:
Oct. 2014

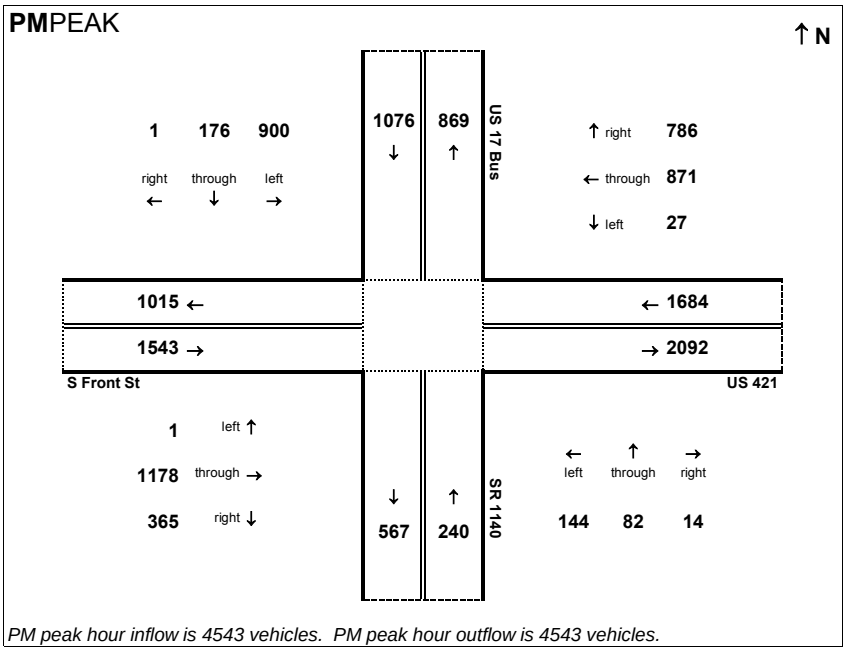
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 4543 vehicles. AM peak hour outflow is 4544 vehicles.



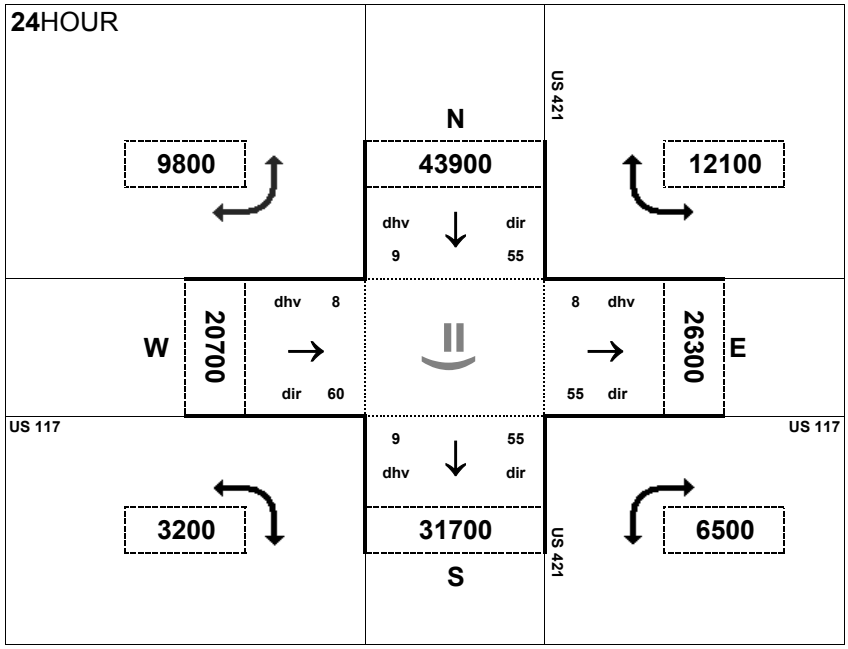
PM peak hour inflow is 4543 vehicles. PM peak hour outflow is 4543 vehicles.

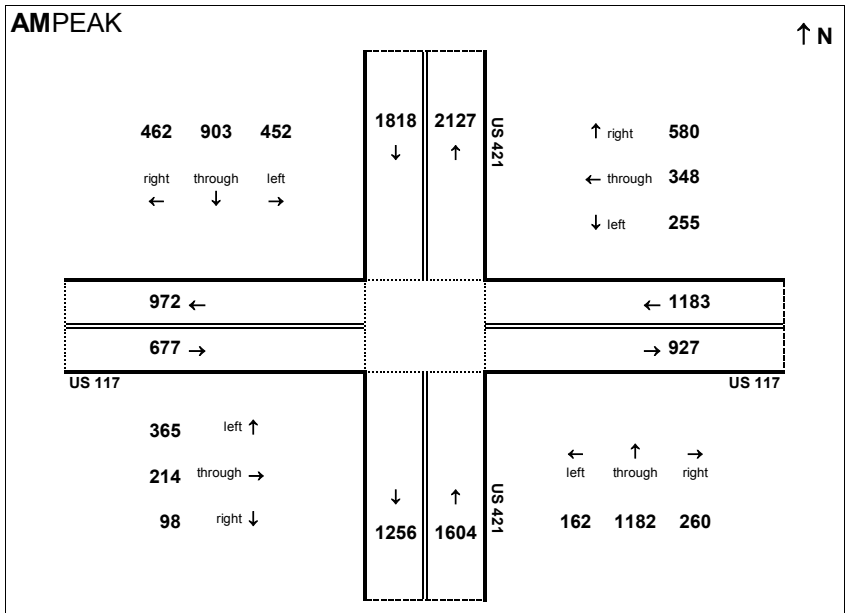
Peak Hour Volume Breakouts Report:
30 - Intersection of US 421 and US 117

Traffic Forecast Release Date:
Oct. 2014

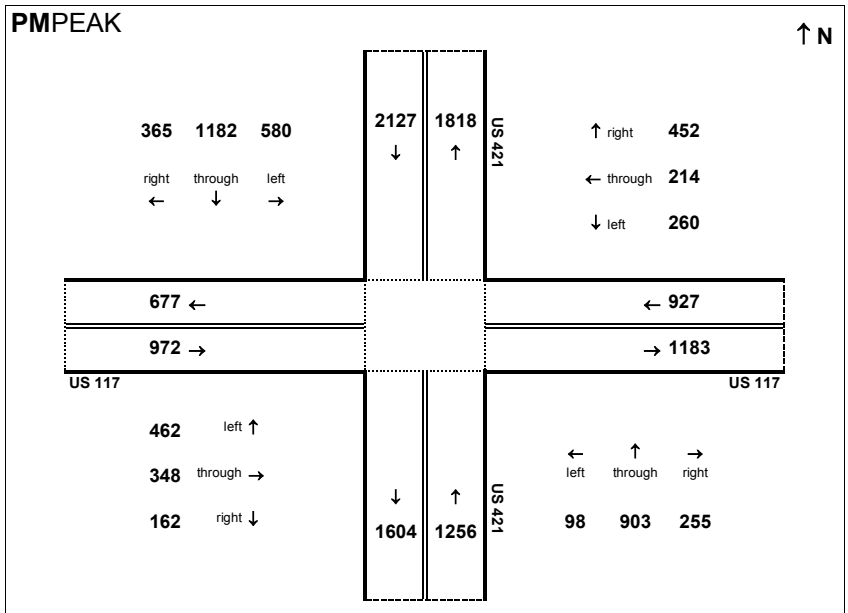
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing

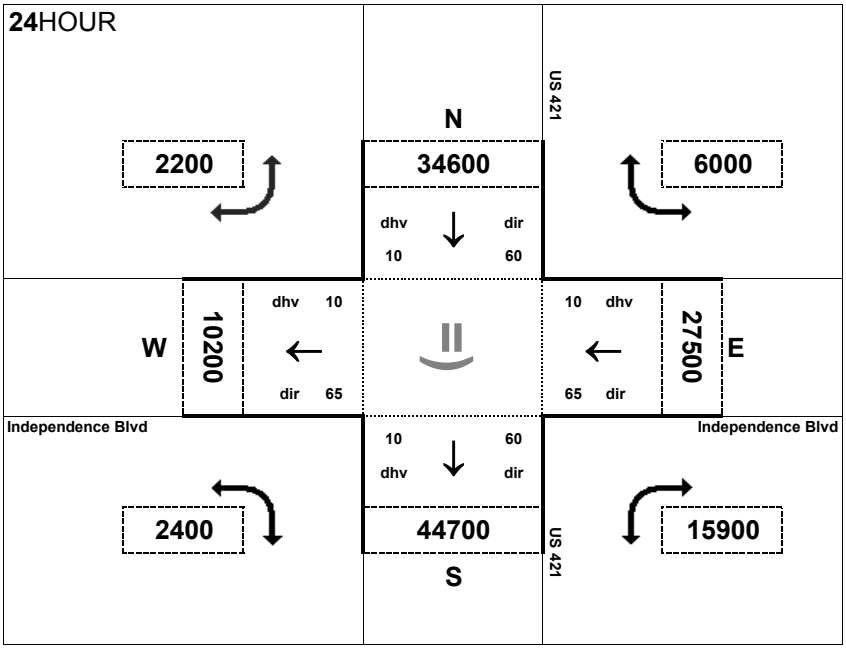




AM peak hour inflow is 5282 vehicles. AM peak hour outflow is 5282 vehicles.



PM peak hour inflow is 5282 vehicles. PM peak hour outflow is 5282 vehicles.

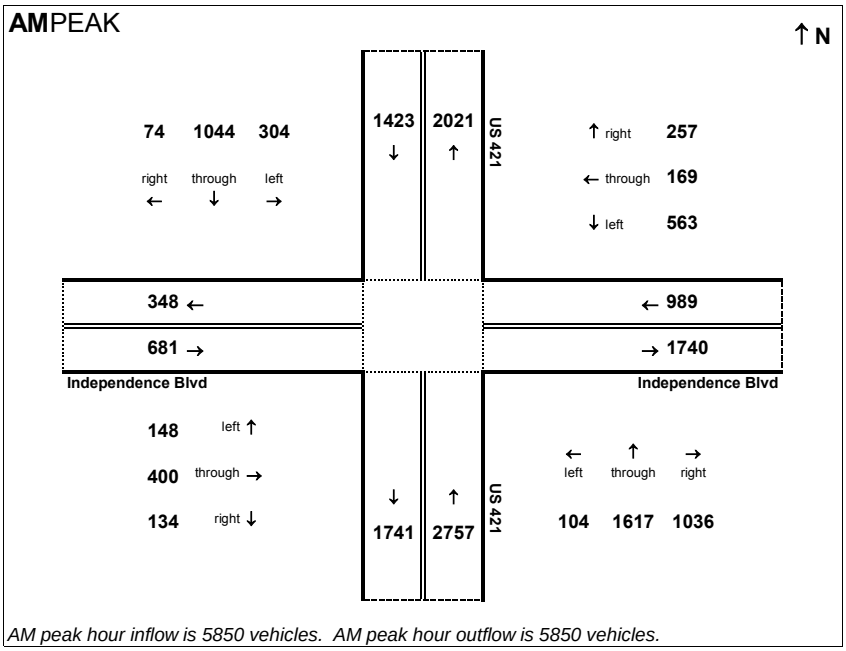


Peak Hour Volume Breakouts Report:
31 - Intersection of US 421 and Independence Blvd

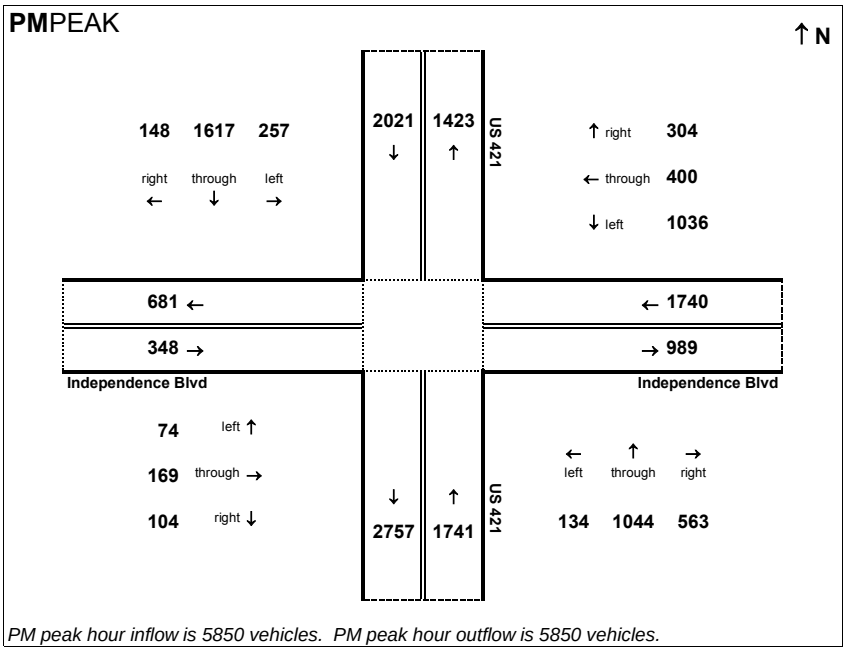
Traffic Forecast Release Date:
http://www.ashanet.o

Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing



AM peak hour inflow is 5850 vehicles. AM peak hour outflow is 5850 vehicles.



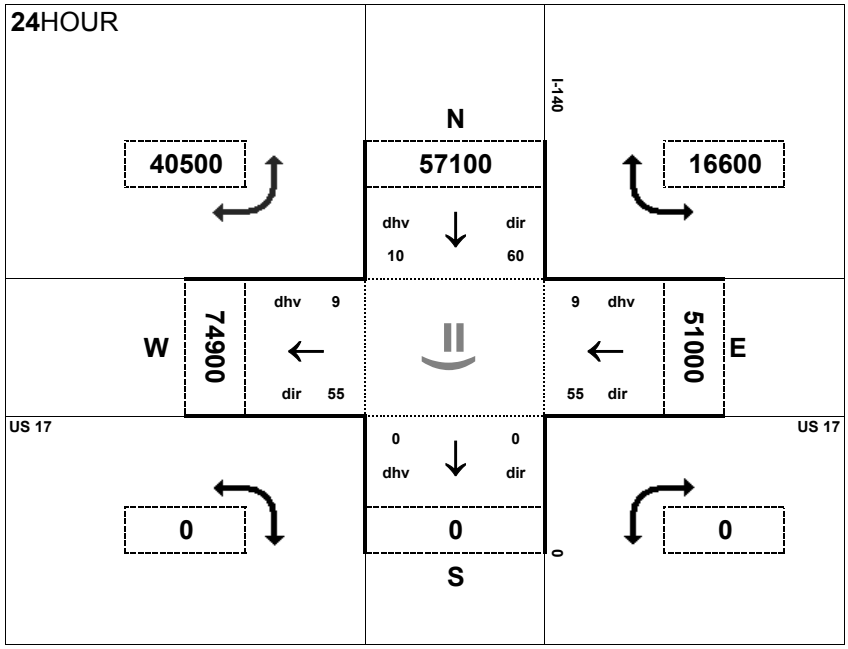
PM peak hour inflow is 5850 vehicles. PM peak hour outflow is 5850 vehicles.

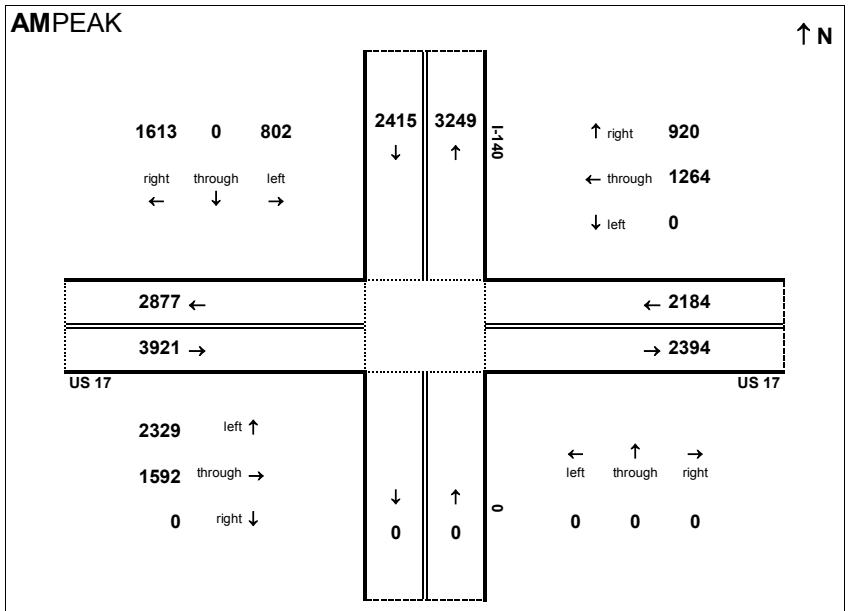
Peak Hour Volume Breakouts Report:
43 - Interchange of I-140 and US 17

Traffic Forecast Release Date:
Oct. 2014

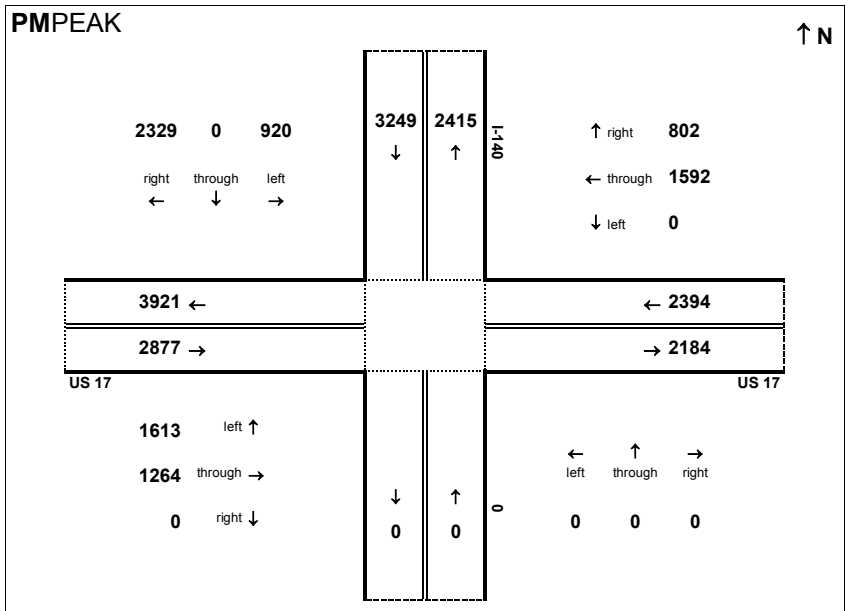
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 8520 vehicles. AM peak hour outflow is 8520 vehicles.



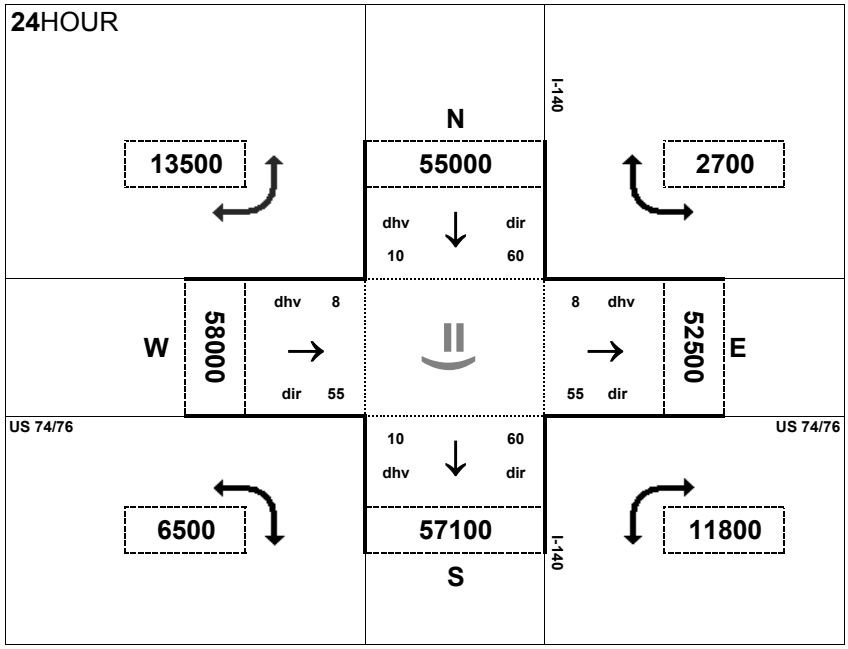
PM peak hour inflow is 8520 vehicles. PM peak hour outflow is 8520 vehicles.

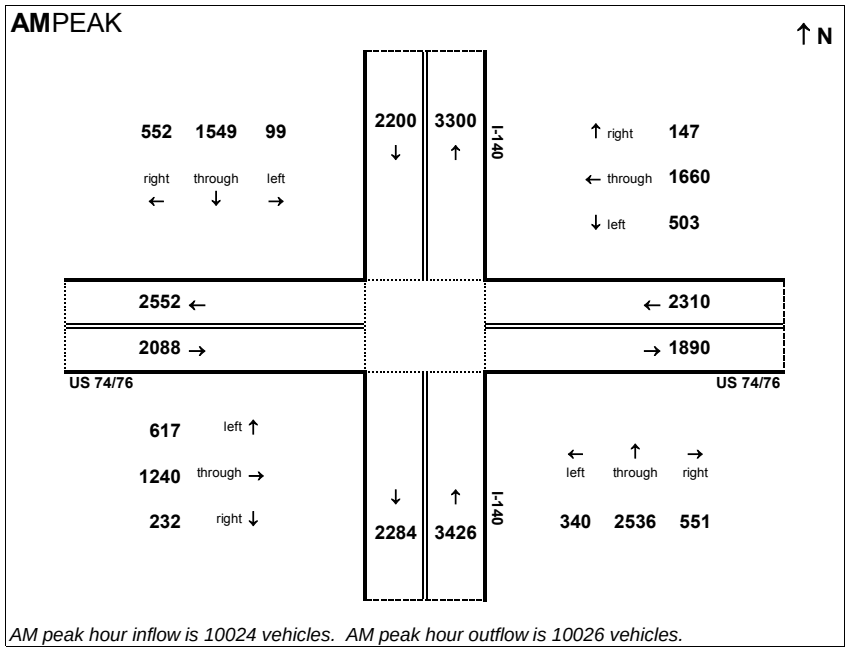
Peak Hour Volume Breakouts Report:
44 - Interchange of I-140 and US 74/76

Traffic Forecast Release Date:
Oct. 2014

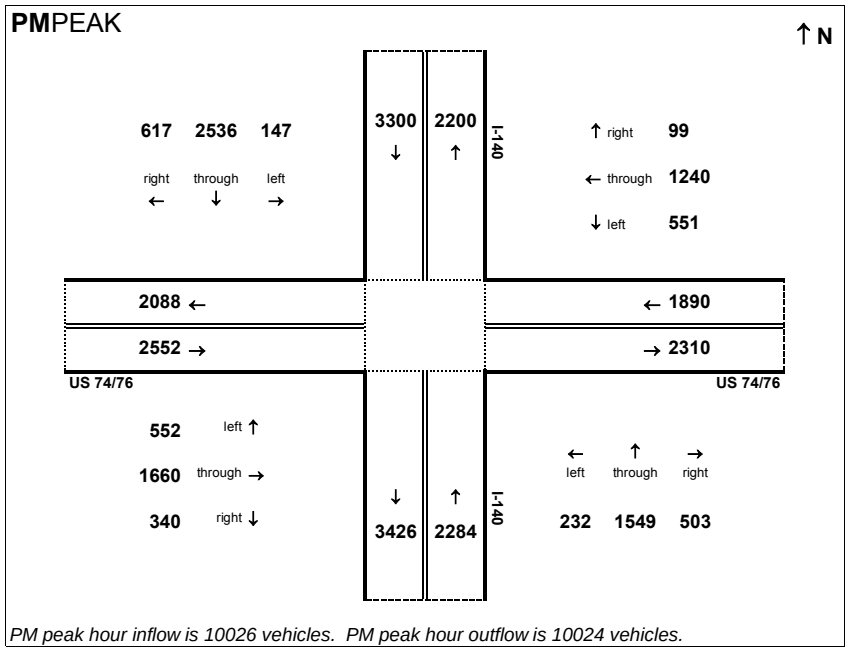
Traffic Data Year:
2040 NB

Project:
Cape Fear Crossing





AM peak hour inflow is 10024 vehicles. AM peak hour outflow is 10026 vehicles.



PM peak hour inflow is 10026 vehicles. PM peak hour outflow is 10024 vehicles.

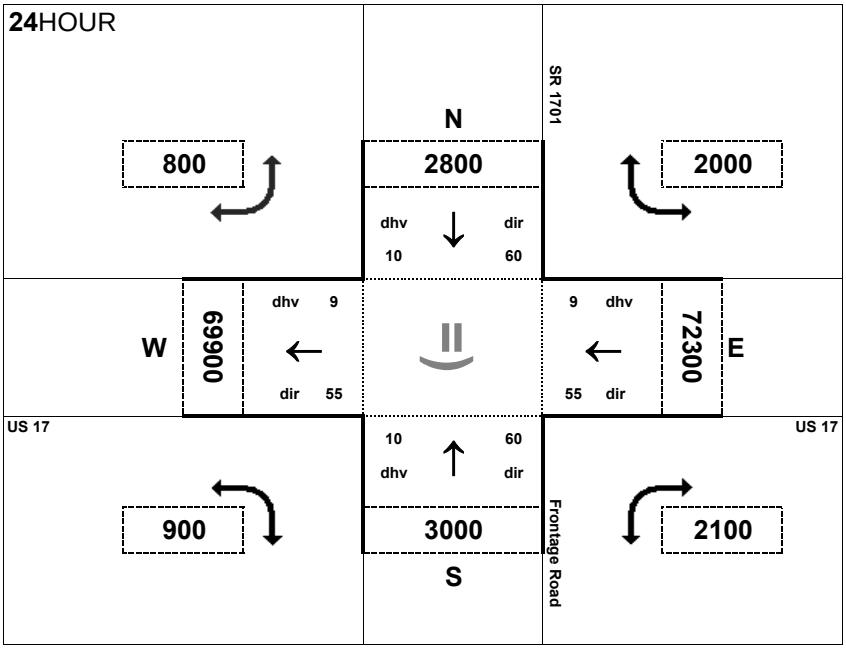
2040 Build DSA Alternative B

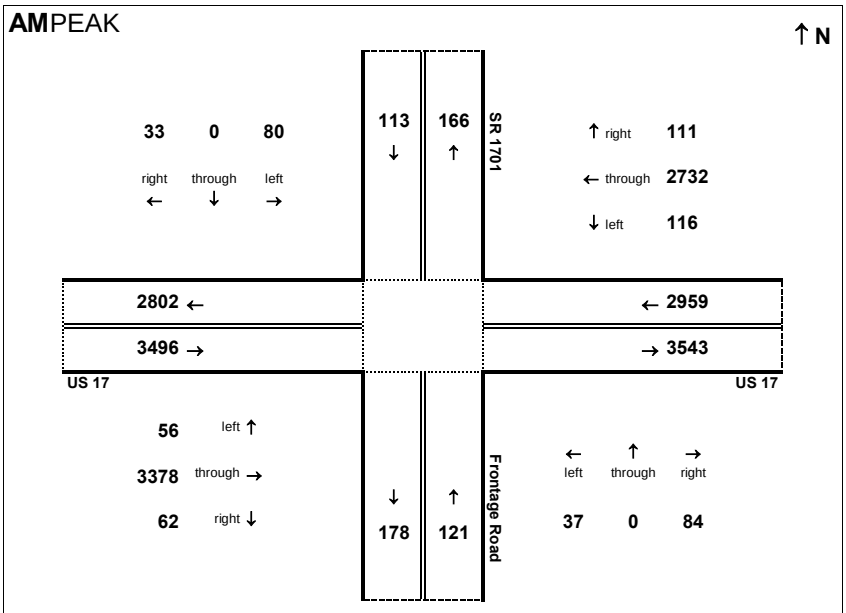
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

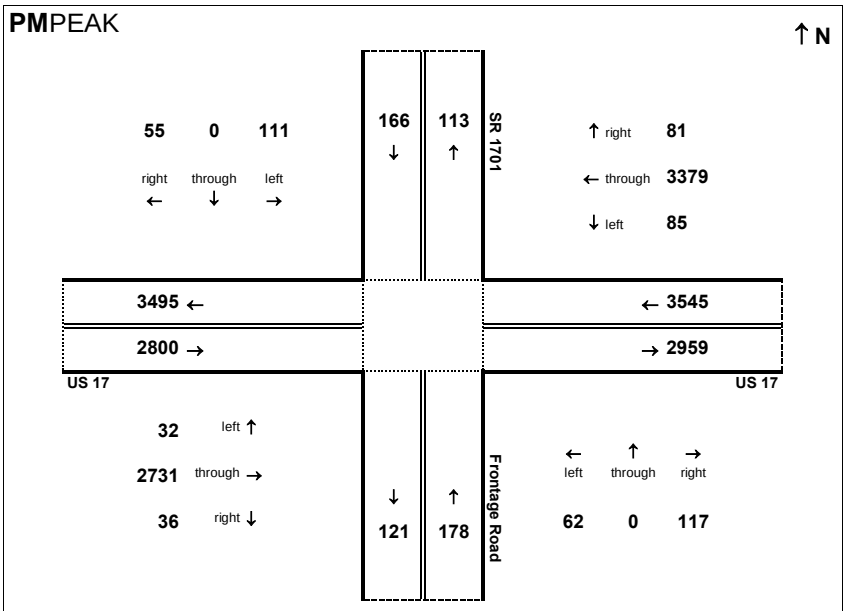
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B

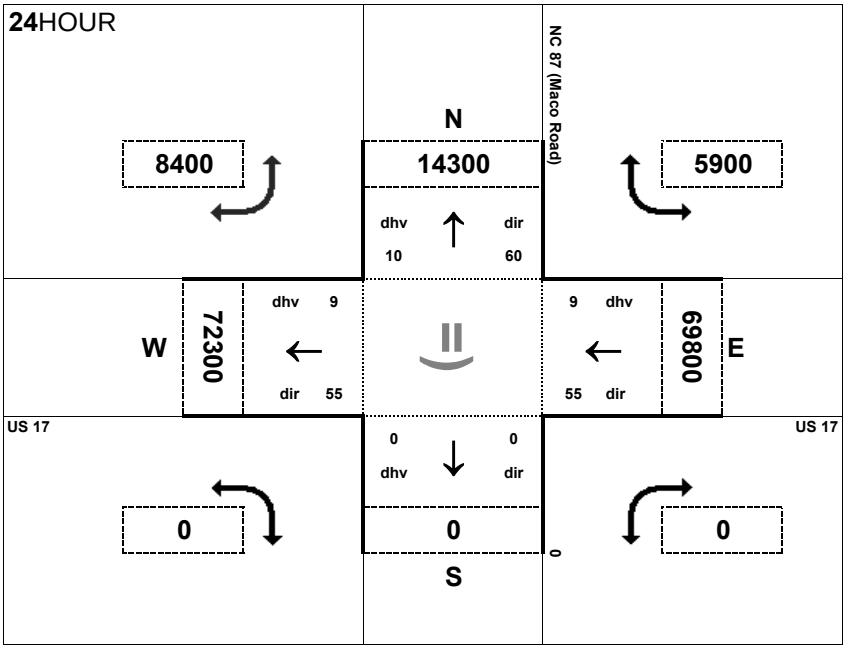




AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

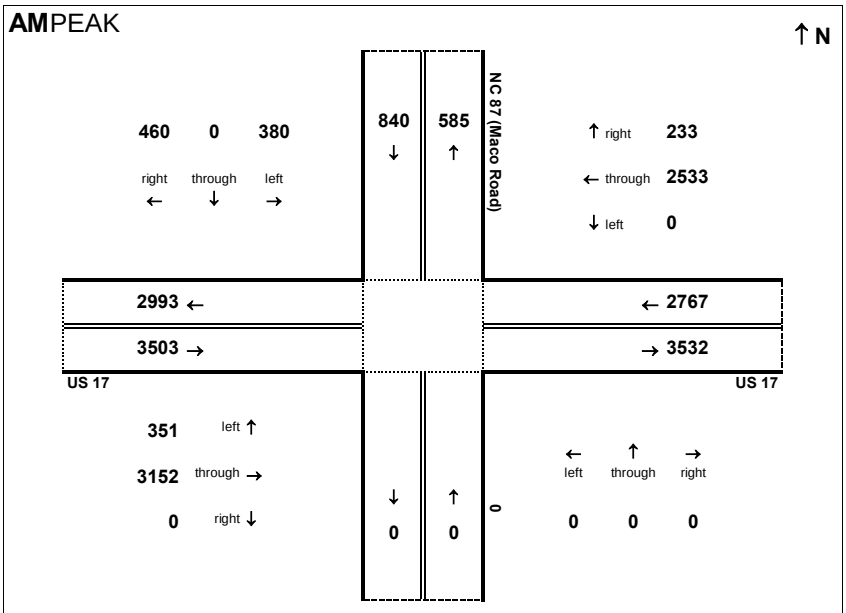


Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

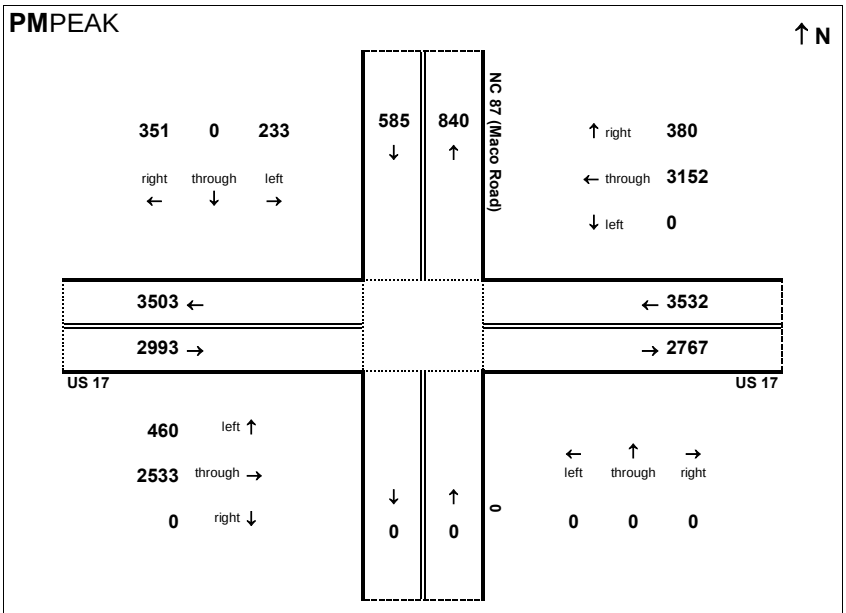
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

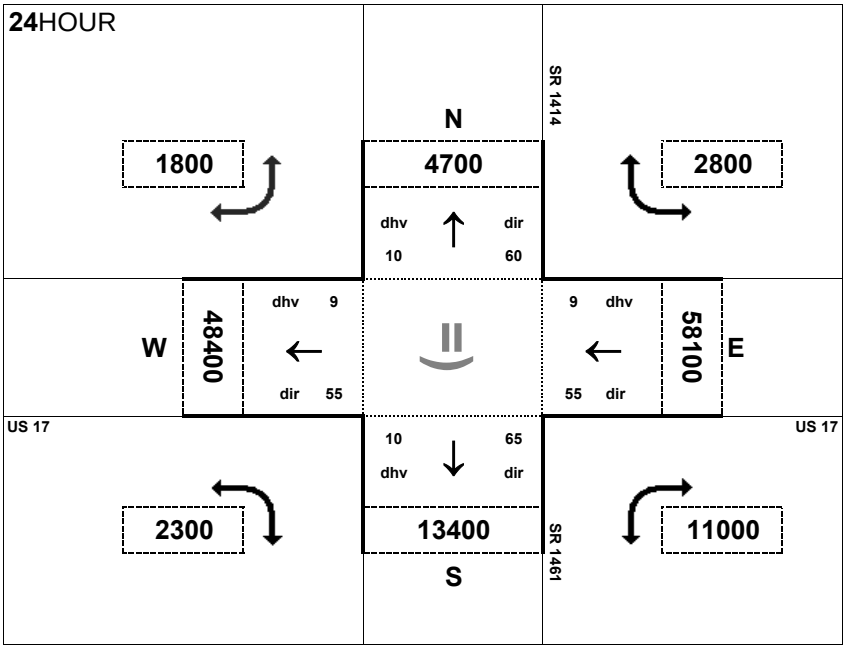
Project:
Cape Fear Crossing - Build Alt B



AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

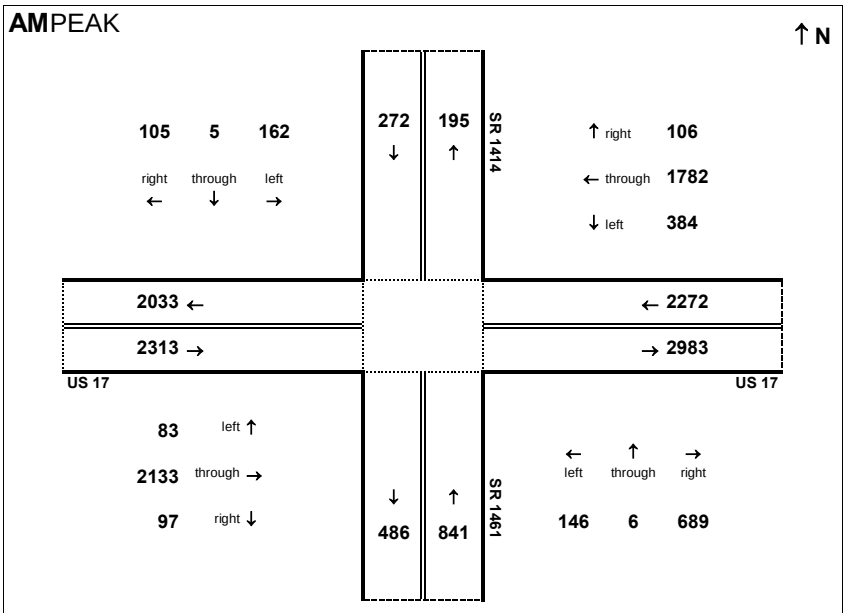


Peak Hour Volume Breakouts Report:
03 - Intersection of US 17 & SR 1414 - Goodman Road and SR 1461 - Hewett-Burton Road

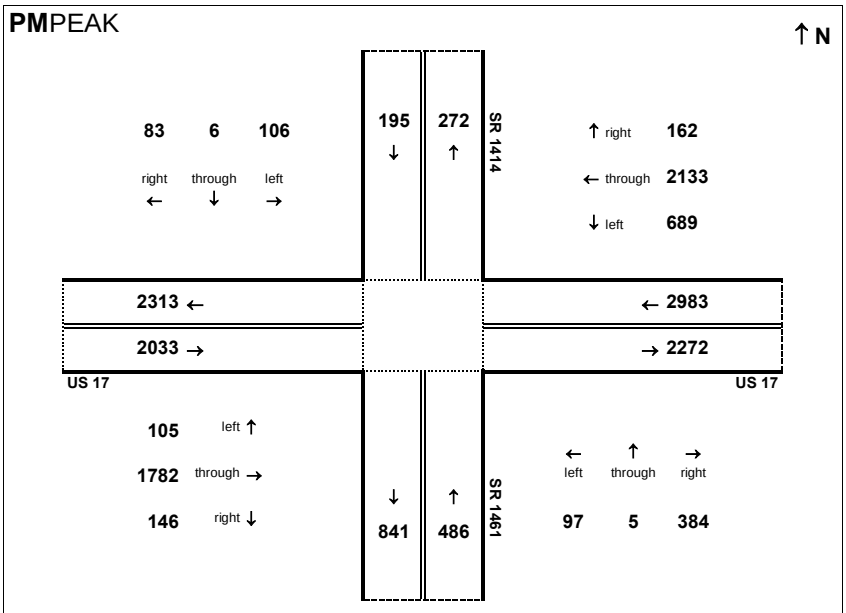
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

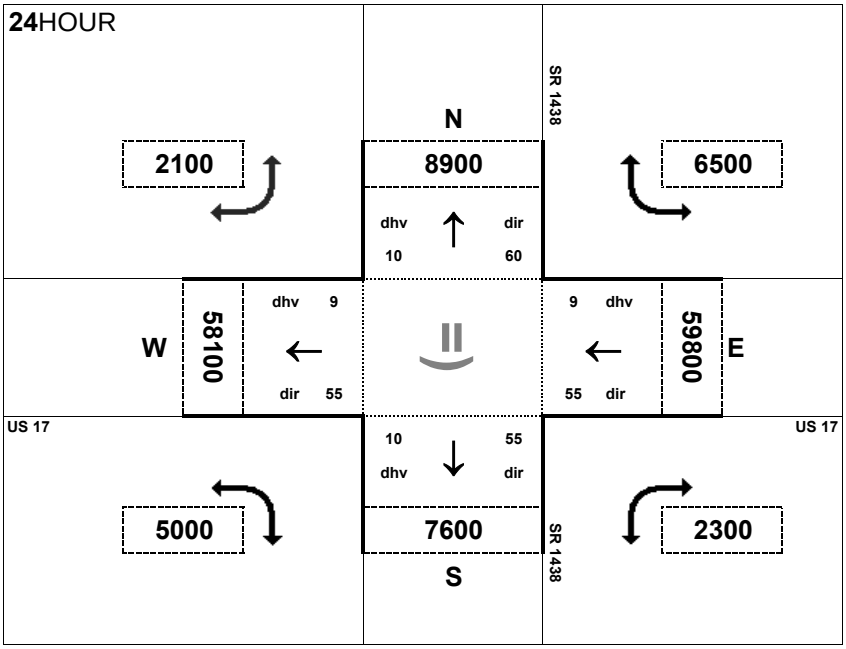
Project:
Cape Fear Crossing - Build Alt B



AM peak hour inflow is 5698 vehicles. AM peak hour outflow is 5697 vehicles.



PM peak hour inflow is 5697 vehicles. PM peak hour outflow is 5698 vehicles.

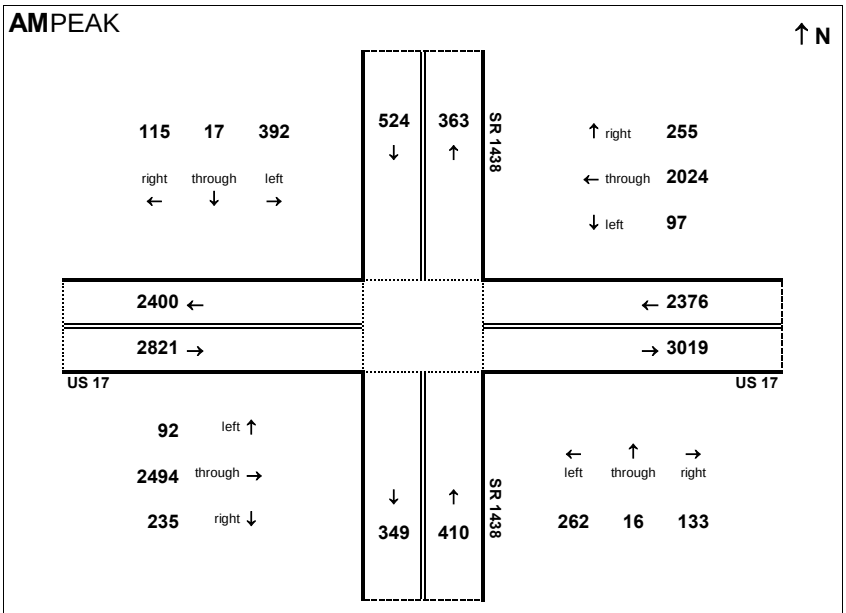


Peak Hour Volume Breakouts Report:
04 - Intersection of US 17 & SR 1438 - Lanvale Road

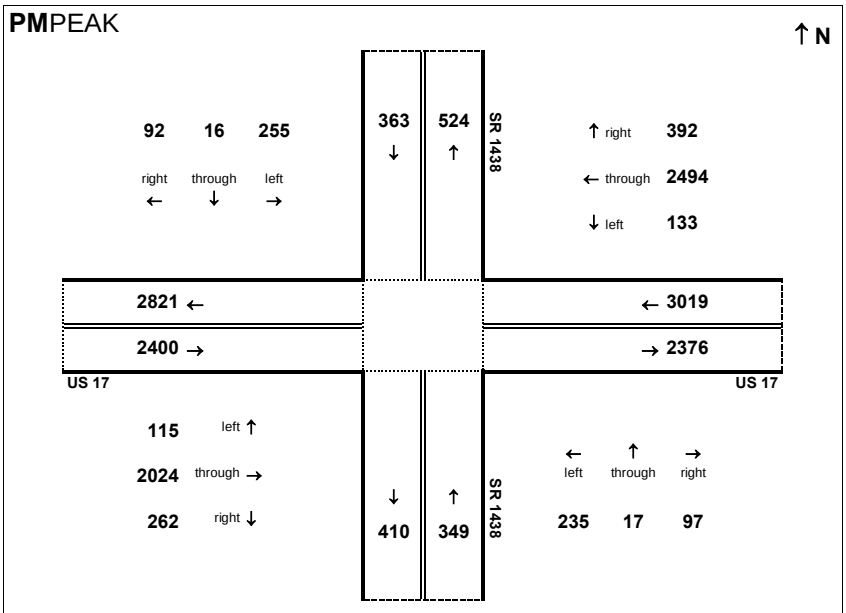
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B



AM peak hour inflow is 6131 vehicles. AM peak hour outflow is 6131 vehicles.



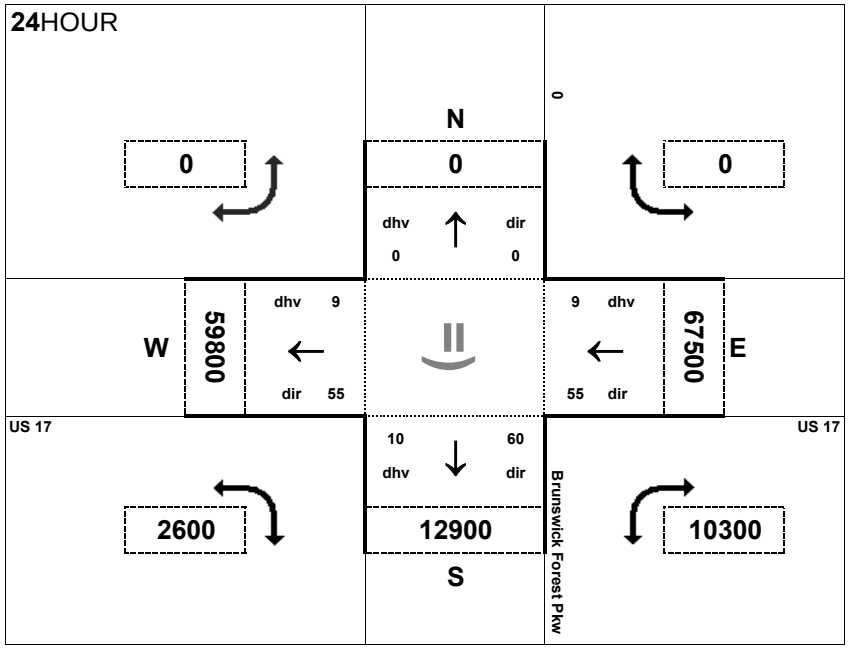
PM peak hour inflow is 6131 vehicles. PM peak hour outflow is 6131 vehicles.

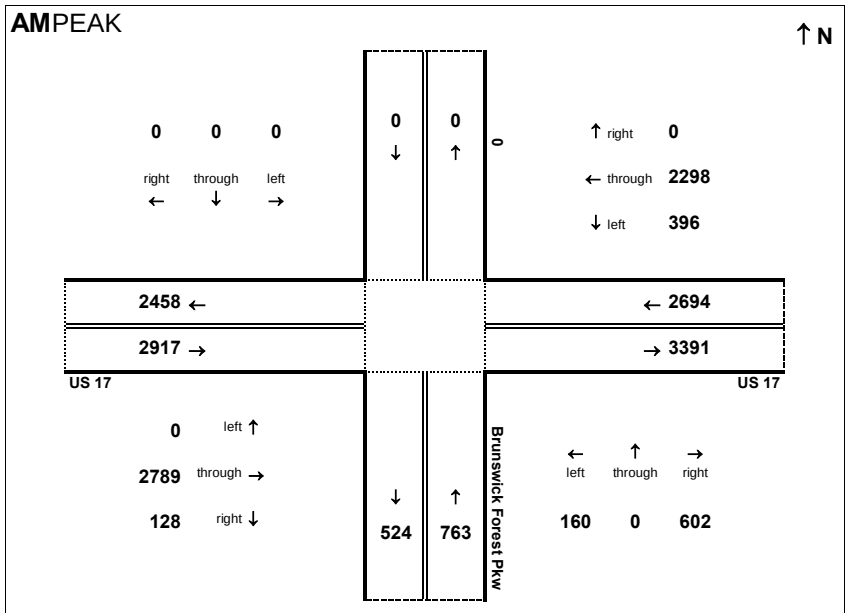
Peak Hour Volume Breakouts Report:
05 - Intersection of US 17 and Brunswick Forest Parkway

Traffic Forecast Release Date:
Oct. 2014

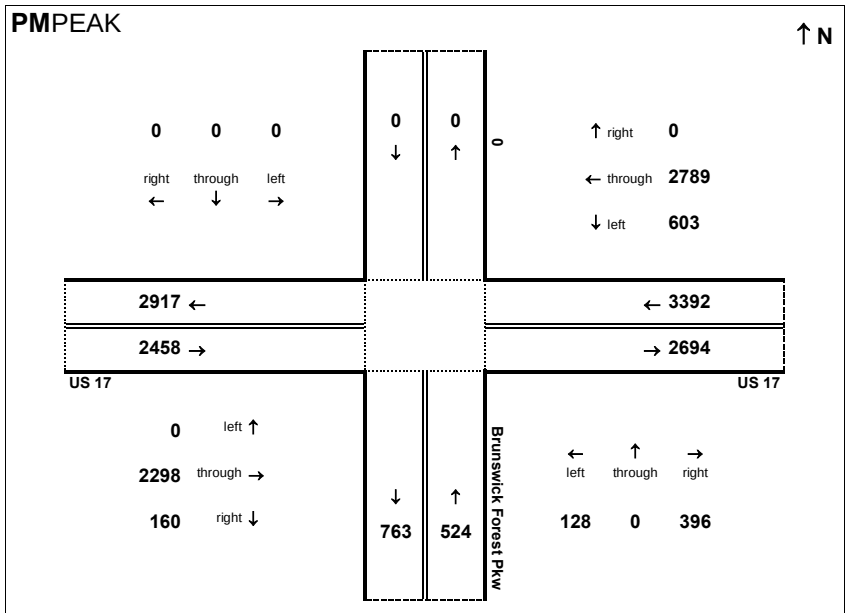
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 6374 vehicles. AM peak hour outflow is 6373 vehicles.



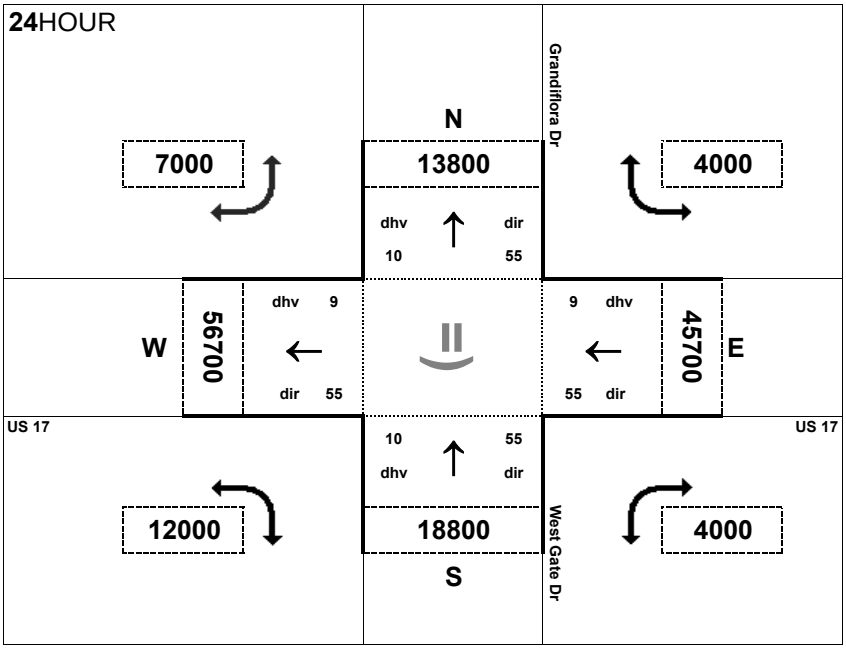
PM peak hour inflow is 6374 vehicles. PM peak hour outflow is 6374 vehicles.

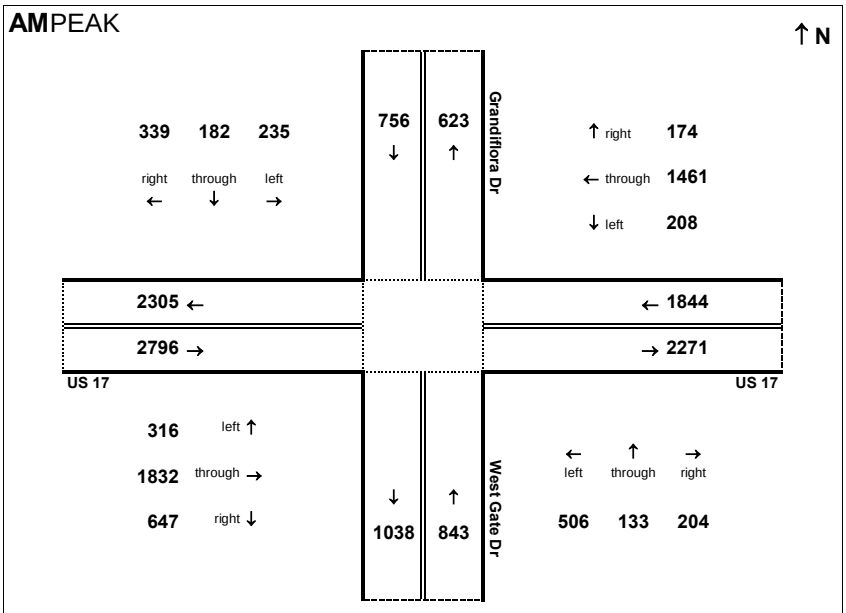
Peak Hour Volume Breakouts Report:
06 - Intersection of US 17 and Grandiflora Dr and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

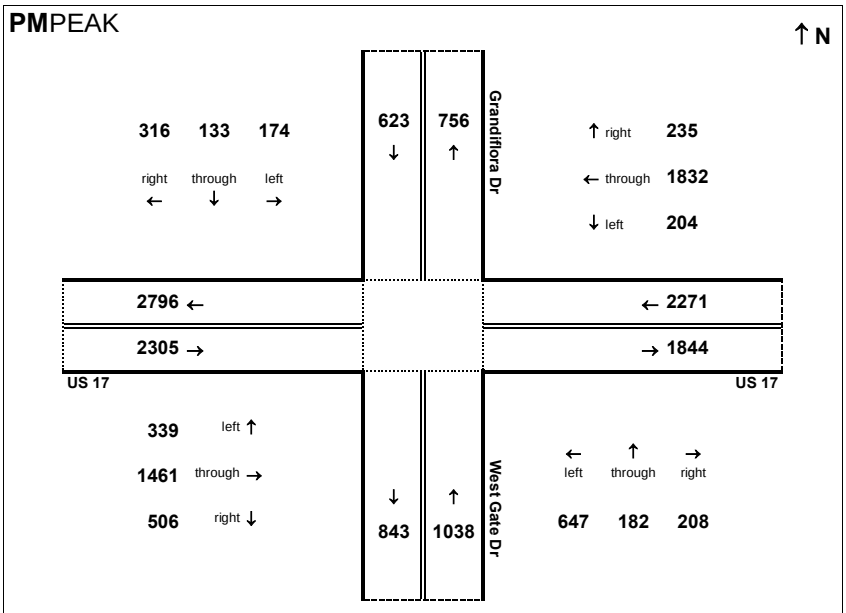
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



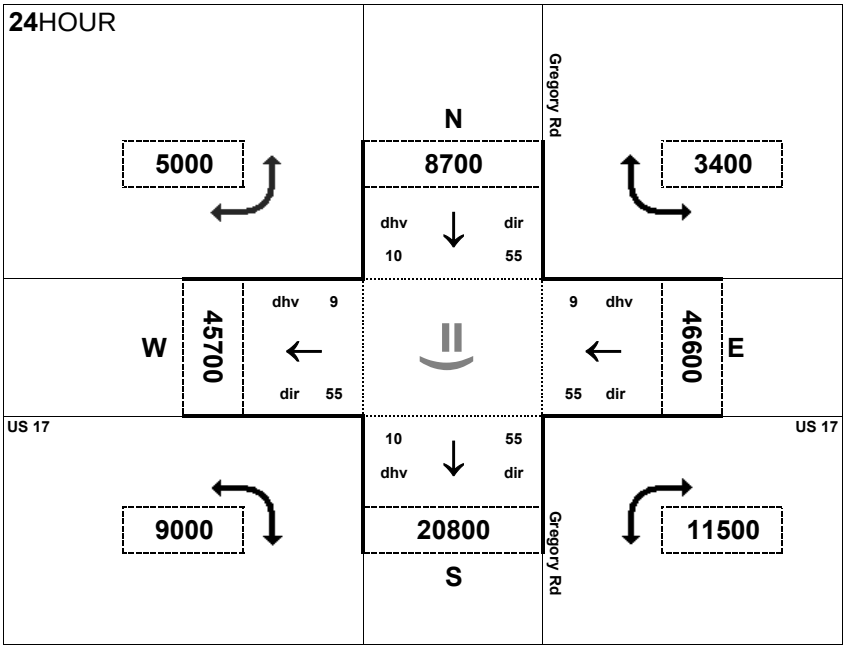
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

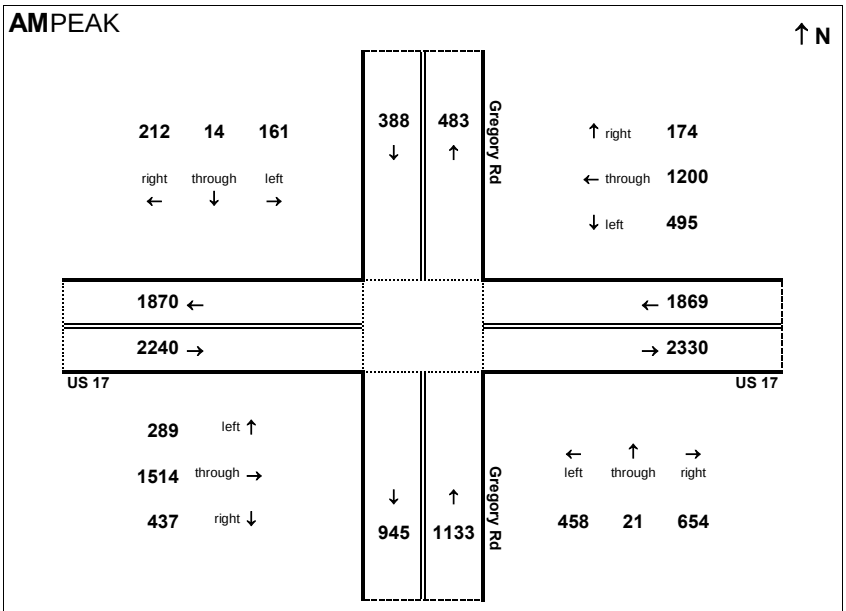
Peak Hour Volume Breakouts Report:
07 - Intersection of US 17 and Gregory Road

Traffic Forecast Release Date:
Oct. 2014

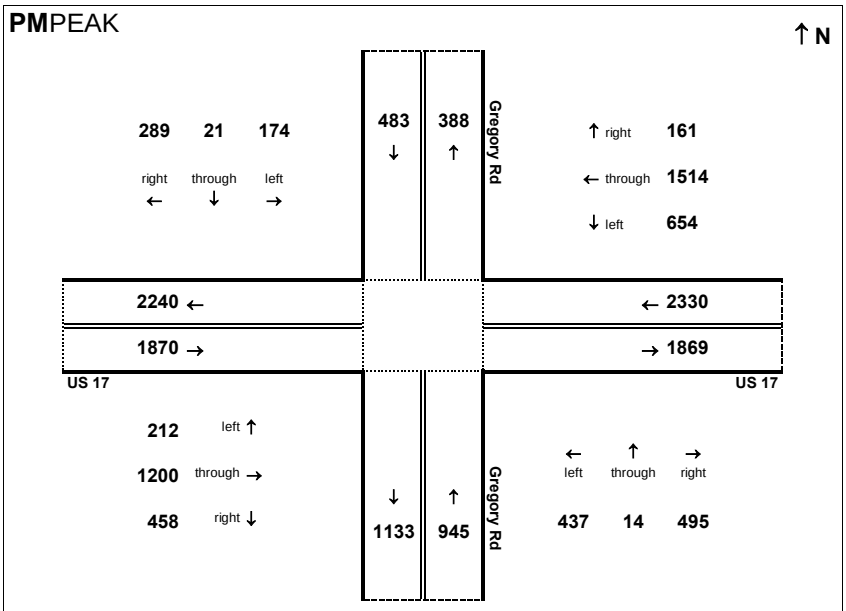
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

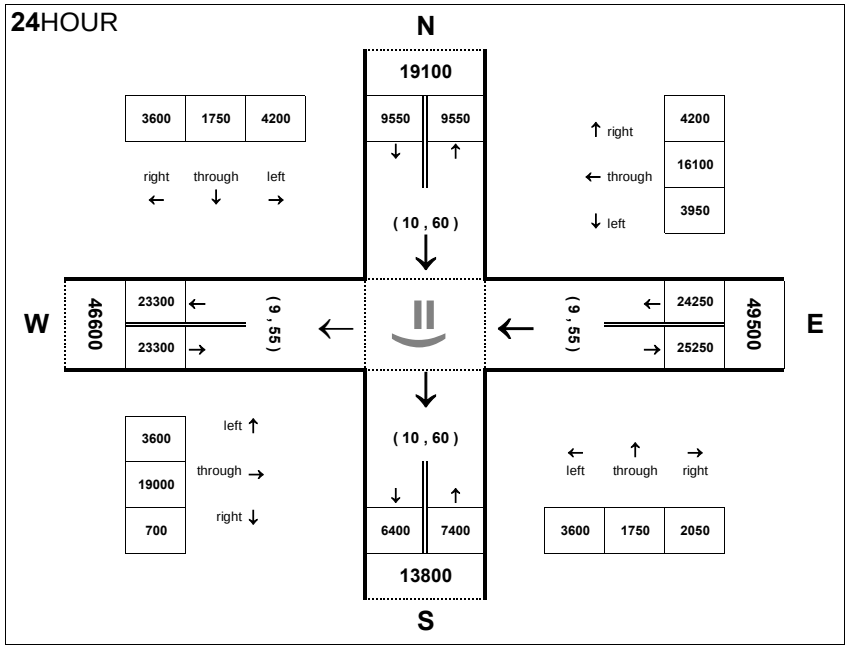


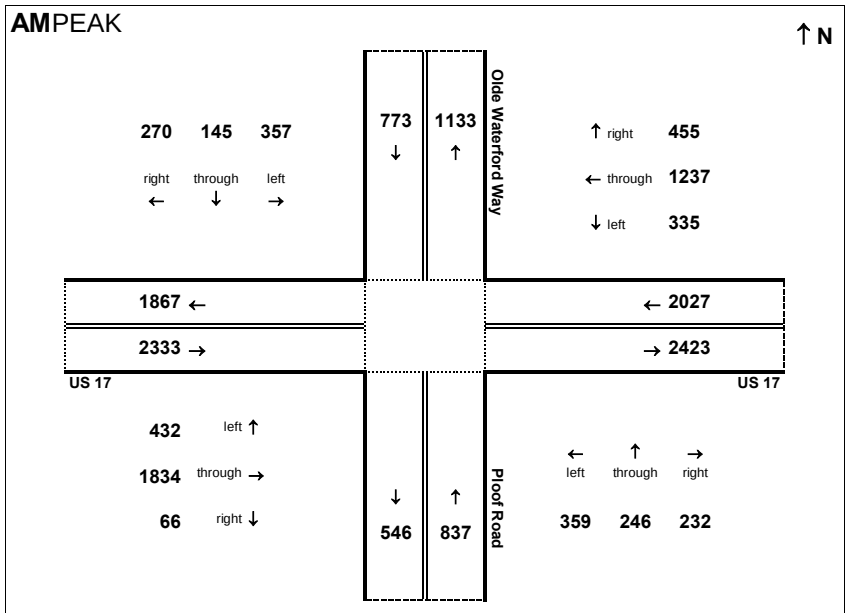
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

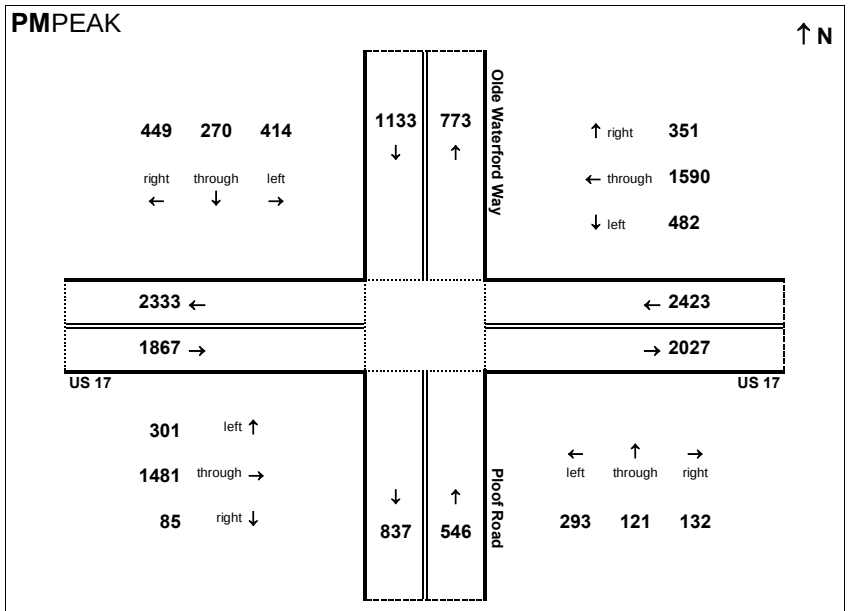
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. B





AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



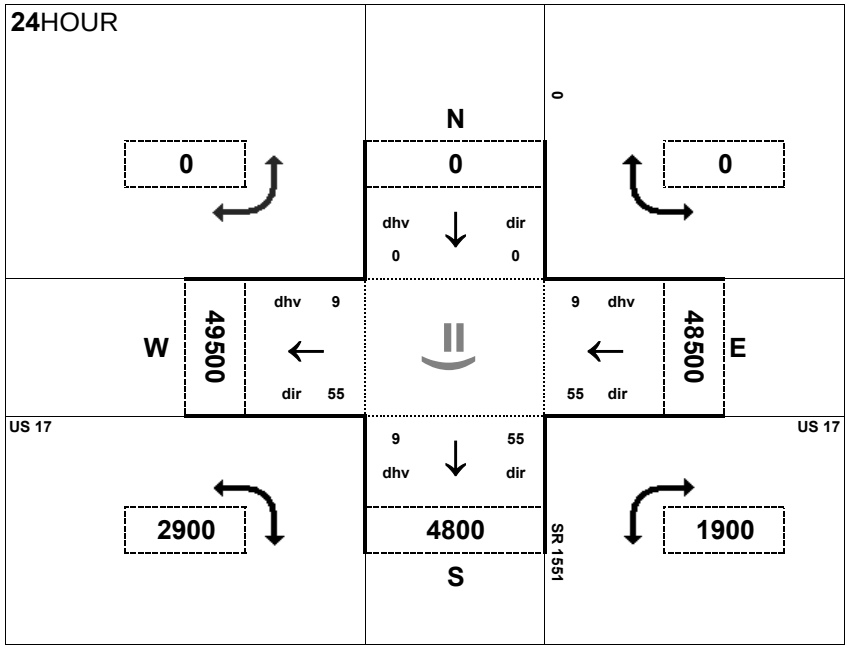
PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

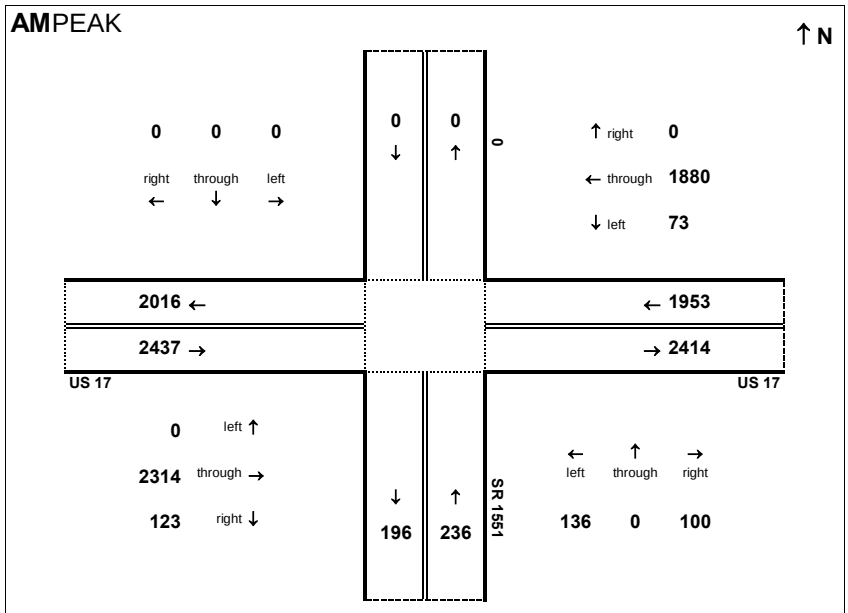
Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

Traffic Forecast Release Date:
Oct. 2014

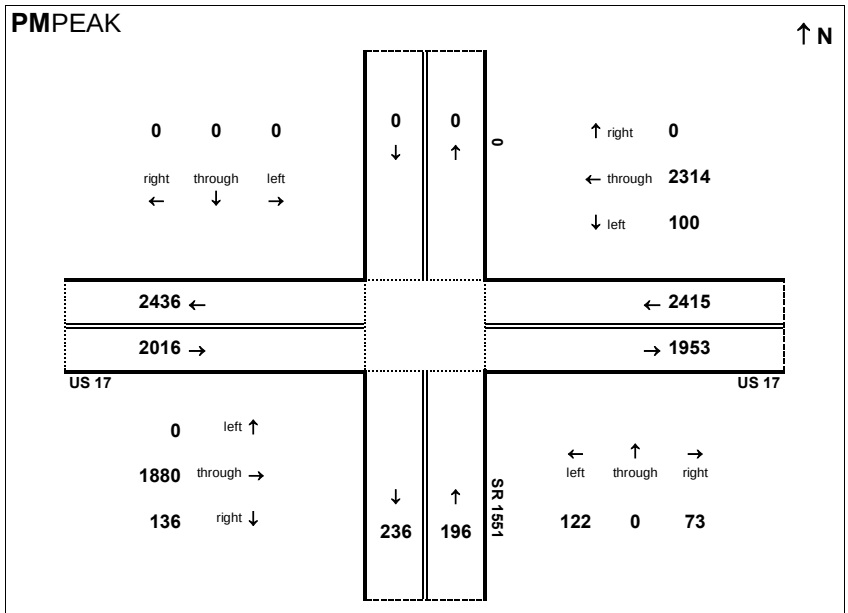
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



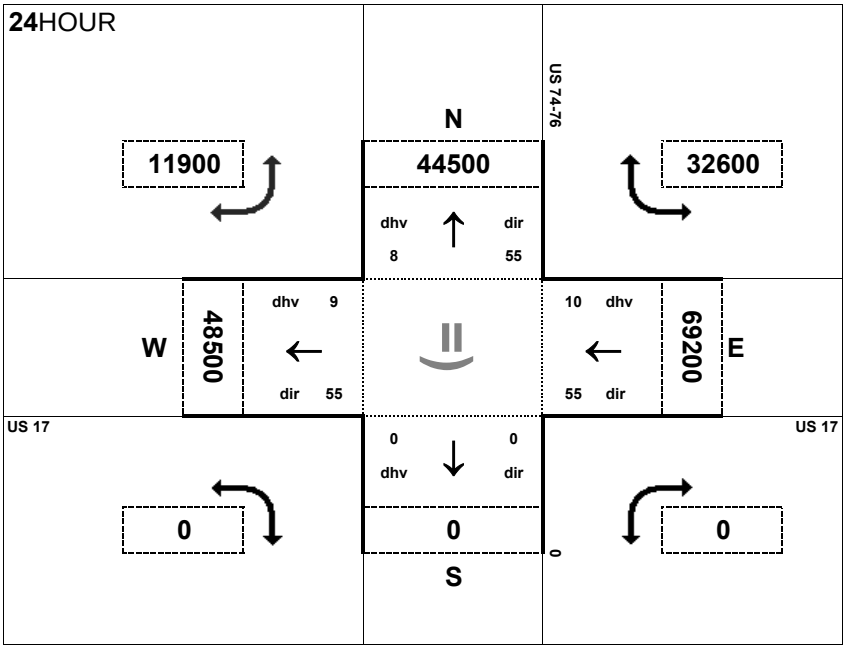
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

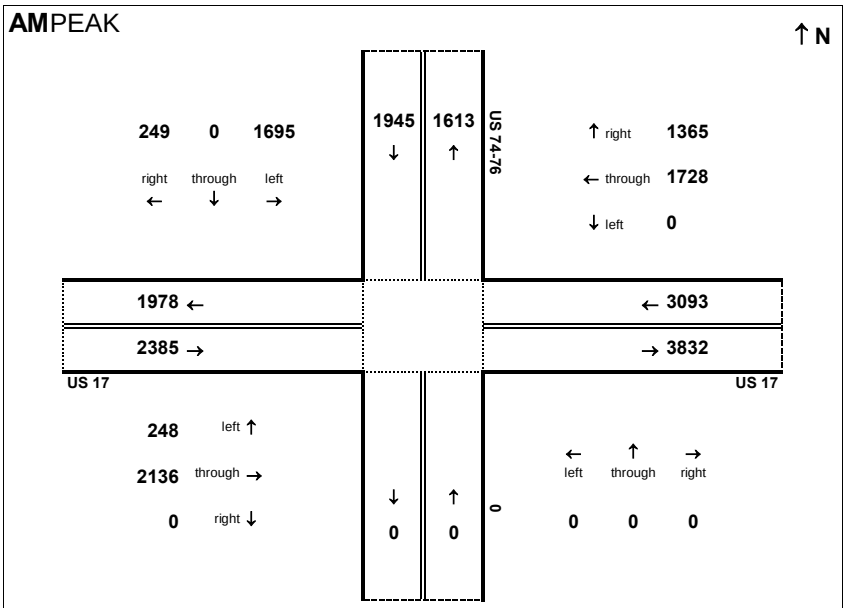
Peak Hour Volume Breakouts Report:
10 - Intersection of US 17 & US 74-76

Traffic Forecast Release Date:
Oct. 2014

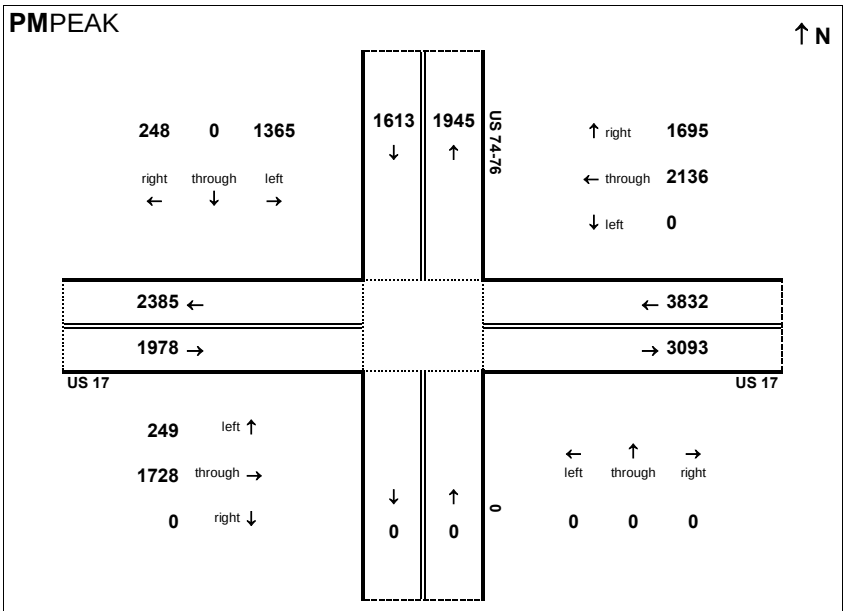
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 7423 vehicles. AM peak hour outflow is 7423 vehicles.



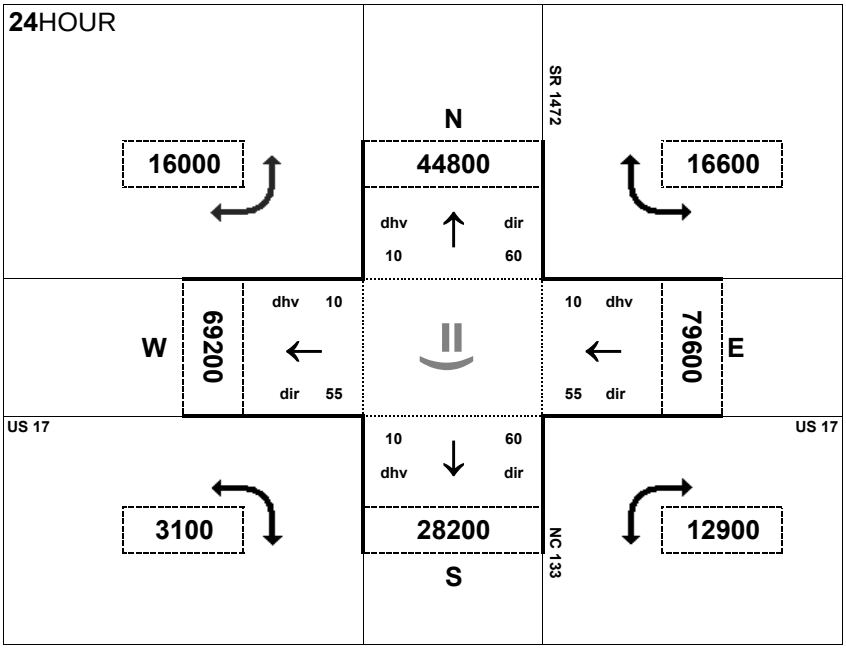
PM peak hour inflow is 7423 vehicles. PM peak hour outflow is 7423 vehicles.

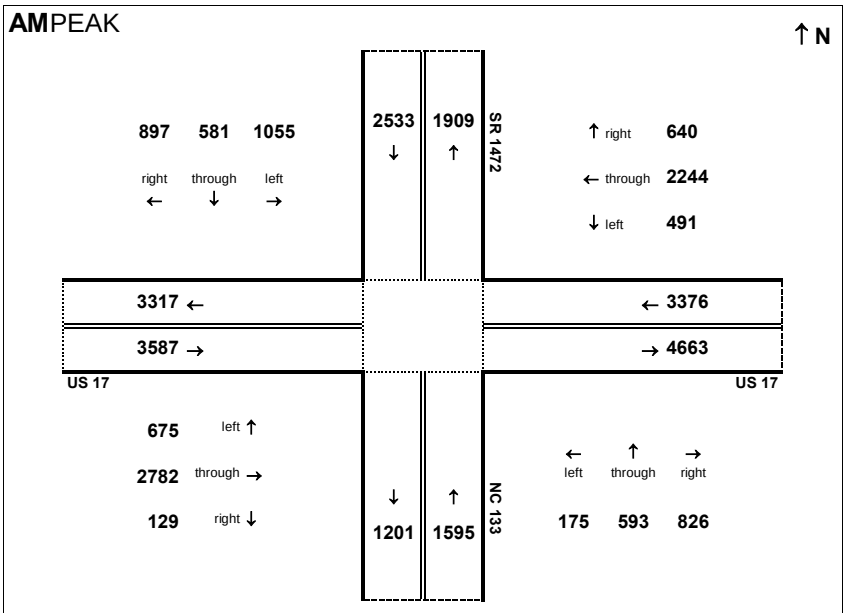
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

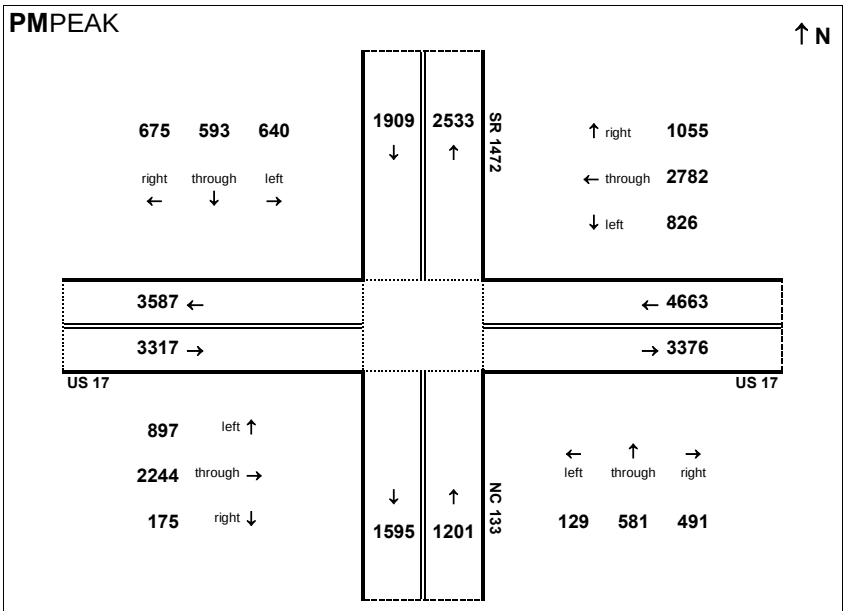
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 11091 vehicles. AM peak hour outflow is 11090 vehicles.



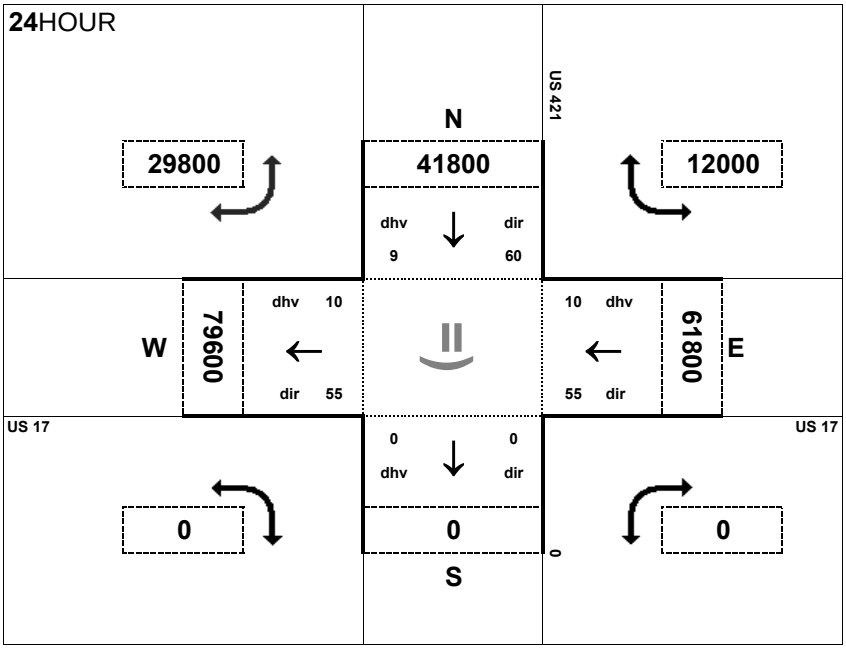
PM peak hour inflow is 11090 vehicles. PM peak hour outflow is 11091 vehicles.

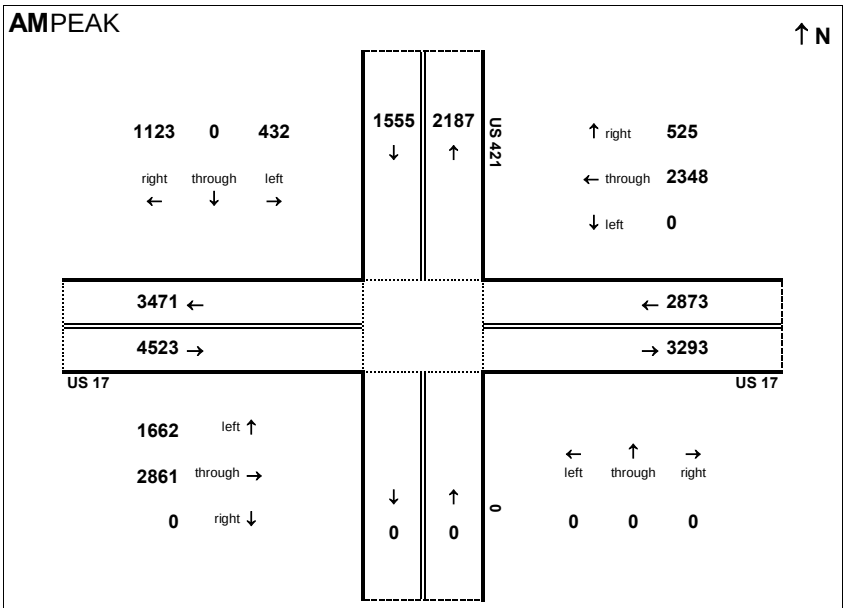
Peak Hour Volume Breakouts Report:
12 - Intersection of US 17 & US 421

Traffic Forecast Release Date:
Oct. 2014

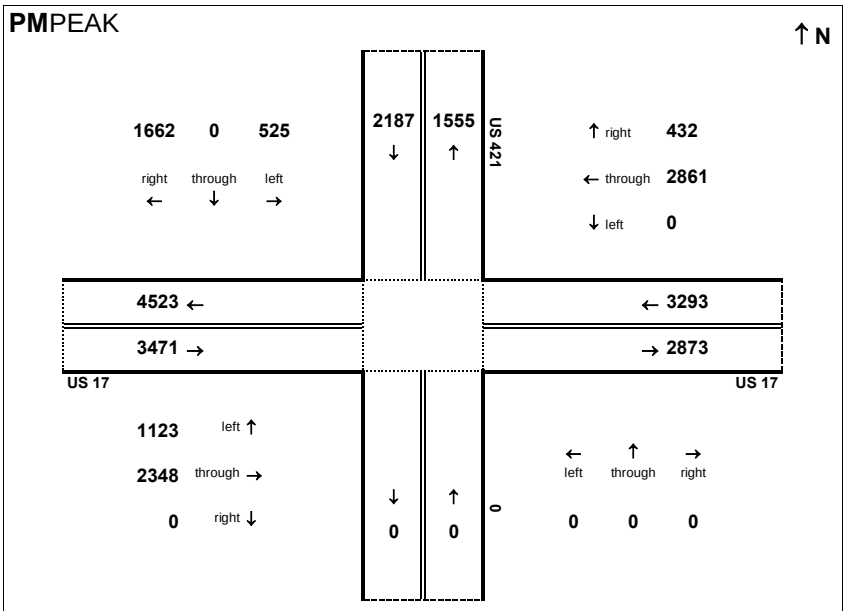
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B

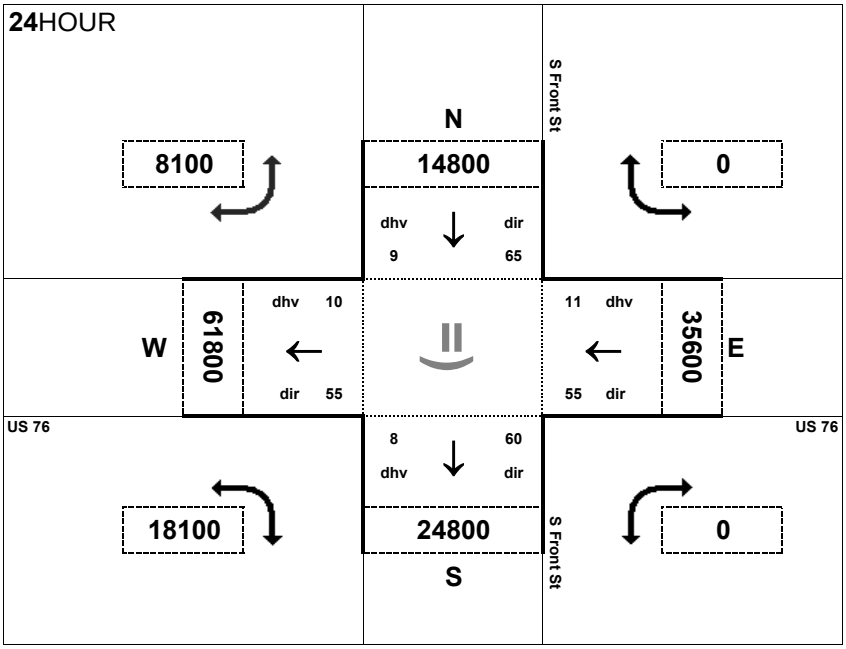




AM peak hour inflow is 8951 vehicles. AM peak hour outflow is 8951 vehicles.



PM peak hour inflow is 8951 vehicles. PM peak hour outflow is 8951 vehicles.

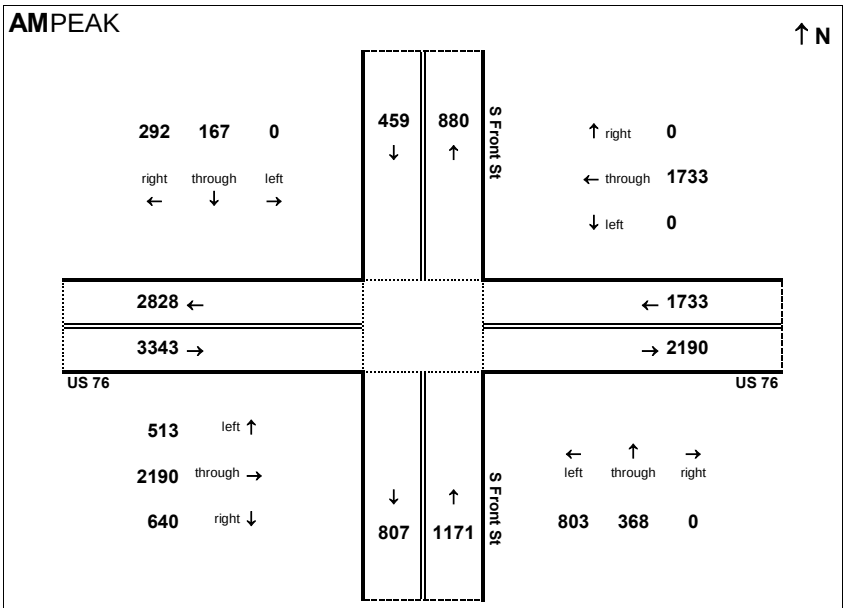


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

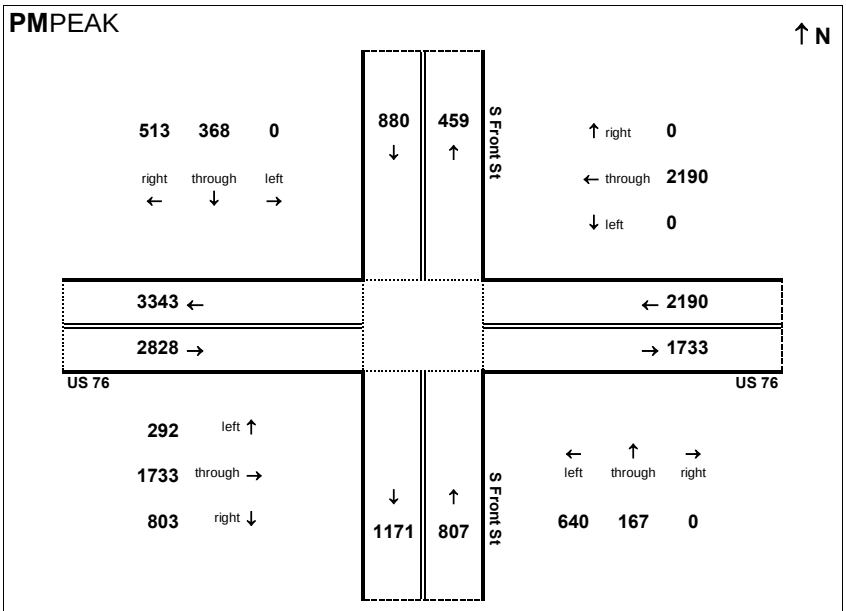
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

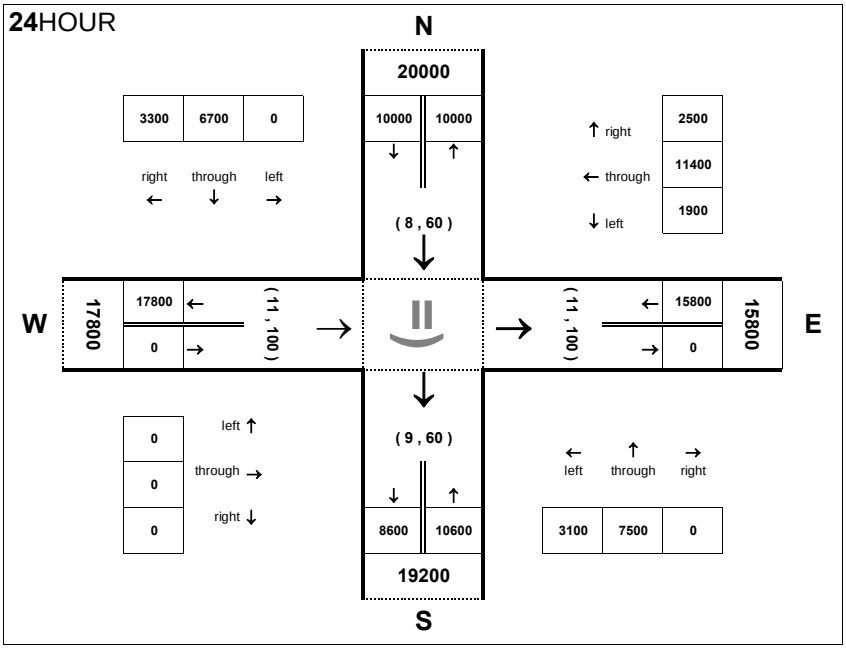
Project:
Cape Fear Crossing - Build Alt B



AM peak hour inflow is 6706 vehicles. AM peak hour outflow is 6705 vehicles.



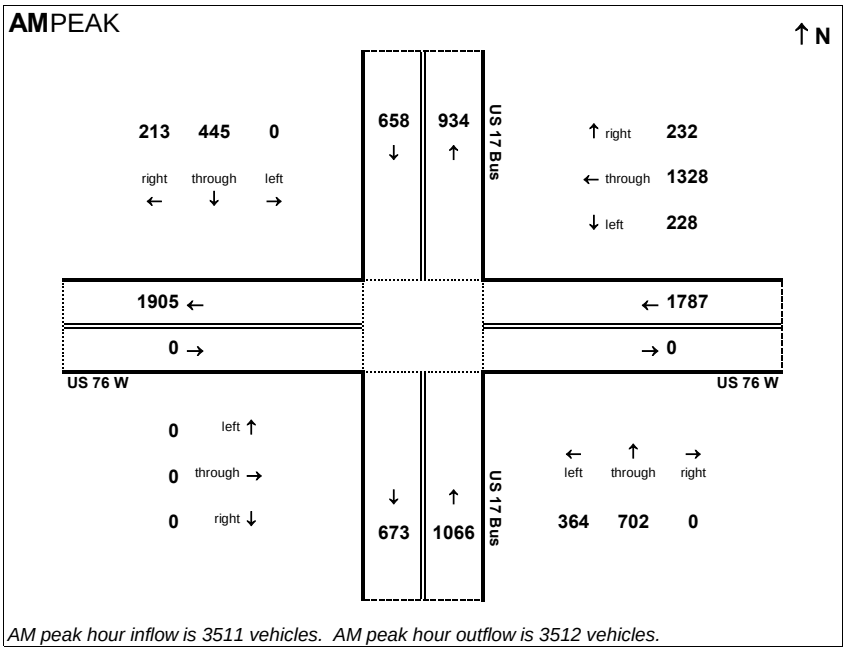
PM peak hour inflow is 6705 vehicles. PM peak hour outflow is 6706 vehicles.



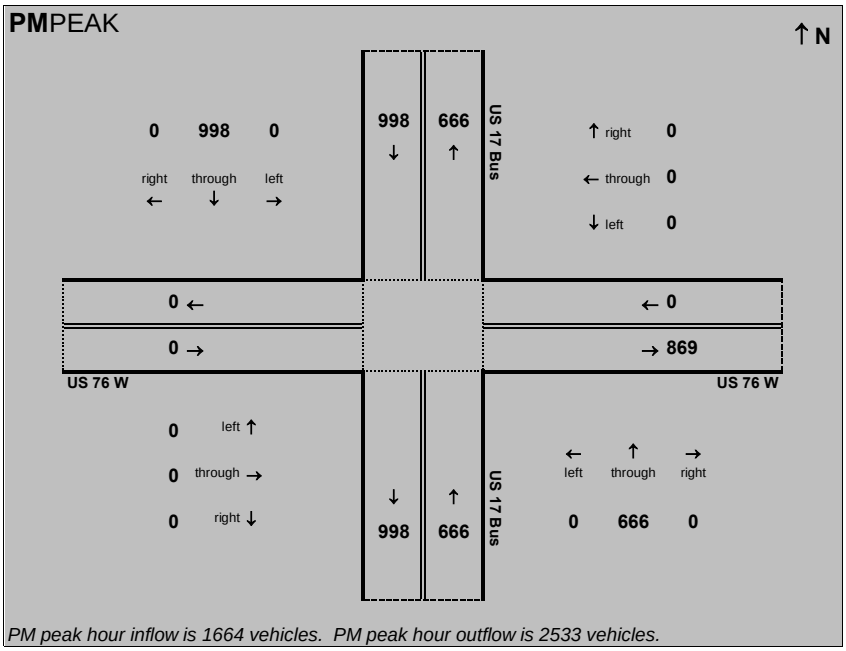
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

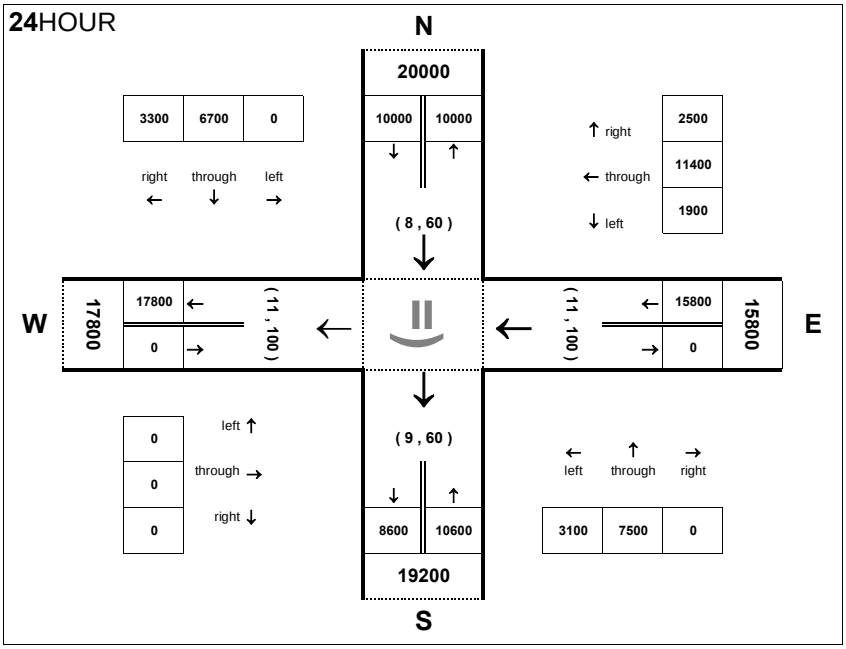
Traffic Data Year:
2040 Alt B



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



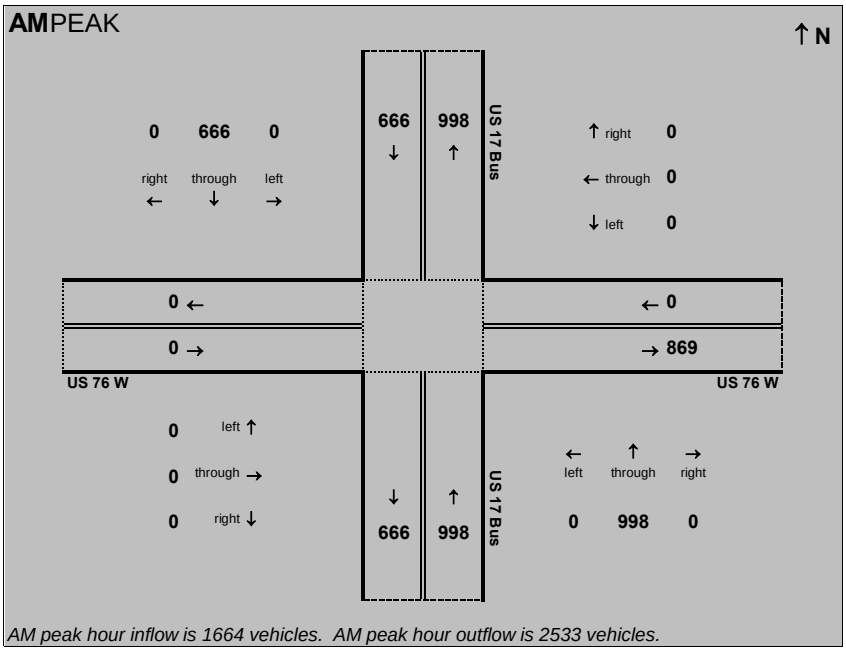
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



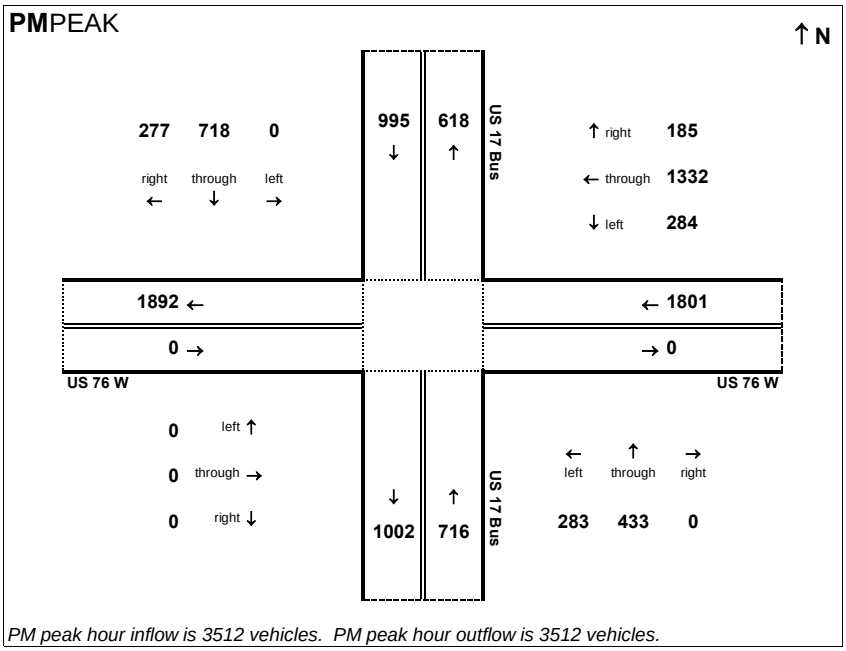
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

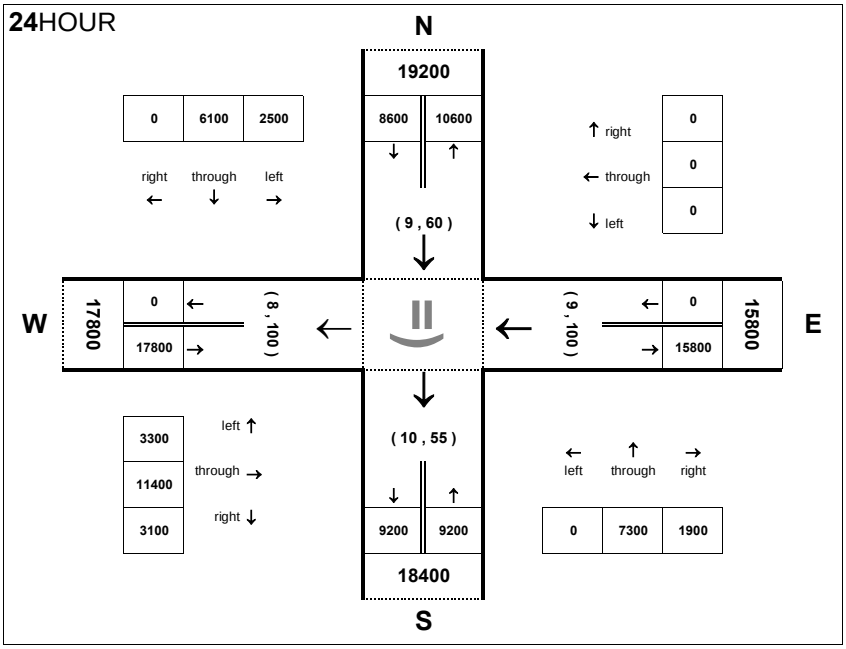
Traffic Data Year:
2040 Alt B



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



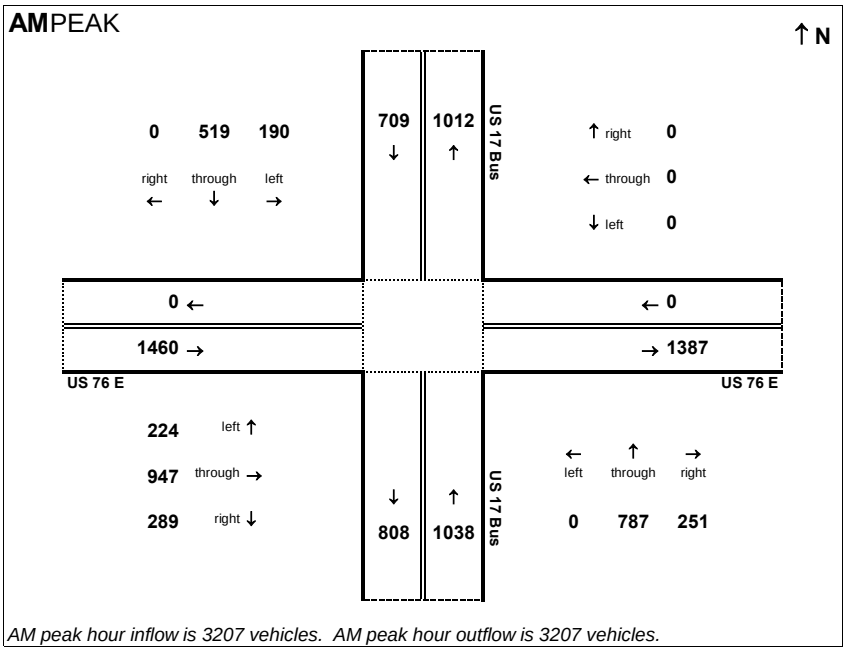
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



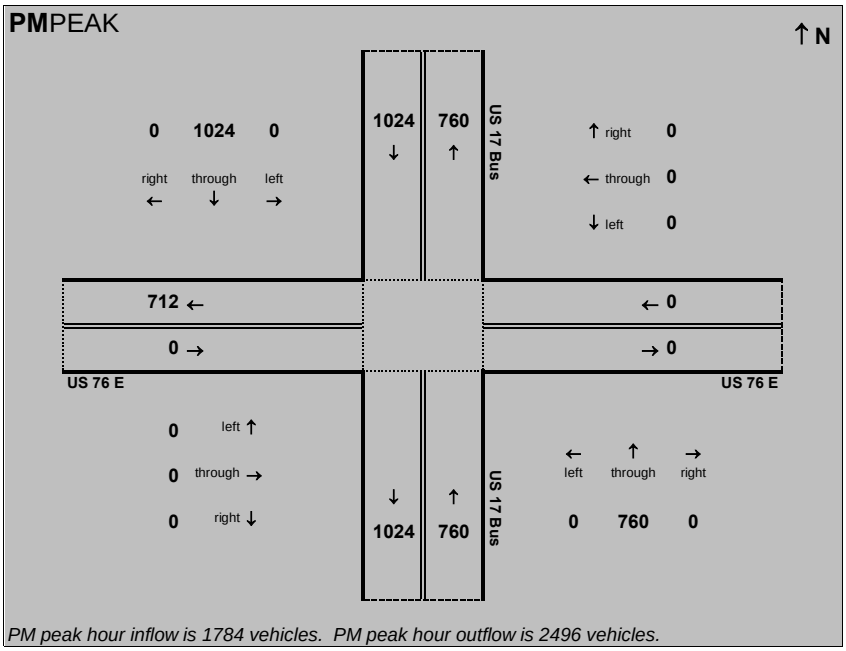
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

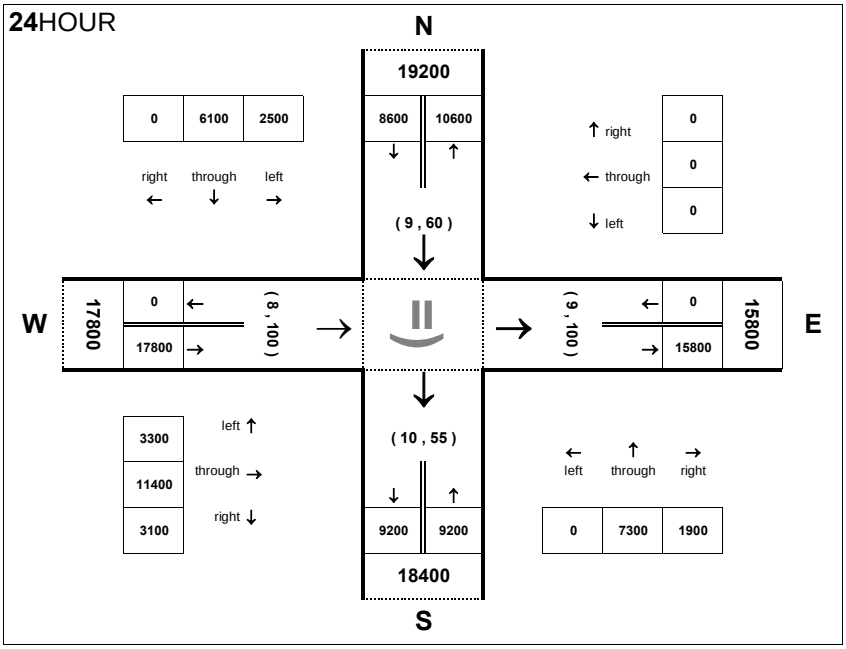
Traffic Data Year:
2040 Alt B



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



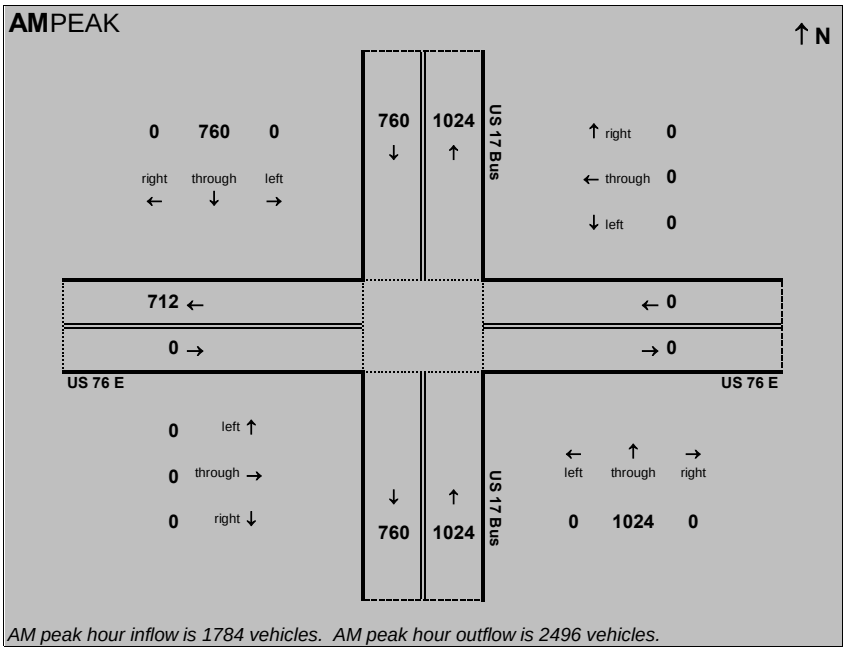
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



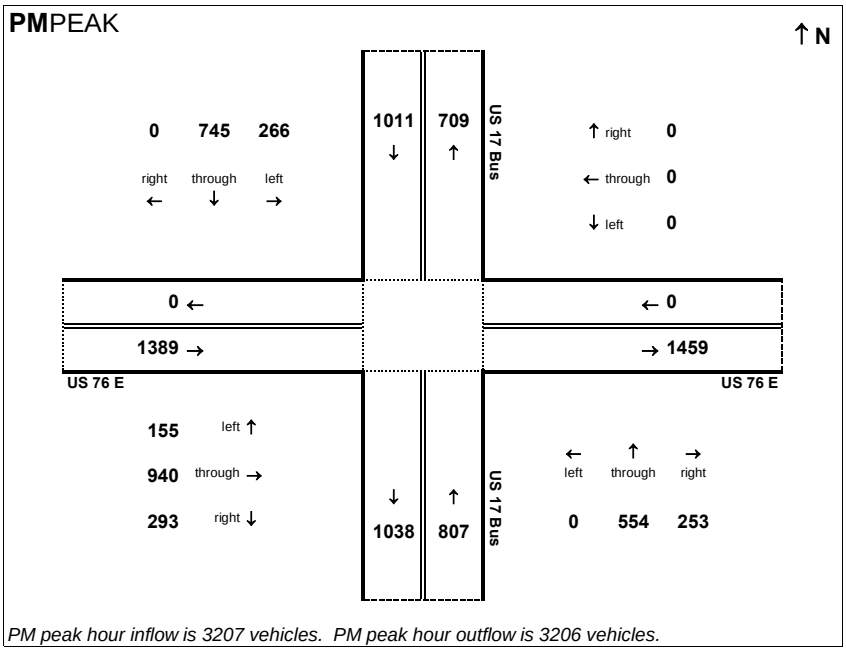
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt B



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



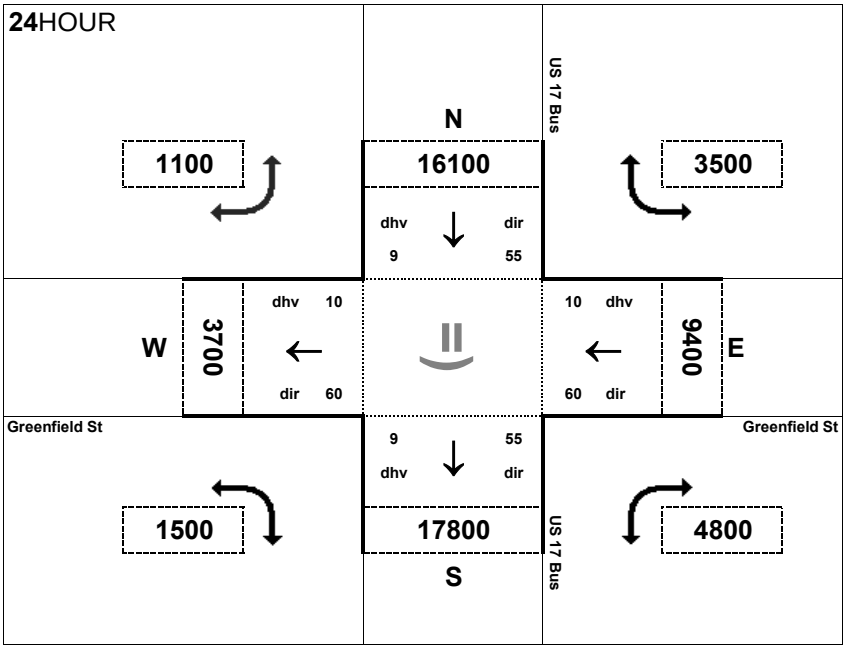
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

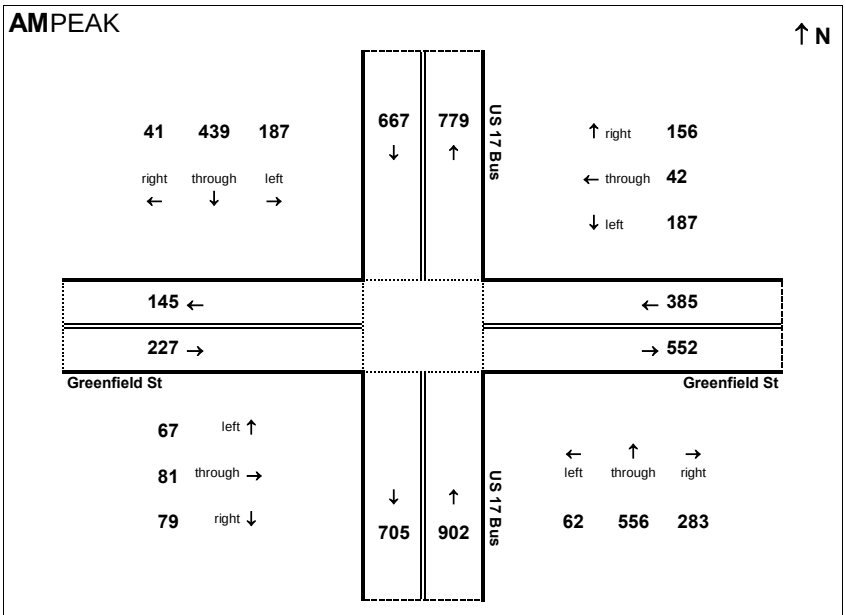
Peak Hour Volume Breakouts Report:
28 - Intersection of US 17 Business and Greenfield Street

Traffic Forecast Release Date:
Oct. 2014

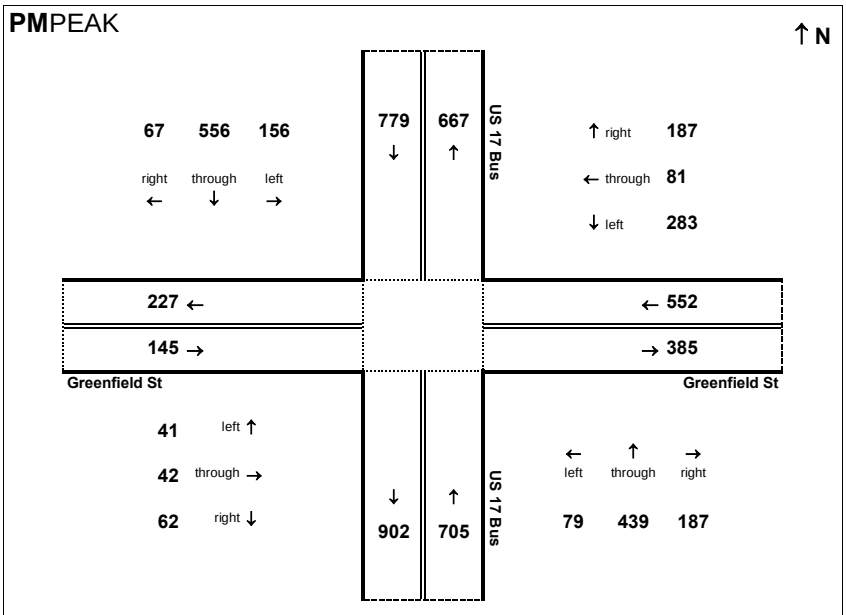
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



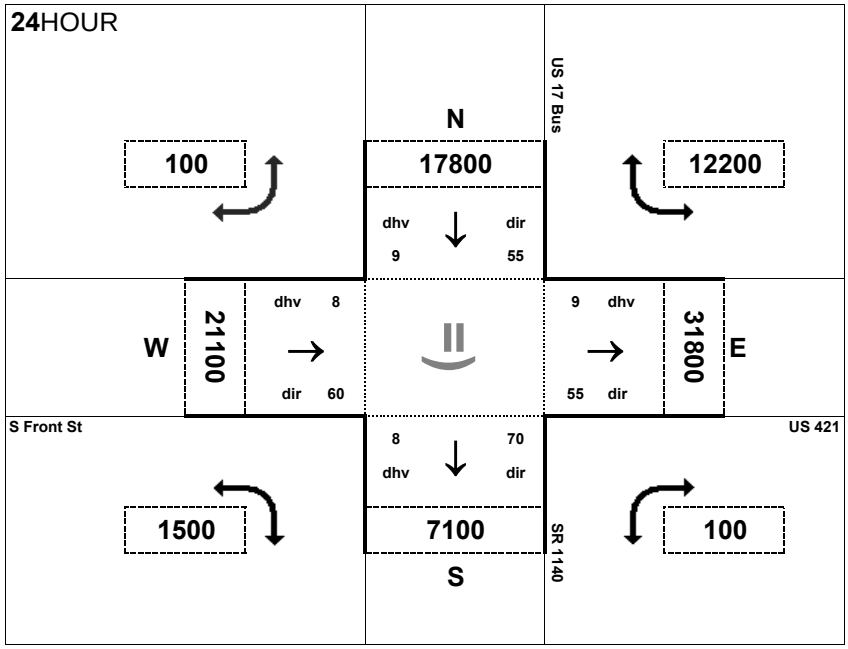
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

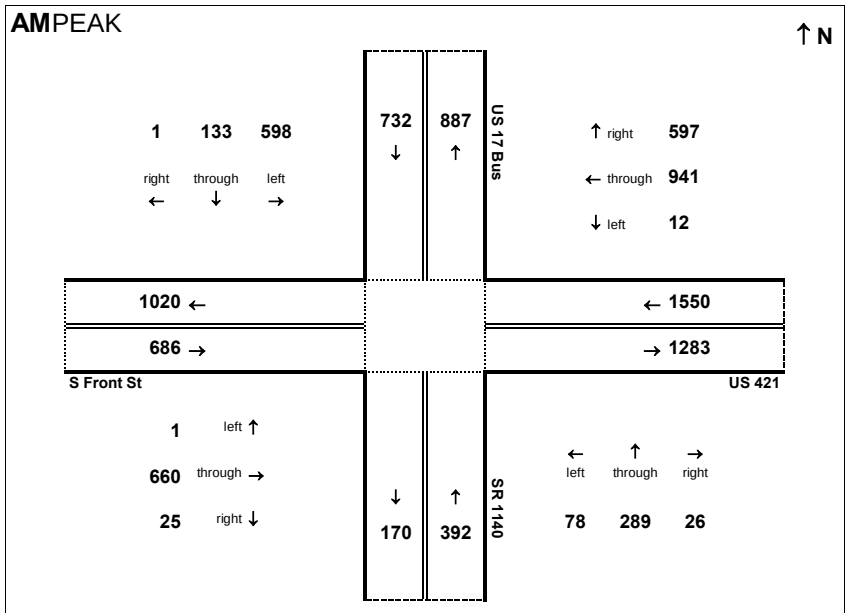
Peak Hour Volume Breakouts Report:
29 - Intersection of US 17 Business & S Front Street and US 421

Traffic Forecast Release Date:
Oct. 2014

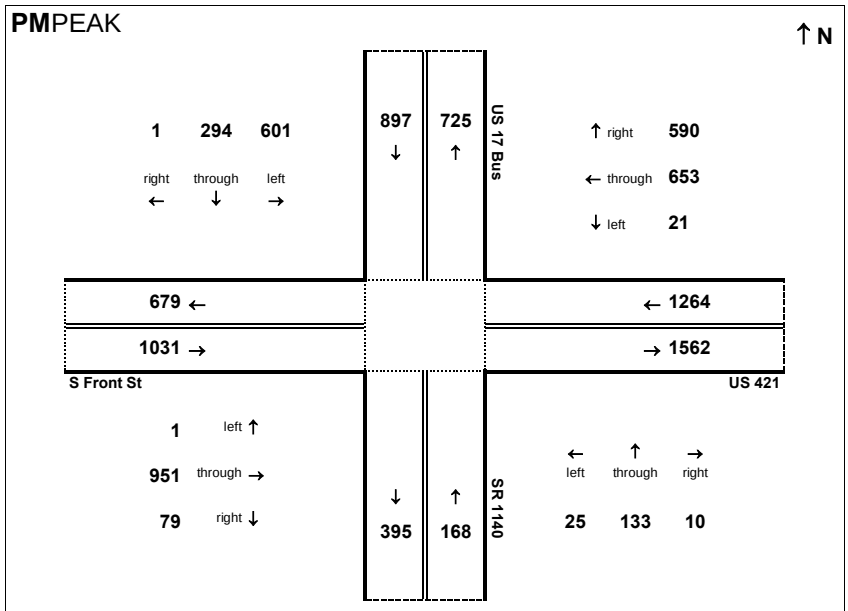
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



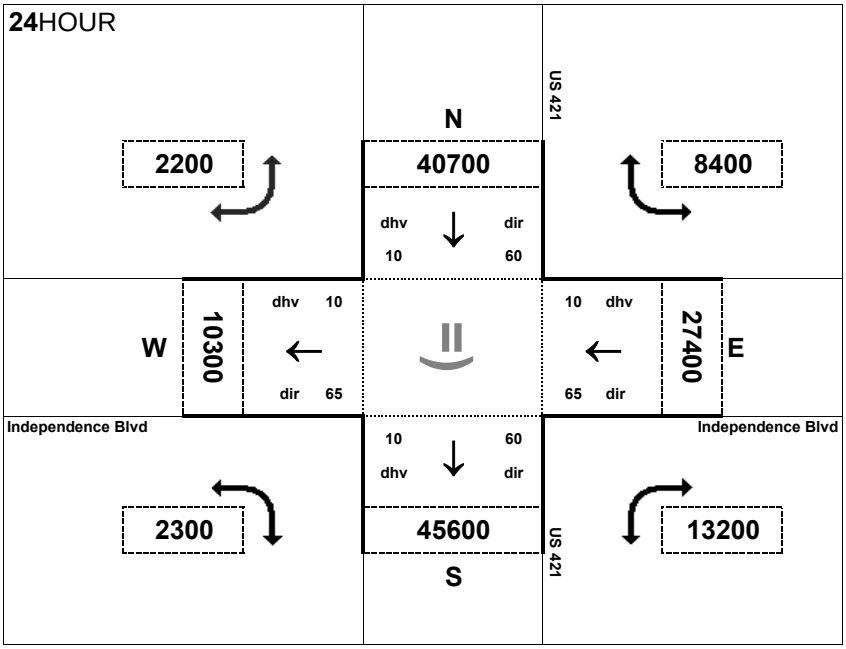
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3361 vehicles.

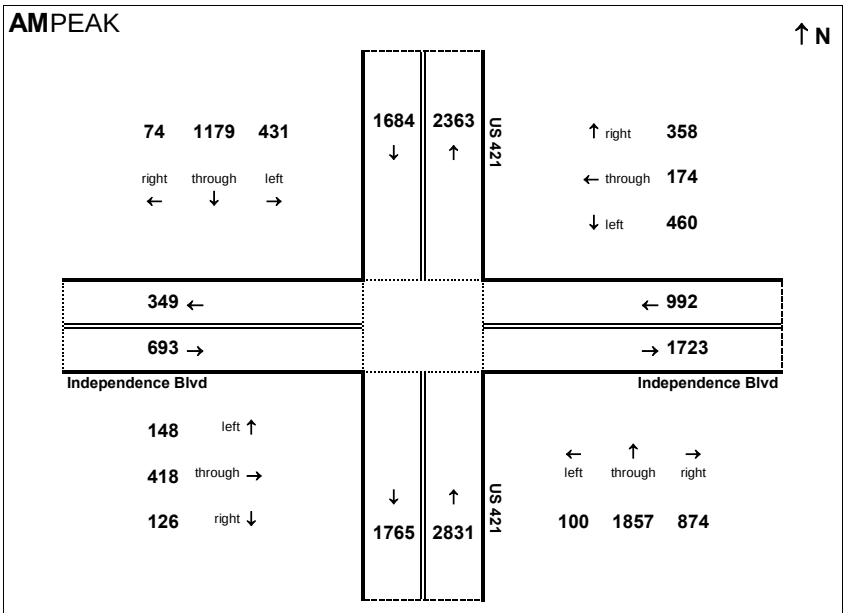
Peak Hour Volume Breakouts Report:
31 - Intersection of US 421 and Independence Blvd

Traffic Forecast Release Date:
Oct. 2014

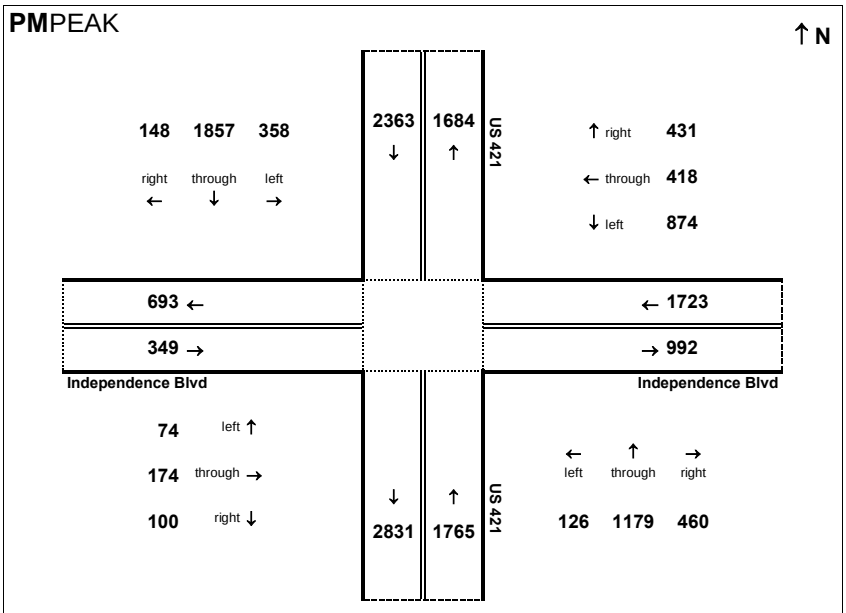
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 6200 vehicles. AM peak hour outflow is 6200 vehicles.



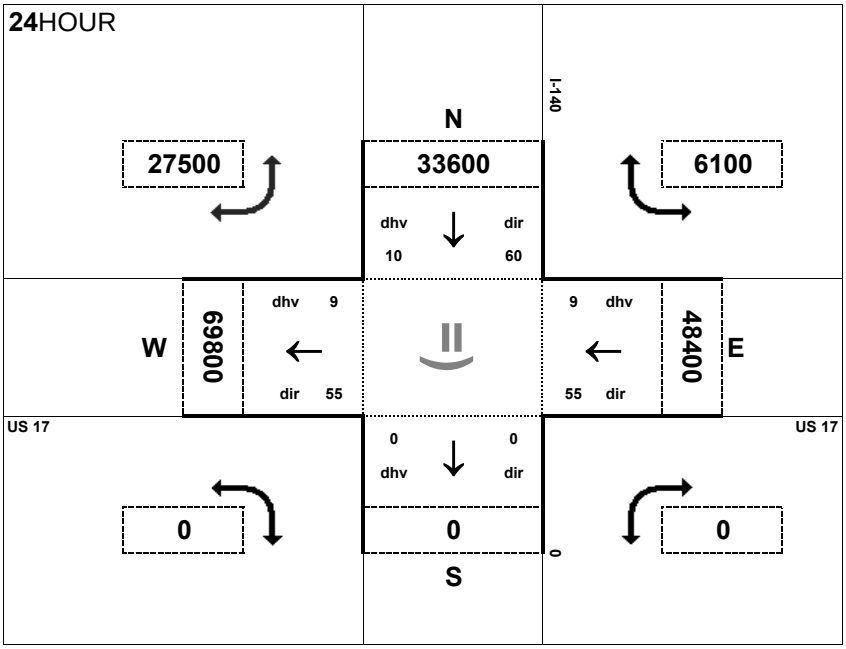
PM peak hour inflow is 6200 vehicles. PM peak hour outflow is 6200 vehicles.

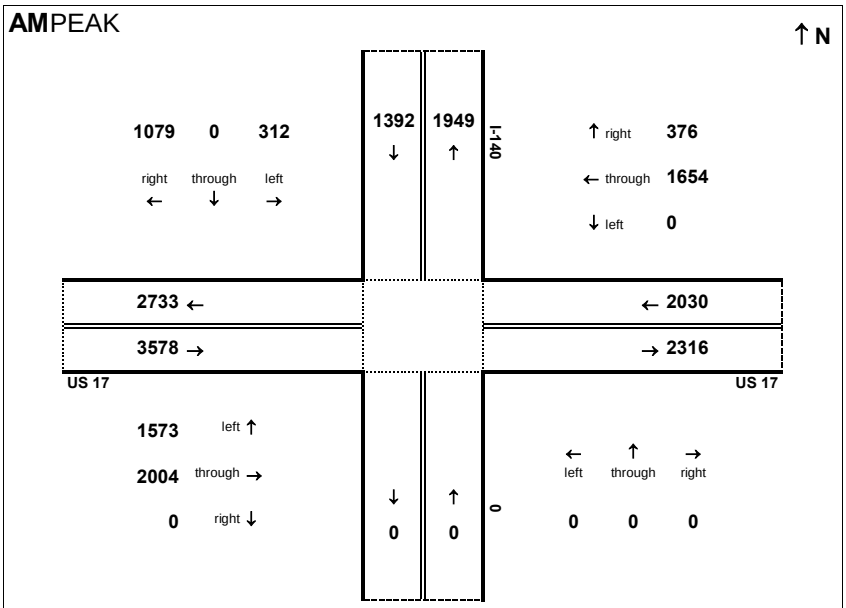
Peak Hour Volume Breakouts Report:
43 - Interchange of I-140 and US 17

Traffic Forecast Release Date:
Oct. 2014

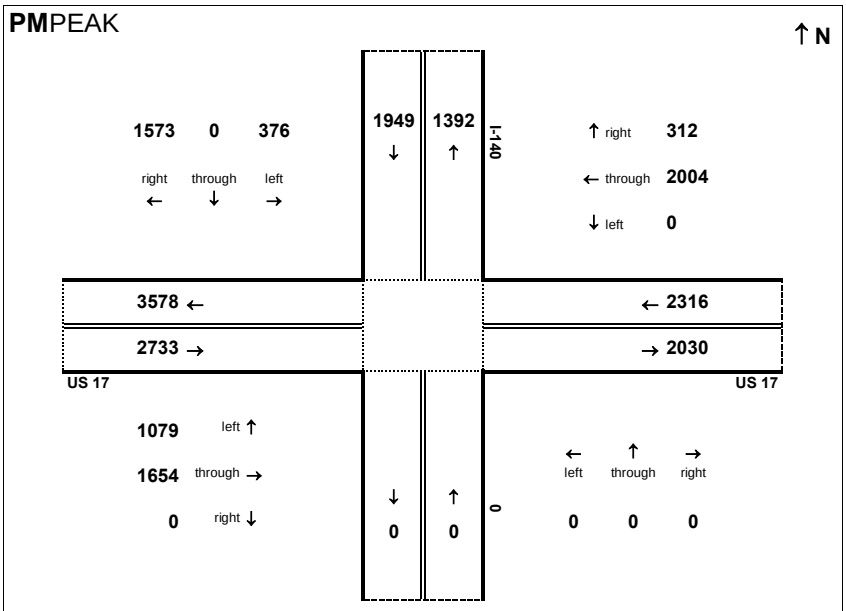
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 7000 vehicles. AM peak hour outflow is 6998 vehicles.



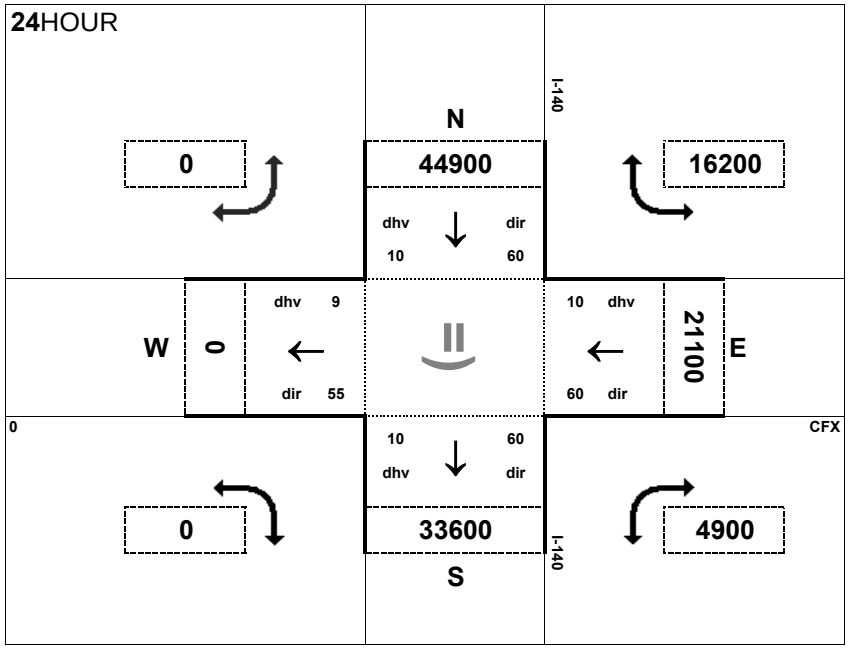
PM peak hour inflow is 6998 vehicles. PM peak hour outflow is 7000 vehicles.

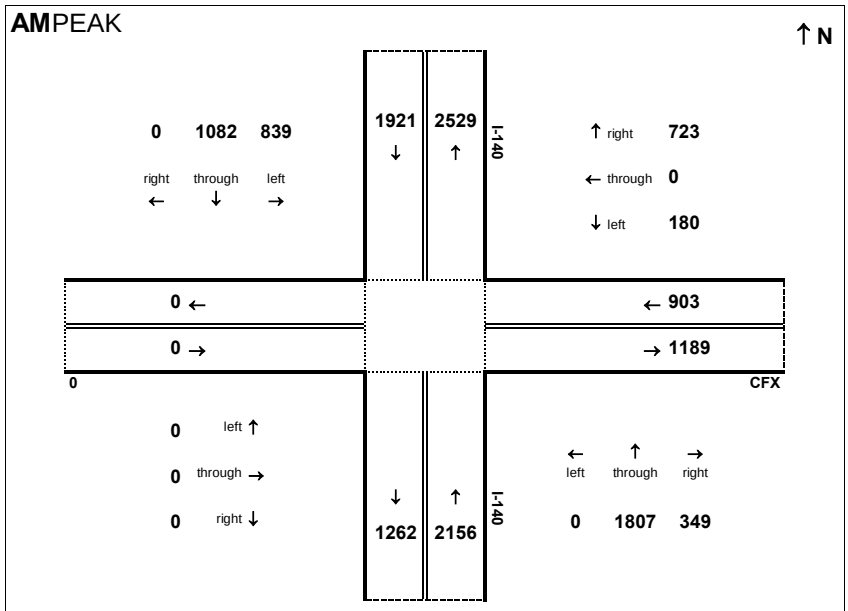
Peak Hour Volume Breakouts Report:
101 - CFX and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

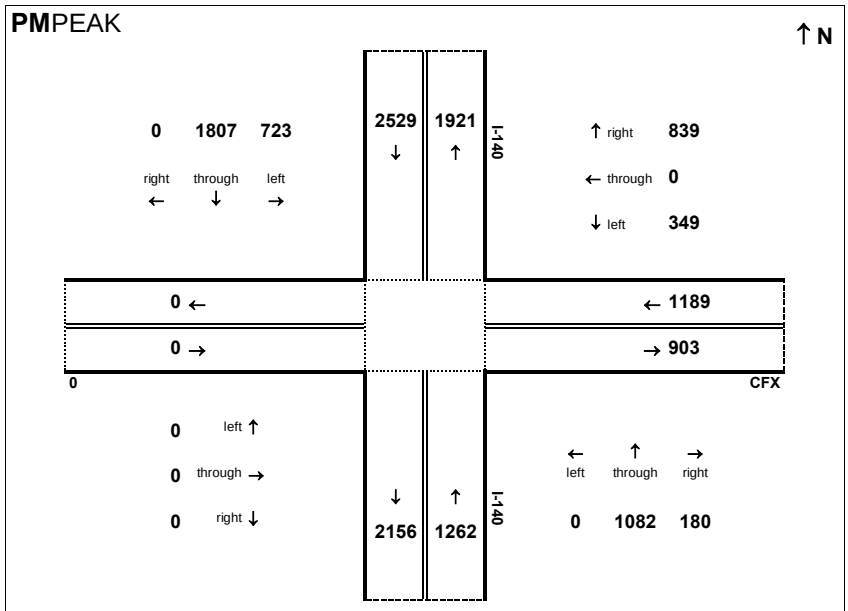
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 4980 vehicles. AM peak hour outflow is 4980 vehicles.



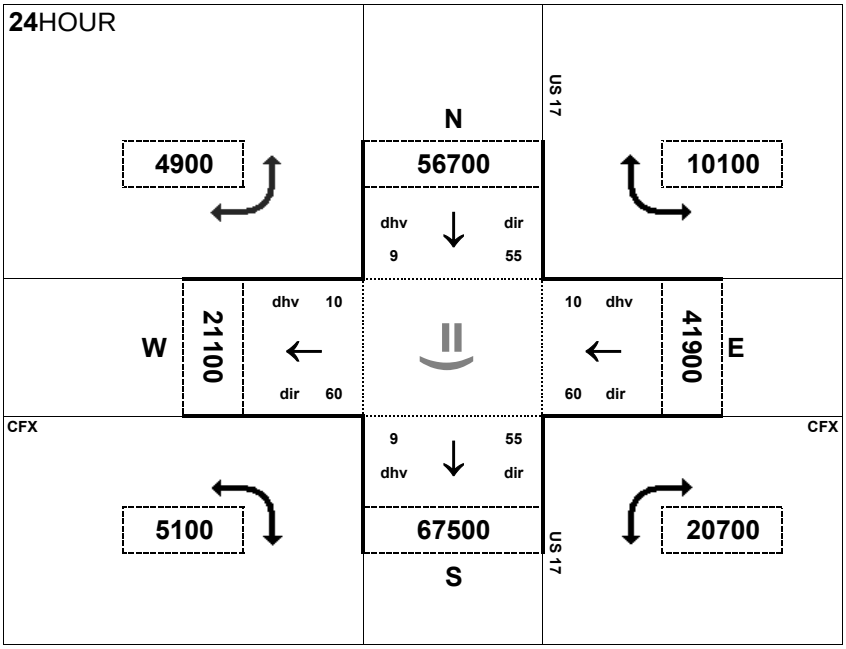
PM peak hour inflow is 4980 vehicles. PM peak hour outflow is 4980 vehicles.

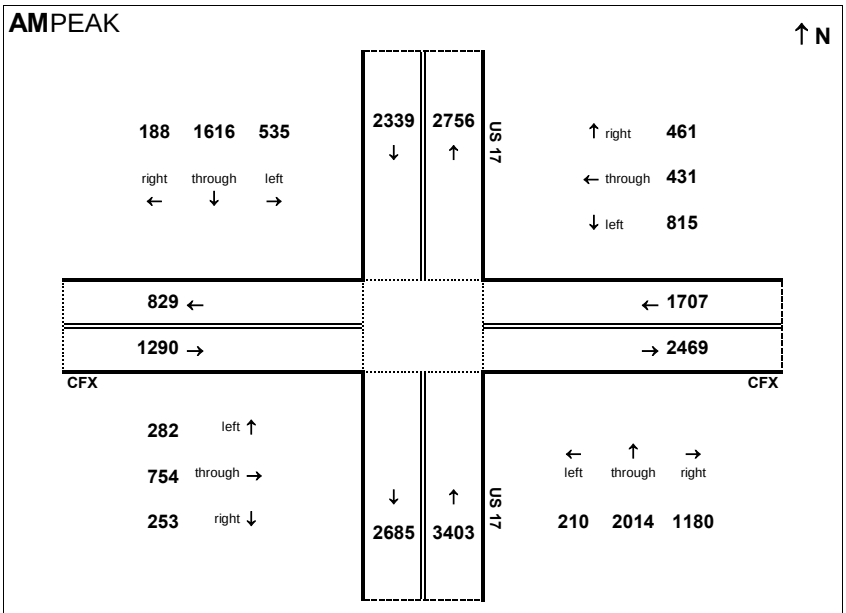
Peak Hour Volume Breakouts Report:
102 - CFX and US 17 Interchange

Traffic Forecast Release Date:
Oct. 2014

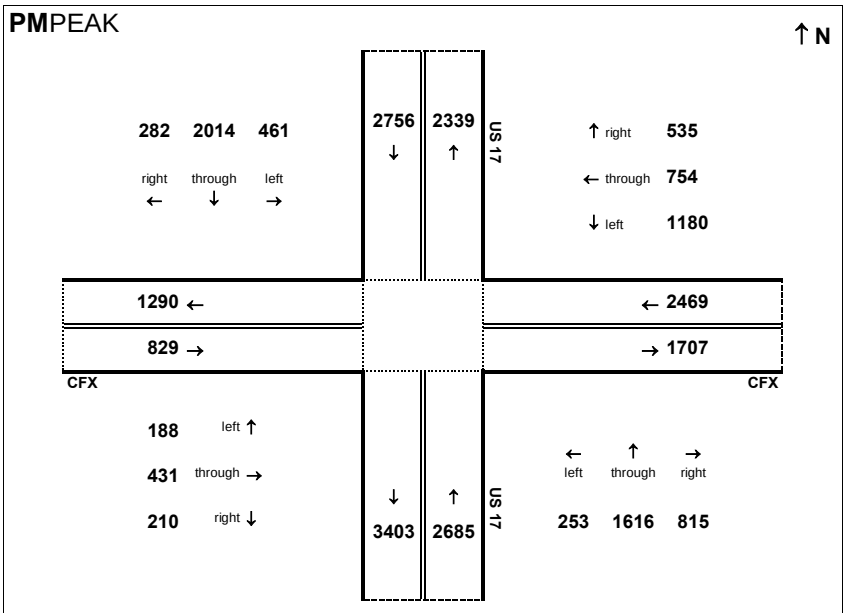
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 8739 vehicles. AM peak hour outflow is 8739 vehicles.



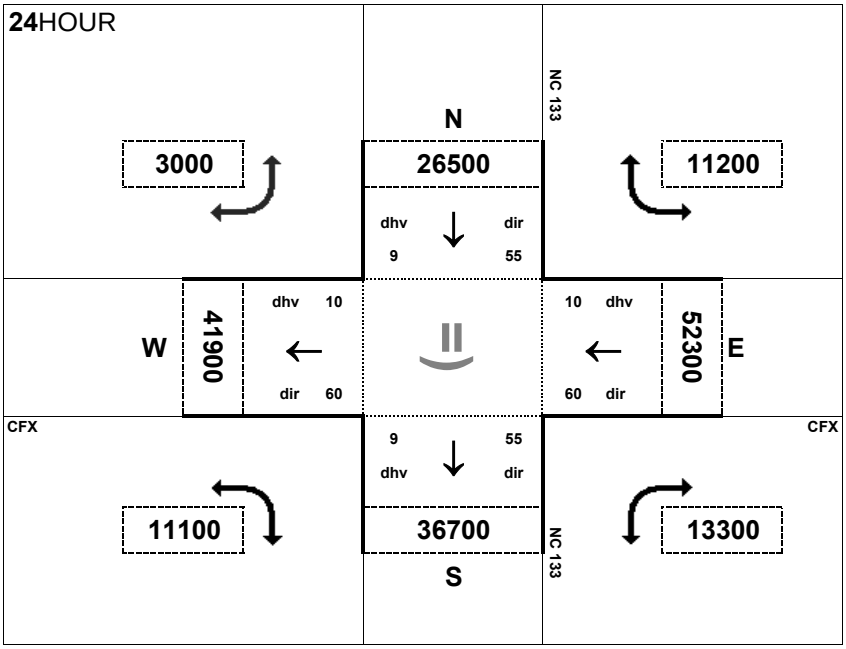
PM peak hour inflow is 8739 vehicles. PM peak hour outflow is 8739 vehicles.

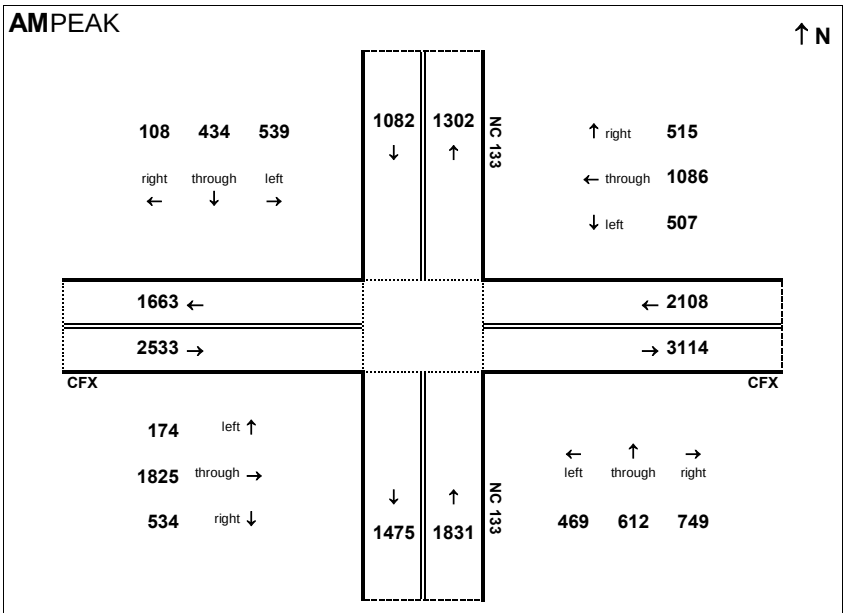
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

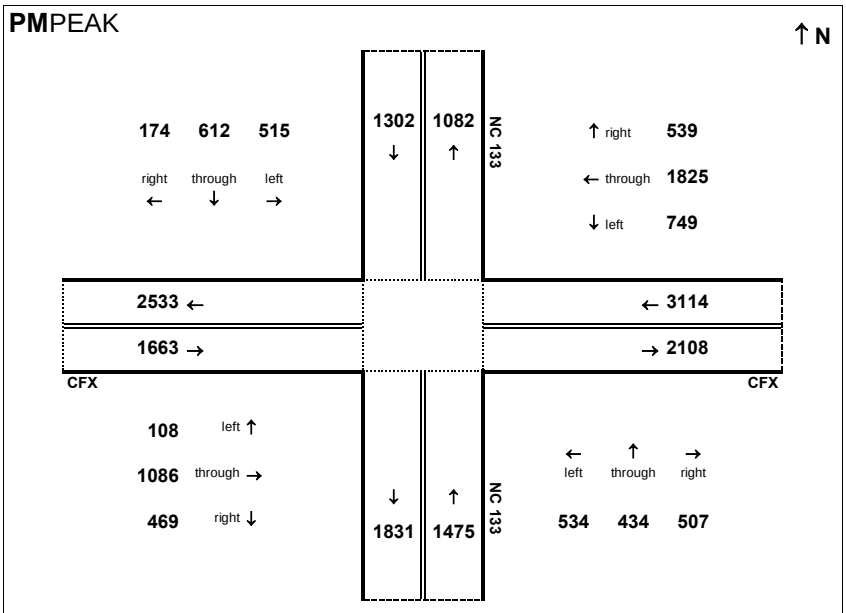
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 7554 vehicles. AM peak hour outflow is 7554 vehicles.



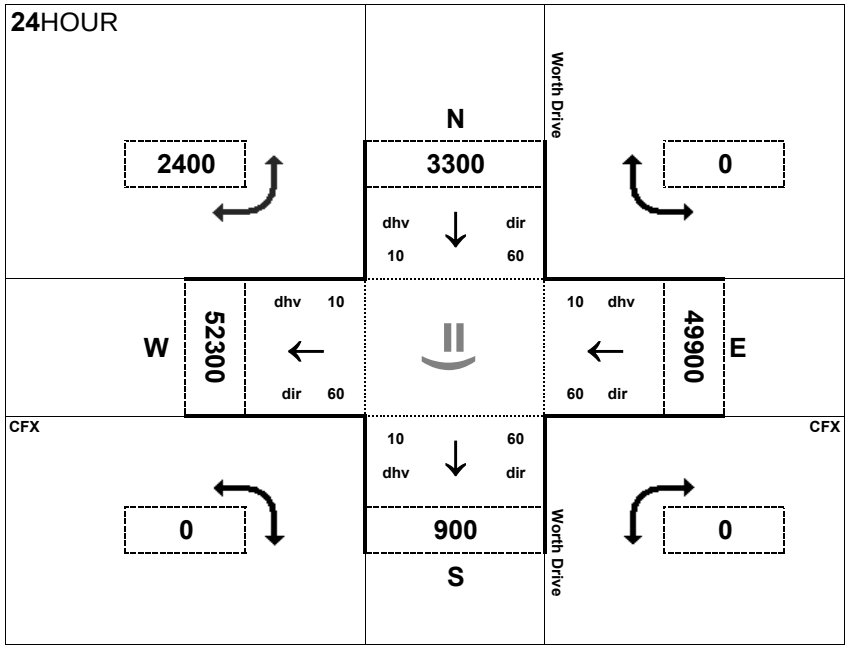
PM peak hour inflow is 7554 vehicles. PM peak hour outflow is 7554 vehicles.

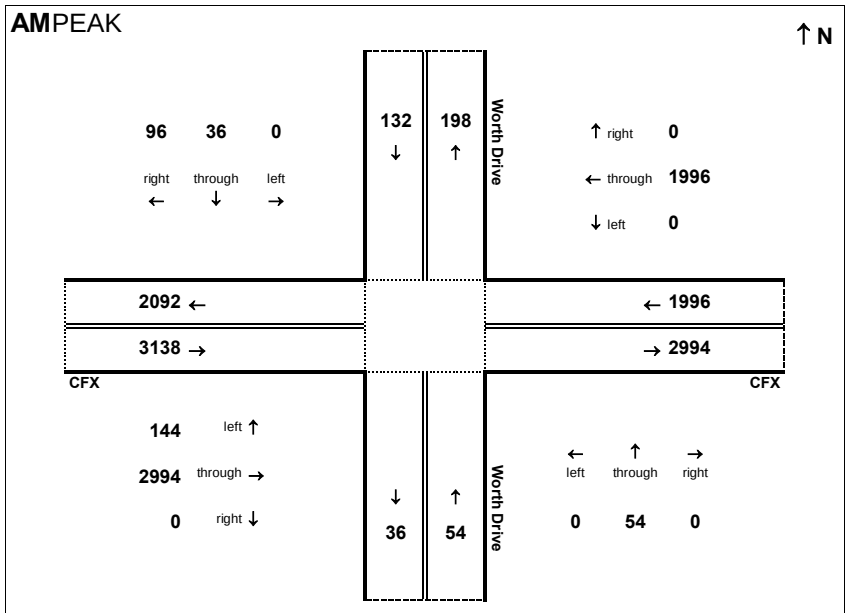
Peak Hour Volume Breakouts Report:
106 - CFX and Worth Dr

Traffic Forecast Release Date:
Oct. 2014

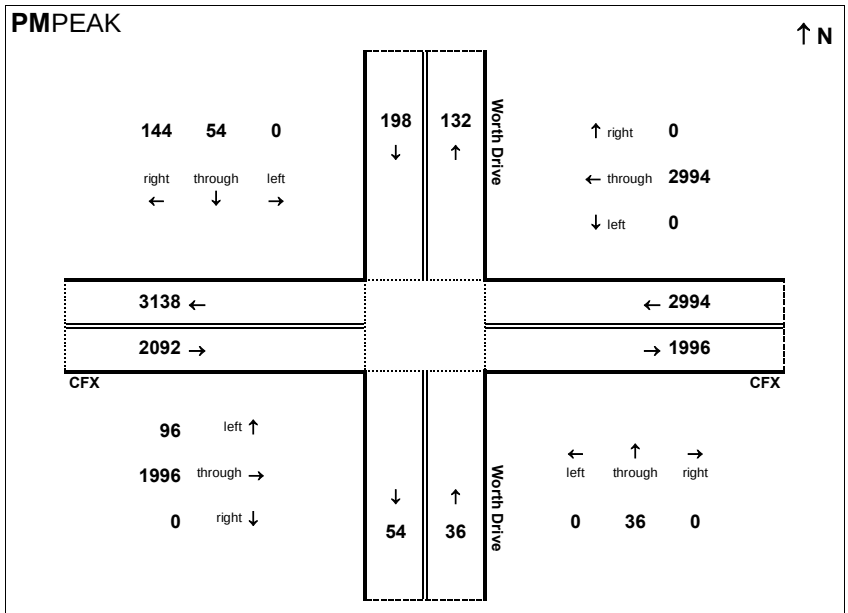
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 5320 vehicles. AM peak hour outflow is 5320 vehicles.



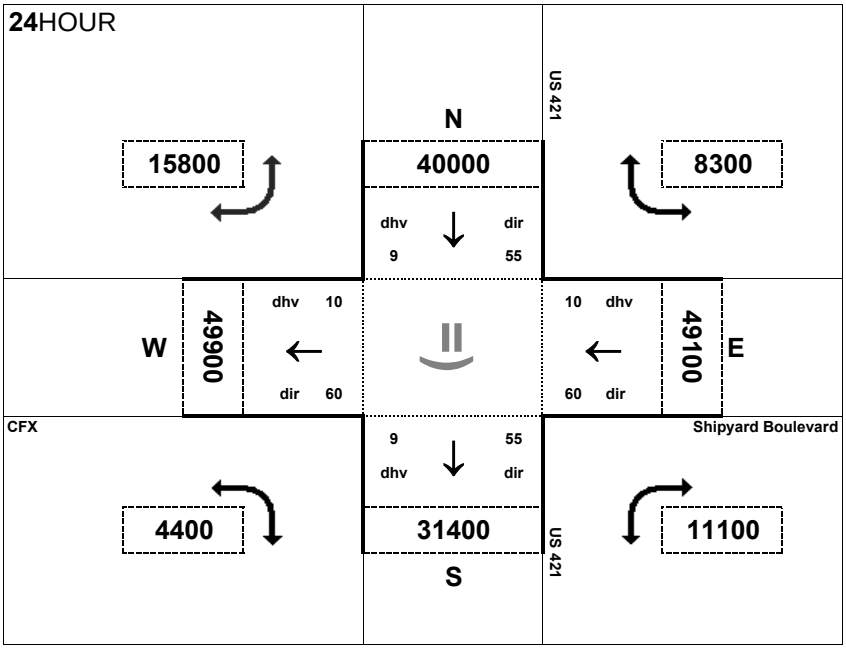
PM peak hour inflow is 5320 vehicles. PM peak hour outflow is 5320 vehicles.

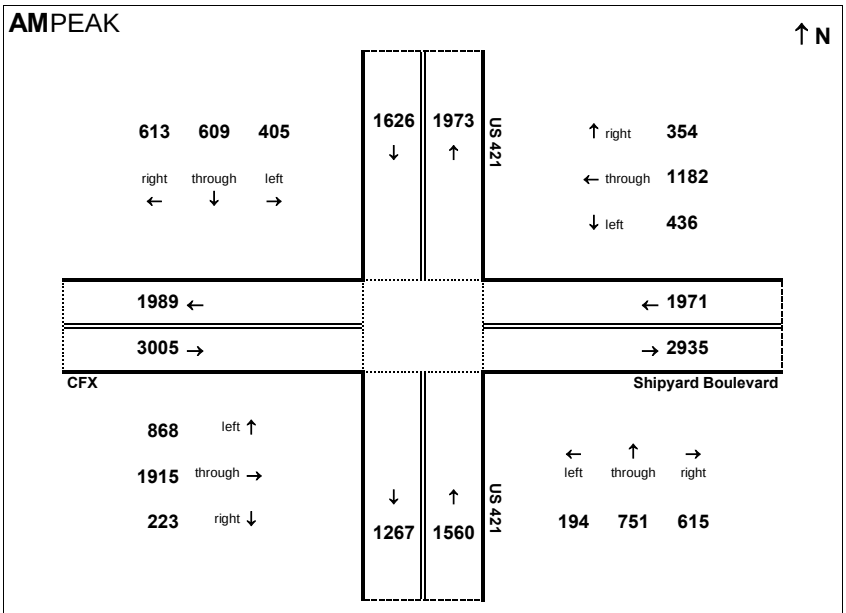
Peak Hour Volume Breakouts Report:
108 -CFX and US 421-Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

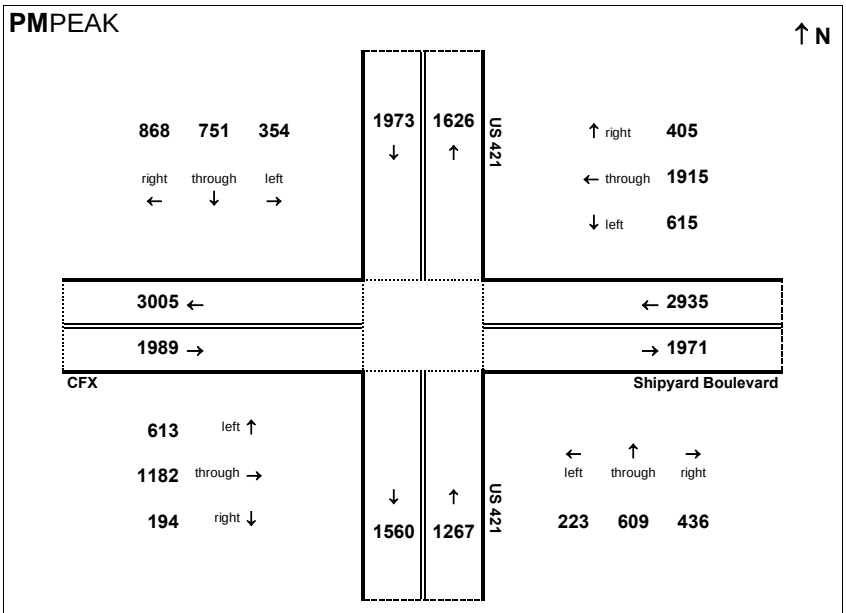
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 8162 vehicles. AM peak hour outflow is 8164 vehicles.



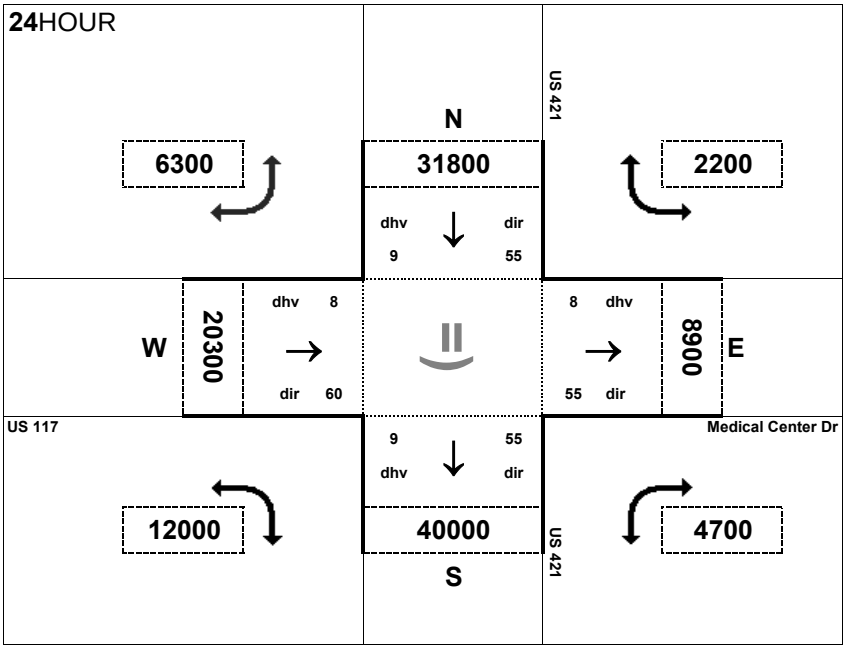
PM peak hour inflow is 8164 vehicles. PM peak hour outflow is 8162 vehicles.

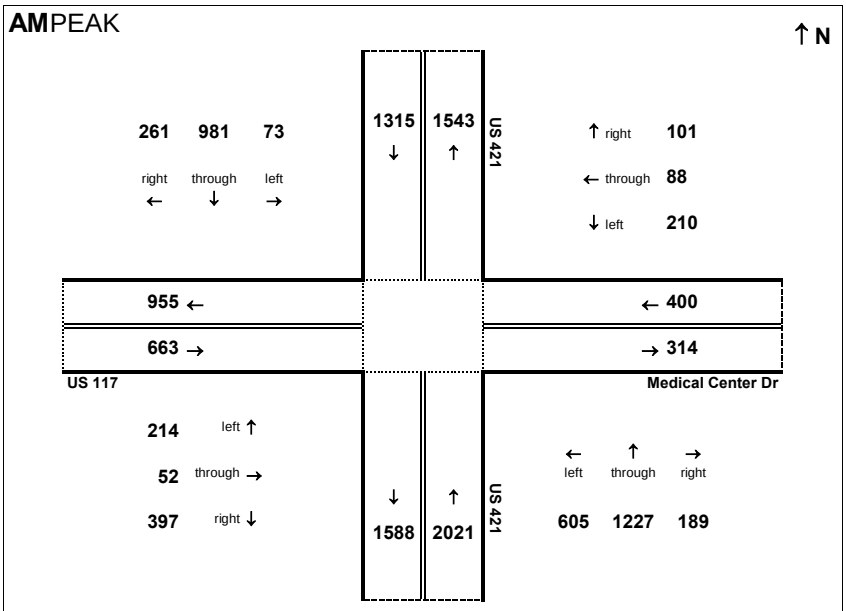
Peak Hour Volume Breakouts Report:
109 - Intersection of US 421 and US 117/Medical Center Dr

Traffic Forecast Release Date:
Oct. 2014

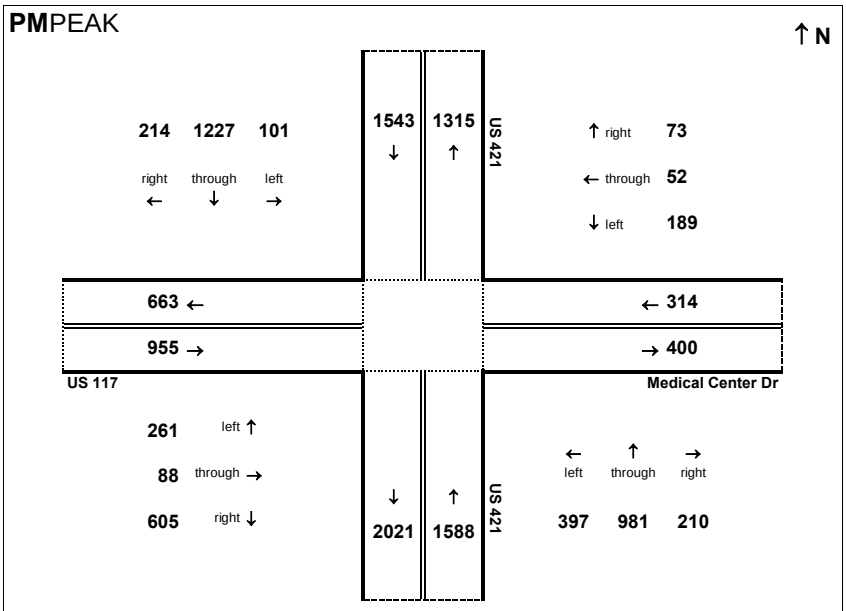
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt B





AM peak hour inflow is 4399 vehicles. AM peak hour outflow is 4400 vehicles.



PM peak hour inflow is 4400 vehicles. PM peak hour outflow is 4399 vehicles.

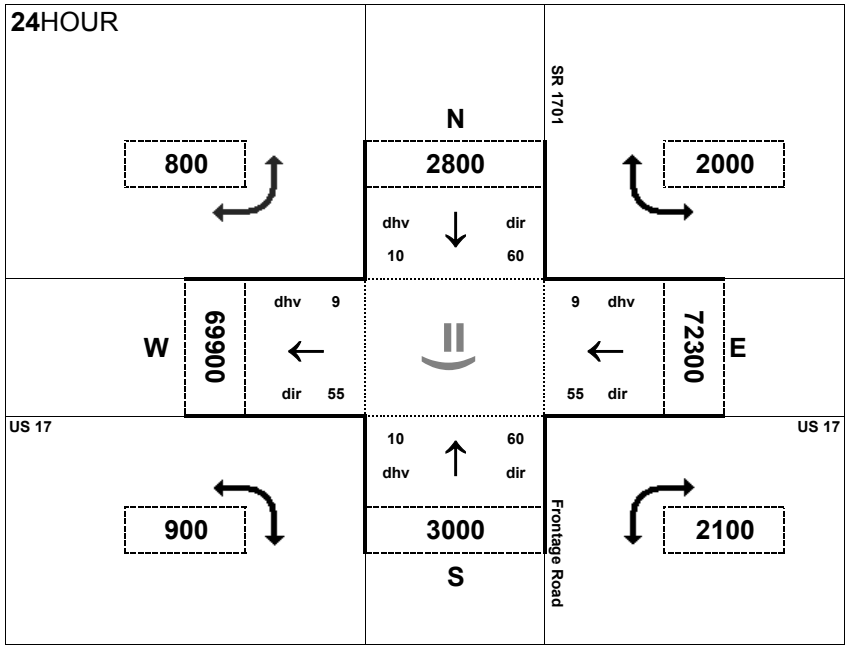
2040 Build DSA Alternative C

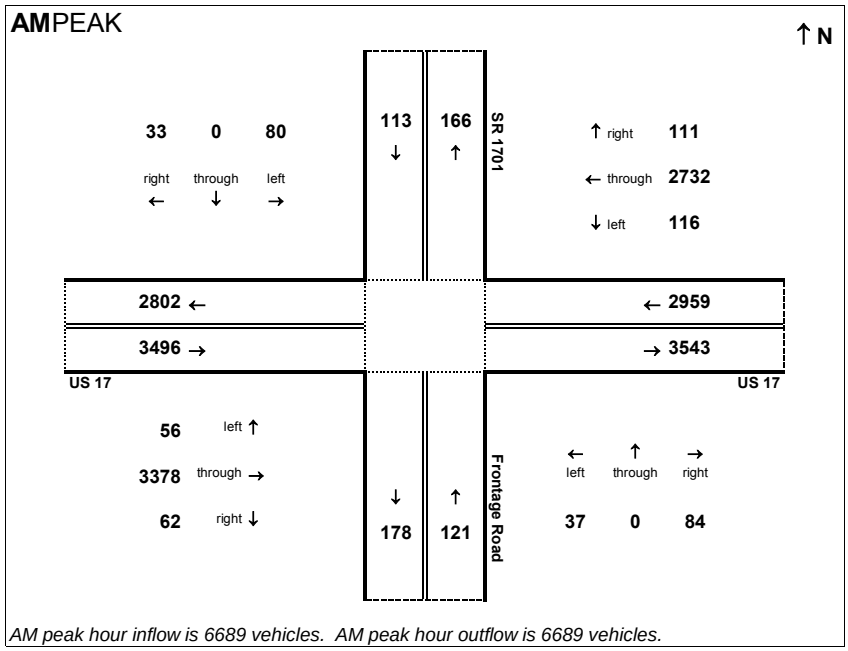
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

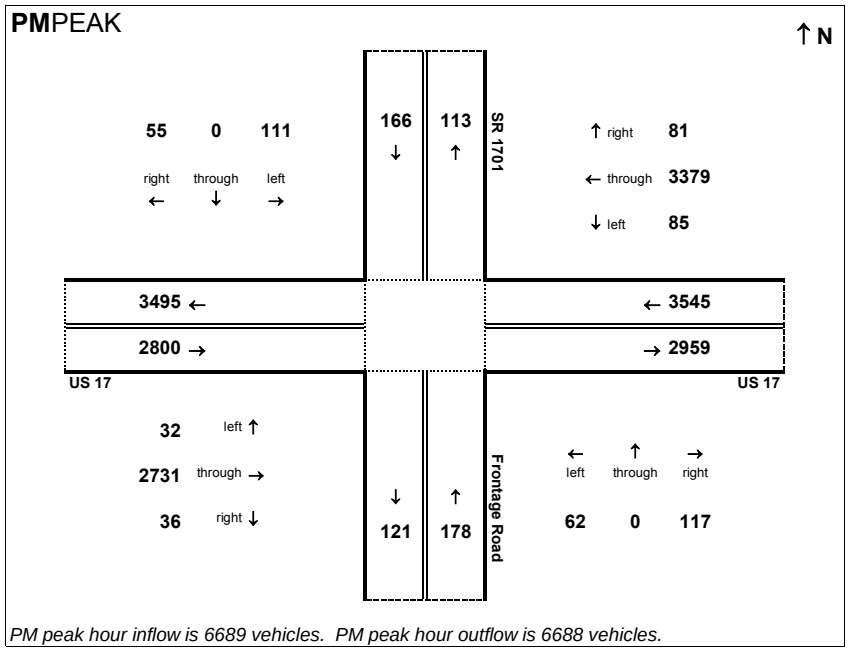
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C

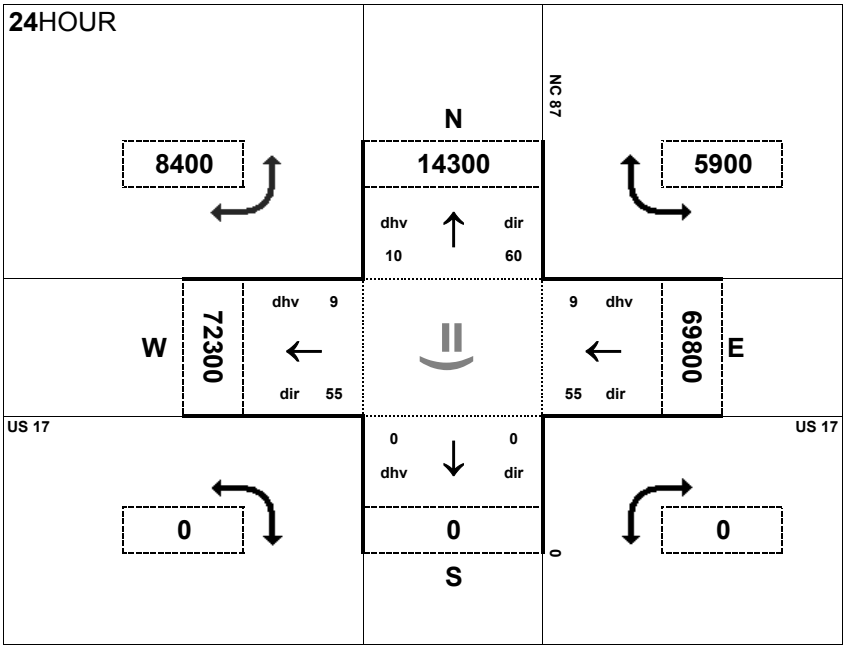




AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

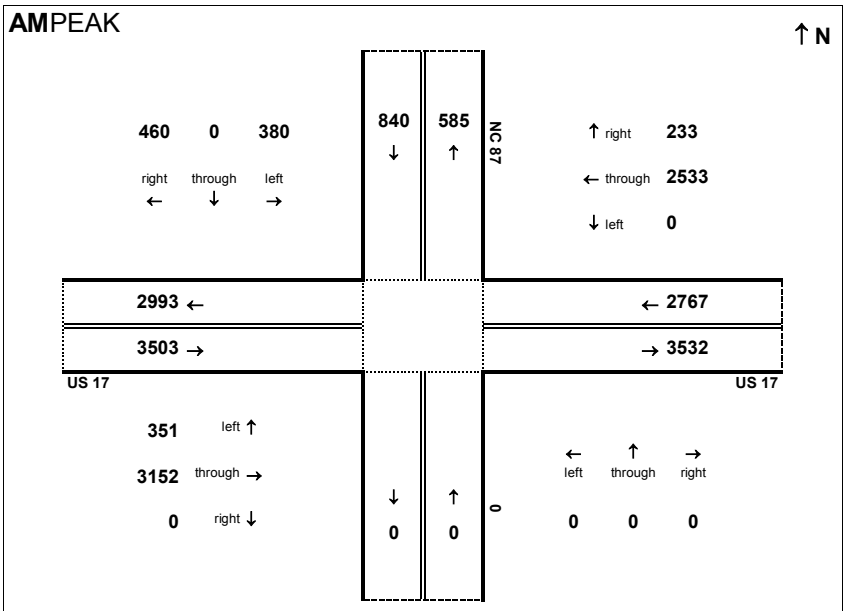


Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

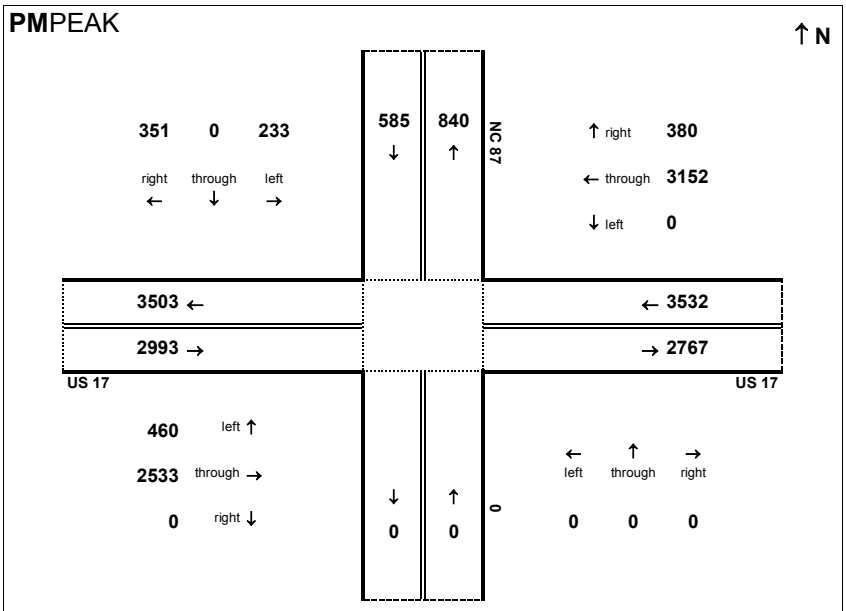
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

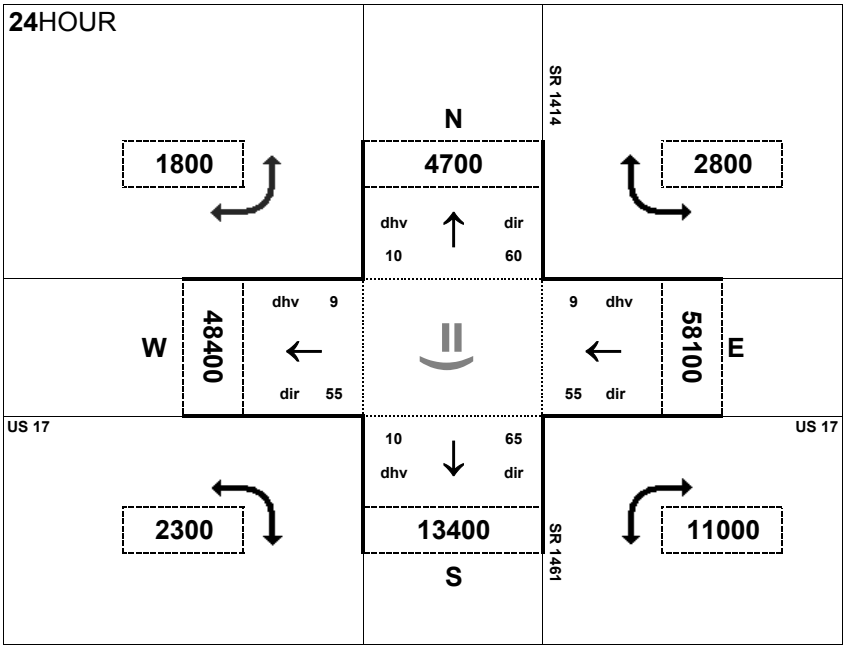
Project:
Cape Fear Crossing - Build Alt. C



AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

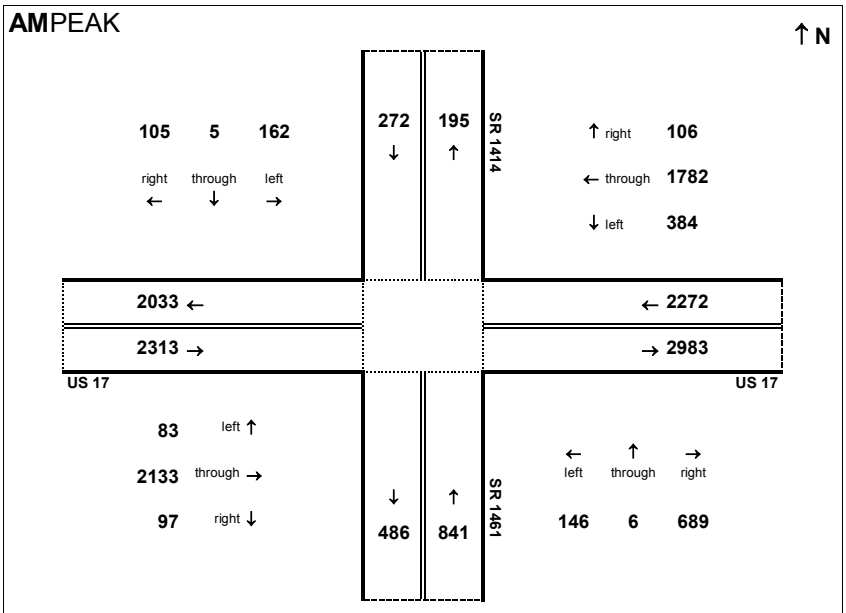


Peak Hour Volume Breakouts Report:
03 - Intersection of US 17 & SR 1414 - Goodman Road and SR 1461 - Hewett-Burton Road

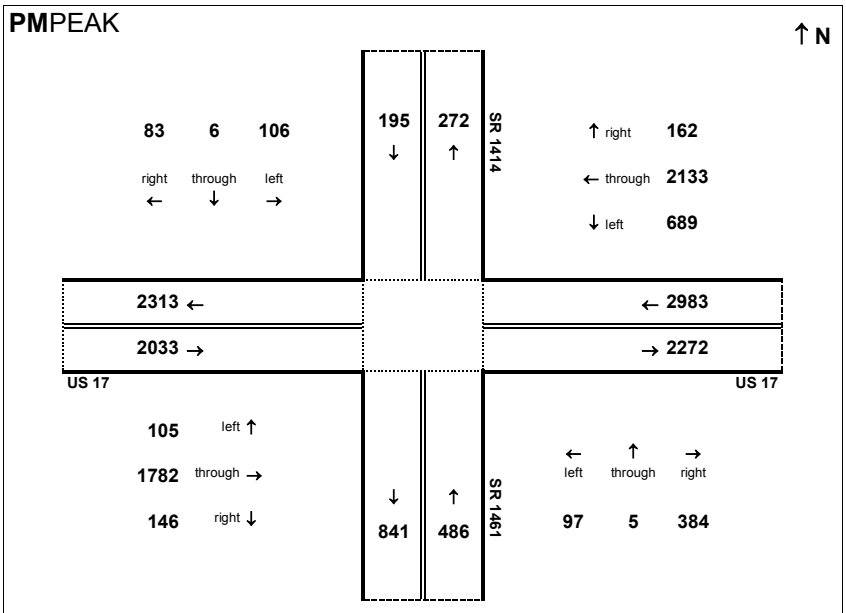
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C



AM peak hour inflow is 5698 vehicles. AM peak hour outflow is 5697 vehicles.



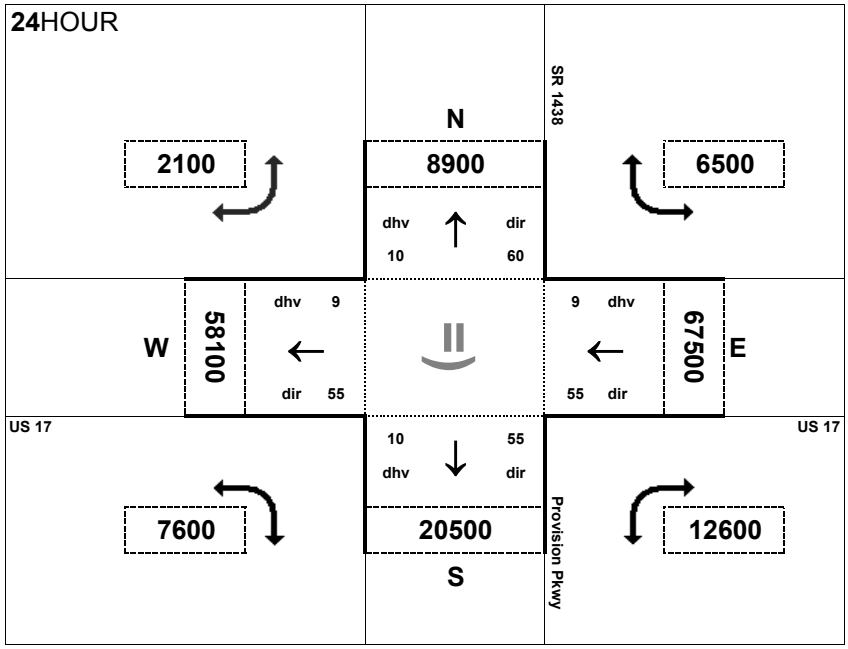
PM peak hour inflow is 5697 vehicles. PM peak hour outflow is 5698 vehicles.

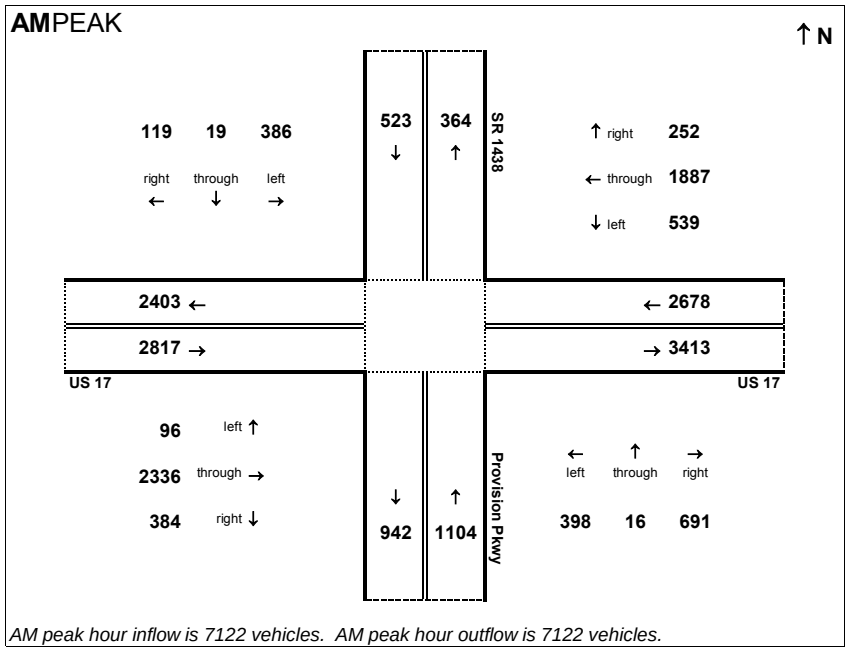
Peak Hour Volume Breakouts Report:
04 - Intersection of US 17 & SR 1438 - Lanvale Road and Provision Parkway

Traffic Forecast Release Date:
Oct. 2014

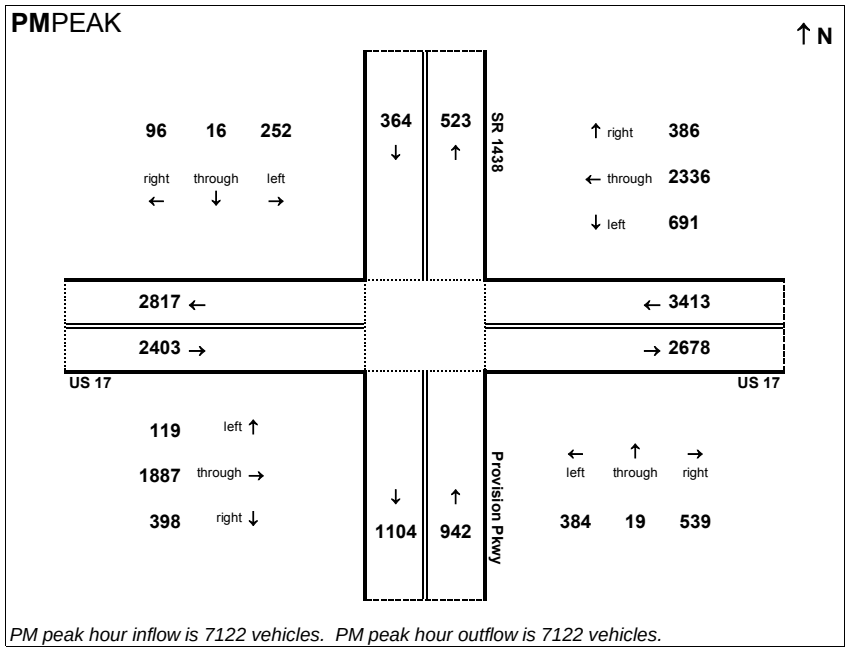
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 7122 vehicles. AM peak hour outflow is 7122 vehicles.



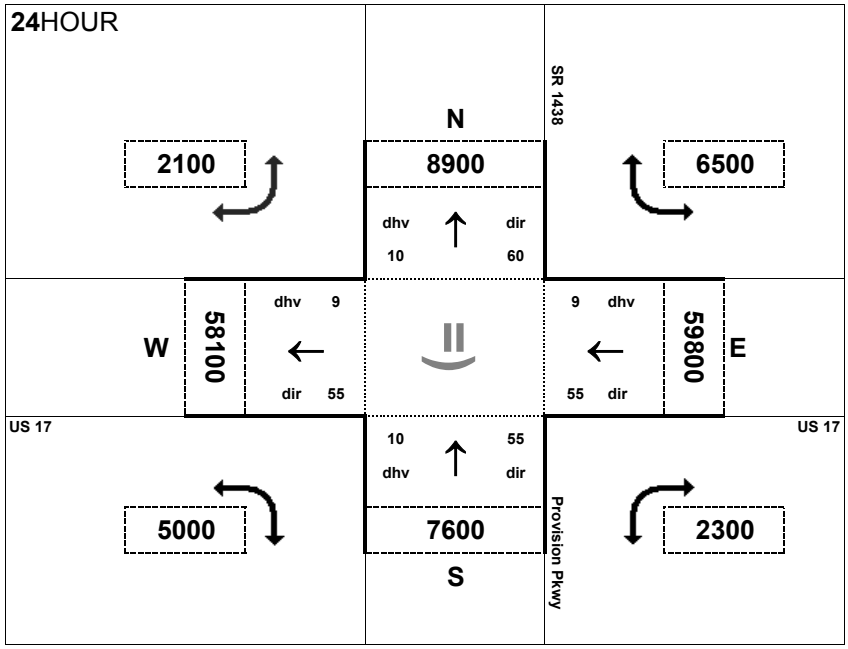
PM peak hour inflow is 7122 vehicles. PM peak hour outflow is 7122 vehicles.

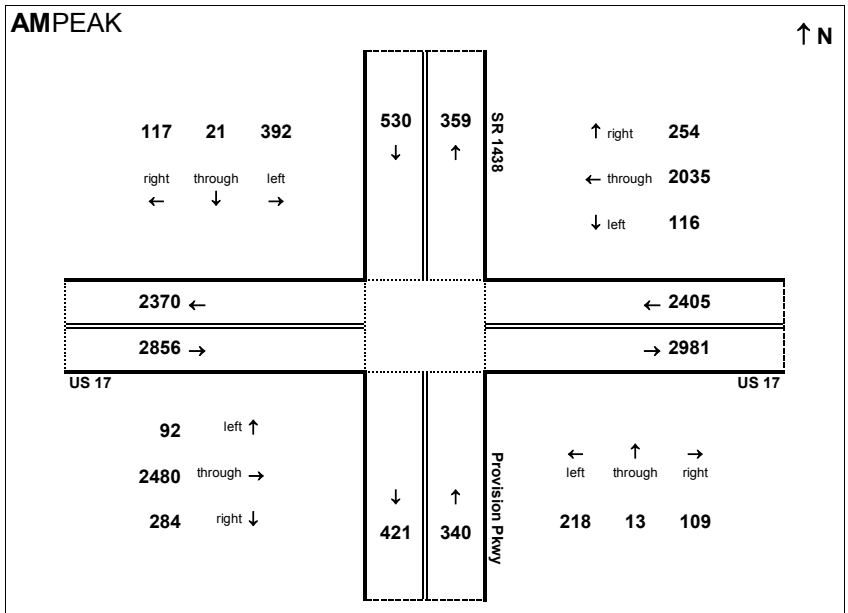
Peak Hour Volume Breakouts Report:
04 - Intersection of US 17 & SR 1438 - Lanvale Road and Provision Parkway

Traffic Forecast Release Date:
Oct. 2014

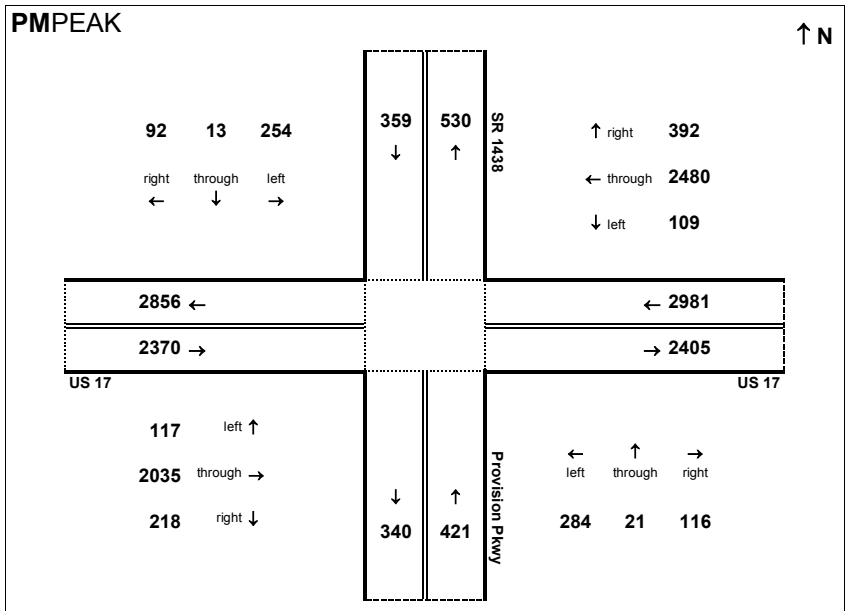
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 6131 vehicles. AM peak hour outflow is 6131 vehicles.



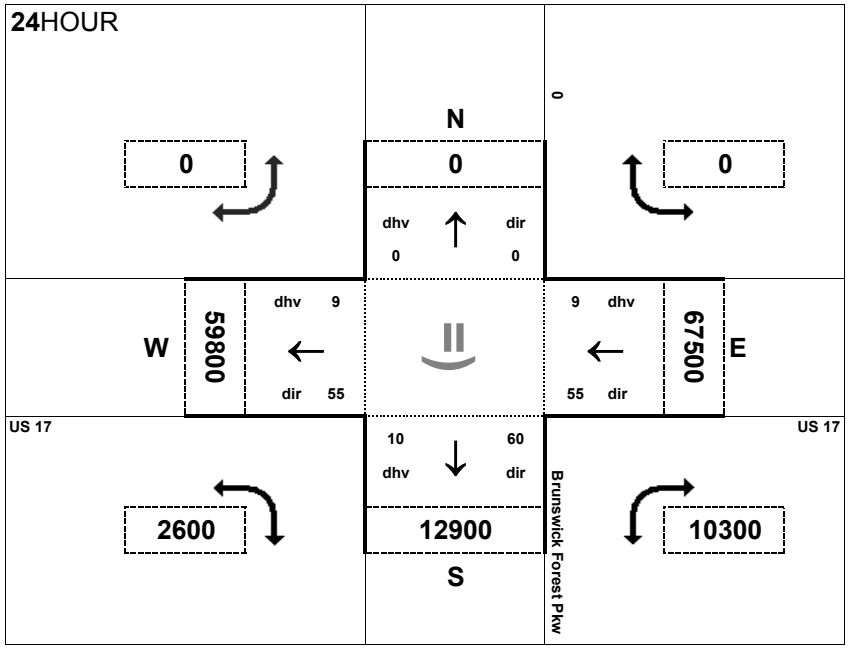
PM peak hour inflow is 6131 vehicles. PM peak hour outflow is 6131 vehicles.

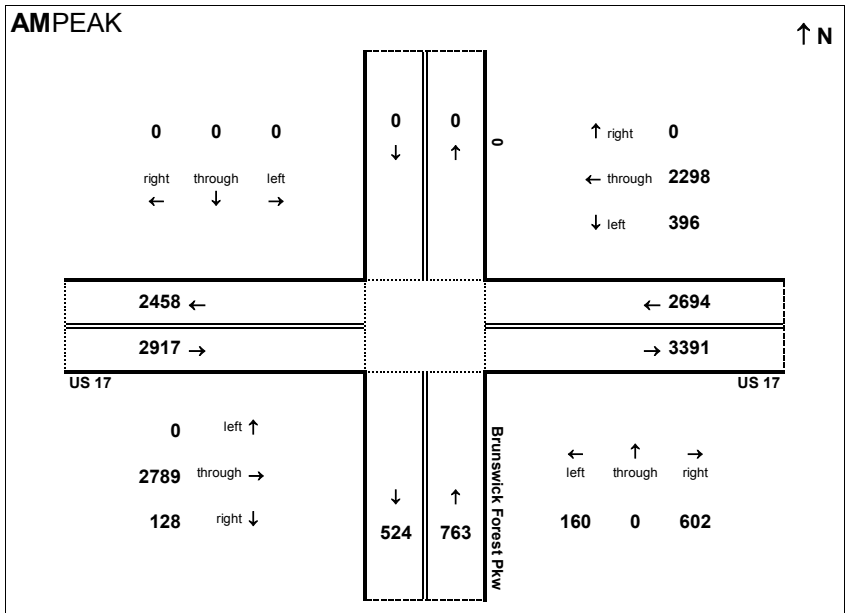
Peak Hour Volume Breakouts Report:
05 - Intersection of US 17 and Brunswick Forest Parkway

Traffic Forecast Release Date:
Oct. 2014

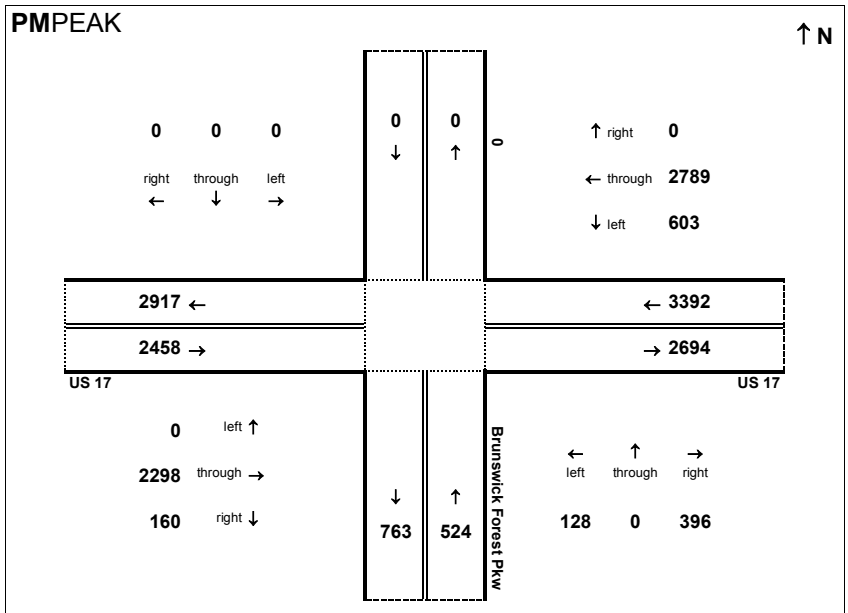
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 6374 vehicles. AM peak hour outflow is 6373 vehicles.



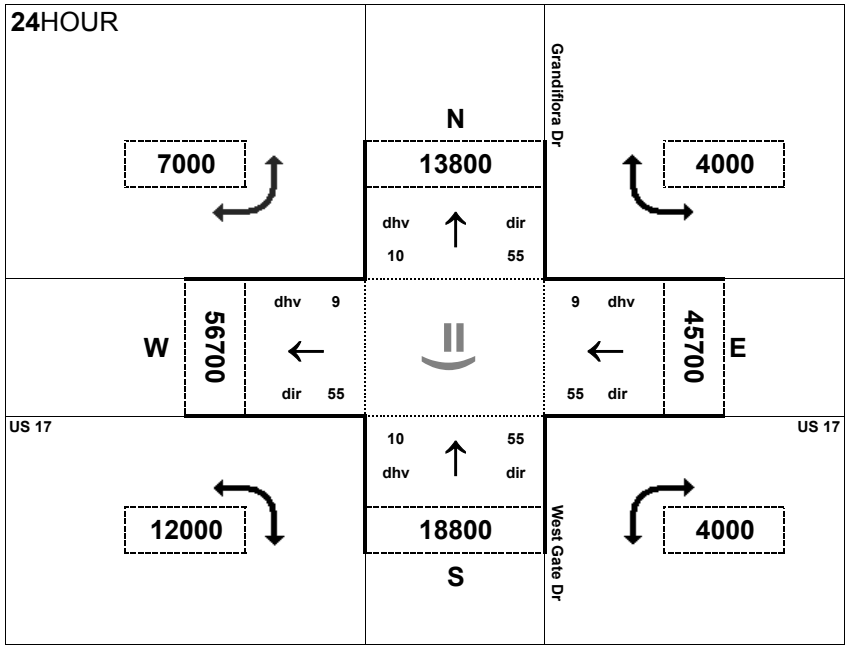
PM peak hour inflow is 6374 vehicles. PM peak hour outflow is 6374 vehicles.

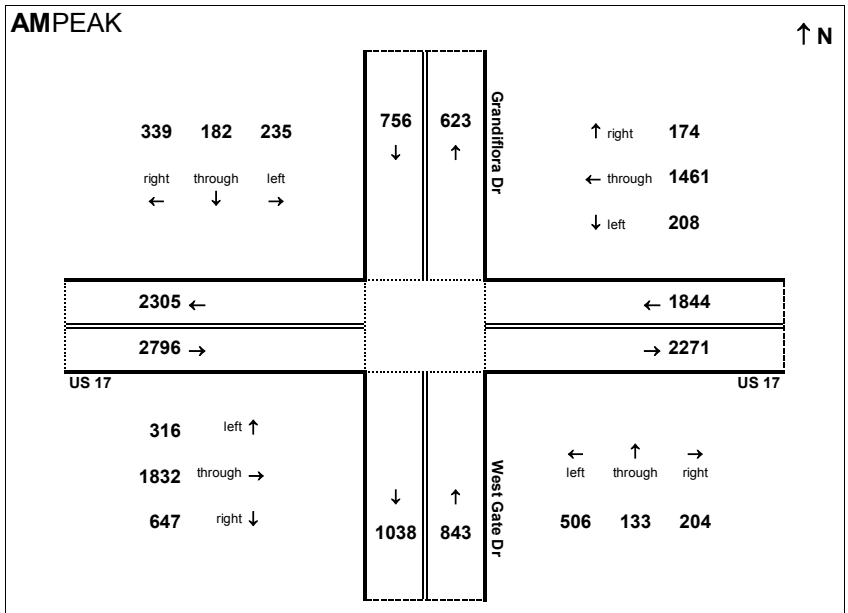
Peak Hour Volume Breakouts Report:
06 - Intersection of US 17 and Grandiflora Dr and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

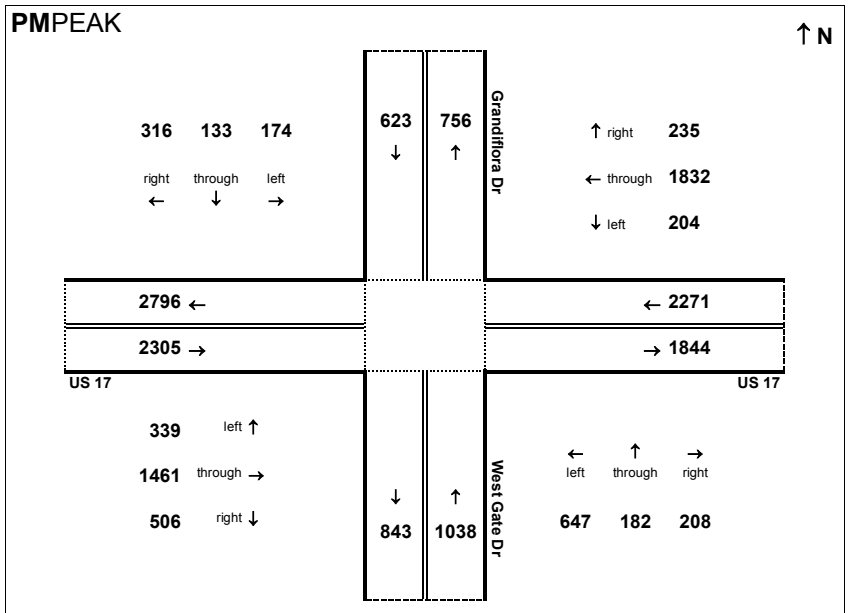
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



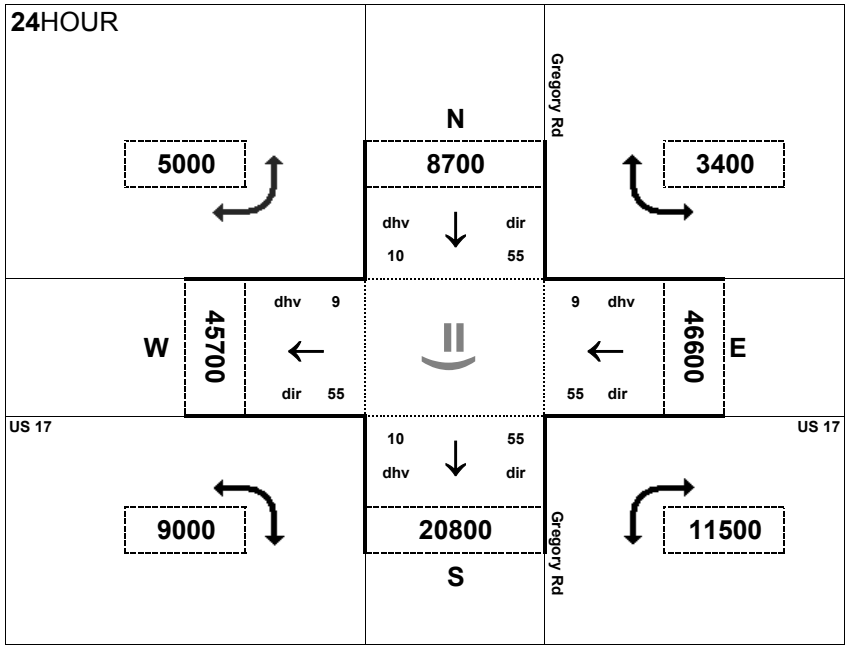
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

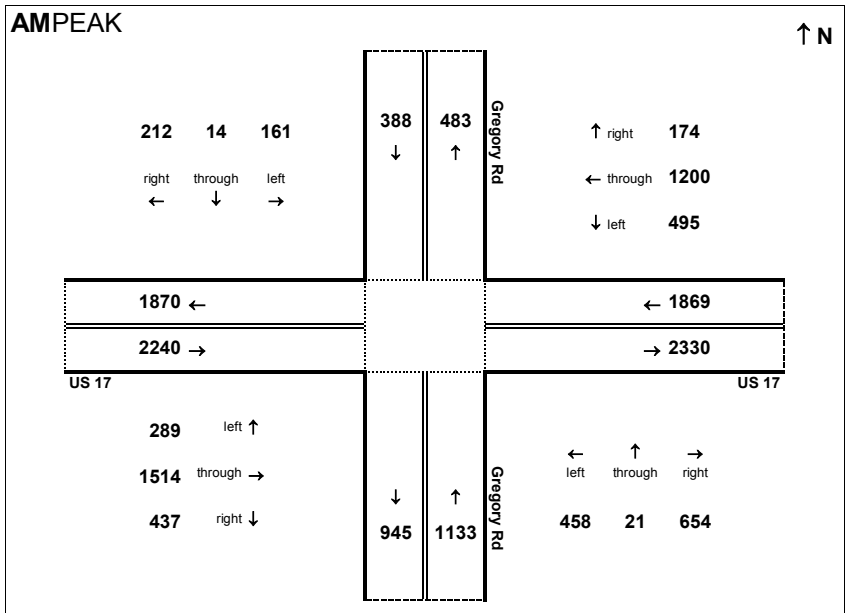
Peak Hour Volume Breakouts Report:
07 - Intersection of US 17 and Gregory Road

Traffic Forecast Release Date:
Oct. 2014

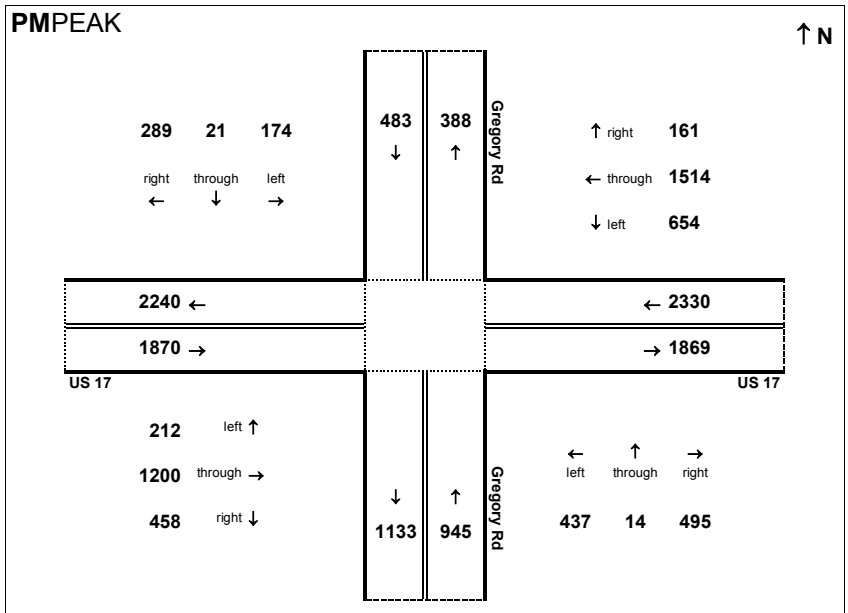
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

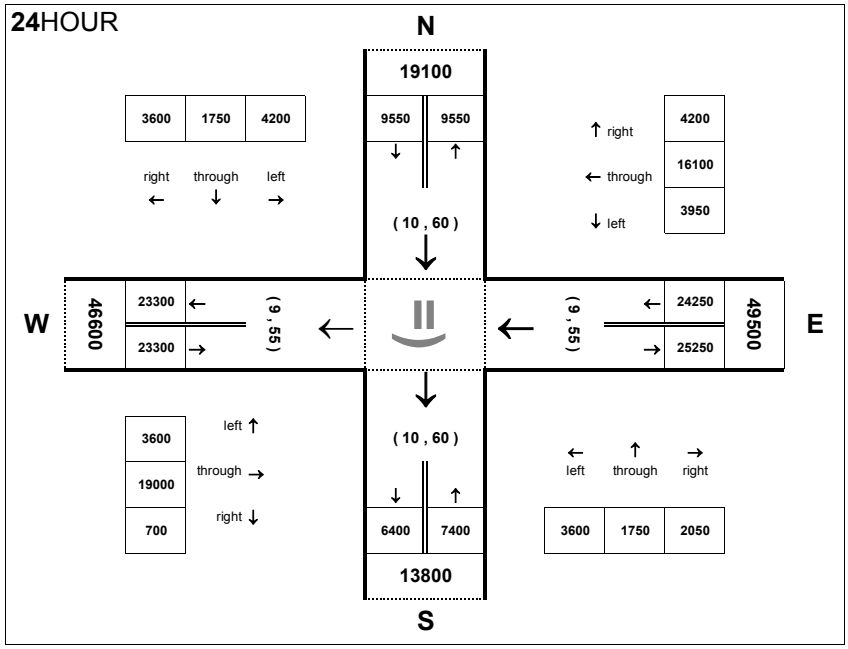


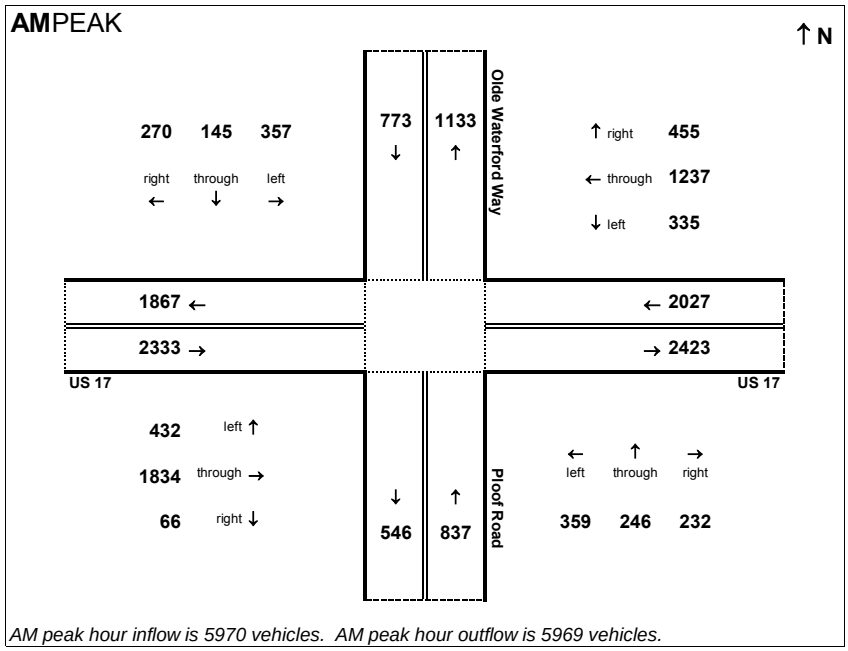
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

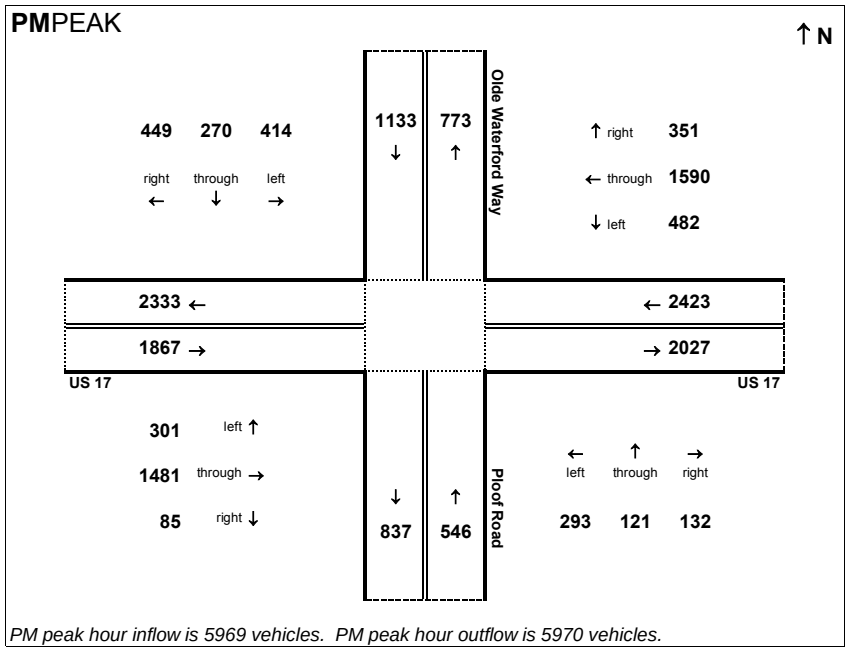
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. C





AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



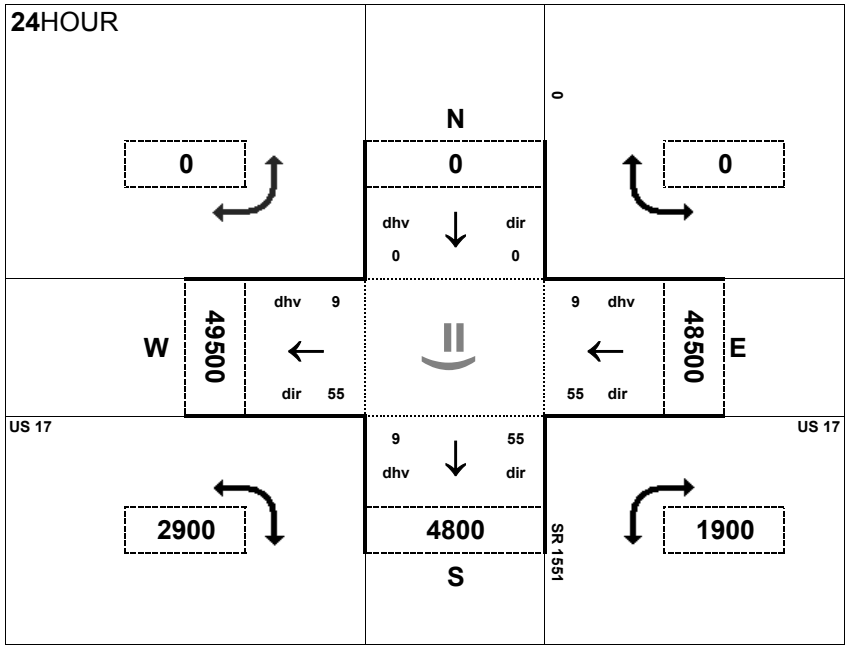
PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

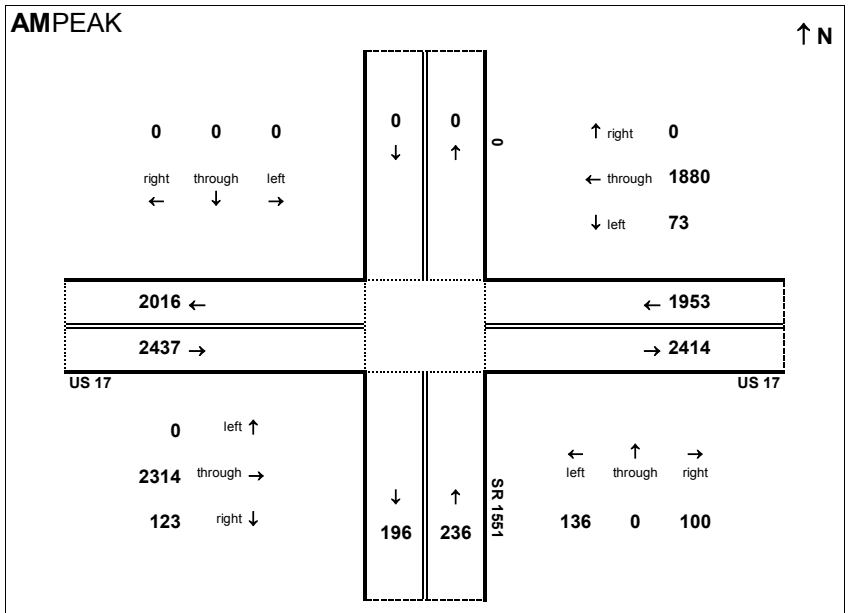
Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

Traffic Forecast Release Date:
Oct. 2014

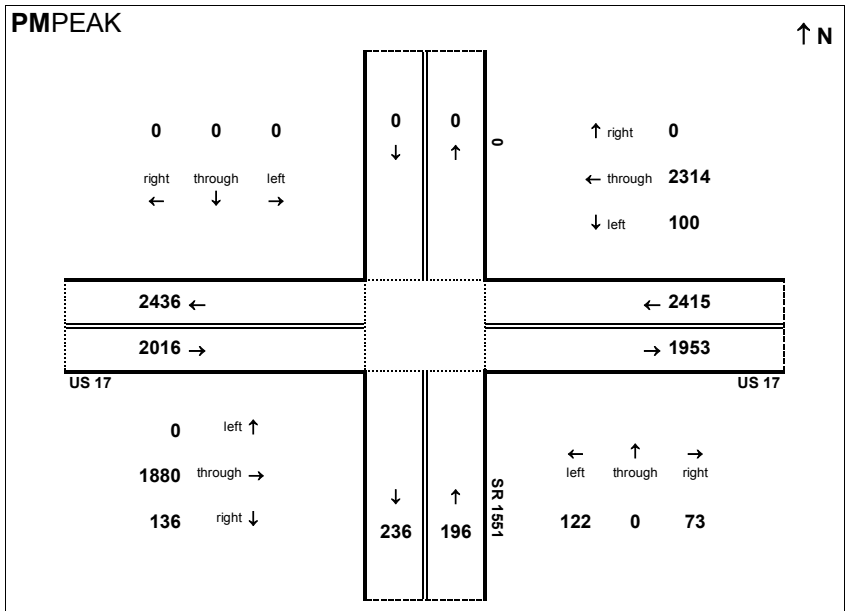
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



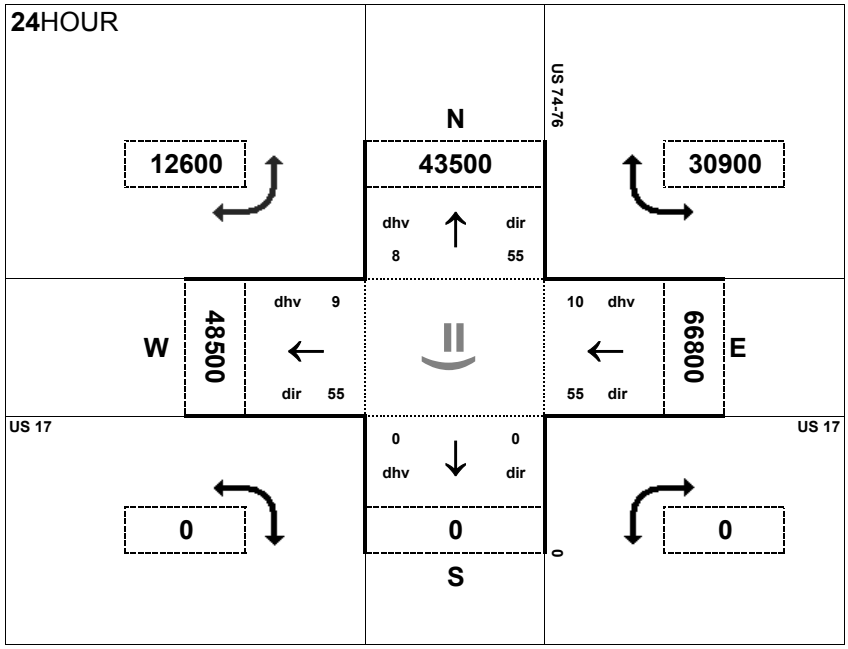
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

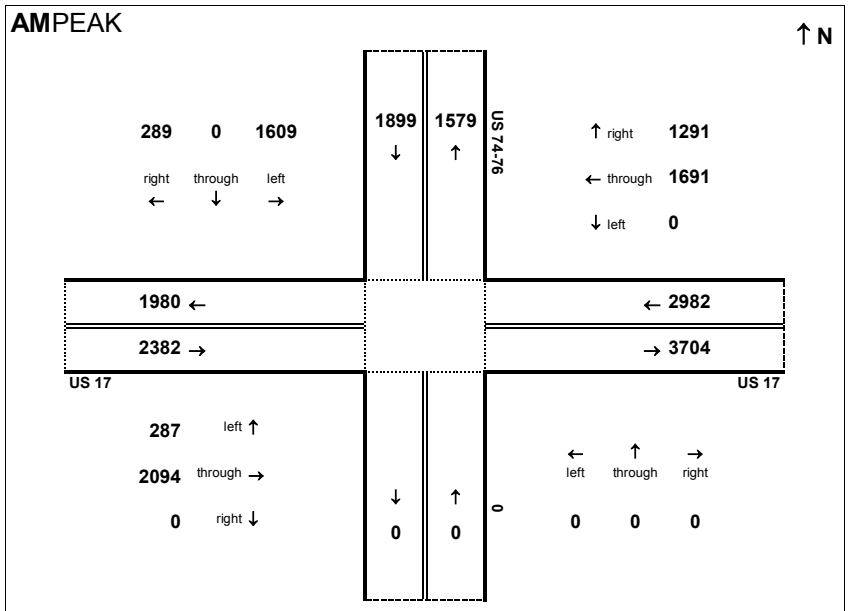
Peak Hour Volume Breakouts Report:
10 - Intersection of US 17 & US 74-76

Traffic Forecast Release Date:
Oct. 2014

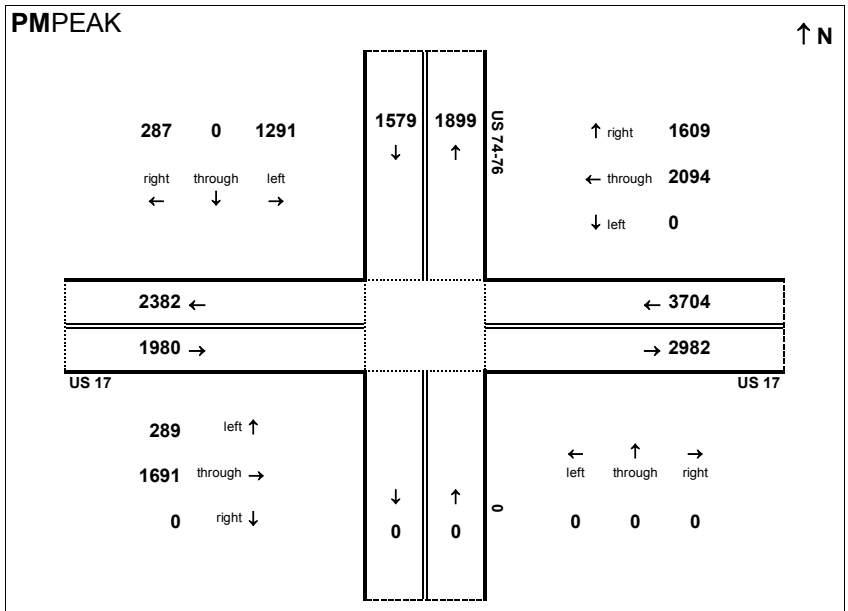
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 7263 vehicles. AM peak hour outflow is 7263 vehicles.



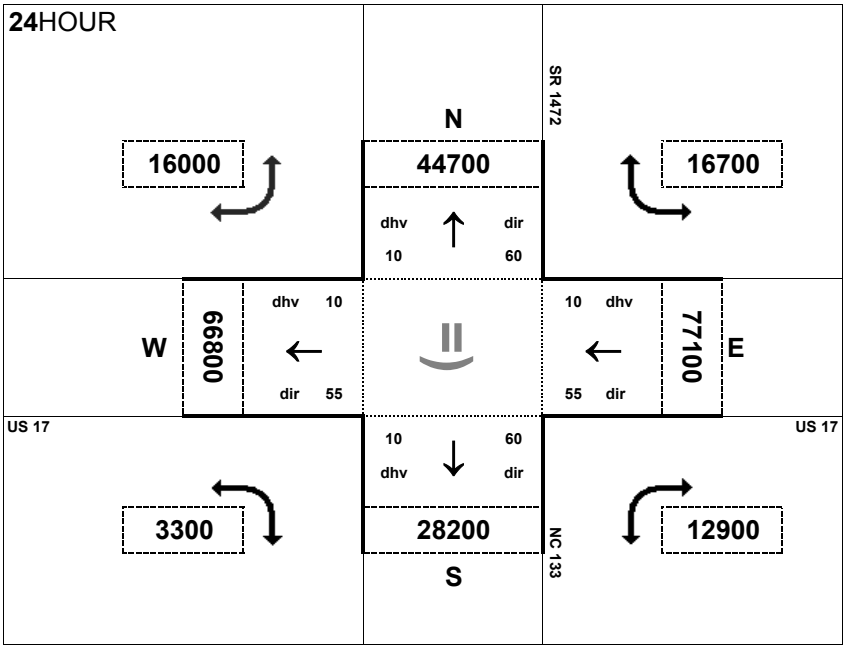
PM peak hour inflow is 7263 vehicles. PM peak hour outflow is 7263 vehicles.

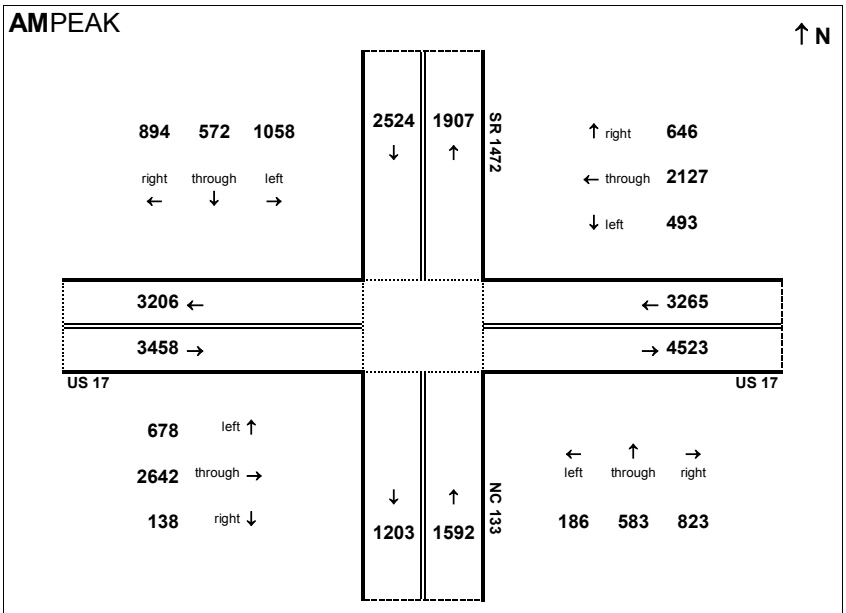
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

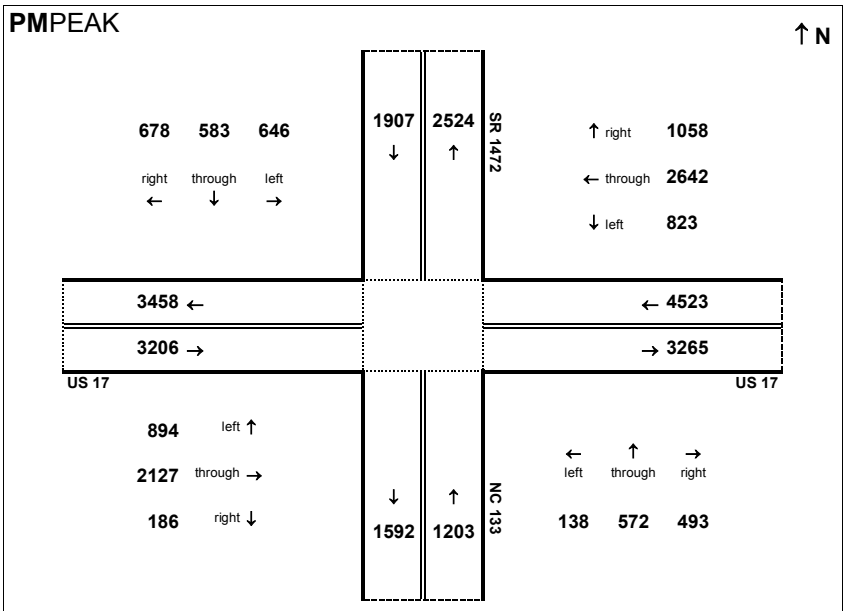
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 10839 vehicles. AM peak hour outflow is 10839 vehicles.



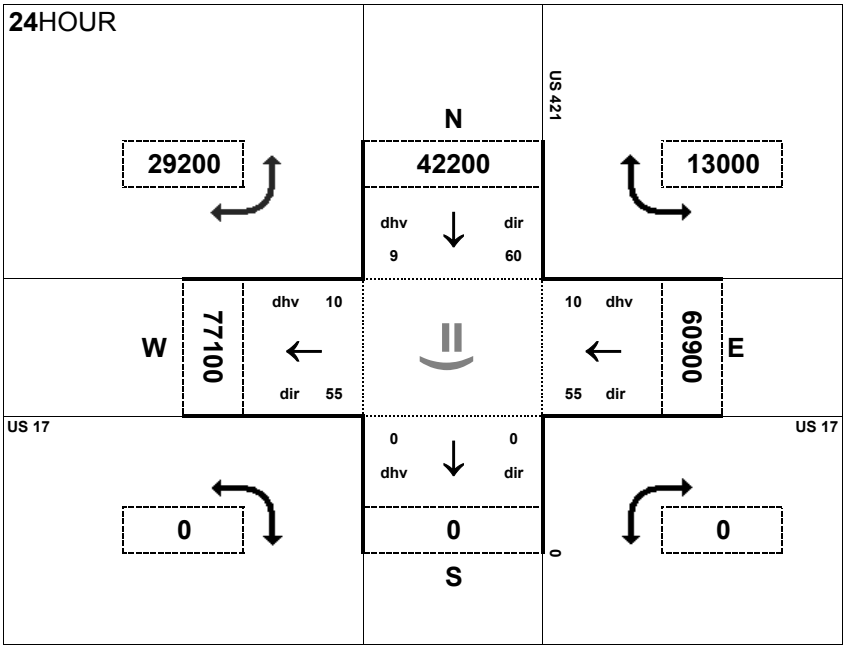
PM peak hour inflow is 10839 vehicles. PM peak hour outflow is 10839 vehicles.

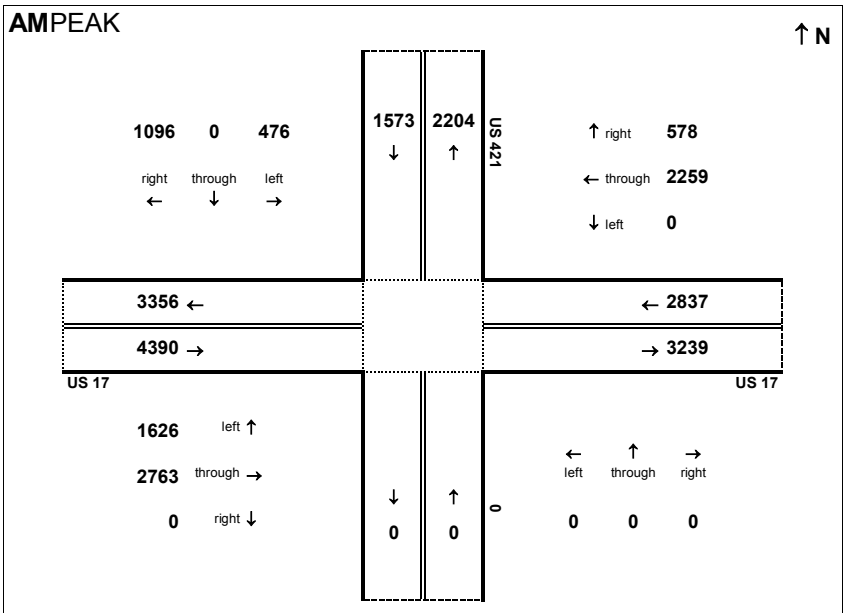
Peak Hour Volume Breakouts Report:
12 - Intersection of US 17 & US 421

Traffic Forecast Release Date:
Oct. 2014

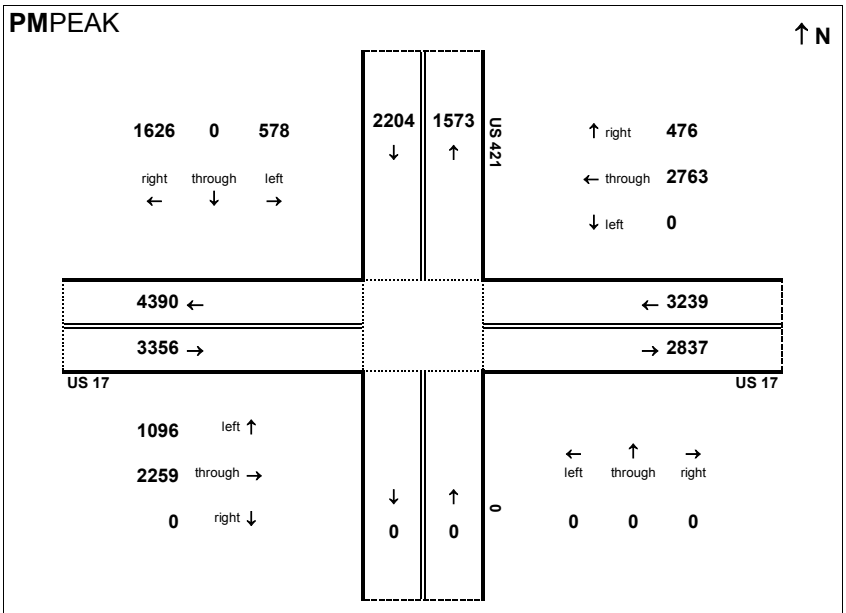
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C

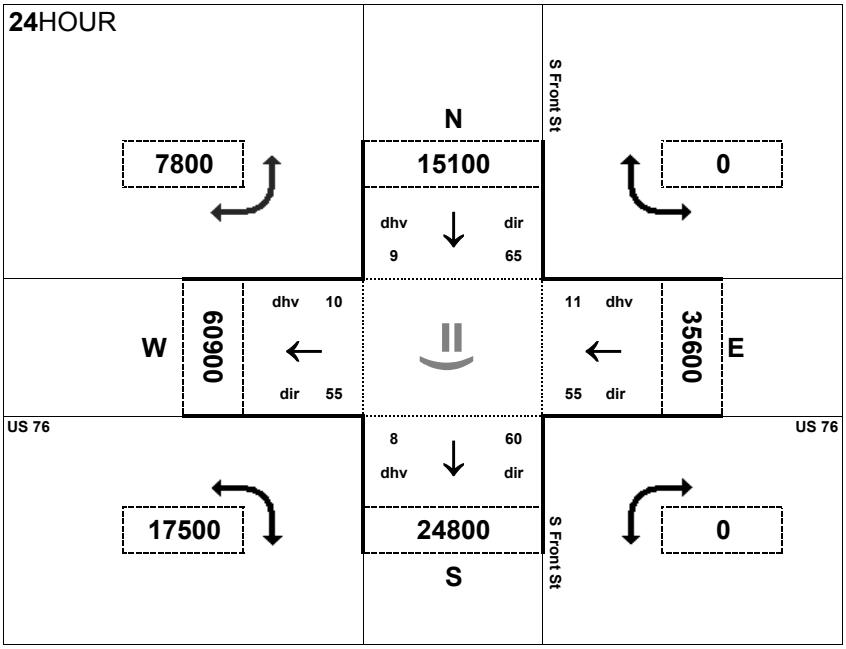




AM peak hour inflow is 8800 vehicles. AM peak hour outflow is 8799 vehicles.



PM peak hour inflow is 8799 vehicles. PM peak hour outflow is 8800 vehicles.

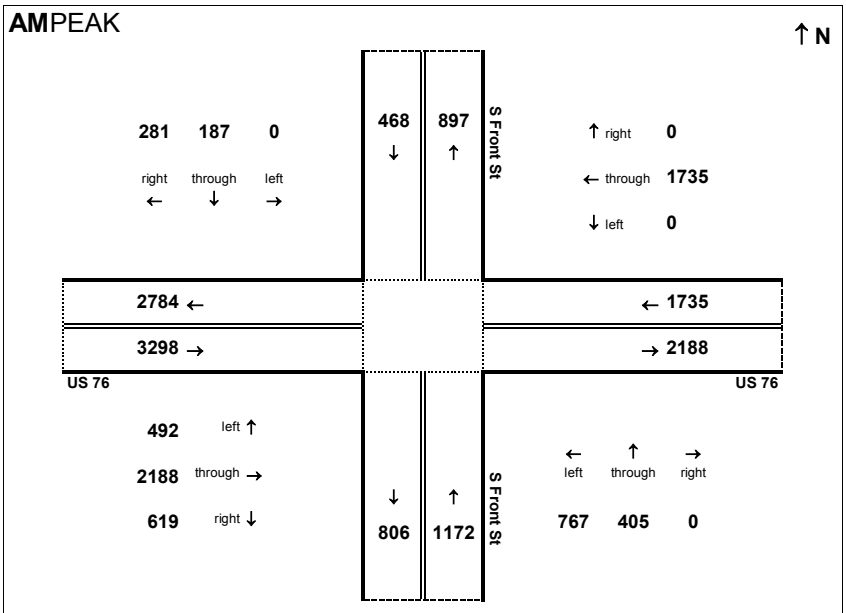


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

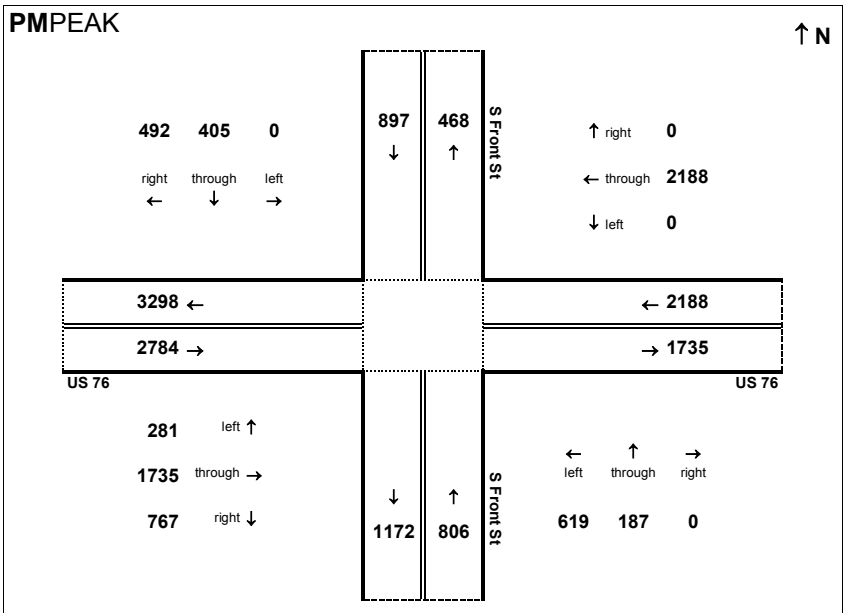
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

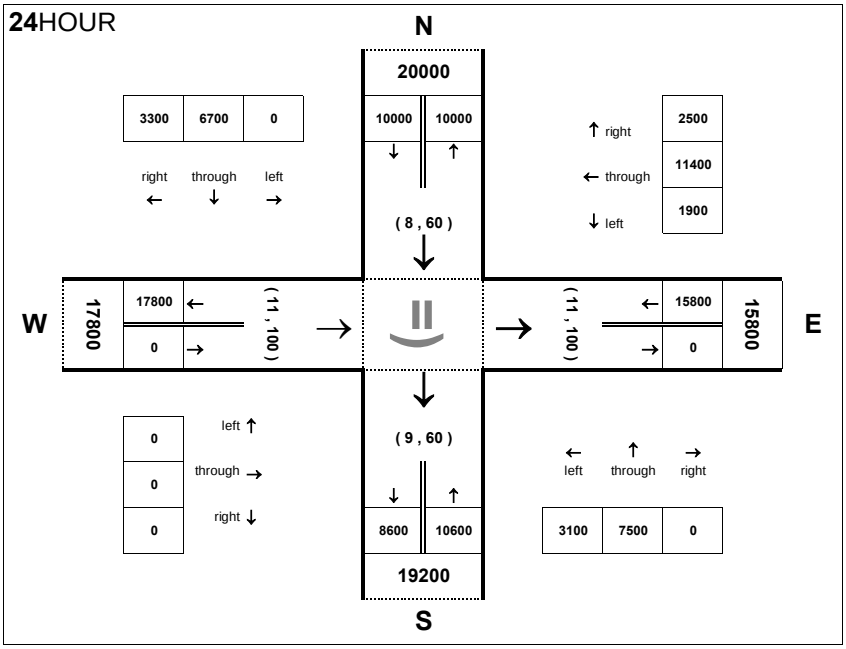
Project:
Cape Fear Crossing - Build Alt. C



AM peak hour inflow is 6673 vehicles. AM peak hour outflow is 6675 vehicles.



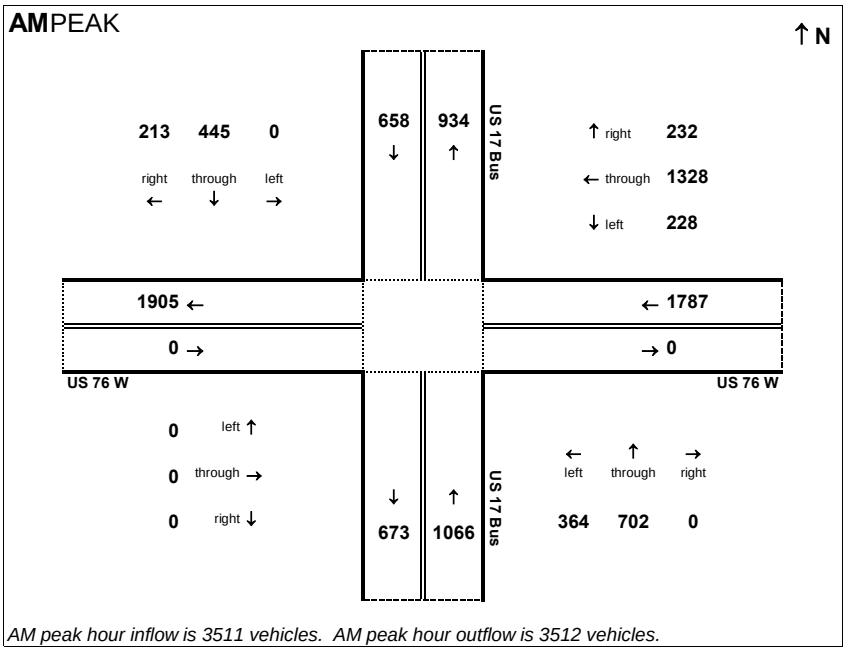
PM peak hour inflow is 6675 vehicles. PM peak hour outflow is 6673 vehicles.



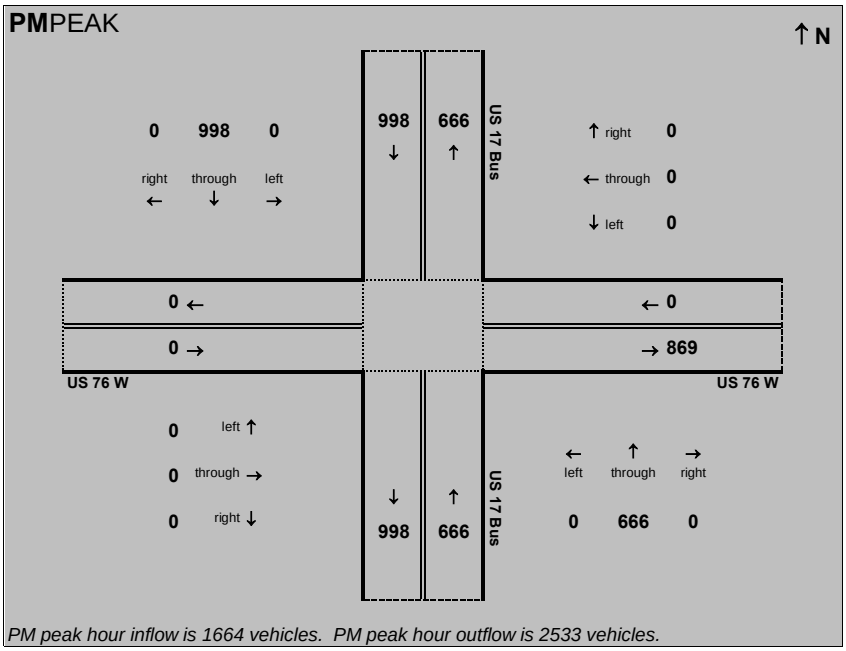
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

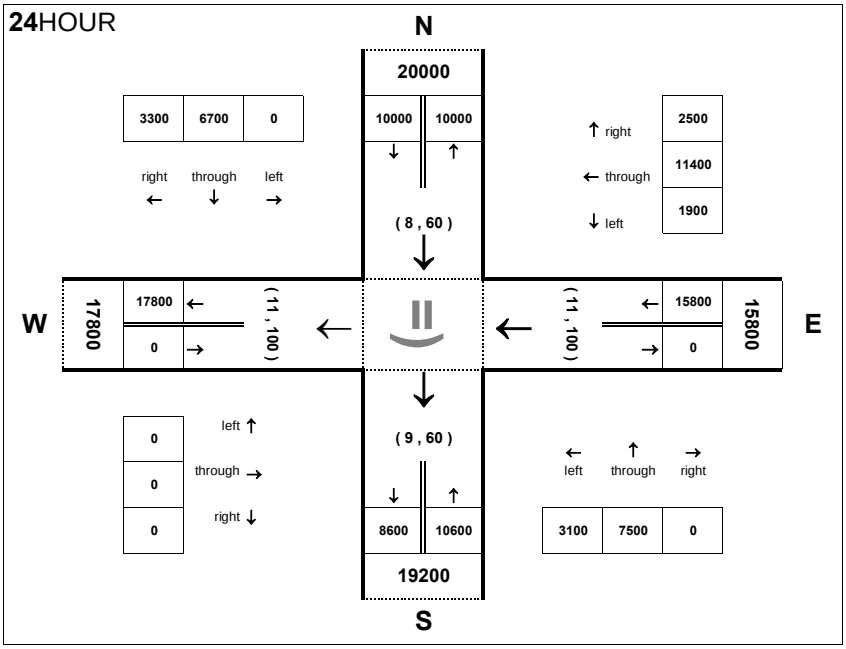
Traffic Data Year:
2040 Alt C



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



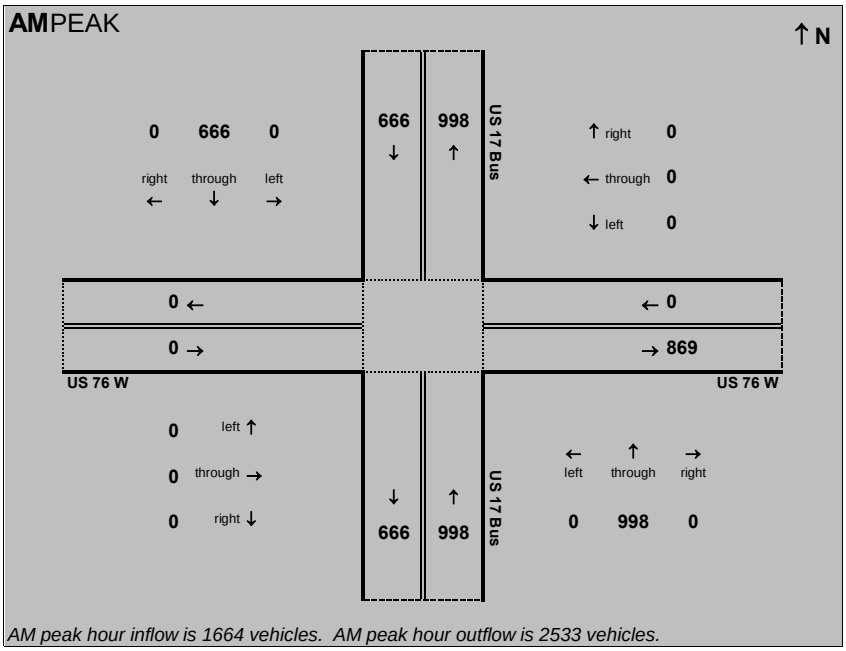
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



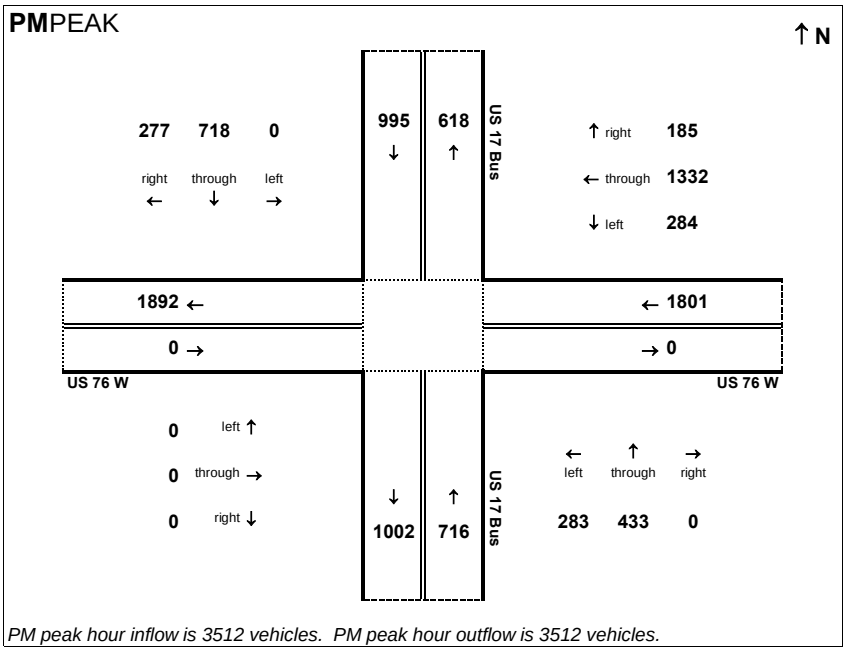
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

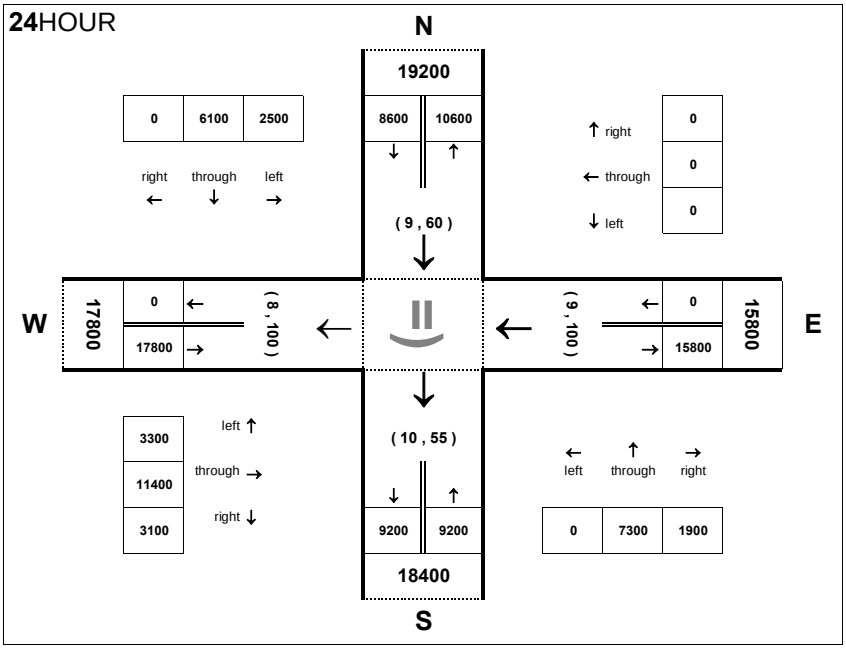
Traffic Data Year:
2040 Alt C



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



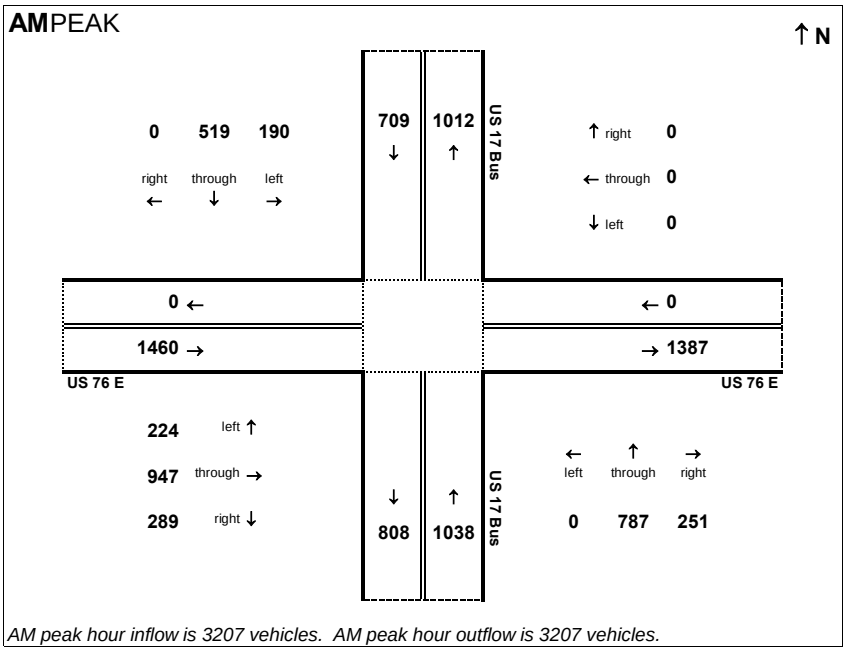
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



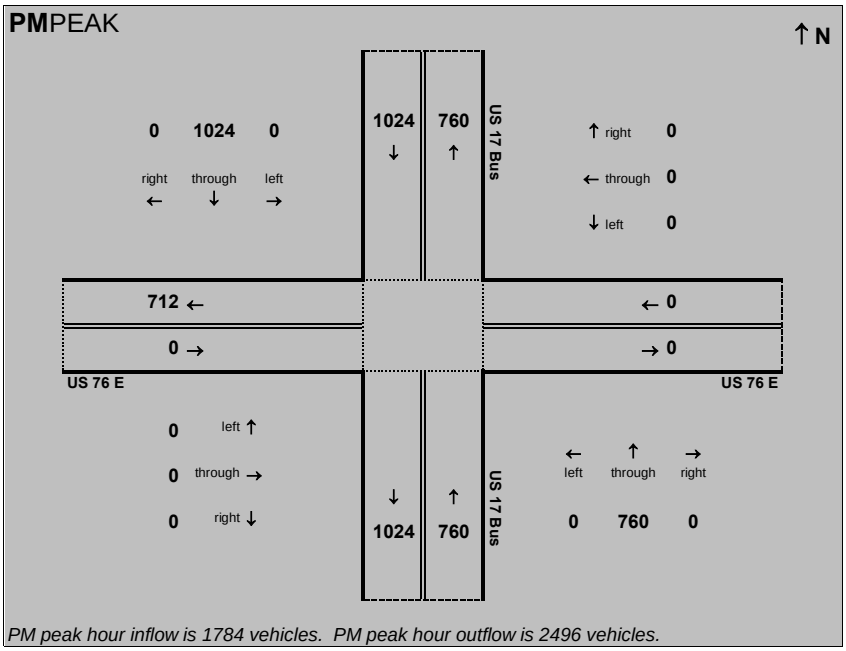
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

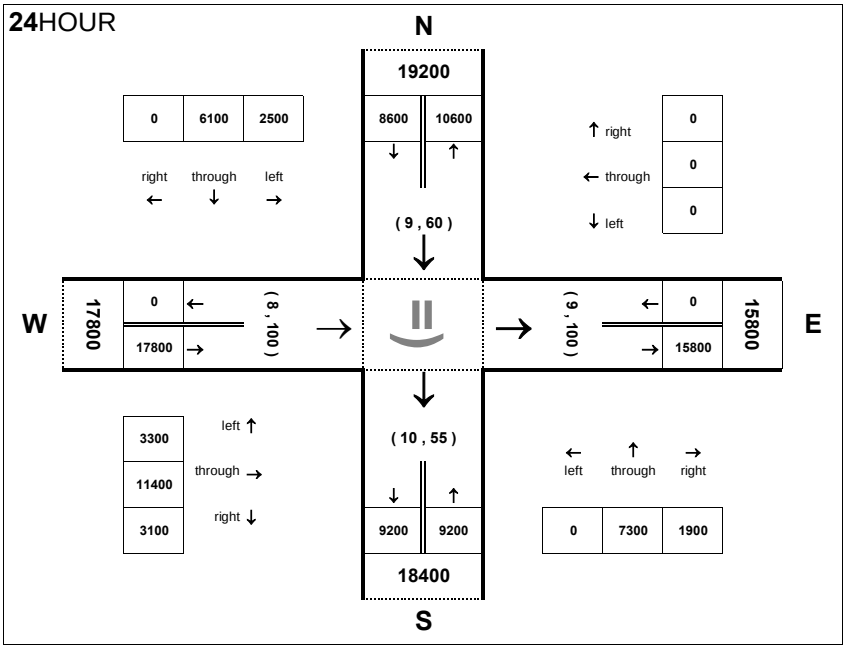
Traffic Data Year:
2040 Alt C



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



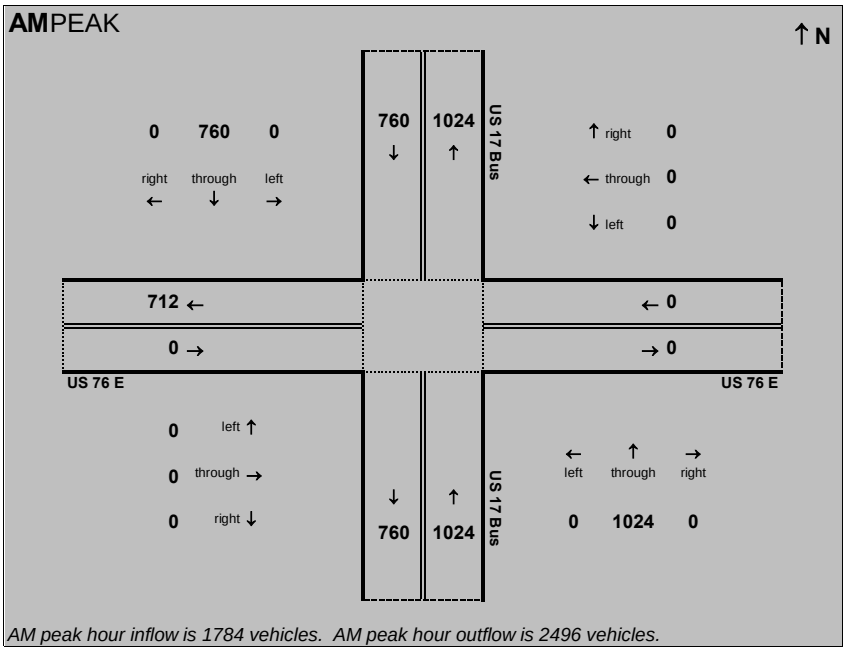
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



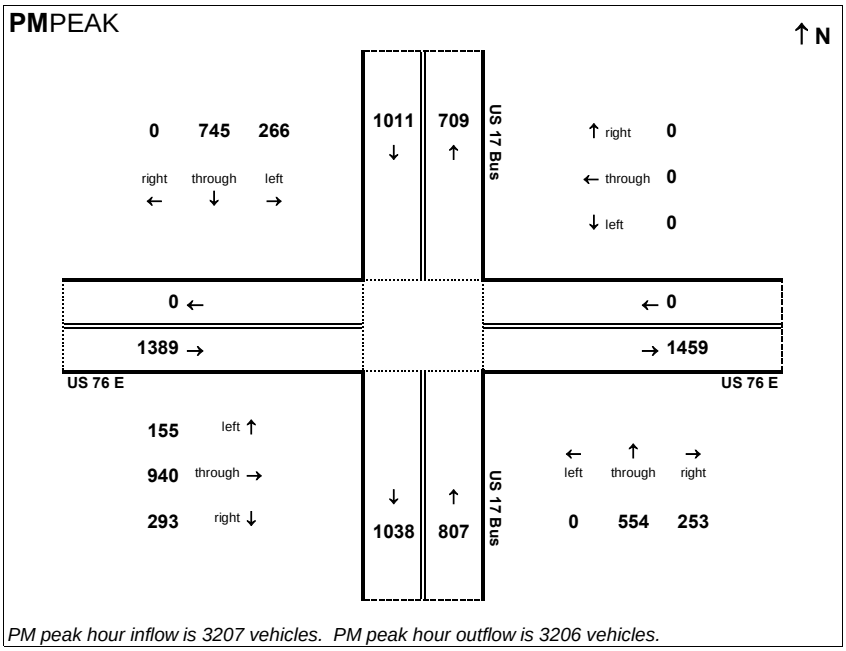
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt C



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



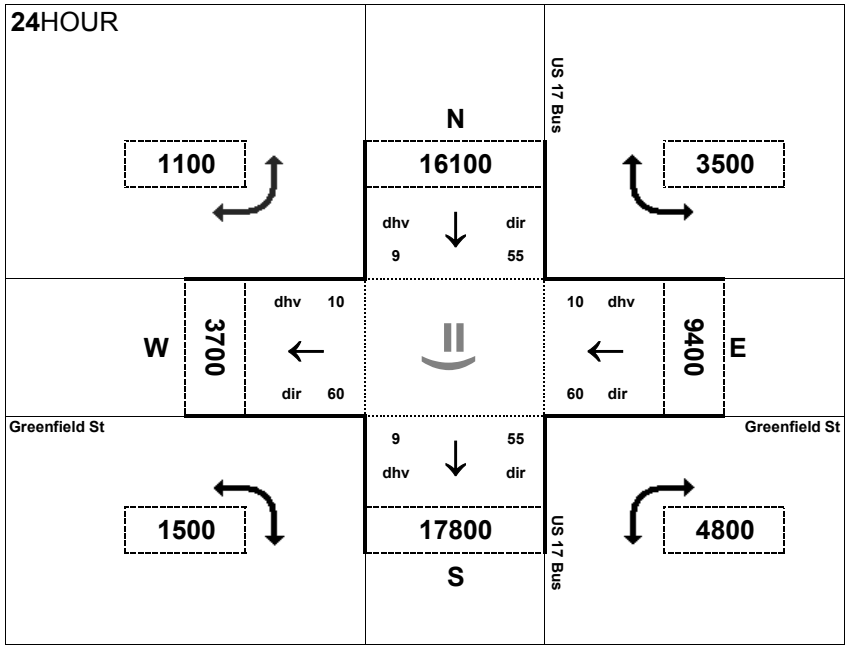
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

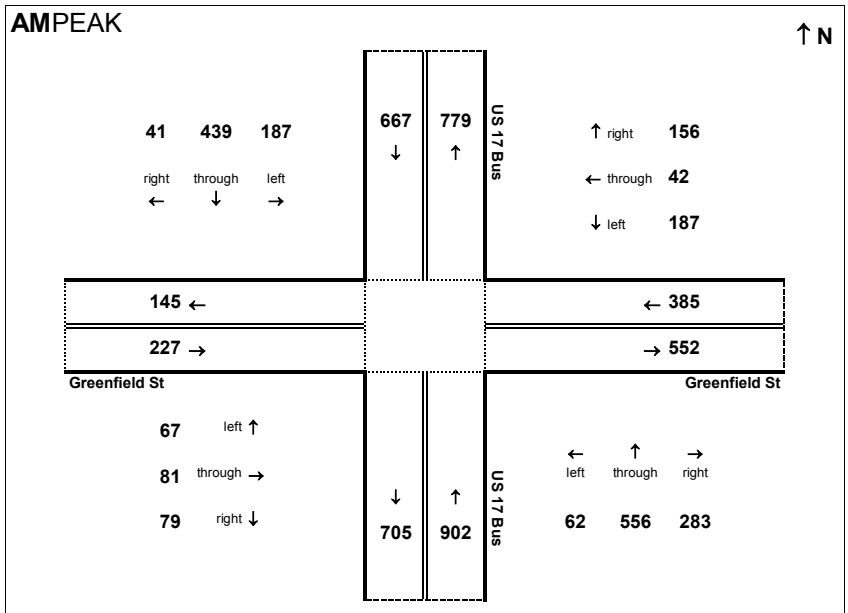
Peak Hour Volume Breakouts Report:
28 - Intersection of US 17 Business and Greenfield Street

Traffic Forecast Release Date:
Oct. 2014

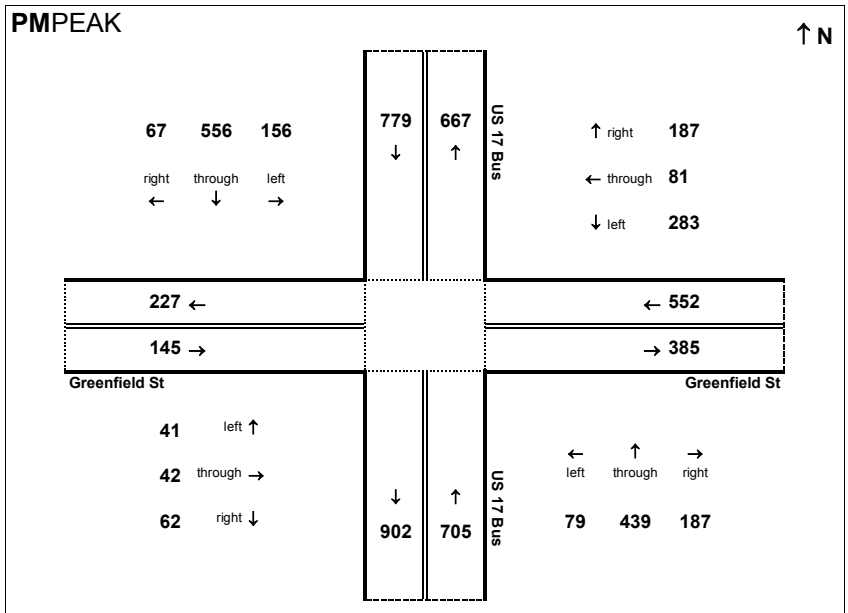
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



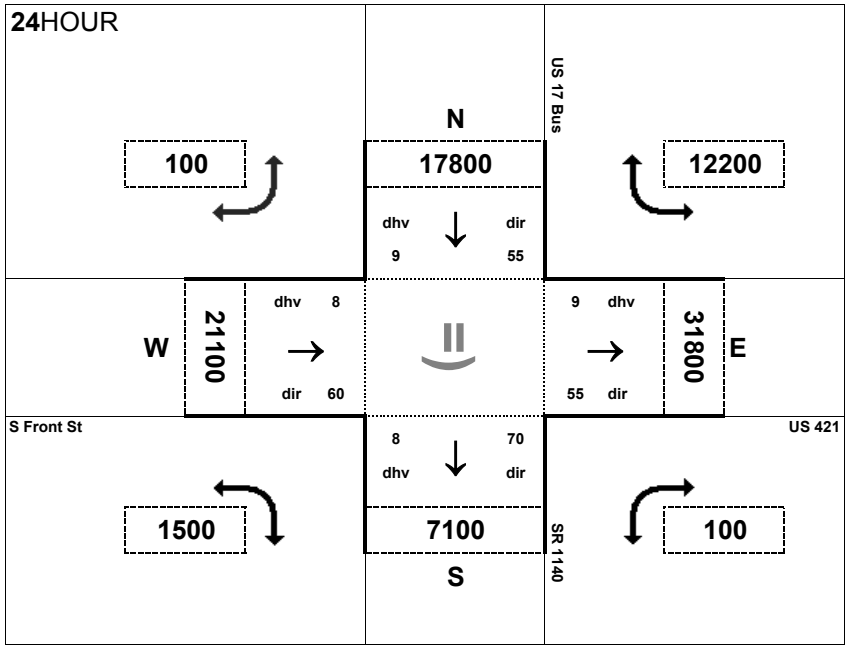
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

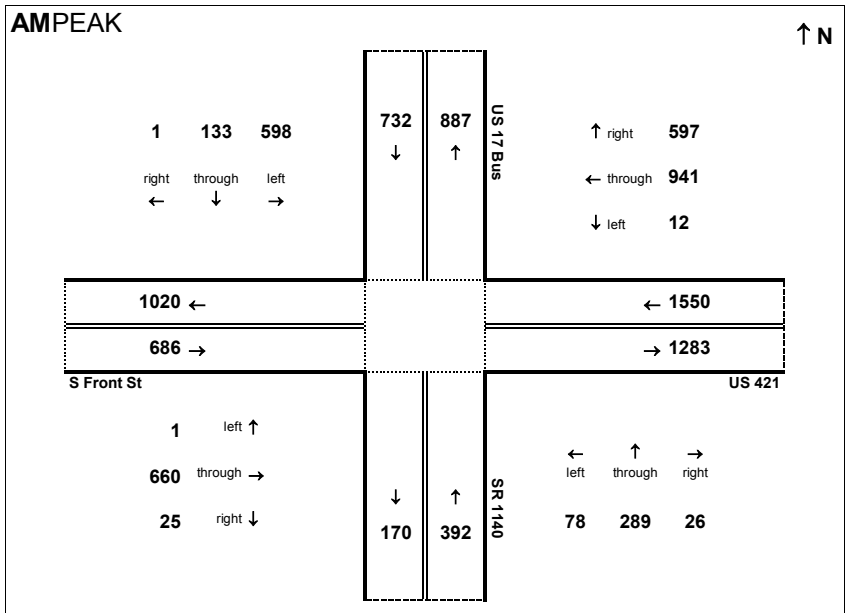
Peak Hour Volume Breakouts Report:
29 - Intersection of US 17 Business & S Front Street and US 421

Traffic Forecast Release Date:
Oct. 2014

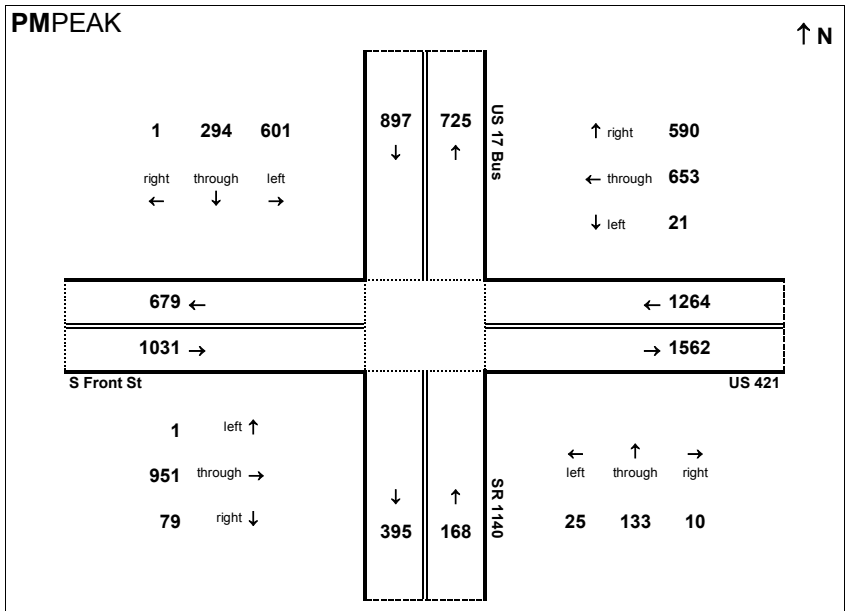
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



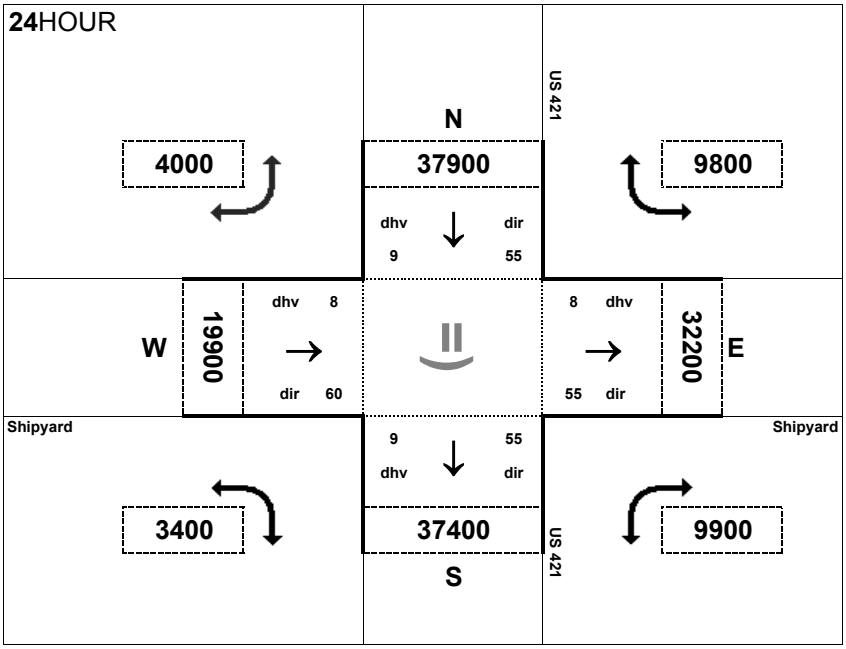
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3361 vehicles.

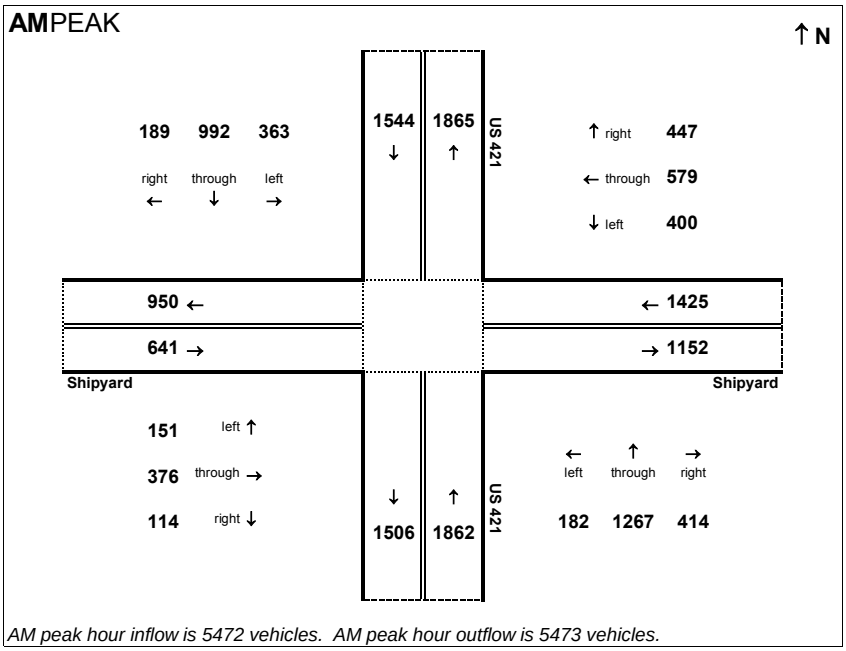
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

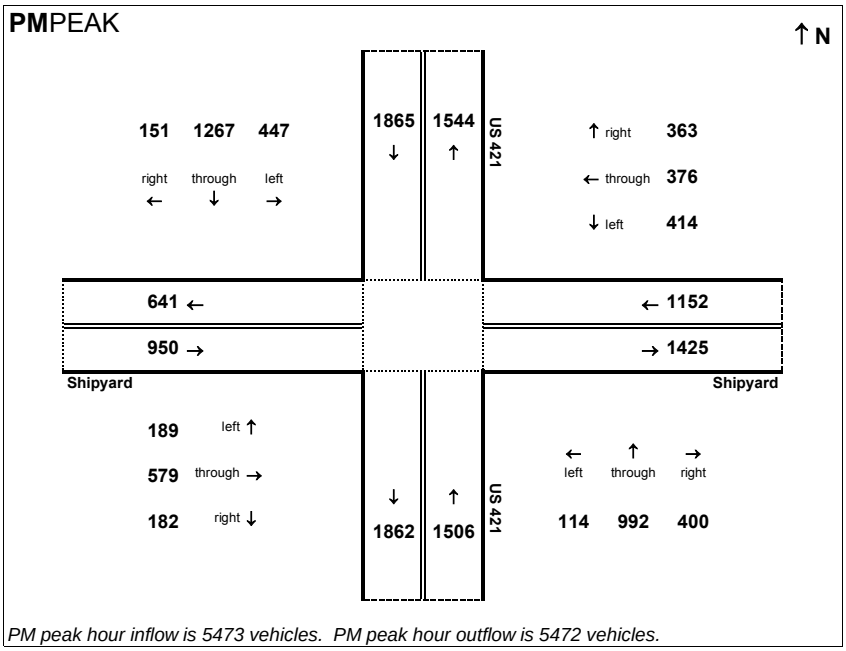
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 5472 vehicles. AM peak hour outflow is 5473 vehicles.



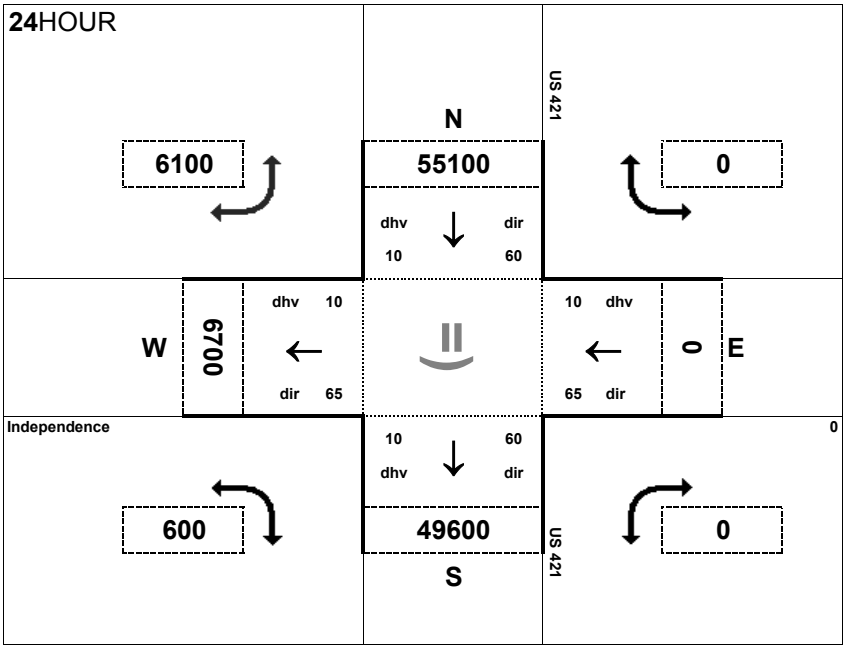
PM peak hour inflow is 5473 vehicles. PM peak hour outflow is 5472 vehicles.

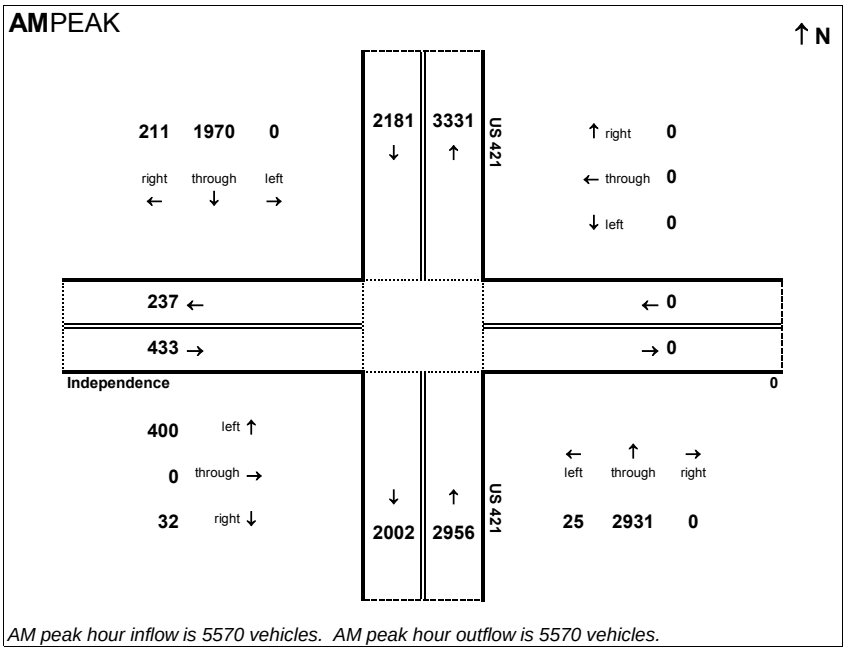
Peak Hour Volume Breakouts Report:
31 US 421 & Independence

Traffic Forecast Release Date:
Oct. 2014

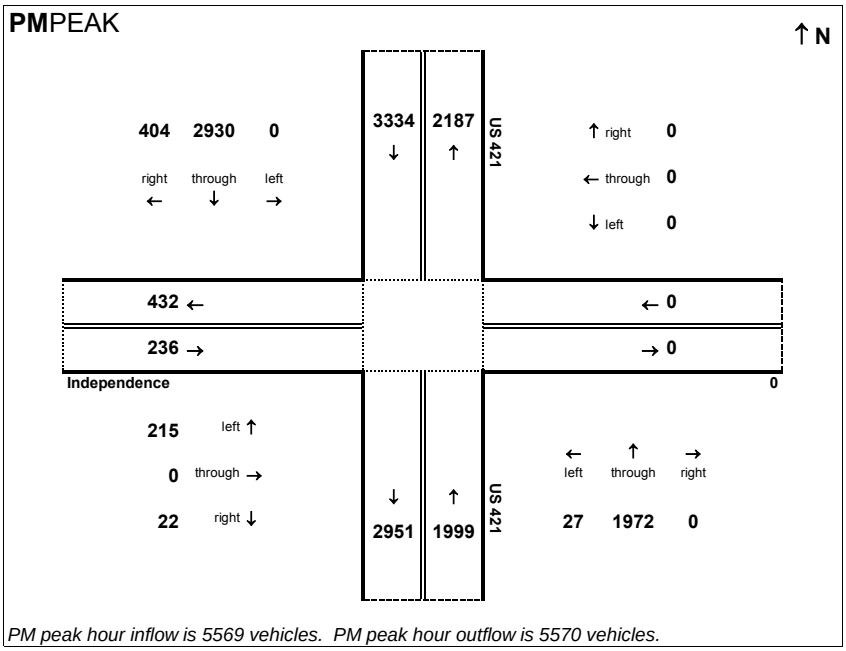
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 5570 vehicles. AM peak hour outflow is 5570 vehicles.



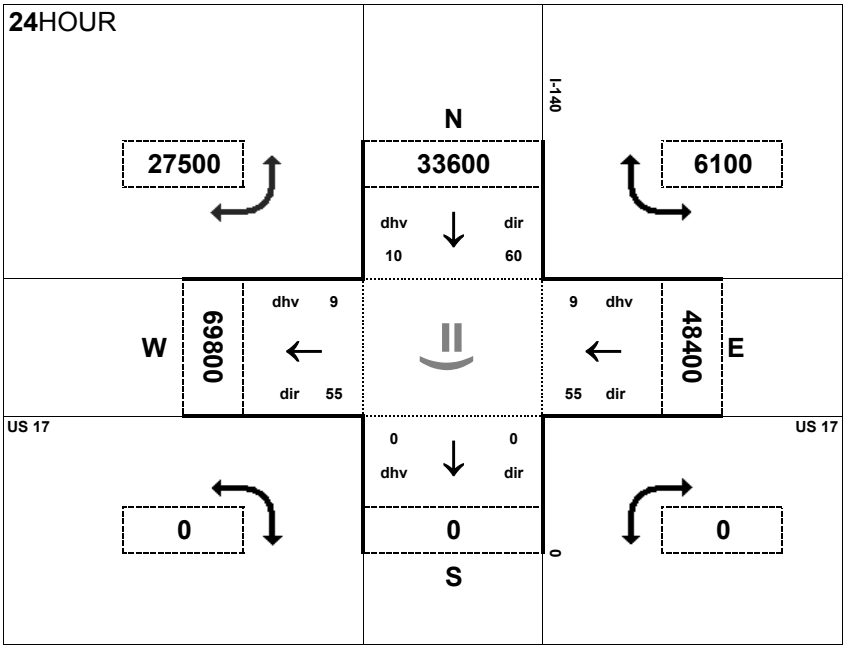
PM peak hour inflow is 5569 vehicles. PM peak hour outflow is 5570 vehicles.

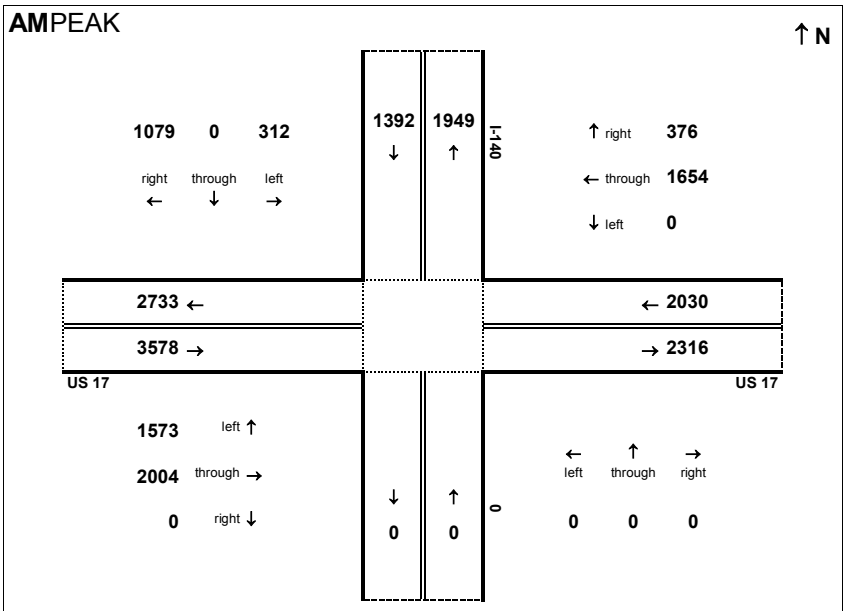
Peak Hour Volume Breakouts Report:
43 - Interchange of I-140 and US 17

Traffic Forecast Release Date:
Oct. 2014

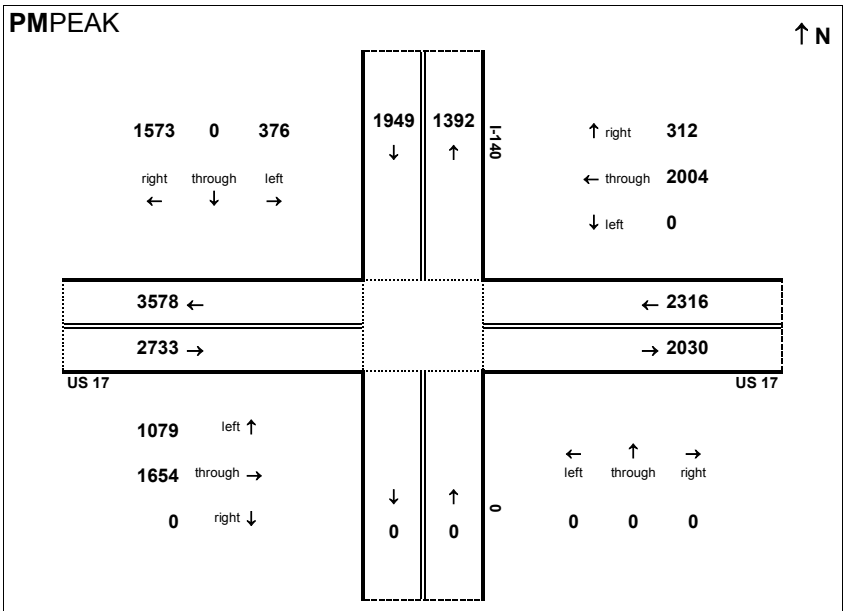
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 7000 vehicles. AM peak hour outflow is 6998 vehicles.



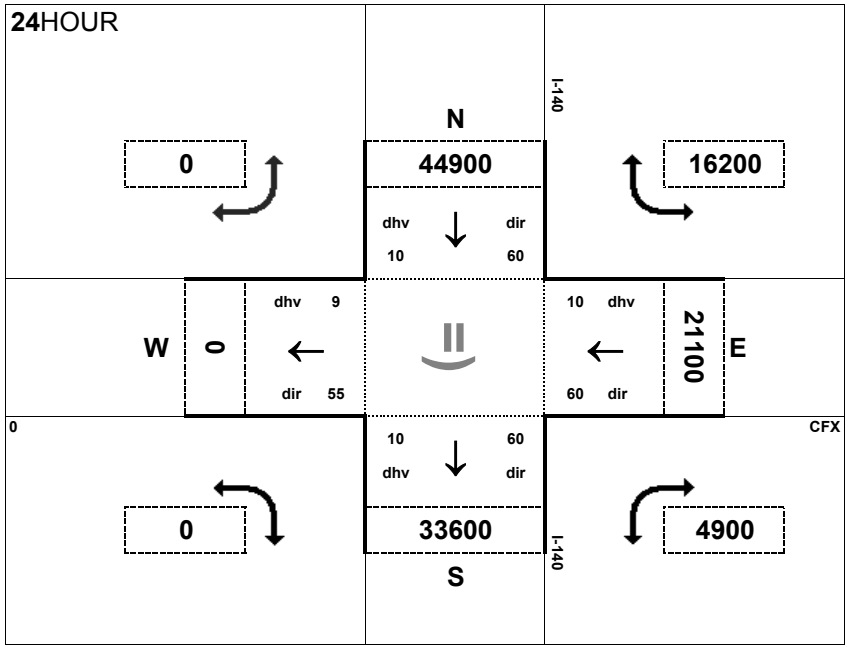
PM peak hour inflow is 6998 vehicles. PM peak hour outflow is 7000 vehicles.

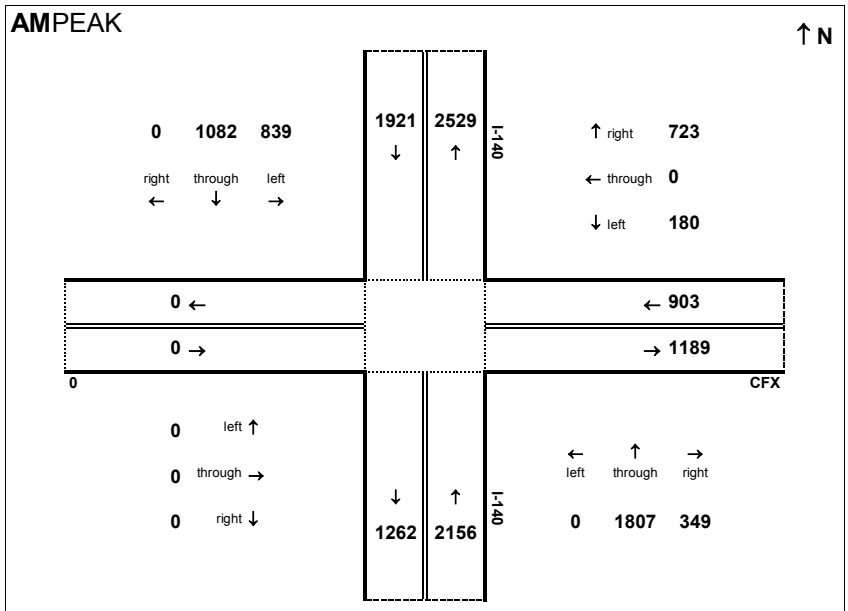
Peak Hour Volume Breakouts Report:
101 - CFX and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

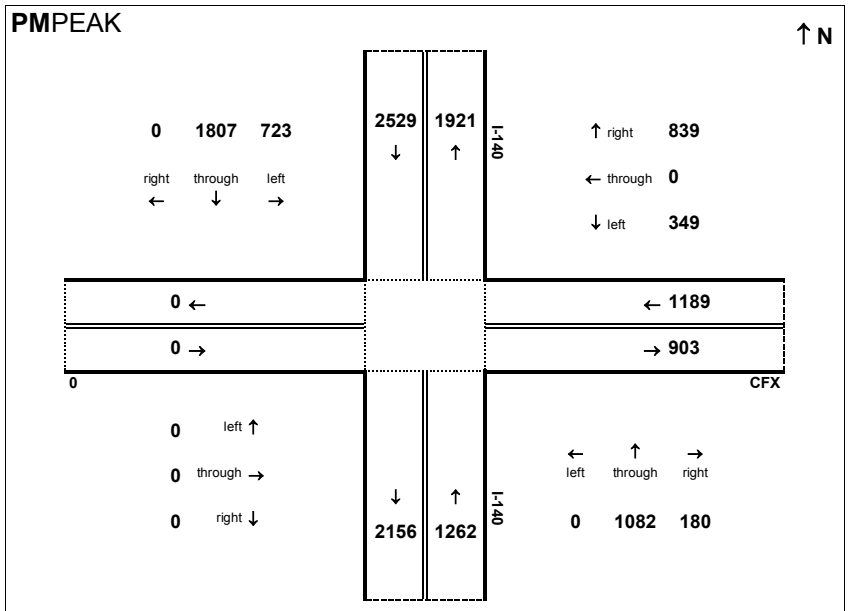
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 4980 vehicles. AM peak hour outflow is 4980 vehicles.



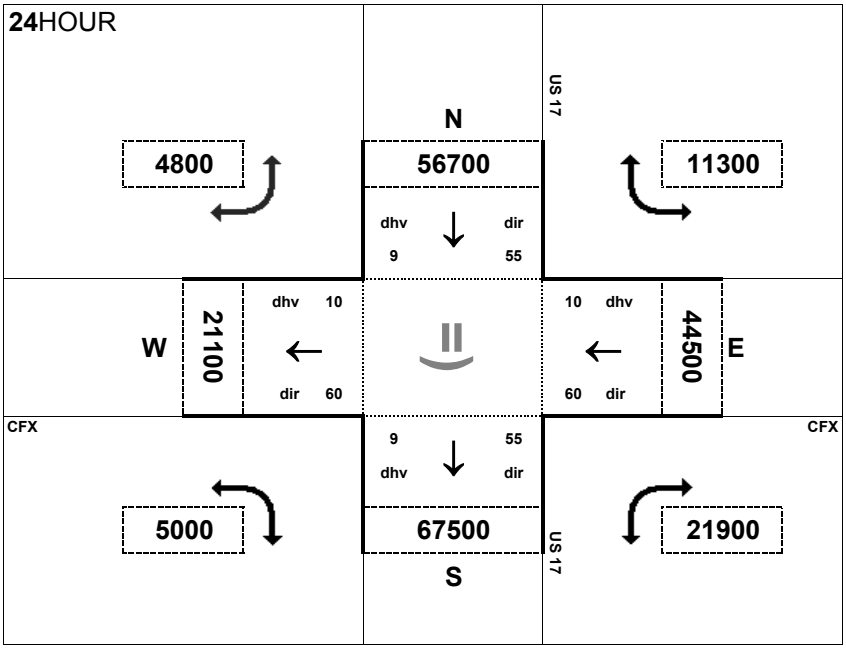
PM peak hour inflow is 4980 vehicles. PM peak hour outflow is 4980 vehicles.

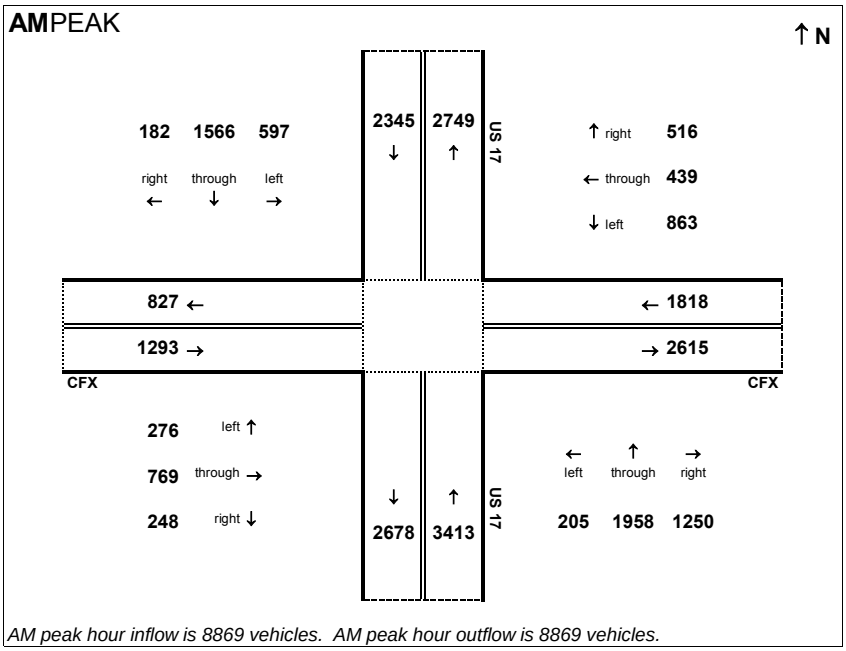
Peak Hour Volume Breakouts Report:
102 - CFX and US 17 Interchange

Traffic Forecast Release Date:
Oct. 2014

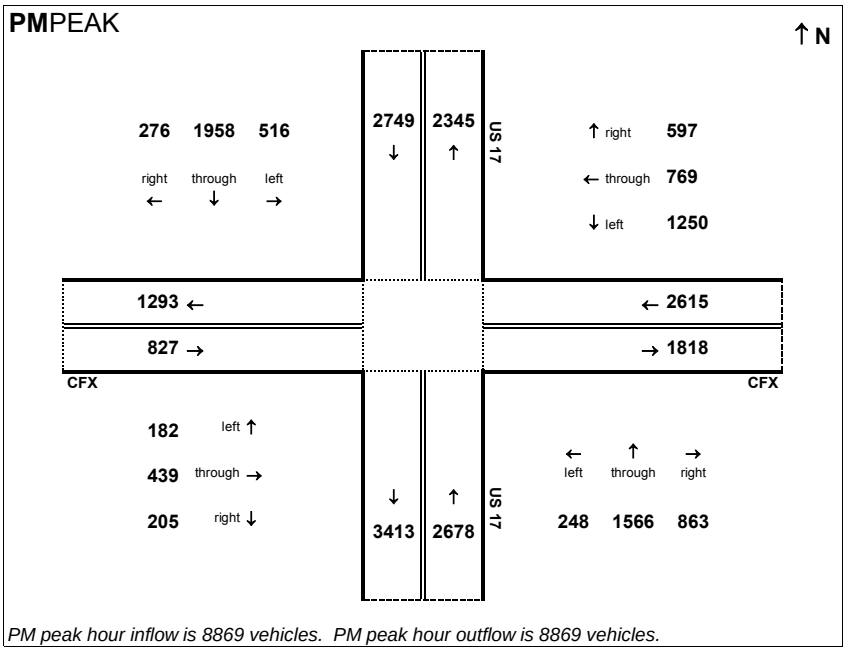
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 8869 vehicles. AM peak hour outflow is 8869 vehicles.



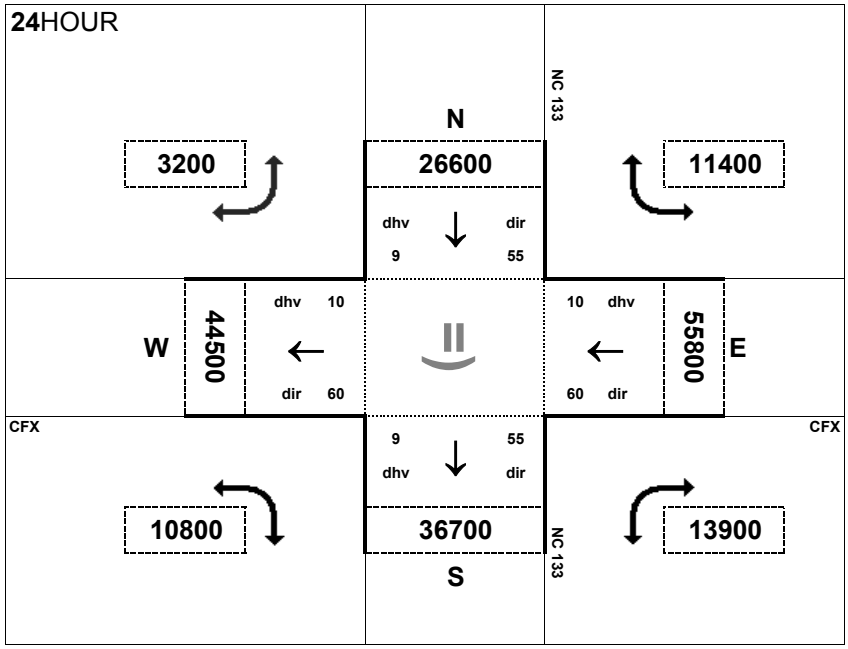
PM peak hour inflow is 8869 vehicles. PM peak hour outflow is 8869 vehicles.

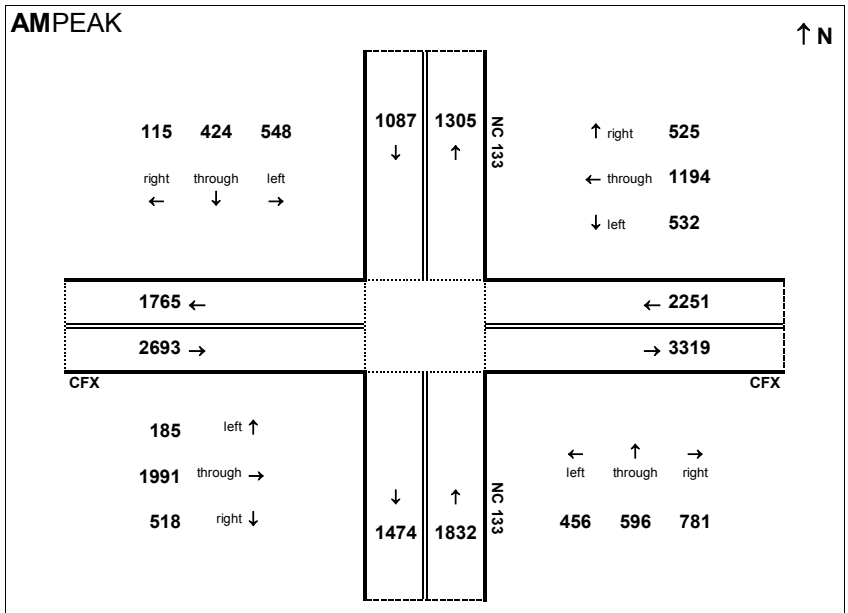
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

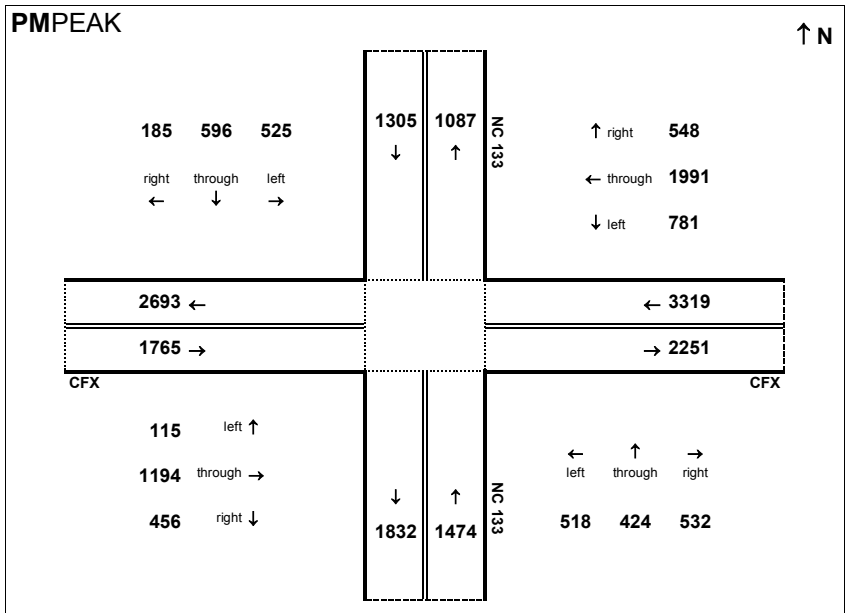
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 7863 vehicles. AM peak hour outflow is 7863 vehicles.



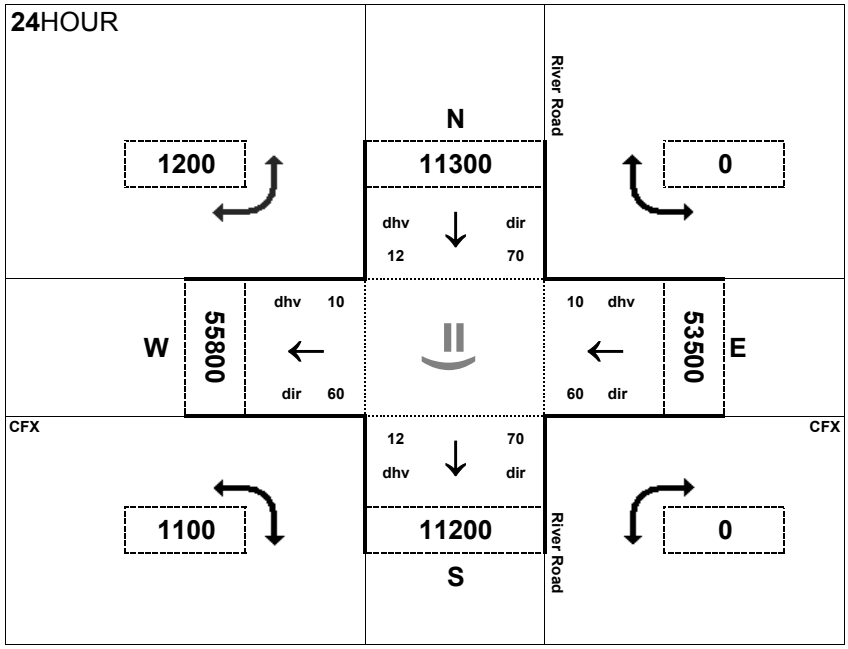
PM peak hour inflow is 7863 vehicles. PM peak hour outflow is 7863 vehicles.

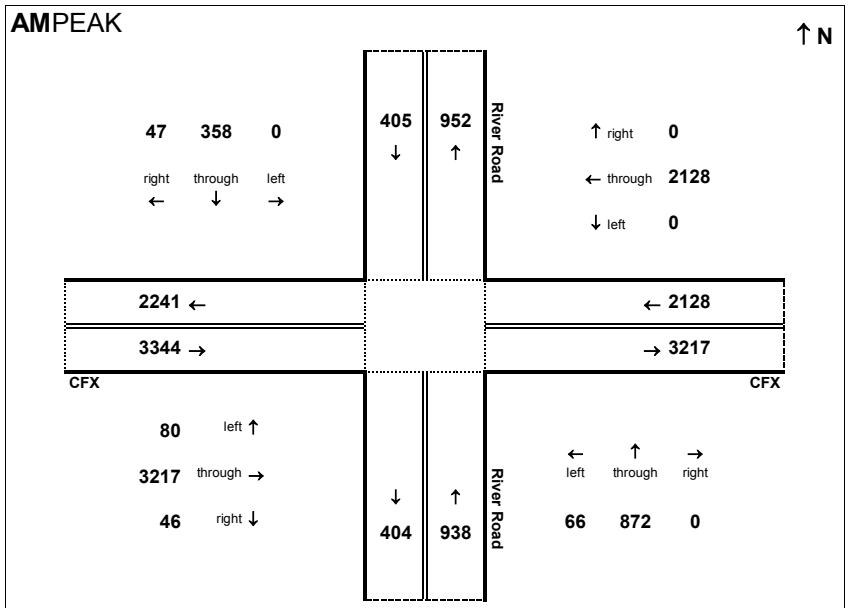
Peak Hour Volume Breakouts Report:
105 - CFX and River Road

Traffic Forecast Release Date:
Oct. 2014

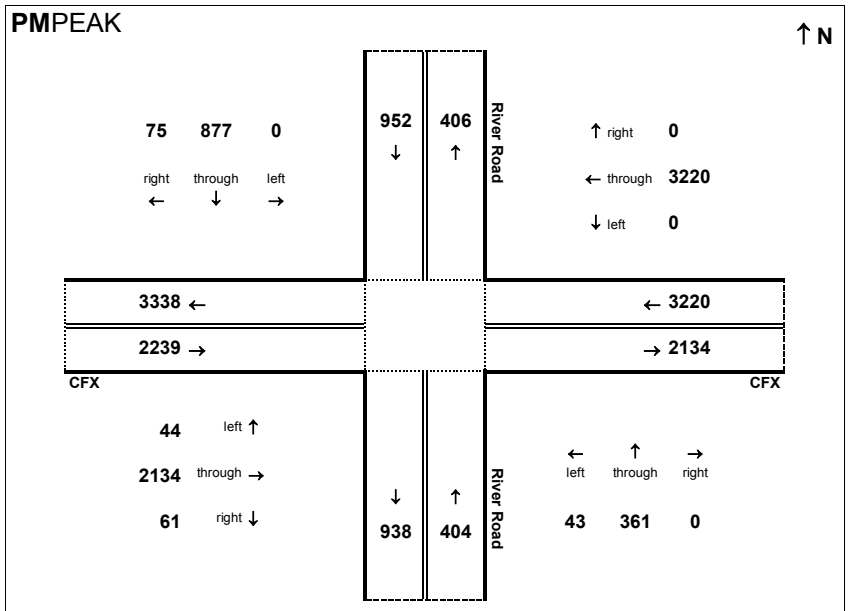
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C





AM peak hour inflow is 6815 vehicles. AM peak hour outflow is 6814 vehicles.



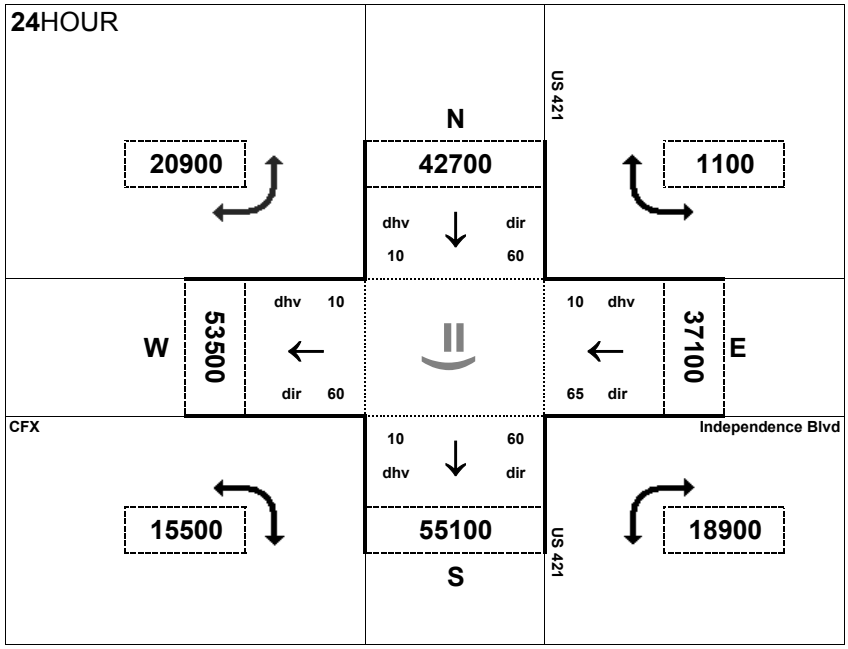
PM peak hour inflow is 6815 vehicles. PM peak hour outflow is 6816 vehicles.

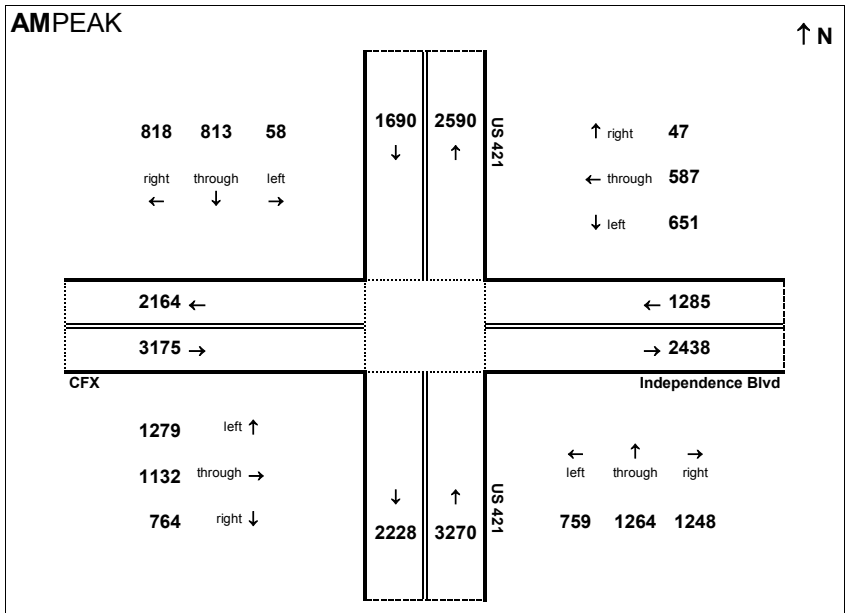
Peak Hour Volume Breakouts Report:
107 - CFX and US 421 - Independence

Traffic Forecast Release Date:
Oct. 2014

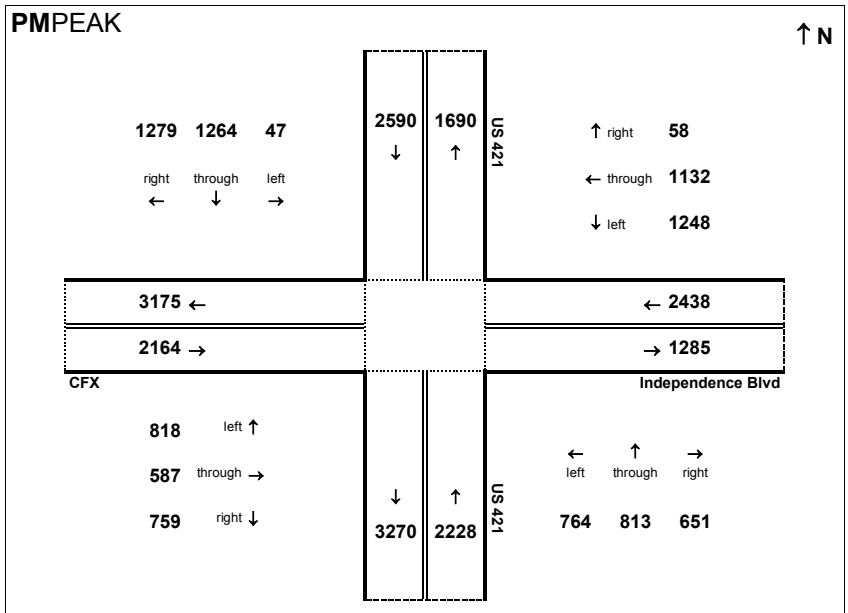
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C

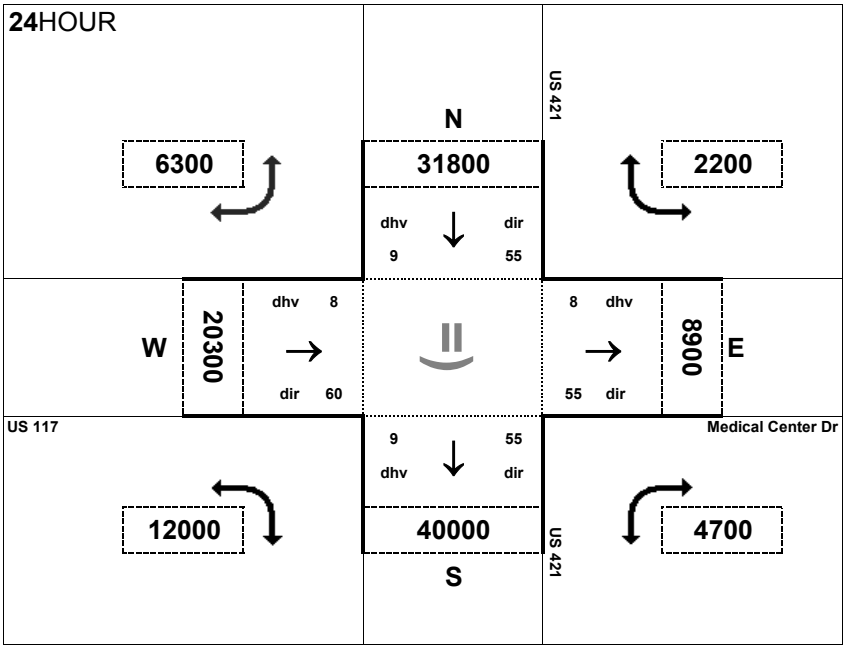




AM peak hour inflow is 9420 vehicles. AM peak hour outflow is 9420 vehicles.



PM peak hour inflow is 9420 vehicles. PM peak hour outflow is 9420 vehicles.

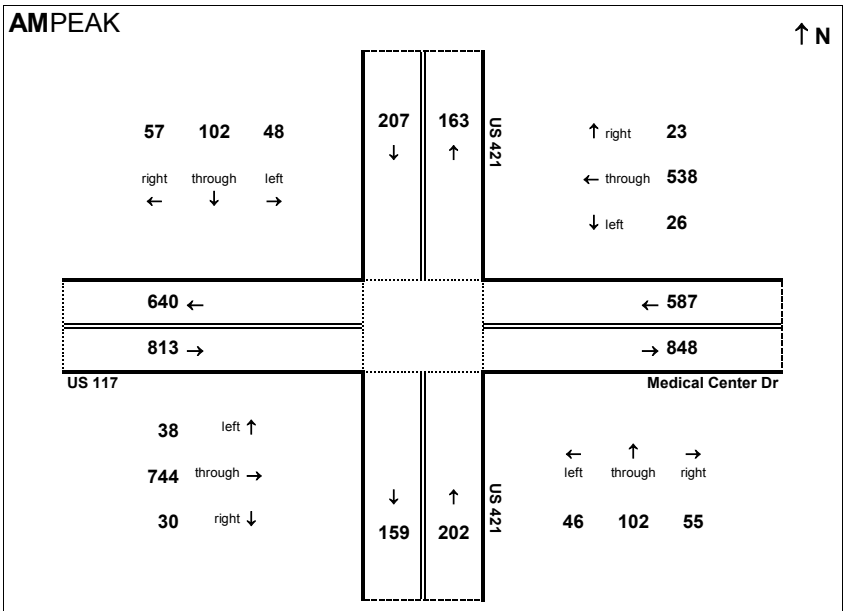


Peak Hour Volume Breakouts Report:
109 - Intersection of US 421 and US 117/Medical Center Dr

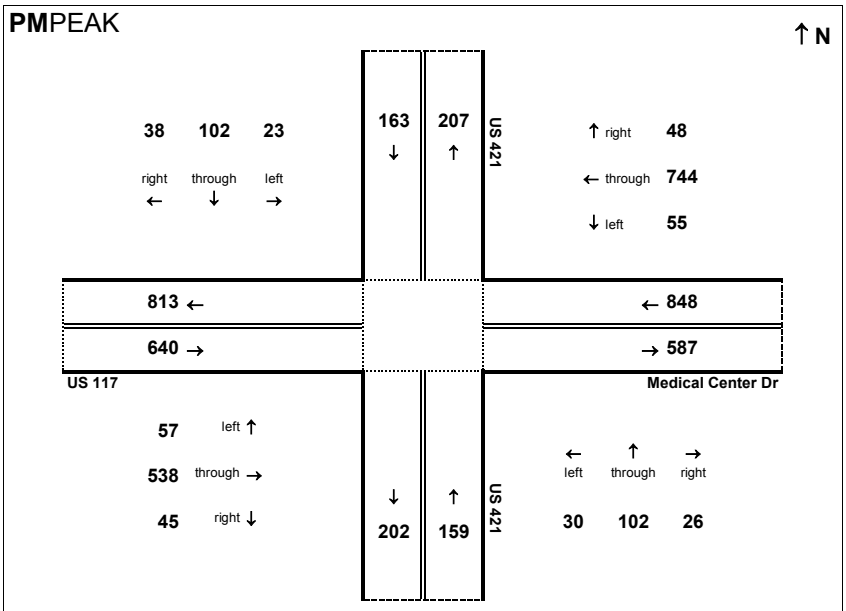
Traffic Forecast Release Date:
OCt. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. C



AM peak hour inflow is 1809 vehicles. AM peak hour outflow is 1810 vehicles.



PM peak hour inflow is 1810 vehicles. PM peak hour outflow is 1809 vehicles.

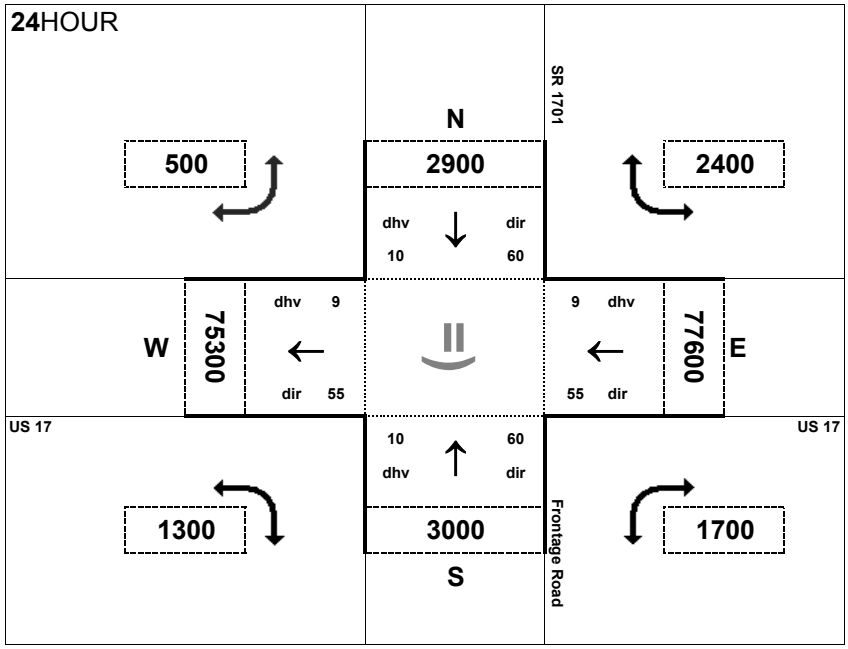
2040 Build DSA Alternative F

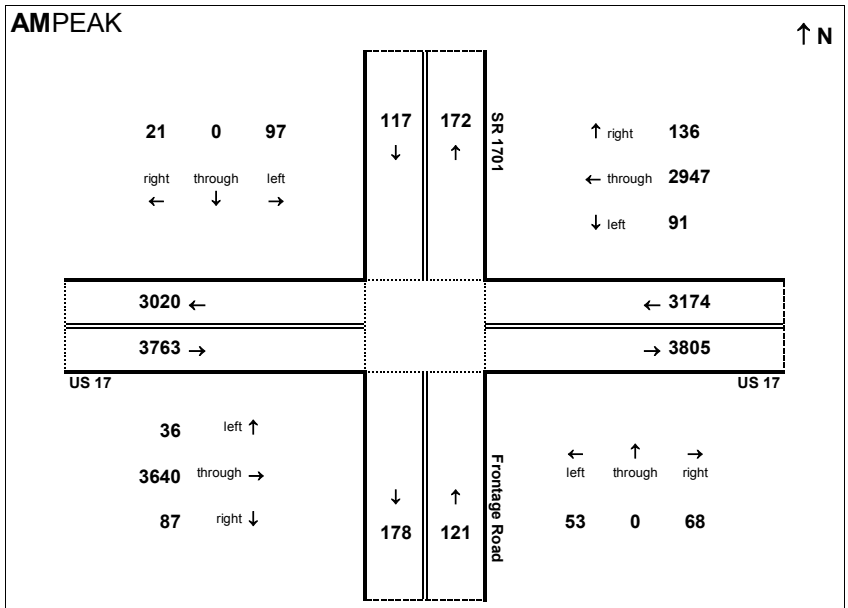
Peak Hour Volume Breakouts Report:
1 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

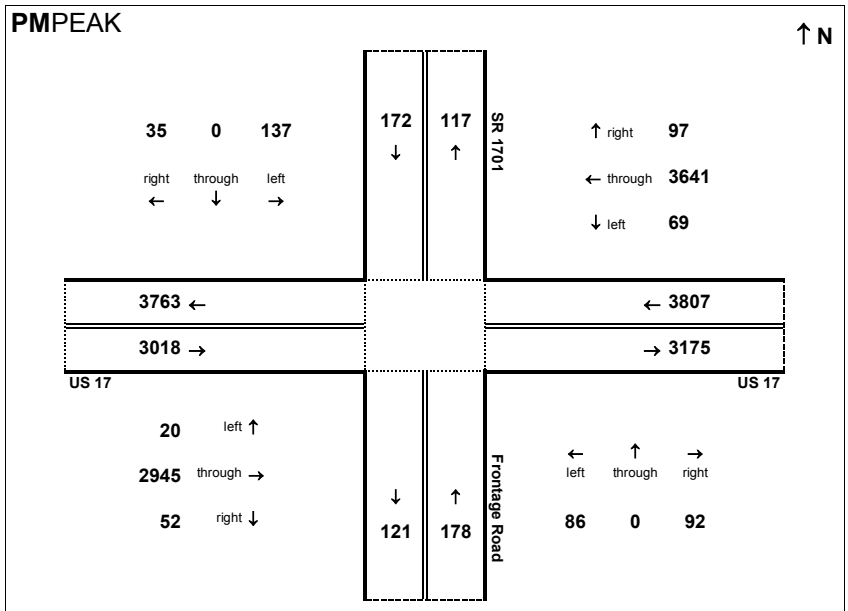
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F

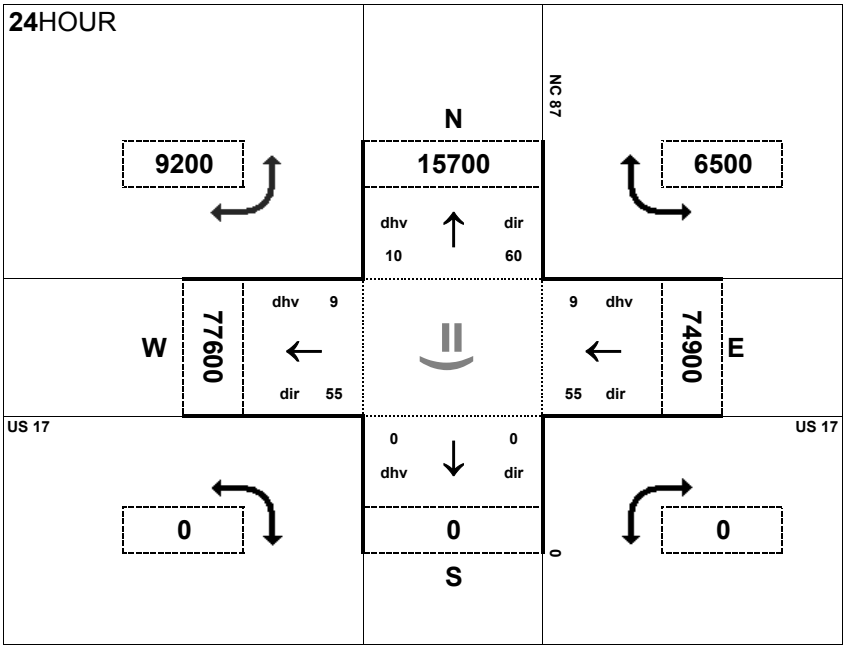




AM peak hour inflow is 7175 vehicles. AM peak hour outflow is 7175 vehicles.



PM peak hour inflow is 7175 vehicles. PM peak hour outflow is 7176 vehicles.

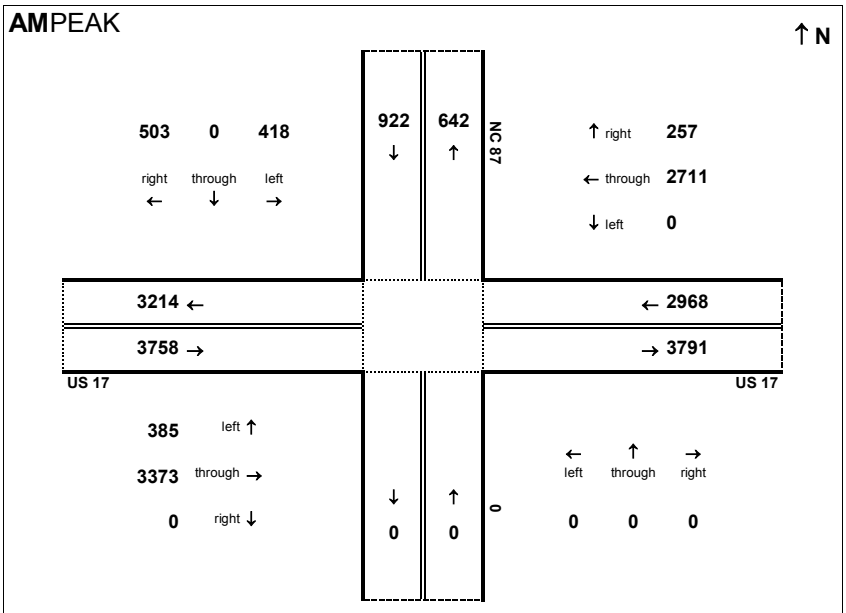


Peak Hour Volume Breakouts Report:
2 - Intersection of US 17 & NC 87 - Maco Road

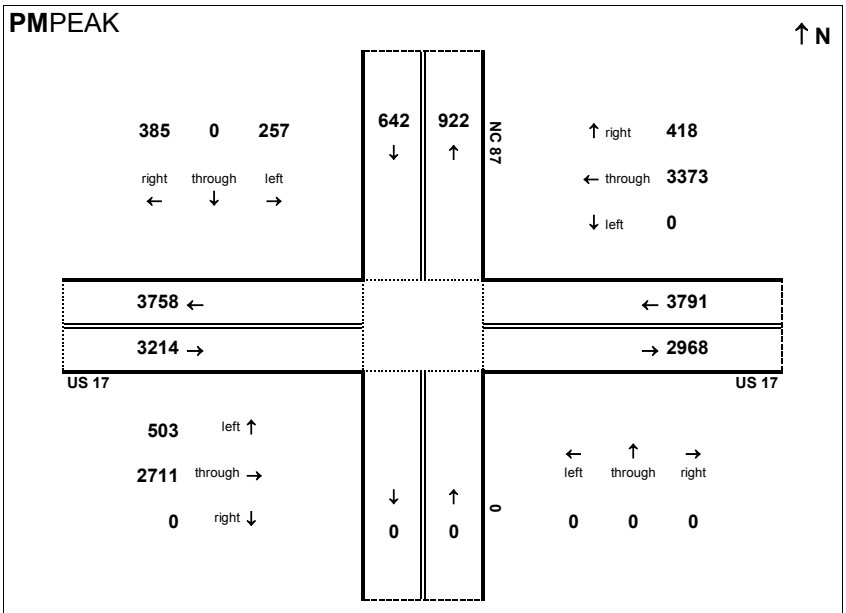
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F



AM peak hour inflow is 7648 vehicles. AM peak hour outflow is 7647 vehicles.



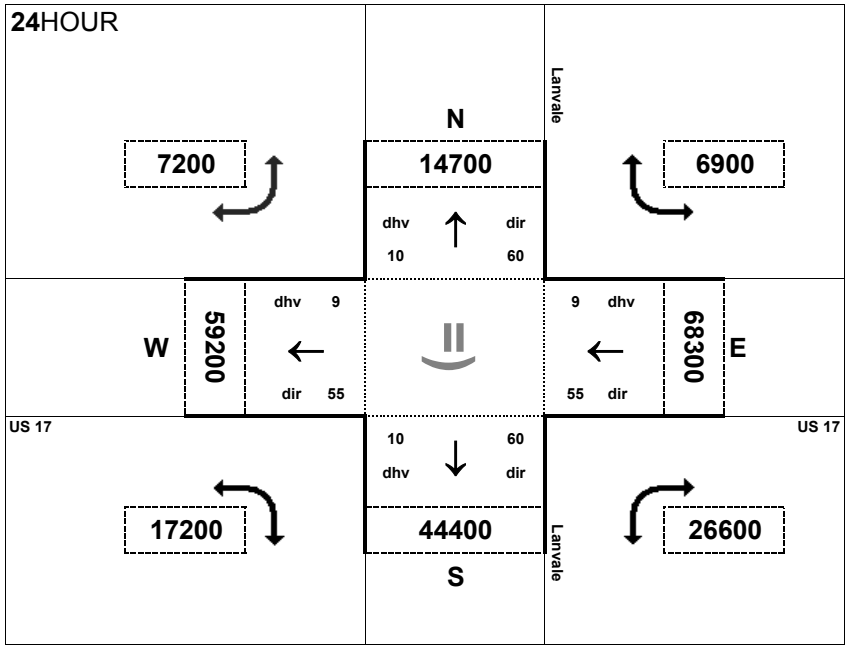
PM peak hour inflow is 7647 vehicles. PM peak hour outflow is 7648 vehicles.

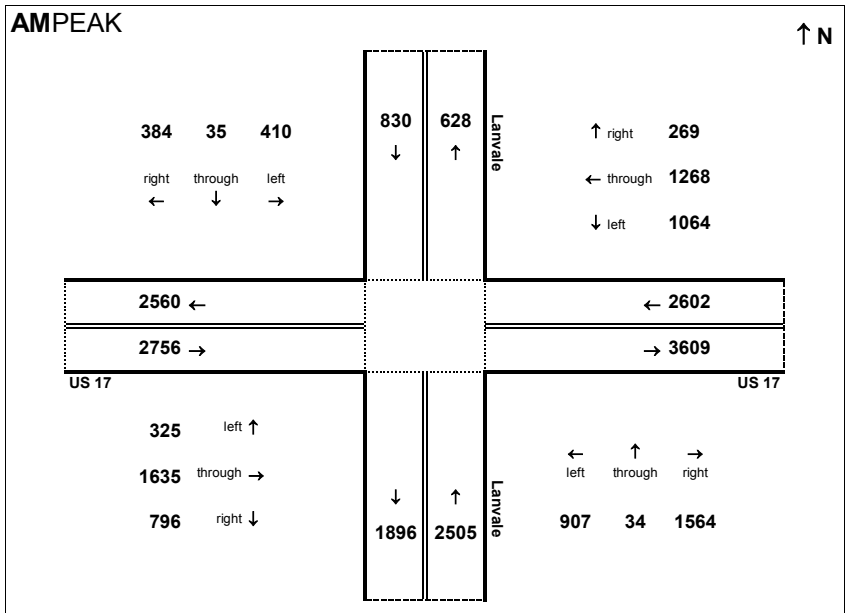
Peak Hour Volume Breakouts Report:
4 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

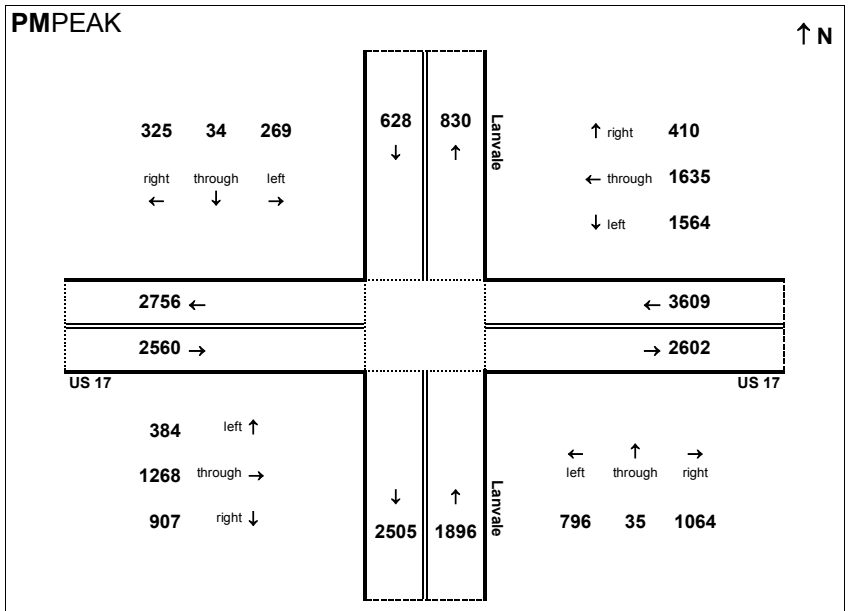
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 8693 vehicles. AM peak hour outflow is 8693 vehicles.



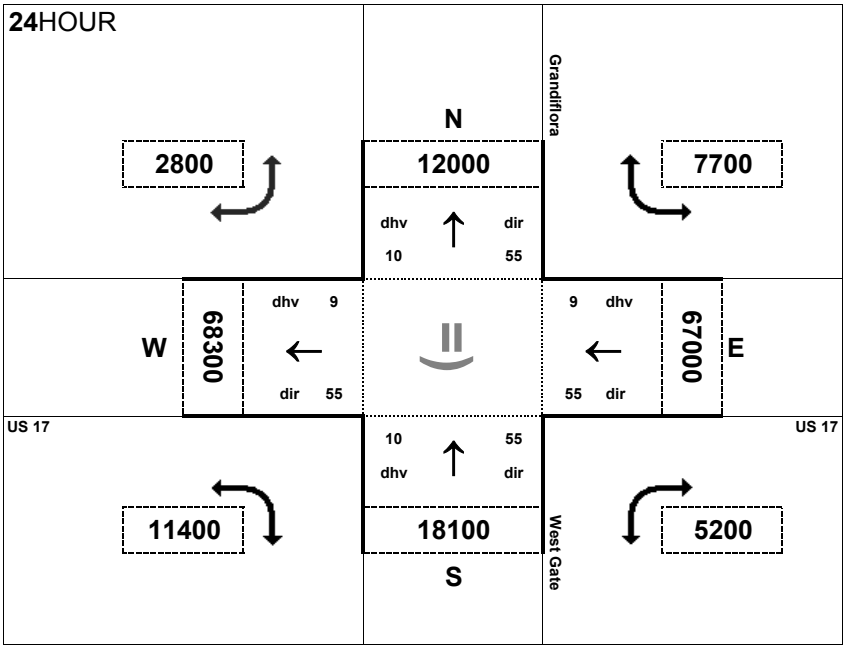
PM peak hour inflow is 8693 vehicles. PM peak hour outflow is 8693 vehicles.

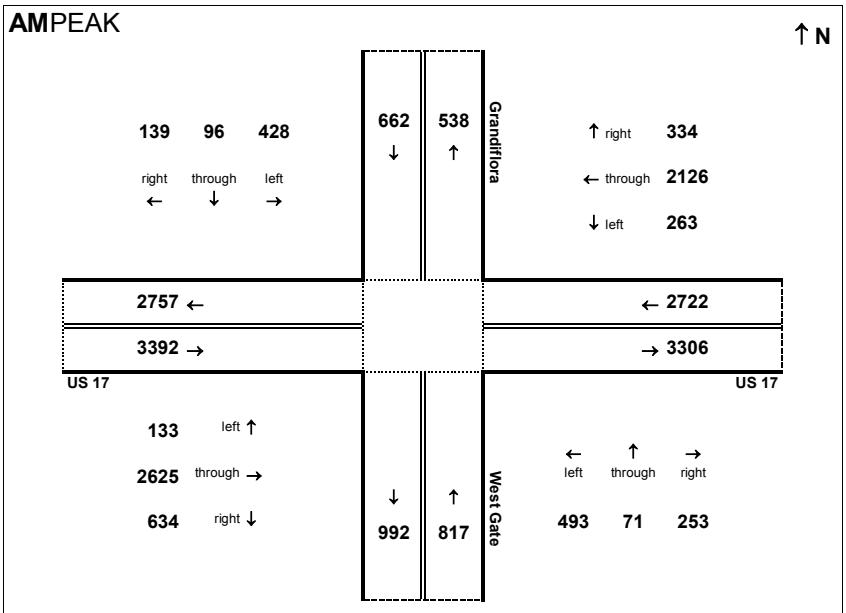
Peak Hour Volume Breakouts Report:
6 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

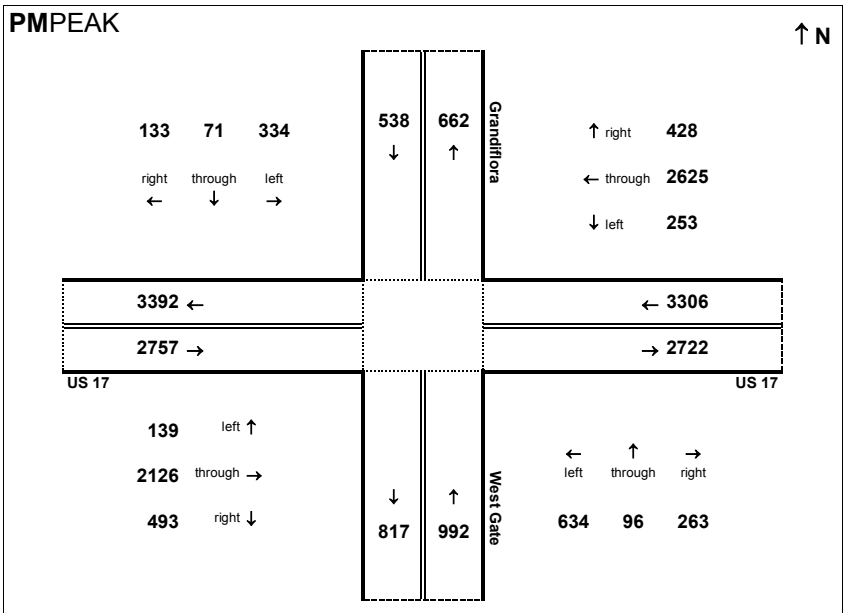
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 7593 vehicles. AM peak hour outflow is 7593 vehicles.



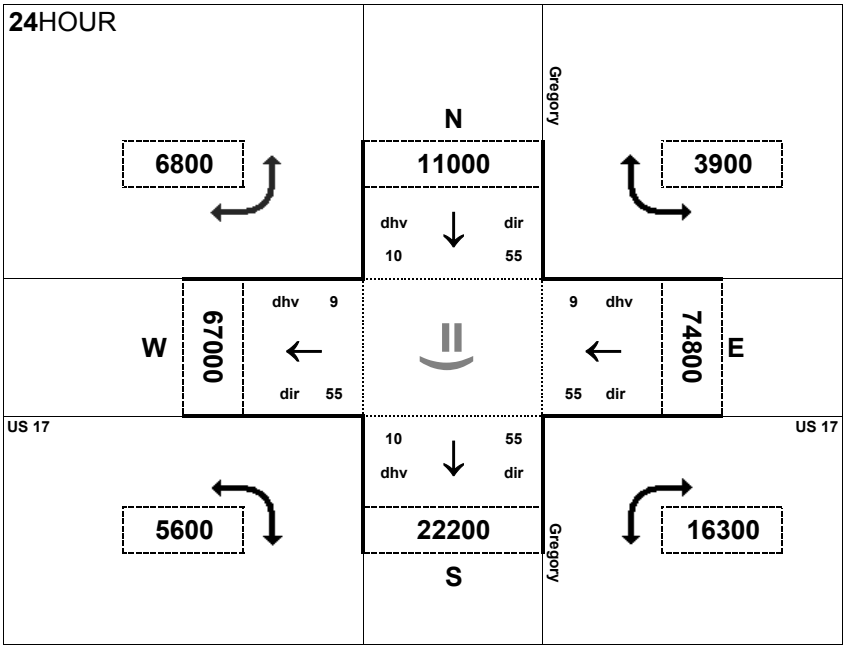
PM peak hour inflow is 7593 vehicles. PM peak hour outflow is 7593 vehicles.

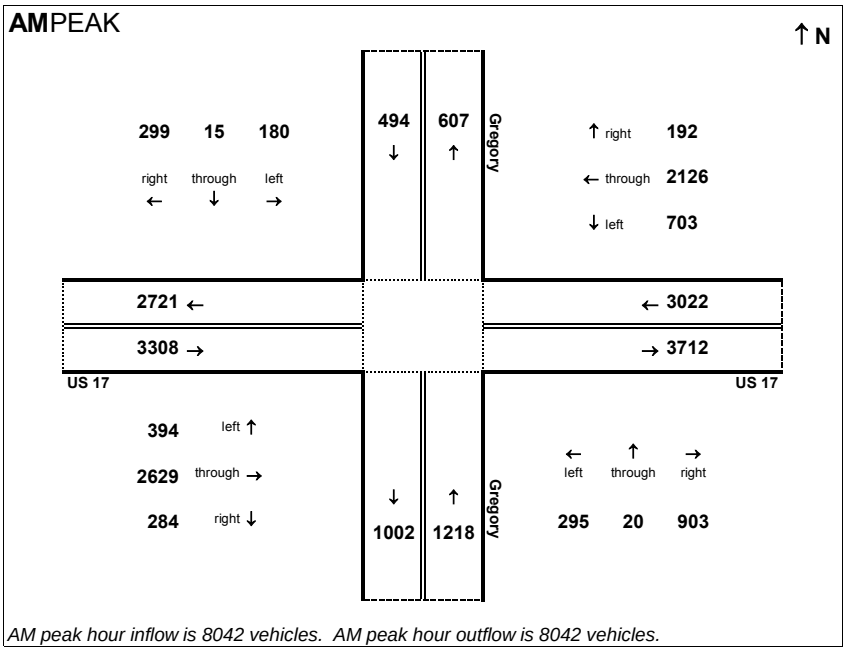
Peak Hour Volume Breakouts Report:
7 - US 17 and Gregory Rd

Traffic Forecast Release Date:
OCt. 2014

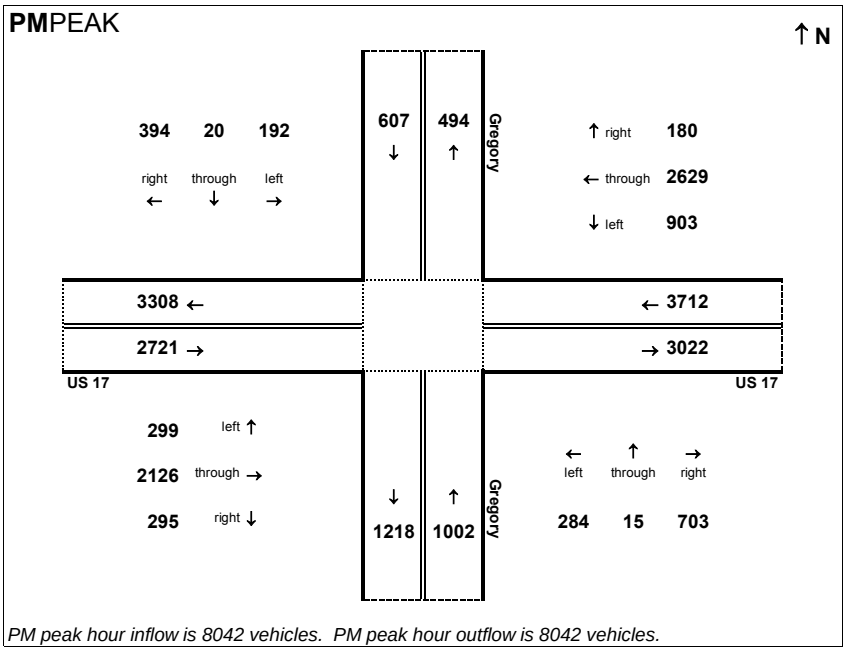
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 8042 vehicles. AM peak hour outflow is 8042 vehicles.



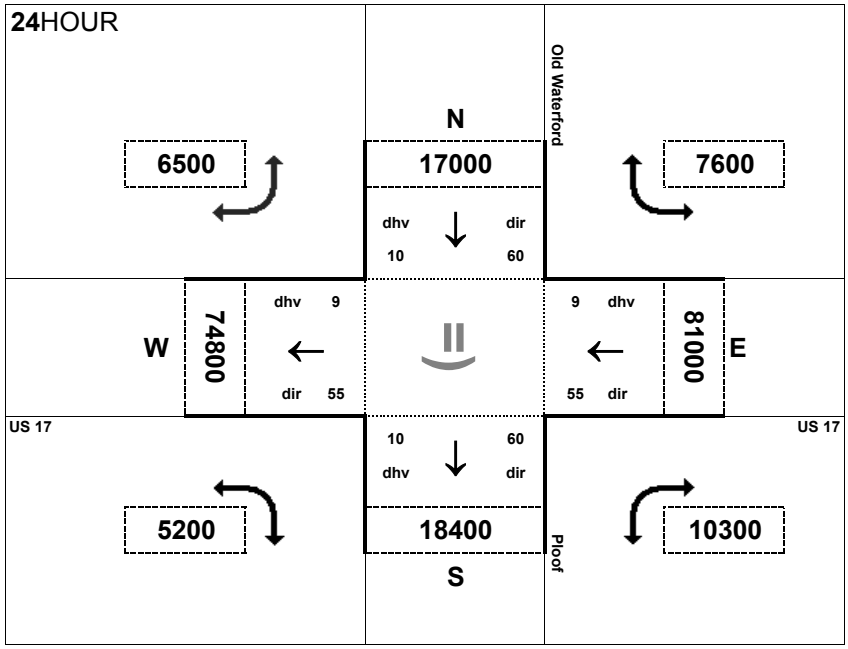
PM peak hour inflow is 8042 vehicles. PM peak hour outflow is 8042 vehicles.

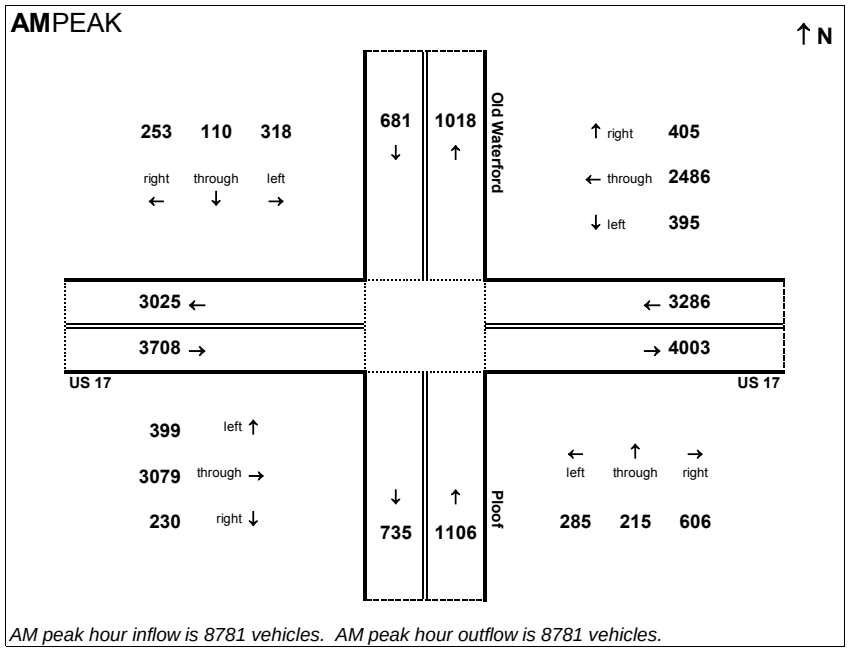
Peak Hour Volume Breakouts Report:
8 - US 17 and Ploof Rd

Traffic Forecast Release Date:
Oct. 2014

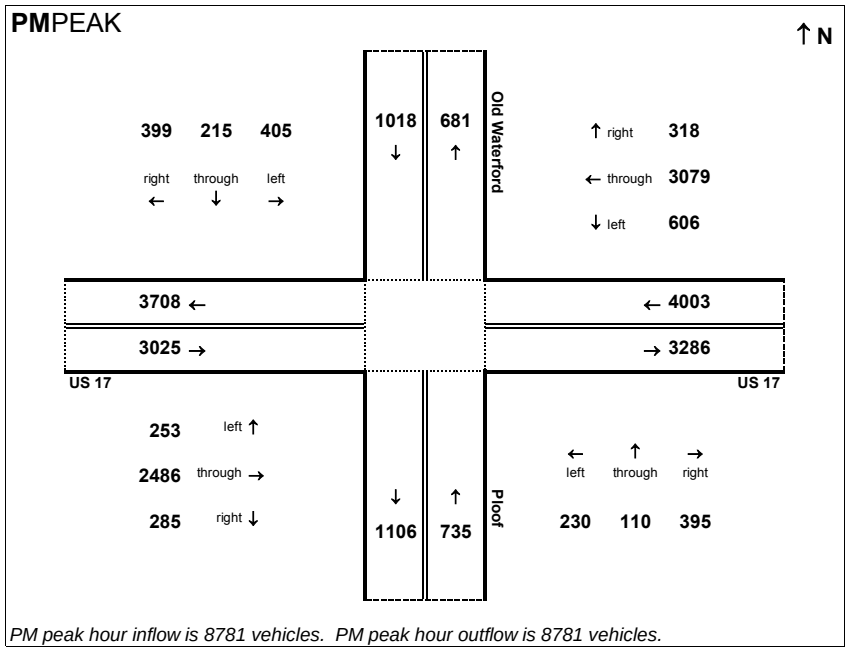
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 8781 vehicles. AM peak hour outflow is 8781 vehicles.



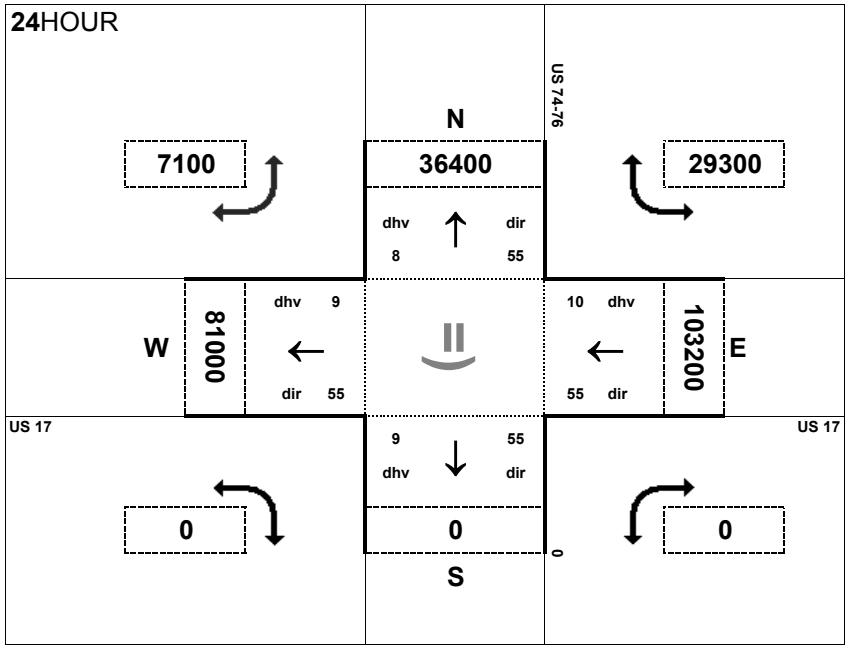
PM peak hour inflow is 8781 vehicles. PM peak hour outflow is 8781 vehicles.

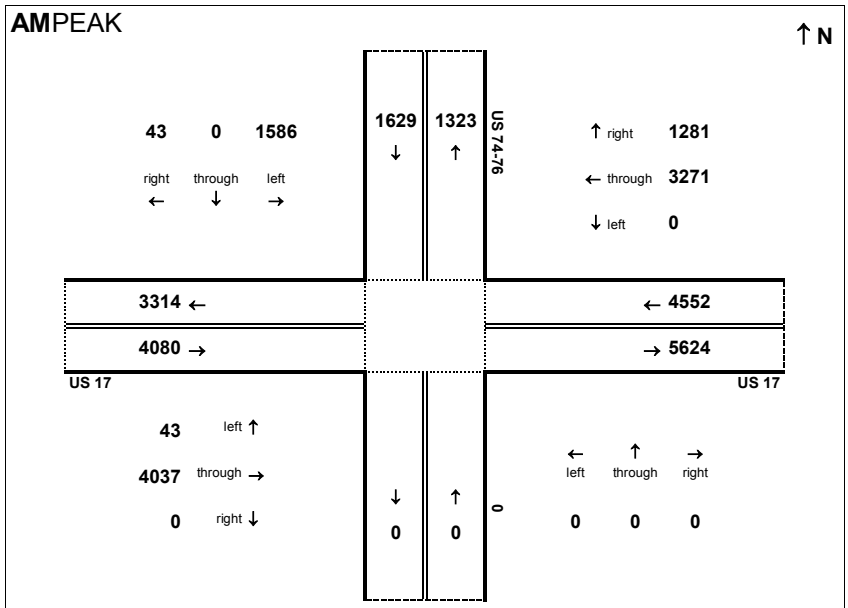
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

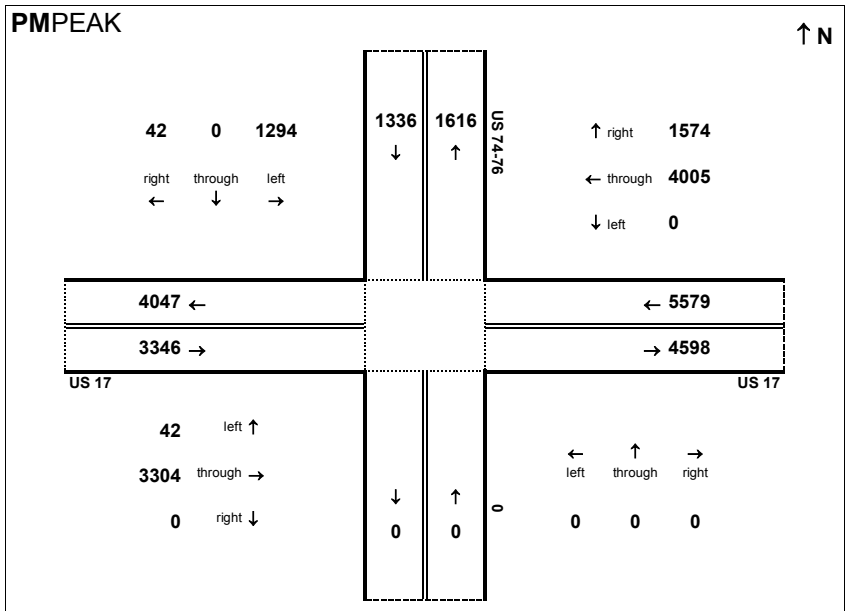
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 10261 vehicles. AM peak hour outflow is 10261 vehicles.



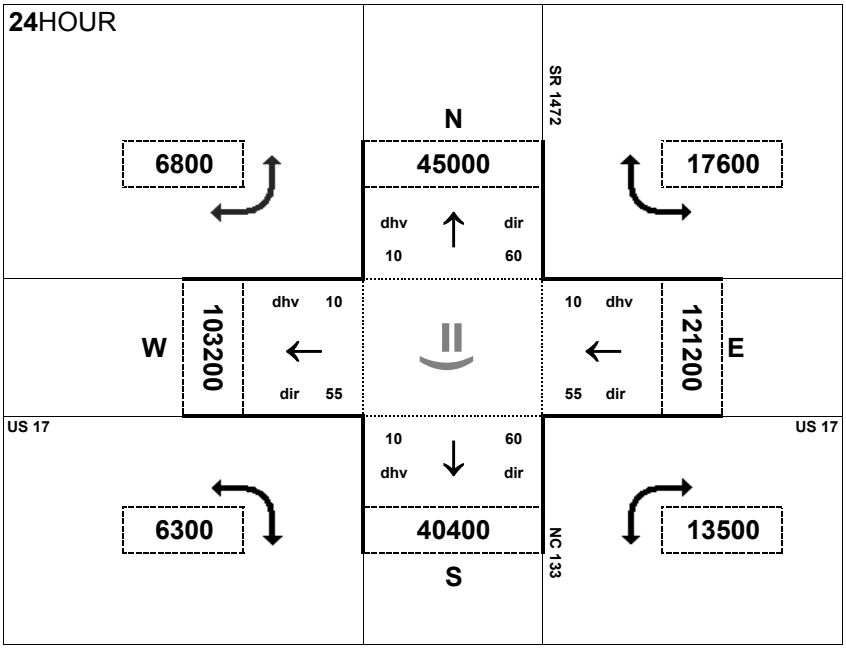
PM peak hour inflow is 10261 vehicles. PM peak hour outflow is 10261 vehicles.

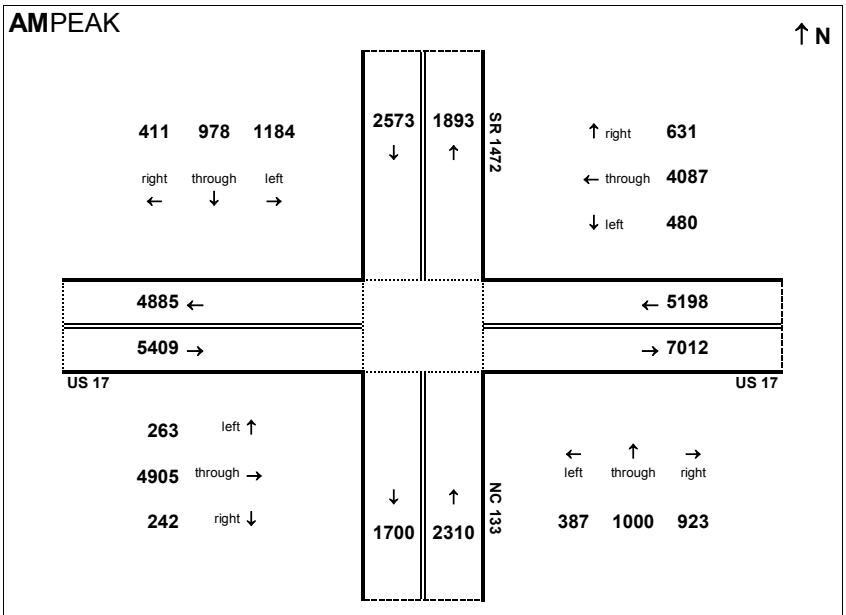
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

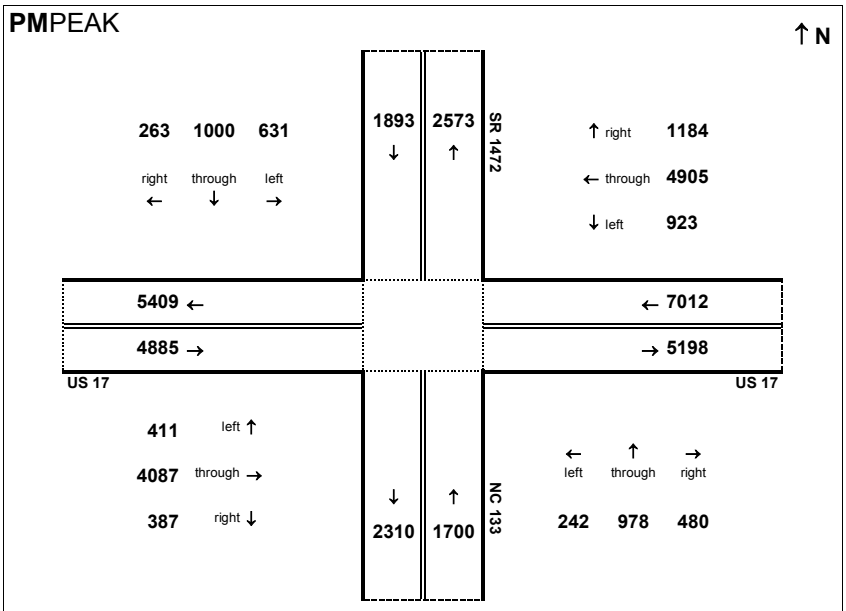
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 15490 vehicles. AM peak hour outflow is 15490 vehicles.



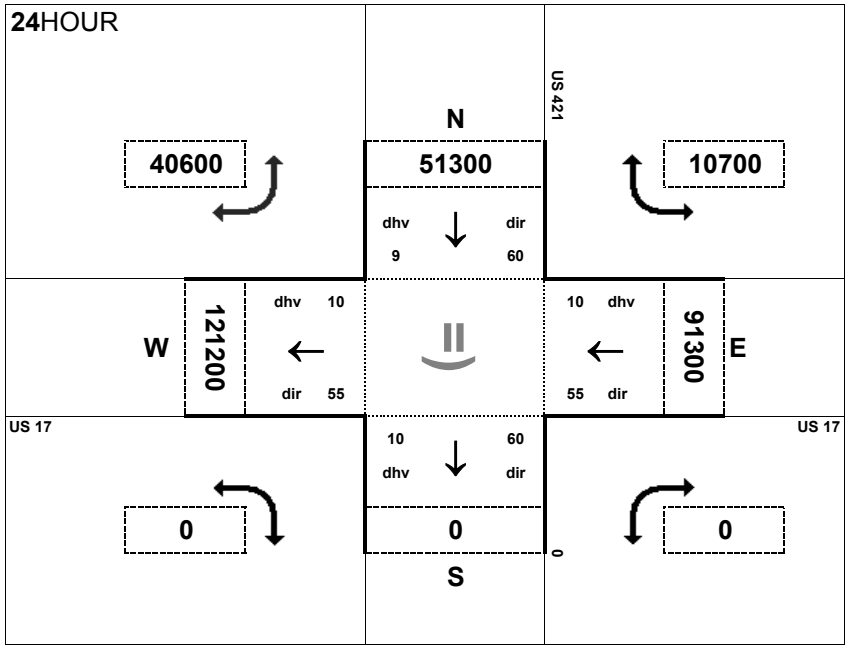
PM peak hour inflow is 15490 vehicles. PM peak hour outflow is 15490 vehicles.

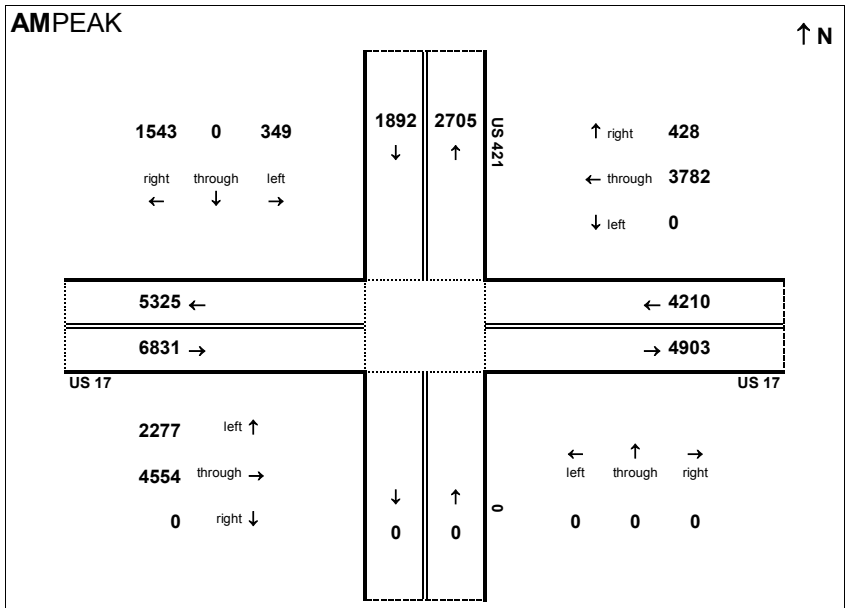
Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

Traffic Forecast Release Date:
Oct. 2014

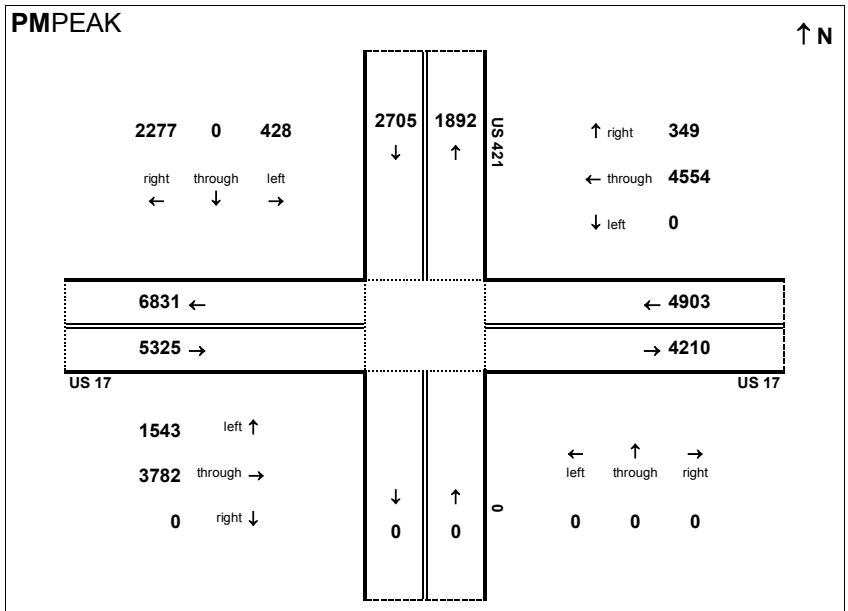
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 12933 vehicles. AM peak hour outflow is 12933 vehicles.



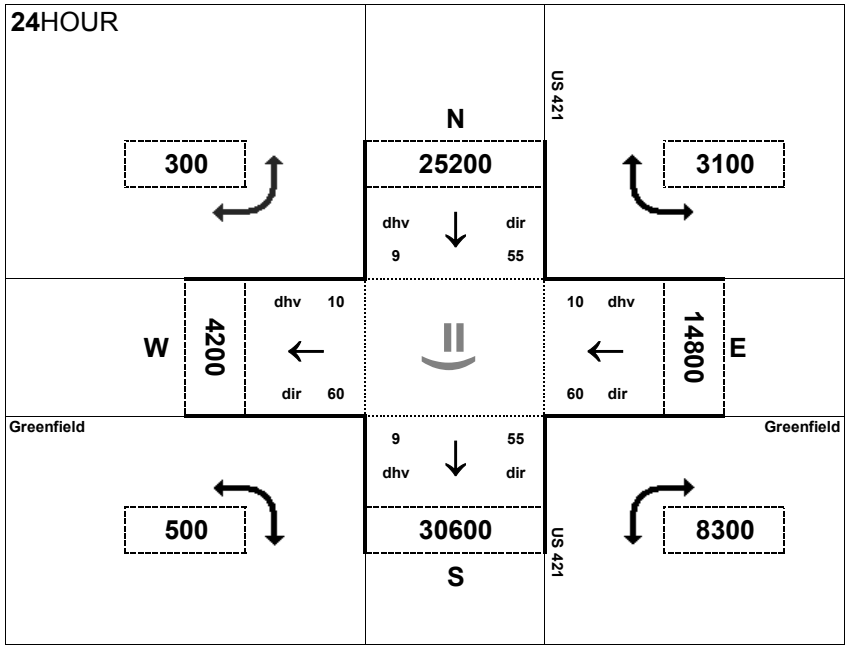
PM peak hour inflow is 12933 vehicles. PM peak hour outflow is 12933 vehicles.

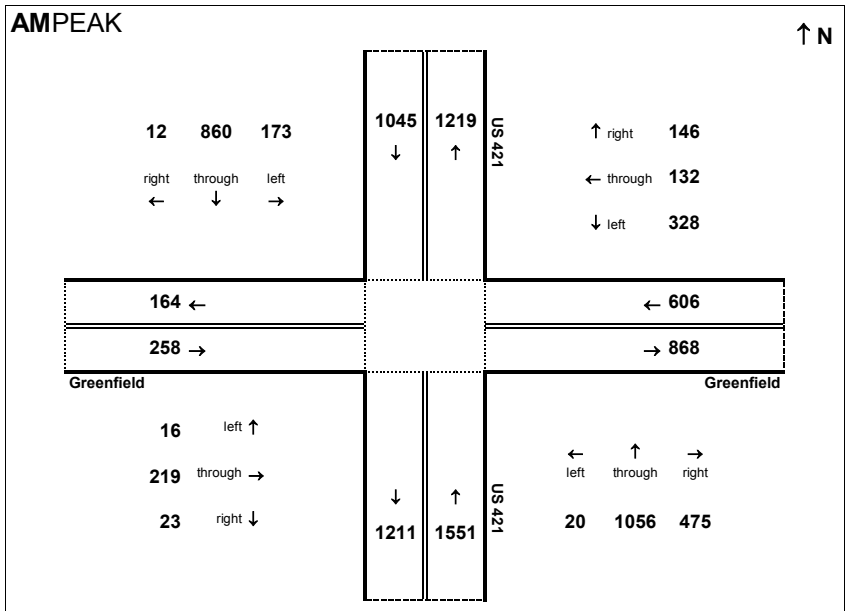
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

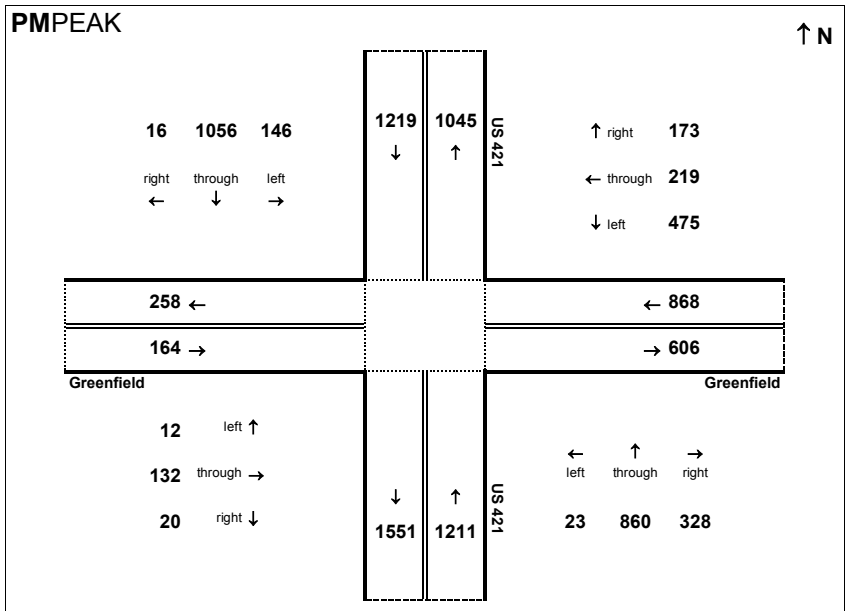
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 3460 vehicles. AM peak hour outflow is 3462 vehicles.



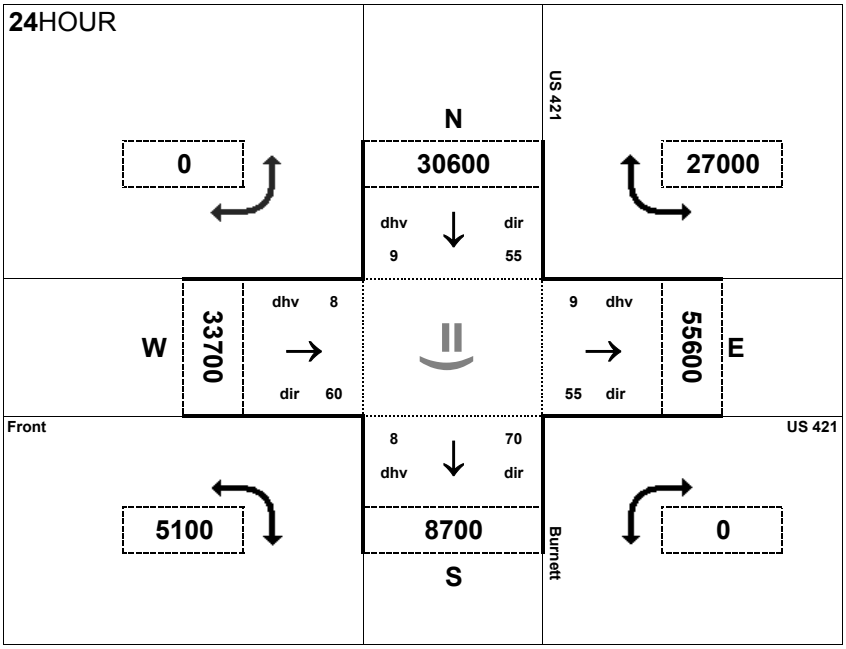
PM peak hour inflow is 3462 vehicles. PM peak hour outflow is 3460 vehicles.

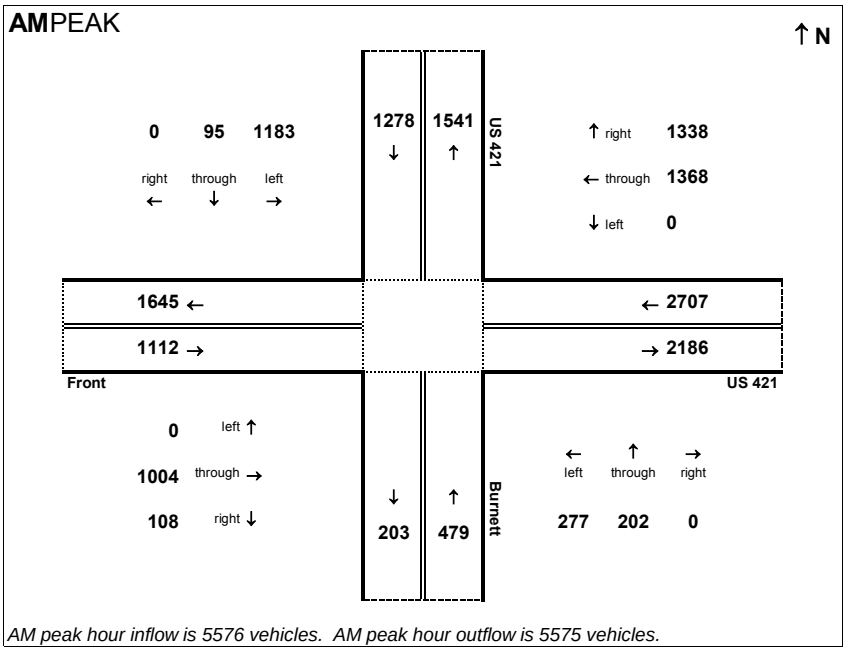
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

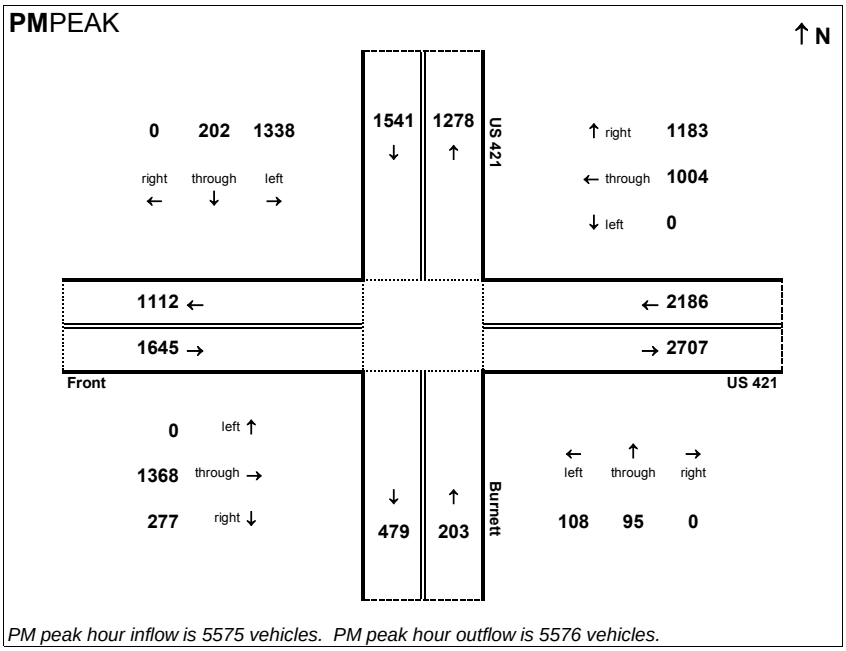
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 5576 vehicles. AM peak hour outflow is 5575 vehicles.



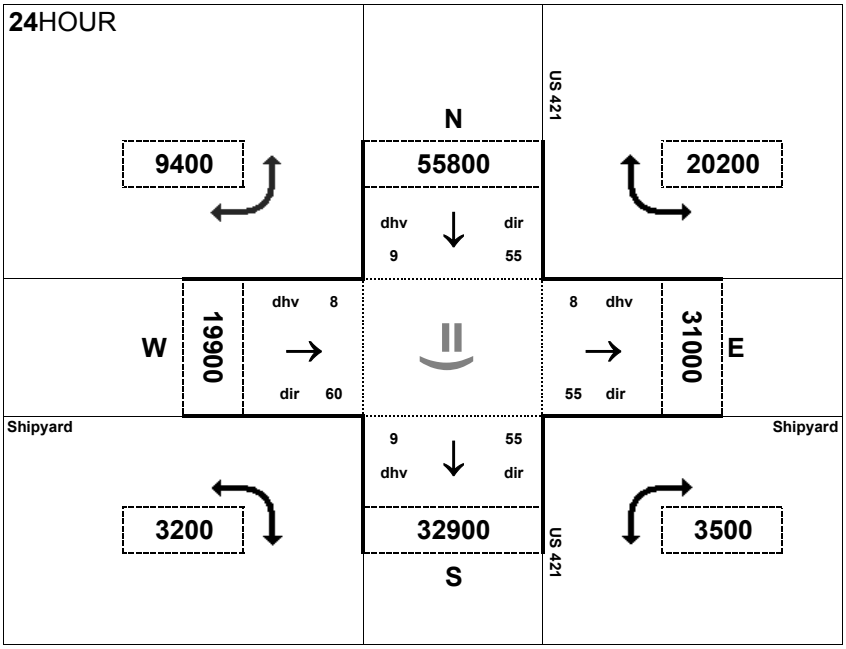
PM peak hour inflow is 5575 vehicles. PM peak hour outflow is 5576 vehicles.

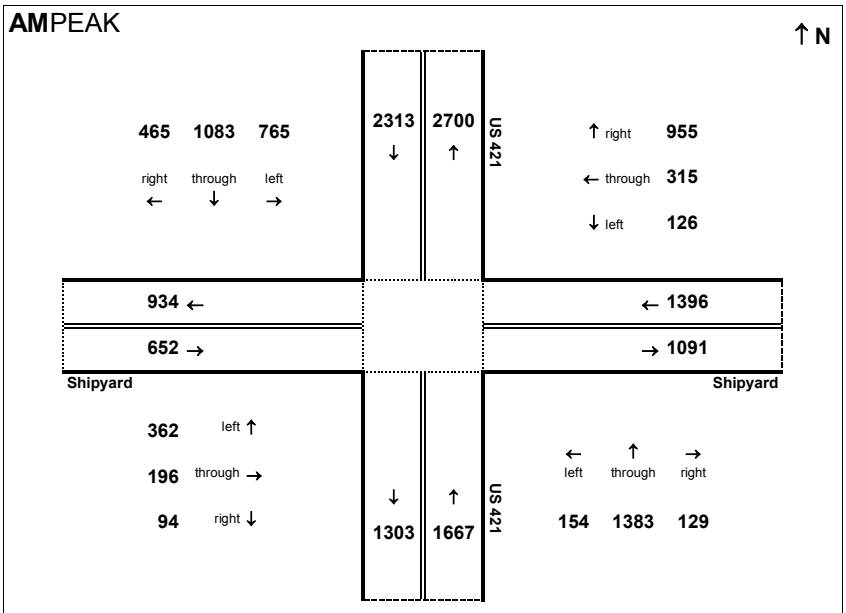
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

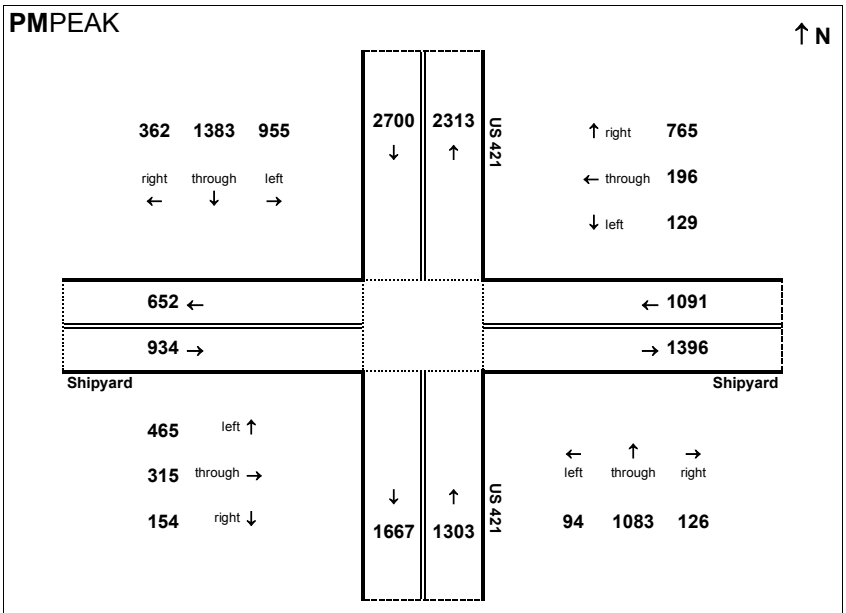
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 6028 vehicles. AM peak hour outflow is 6028 vehicles.



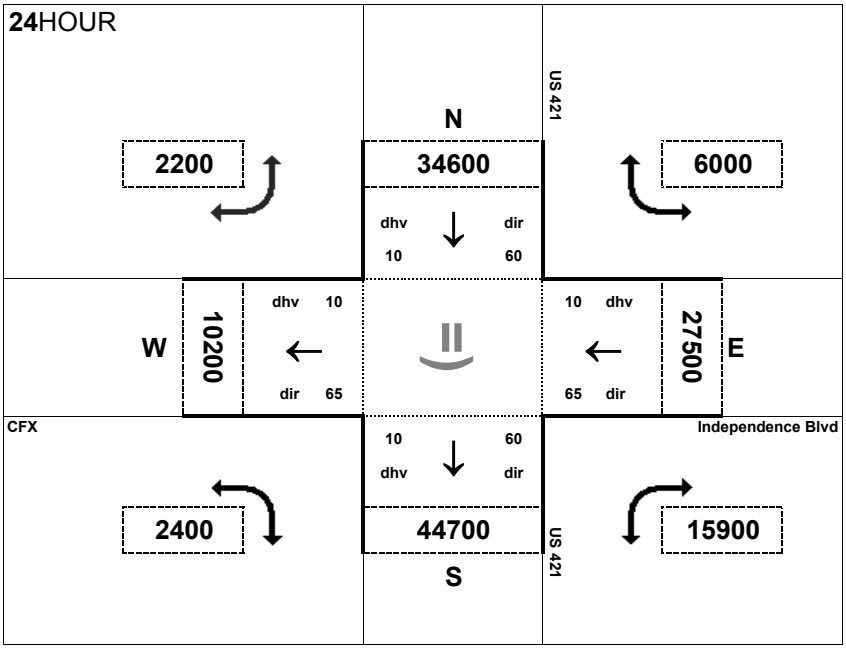
PM peak hour inflow is 6028 vehicles. PM peak hour outflow is 6028 vehicles.

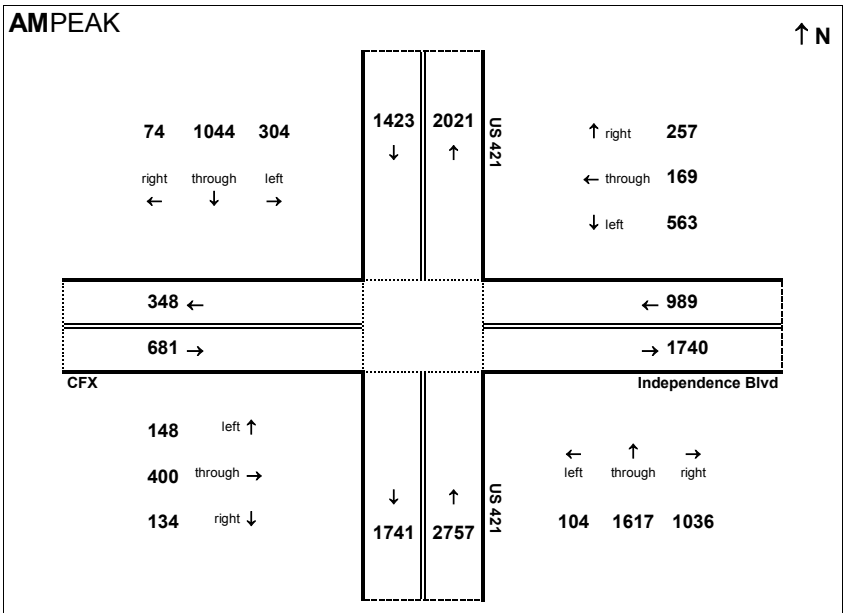
Peak Hour Volume Breakouts Report:
107 - CFX and US 421 - Independence

Traffic Forecast Release Date:
Oct. 2014

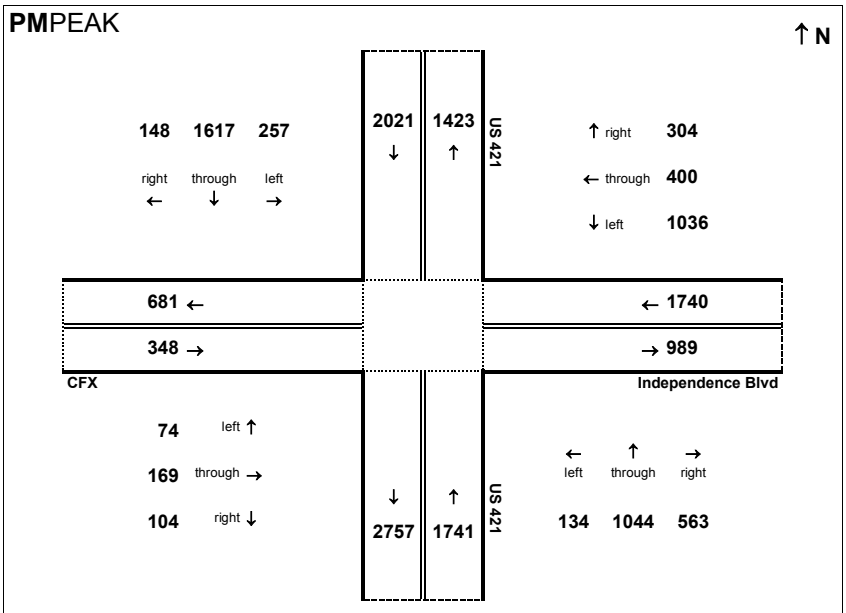
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 5850 vehicles. AM peak hour outflow is 5850 vehicles.



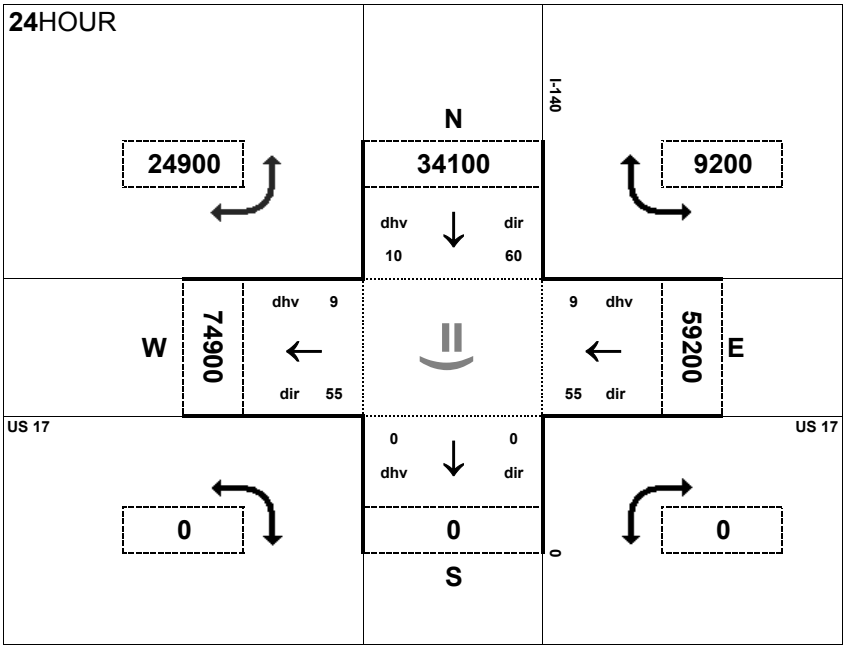
PM peak hour inflow is 5850 vehicles. PM peak hour outflow is 5850 vehicles.

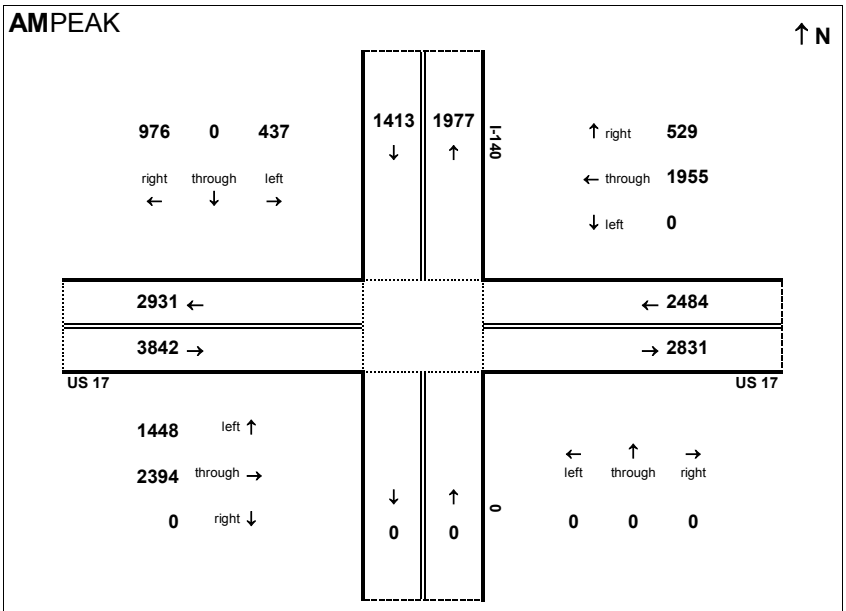
Peak Hour Volume Breakouts Report:
43 - Interchange of I-140 and US 17

Traffic Forecast Release Date:
Oct. 2014

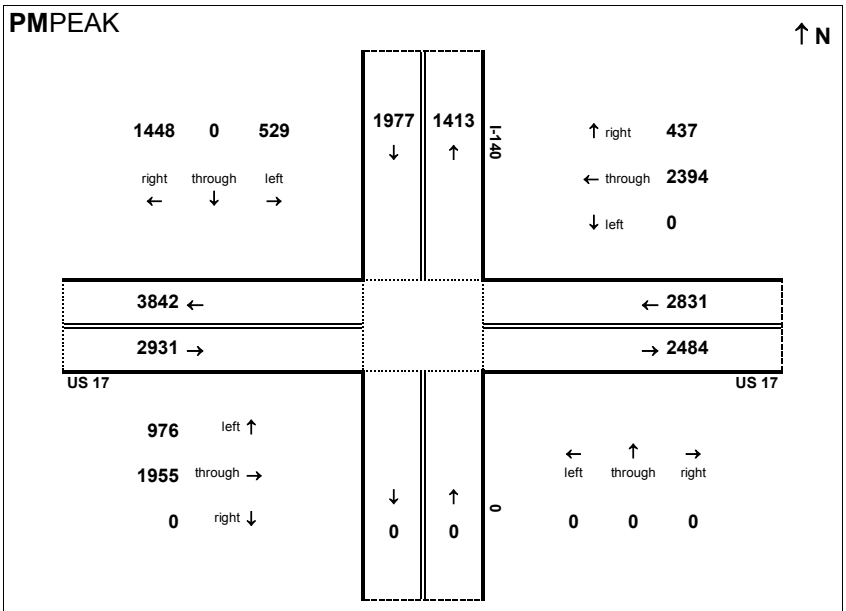
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 7739 vehicles. AM peak hour outflow is 7739 vehicles.



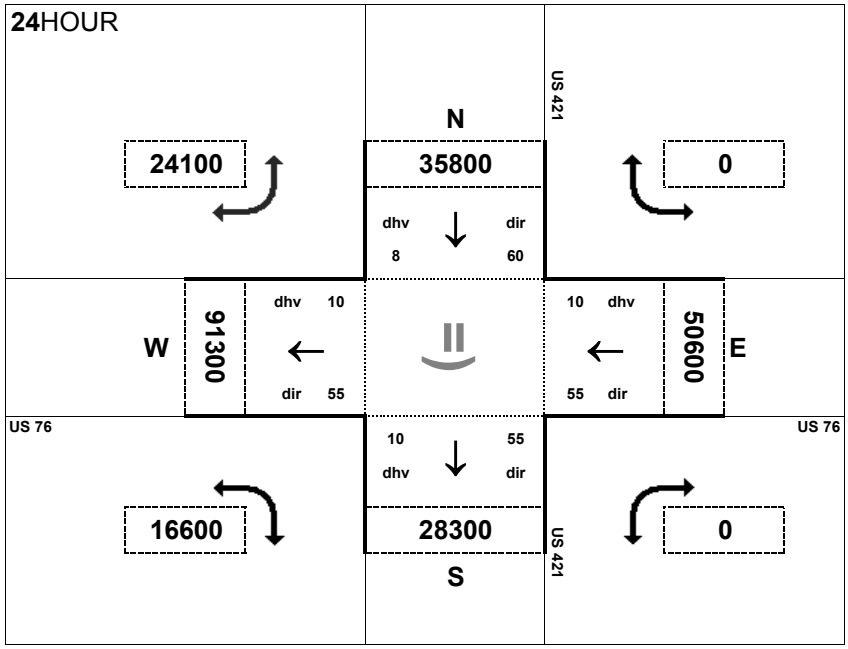
PM peak hour inflow is 7739 vehicles. PM peak hour outflow is 7739 vehicles.

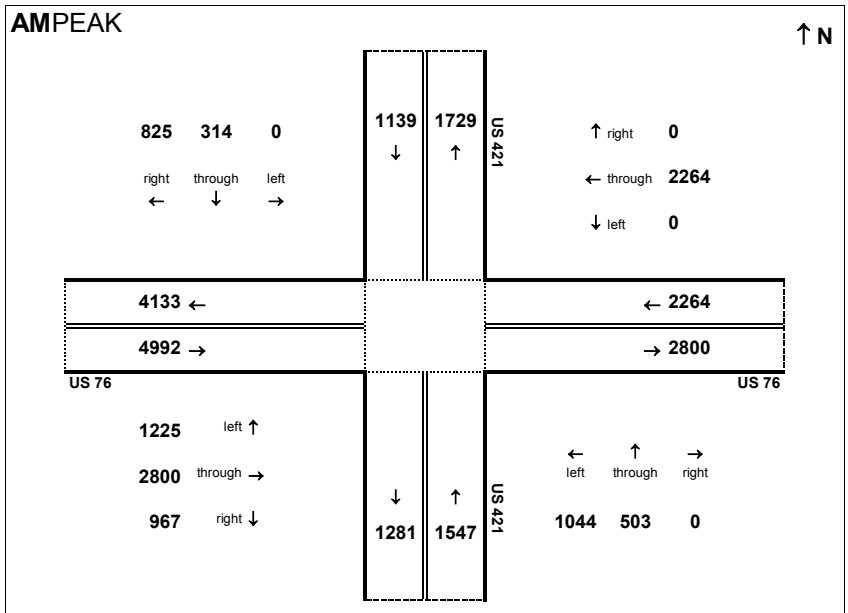
Peak Hour Volume Breakouts Report:
110 - US 76 at US 17 Bus-US 421

Traffic Forecast Release Date:
Oct. 2014

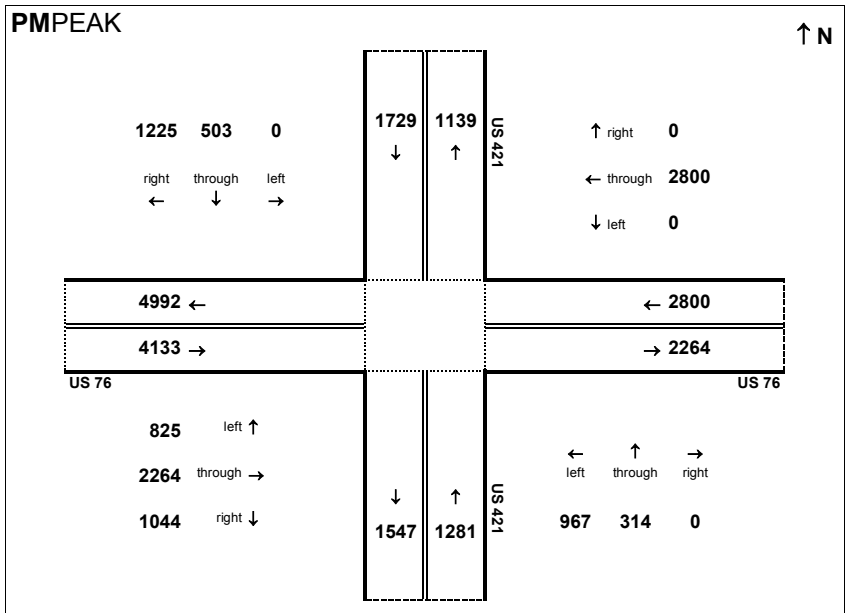
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. F





AM peak hour inflow is 9942 vehicles. AM peak hour outflow is 9943 vehicles.



PM peak hour inflow is 9943 vehicles. PM peak hour outflow is 9942 vehicles.

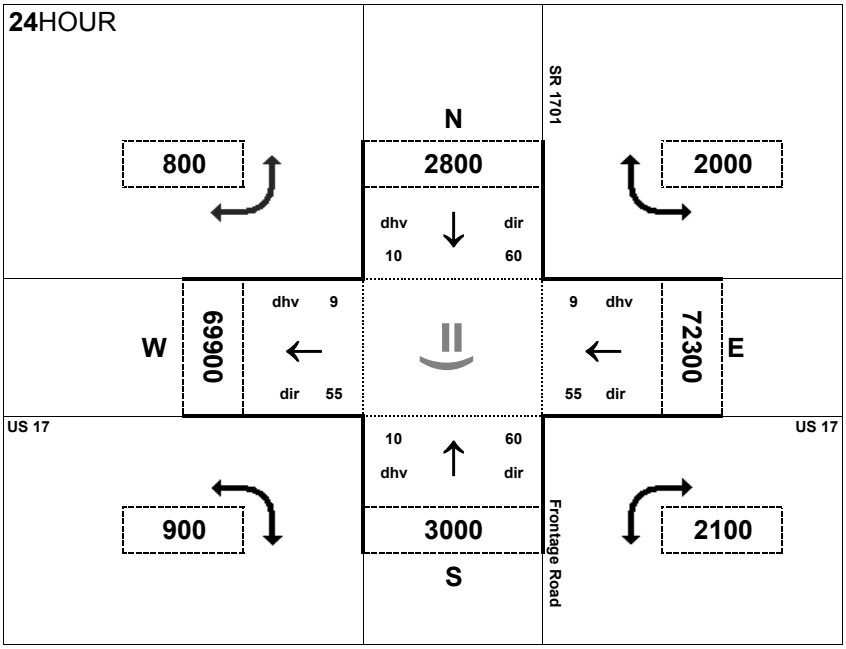
2040 Build DSA Alternative G

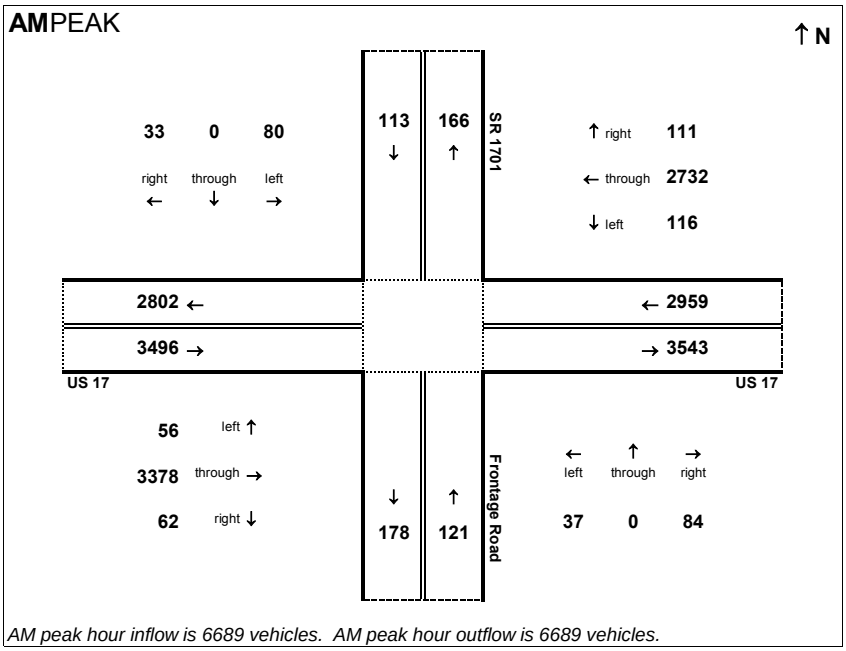
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

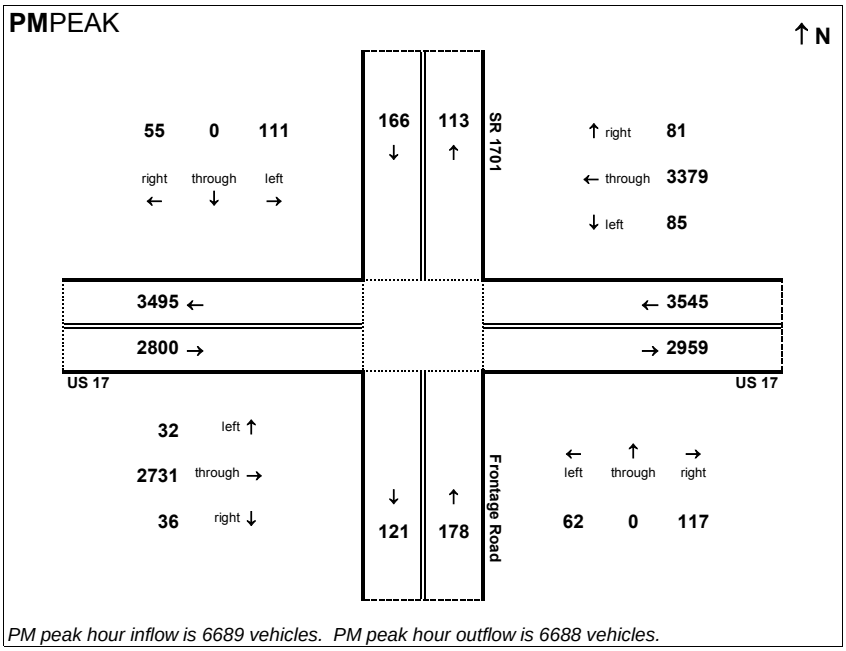
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



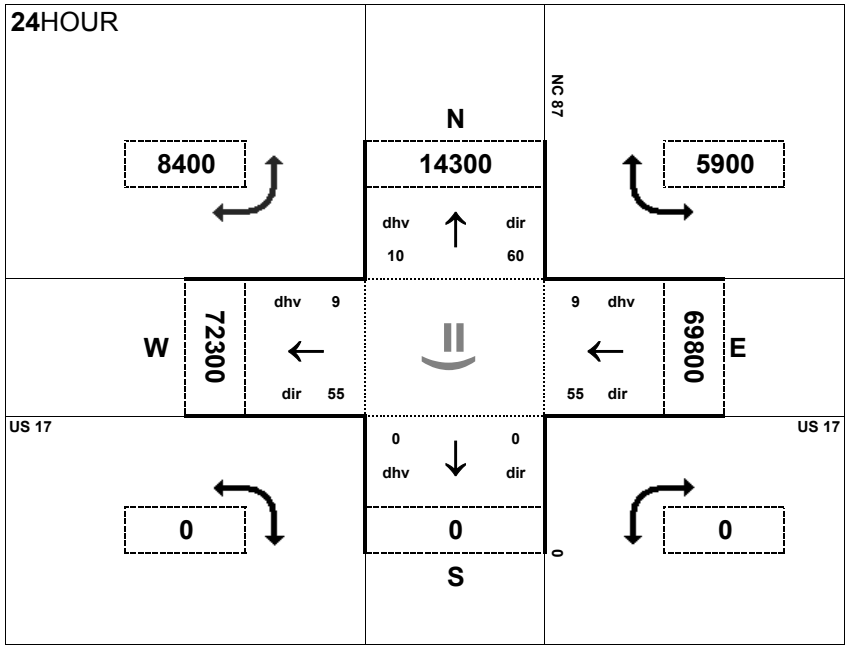
PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

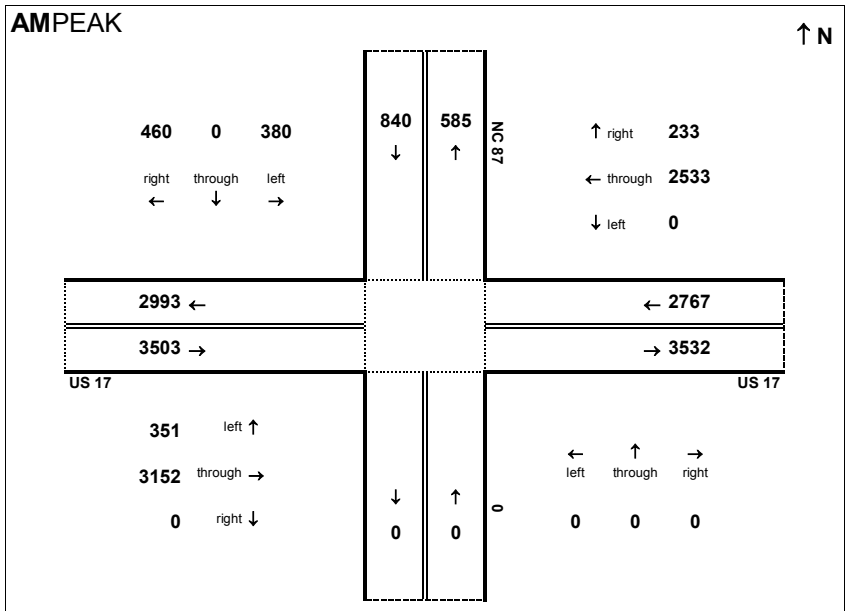
Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

Traffic Forecast Release Date:
Oct. 2014

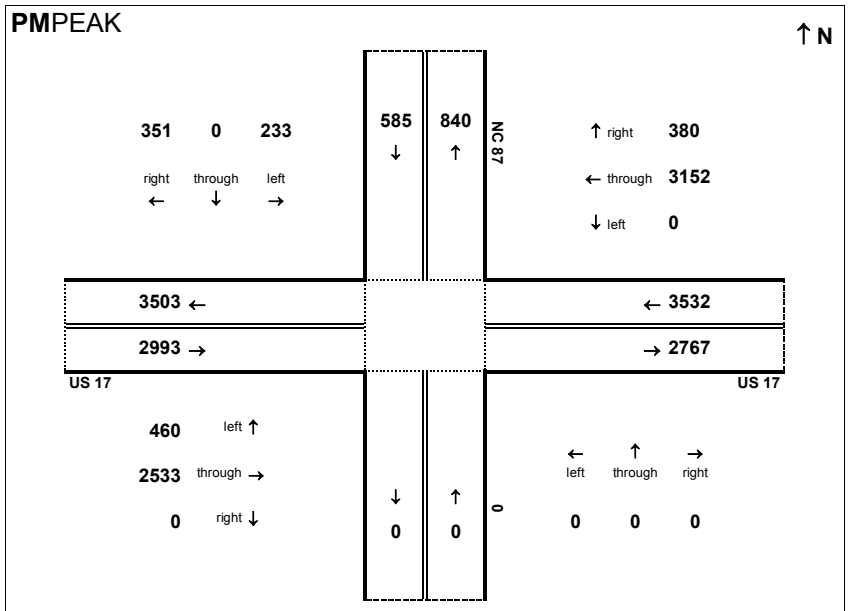
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



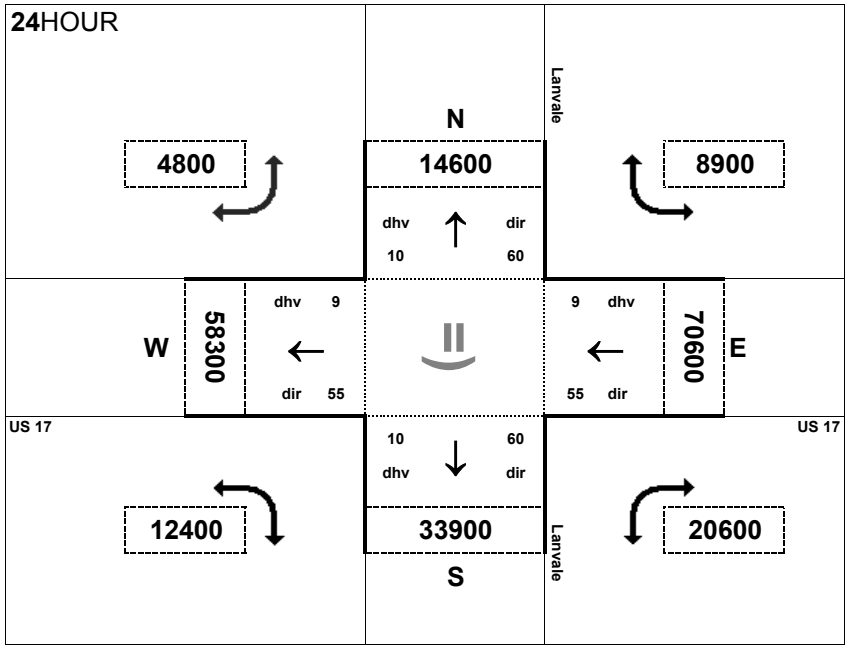
PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

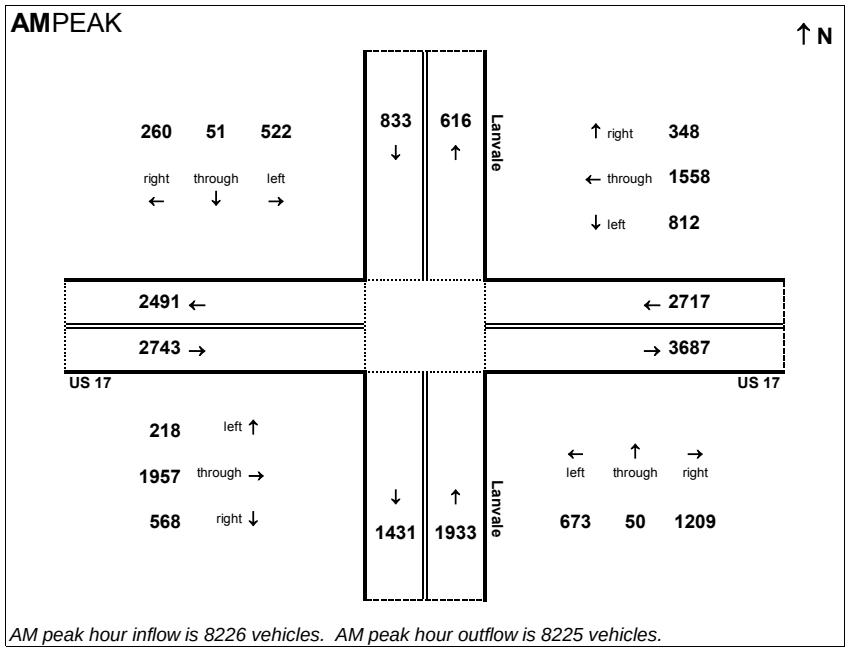
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

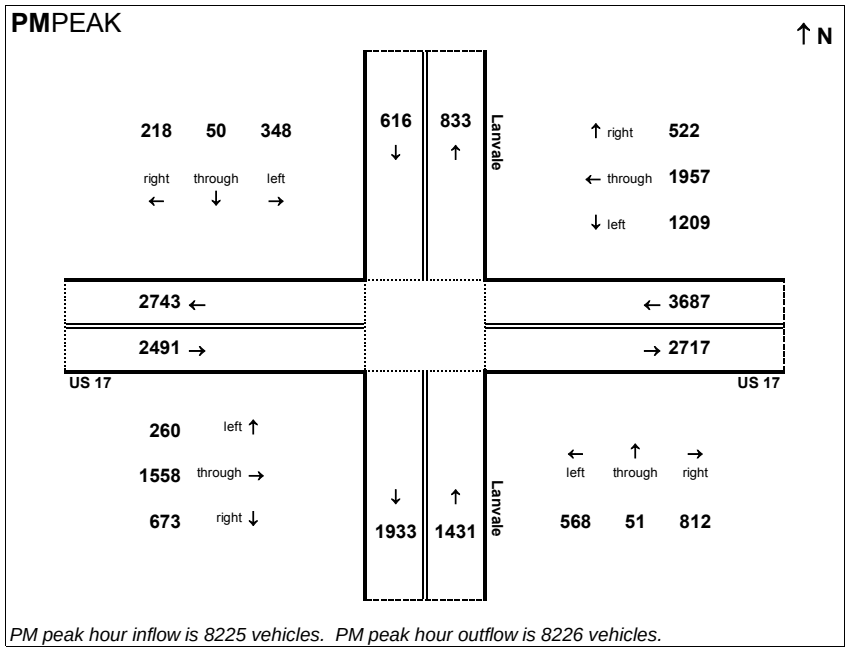
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 8226 vehicles. AM peak hour outflow is 8225 vehicles.



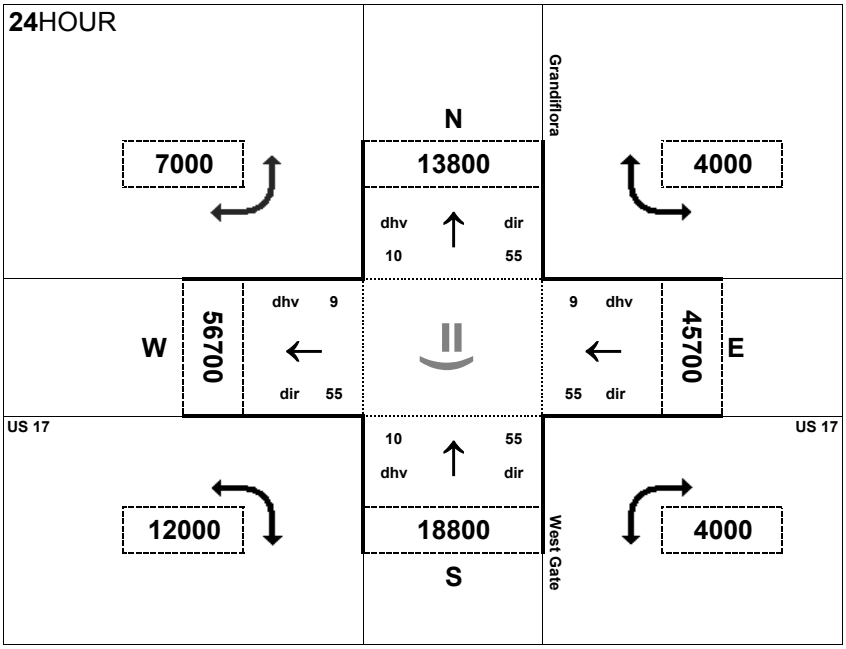
PM peak hour inflow is 8225 vehicles. PM peak hour outflow is 8226 vehicles.

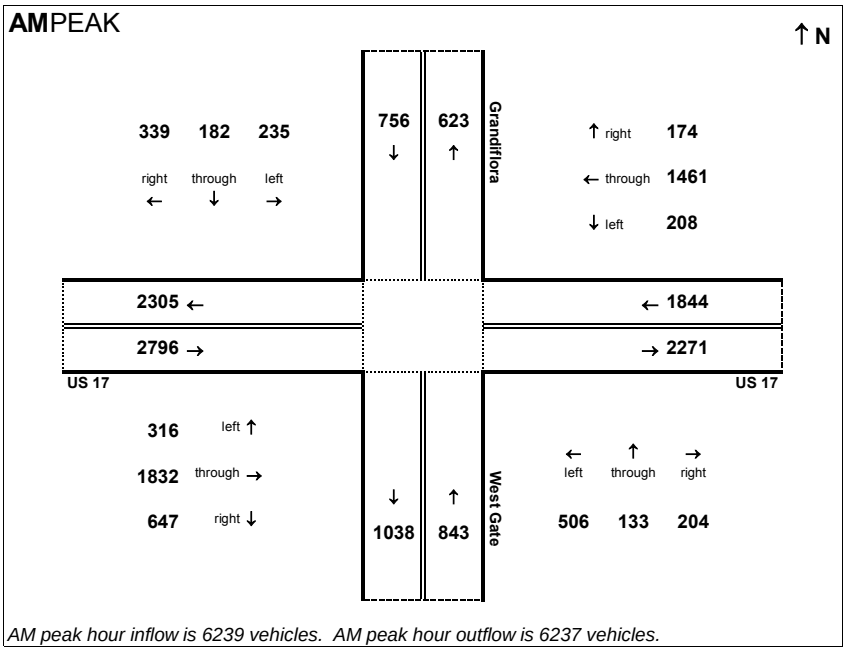
Peak Hour Volume Breakouts Report:
06 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

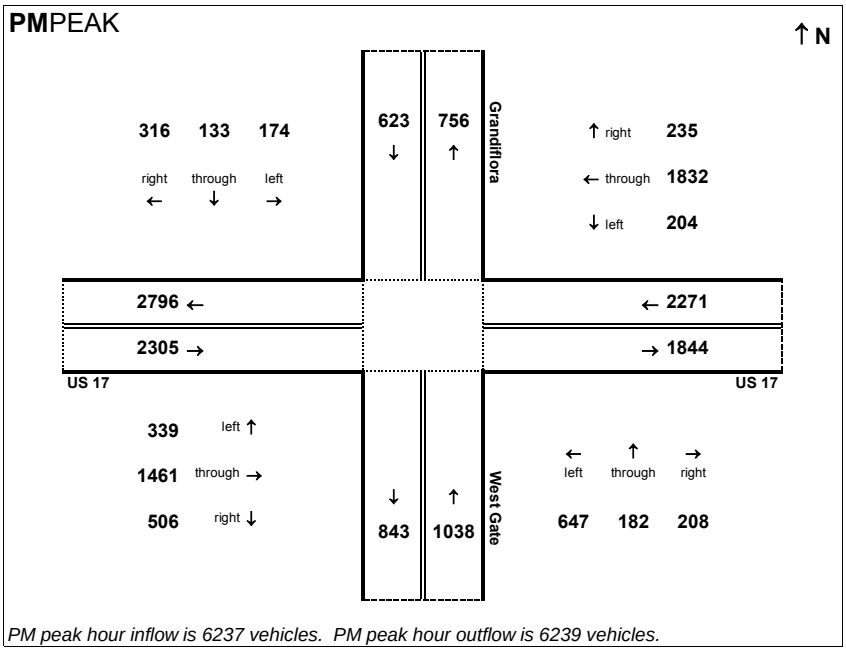
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



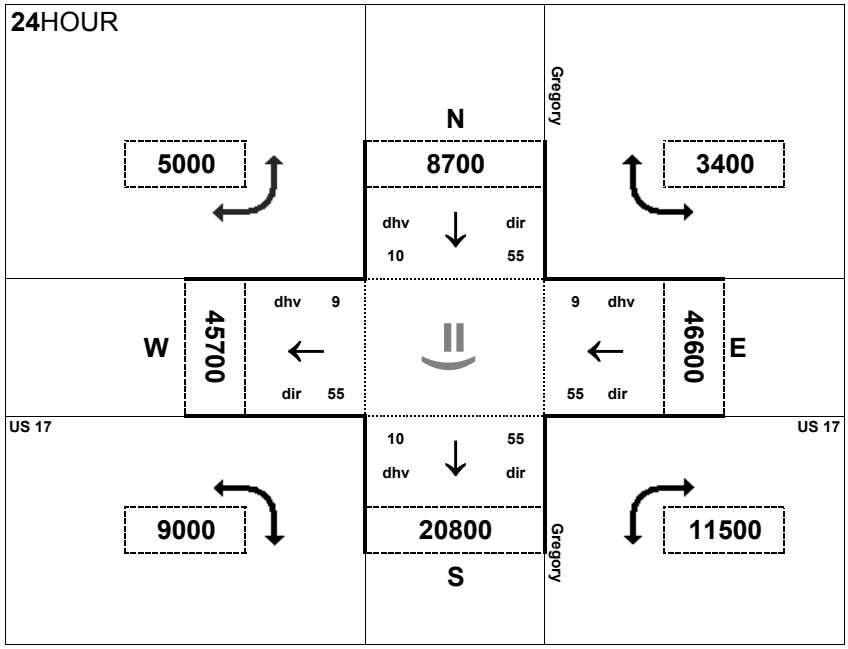
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

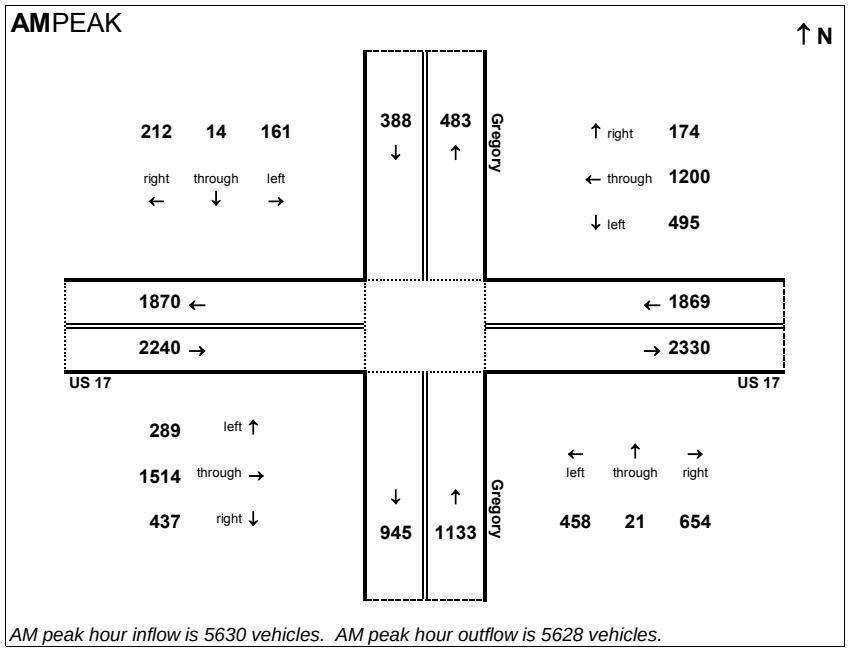
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

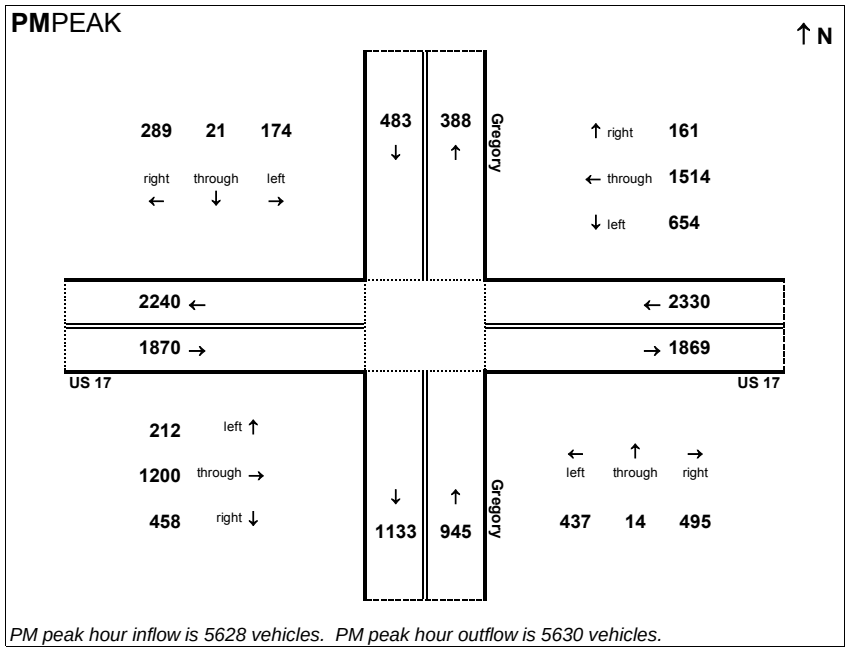
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

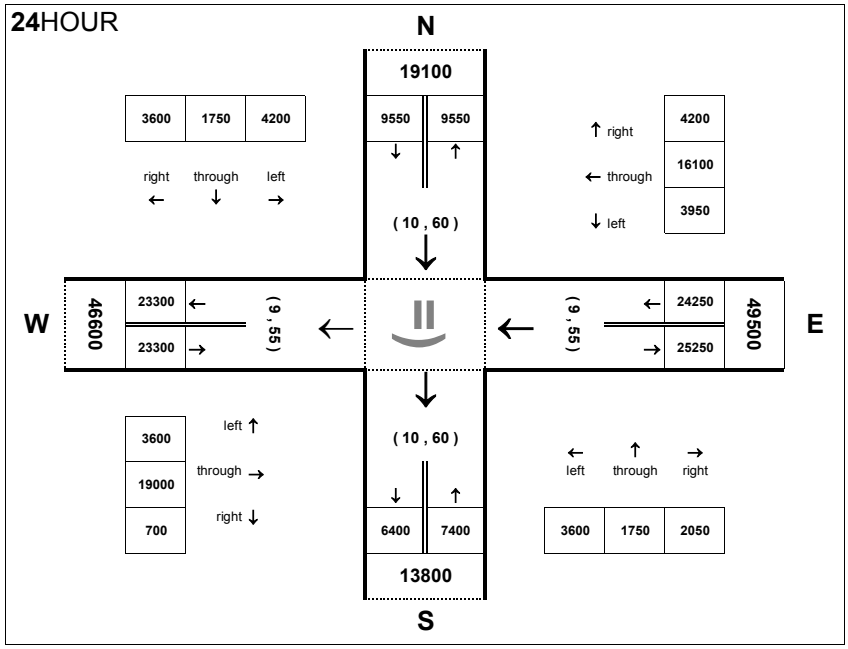


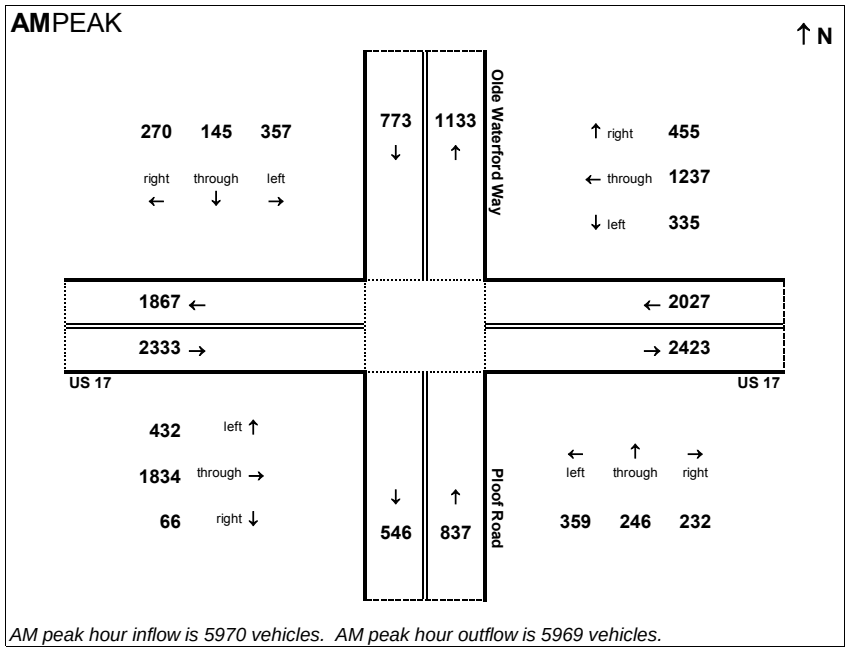
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

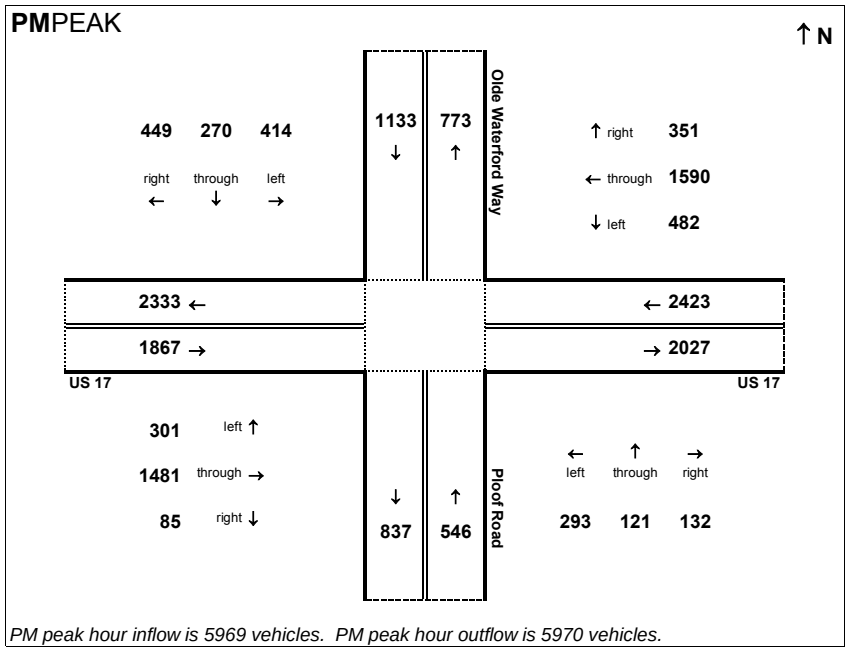
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. G





AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



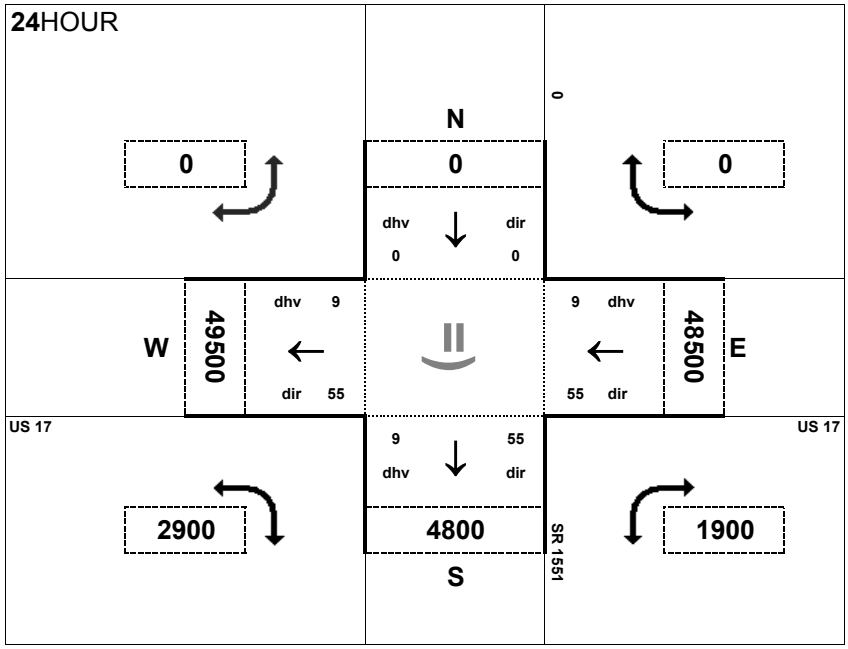
PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

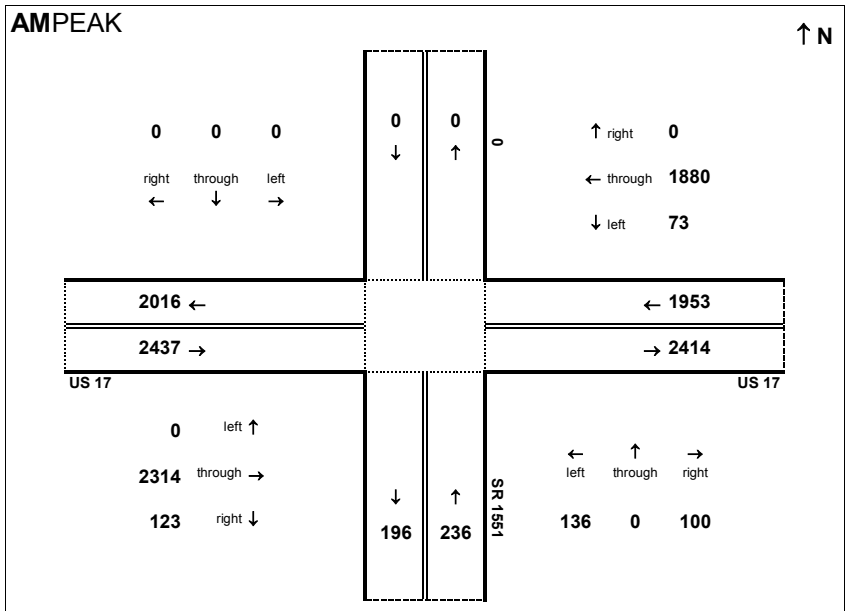
Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

Traffic Forecast Release Date:
Oct. 2014

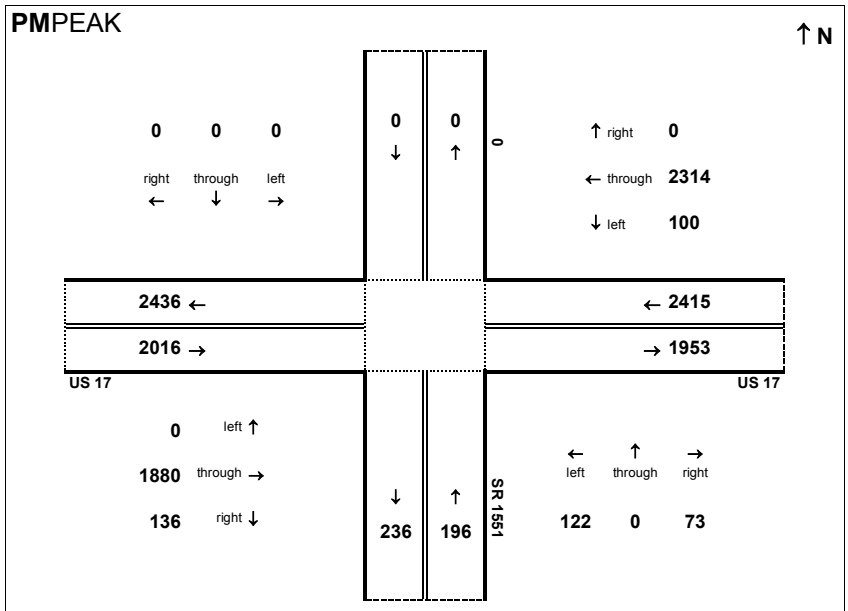
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



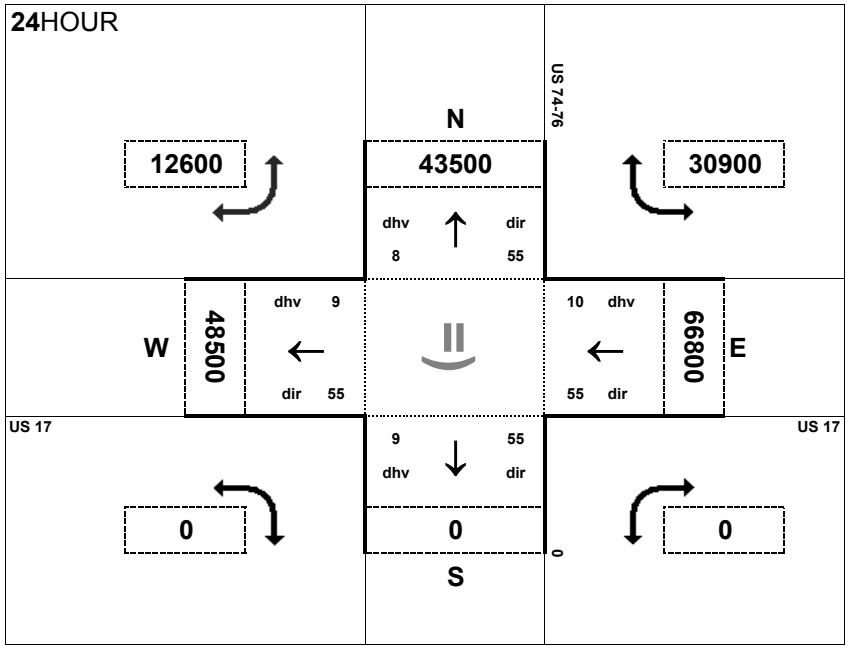
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

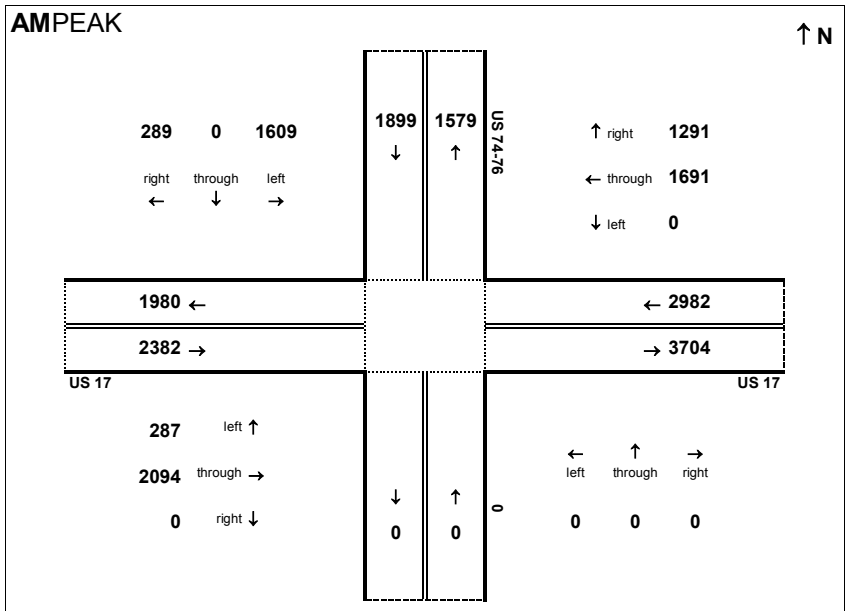
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

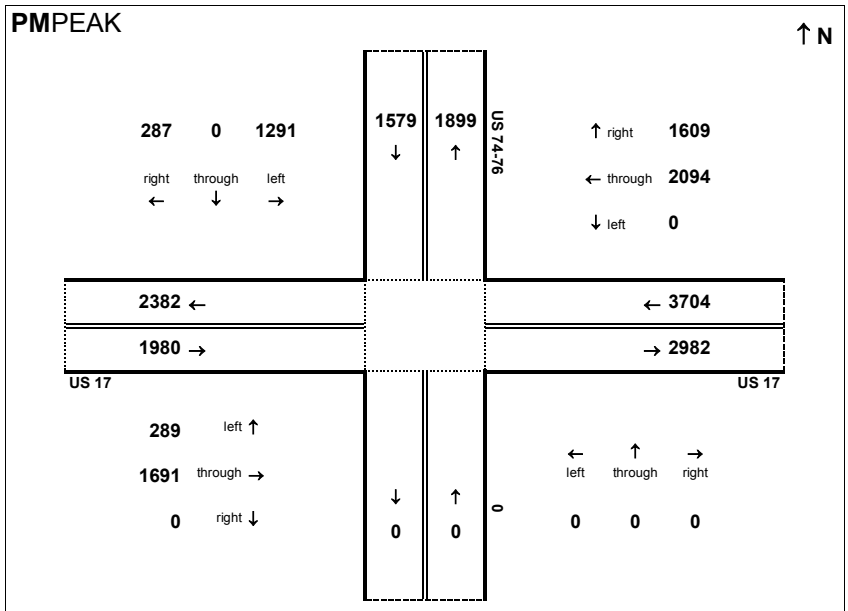
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 7263 vehicles. AM peak hour outflow is 7263 vehicles.



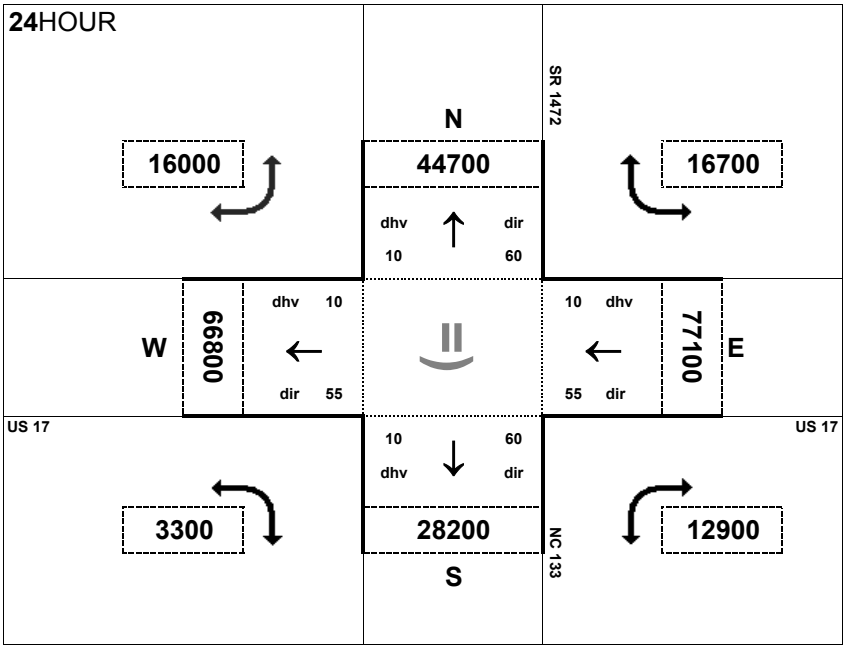
PM peak hour inflow is 7263 vehicles. PM peak hour outflow is 7263 vehicles.

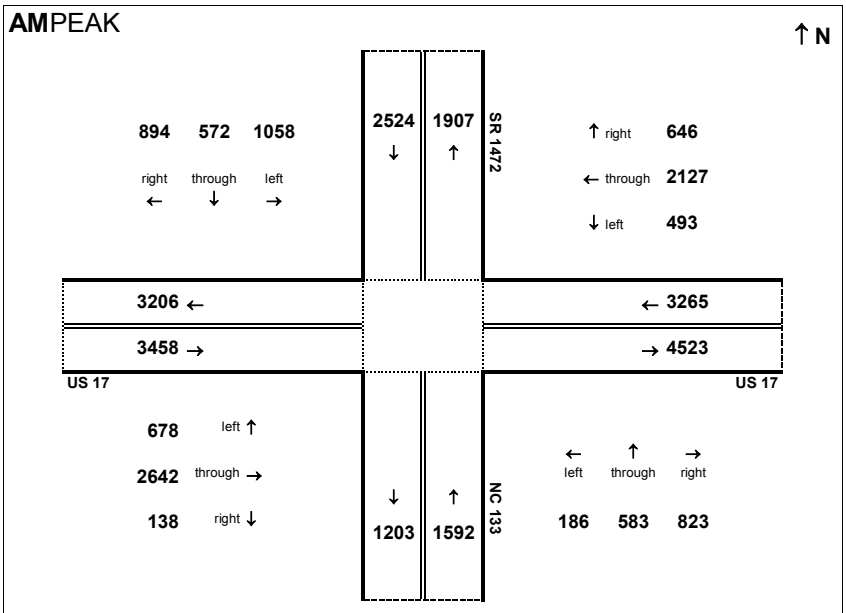
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

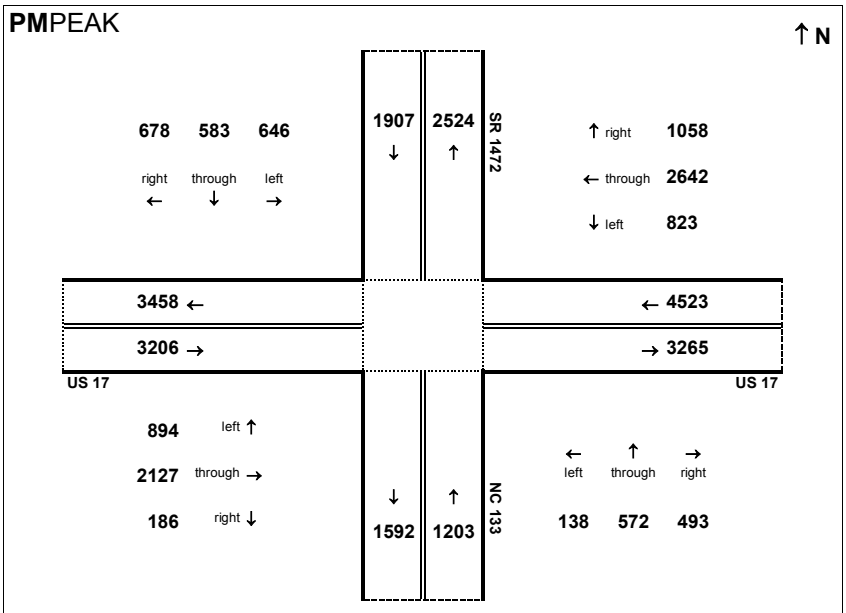
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G

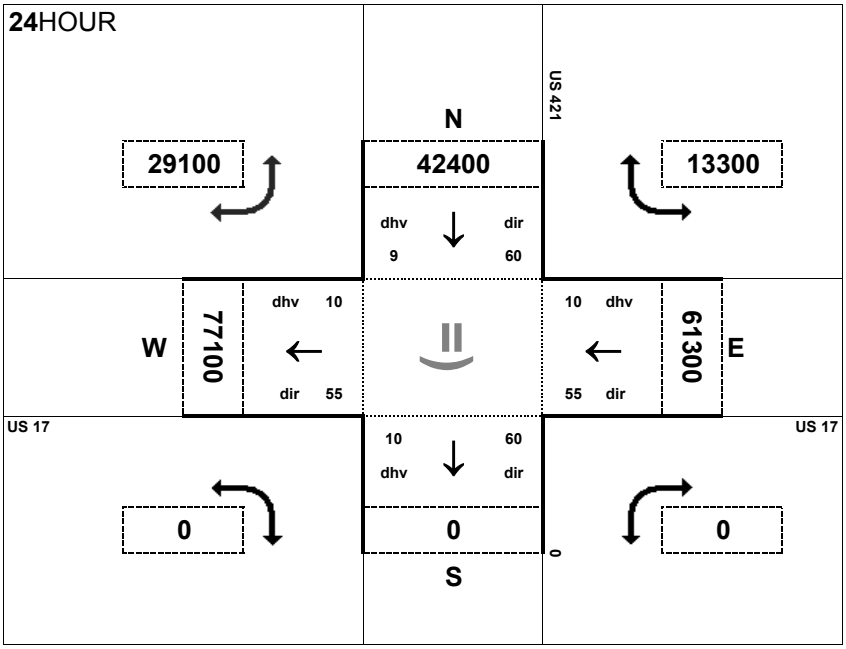




AM peak hour inflow is 10839 vehicles. AM peak hour outflow is 10839 vehicles.



PM peak hour inflow is 10839 vehicles. PM peak hour outflow is 10839 vehicles.

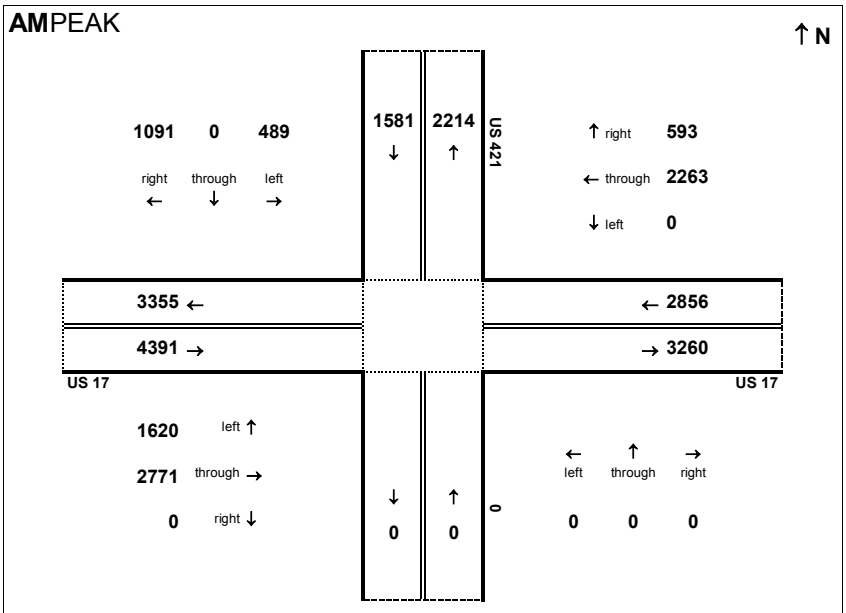


Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

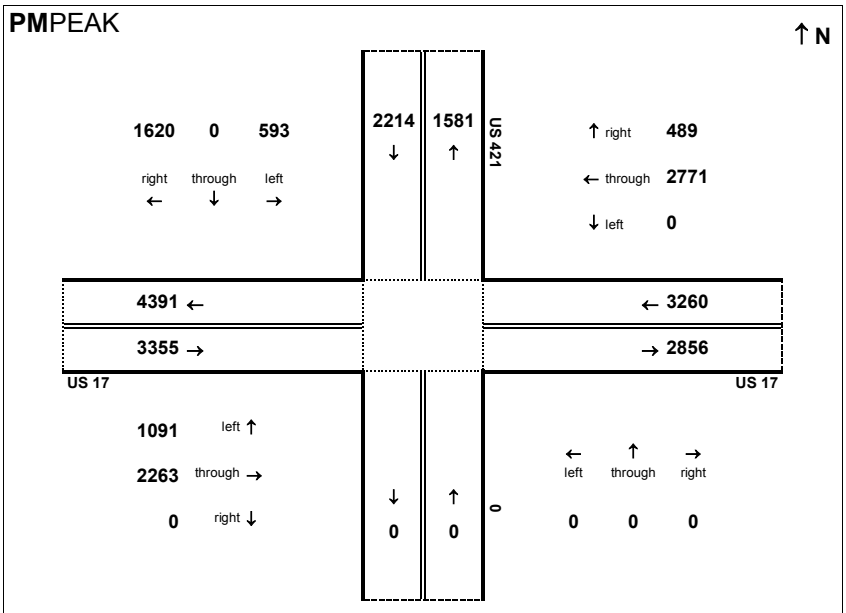
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

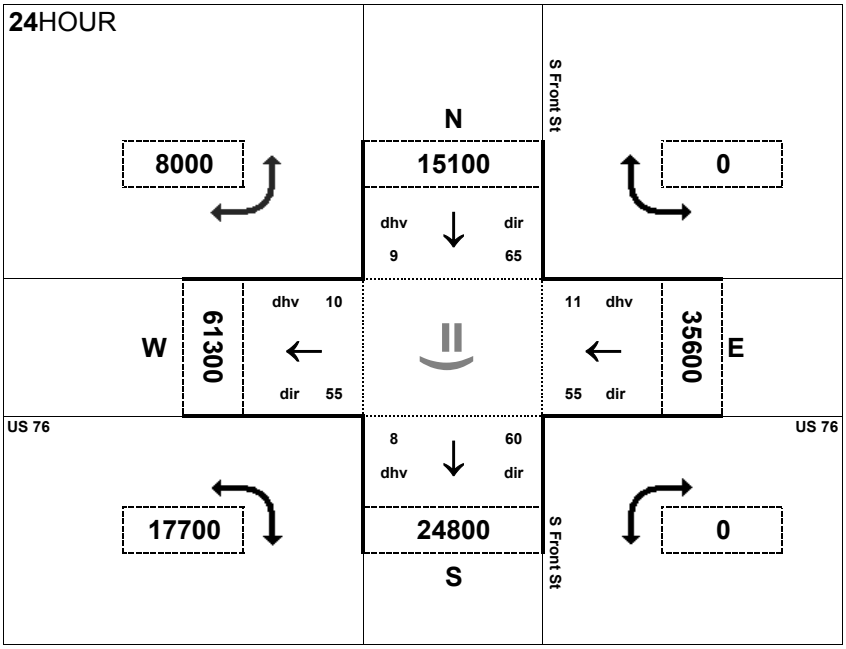
Project:
Cape Fear Crossing - Build Alt. G



AM peak hour inflow is 8828 vehicles. AM peak hour outflow is 8829 vehicles.



PM peak hour inflow is 8829 vehicles. PM peak hour outflow is 8828 vehicles.

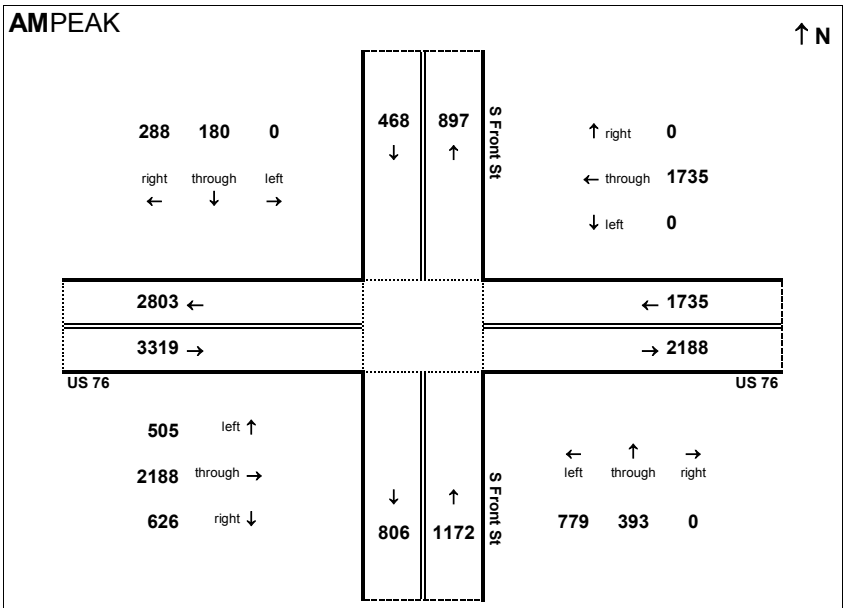


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

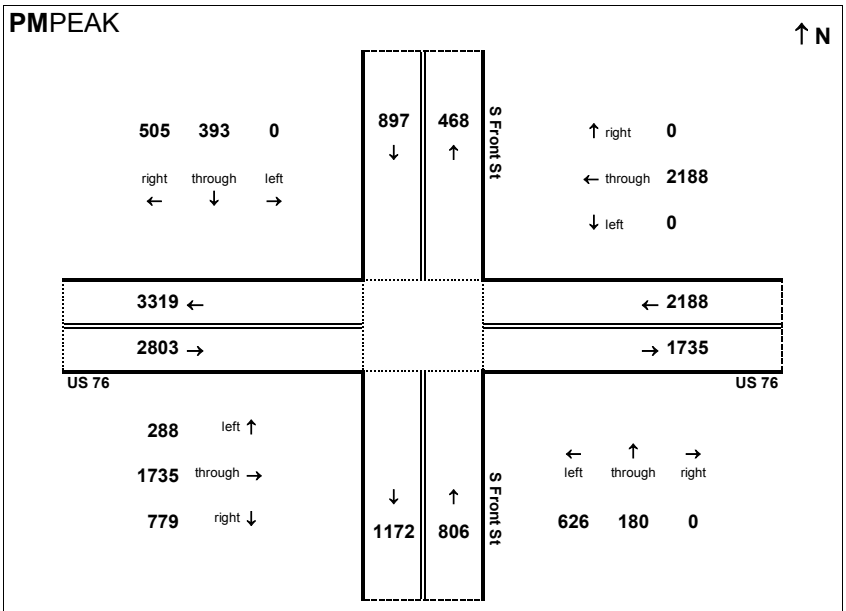
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

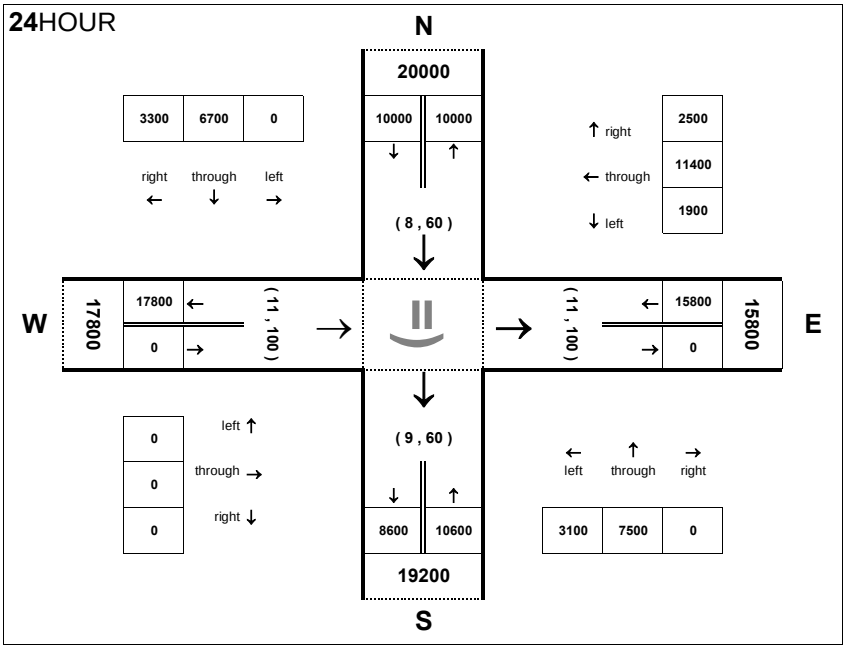
Project:
Cape Fear Crossing - Build Alt. G



AM peak hour inflow is 6694 vehicles. AM peak hour outflow is 6694 vehicles.



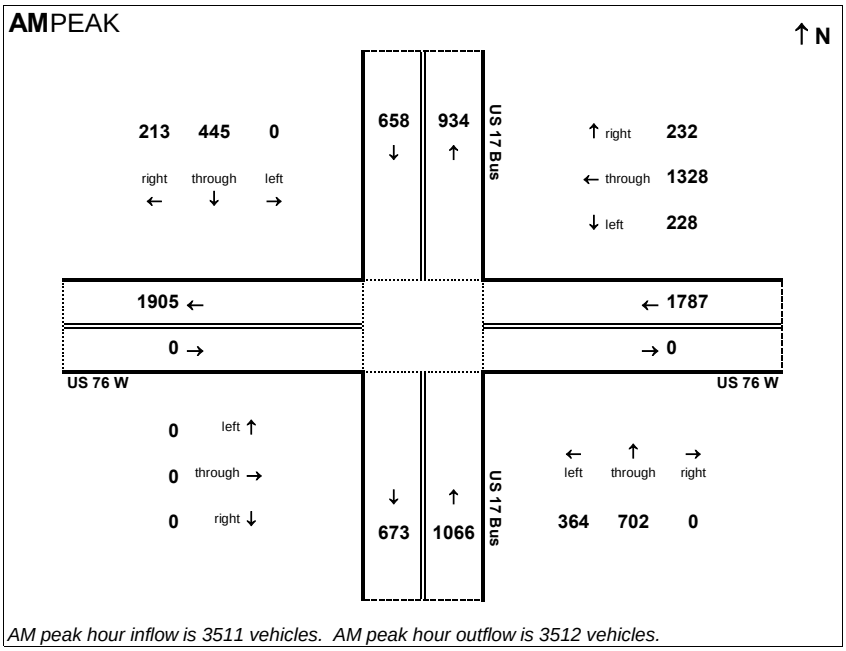
PM peak hour inflow is 6694 vehicles. PM peak hour outflow is 6694 vehicles.



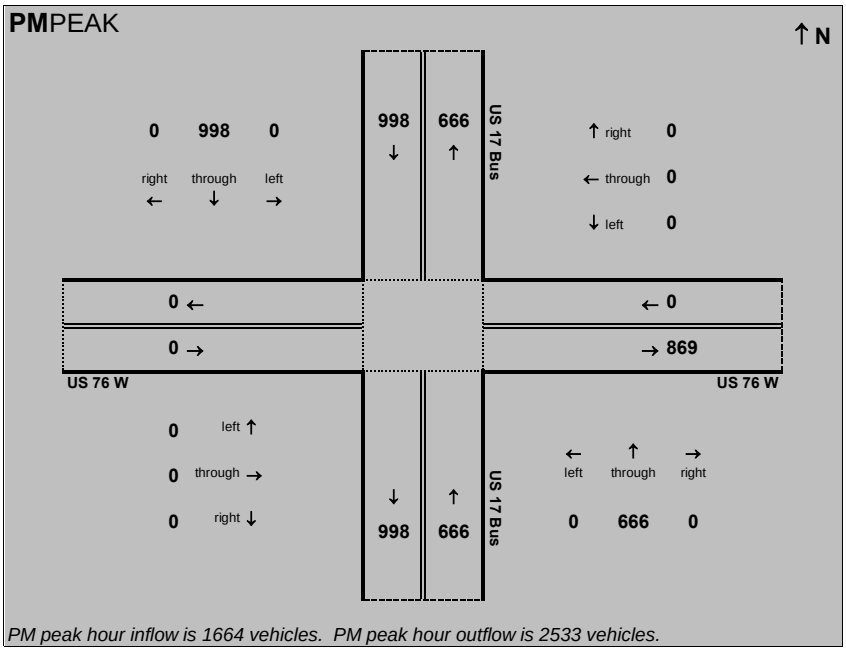
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

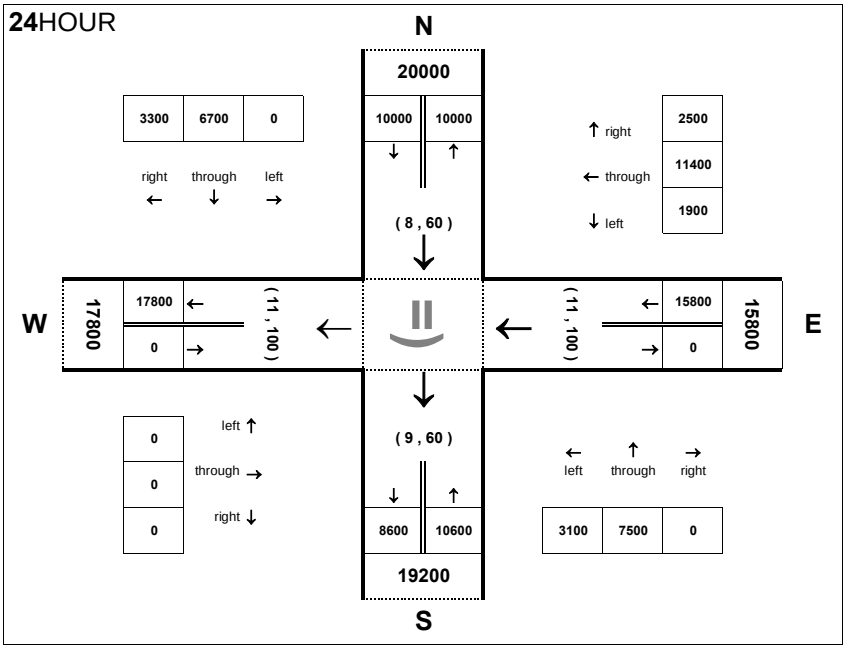
Traffic Data Year:
2040 Alt G



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



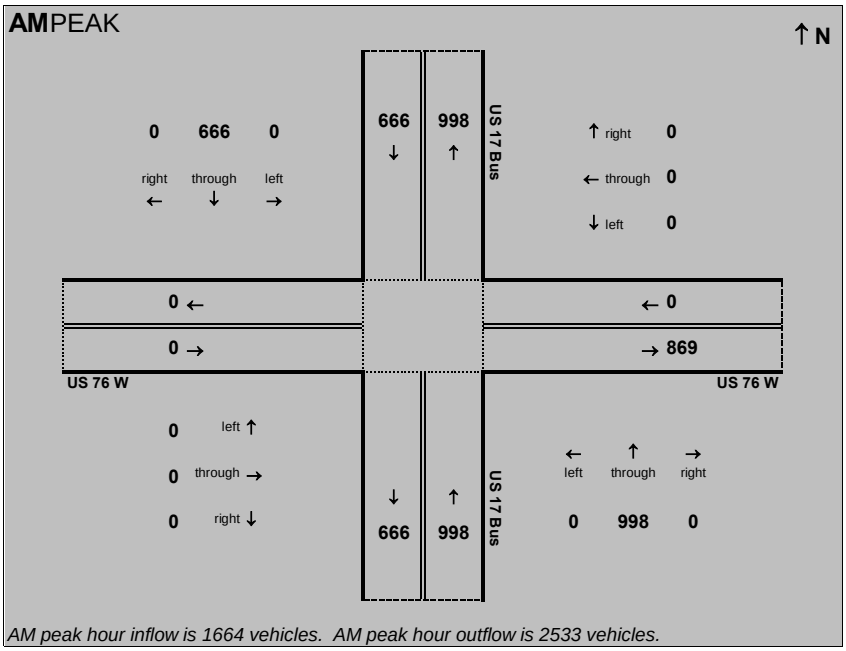
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



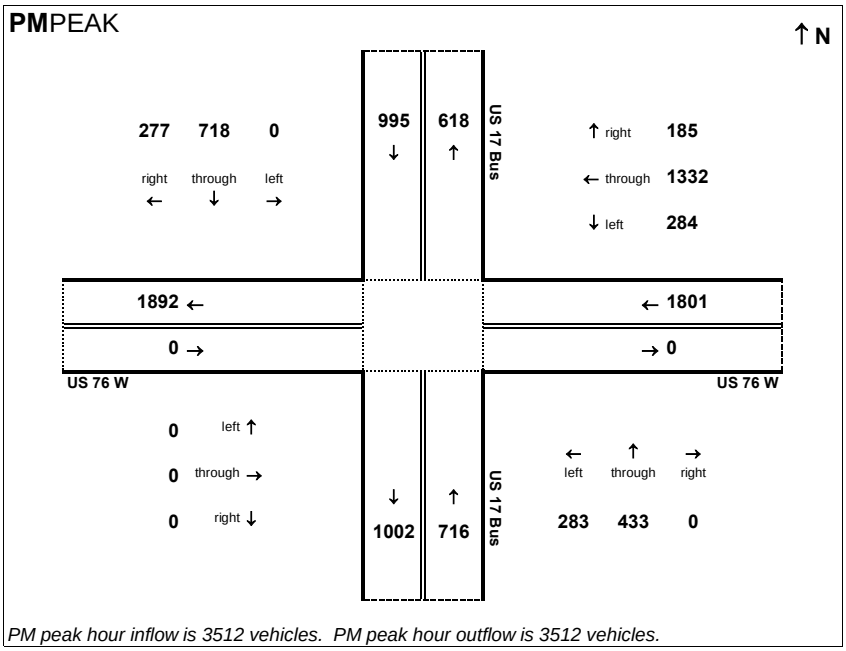
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

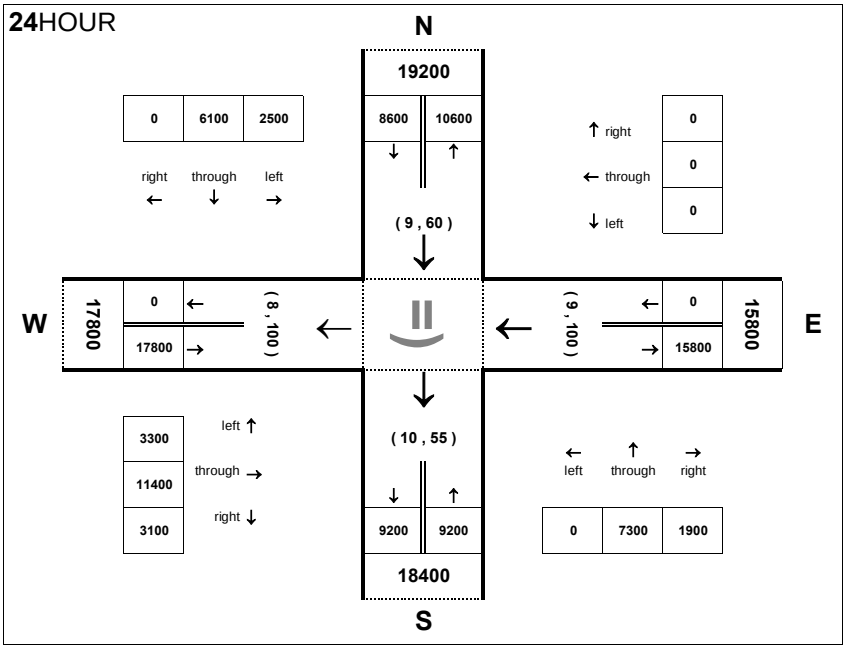
Traffic Data Year:
2040 Alt G



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



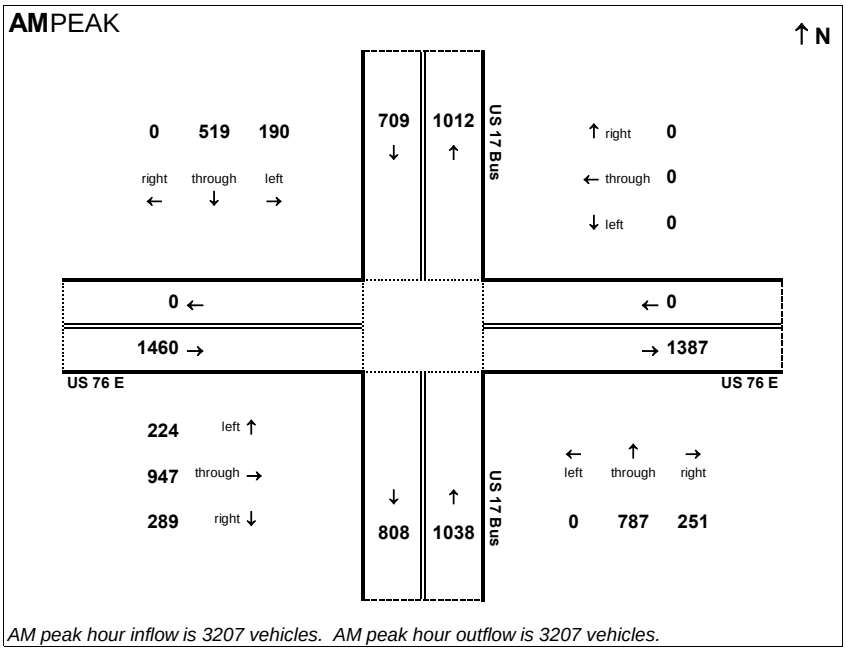
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



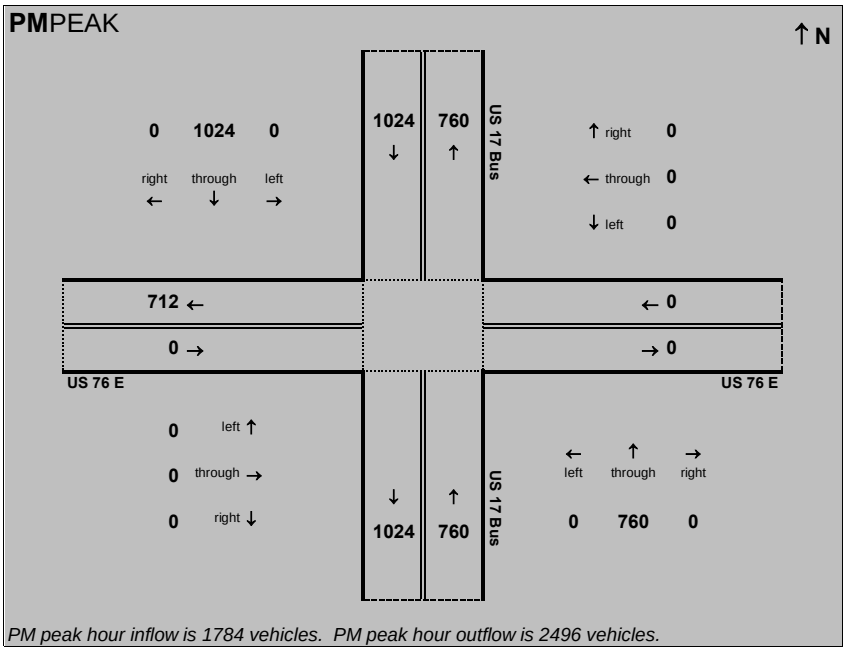
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

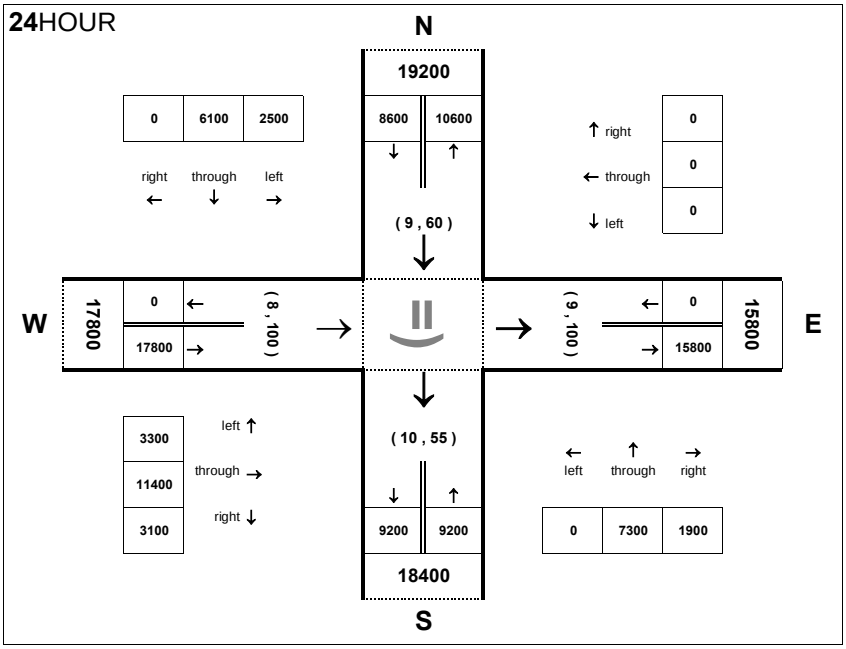
Traffic Data Year:
2040 Alt G



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



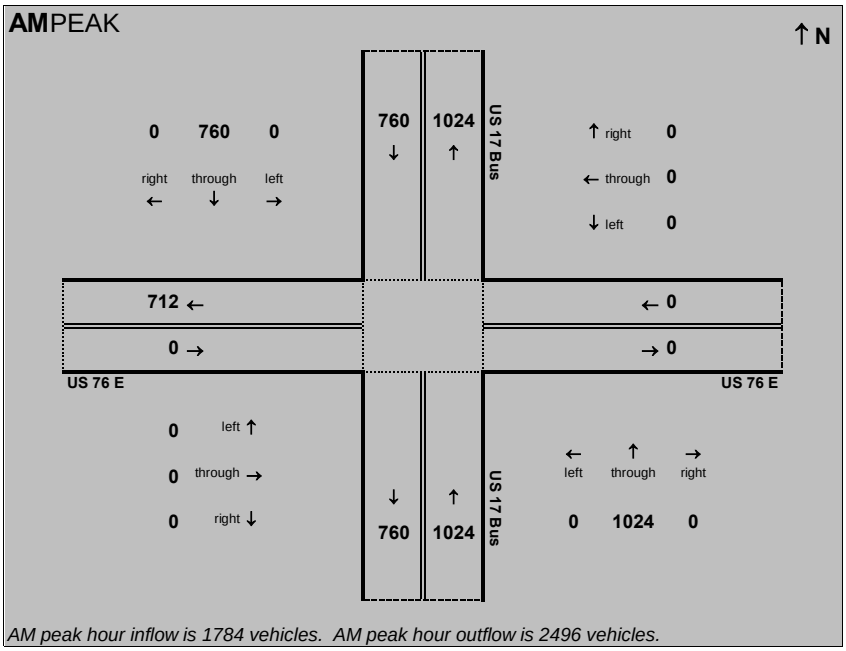
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



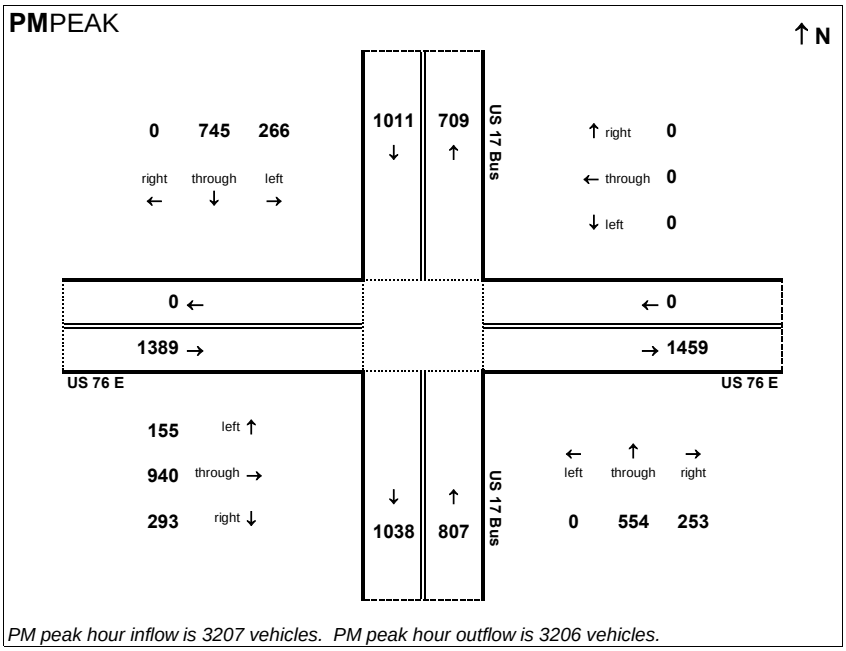
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt G



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



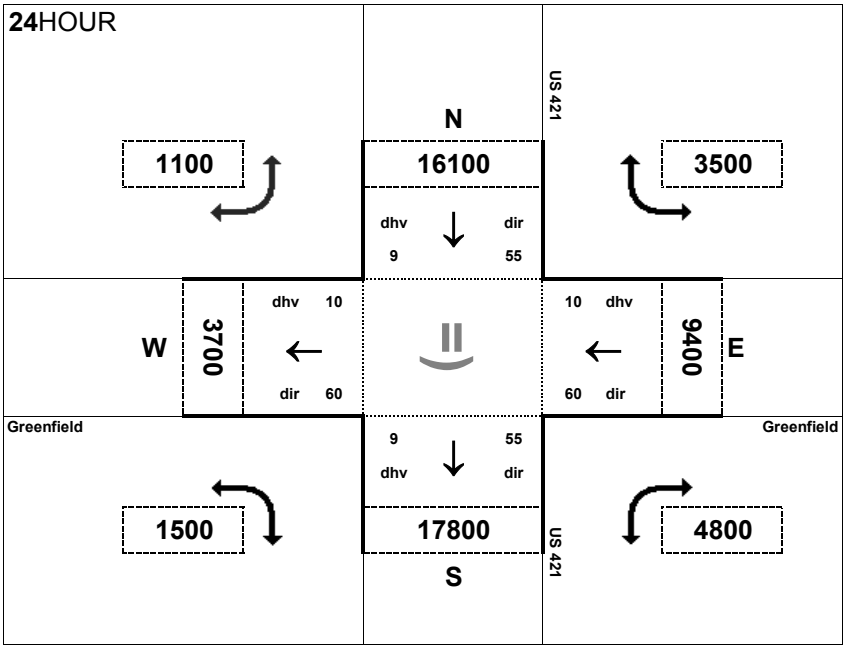
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

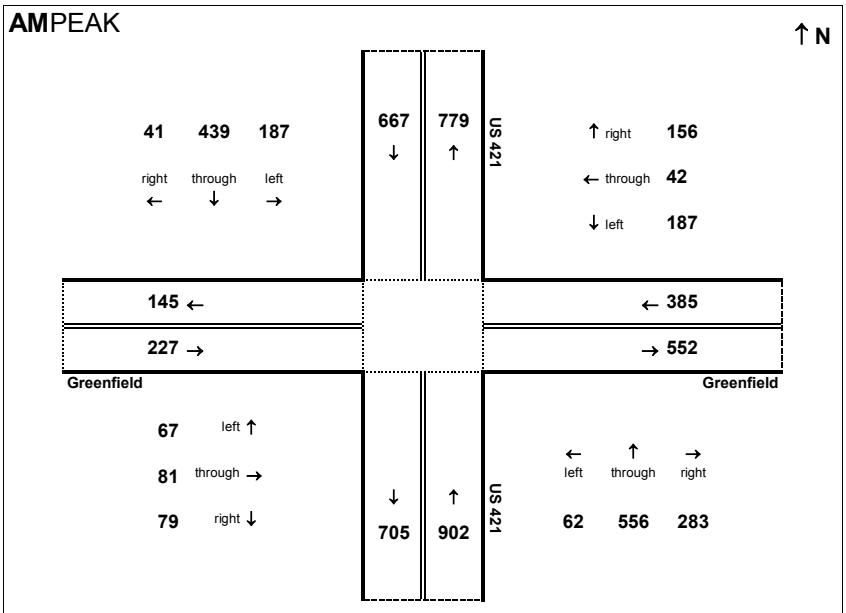
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

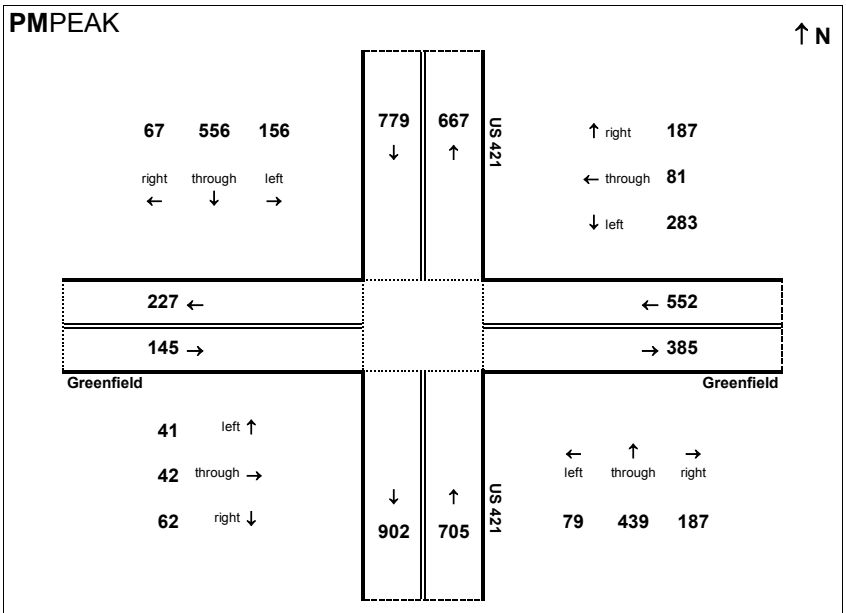
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



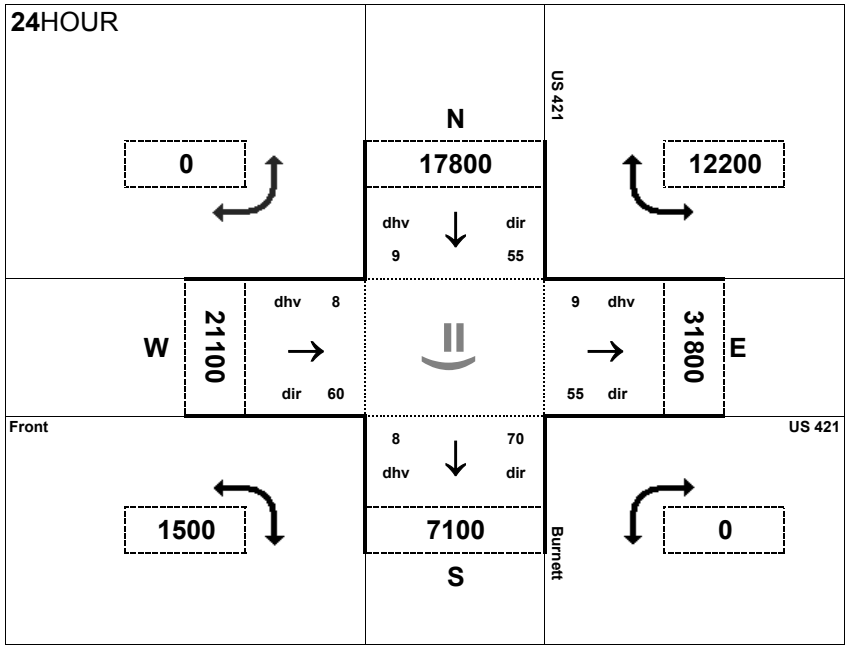
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

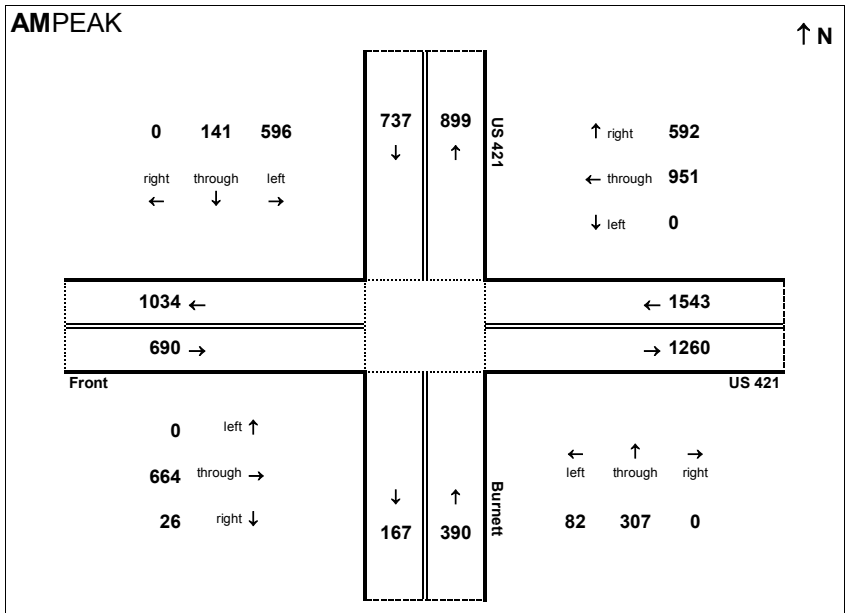
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

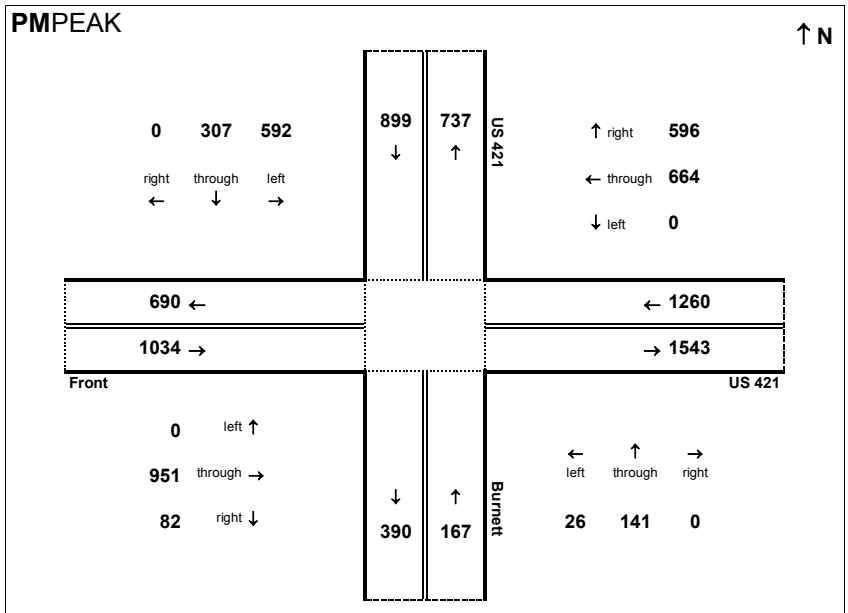
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



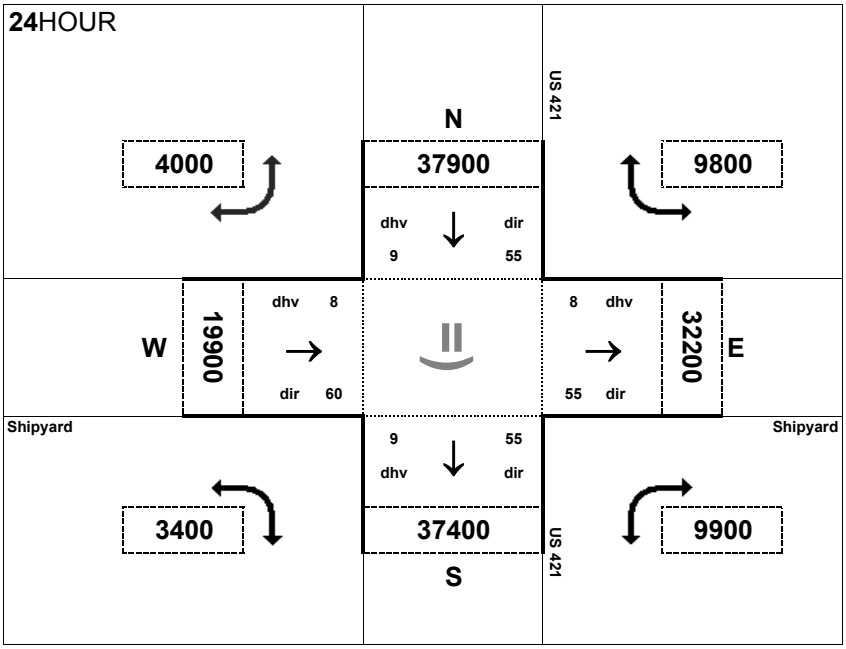
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3360 vehicles.

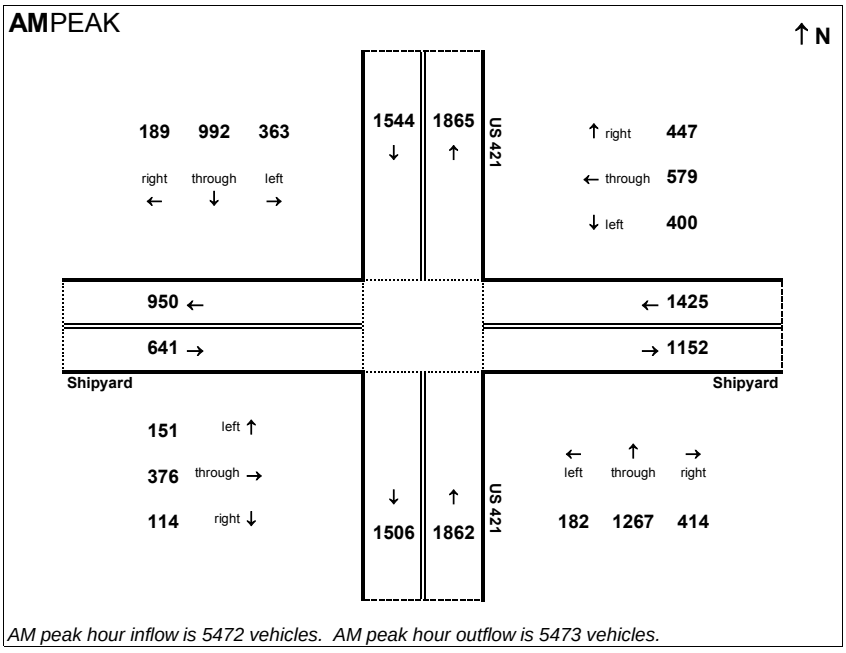
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

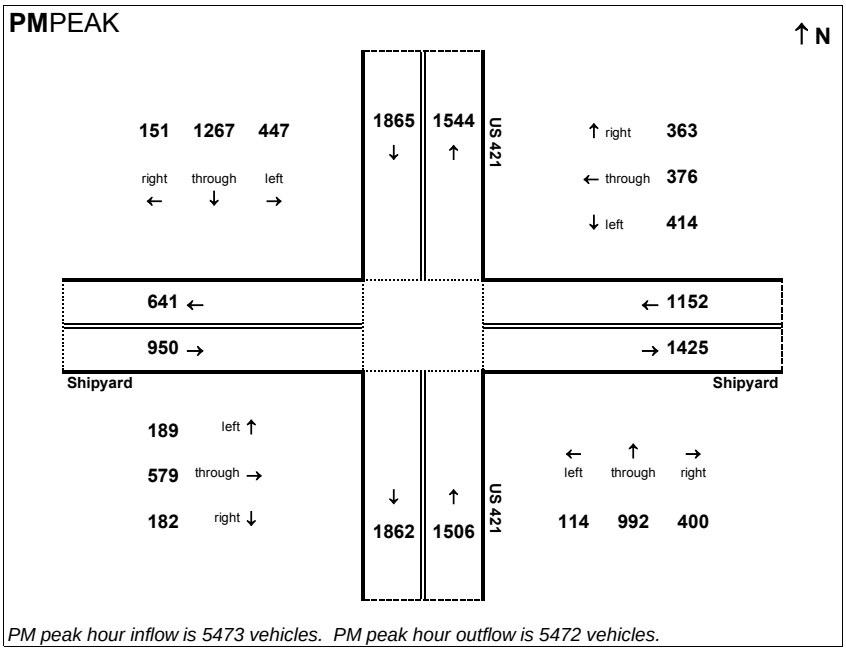
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G

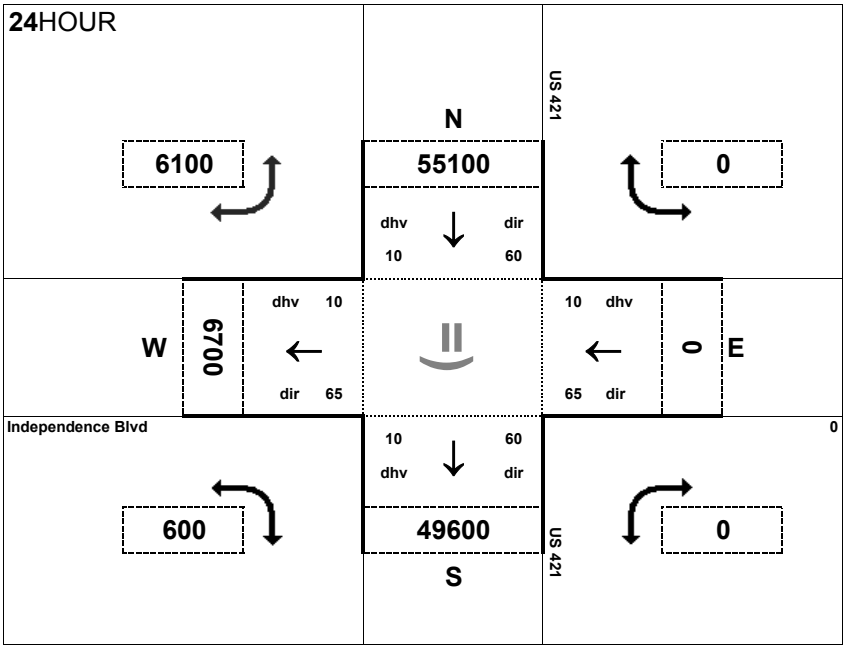




AM peak hour inflow is 5472 vehicles. AM peak hour outflow is 5473 vehicles.



PM peak hour inflow is 5473 vehicles. PM peak hour outflow is 5472 vehicles.

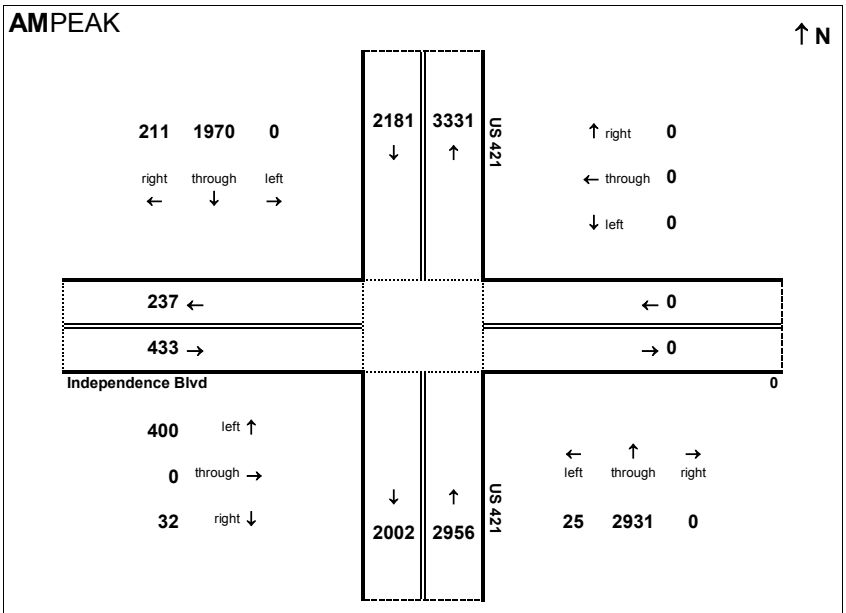


Peak Hour Volume Breakouts Report:
31 - US 421 - Realigned Independence Boulevard

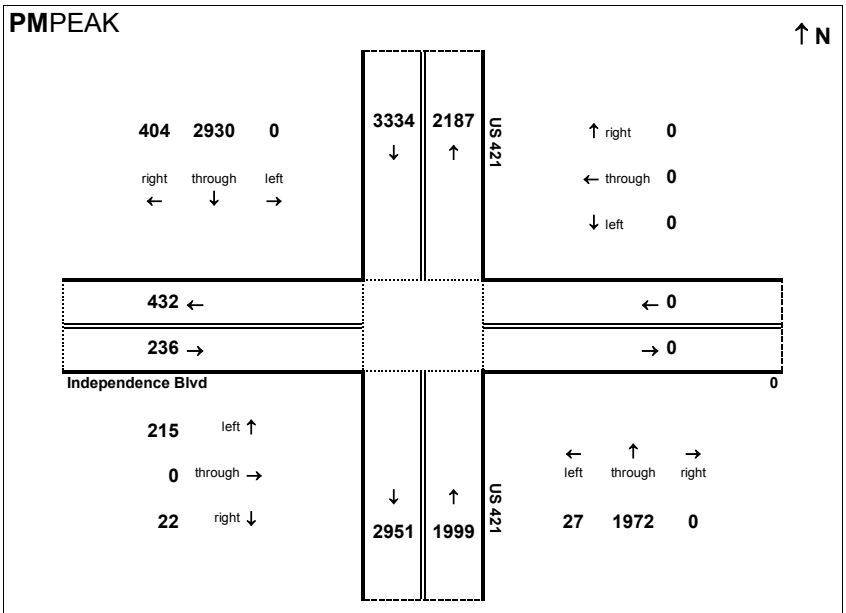
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G



AM peak hour inflow is 5570 vehicles. AM peak hour outflow is 5570 vehicles.



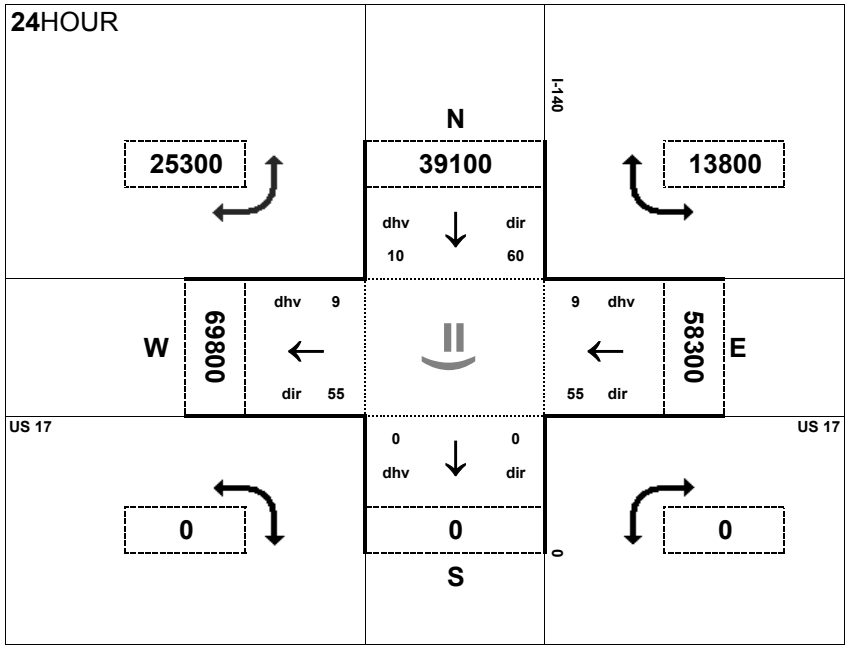
PM peak hour inflow is 5569 vehicles. PM peak hour outflow is 5570 vehicles.

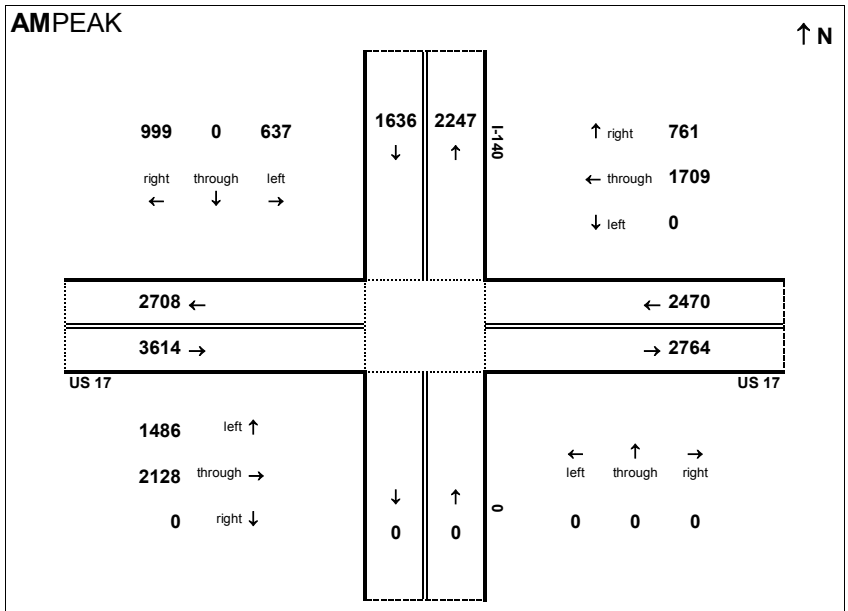
Peak Hour Volume Breakouts Report:
43 - Interchange of I-140 and US 17

Traffic Forecast Release Date:
Oct. 2014

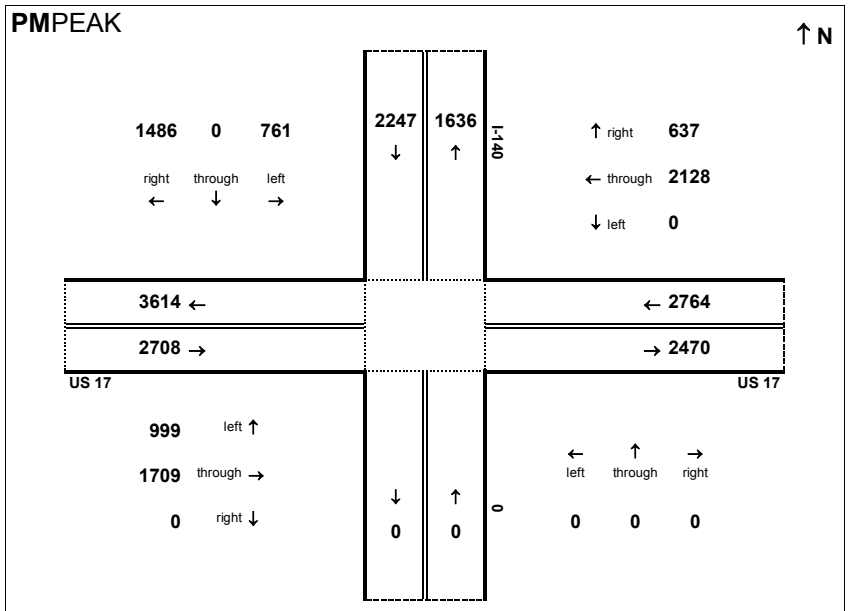
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 7720 vehicles. AM peak hour outflow is 7719 vehicles.



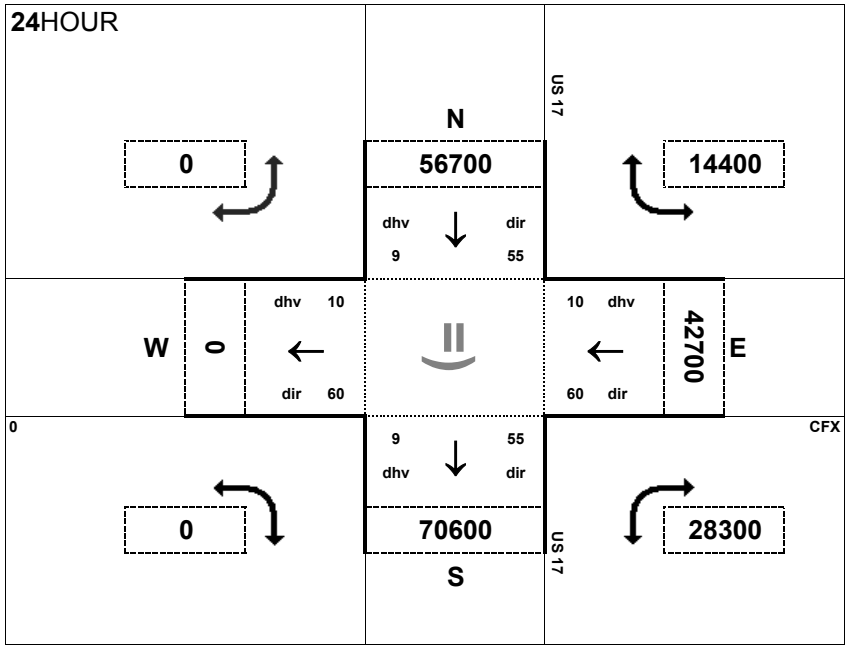
PM peak hour inflow is 7719 vehicles. PM peak hour outflow is 7720 vehicles.

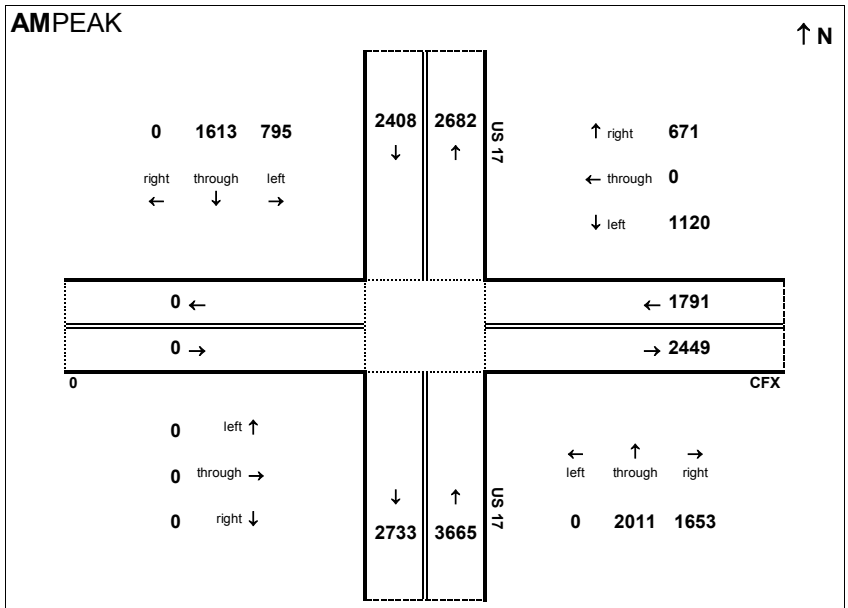
Peak Hour Volume Breakouts Report:
102 - CFX and US 17 Interchange

Traffic Forecast Release Date:
Oct. 2014

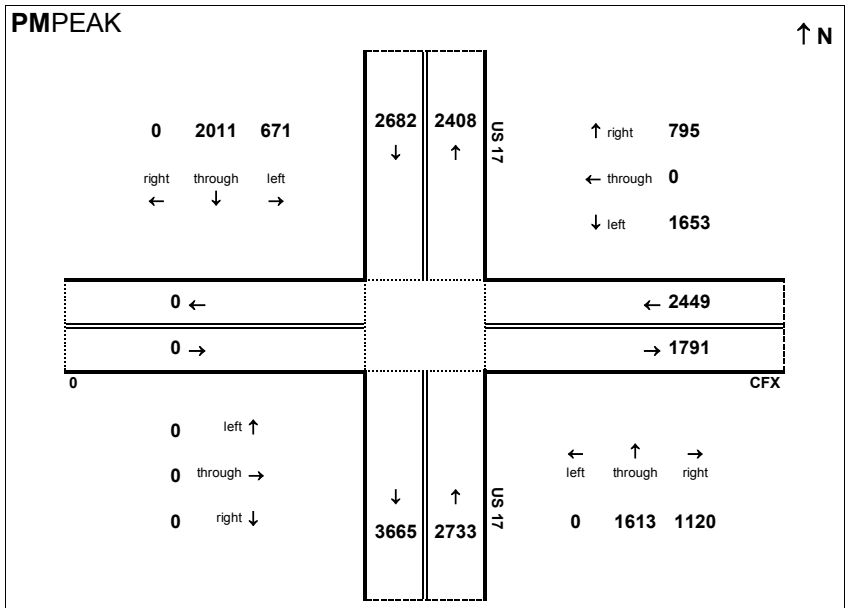
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 7864 vehicles. AM peak hour outflow is 7864 vehicles.



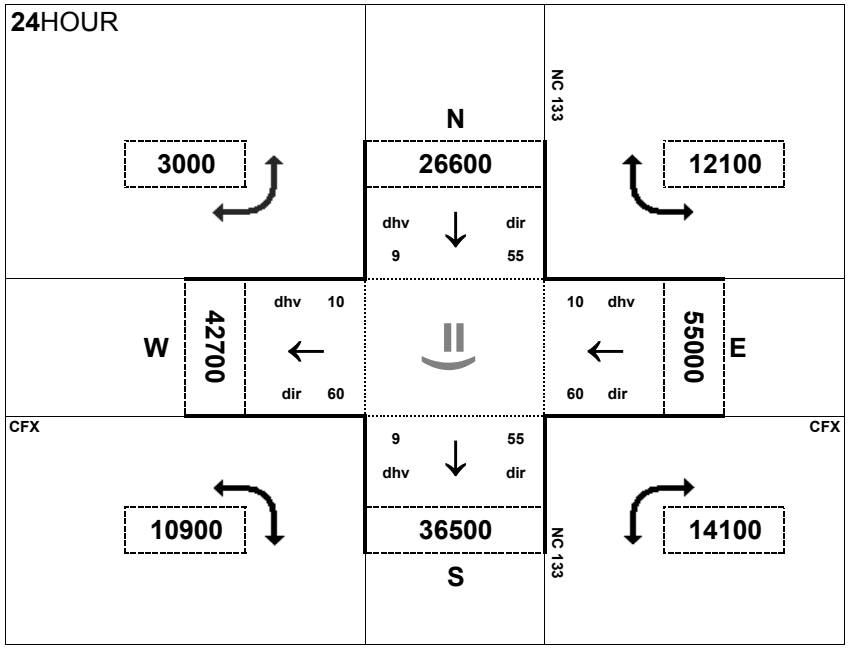
PM peak hour inflow is 7864 vehicles. PM peak hour outflow is 7864 vehicles.

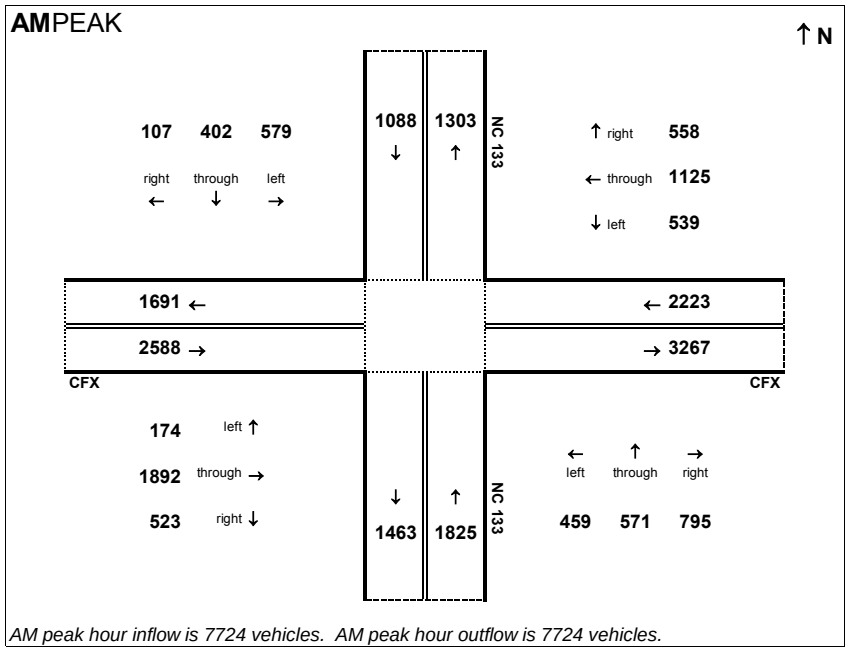
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

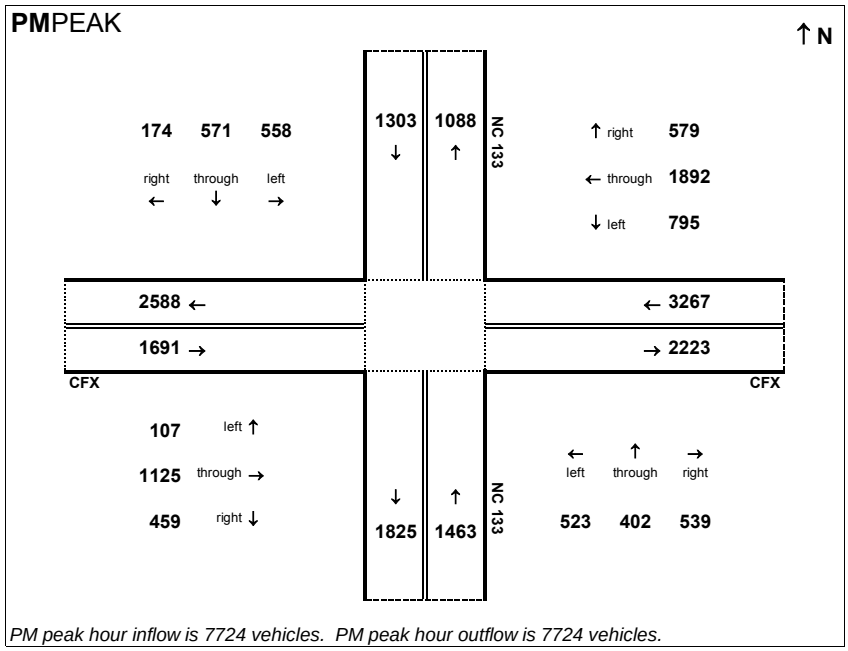
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G

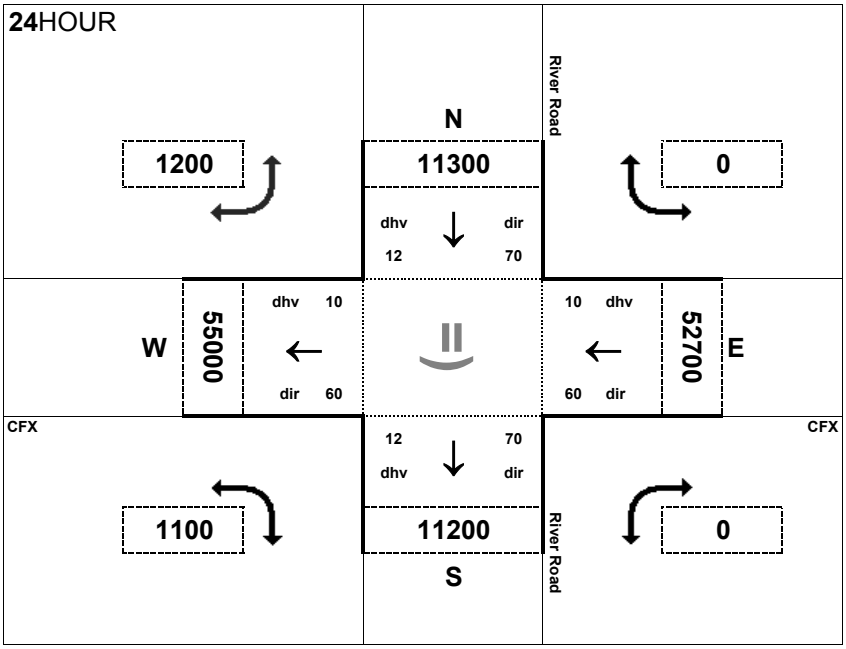




AM peak hour inflow is 7724 vehicles. AM peak hour outflow is 7724 vehicles.



PM peak hour inflow is 7724 vehicles. PM peak hour outflow is 7724 vehicles.

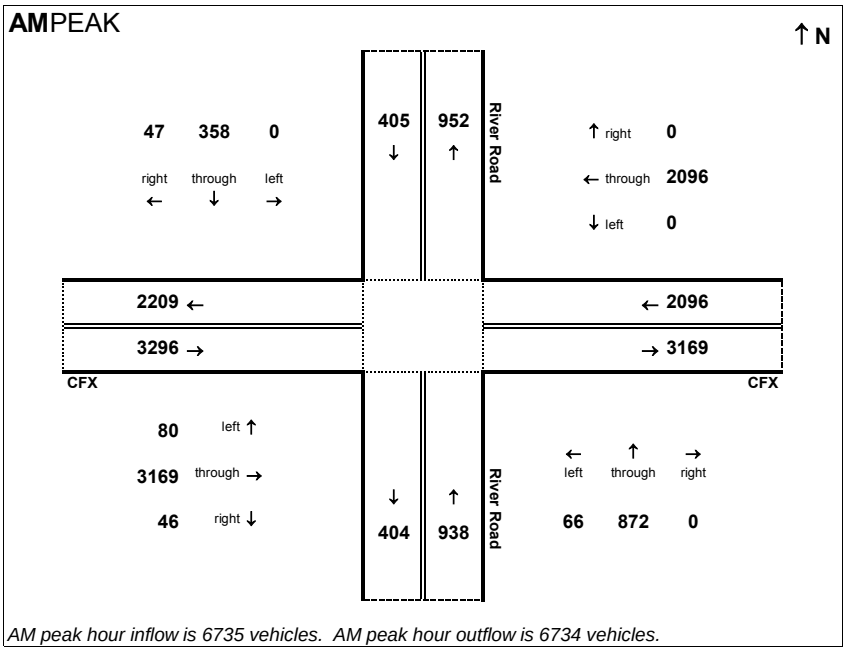


Peak Hour Volume Breakouts Report:
105 - CFX and River Road

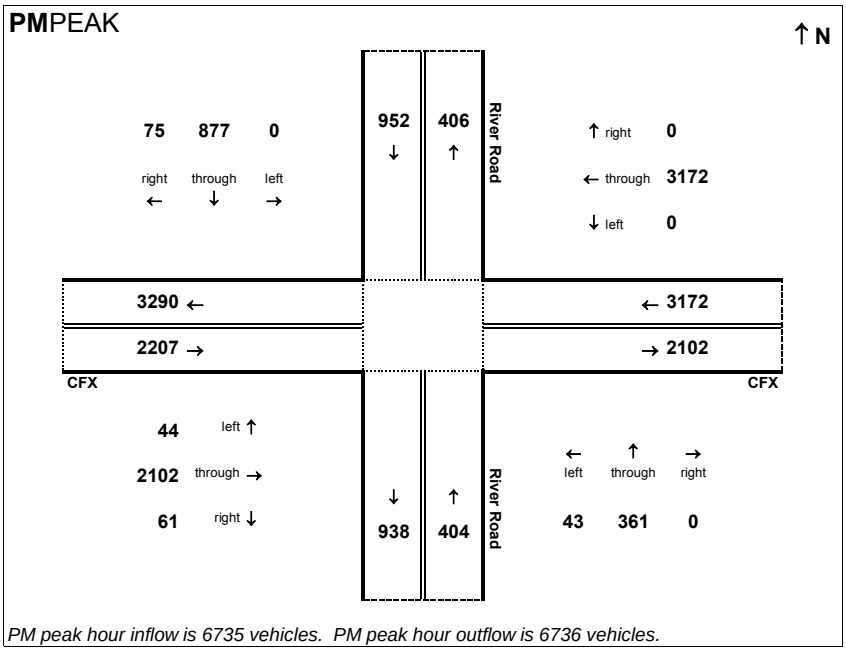
Traffic Forecast Release Date:
OCt. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G



AM peak hour inflow is 6735 vehicles. AM peak hour outflow is 6734 vehicles.



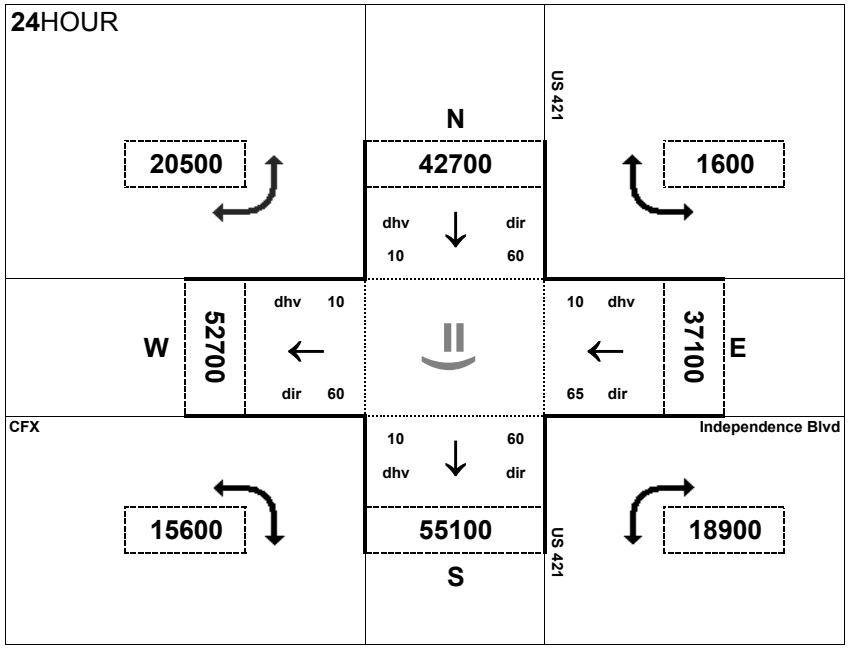
PM peak hour inflow is 6735 vehicles. PM peak hour outflow is 6736 vehicles.

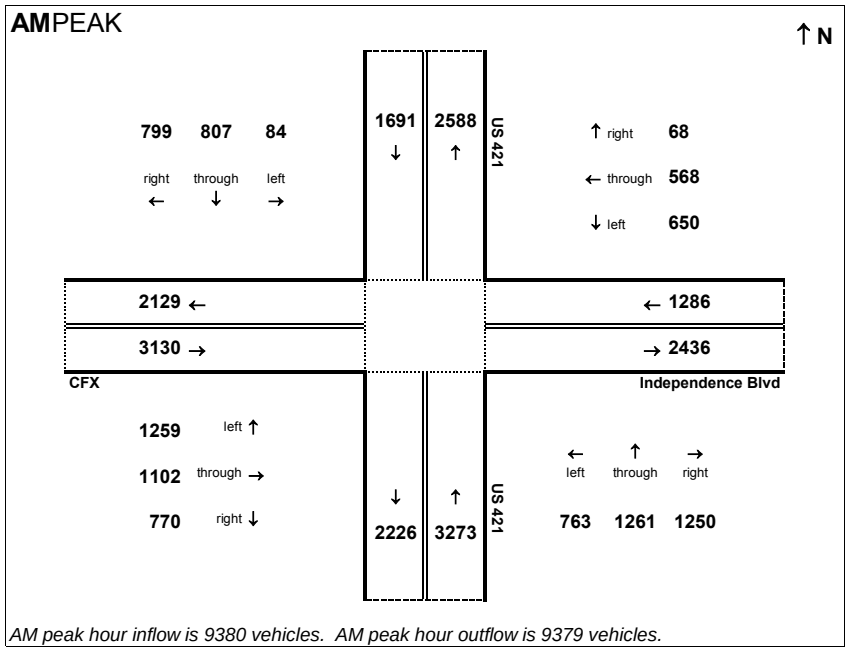
Peak Hour Volume Breakouts Report:
107 - CFX and US 421 - Independence

Traffic Forecast Release Date:
Oct. 2014

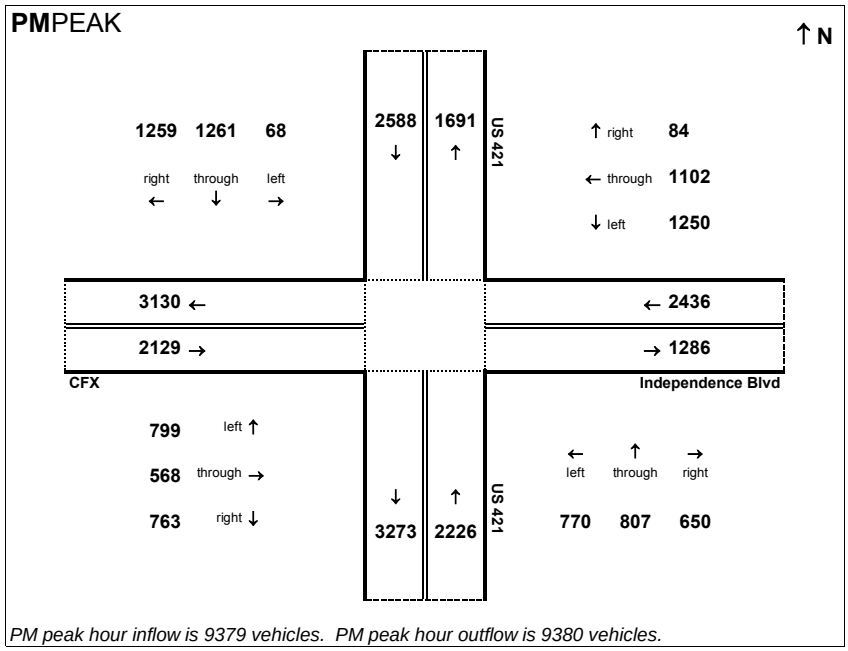
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. G





AM peak hour inflow is 9380 vehicles. AM peak hour outflow is 9379 vehicles.



PM peak hour inflow is 9379 vehicles. PM peak hour outflow is 9380 vehicles.

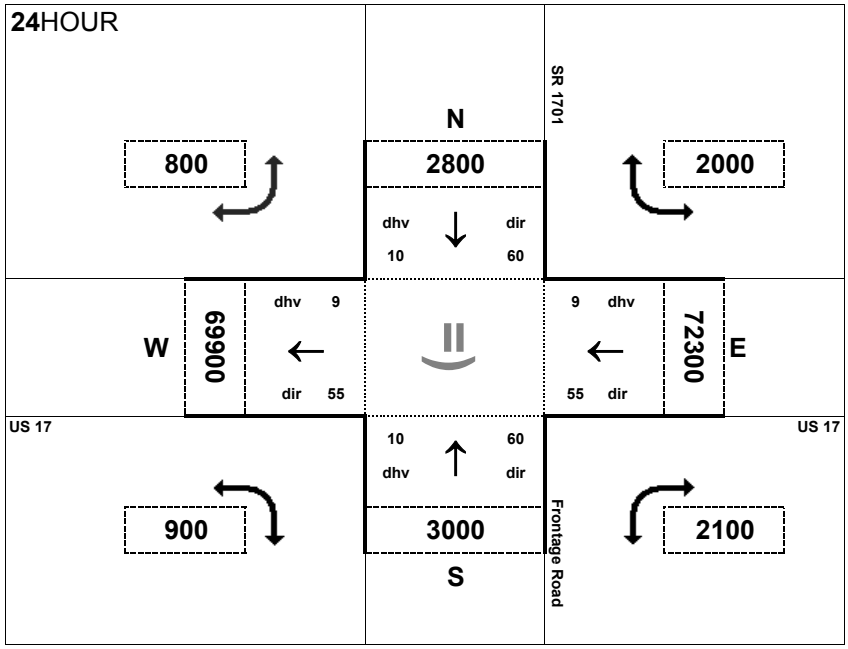
2040 Build DSA Alternative J

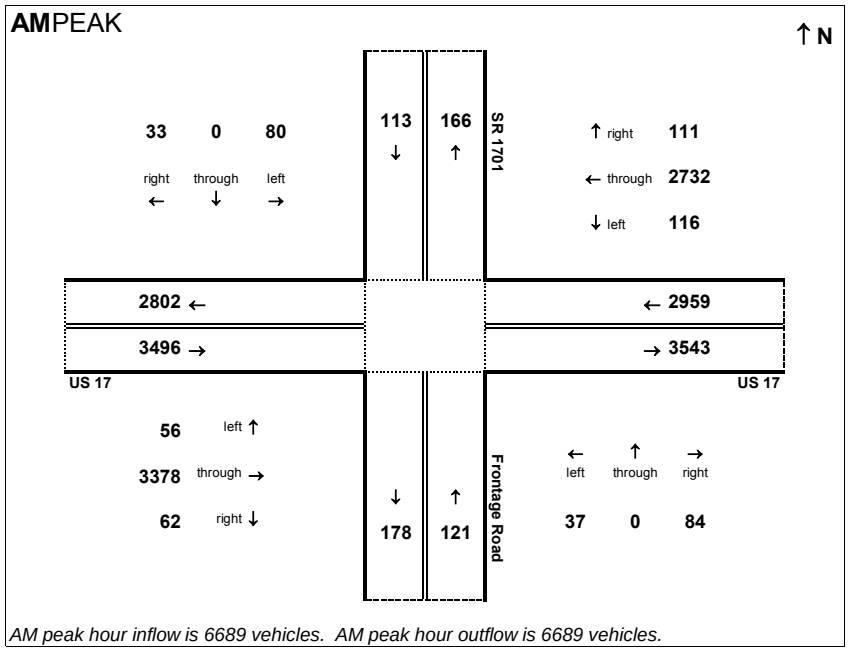
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

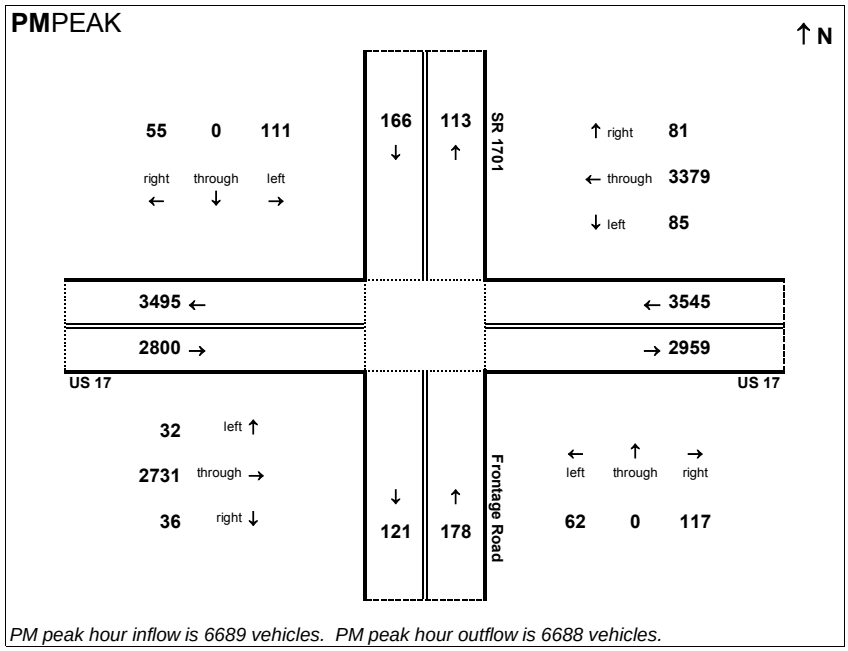
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



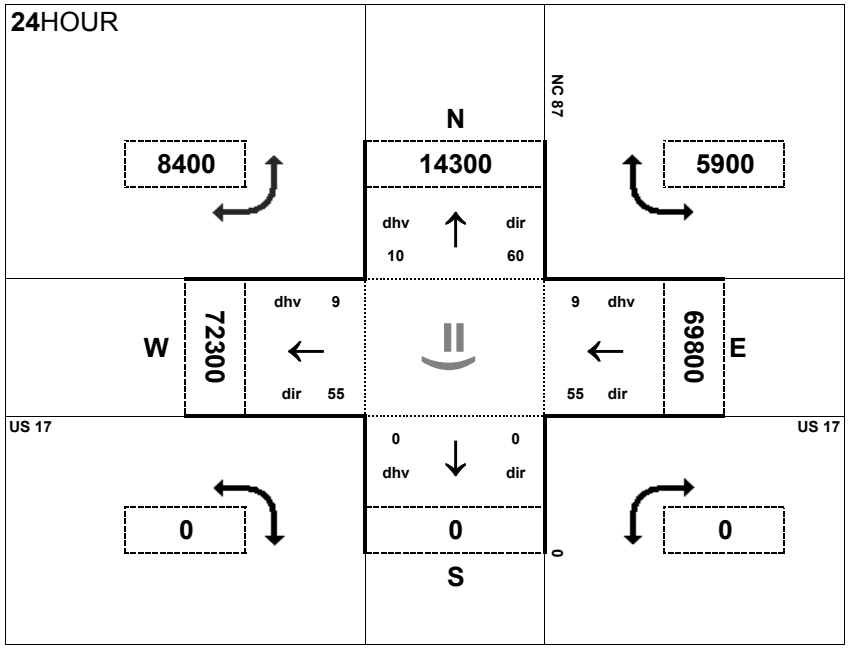
PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

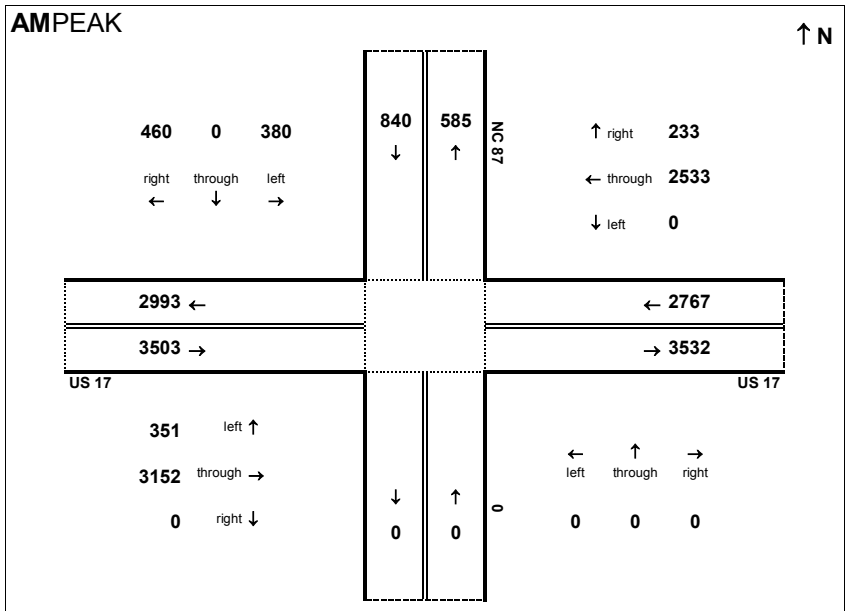
Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

Traffic Forecast Release Date:
Oct. 2014

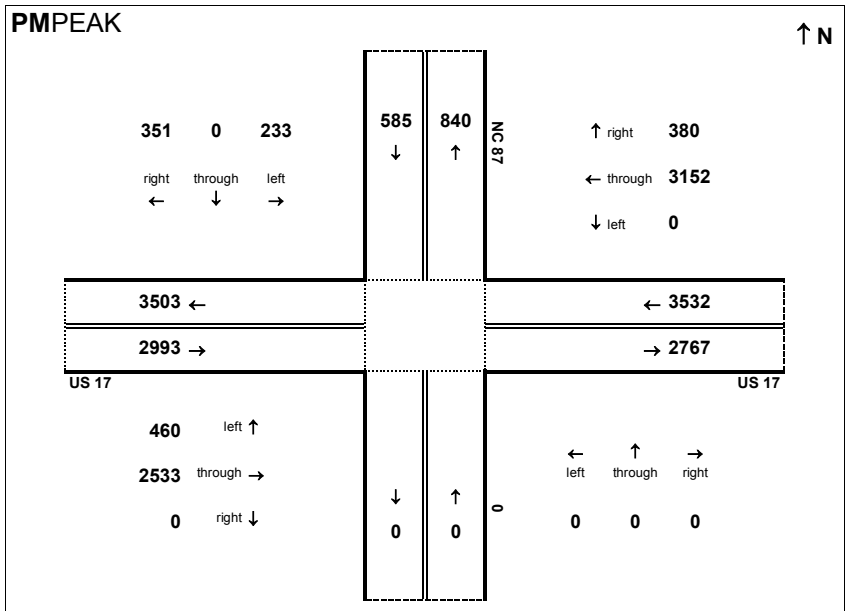
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



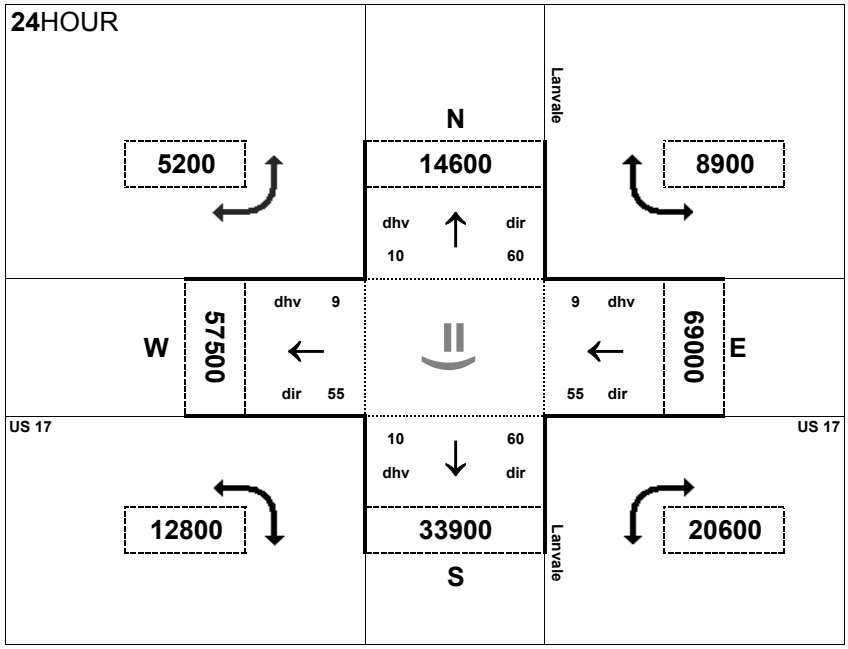
PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

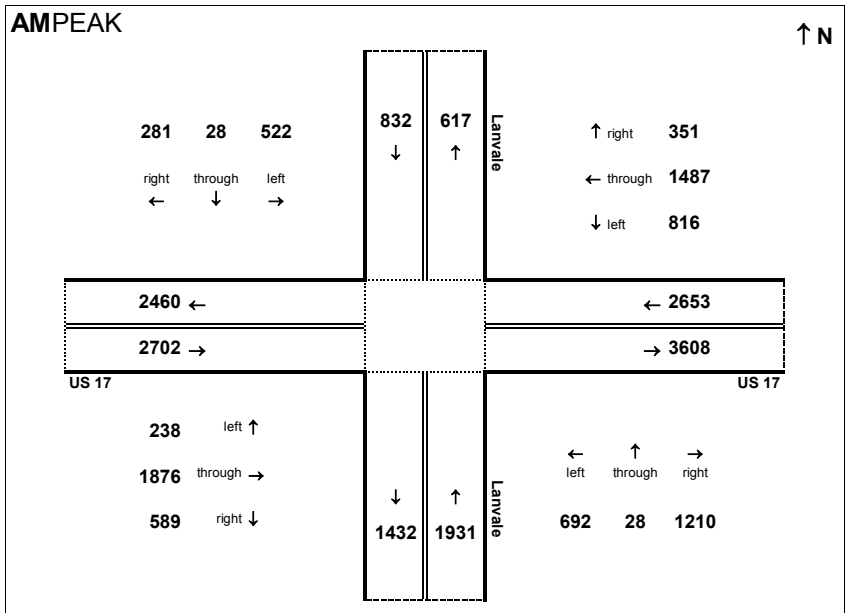
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

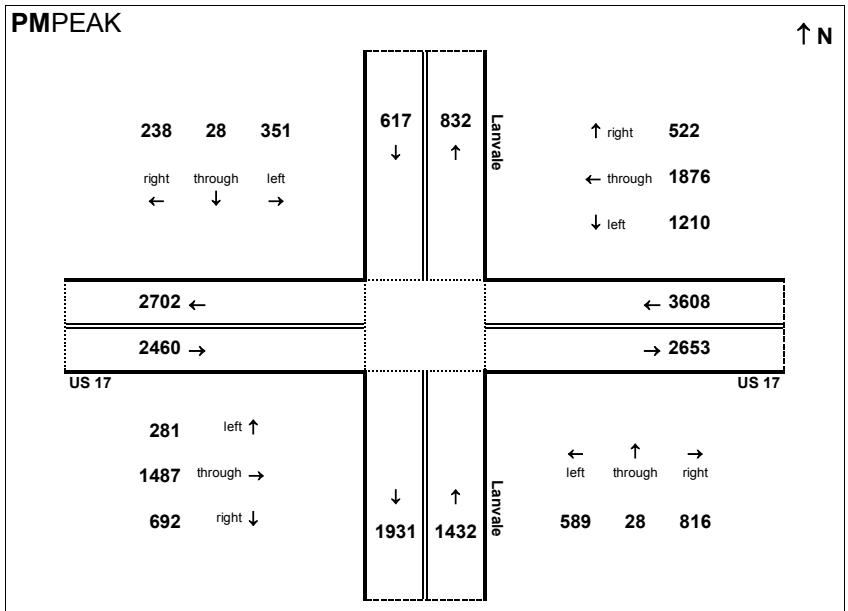
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 8118 vehicles. AM peak hour outflow is 8117 vehicles.



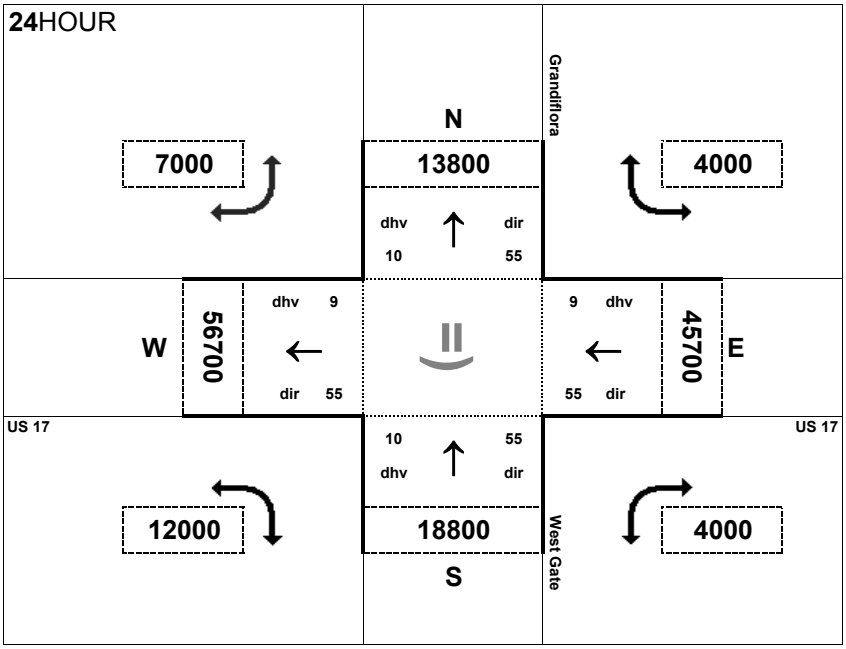
PM peak hour inflow is 8117 vehicles. PM peak hour outflow is 8118 vehicles.

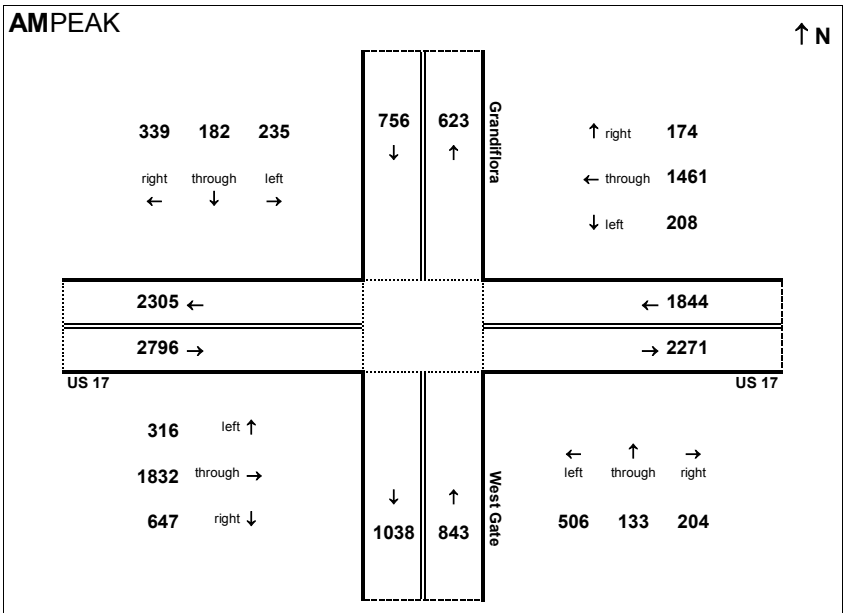
Peak Hour Volume Breakouts Report:
06 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

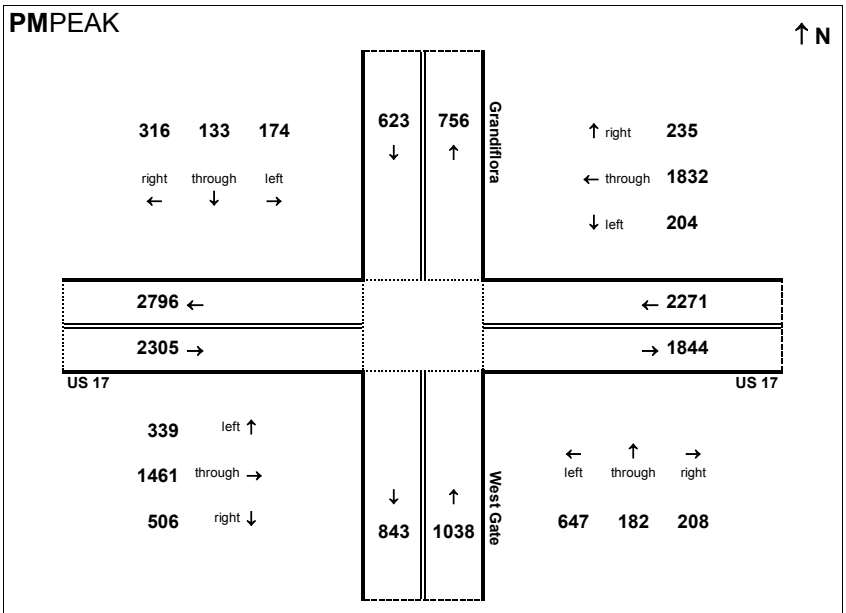
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



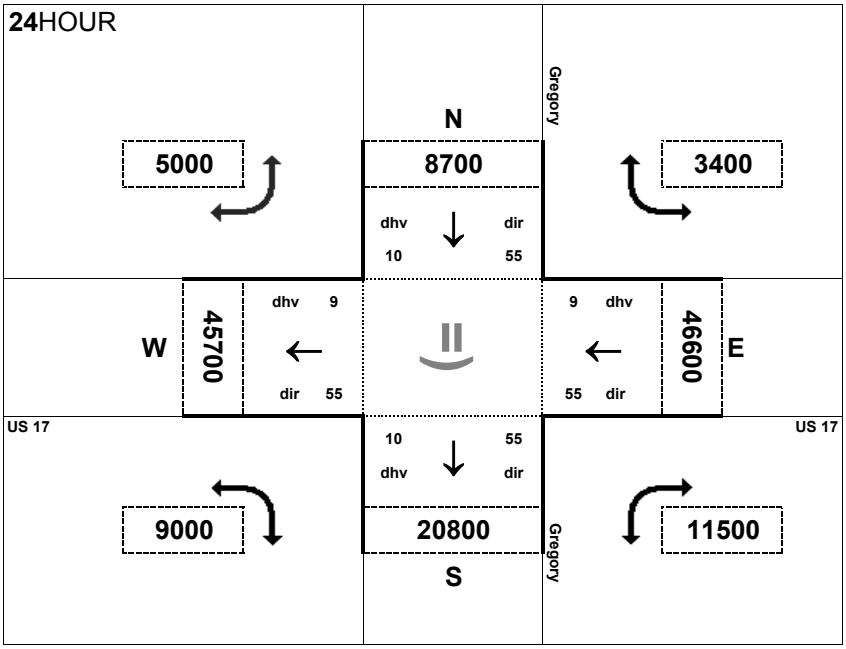
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

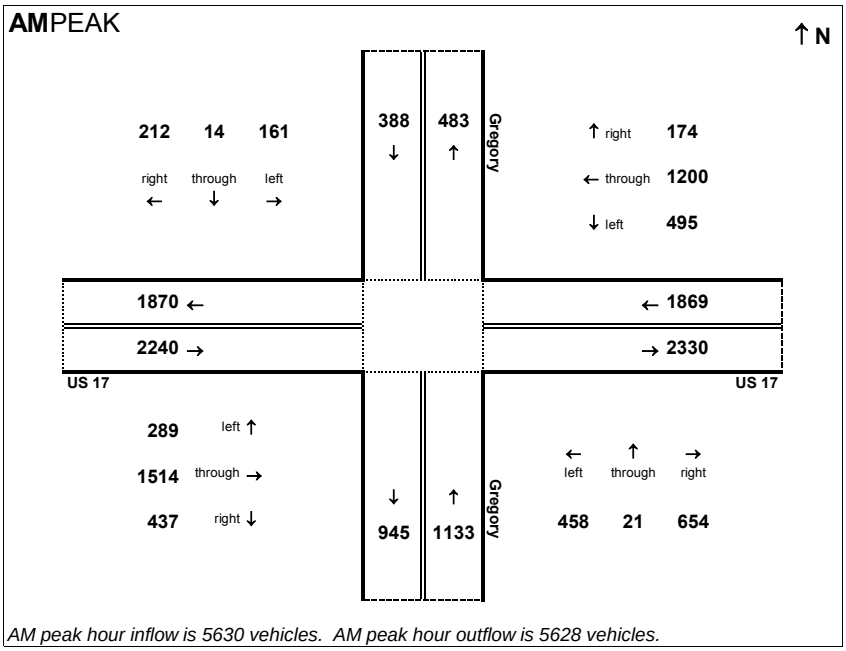
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

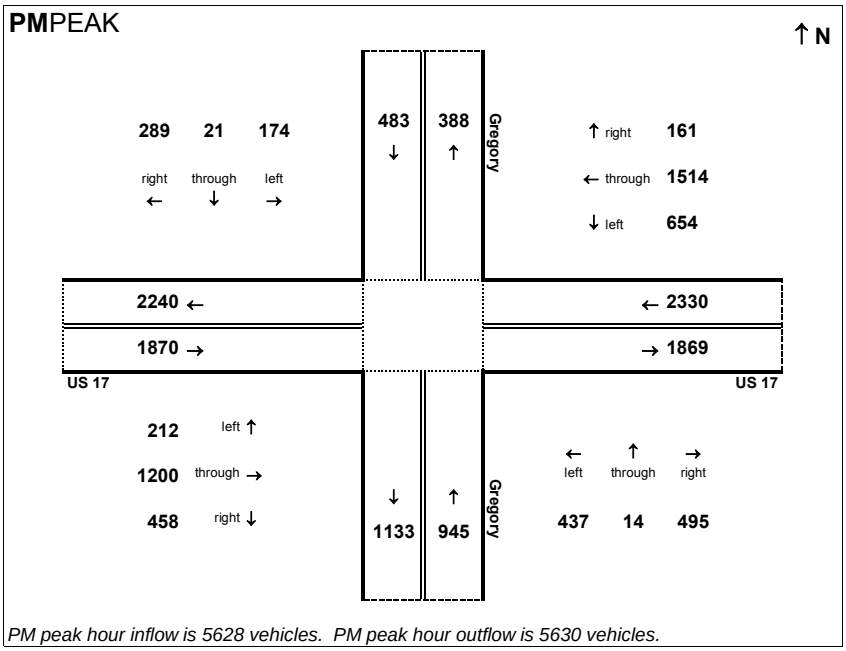
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

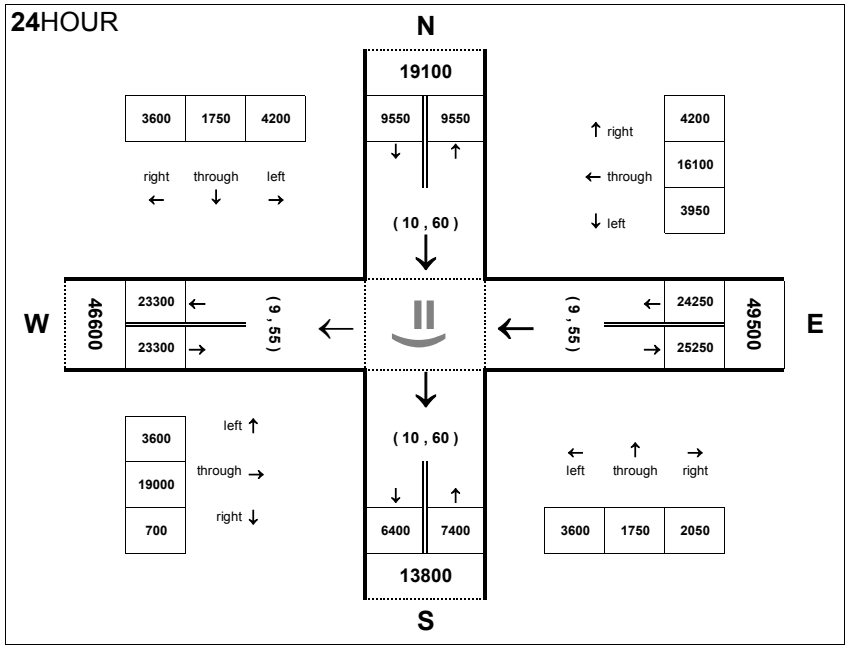


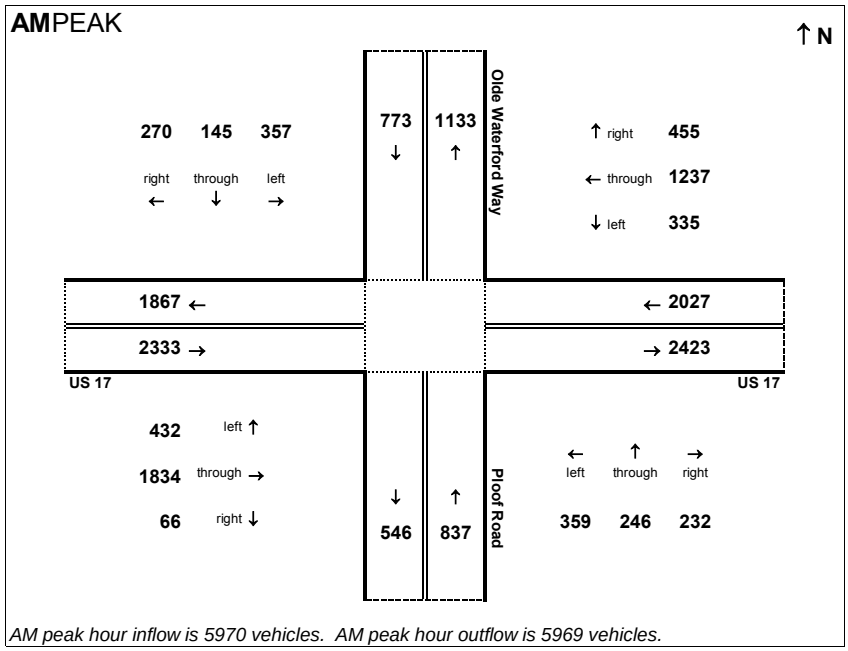
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

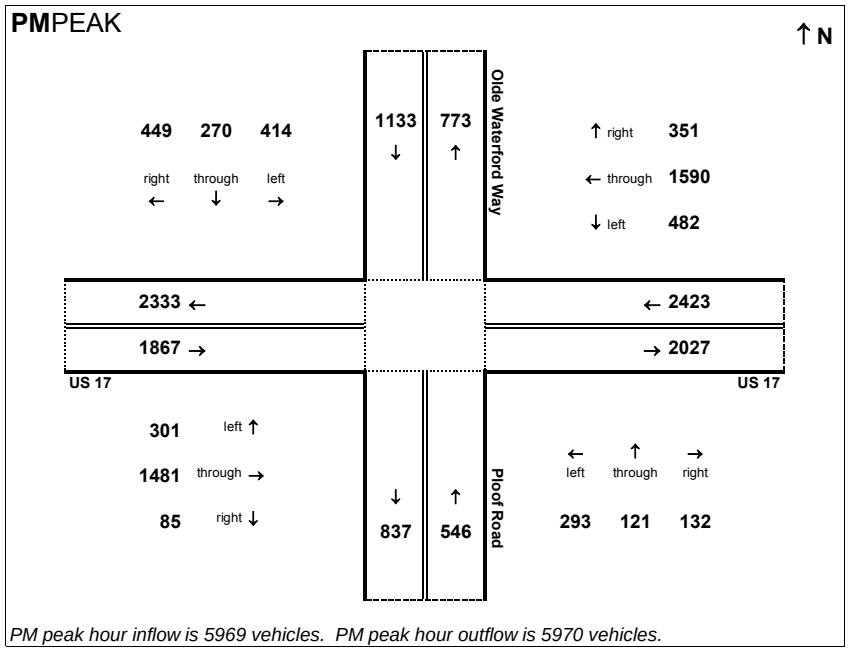
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. J

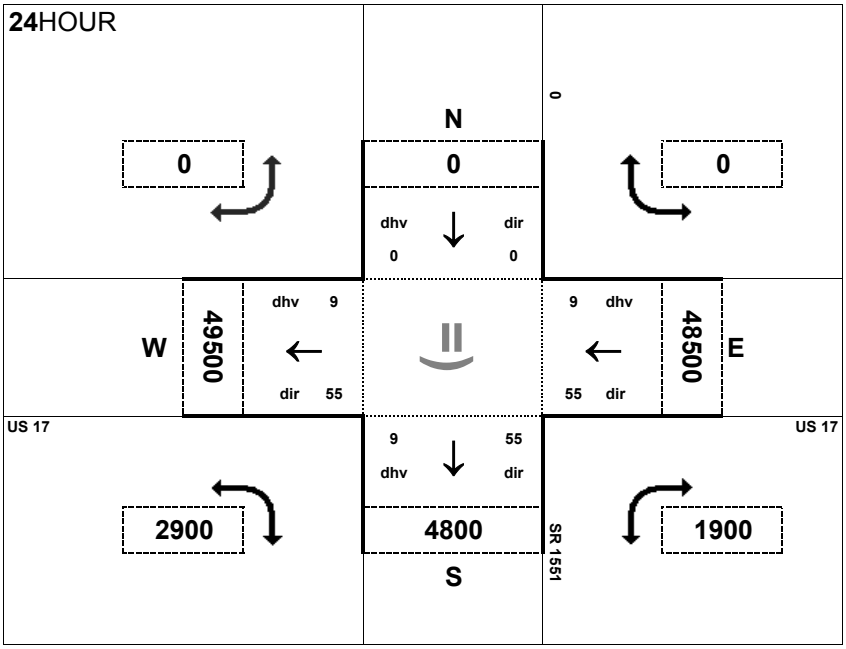




AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

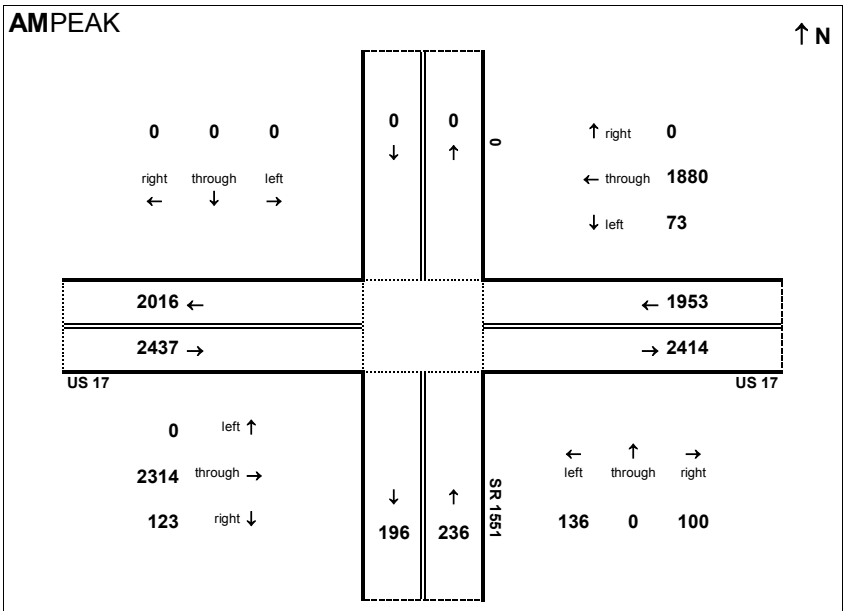


Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

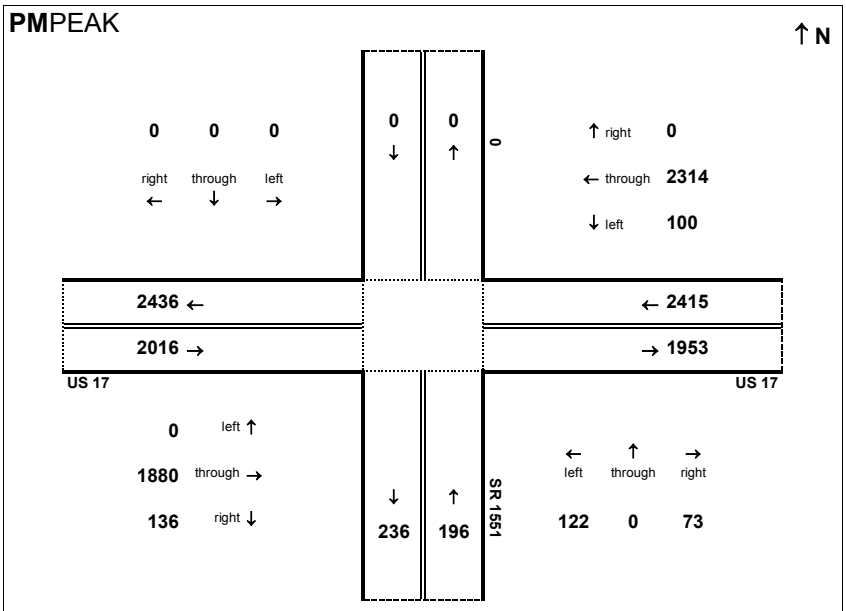
Traffic Forecast Release Date:
OCt. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J



AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



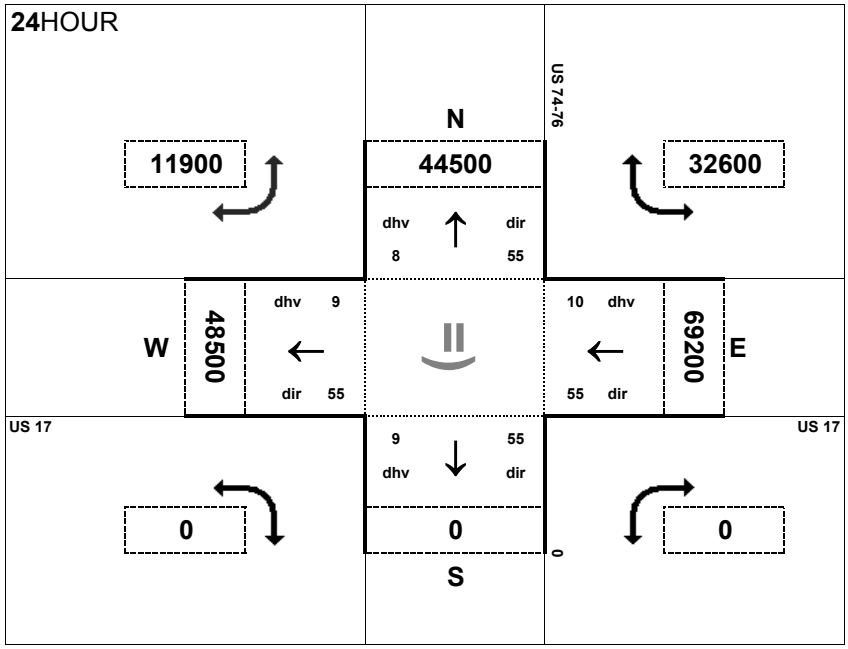
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

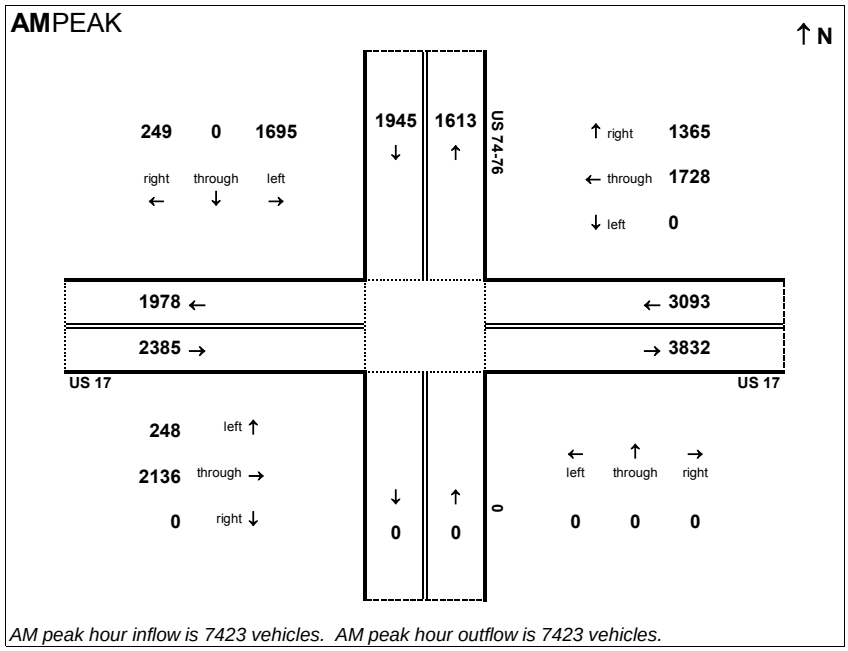
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

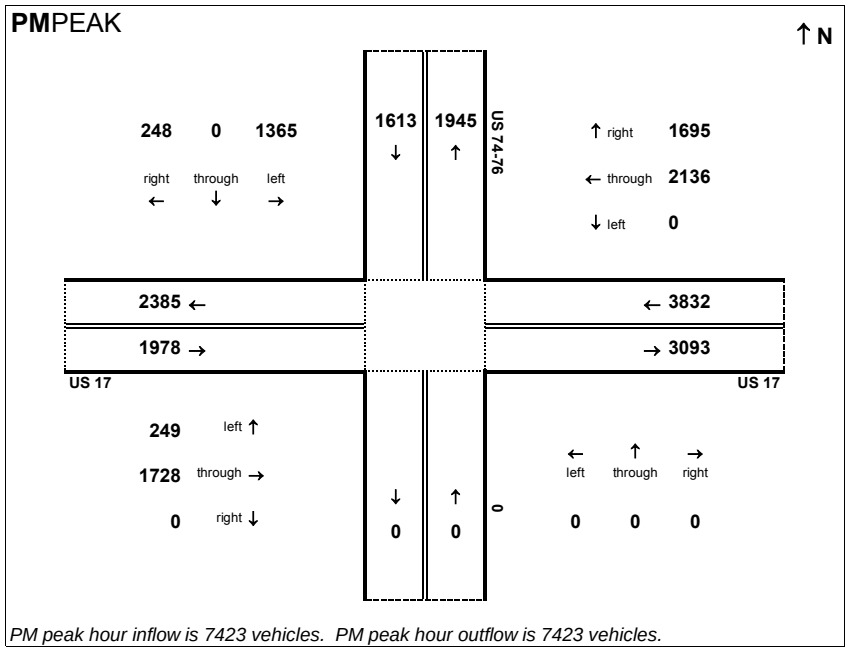
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 7423 vehicles. AM peak hour outflow is 7423 vehicles.



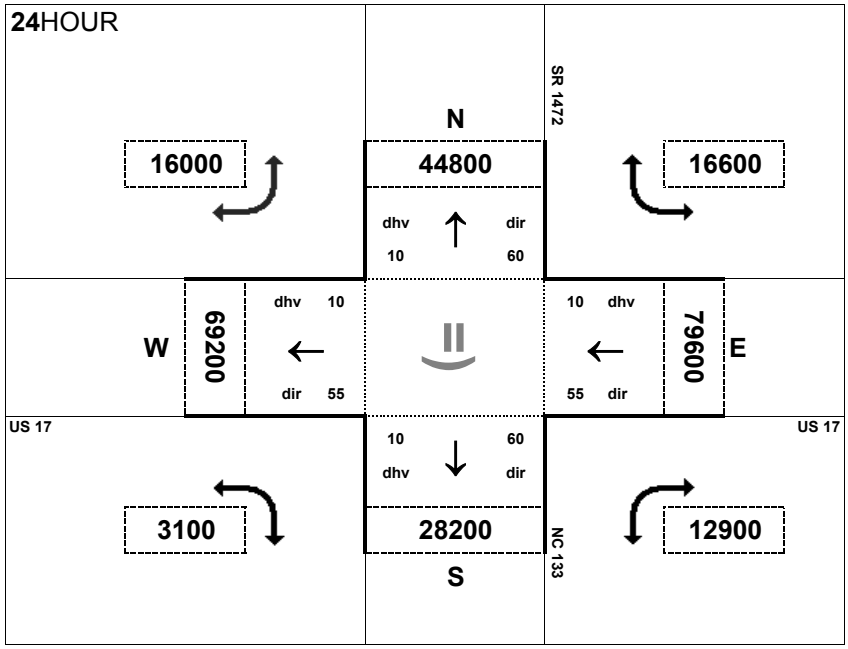
PM peak hour inflow is 7423 vehicles. PM peak hour outflow is 7423 vehicles.

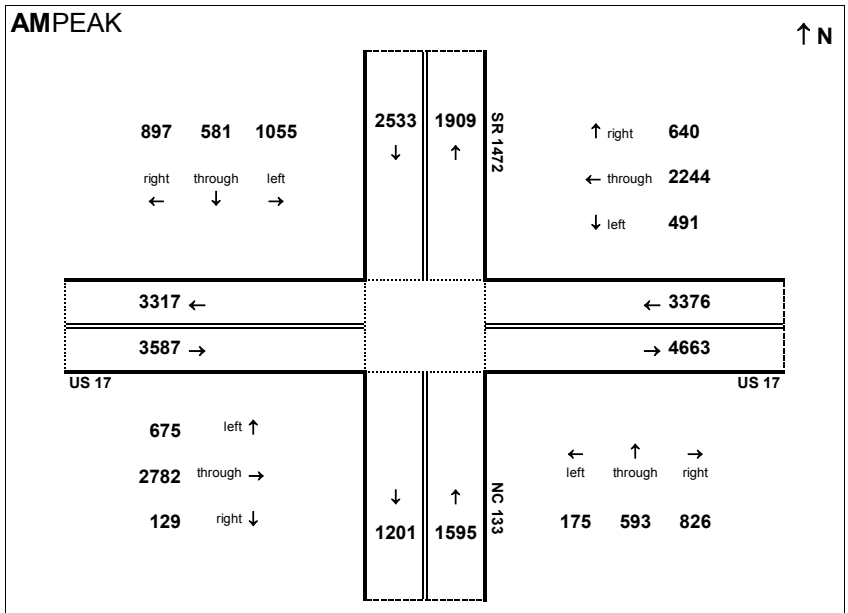
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

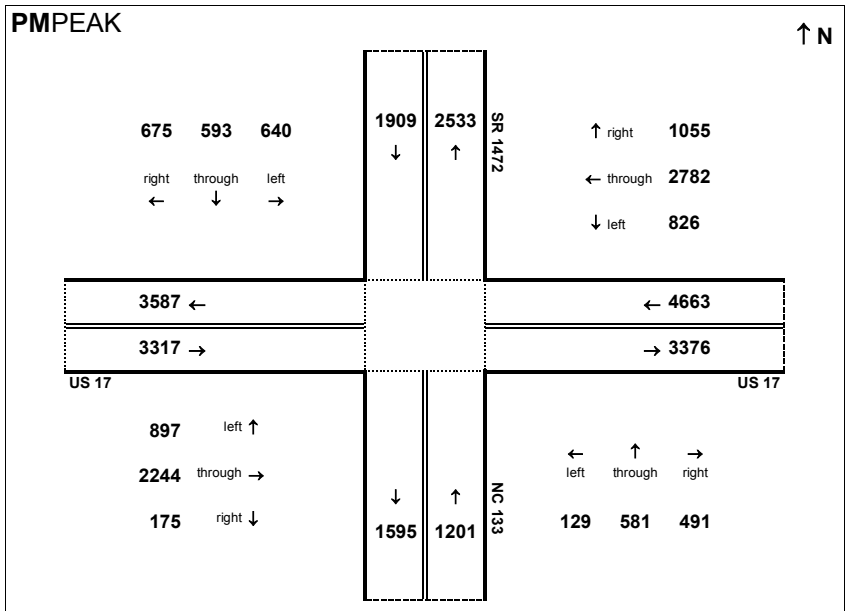
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 11091 vehicles. AM peak hour outflow is 11090 vehicles.



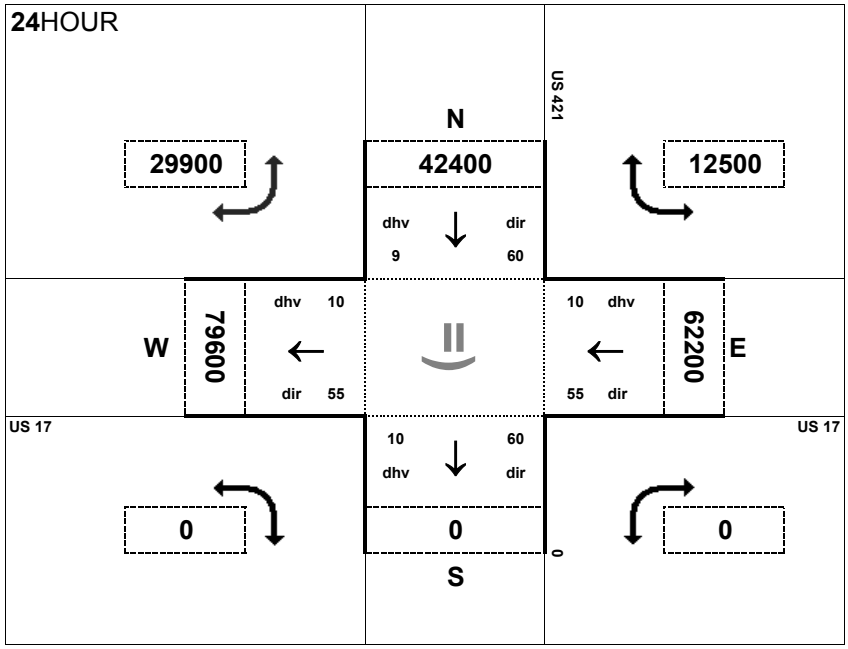
PM peak hour inflow is 11090 vehicles. PM peak hour outflow is 11091 vehicles.

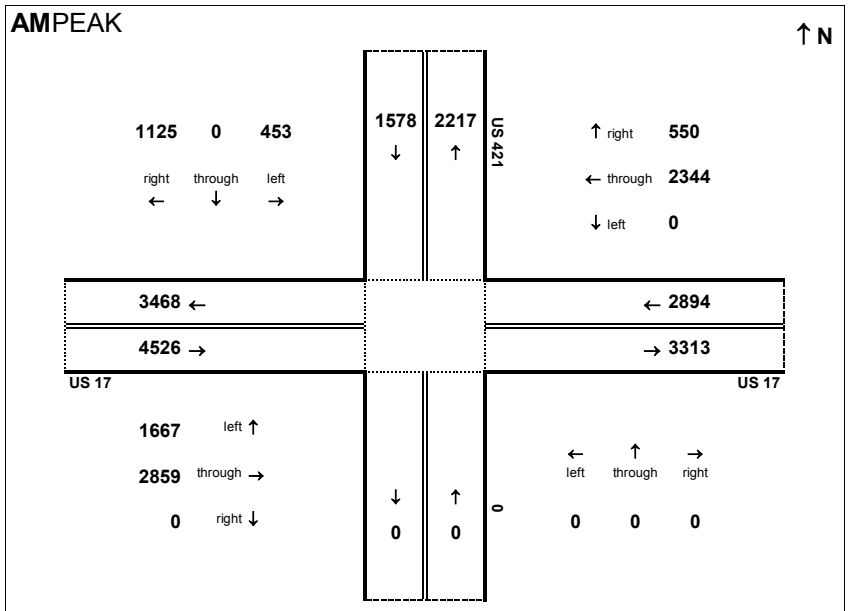
Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

Traffic Forecast Release Date:
Oct. 2014

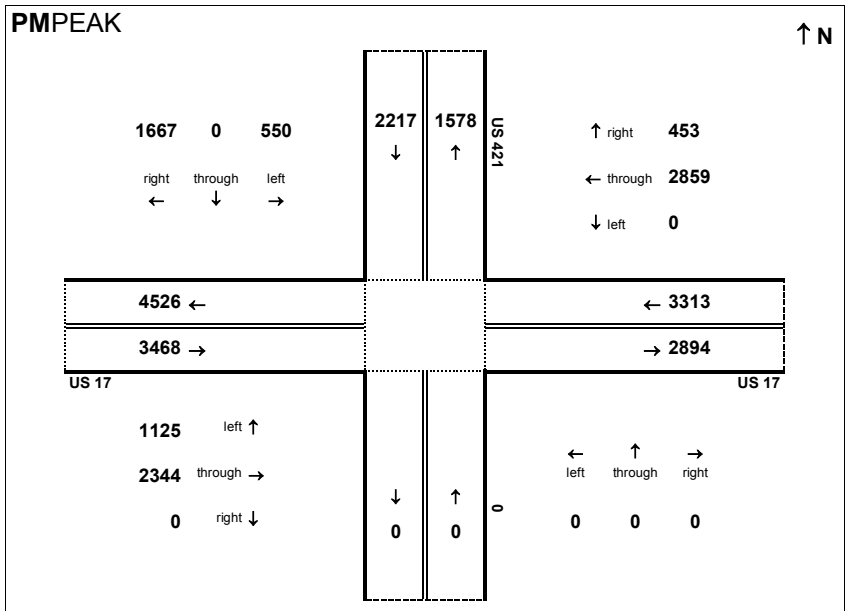
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J

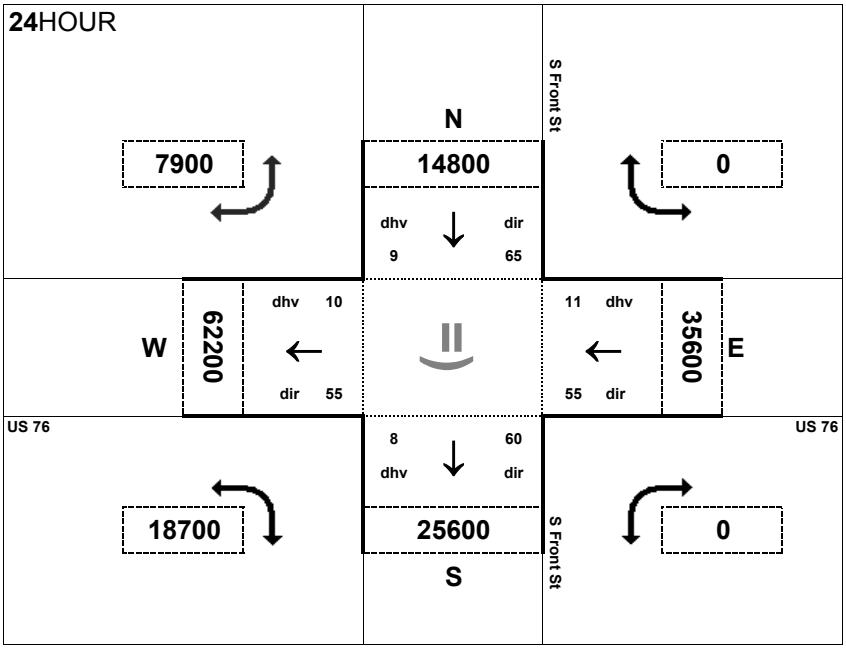




AM peak hour inflow is 8998 vehicles. AM peak hour outflow is 8998 vehicles.



PM peak hour inflow is 8998 vehicles. PM peak hour outflow is 8998 vehicles.

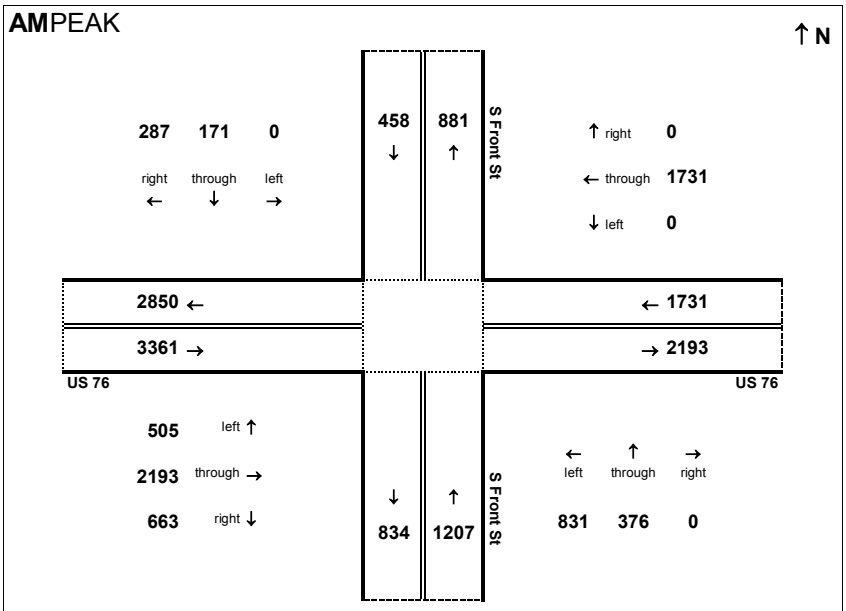


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

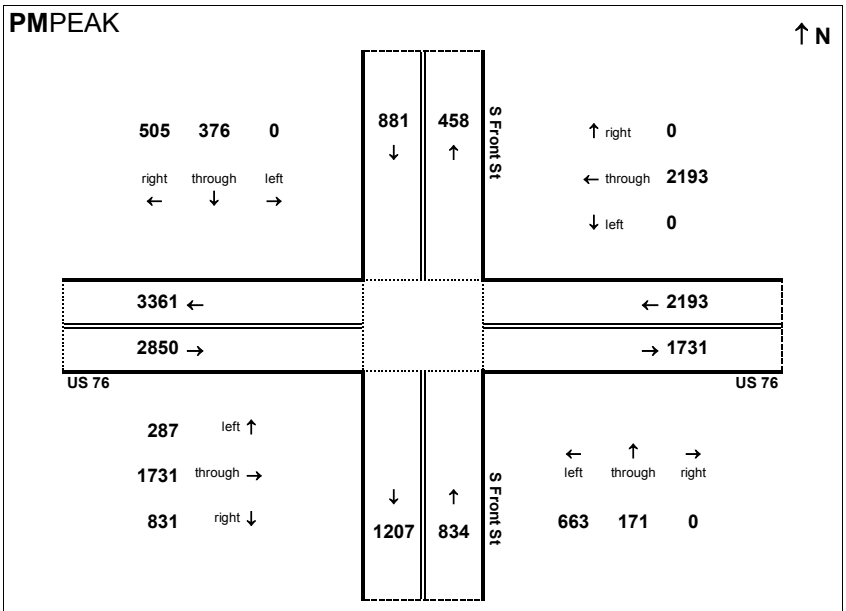
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2013

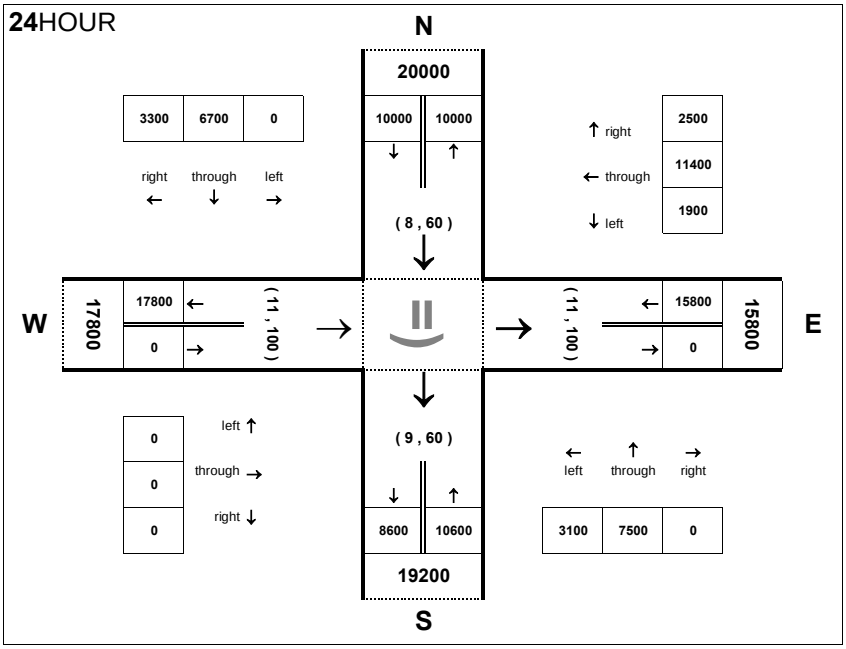
Project:
Cape Fear Crossing - Build Alt. J



AM peak hour inflow is 6757 vehicles. AM peak hour outflow is 6758 vehicles.



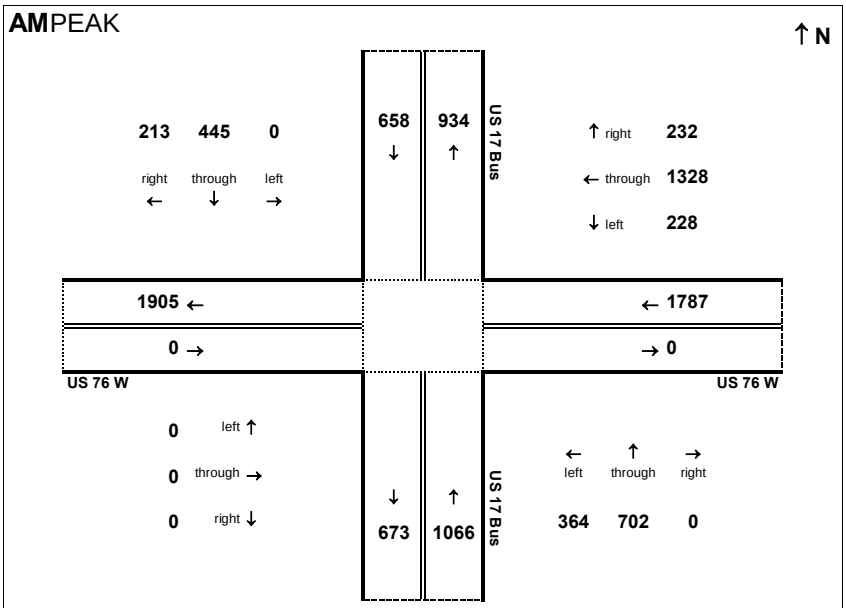
PM peak hour inflow is 6758 vehicles. PM peak hour outflow is 6757 vehicles.



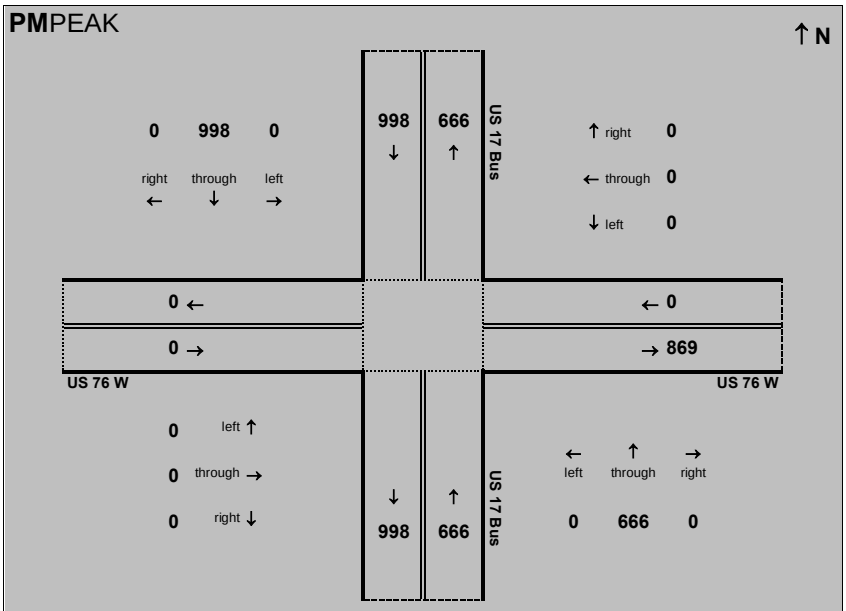
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

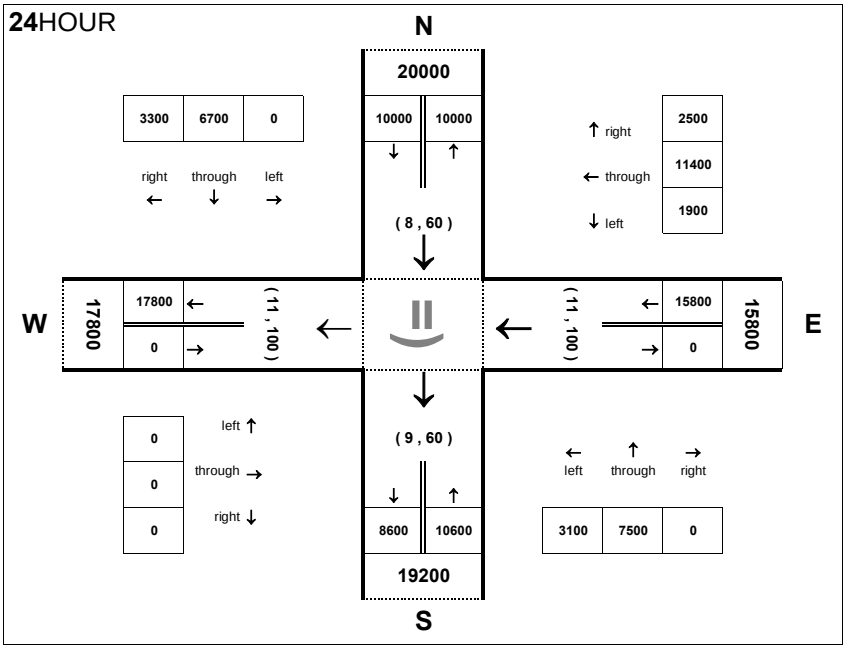
Traffic Data Year:
2040 Alt J



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



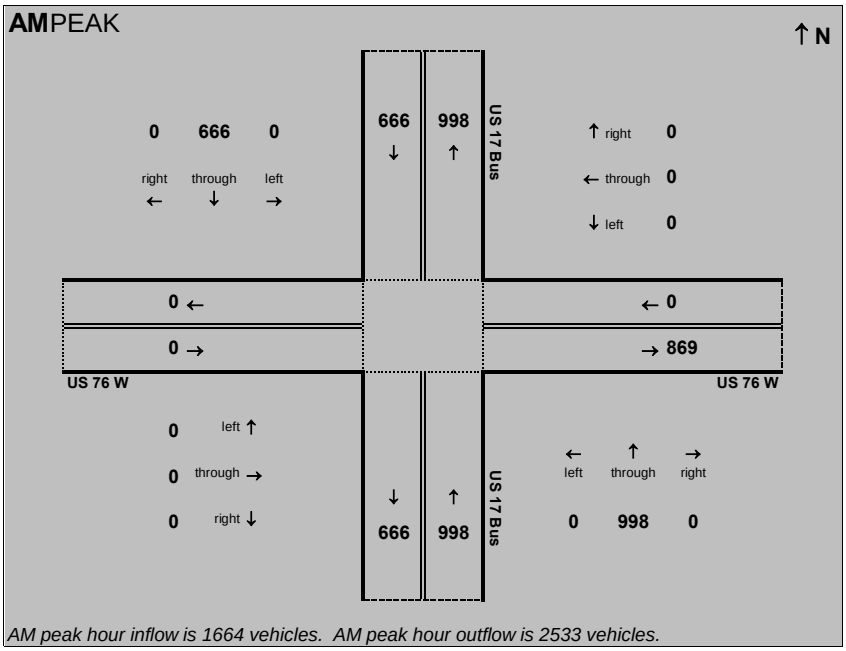
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



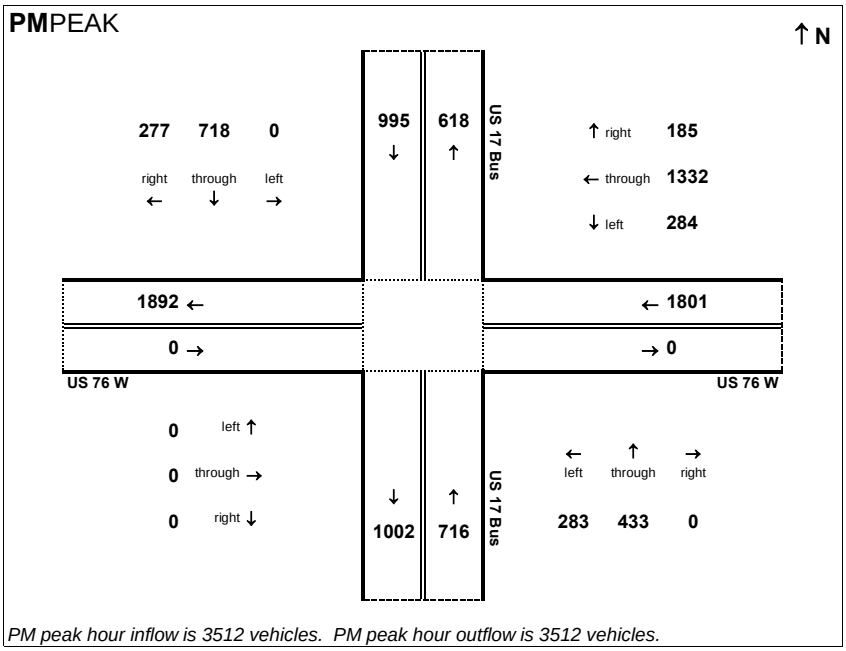
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

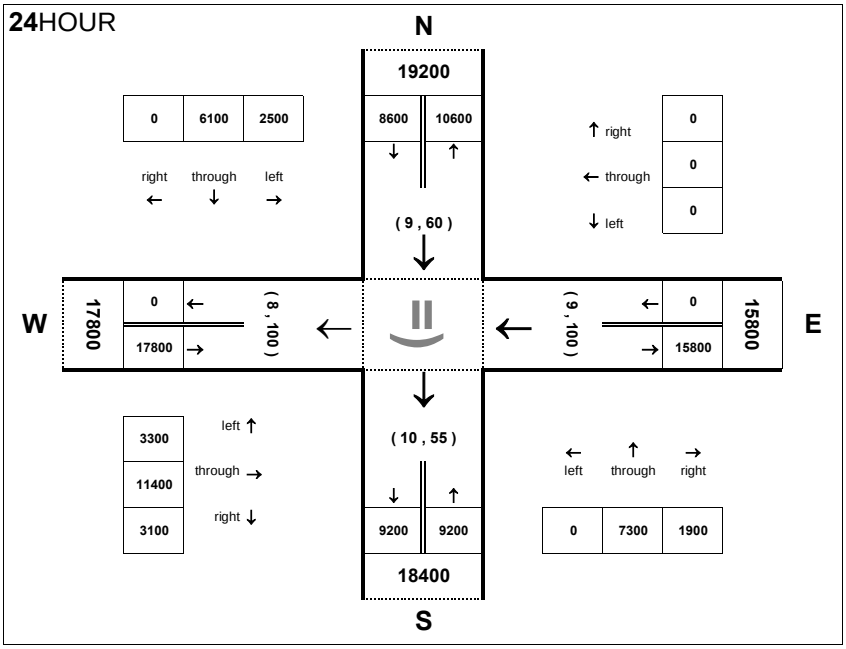
Traffic Data Year:
2040 Alt J



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



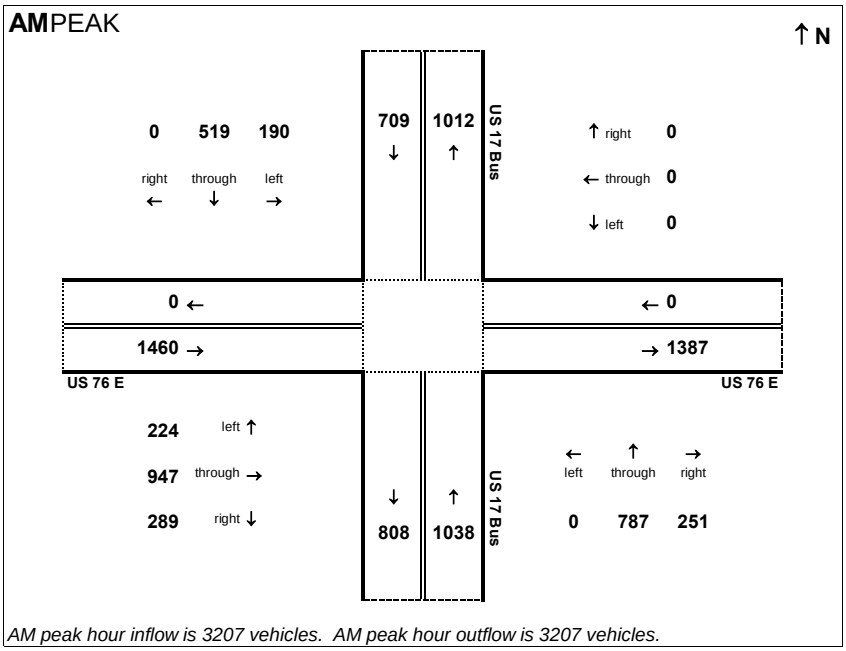
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



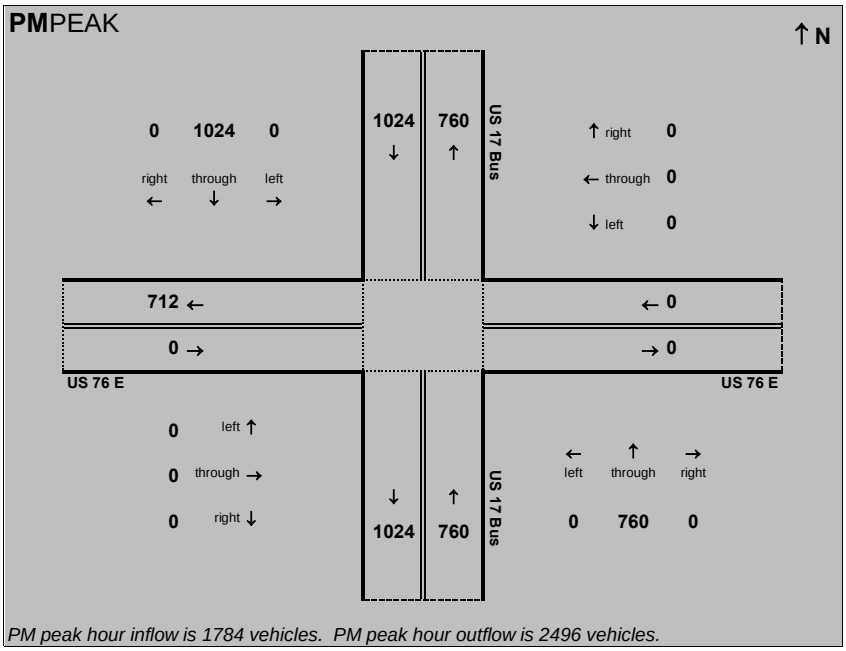
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

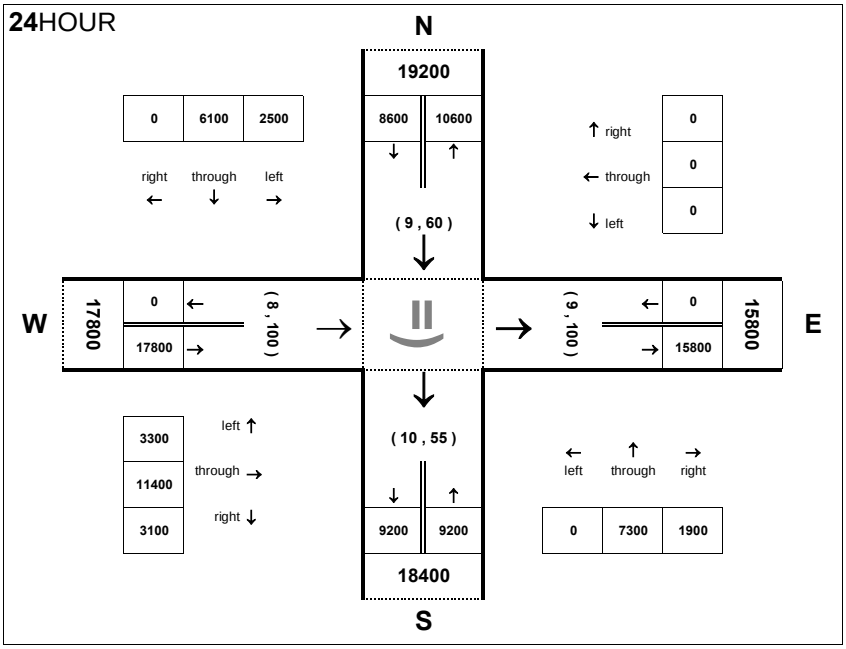
Traffic Data Year:
2040 Alt J



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



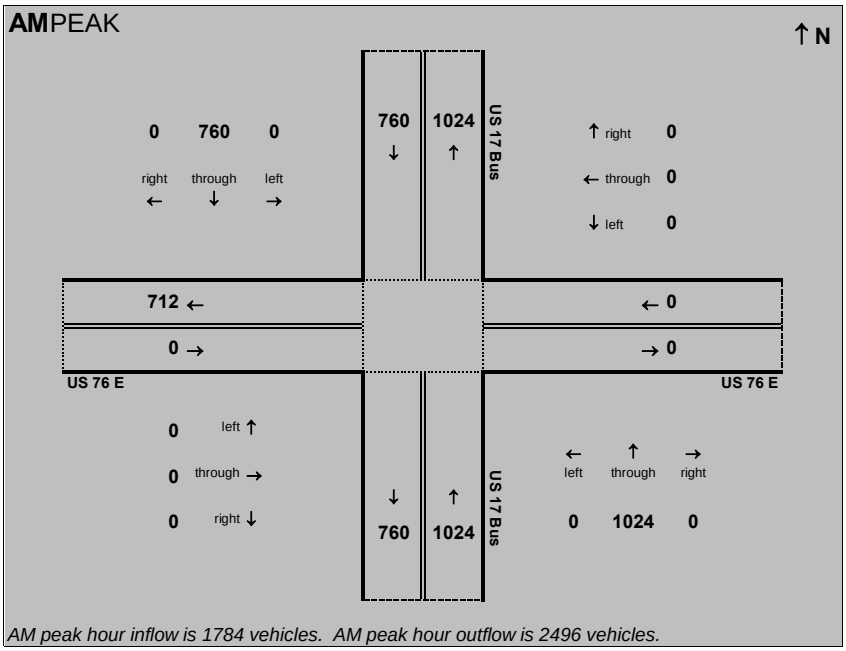
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



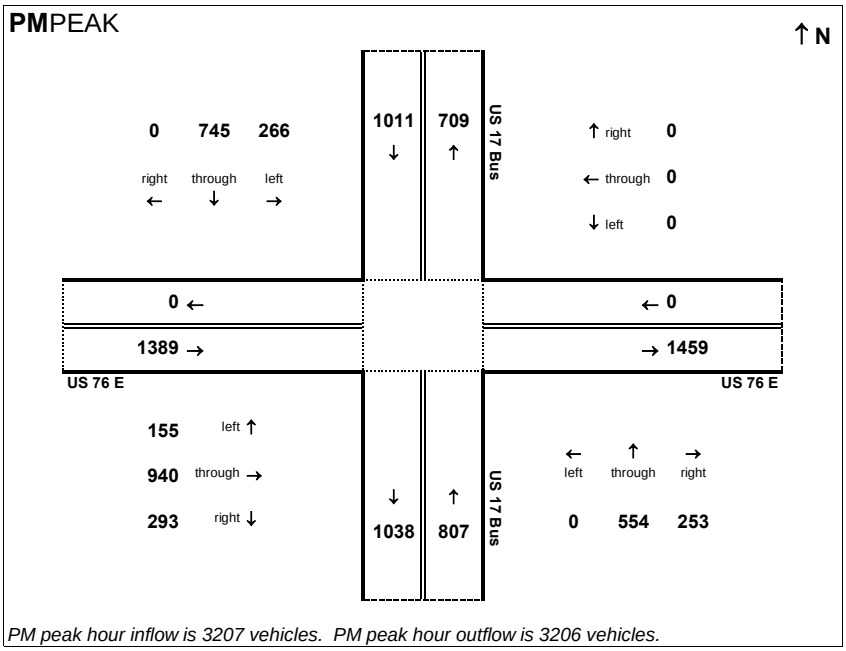
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt J



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



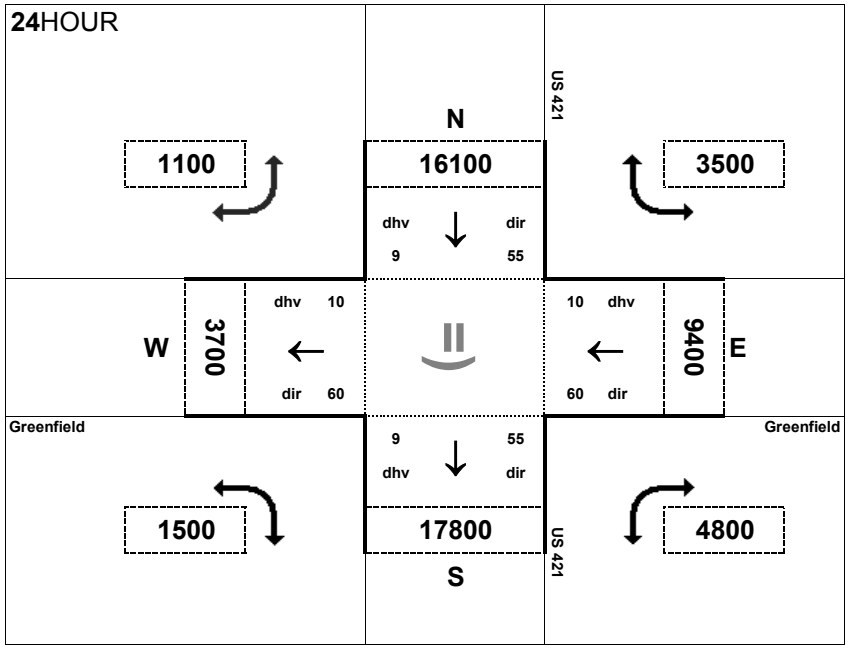
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

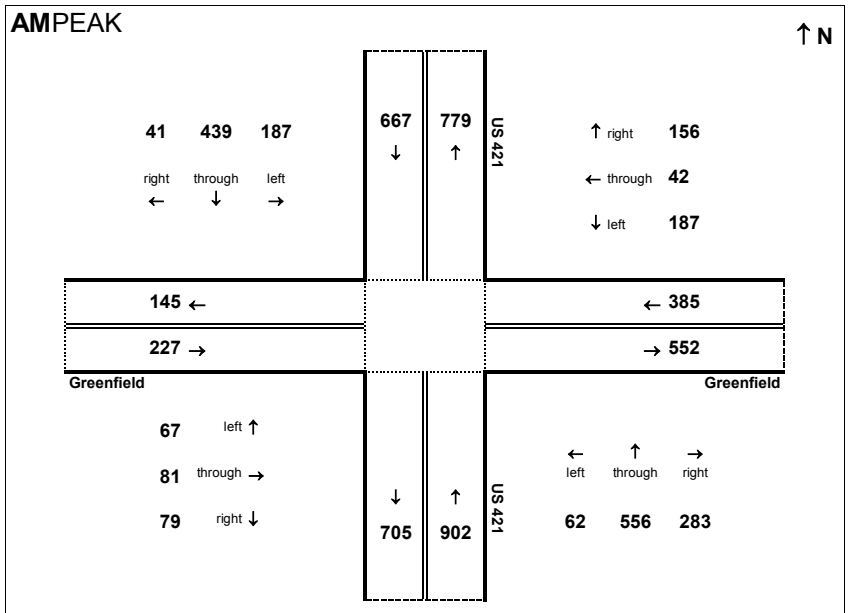
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

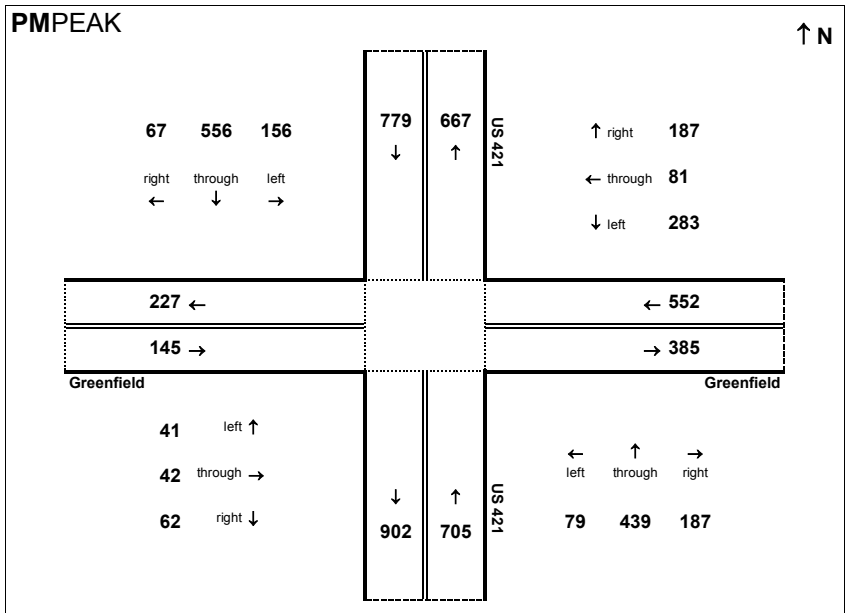
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



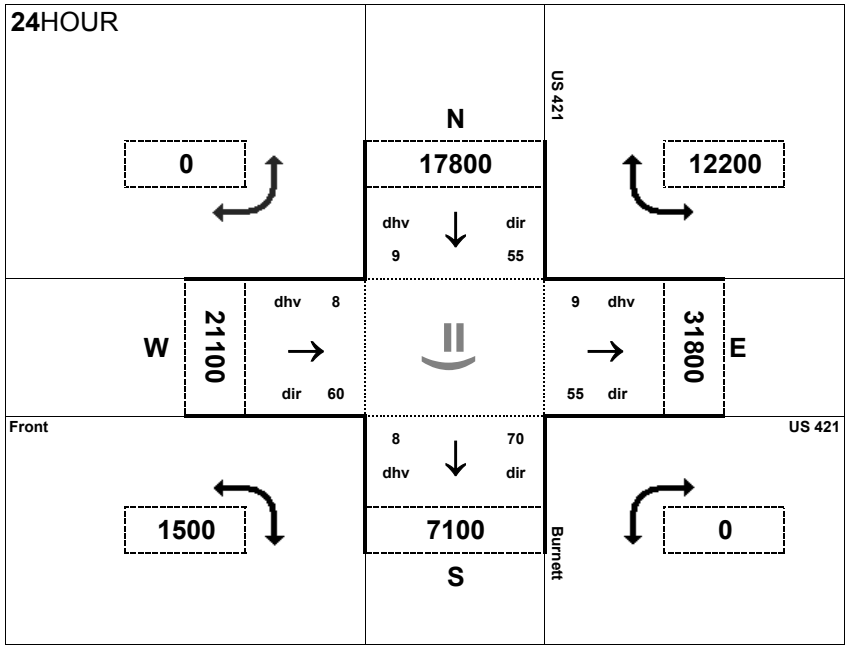
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

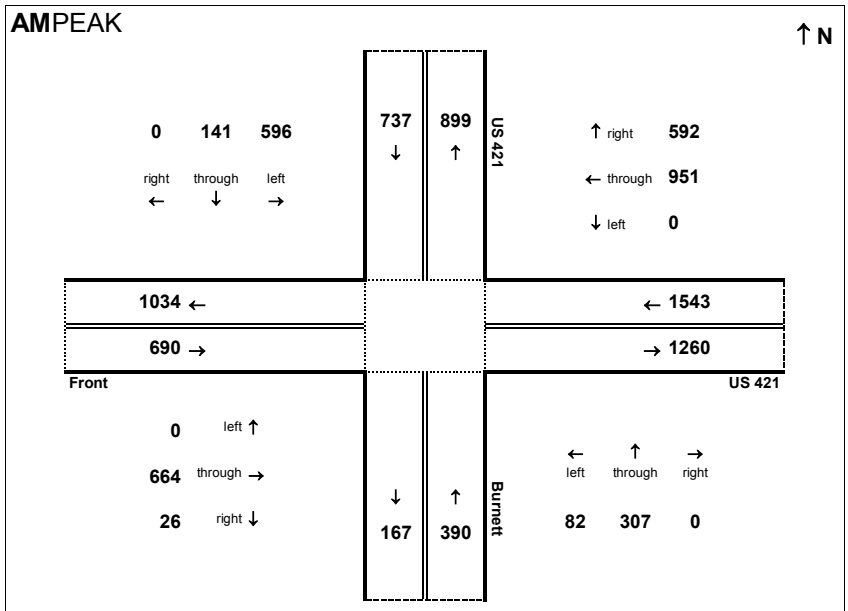
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

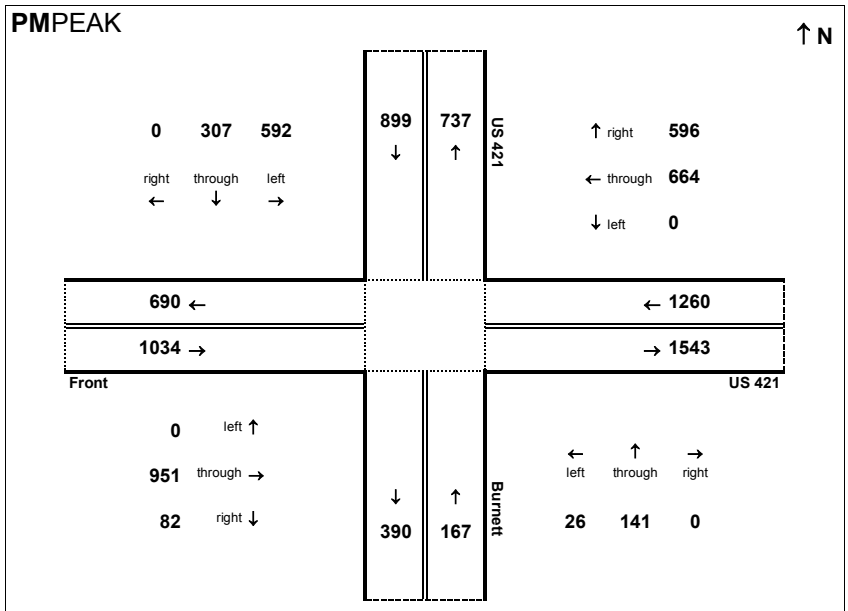
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



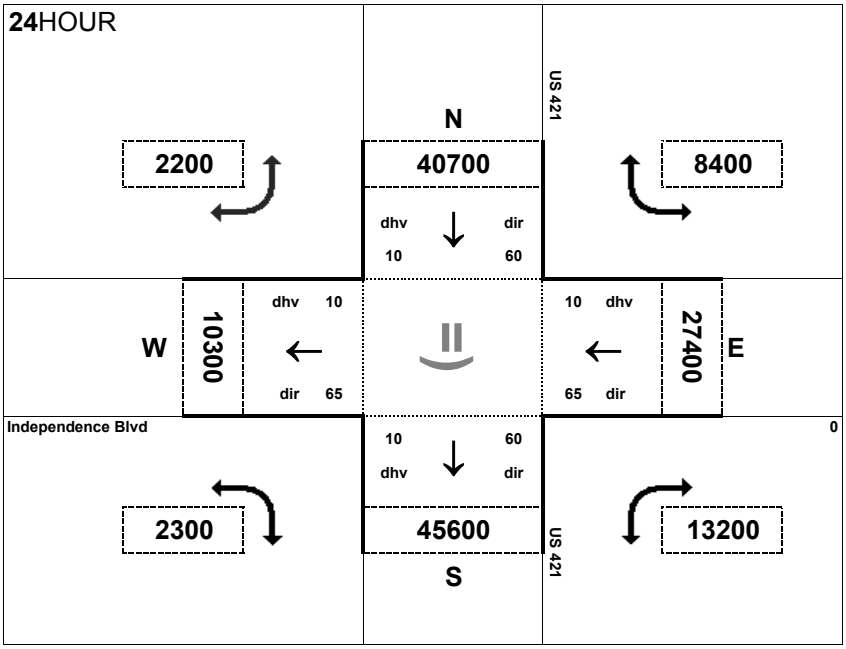
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3360 vehicles.

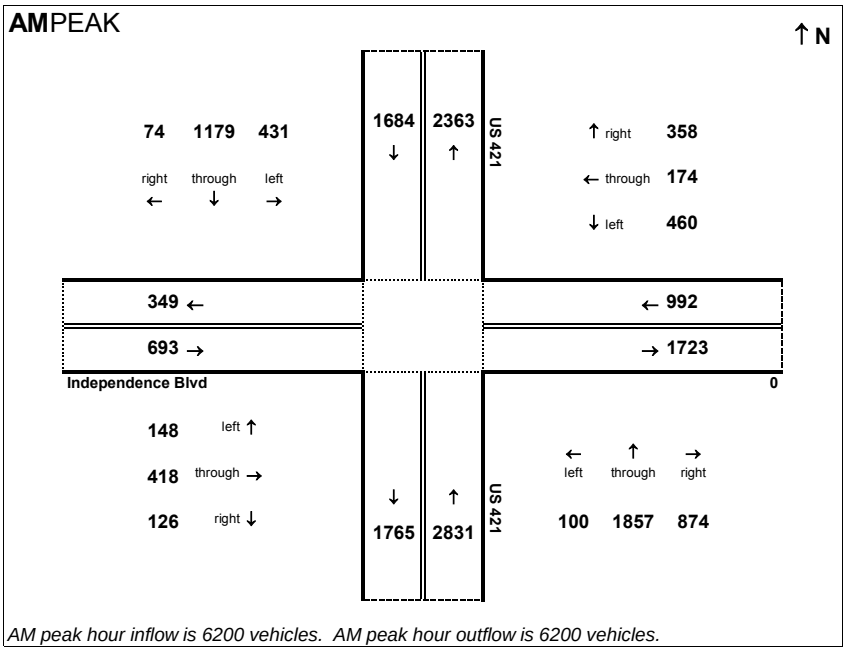
Peak Hour Volume Breakouts Report:
31 - US 421 - Realigned Independence Boulevard

Traffic Forecast Release Date:
Oct. 2014

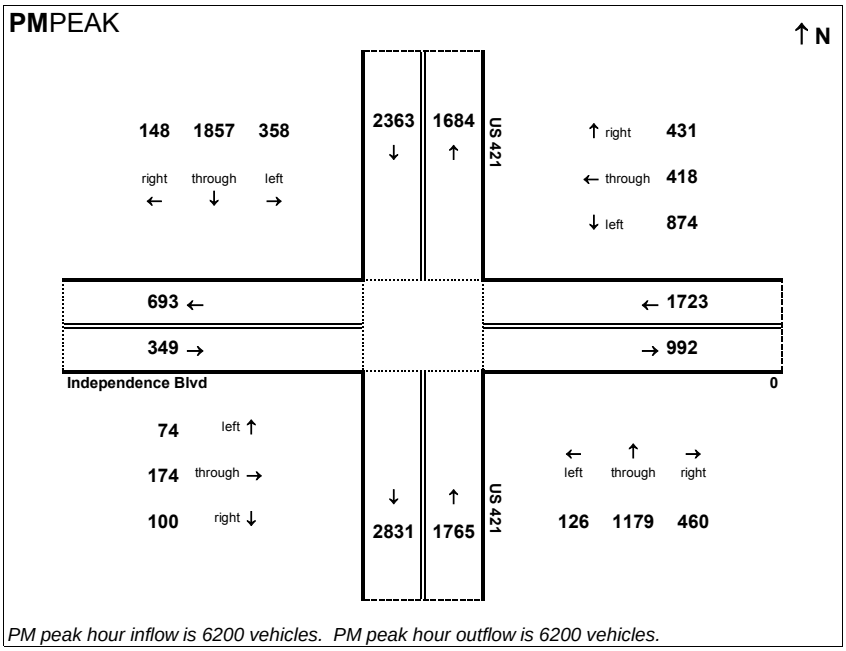
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 6200 vehicles. AM peak hour outflow is 6200 vehicles.



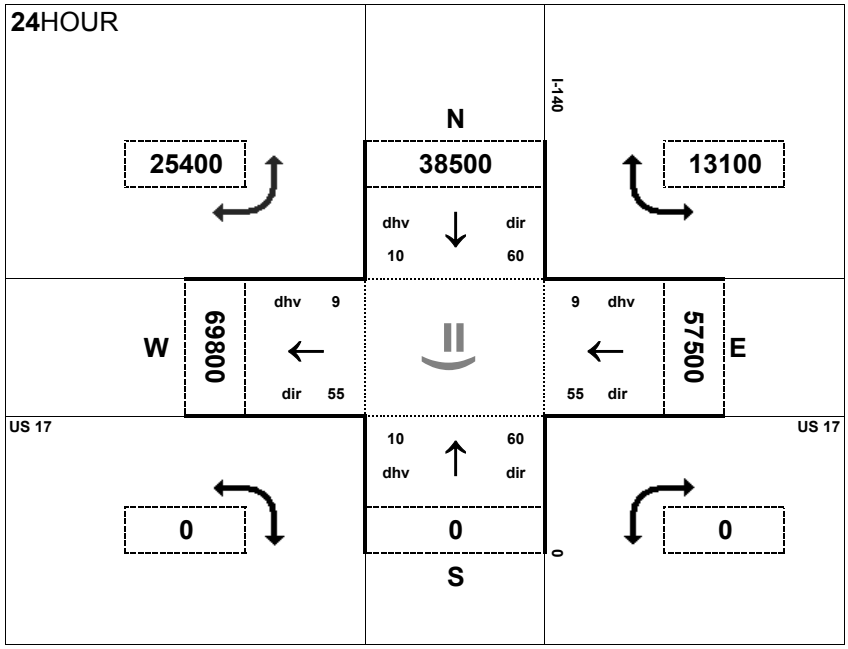
PM peak hour inflow is 6200 vehicles. PM peak hour outflow is 6200 vehicles.

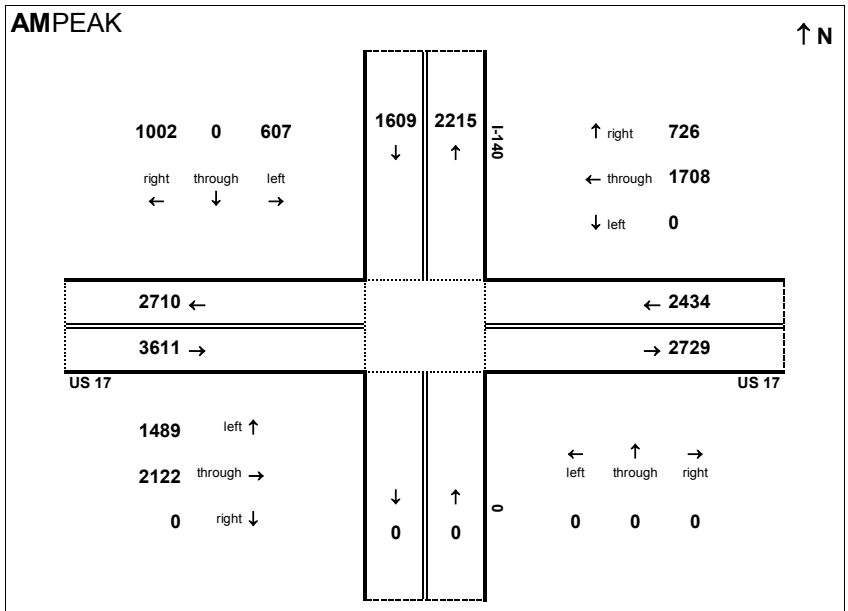
Peak Hour Volume Breakouts Report:
43 - US 17 and I-140 Interchange

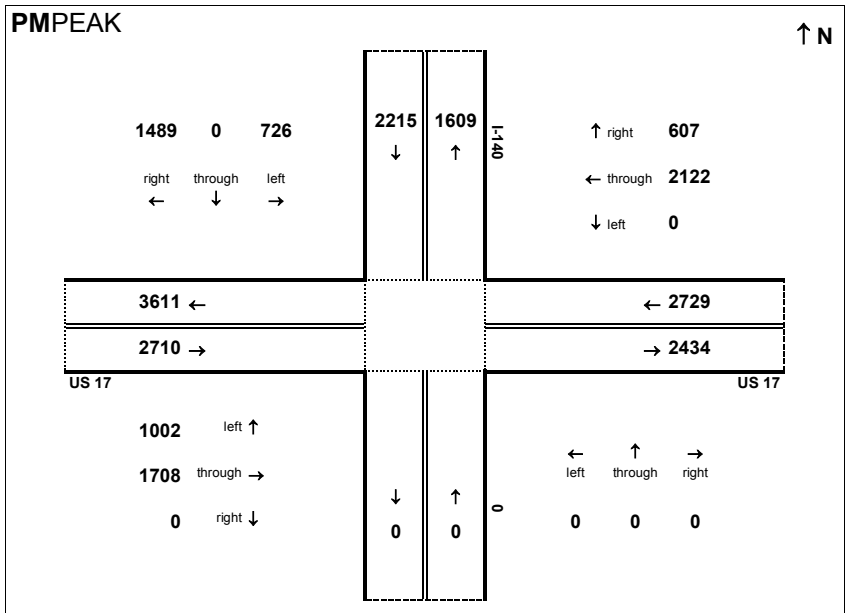
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





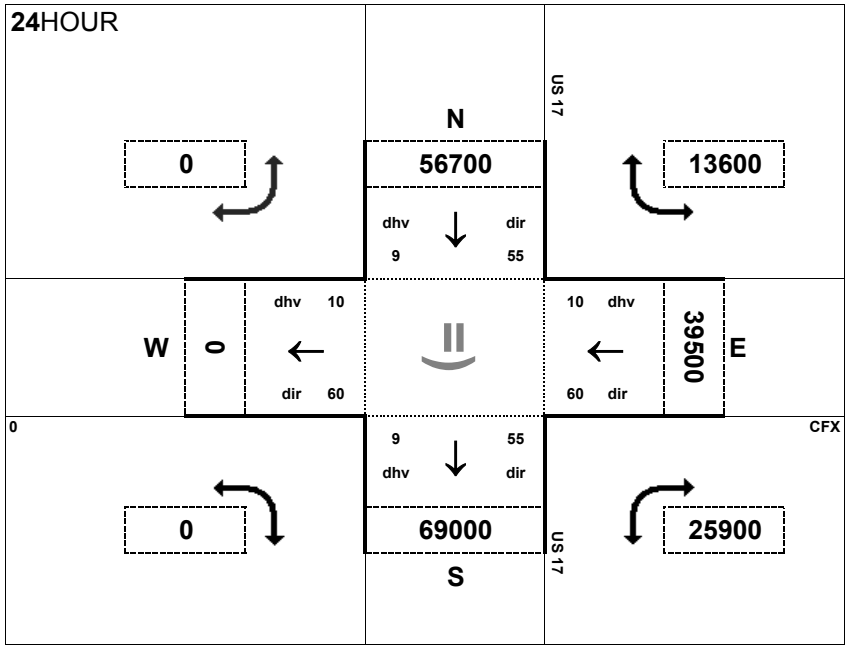


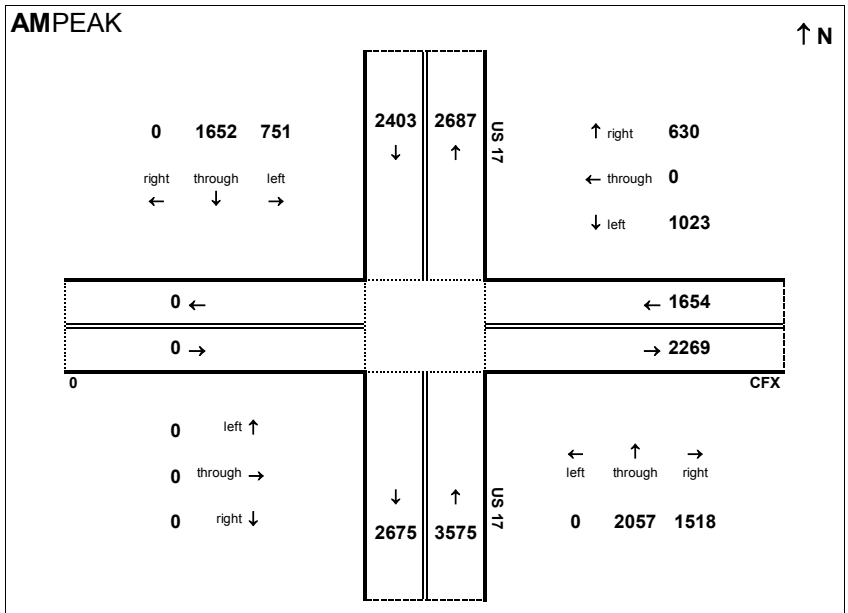
Peak Hour Volume Breakouts Report:
102 - CFX and US 17 Interchange

Traffic Forecast Release Date:
Oct. 2014

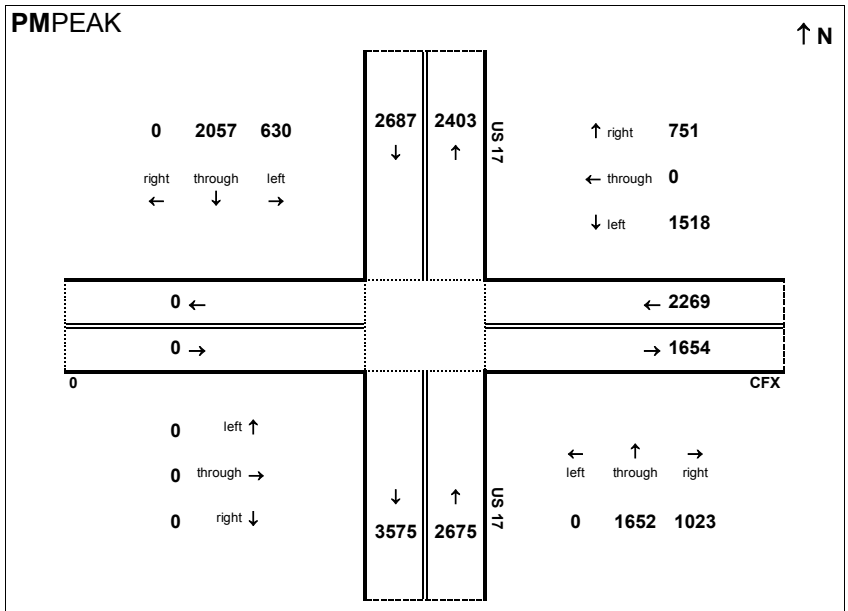
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 7632 vehicles. AM peak hour outflow is 7631 vehicles.



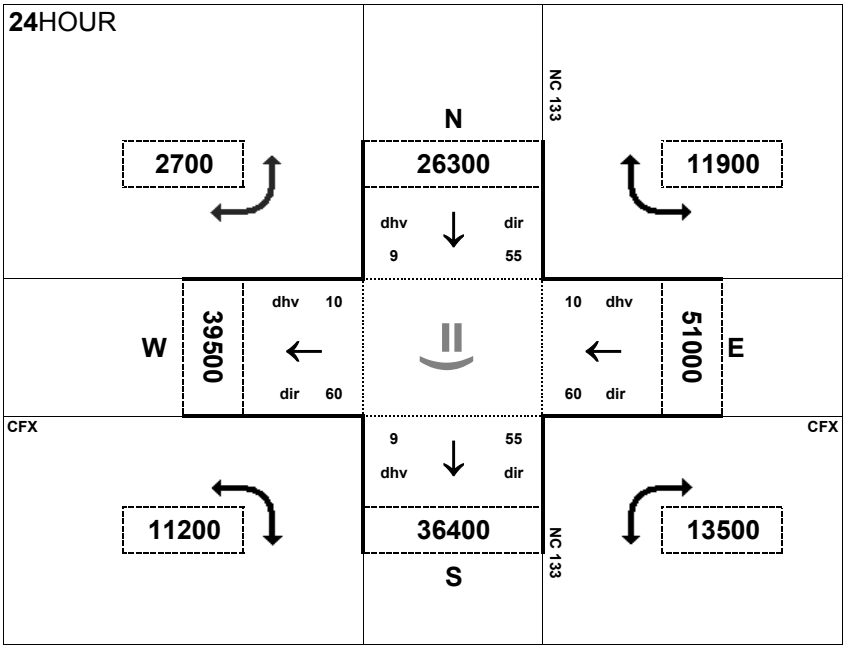
PM peak hour inflow is 7631 vehicles. PM peak hour outflow is 7632 vehicles.

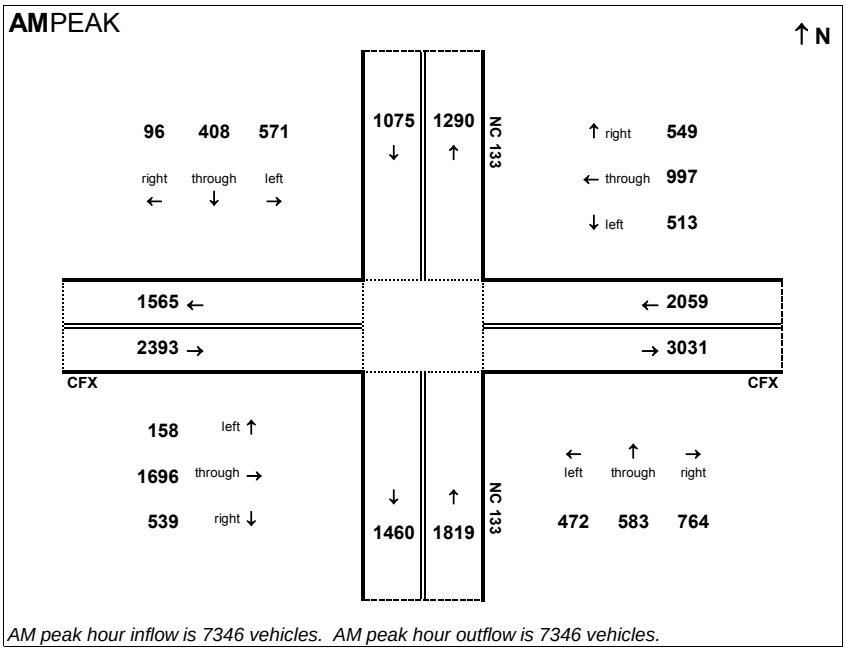
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

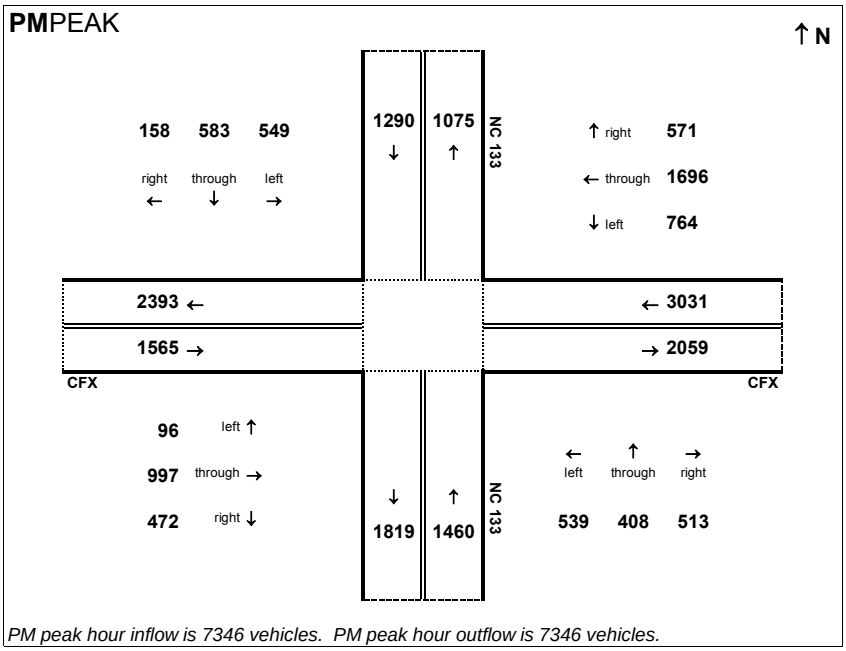
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 7346 vehicles. AM peak hour outflow is 7346 vehicles.



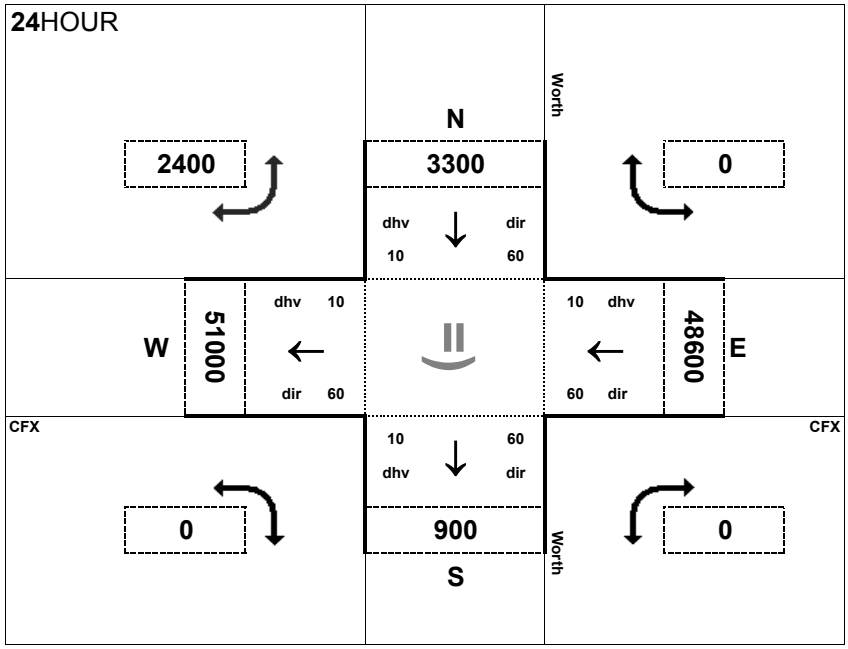
PM peak hour inflow is 7346 vehicles. PM peak hour outflow is 7346 vehicles.

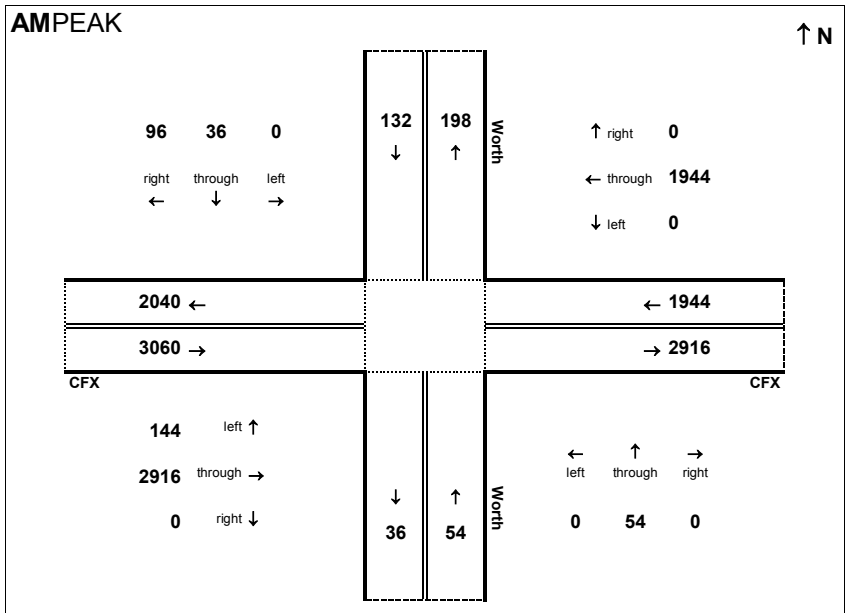
Peak Hour Volume Breakouts Report:
106 - CFX and Worth Dr

Traffic Forecast Release Date:
Oct. 2014

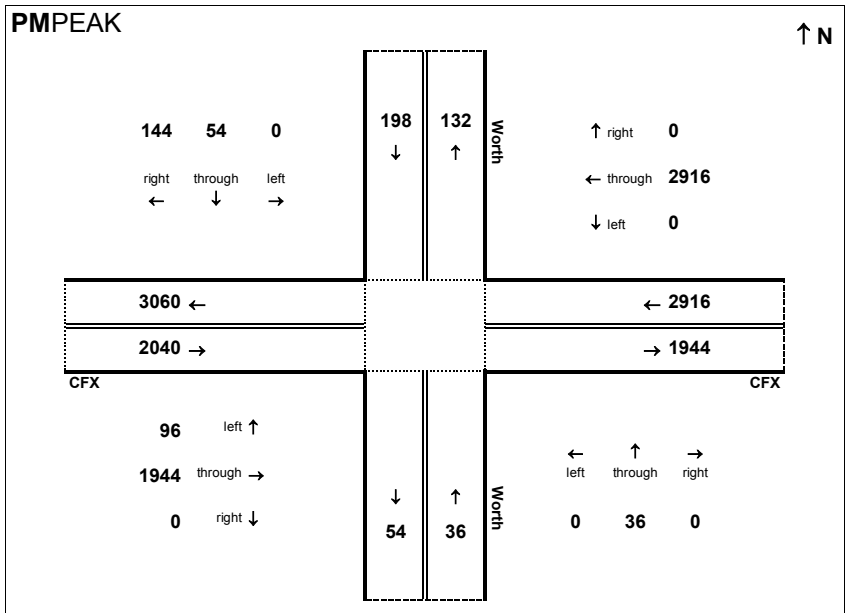
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 5190 vehicles. AM peak hour outflow is 5190 vehicles.



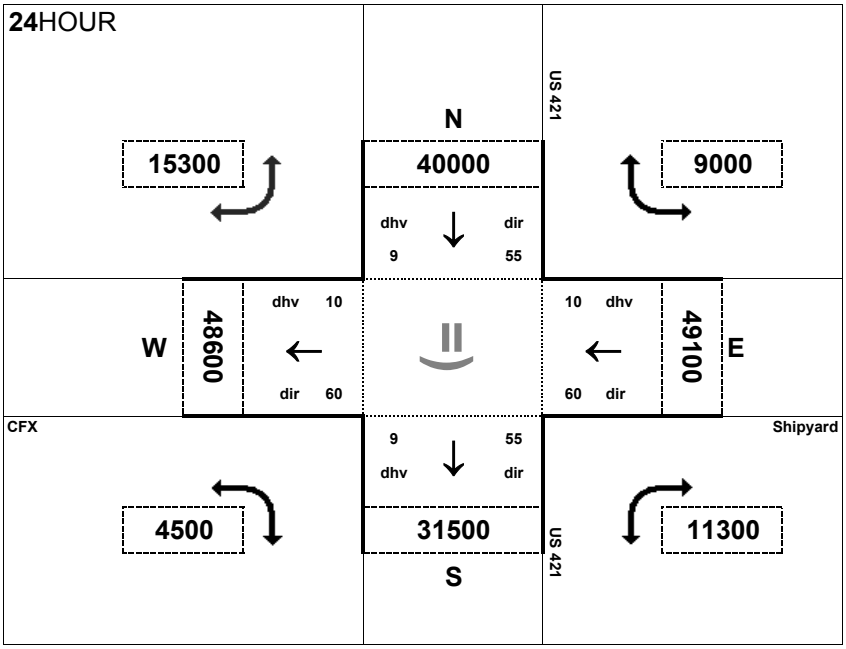
PM peak hour inflow is 5190 vehicles. PM peak hour outflow is 5190 vehicles.

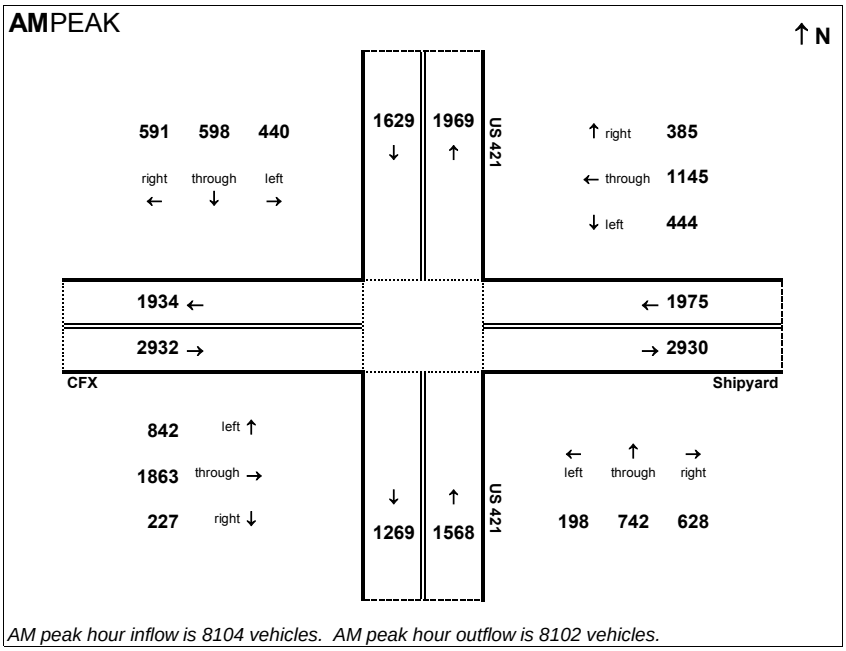
Peak Hour Volume Breakouts Report:
108 - CFX and US 421-Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

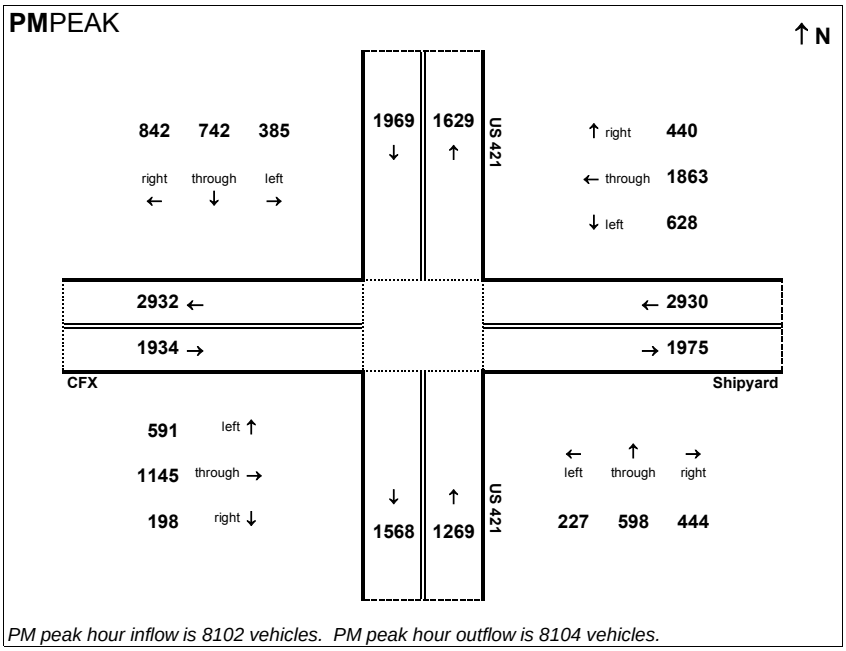
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 8104 vehicles. AM peak hour outflow is 8102 vehicles.



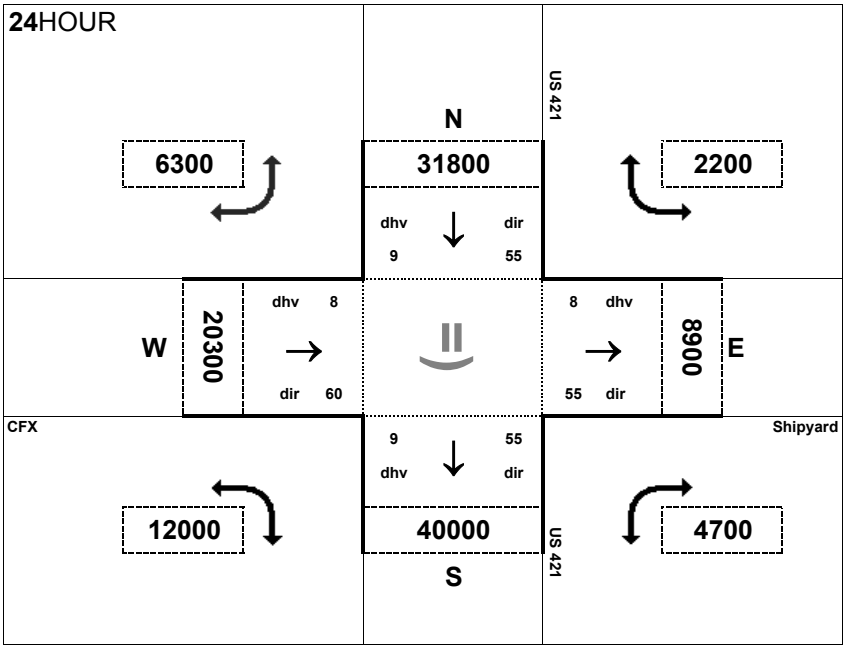
PM peak hour inflow is 8102 vehicles. PM peak hour outflow is 8104 vehicles.

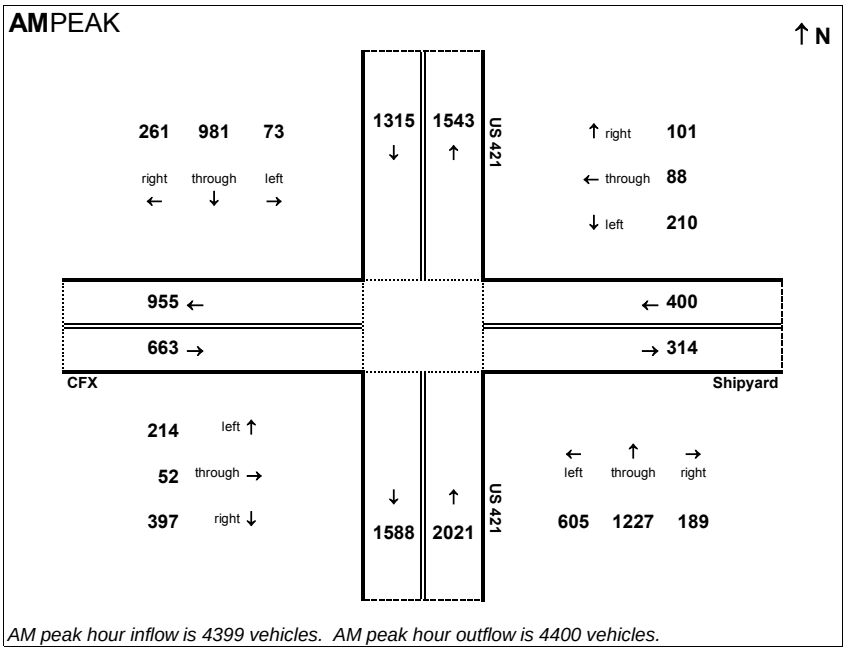
Peak Hour Volume Breakouts Report:
108 - CFX and US 421-Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

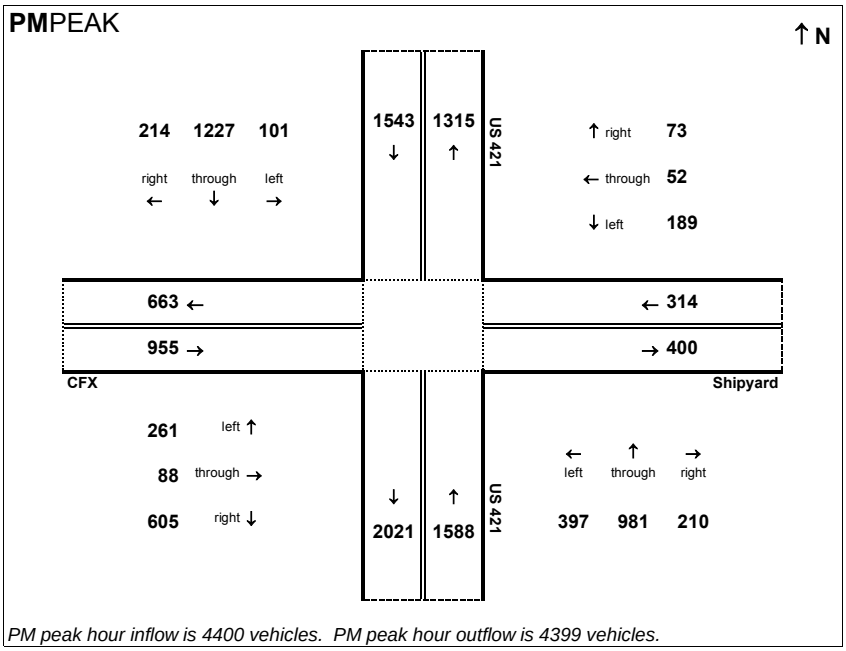
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. J





AM peak hour inflow is 4399 vehicles. AM peak hour outflow is 4400 vehicles.



PM peak hour inflow is 4400 vehicles. PM peak hour outflow is 4399 vehicles.

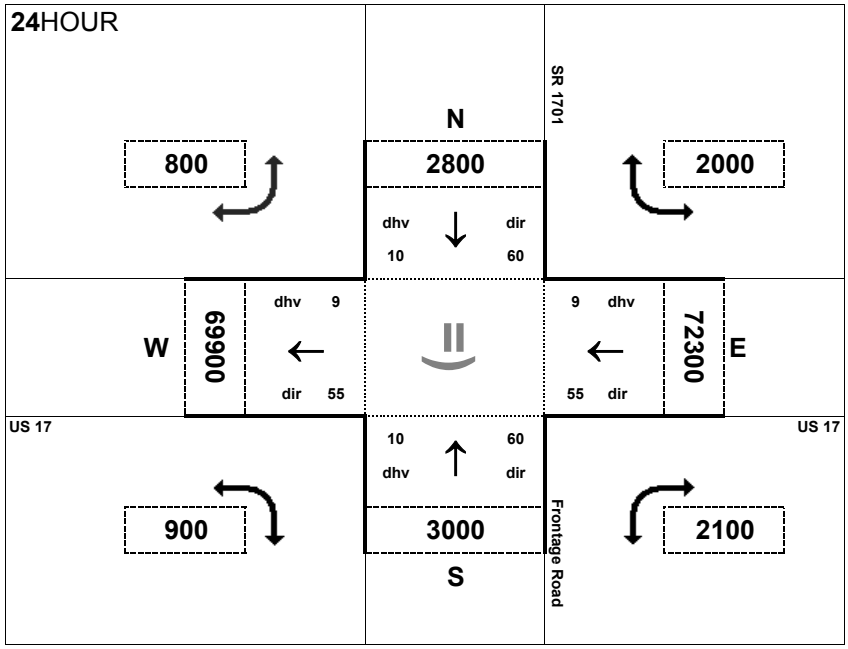
2040 Build DSA Alternative M

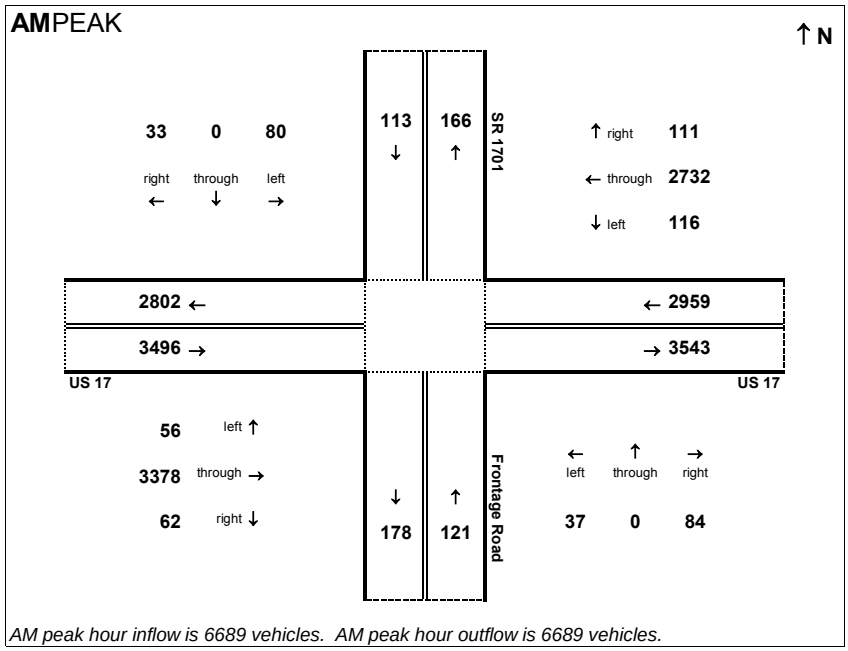
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

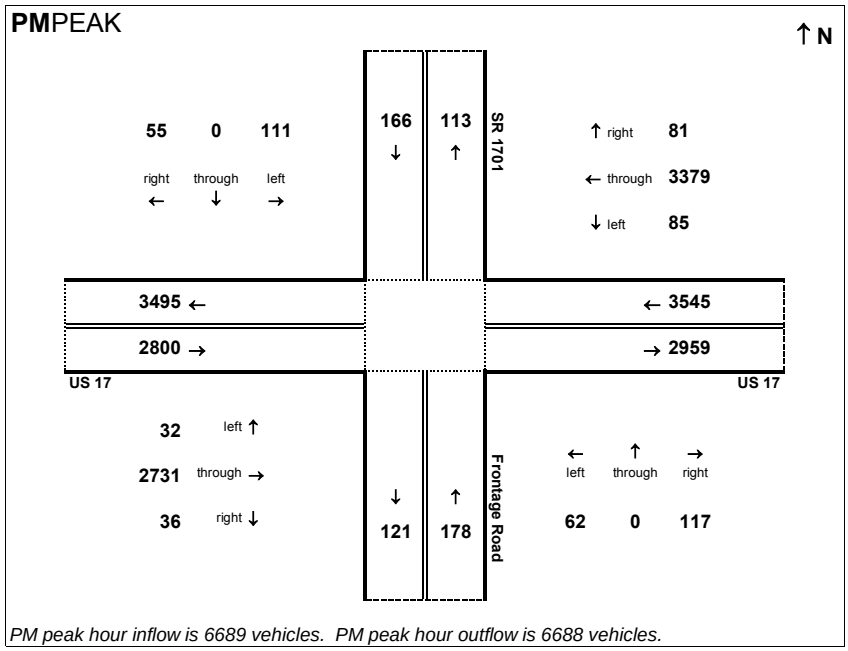
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M

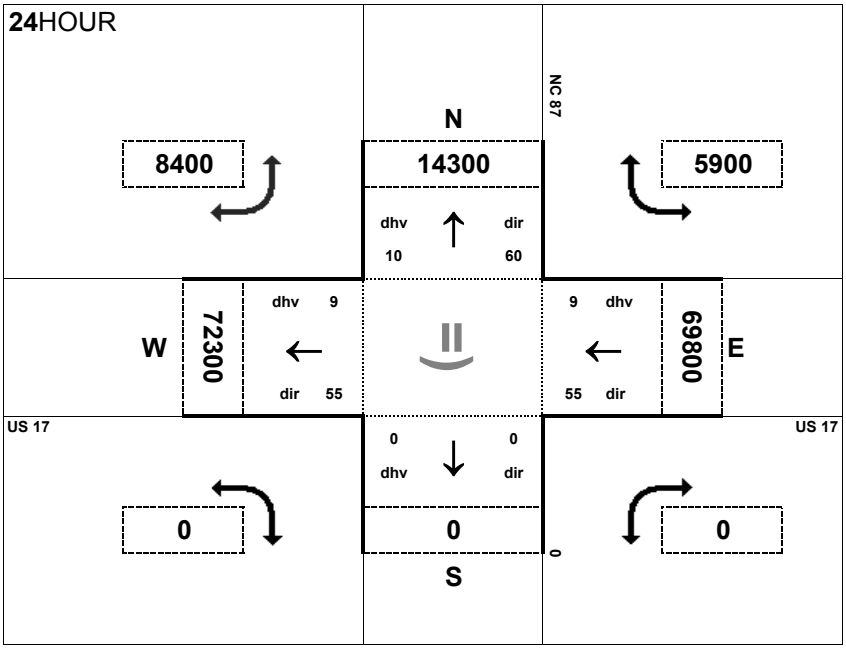




AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

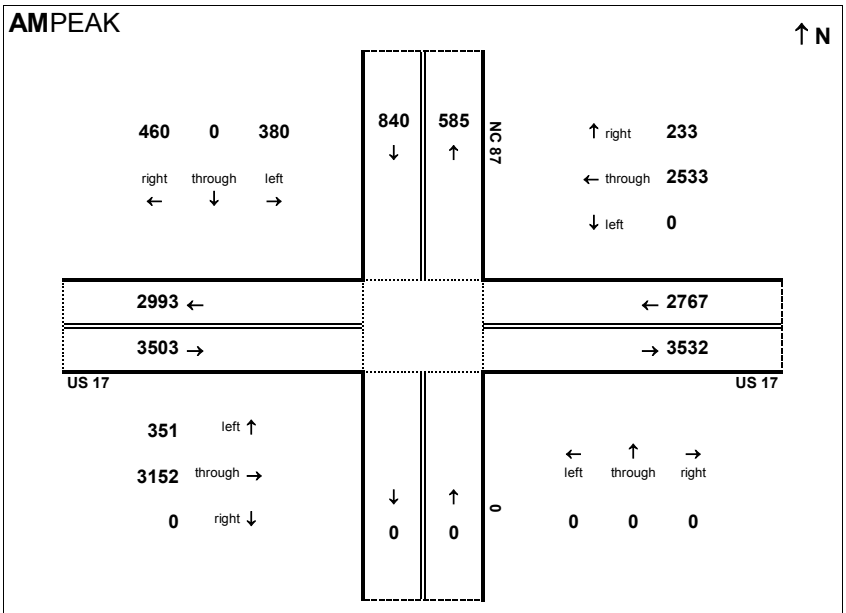


Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

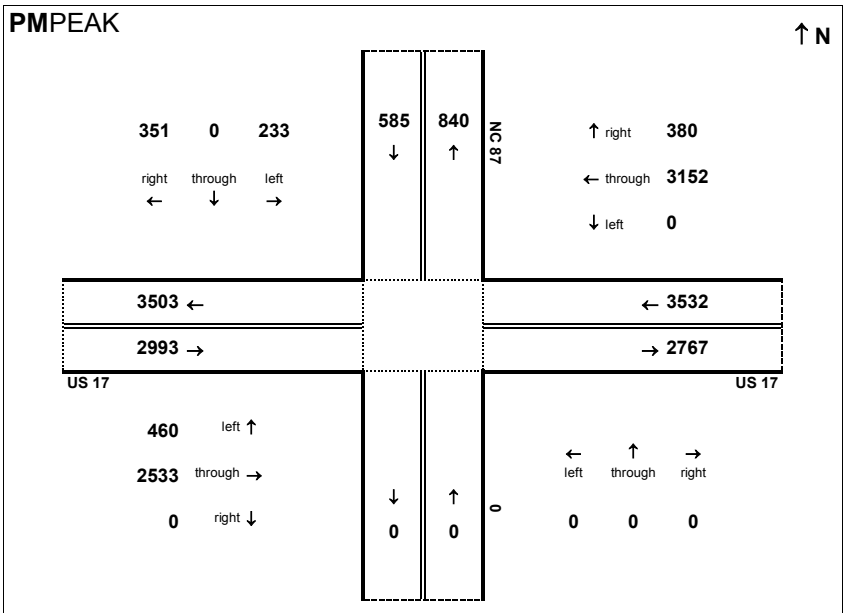
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

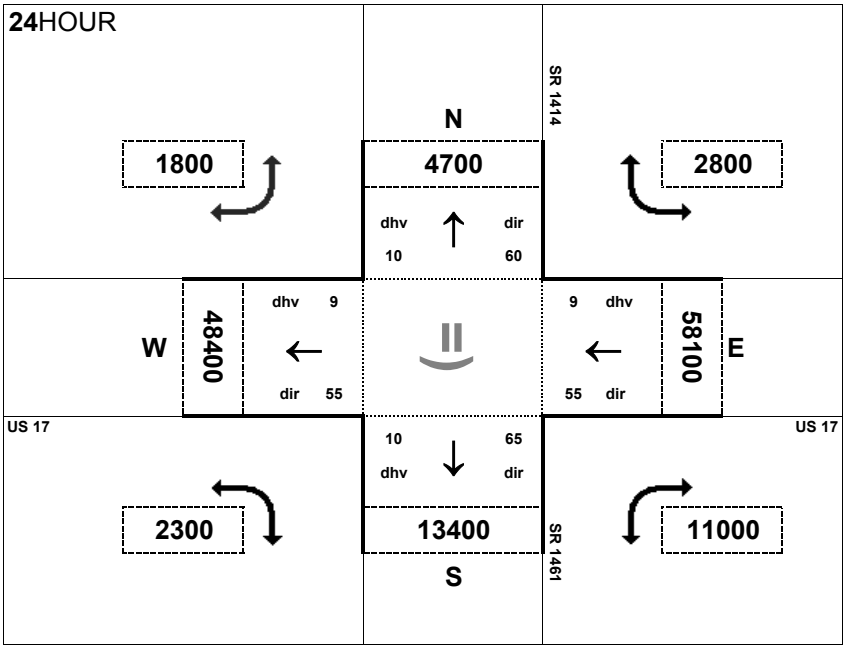
Project:
Cape Fear Crossing - Build Alt. M



AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

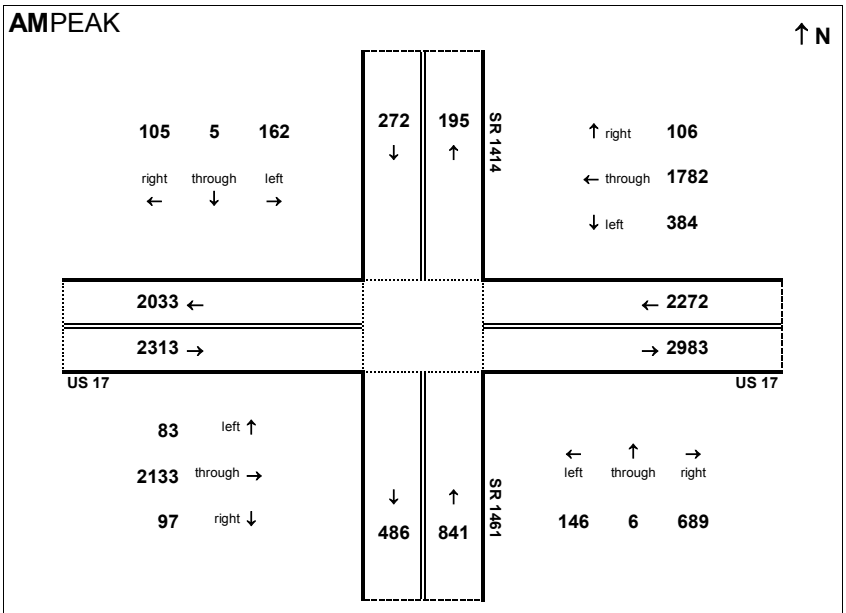


Peak Hour Volume Breakouts Report:
03 - Intersection of US 17 & SR 1414 - Goodman Road and SR 1461 - Hewett-Burton Road

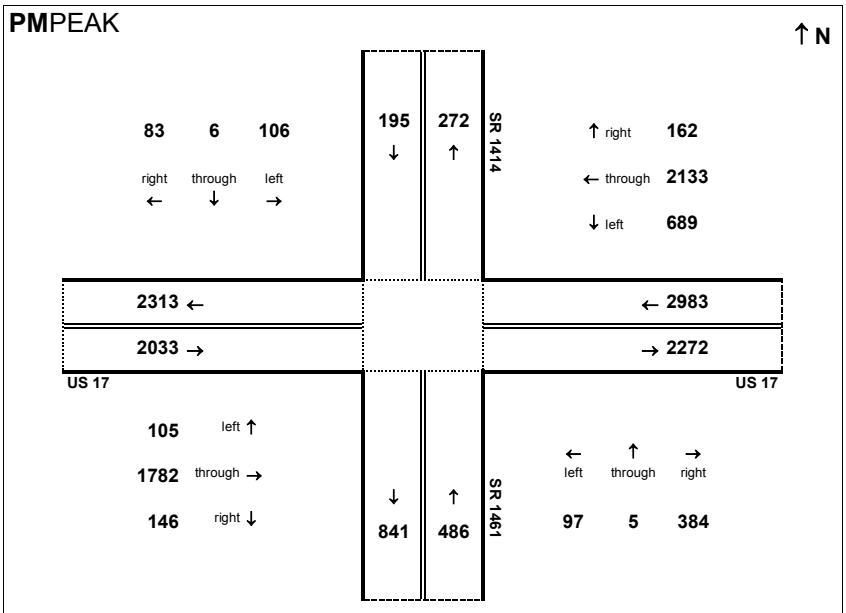
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M



AM peak hour inflow is 5698 vehicles. AM peak hour outflow is 5697 vehicles.



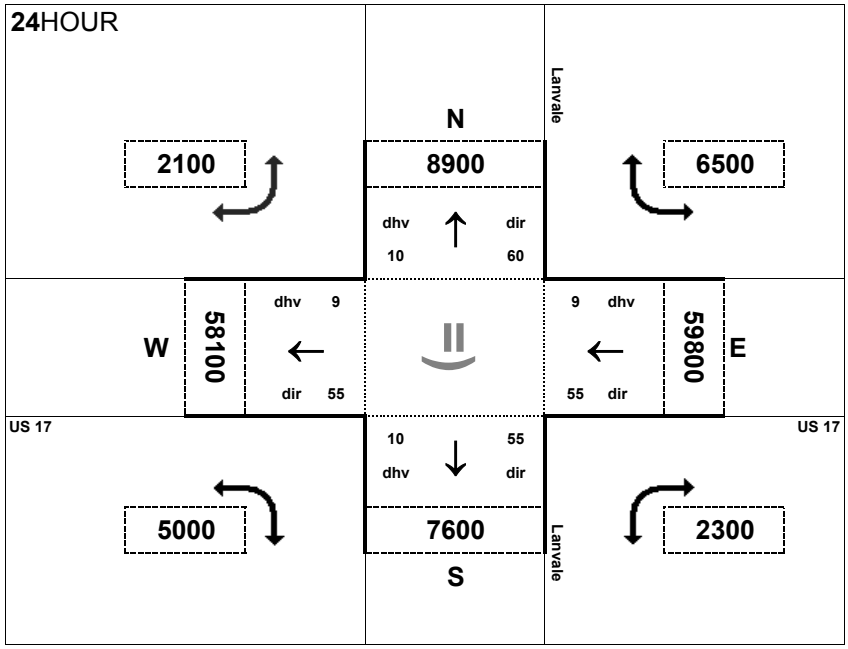
PM peak hour inflow is 5697 vehicles. PM peak hour outflow is 5698 vehicles.

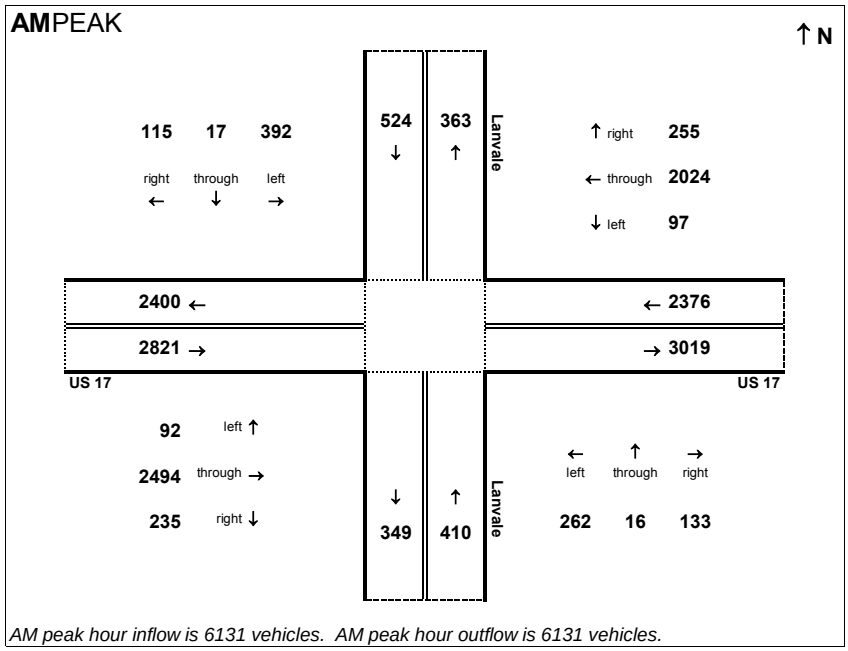
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

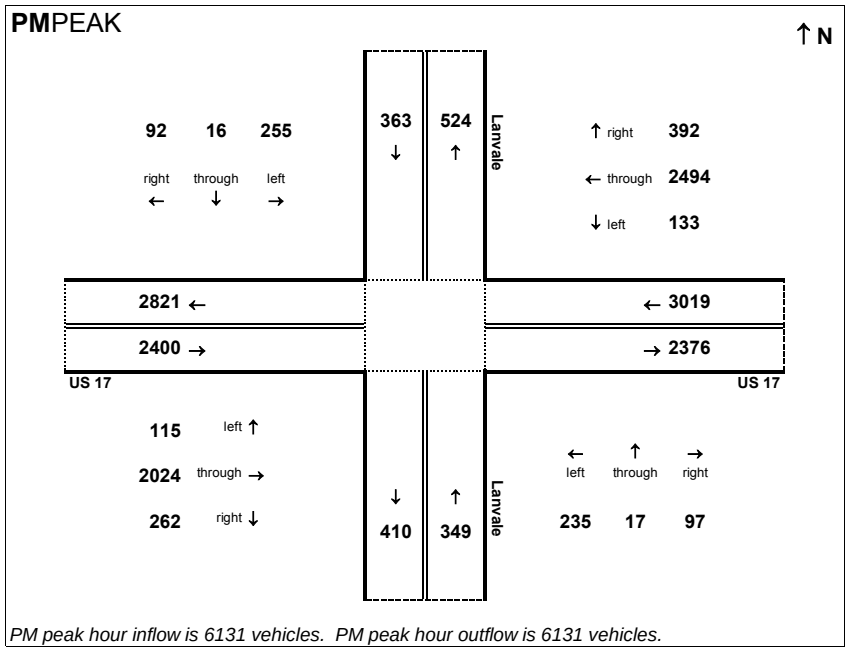
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 6131 vehicles. AM peak hour outflow is 6131 vehicles.



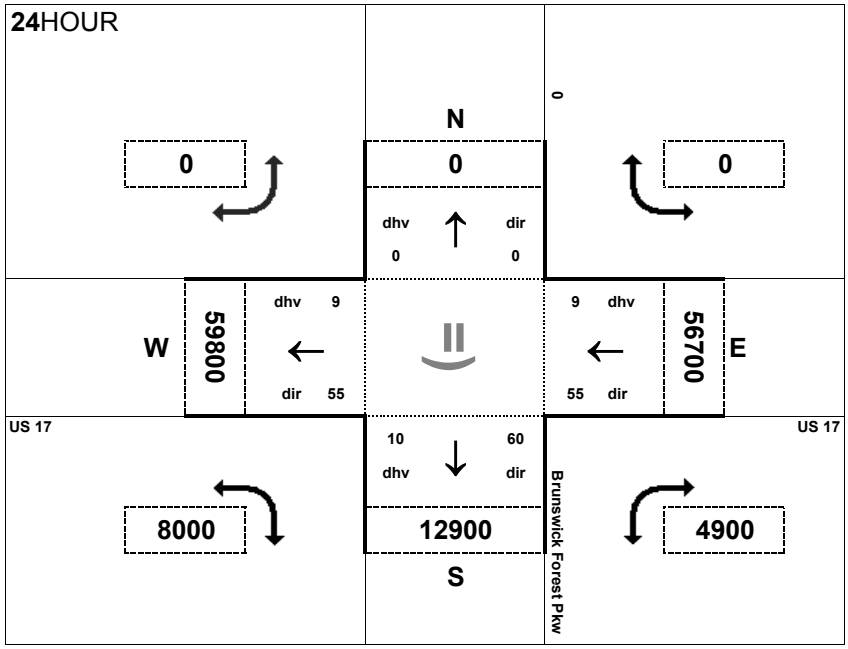
PM peak hour inflow is 6131 vehicles. PM peak hour outflow is 6131 vehicles.

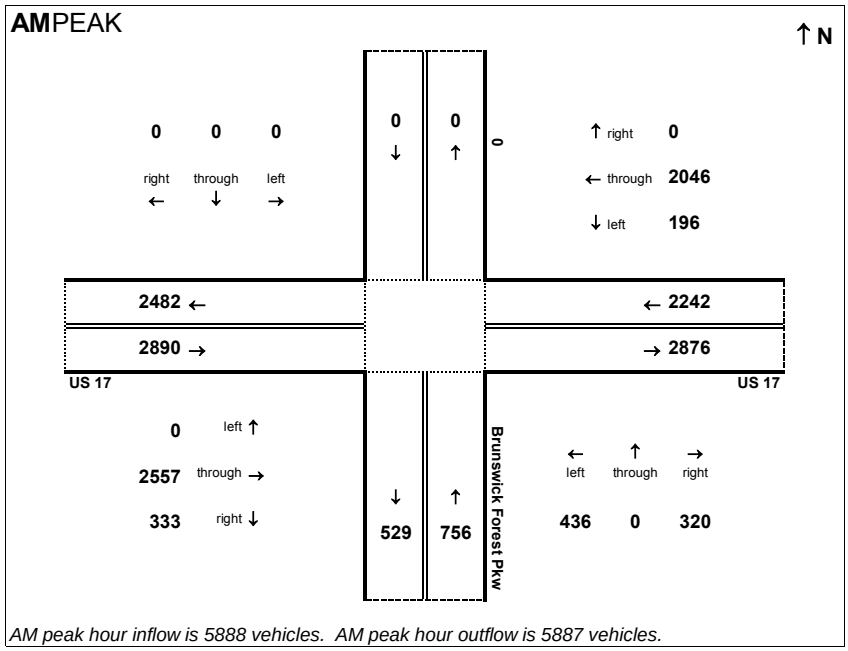
Peak Hour Volume Breakouts Report:
05 - Intersection of US 17 and Brunswick Forest Parkway

Traffic Forecast Release Date:
OCt. 2014

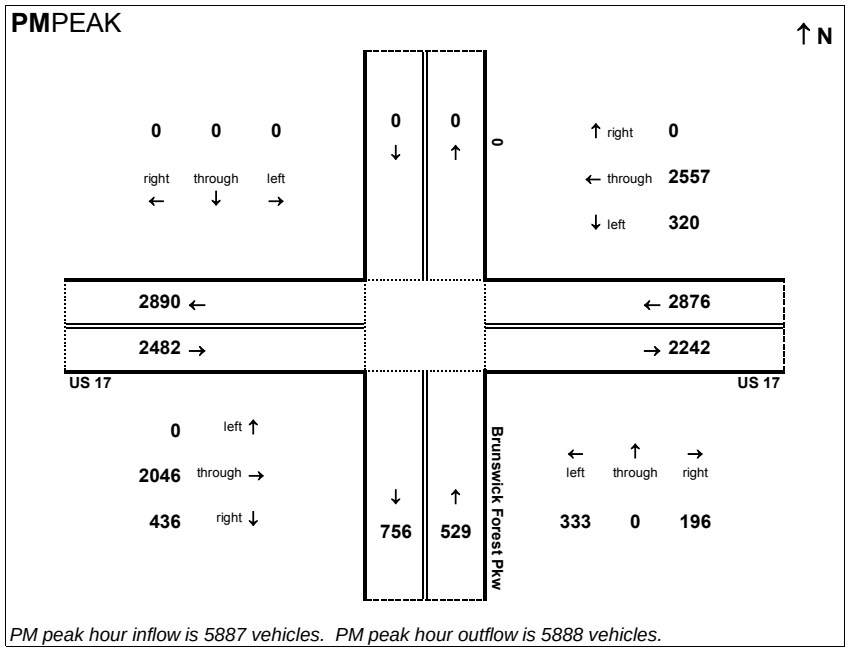
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 5888 vehicles. AM peak hour outflow is 5887 vehicles.



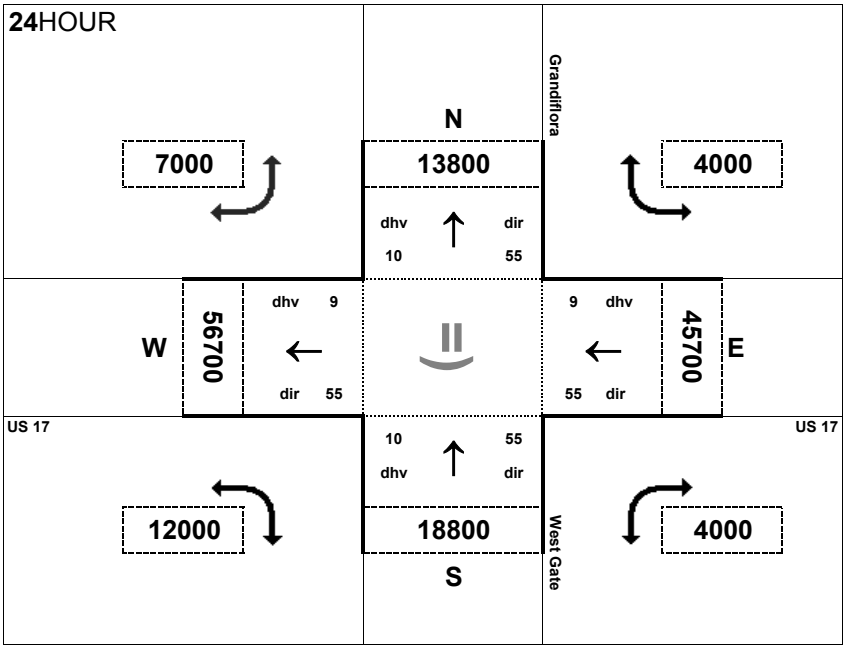
PM peak hour inflow is 5887 vehicles. PM peak hour outflow is 5888 vehicles.

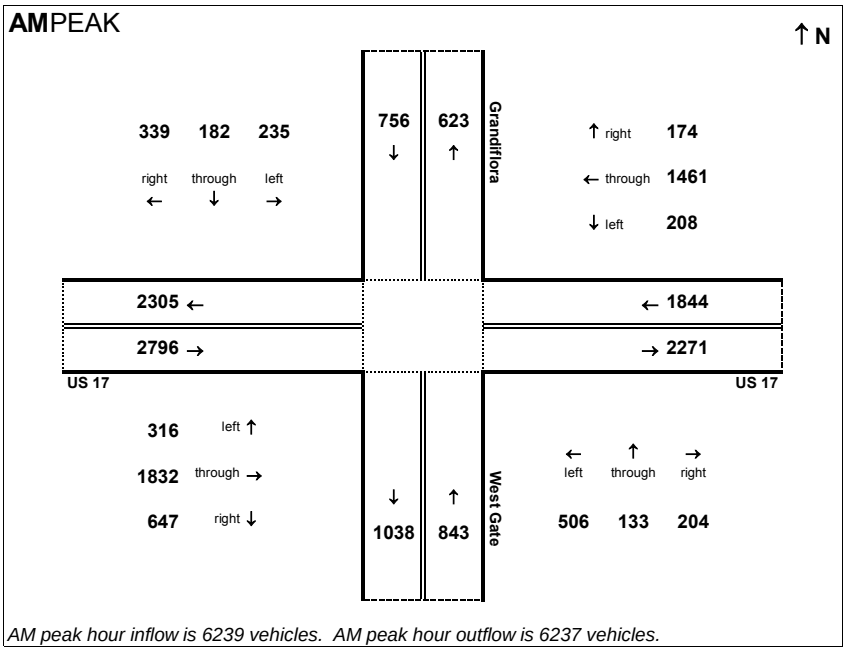
Peak Hour Volume Breakouts Report:
06 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

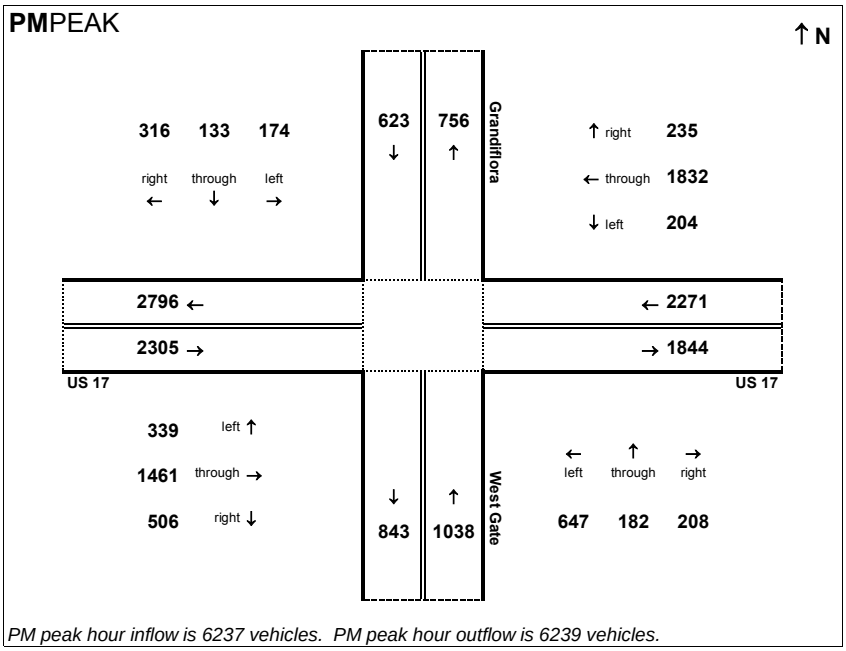
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



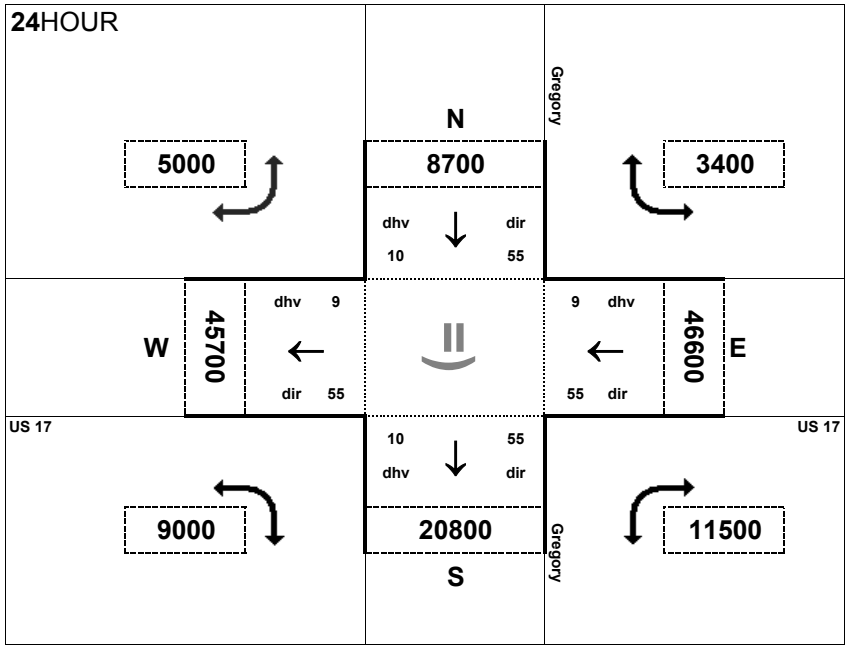
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

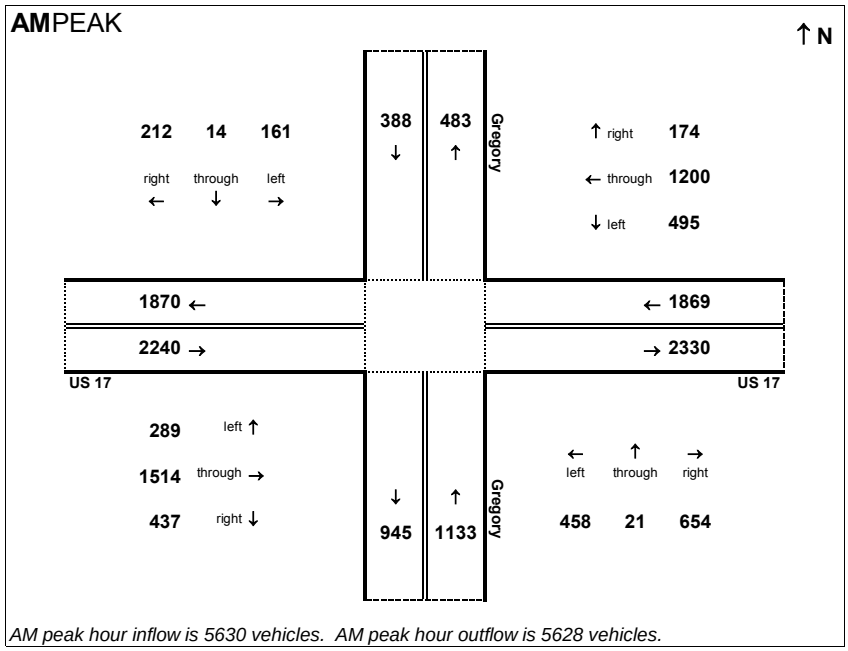
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

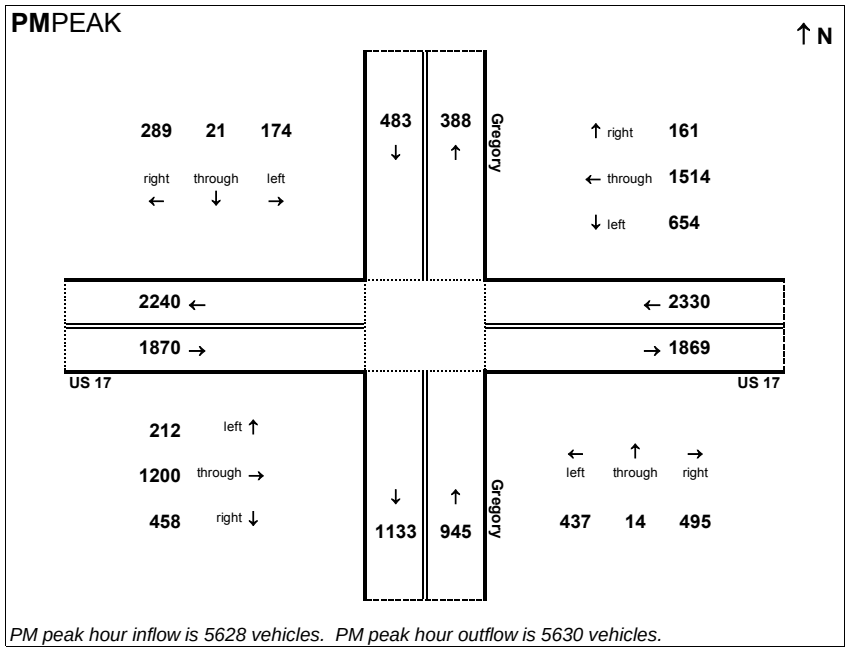
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

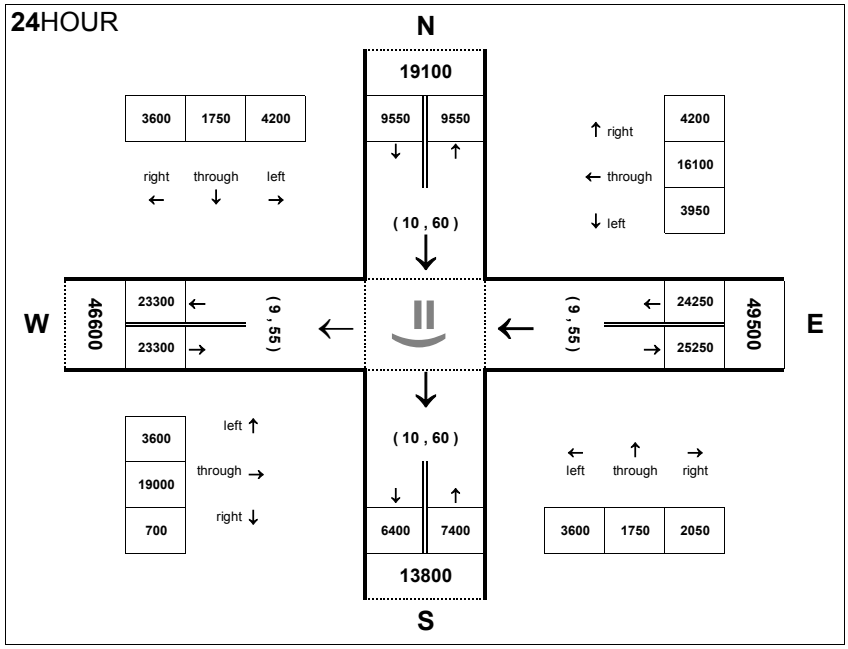


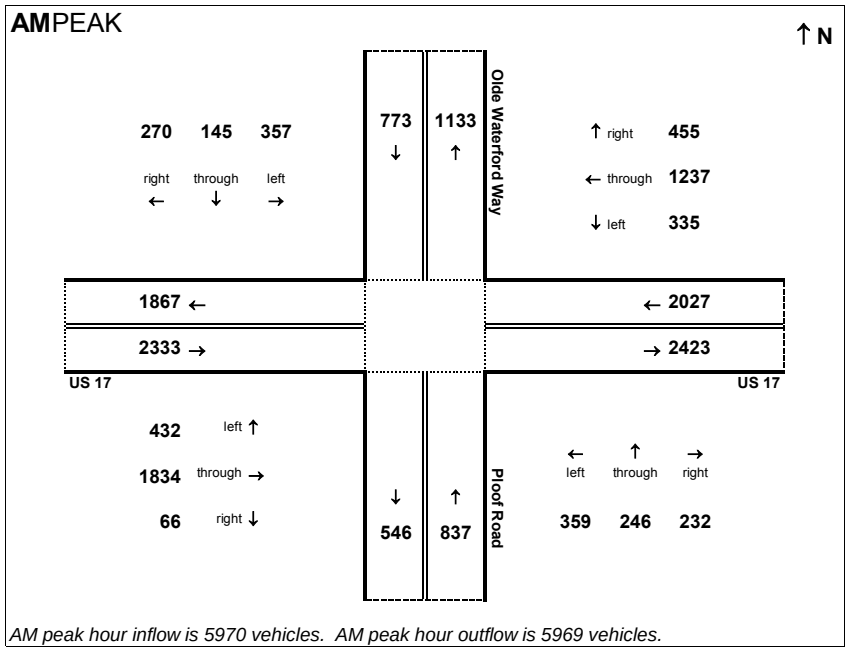
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

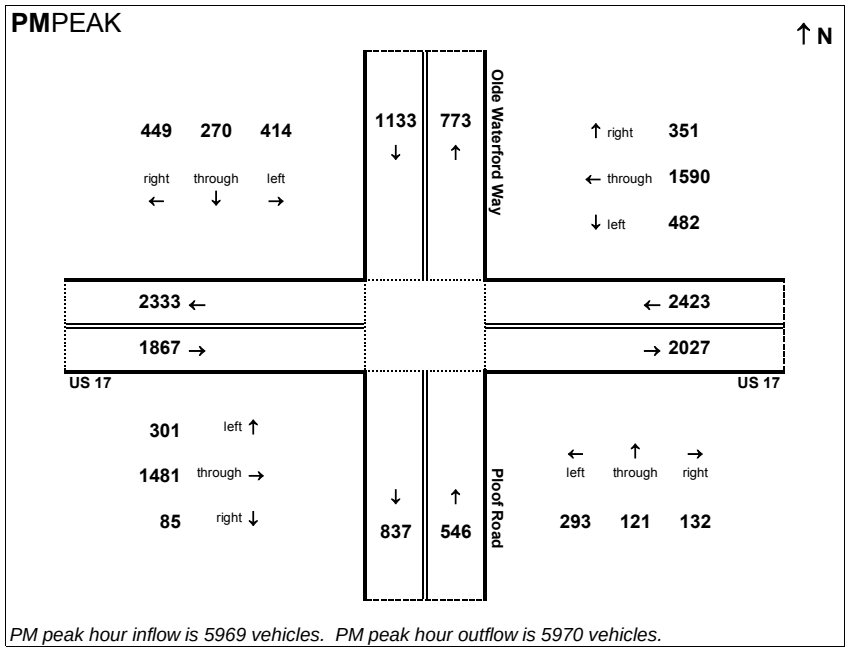
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. M

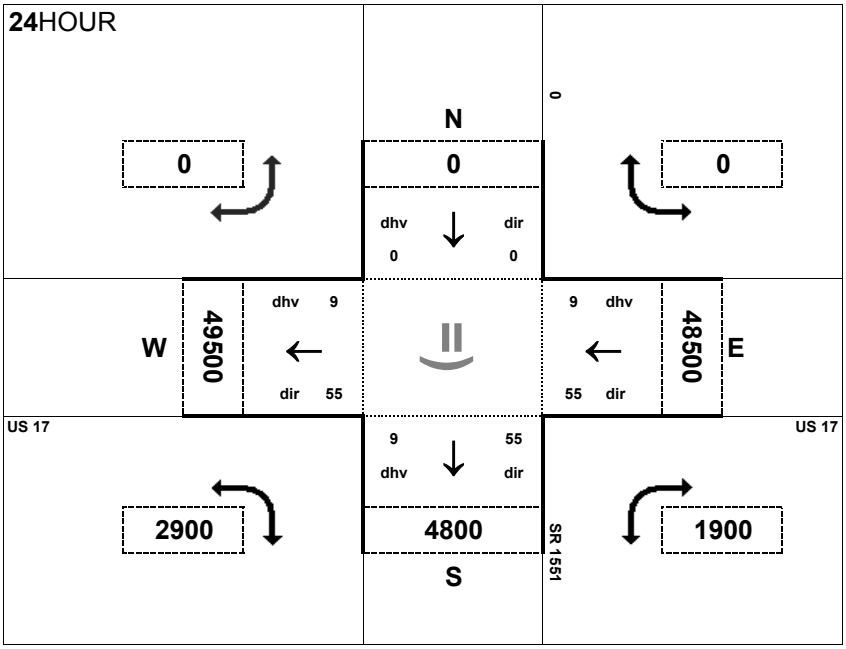




AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

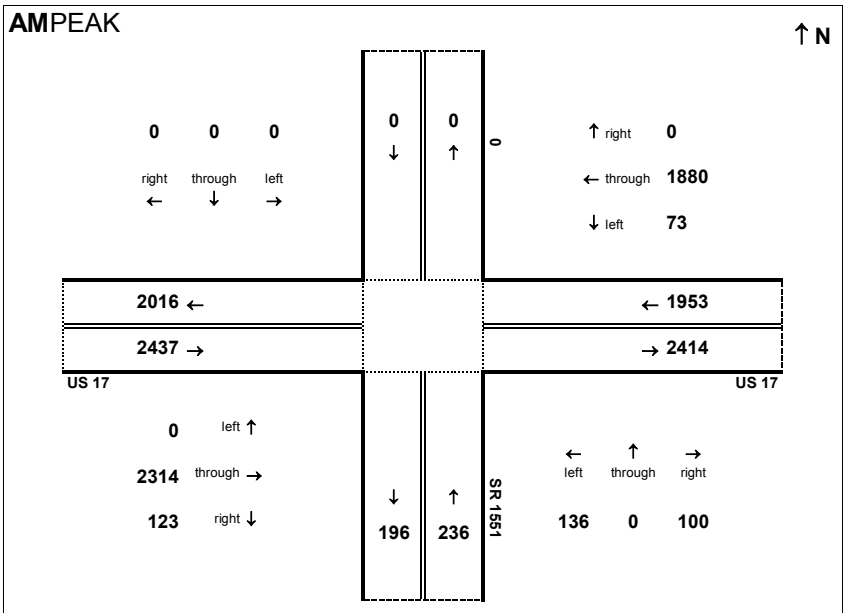


Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

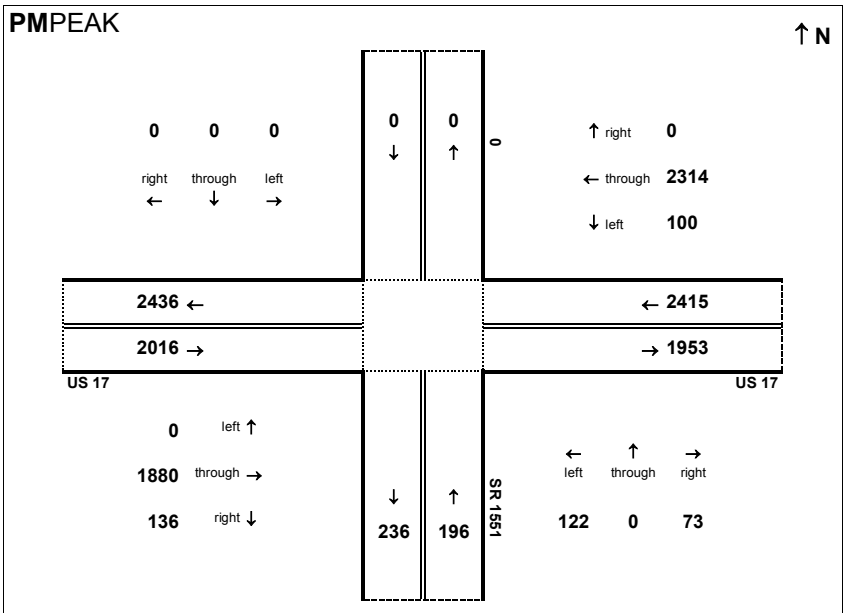
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M



AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



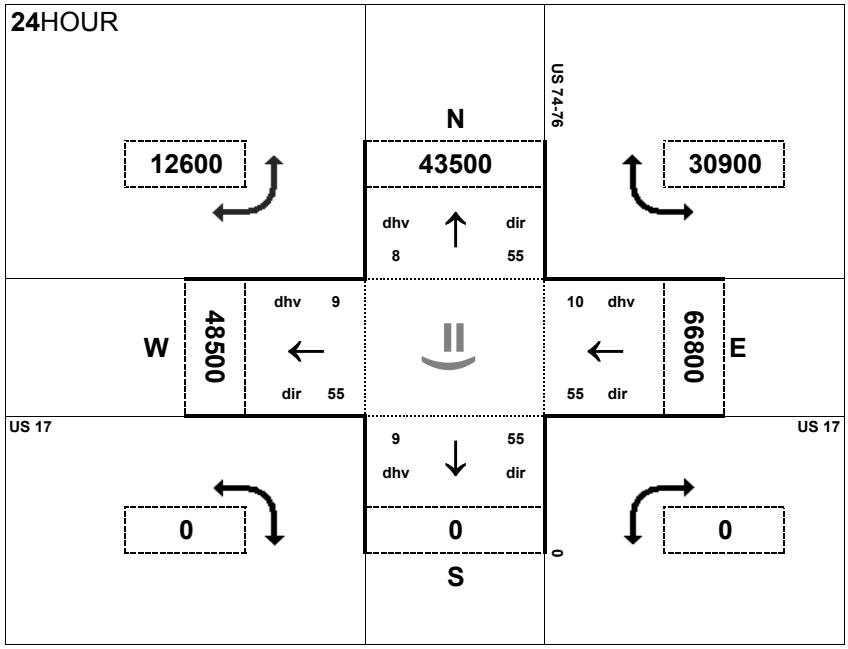
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

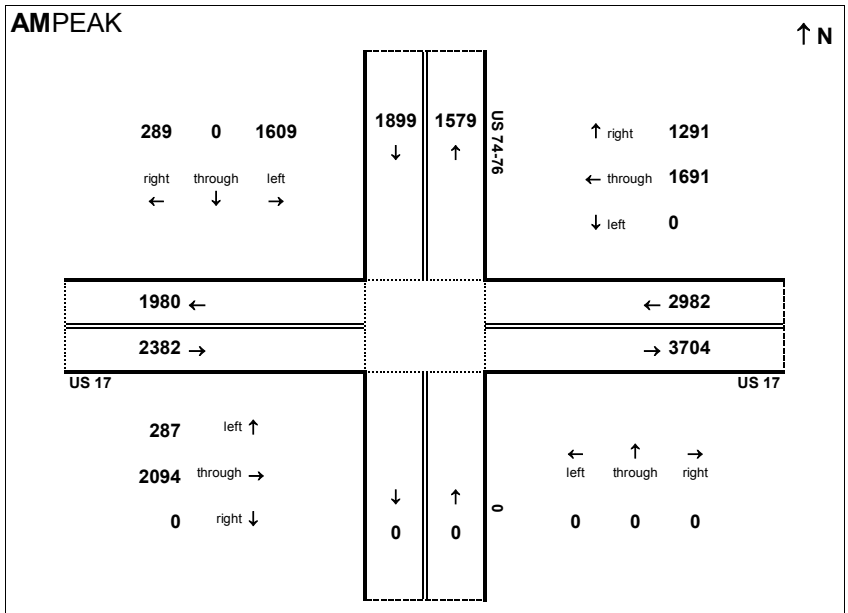
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

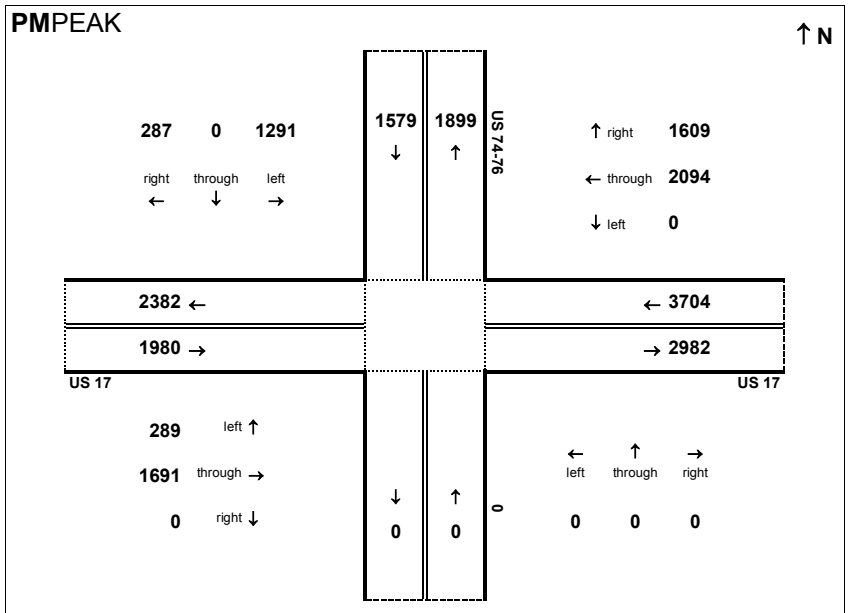
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 7263 vehicles. AM peak hour outflow is 7263 vehicles.



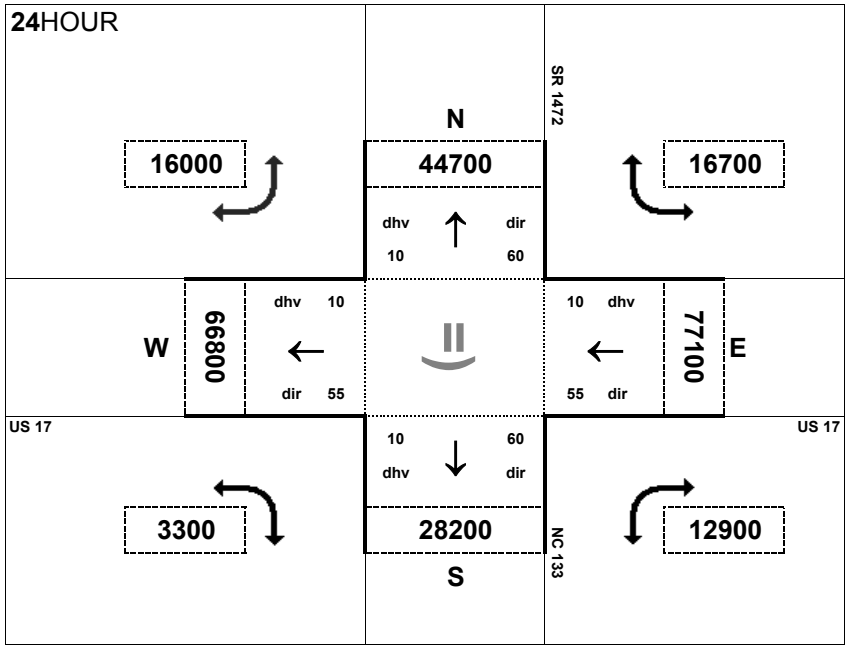
PM peak hour inflow is 7263 vehicles. PM peak hour outflow is 7263 vehicles.

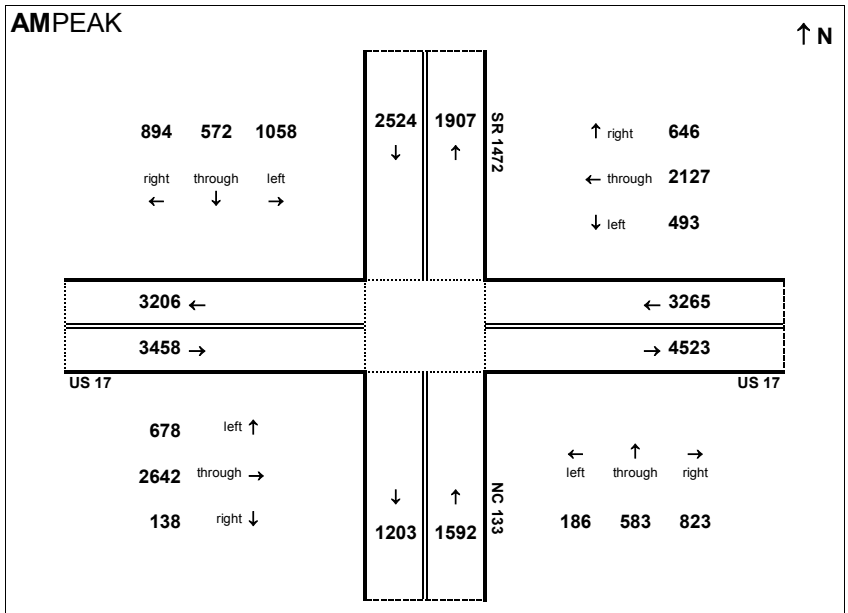
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

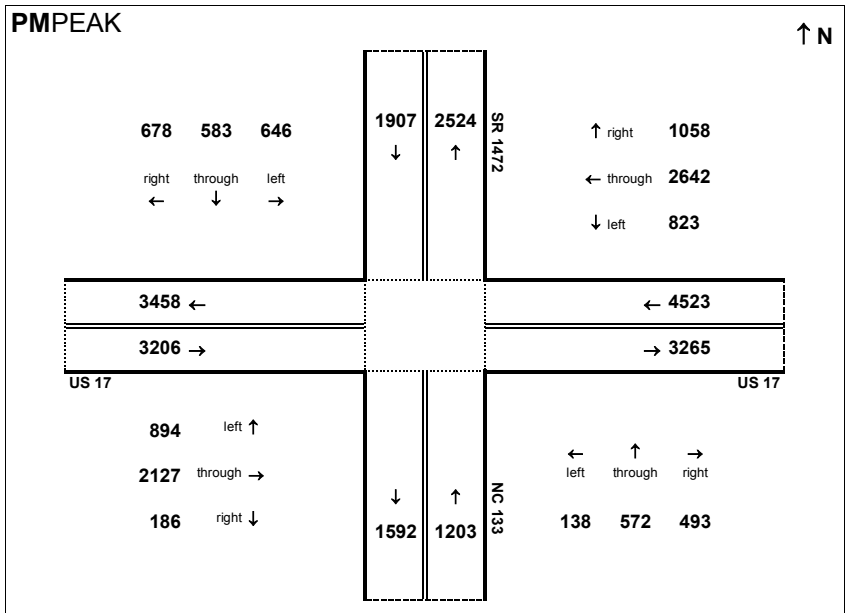
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 10839 vehicles. AM peak hour outflow is 10839 vehicles.



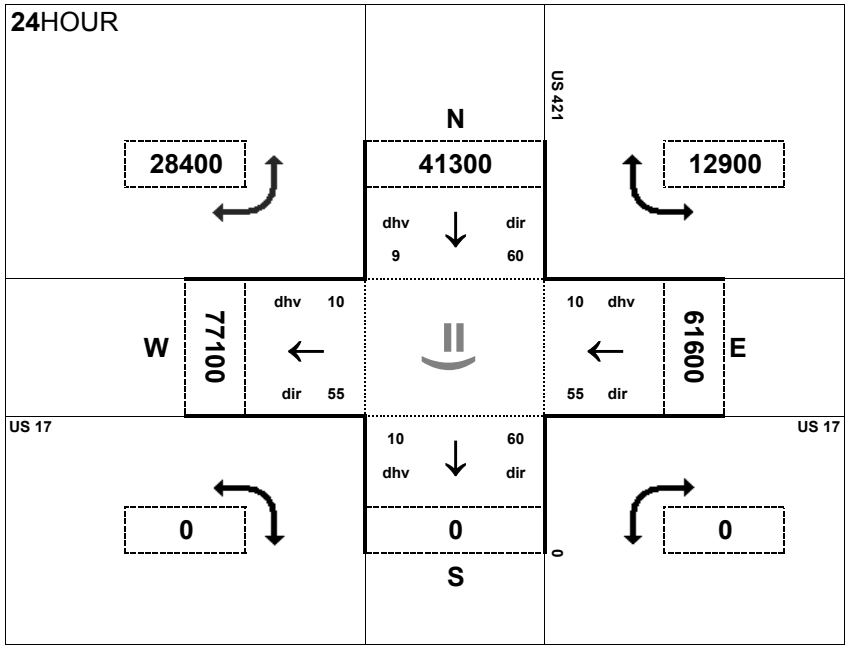
PM peak hour inflow is 10839 vehicles. PM peak hour outflow is 10839 vehicles.

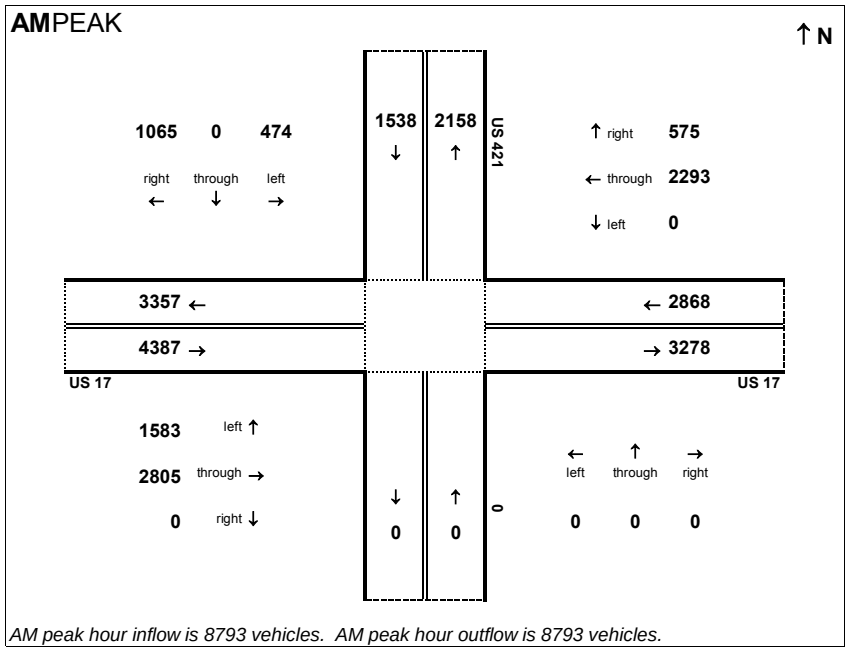
Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

Traffic Forecast Release Date:
Oct. 2014

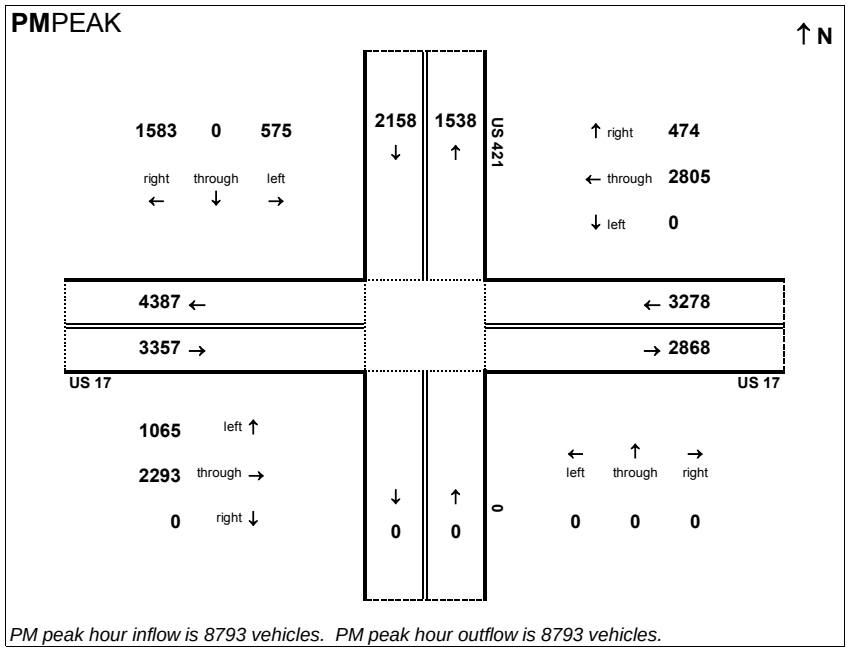
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M

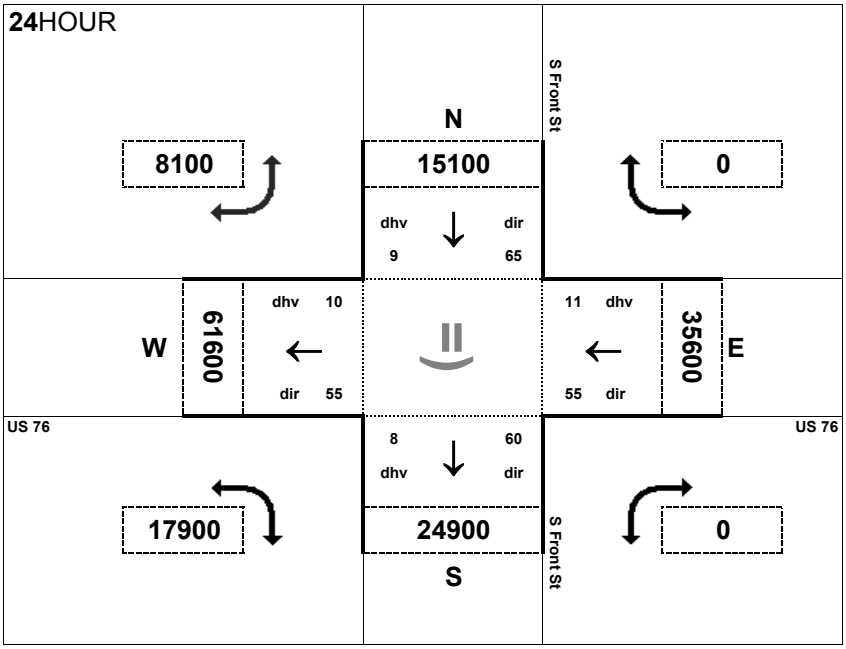




AM peak hour inflow is 8793 vehicles. AM peak hour outflow is 8793 vehicles.



PM peak hour inflow is 8793 vehicles. PM peak hour outflow is 8793 vehicles.

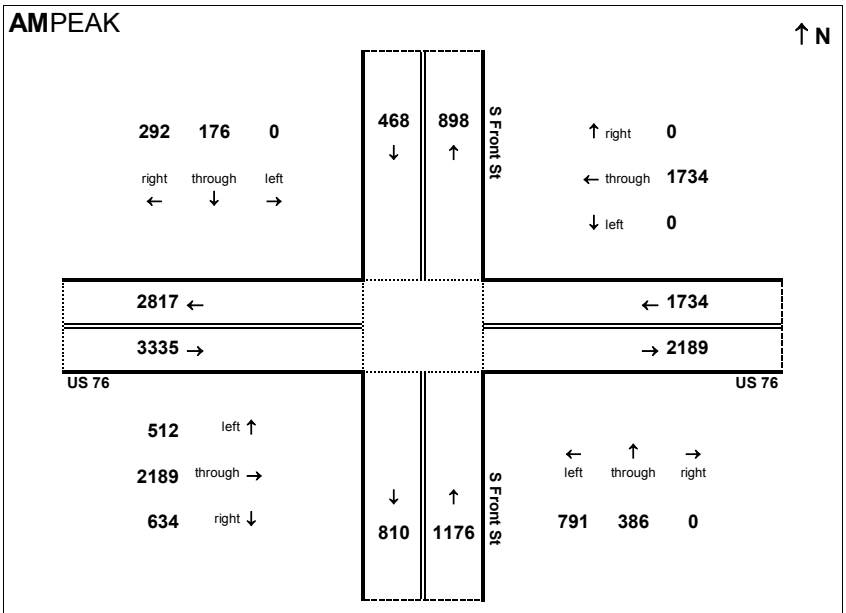


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

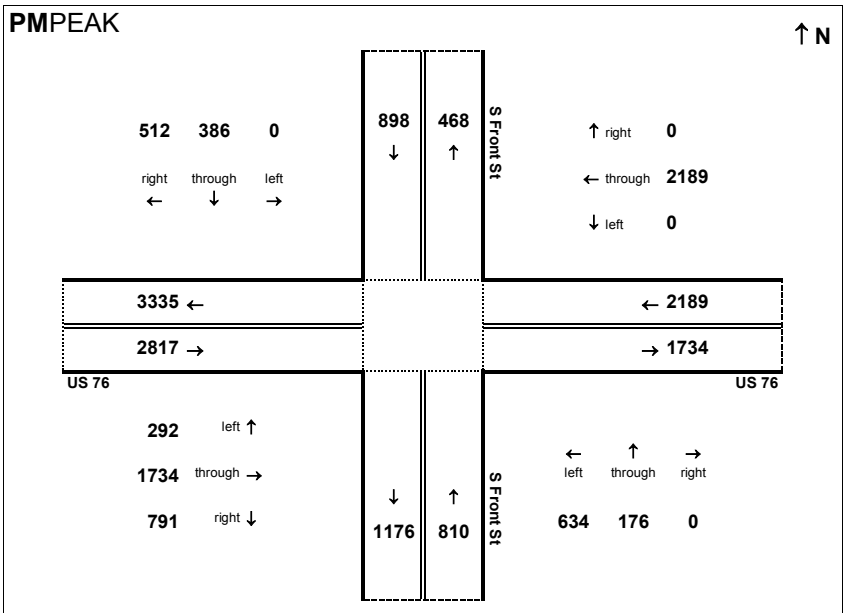
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

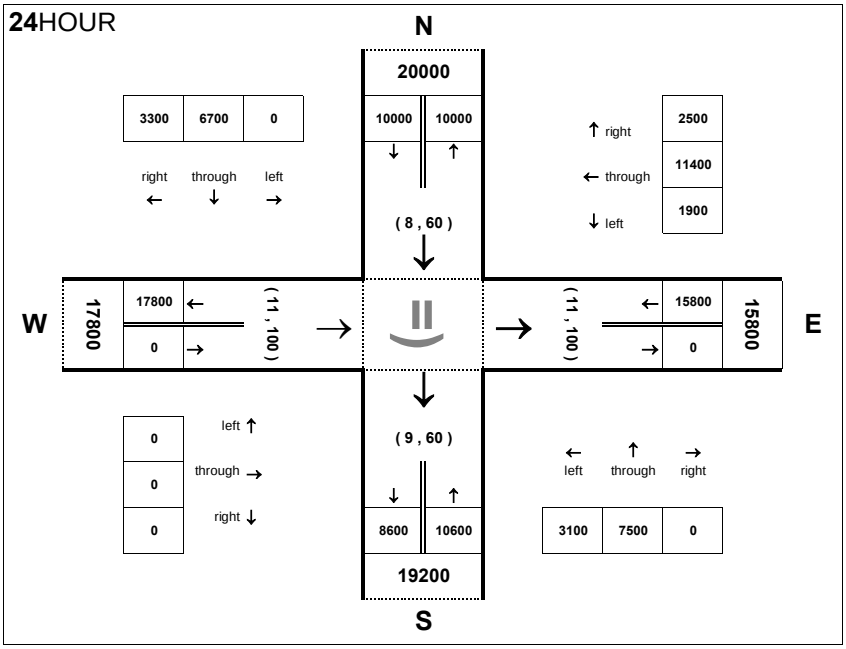
Project:
Cape Fear Crossing - Build Alt. M



AM peak hour inflow is 6713 vehicles. AM peak hour outflow is 6714 vehicles.



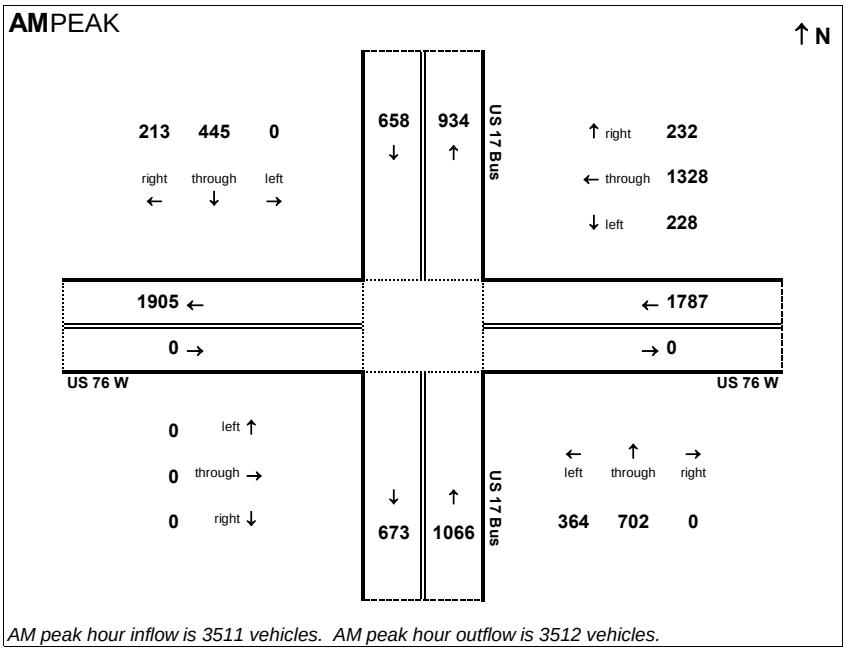
PM peak hour inflow is 6714 vehicles. PM peak hour outflow is 6713 vehicles.



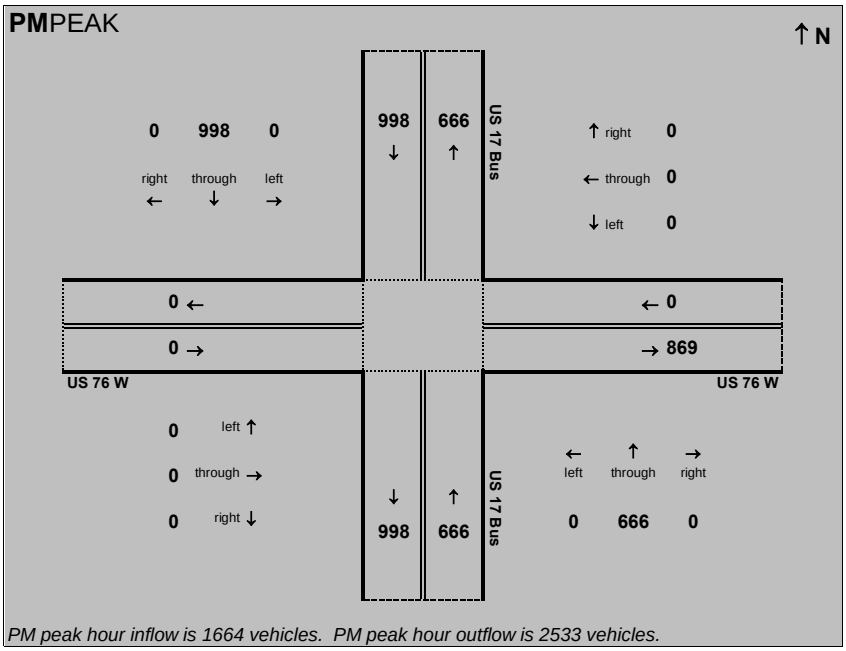
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

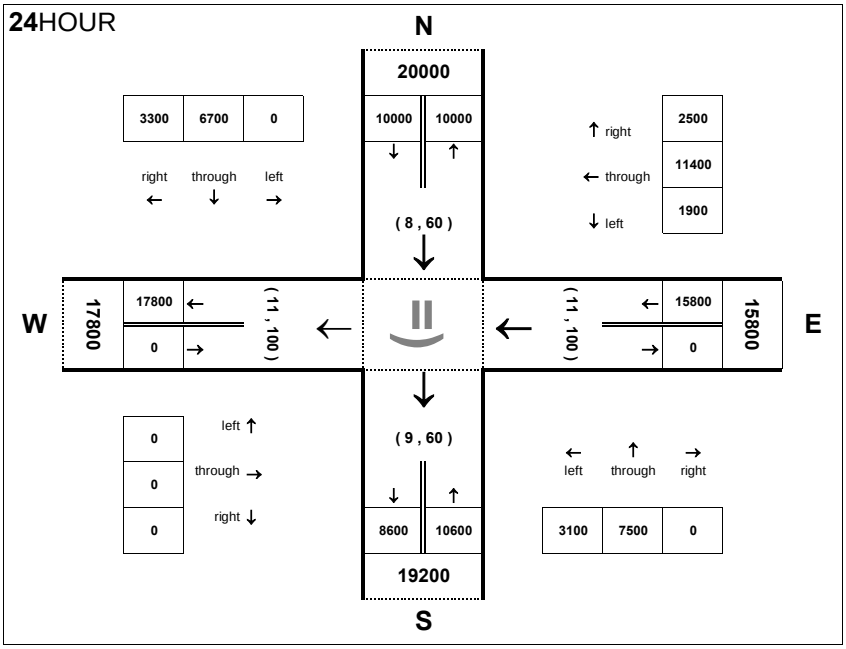
Traffic Data Year:
2040 Alt M



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



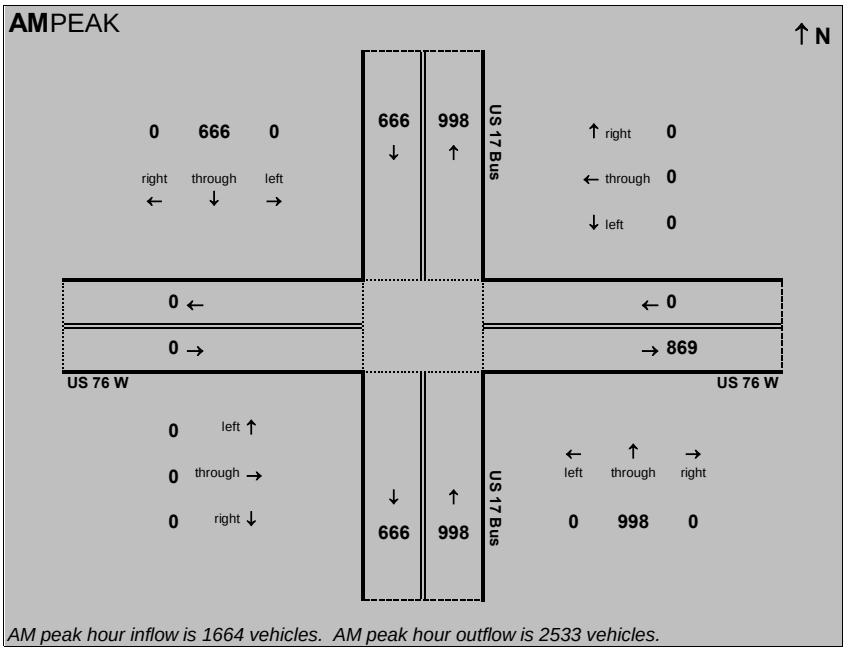
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



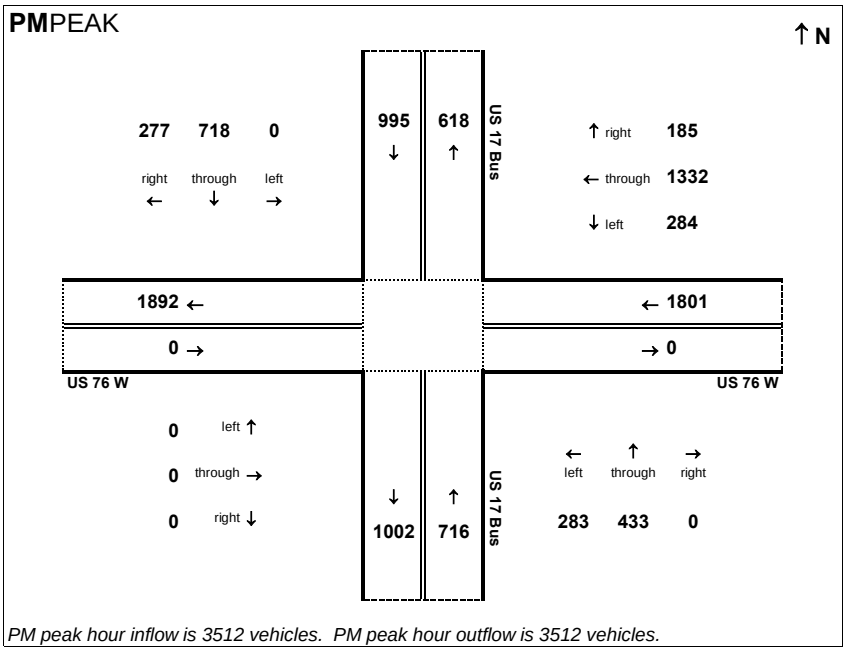
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

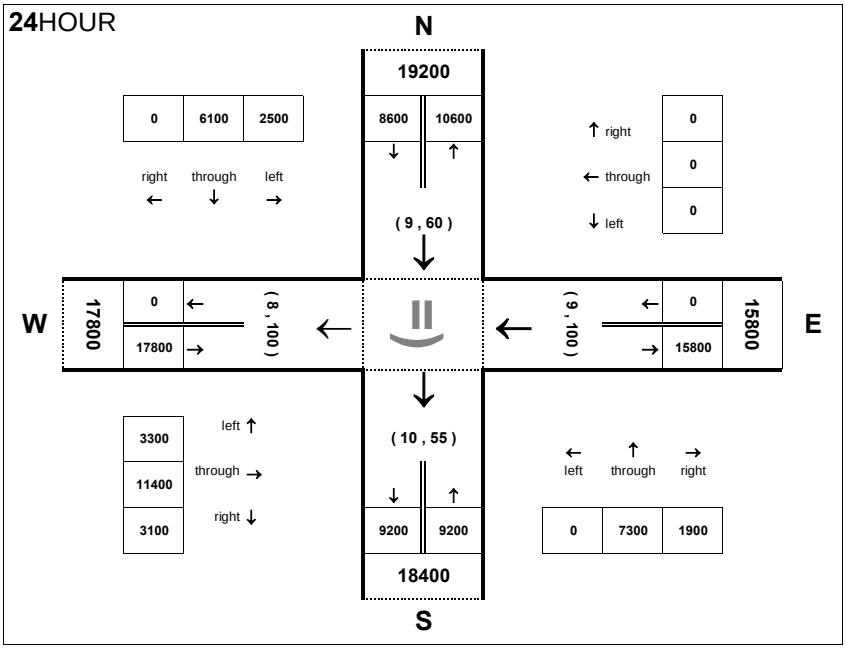
Traffic Data Year:
2040 Alt M



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



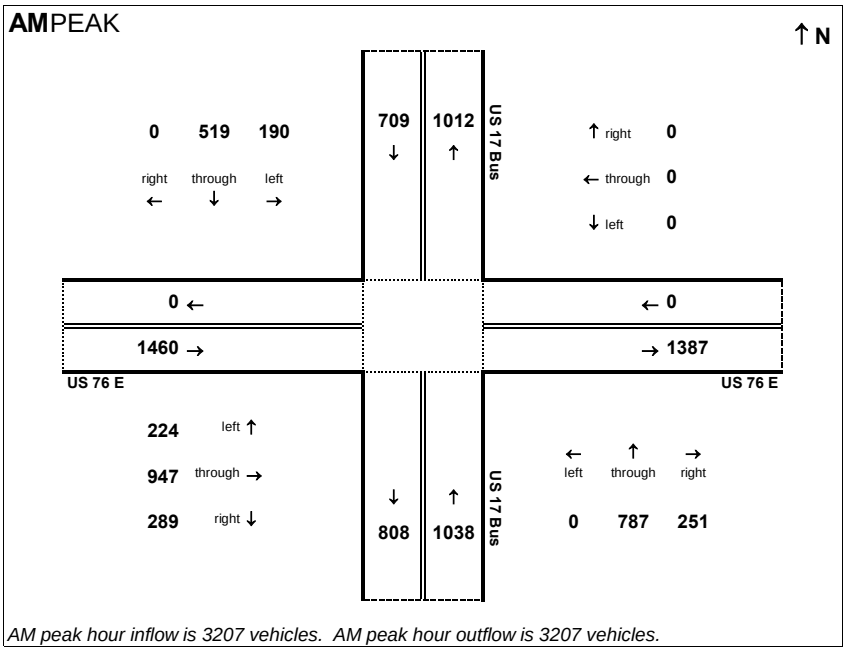
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



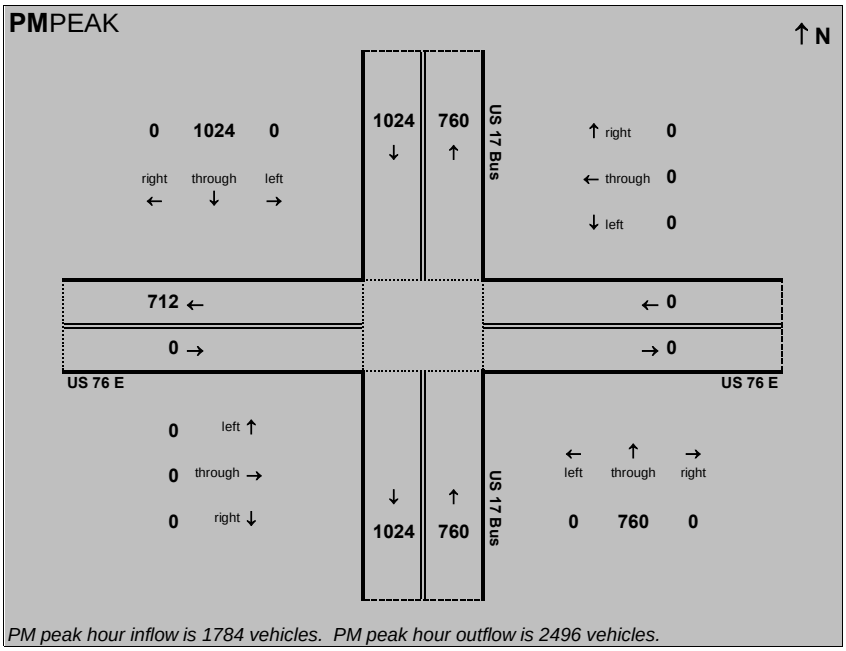
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

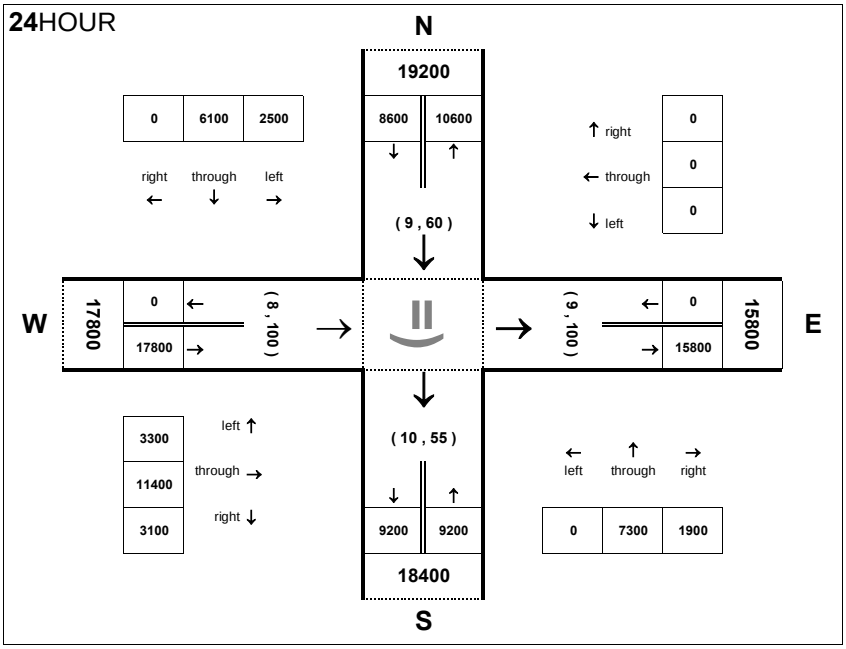
Traffic Data Year:
2040 Alt M



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



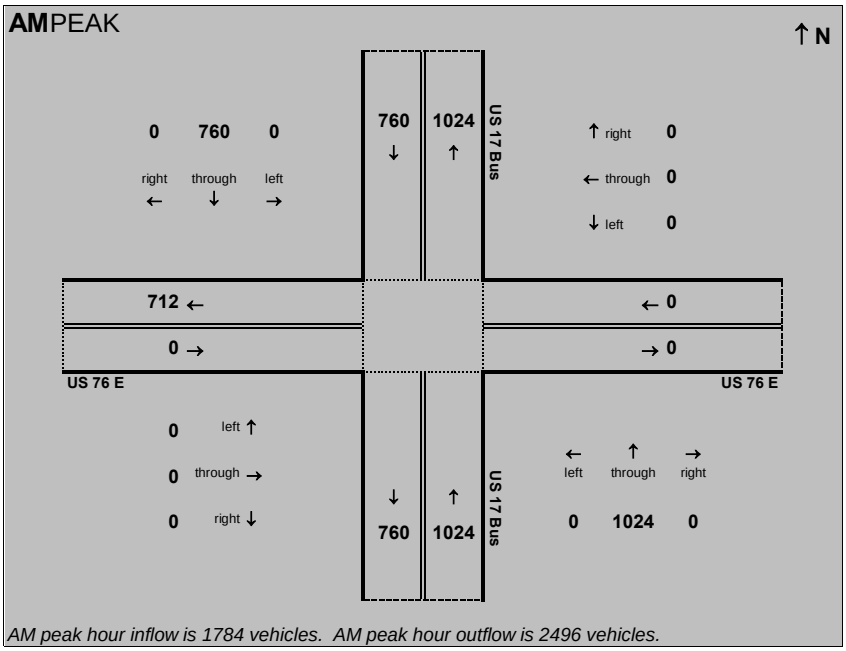
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



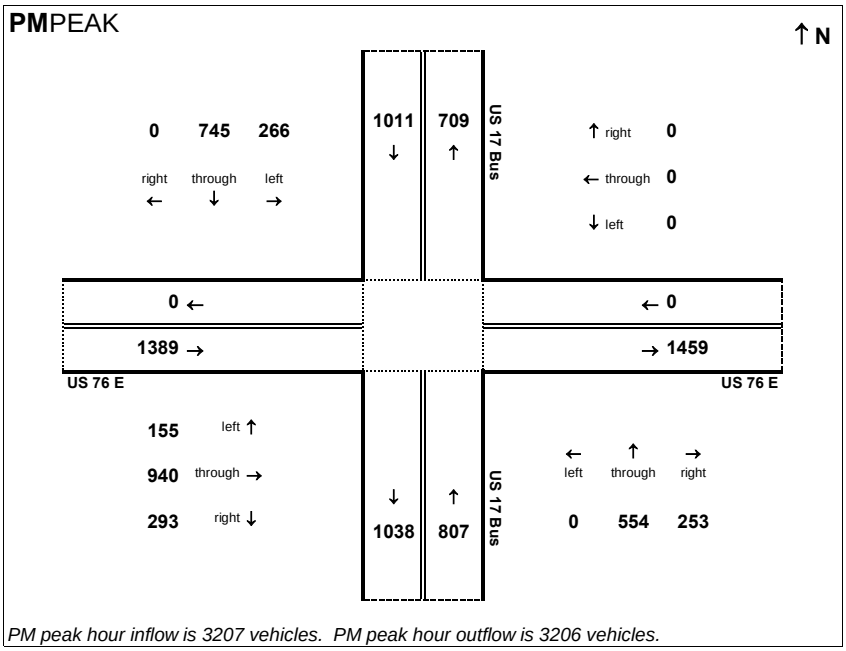
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt M



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



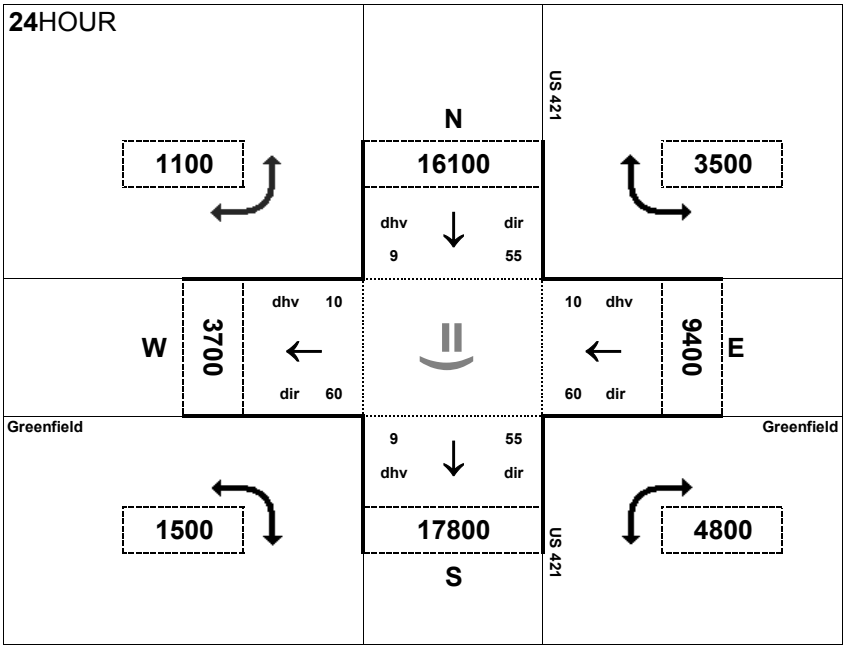
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

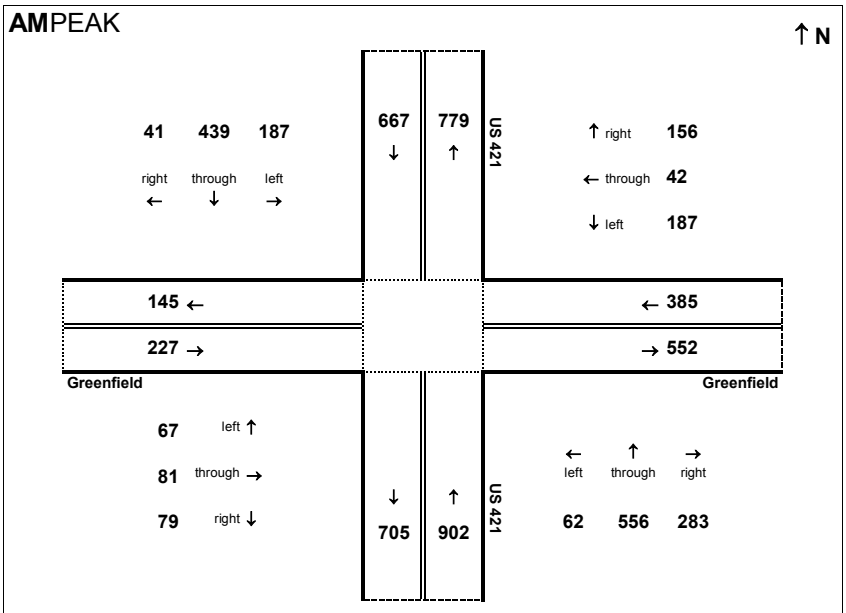
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

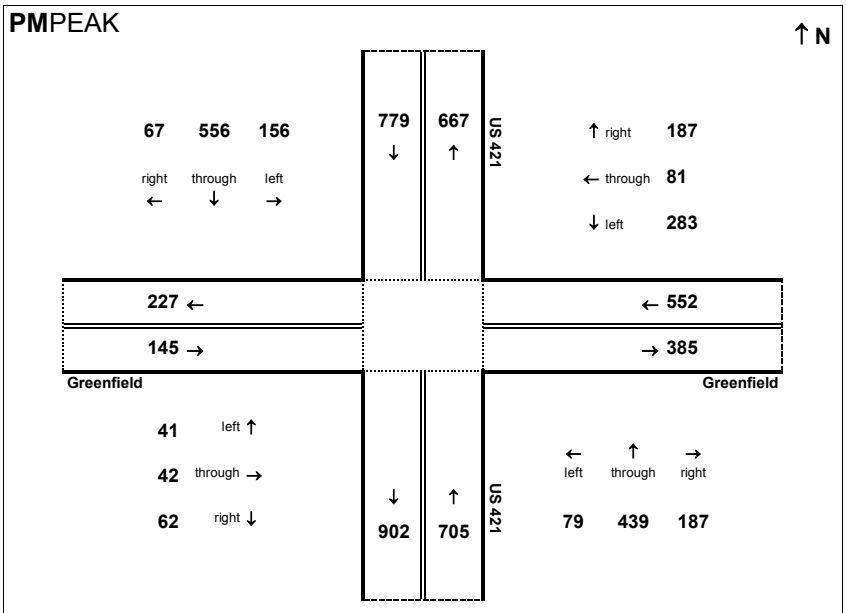
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



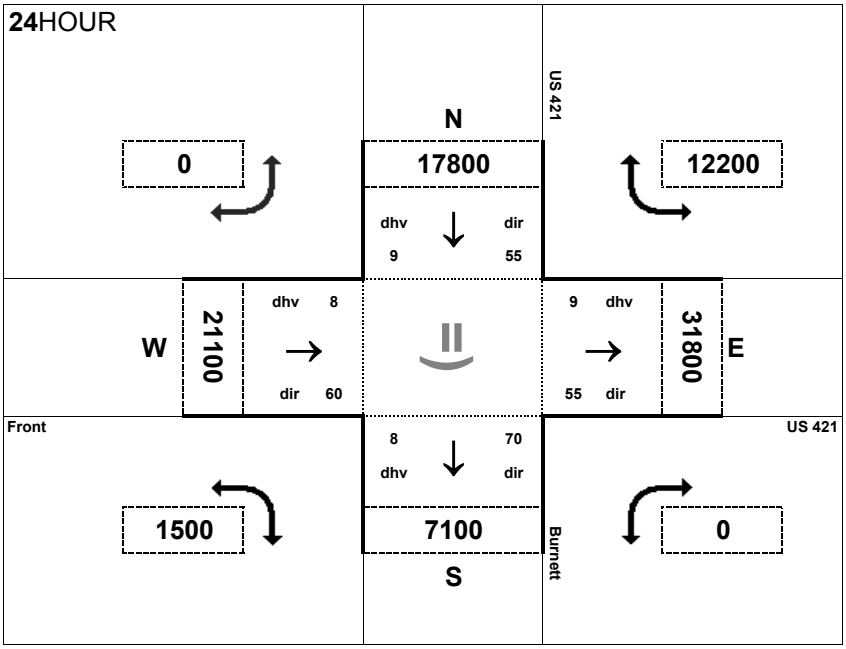
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

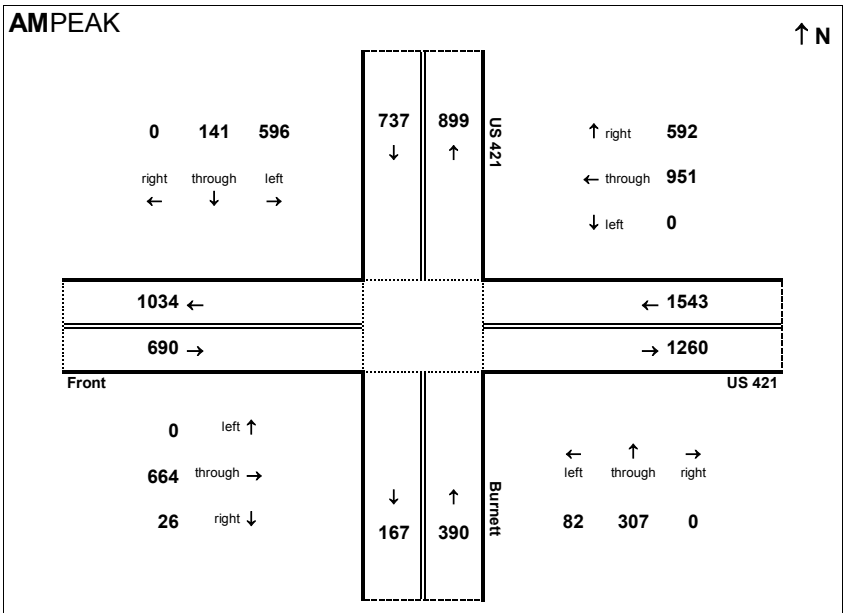
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

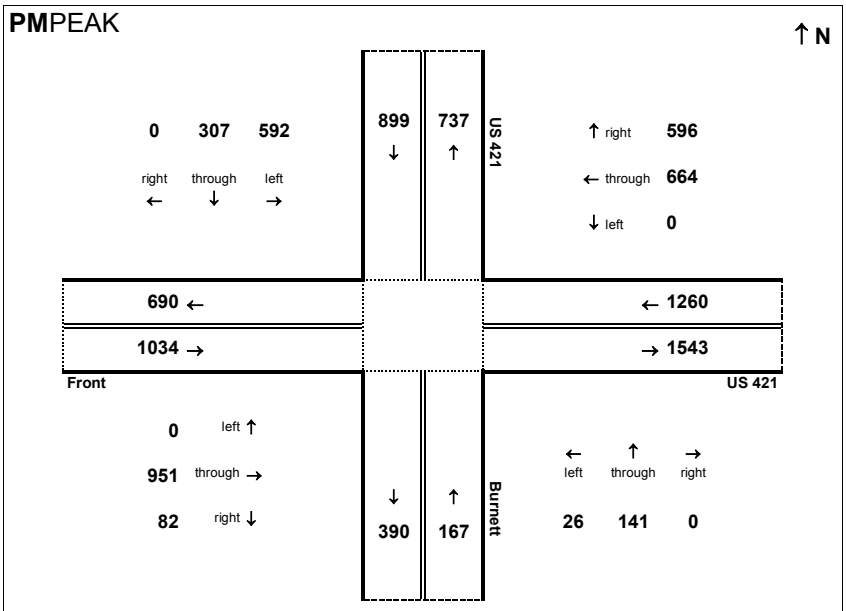
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



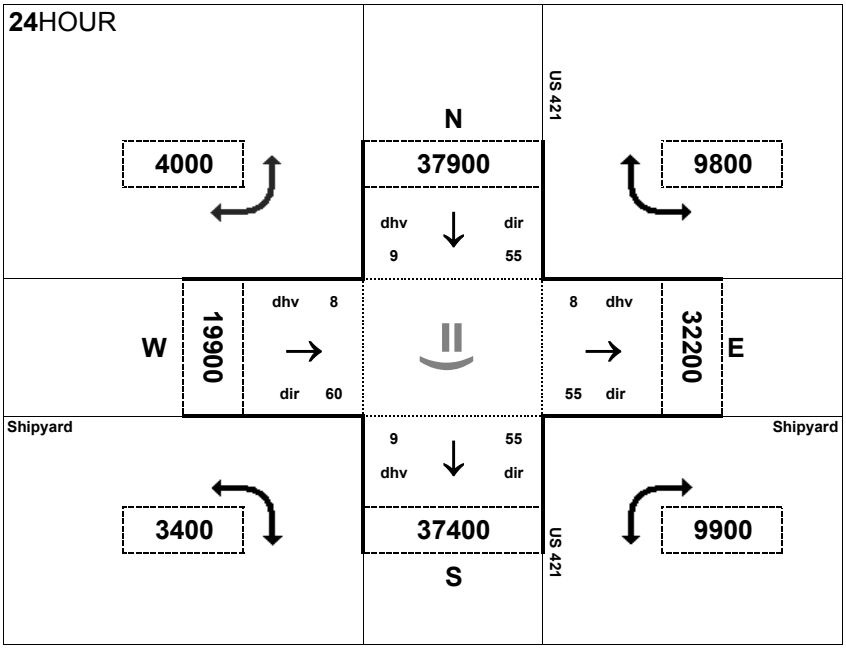
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3360 vehicles.

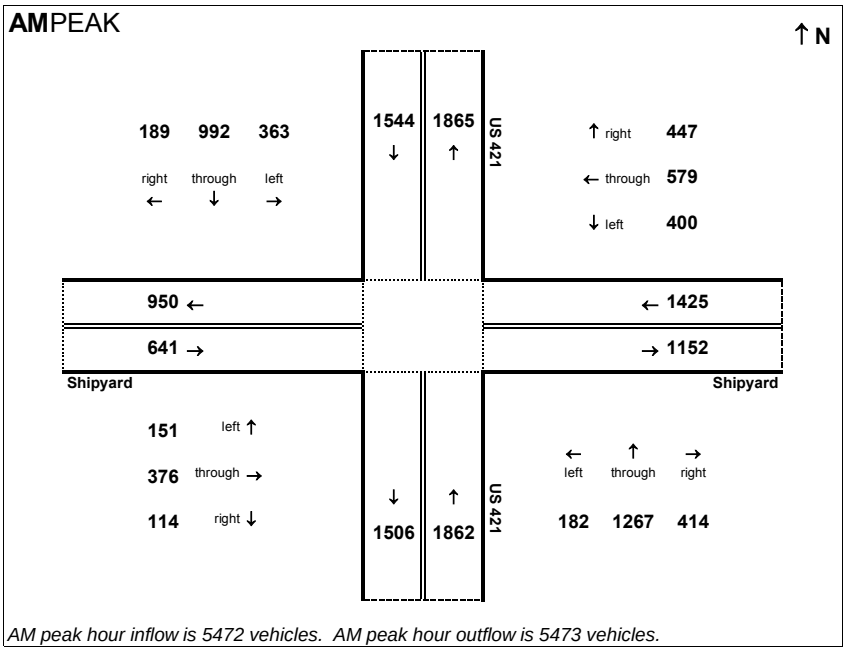
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

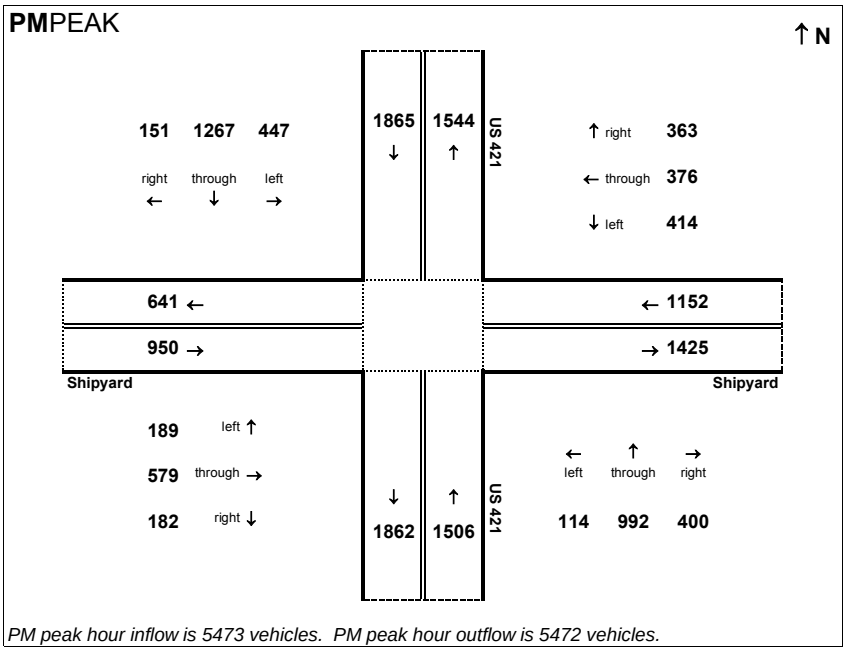
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M

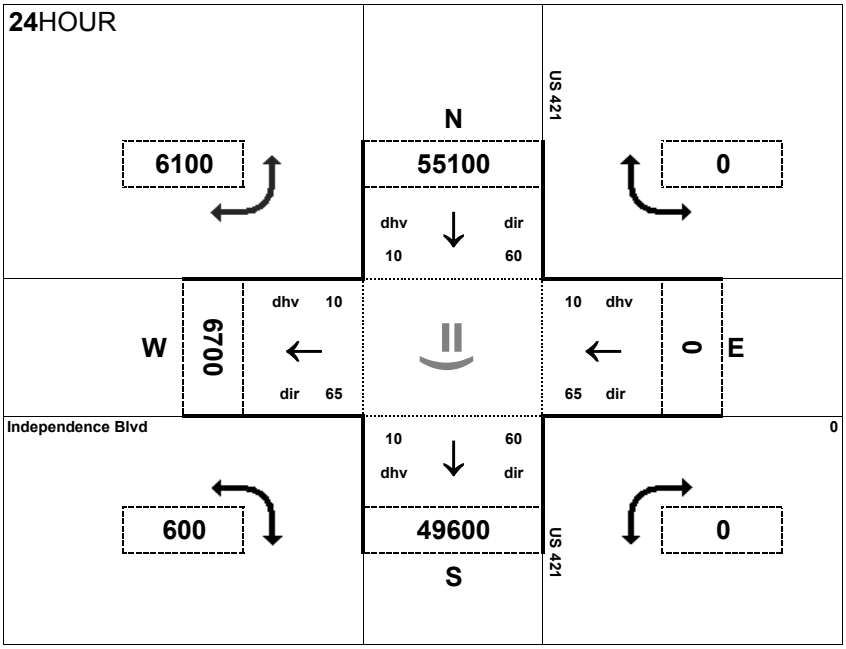




AM peak hour inflow is 5472 vehicles. AM peak hour outflow is 5473 vehicles.



PM peak hour inflow is 5473 vehicles. PM peak hour outflow is 5472 vehicles.

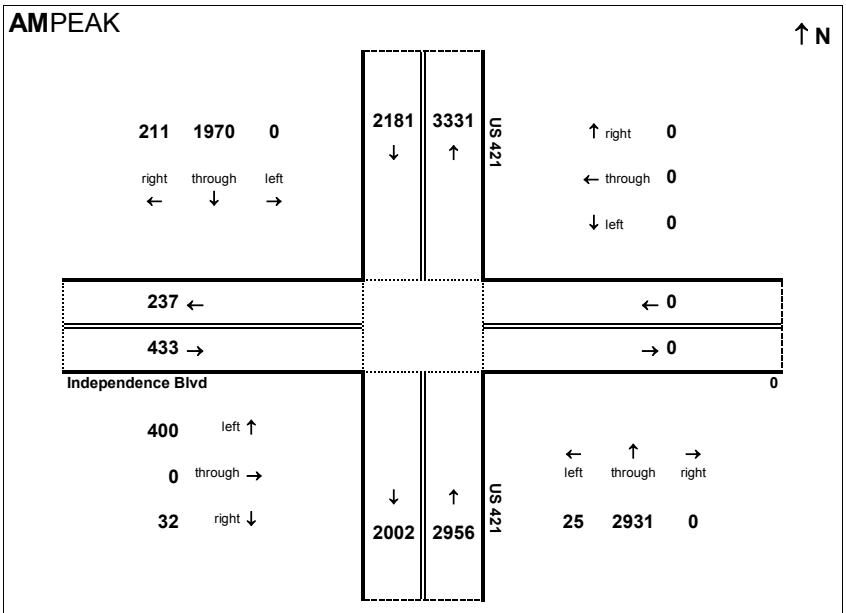


Peak Hour Volume Breakouts Report:
31 - US 421 - Realigned Independence Boulevard

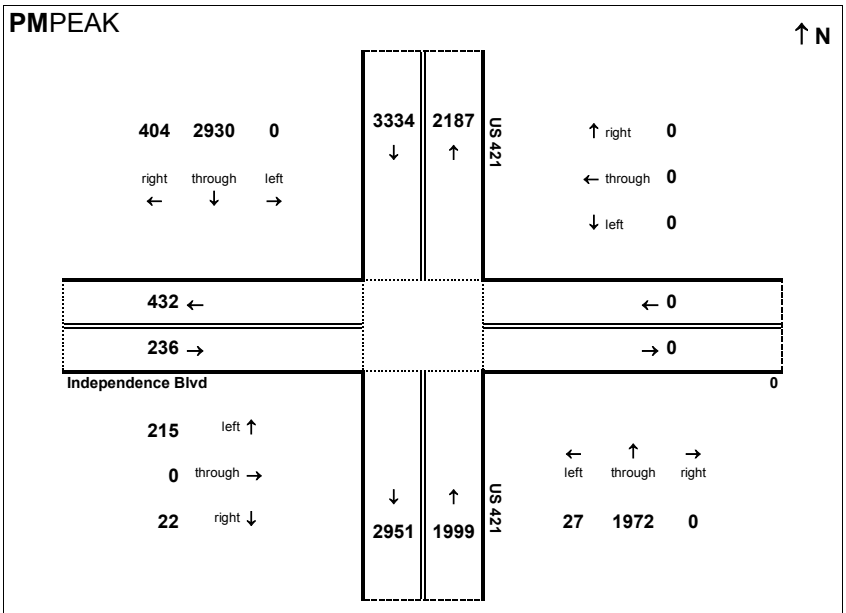
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M



AM peak hour inflow is 5570 vehicles. AM peak hour outflow is 5570 vehicles.



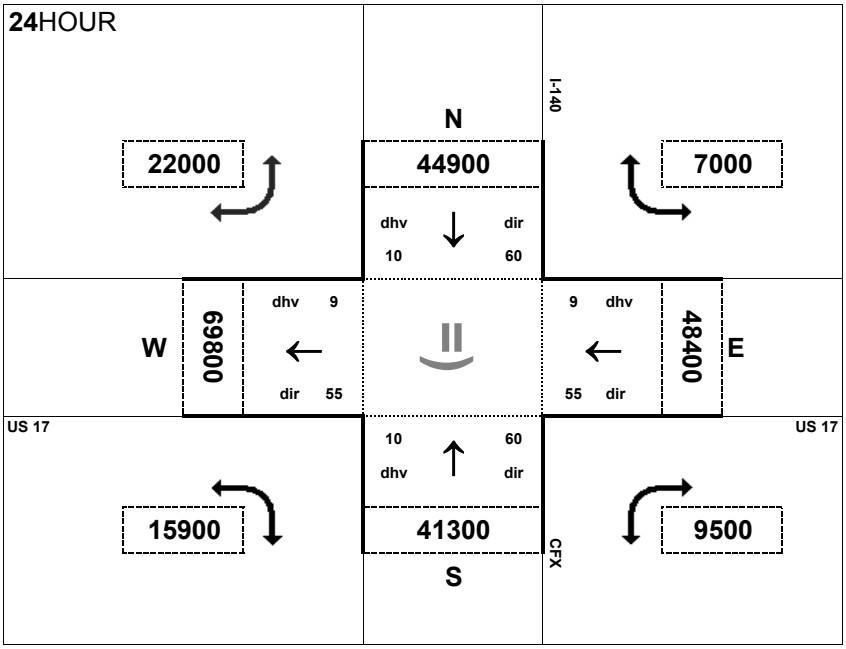
PM peak hour inflow is 5569 vehicles. PM peak hour outflow is 5570 vehicles.

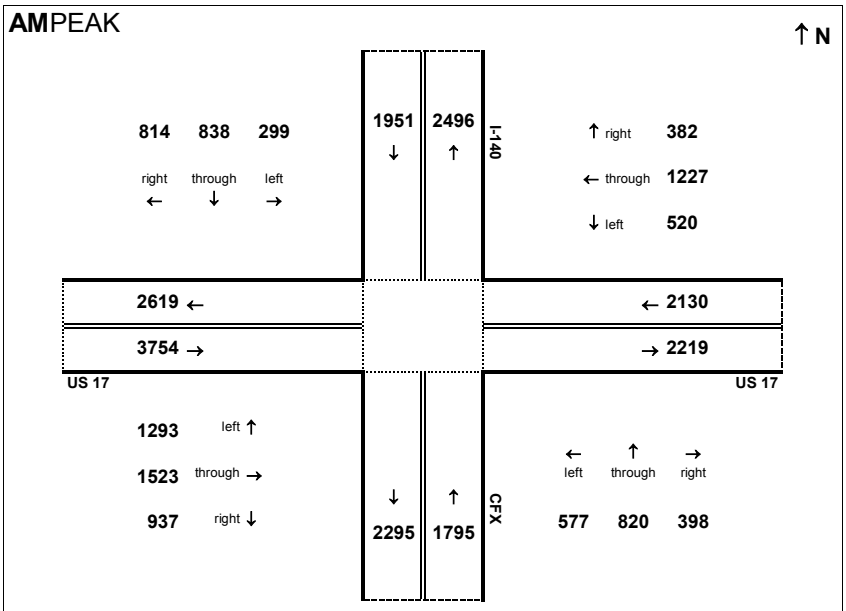
Peak Hour Volume Breakouts Report:
103 - CFX and US 17 - I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

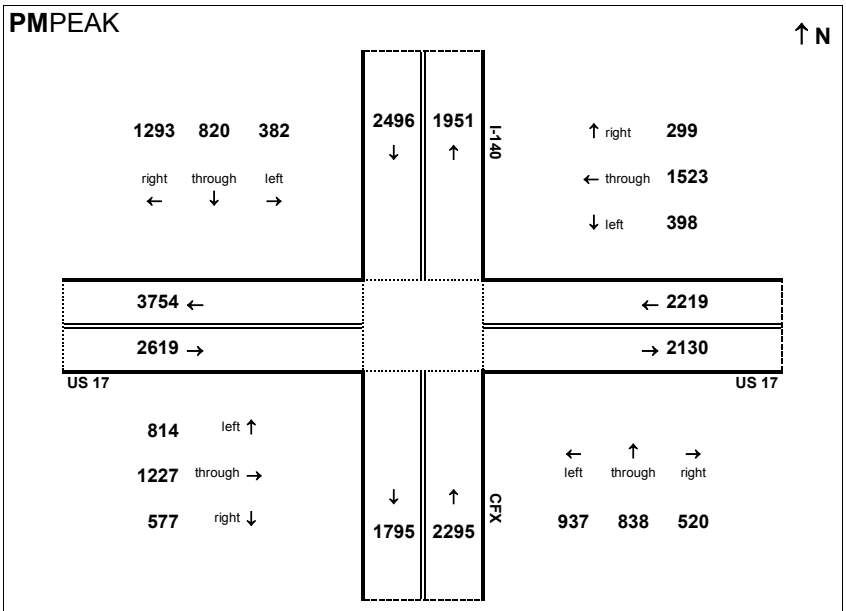
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 9630 vehicles. AM peak hour outflow is 9629 vehicles.



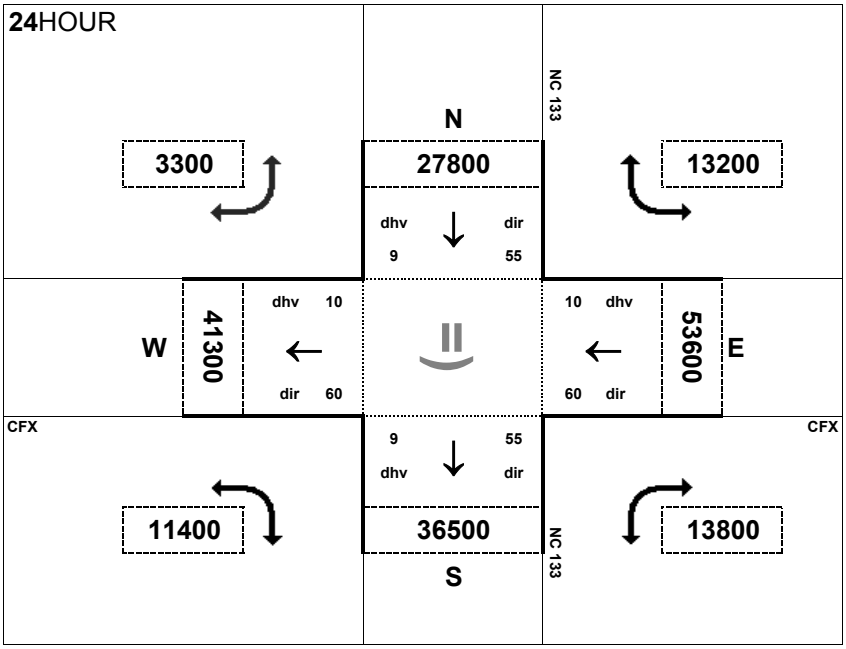
PM peak hour inflow is 9629 vehicles. PM peak hour outflow is 9630 vehicles.

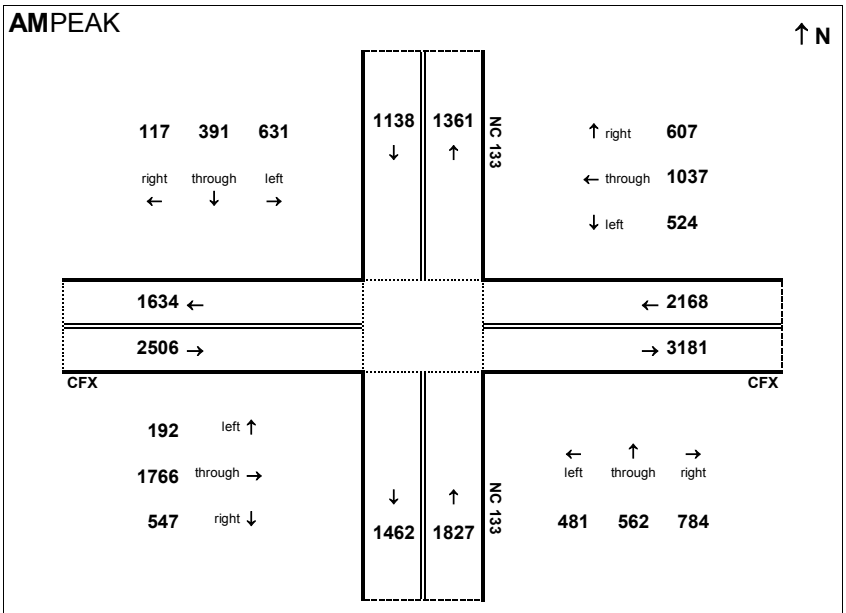
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

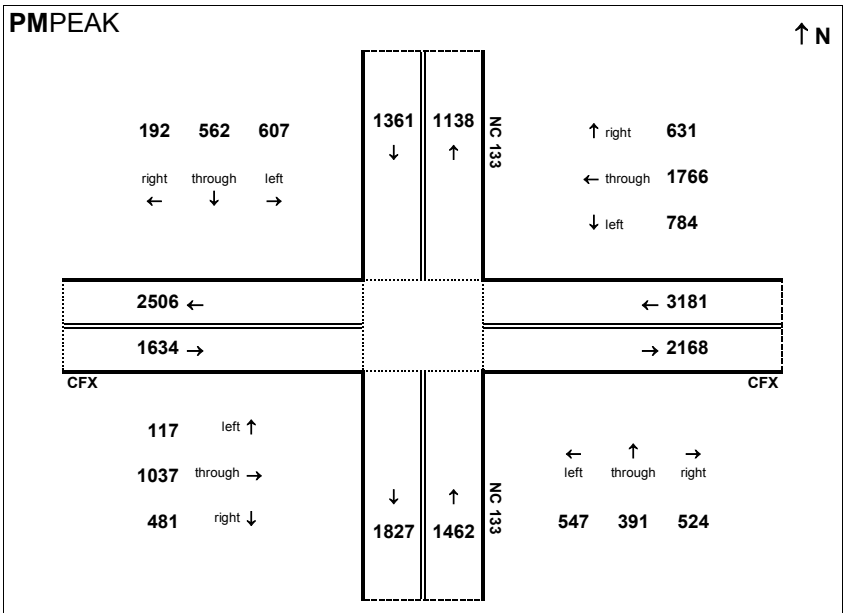
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 7639 vehicles. AM peak hour outflow is 7638 vehicles.



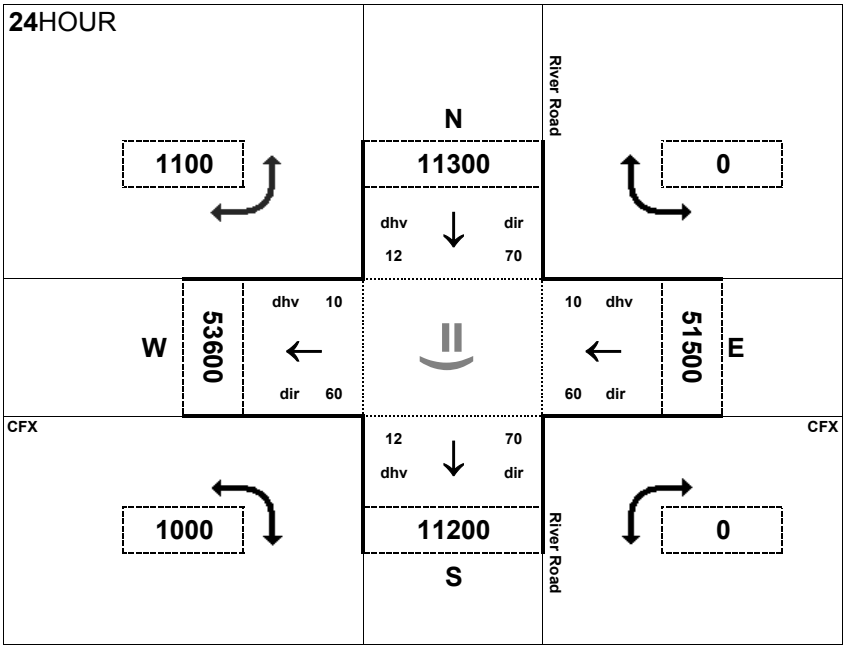
PM peak hour inflow is 7638 vehicles. PM peak hour outflow is 7639 vehicles.

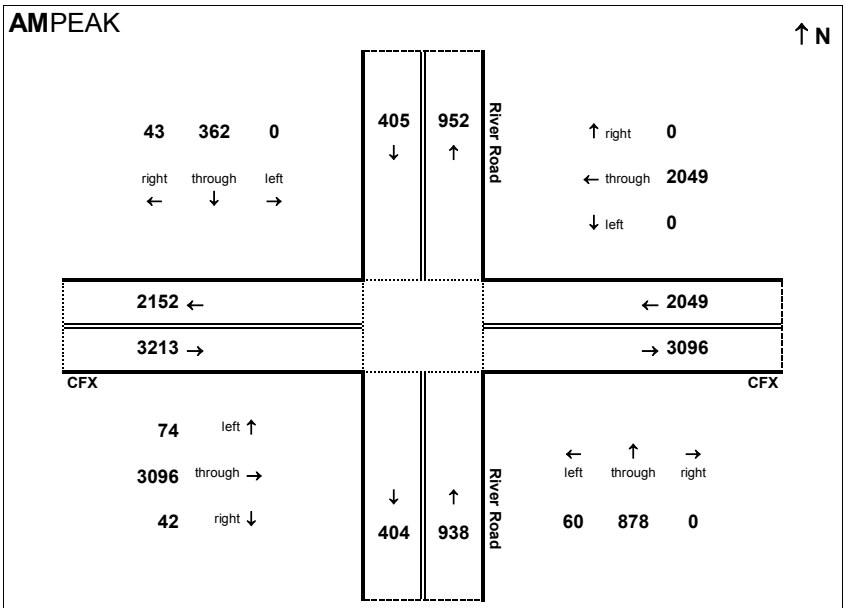
Peak Hour Volume Breakouts Report:
105 - CFX and River Road

Traffic Forecast Release Date:
Oct. 2014

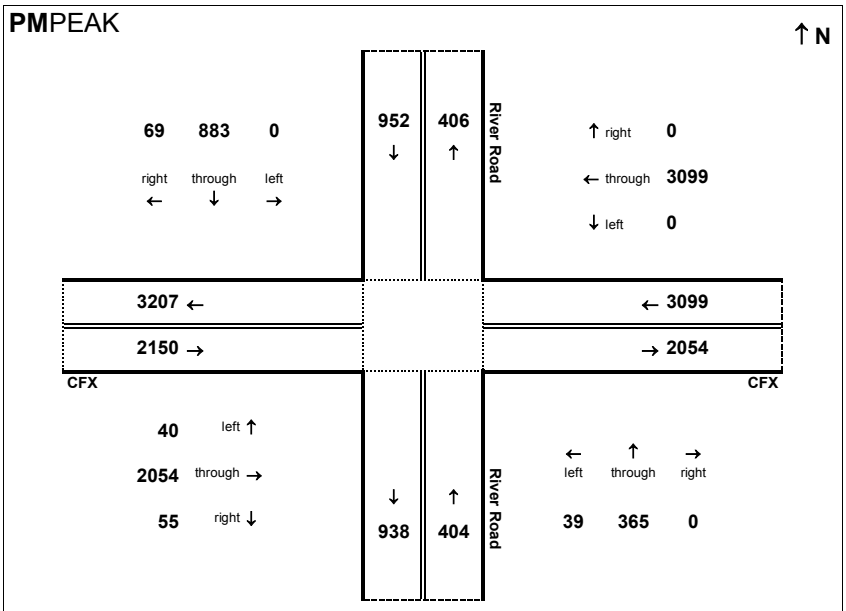
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 6605 vehicles. AM peak hour outflow is 6604 vehicles.



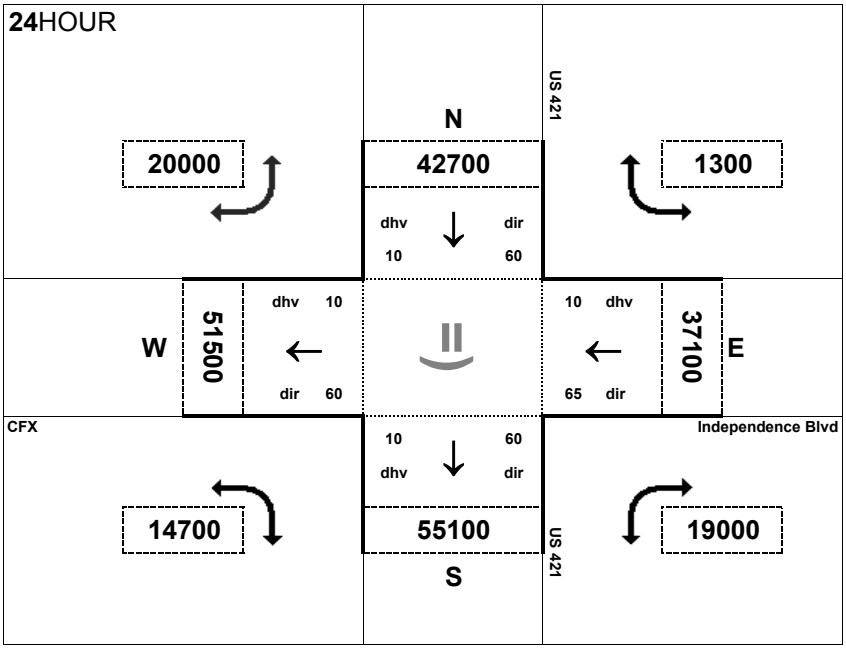
PM peak hour inflow is 6605 vehicles. PM peak hour outflow is 6605 vehicles.

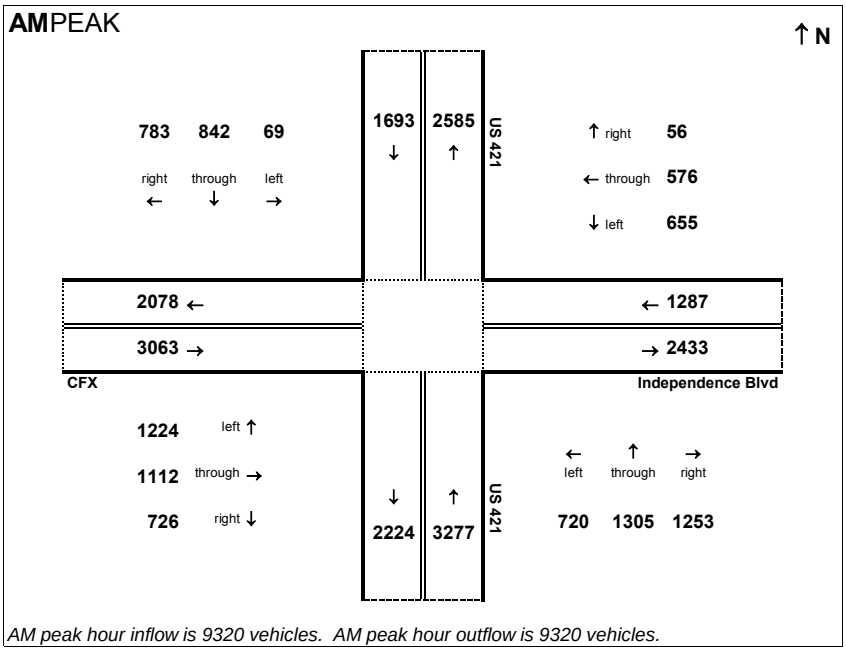
Peak Hour Volume Breakouts Report:
107 - CFX and US 421 - Independence

Traffic Forecast Release Date:
Oct. 2014

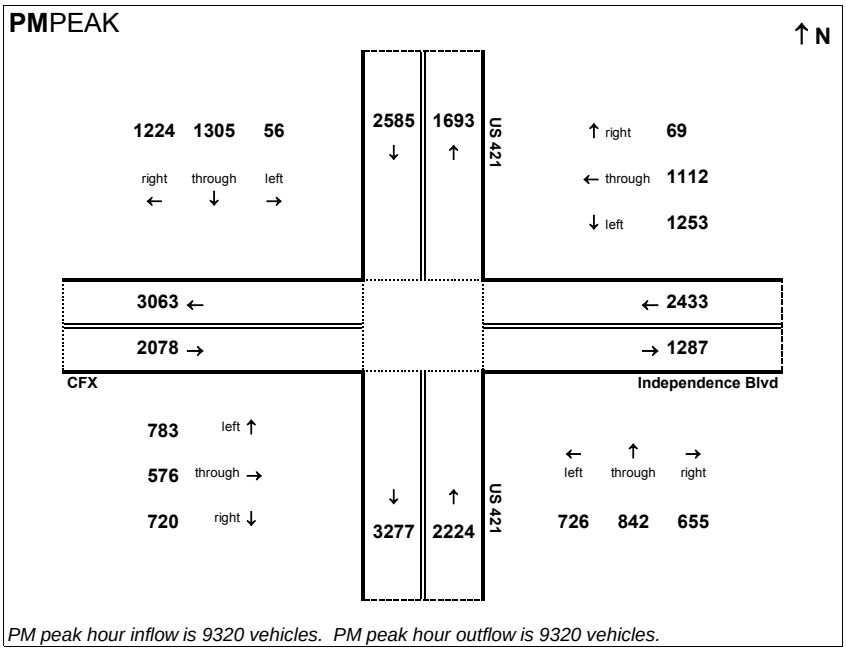
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. M





AM peak hour inflow is 9320 vehicles. AM peak hour outflow is 9320 vehicles.



PM peak hour inflow is 9320 vehicles. PM peak hour outflow is 9320 vehicles.

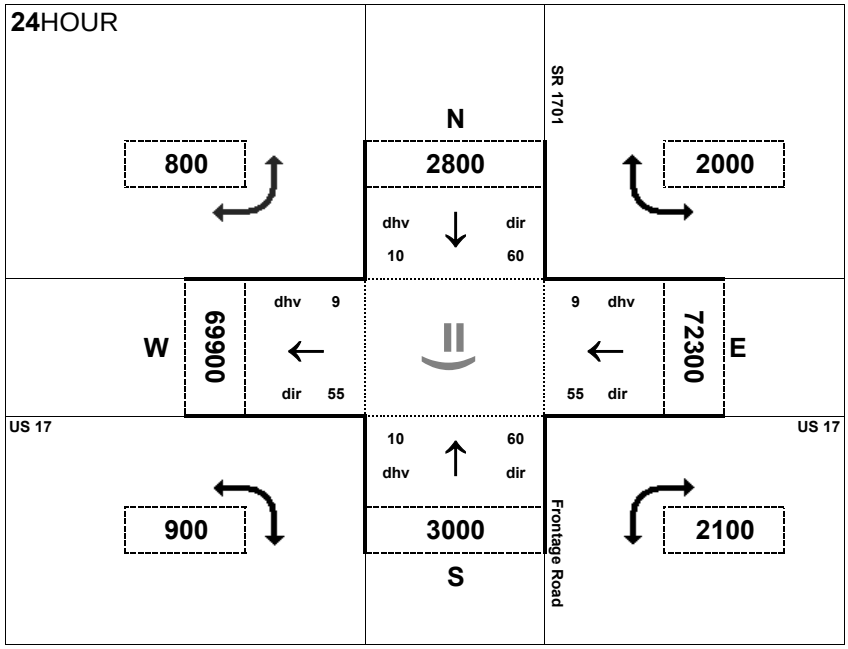
2040 Build DSA Alternative N

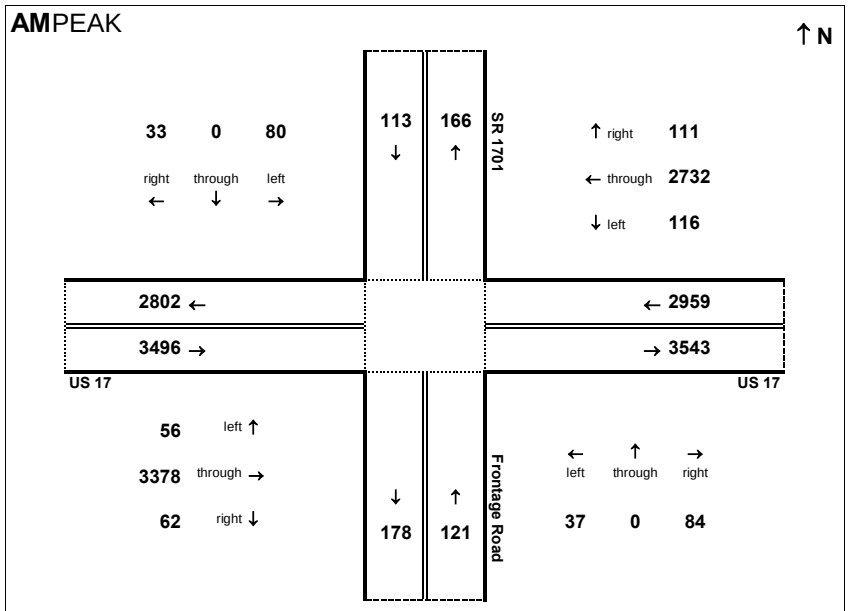
Peak Hour Volume Breakouts Report:
01 - Intersection of US 17 & SR 1701 - Zion Church Road and Frontage Road

Traffic Forecast Release Date:
Oct. 2014

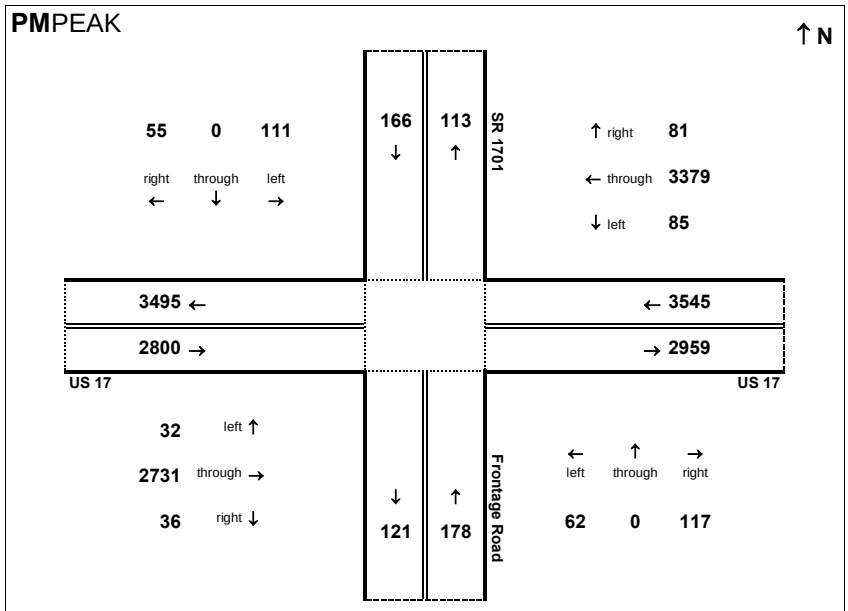
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N

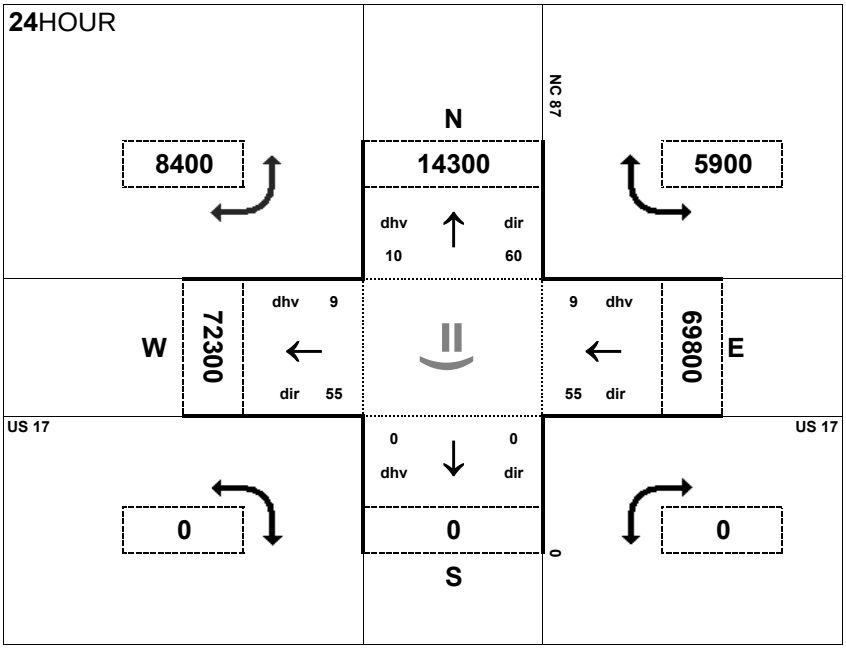




AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

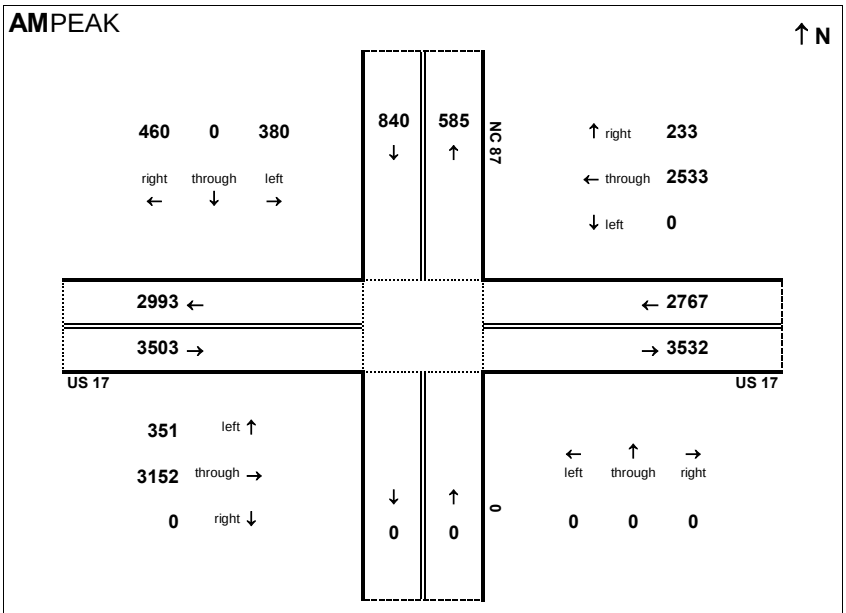


Peak Hour Volume Breakouts Report:
02 - Intersection of US 17 & NC 87 - Maco Road

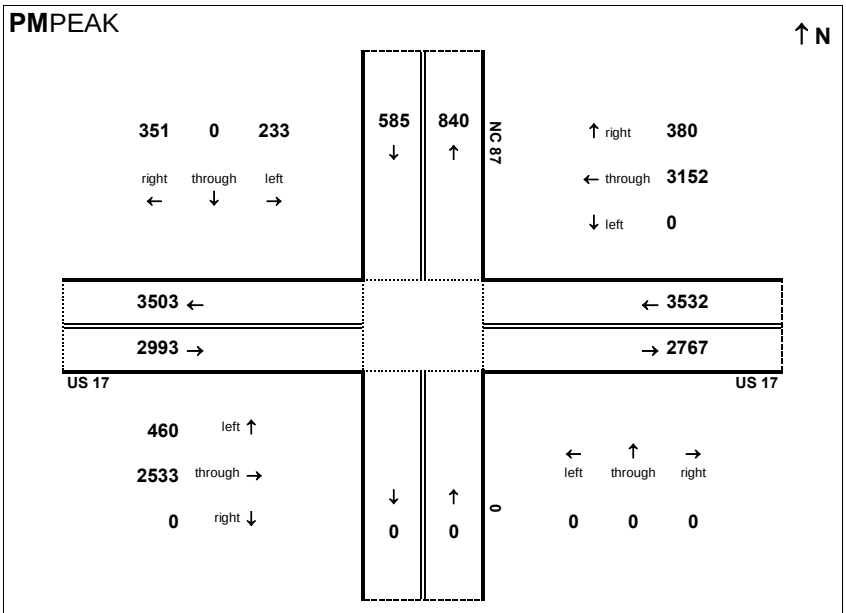
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

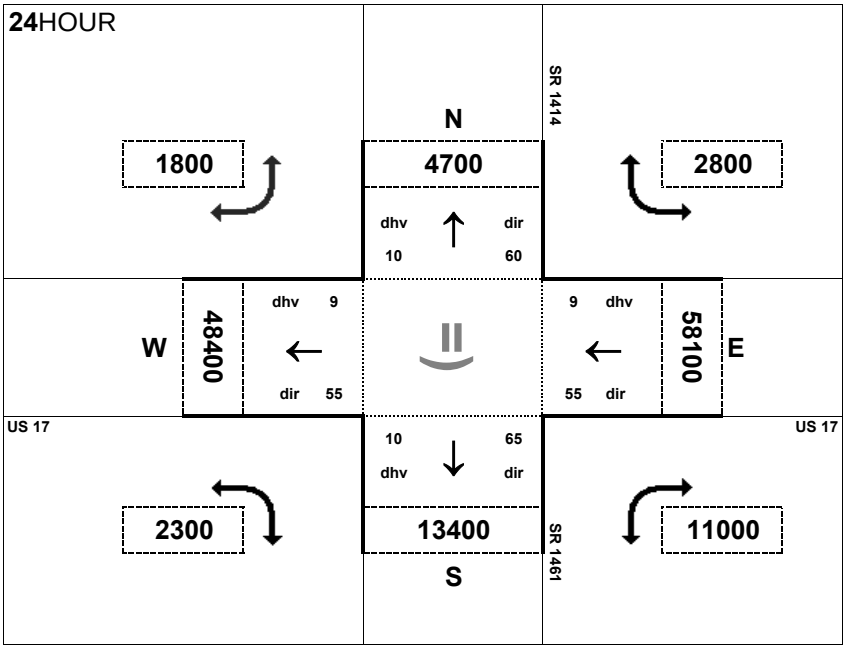
Project:
Cape Fear Crossing - Build Alt. N



AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

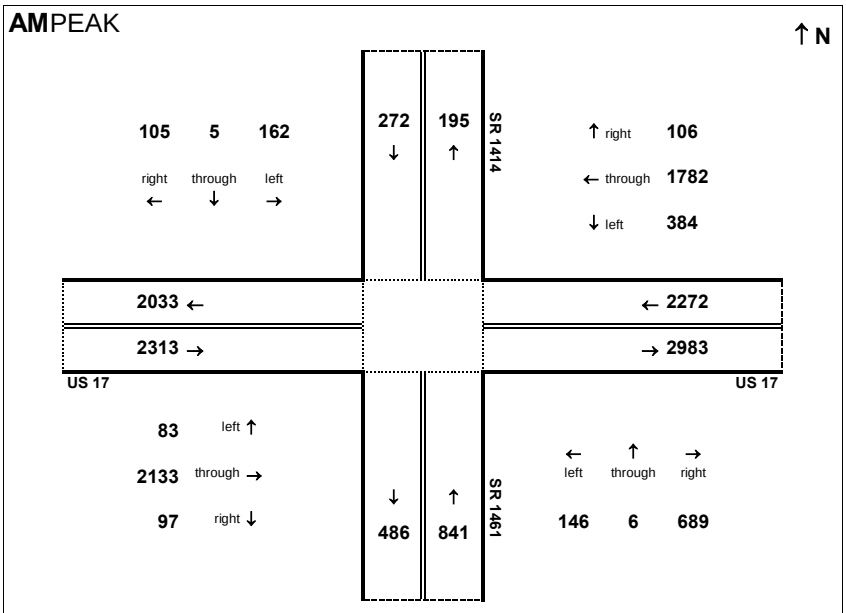


Peak Hour Volume Breakouts Report:
03 - Intersection of US 17 & SR 1414 - Goodman Road and SR 1461 - Hewett-Burton Road

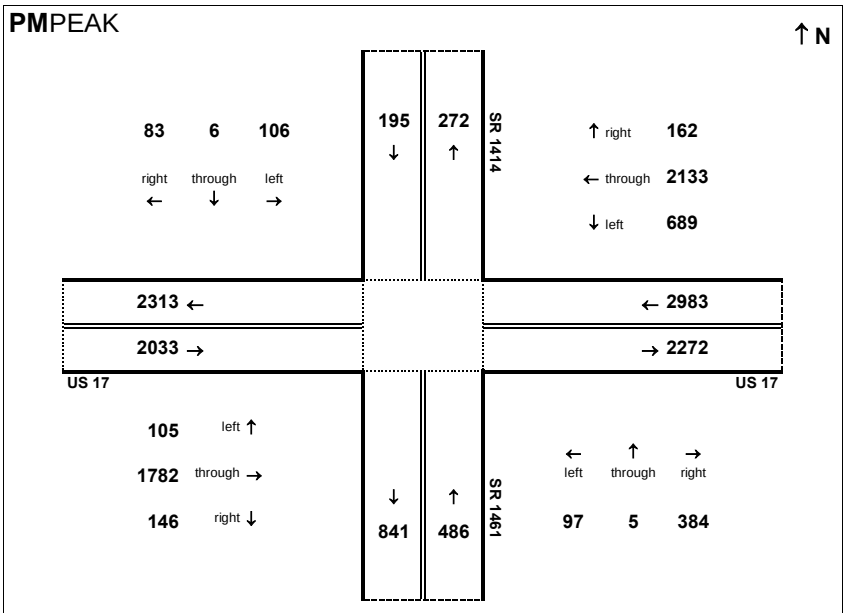
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N



AM peak hour inflow is 5698 vehicles. AM peak hour outflow is 5697 vehicles.



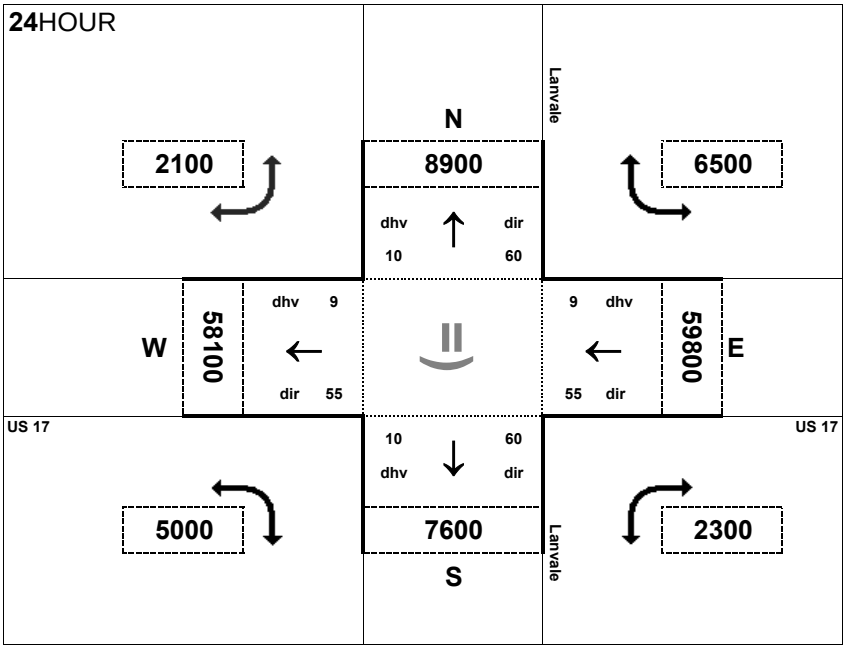
PM peak hour inflow is 5697 vehicles. PM peak hour outflow is 5698 vehicles.

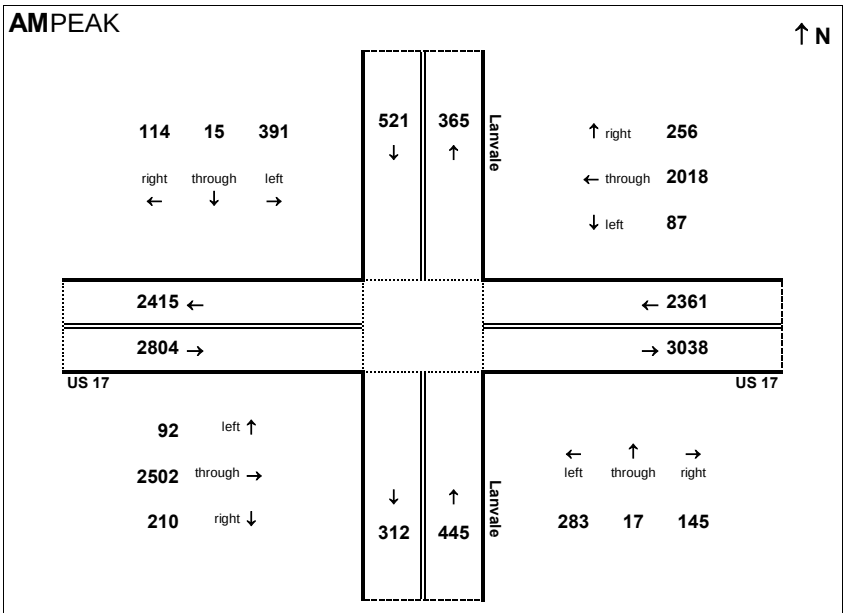
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

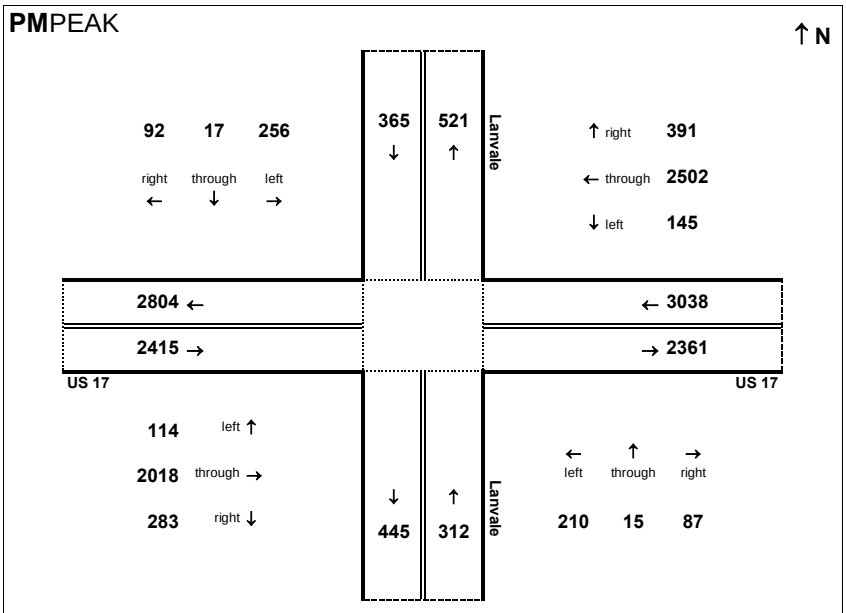
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 6131 vehicles. AM peak hour outflow is 6130 vehicles.



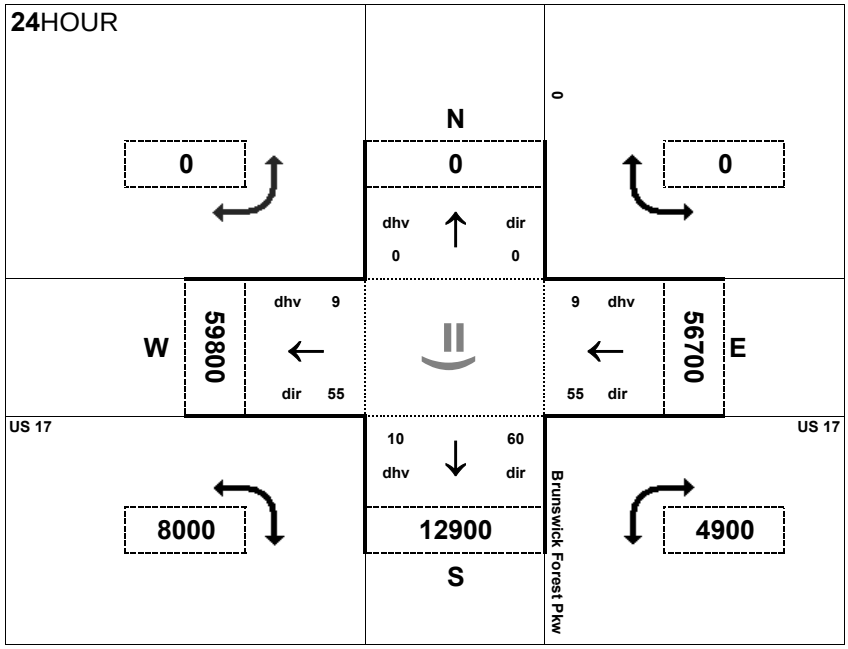
PM peak hour inflow is 6130 vehicles. PM peak hour outflow is 6131 vehicles.

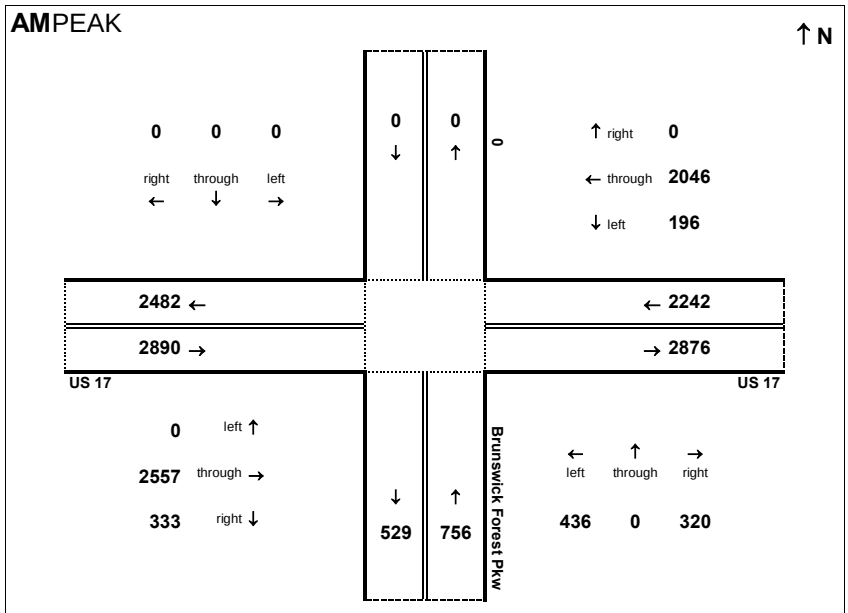
Peak Hour Volume Breakouts Report:
05 - Intersection of US 17 and Brunswick Forest Parkway

Traffic Forecast Release Date:
OCt. 2014

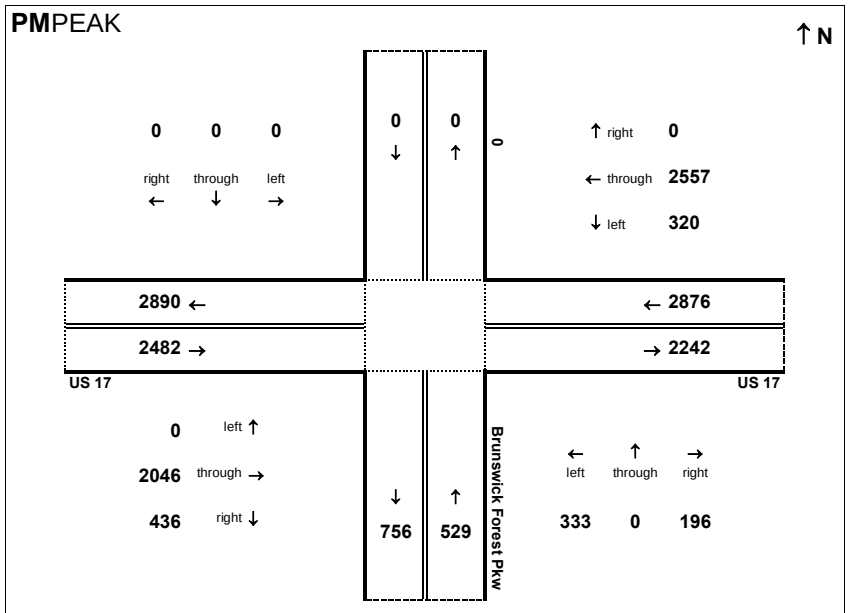
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 5888 vehicles. AM peak hour outflow is 5887 vehicles.



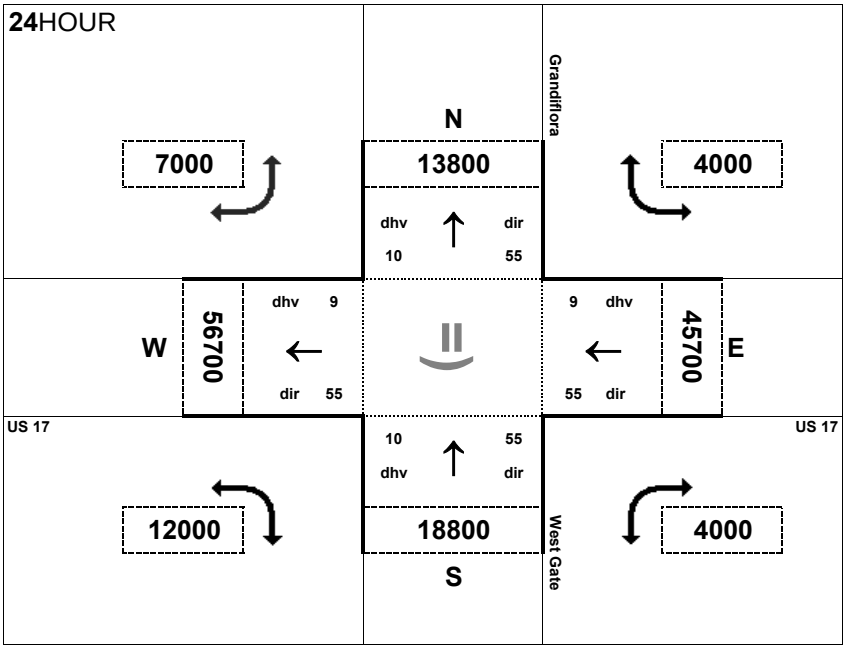
PM peak hour inflow is 5887 vehicles. PM peak hour outflow is 5888 vehicles.

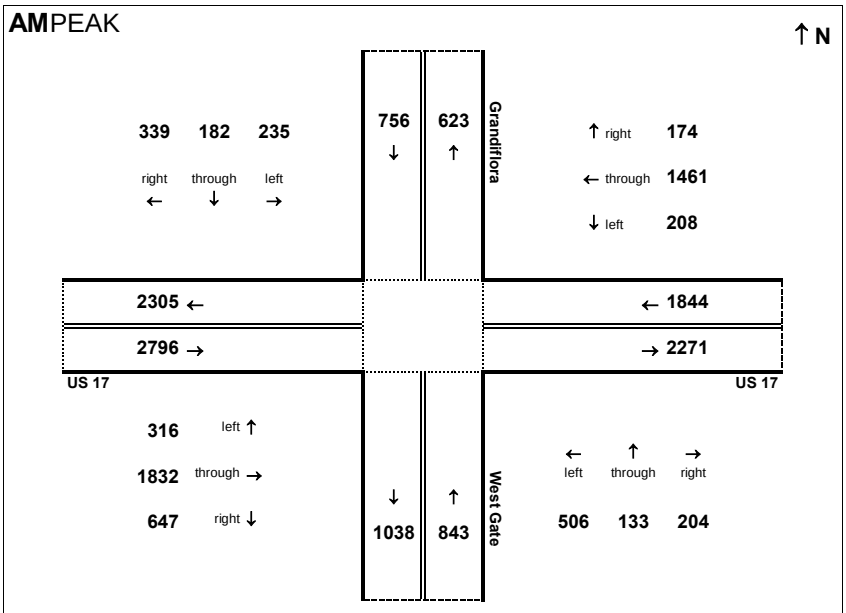
Peak Hour Volume Breakouts Report:
06 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

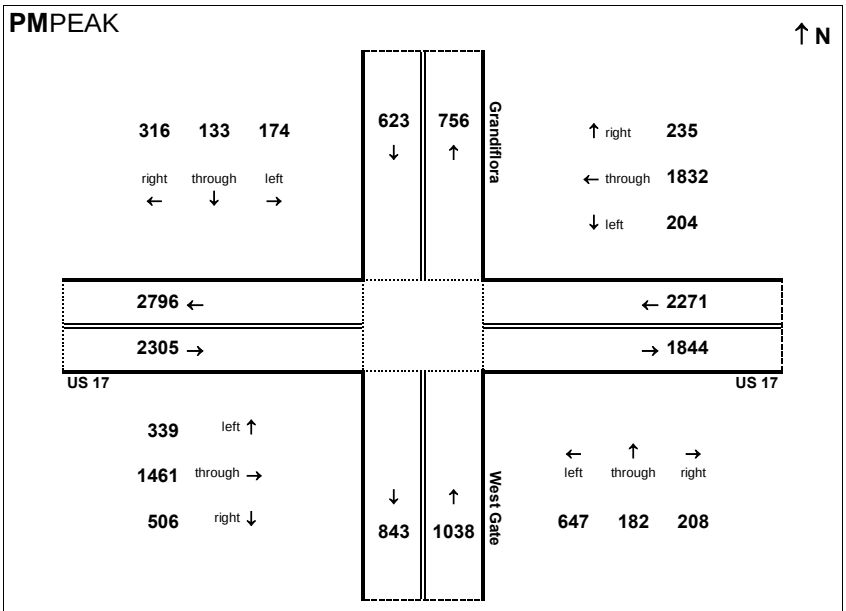
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



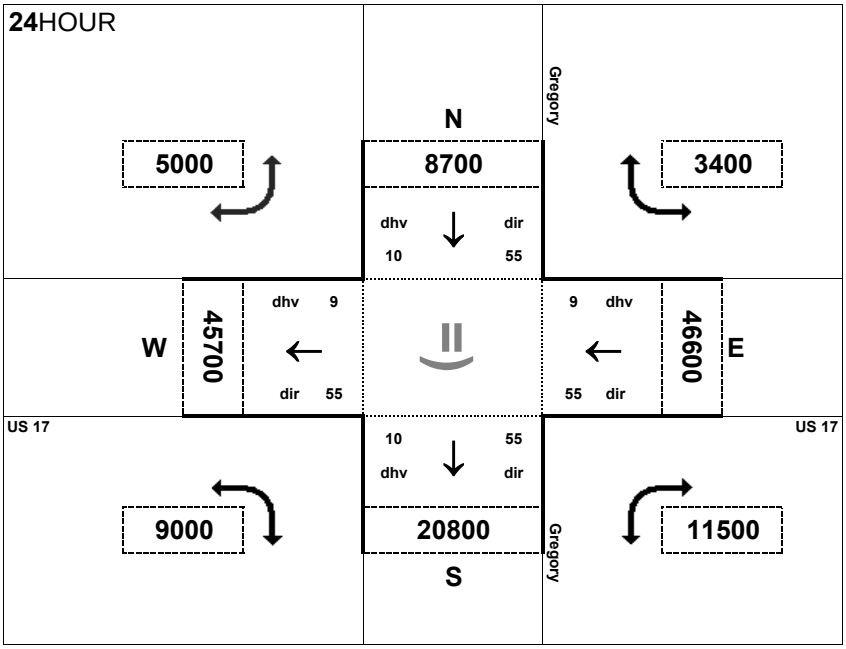
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

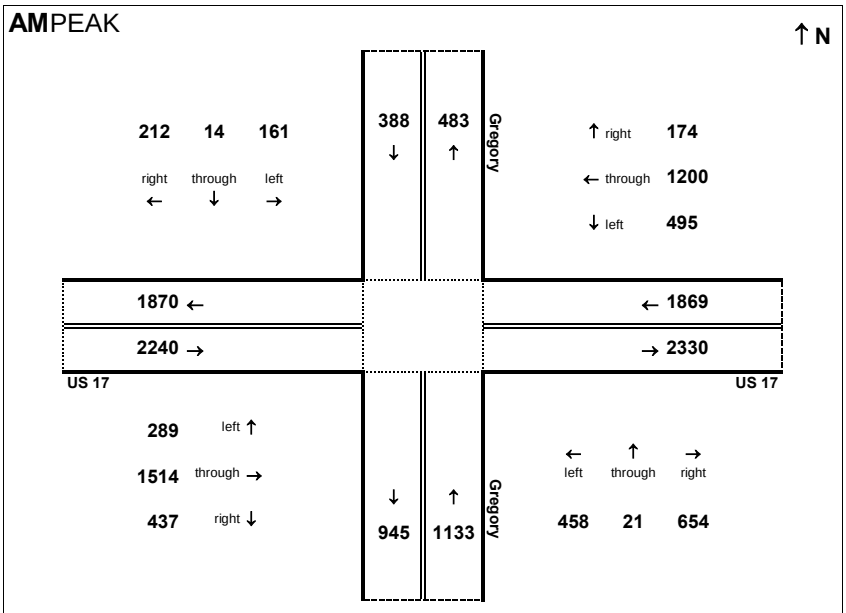
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

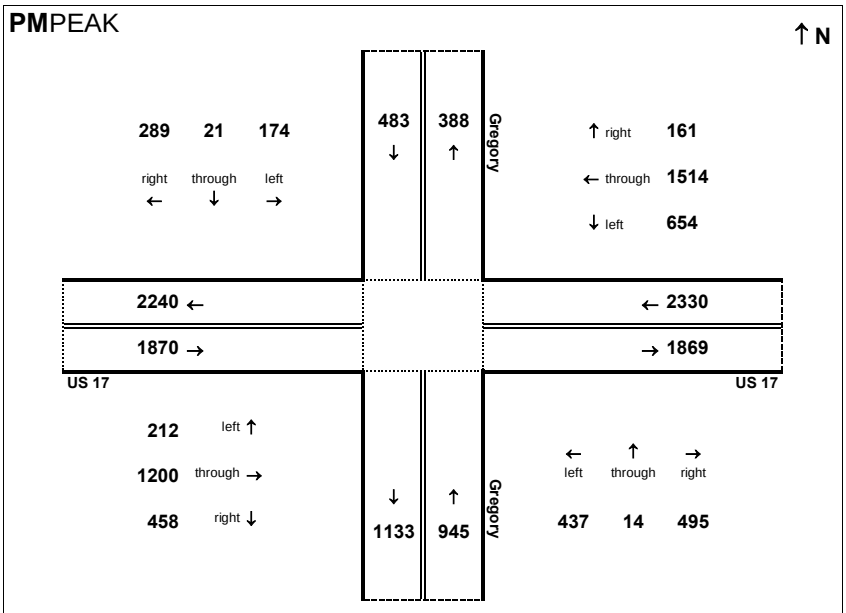
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

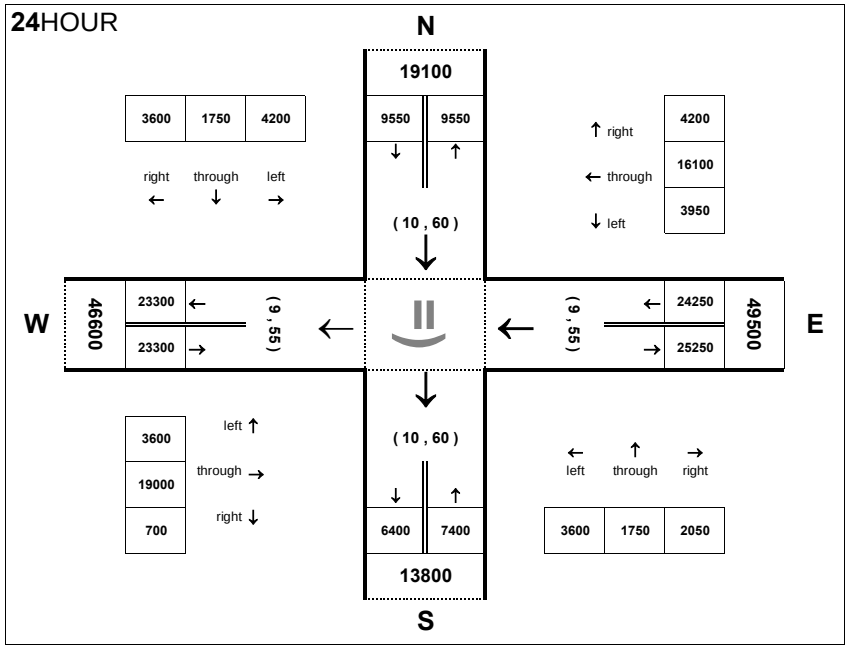


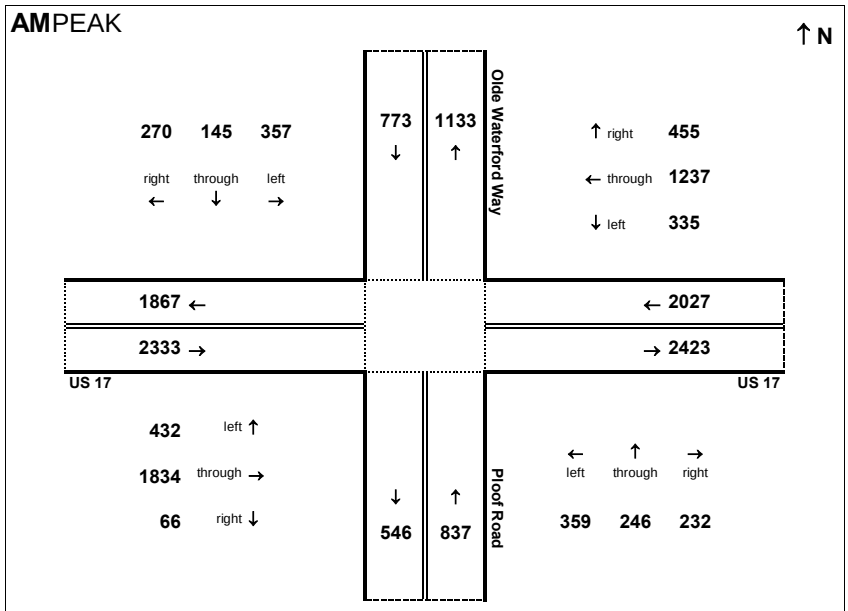
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

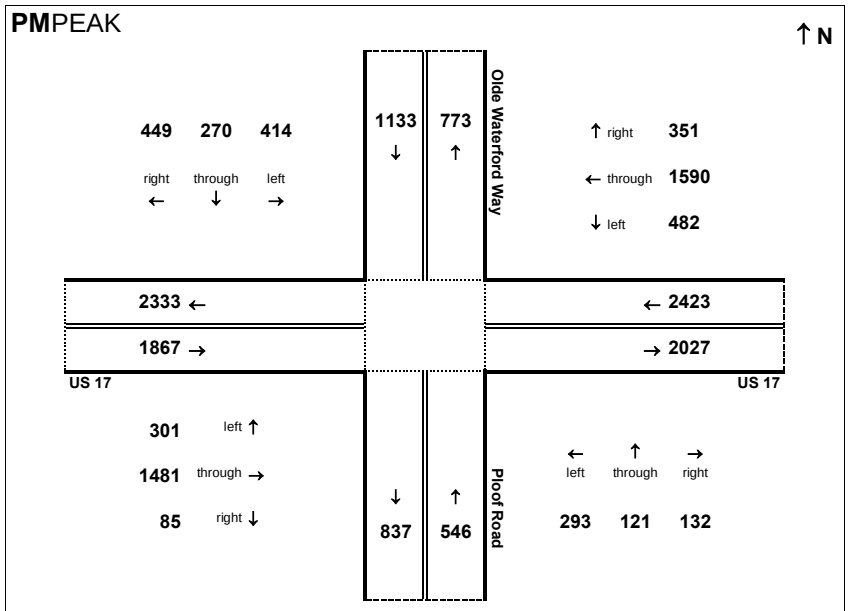
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. N

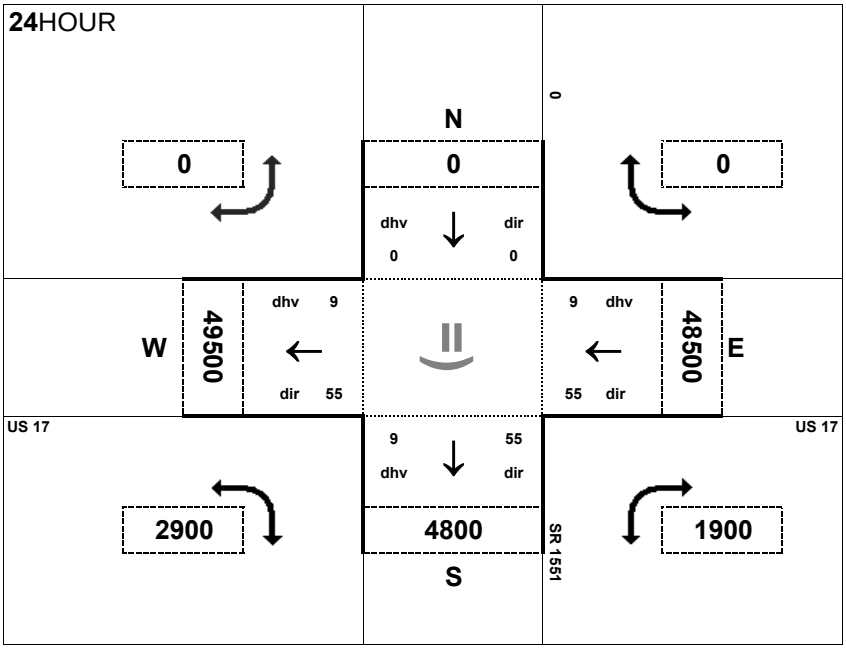




AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

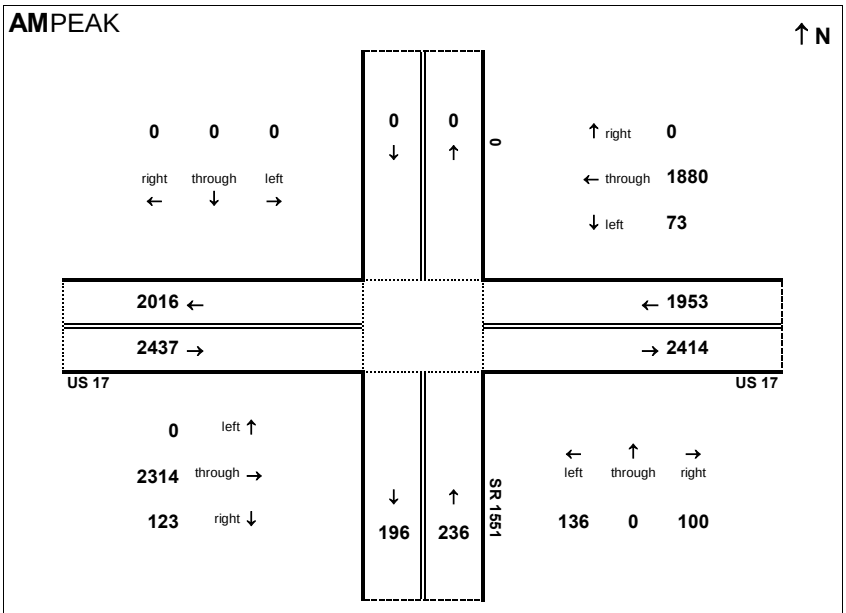


Peak Hour Volume Breakouts Report:
09 - Intersection of US 17 and SR 1551 - Blackwell Road

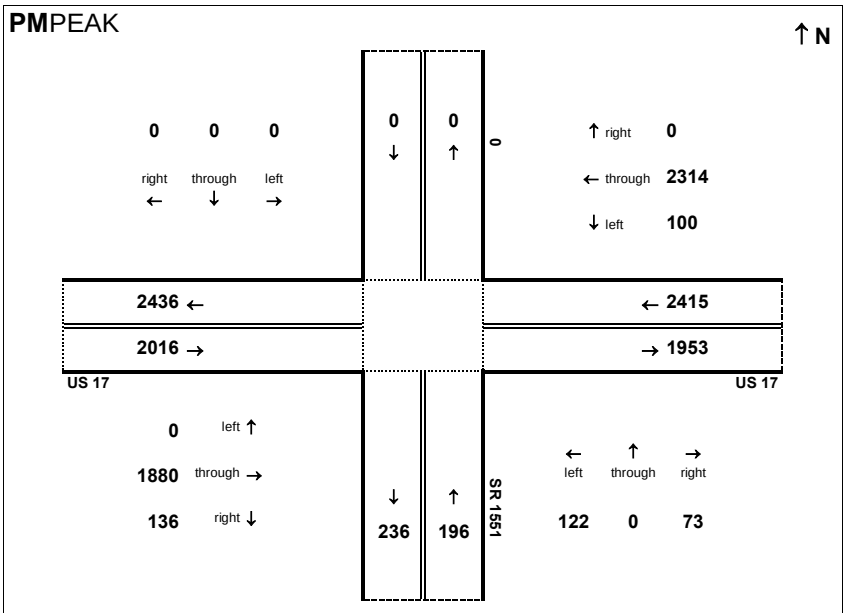
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N



AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



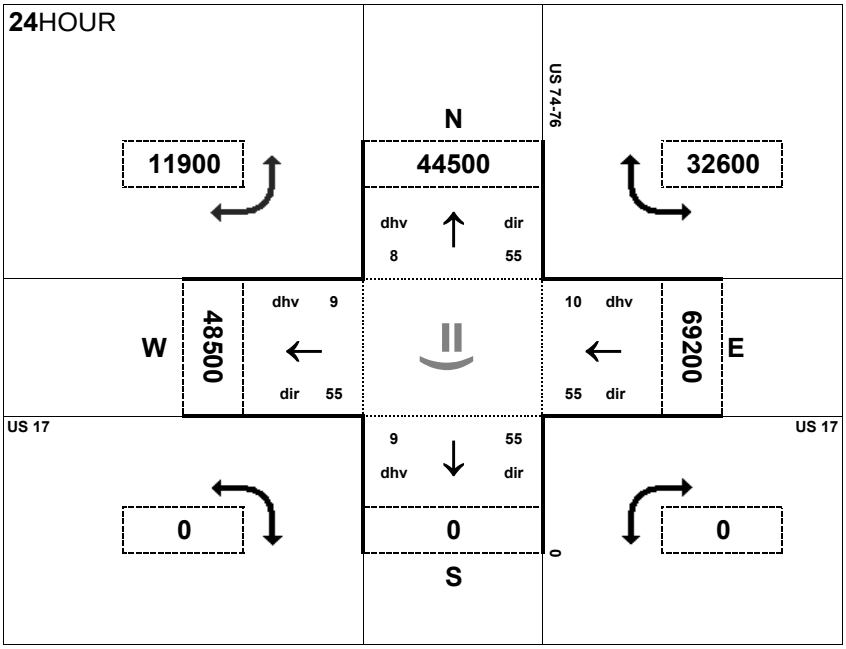
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

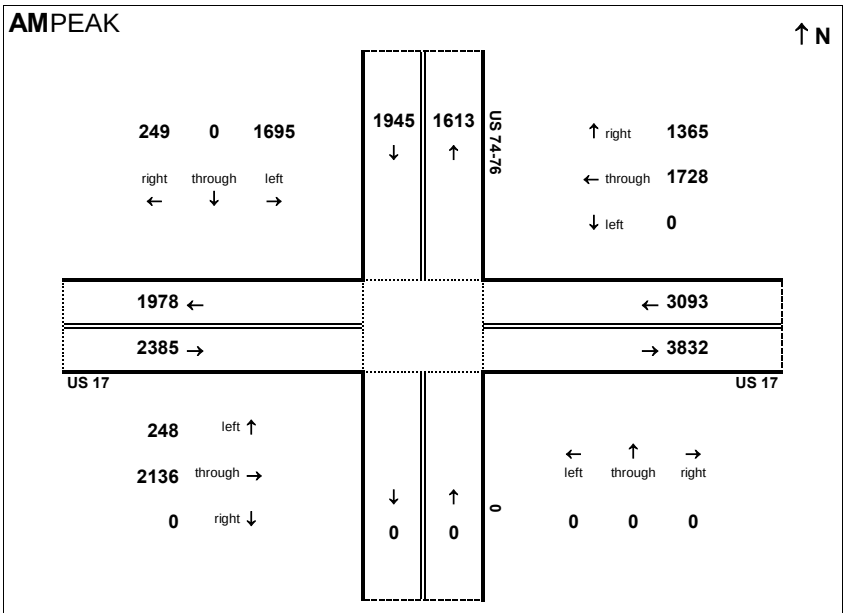
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

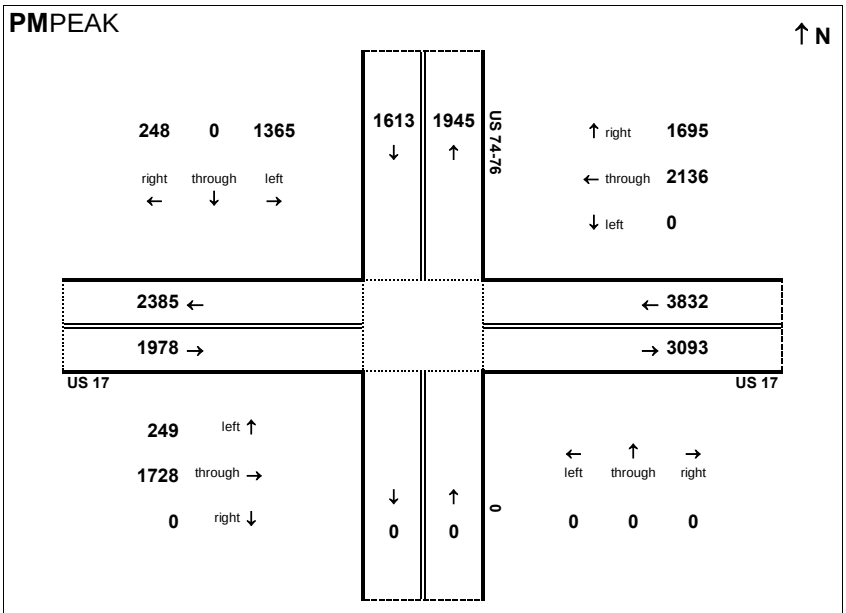
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 7423 vehicles. AM peak hour outflow is 7423 vehicles.



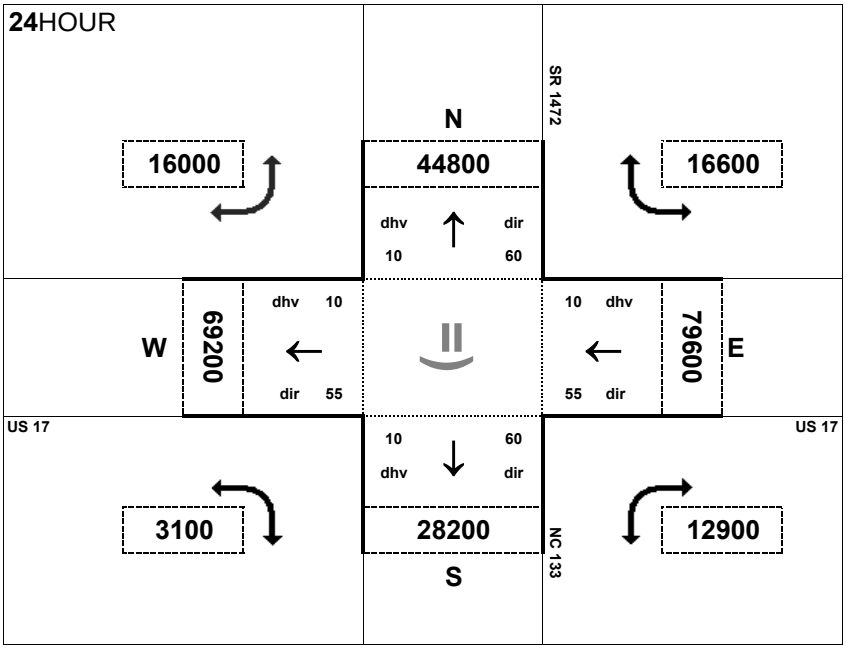
PM peak hour inflow is 7423 vehicles. PM peak hour outflow is 7423 vehicles.

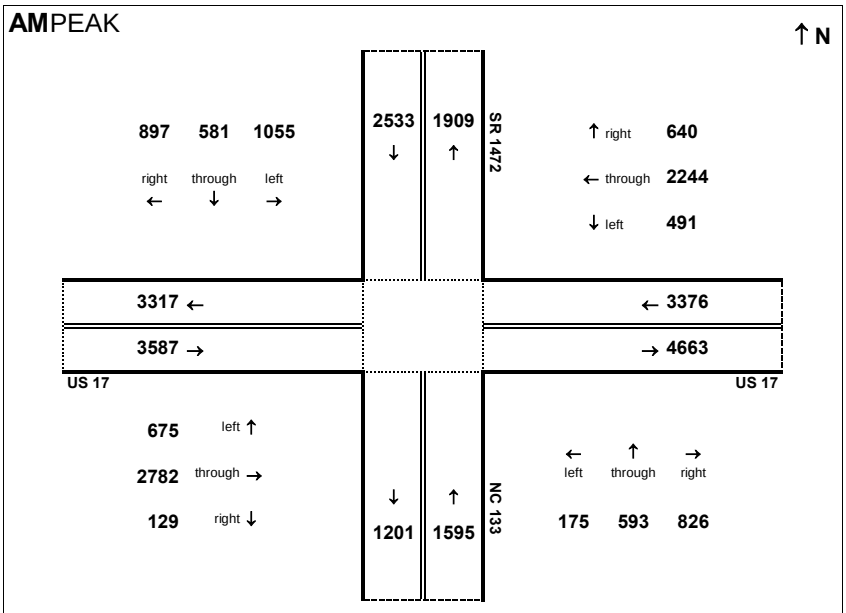
Peak Hour Volume Breakouts Report:
11 - Intersection of US 17 & SR 1472 - Village Road and NC 133 - River Road

Traffic Forecast Release Date:
Oct. 2014

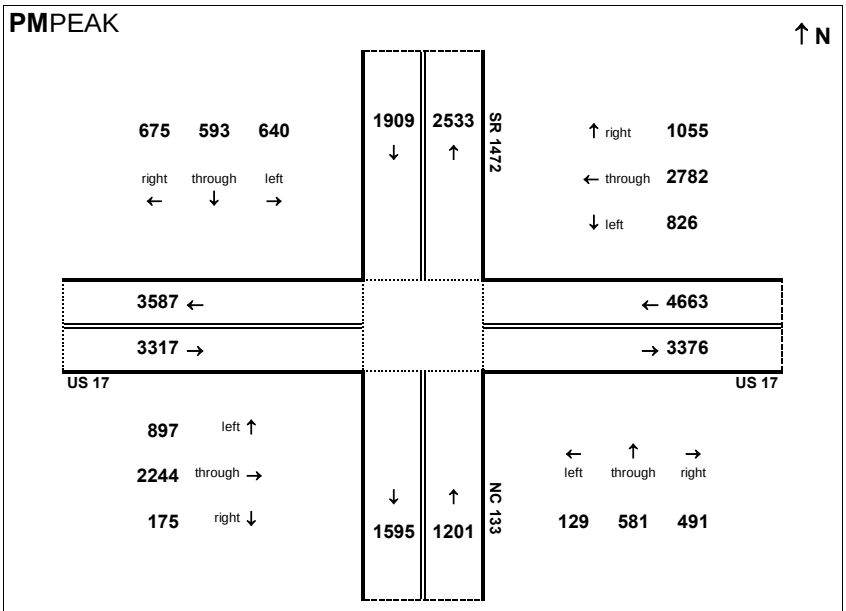
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 11091 vehicles. AM peak hour outflow is 11090 vehicles.



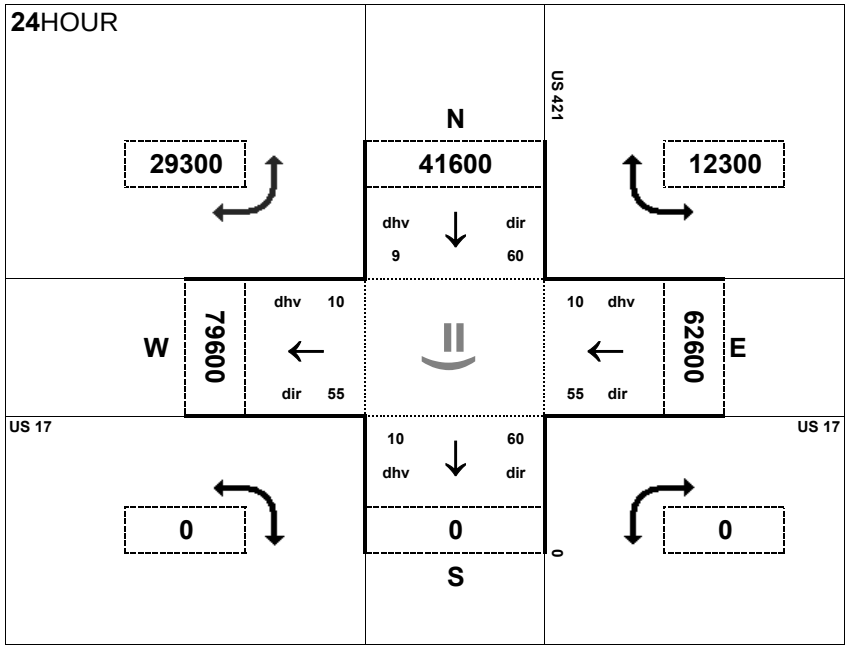
PM peak hour inflow is 11090 vehicles. PM peak hour outflow is 11091 vehicles.

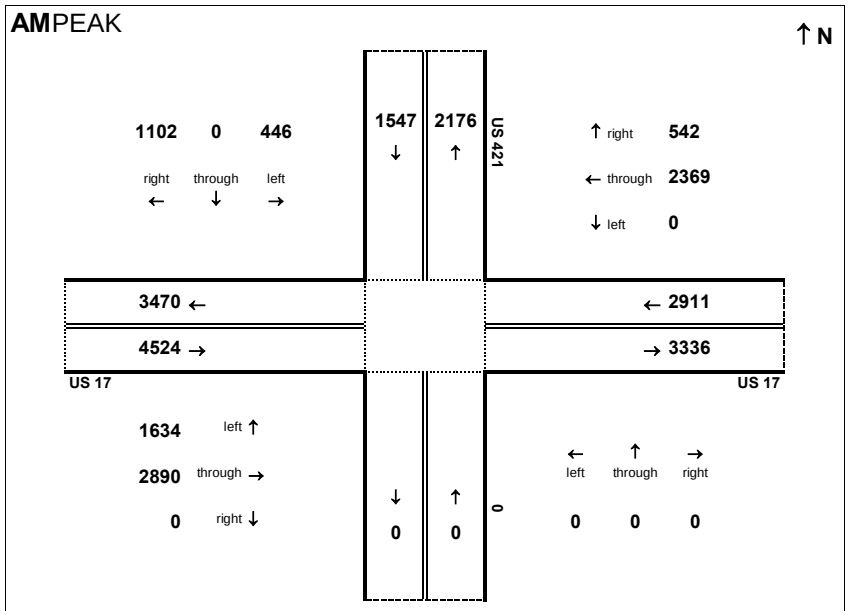
Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

Traffic Forecast Release Date:
Oct. 2014

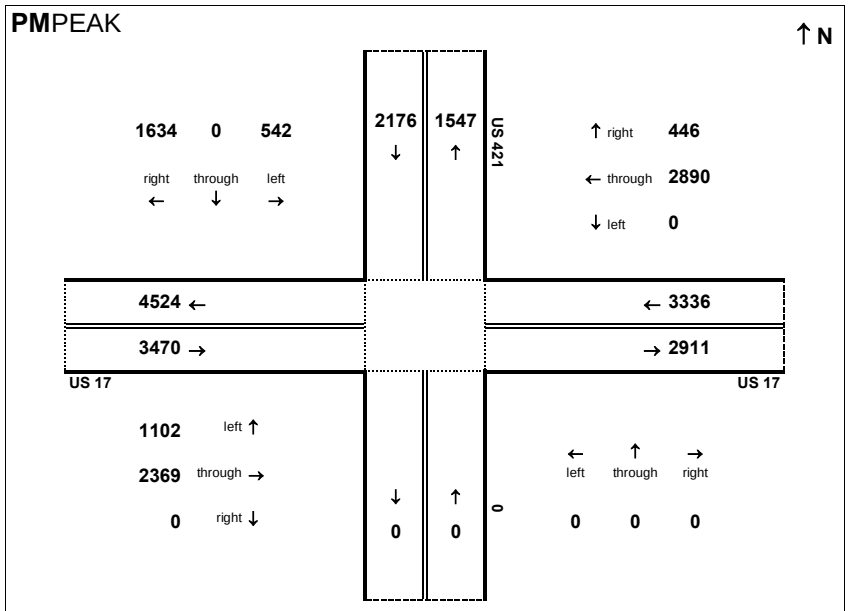
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N

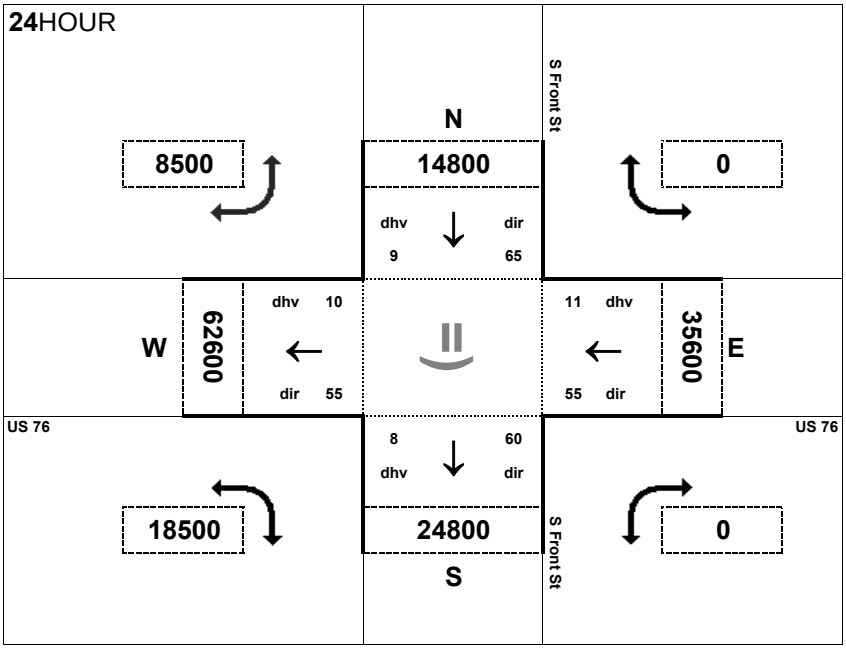




AM peak hour inflow is 8982 vehicles. AM peak hour outflow is 8982 vehicles.



PM peak hour inflow is 8982 vehicles. PM peak hour outflow is 8982 vehicles.

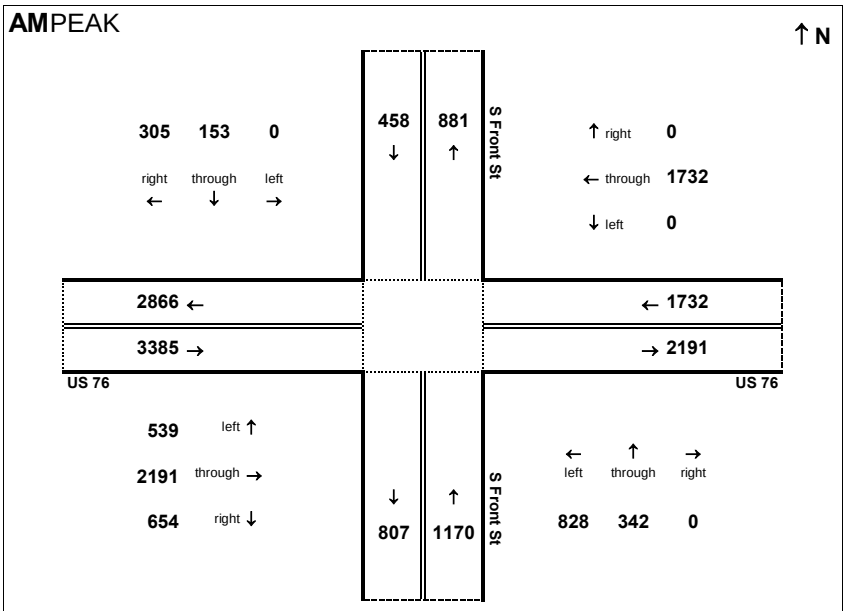


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

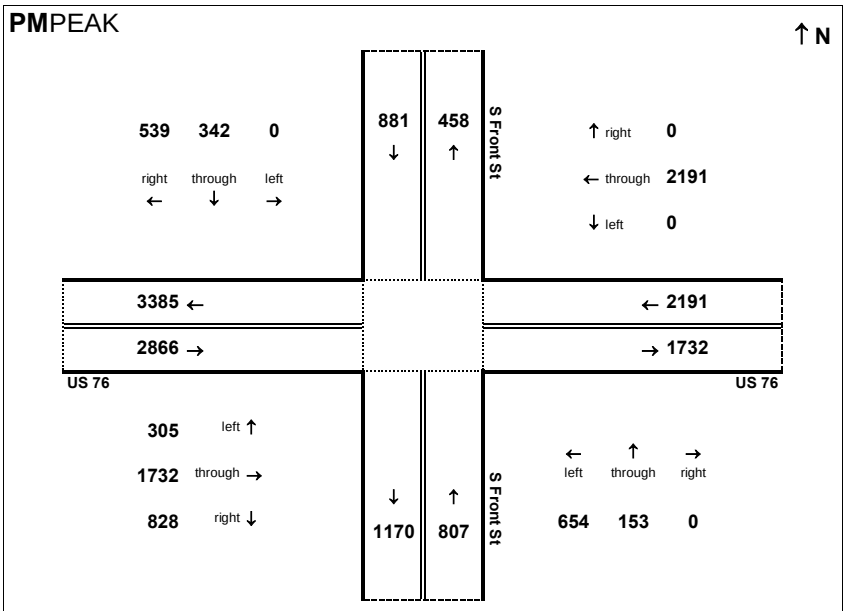
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

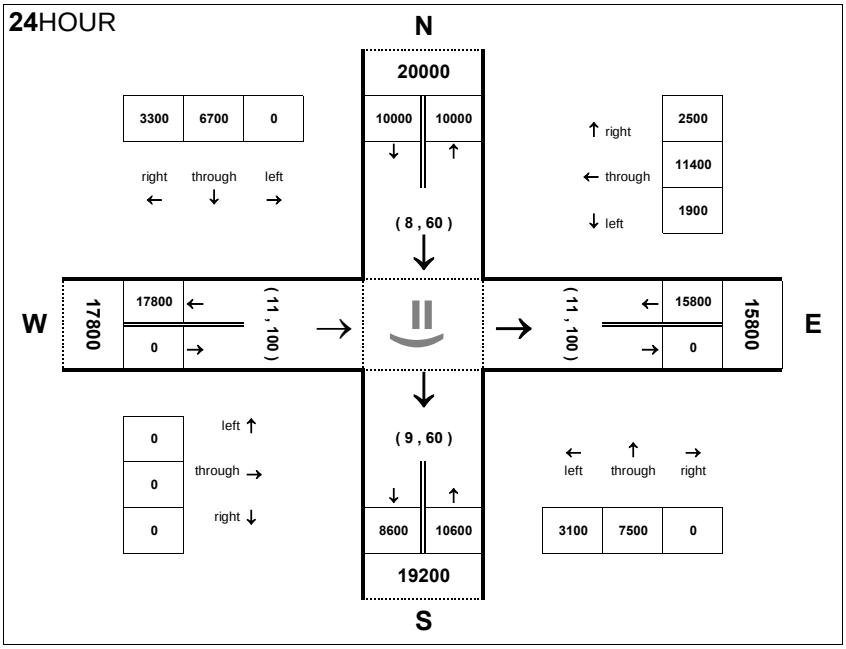
Project:
Cape Fear Crossing - Build Alt. N



AM peak hour inflow is 6745 vehicles. AM peak hour outflow is 6745 vehicles.



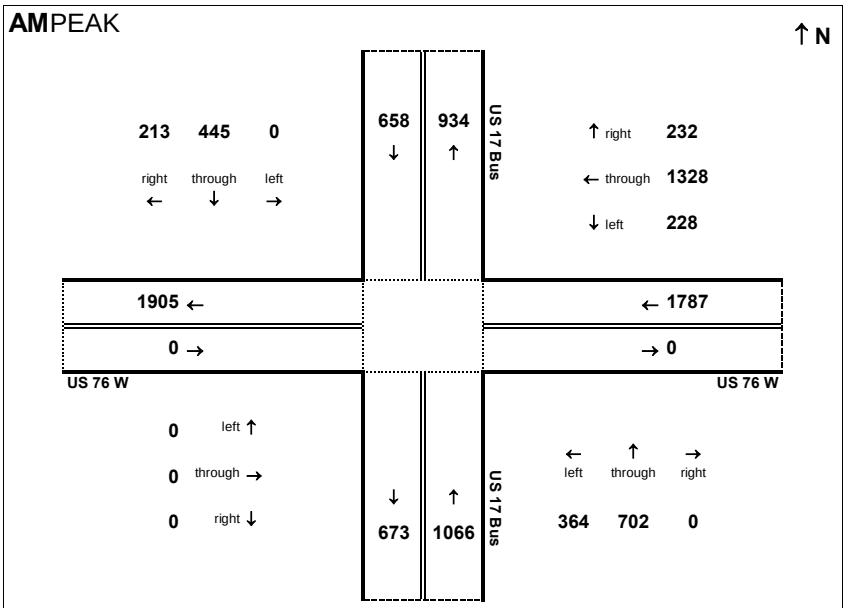
PM peak hour inflow is 6745 vehicles. PM peak hour outflow is 6745 vehicles.



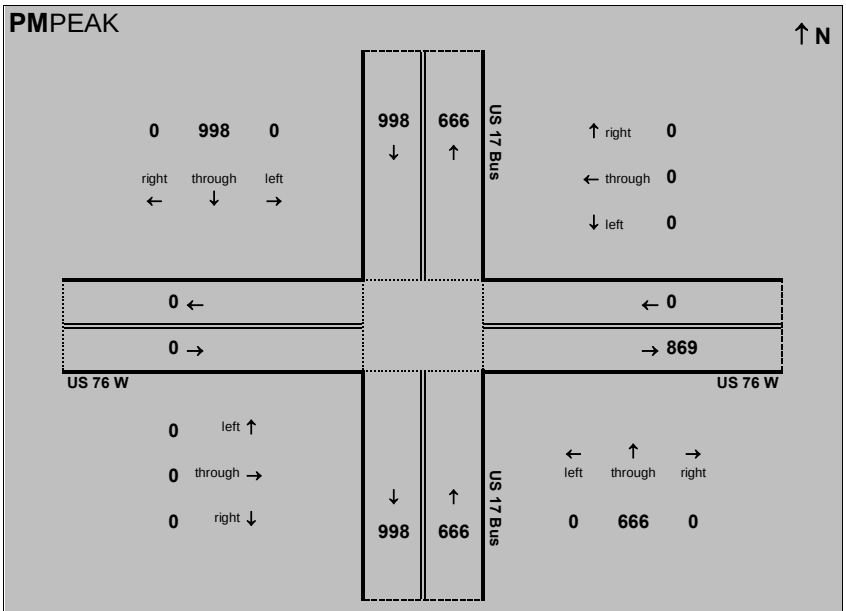
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

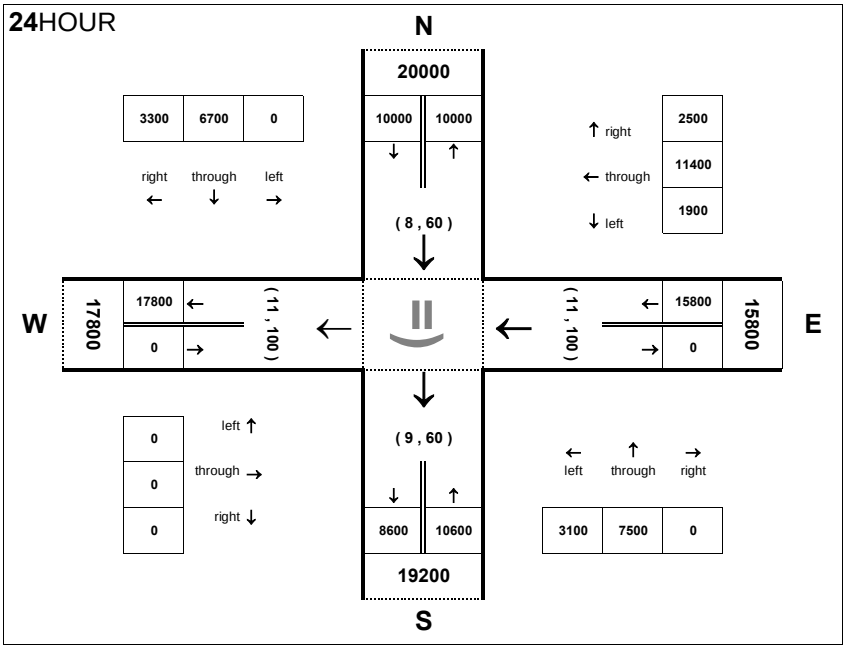
Traffic Data Year:
2040 Alt N



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



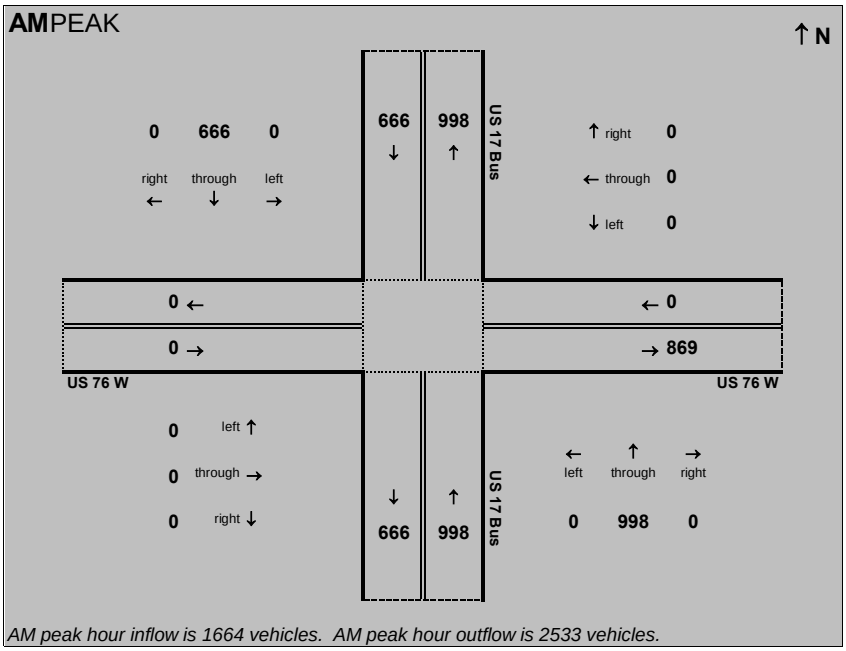
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



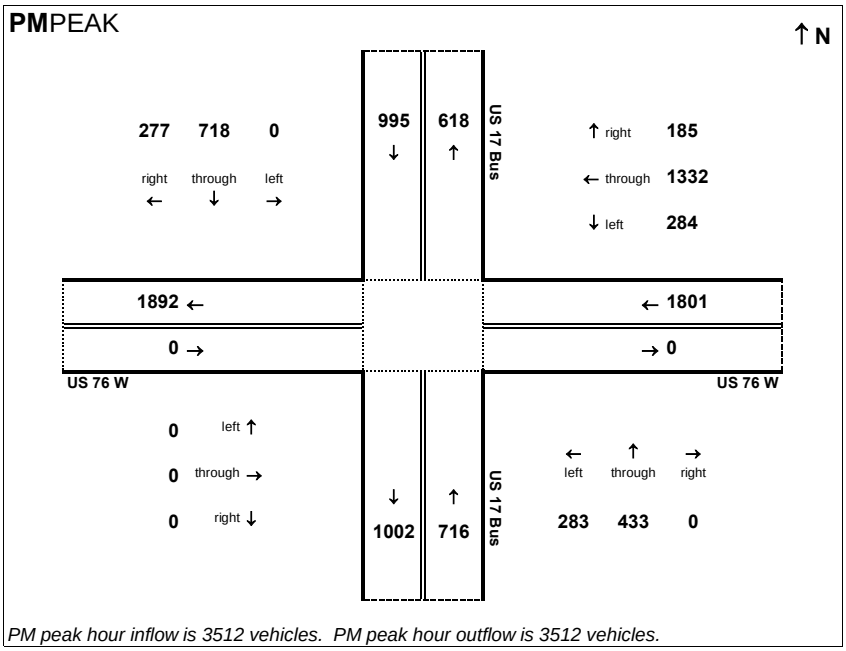
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

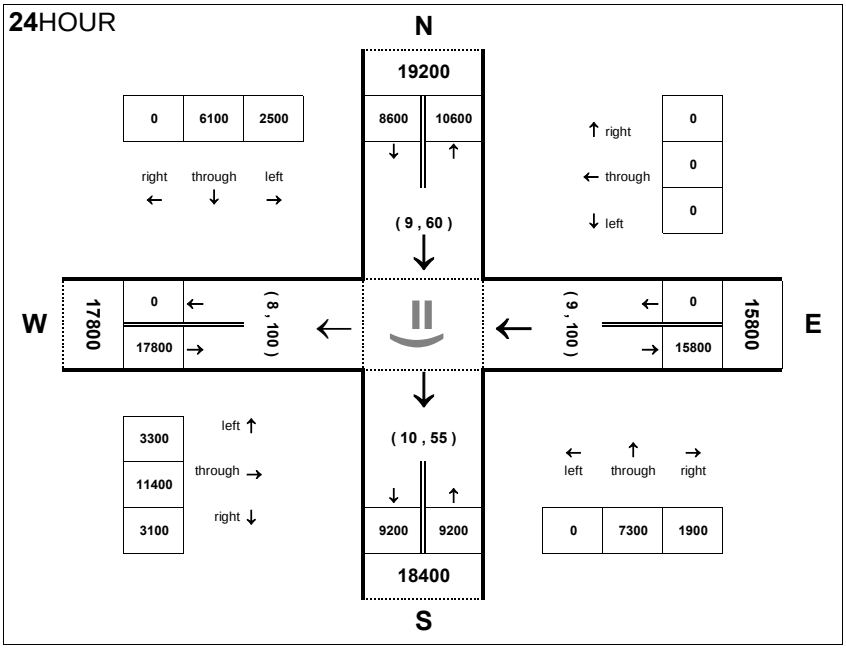
Traffic Data Year:
2040 Alt N



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



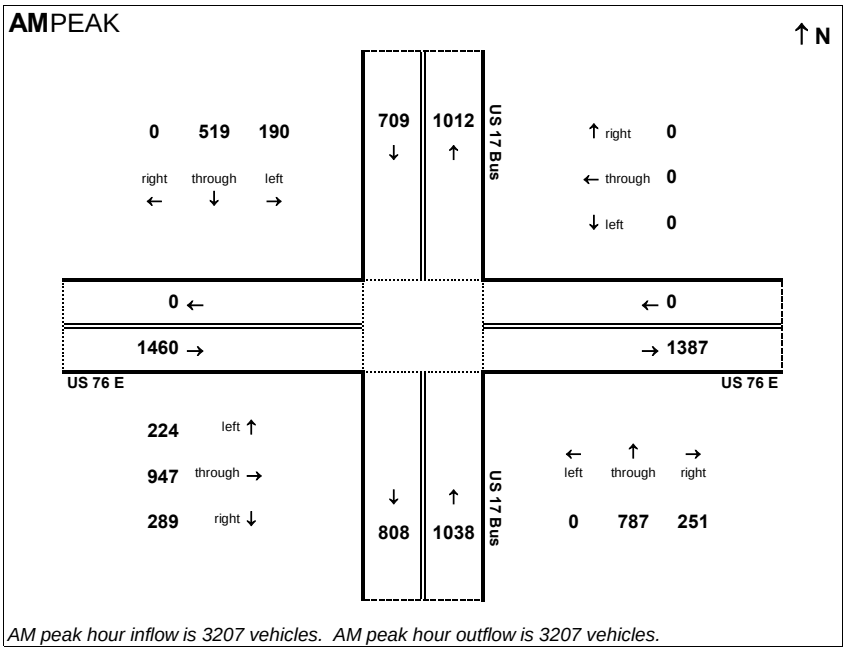
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



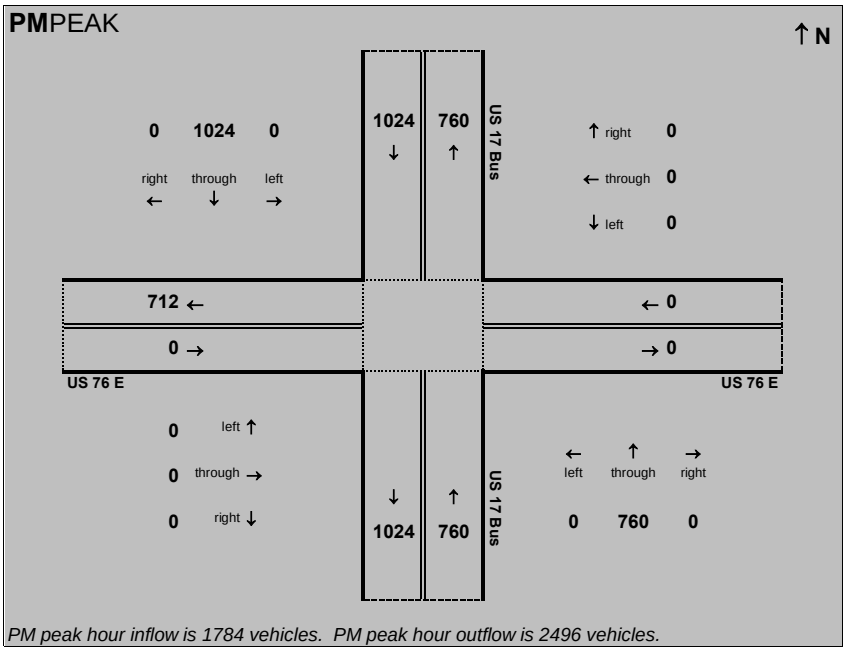
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

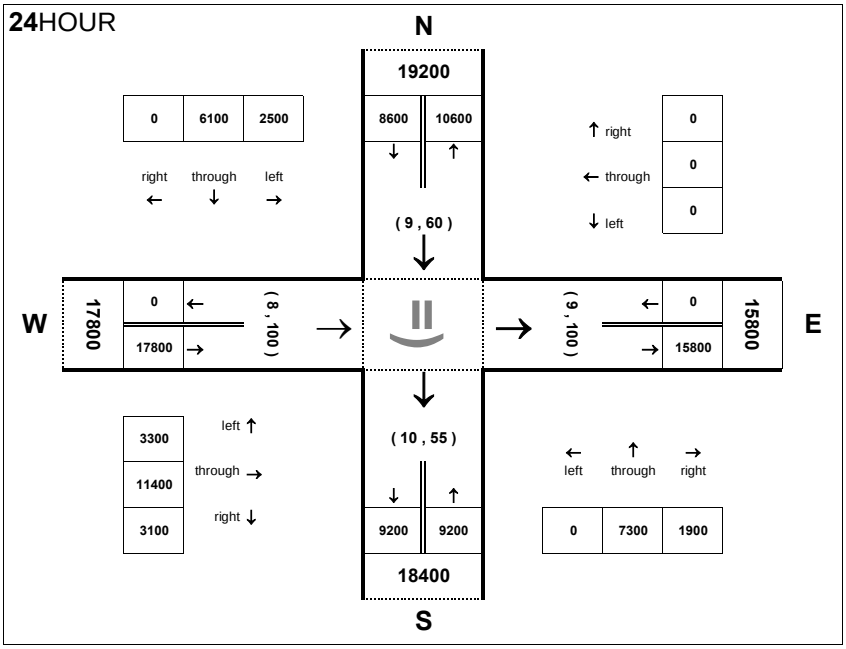
Traffic Data Year:
2040 Alt N



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



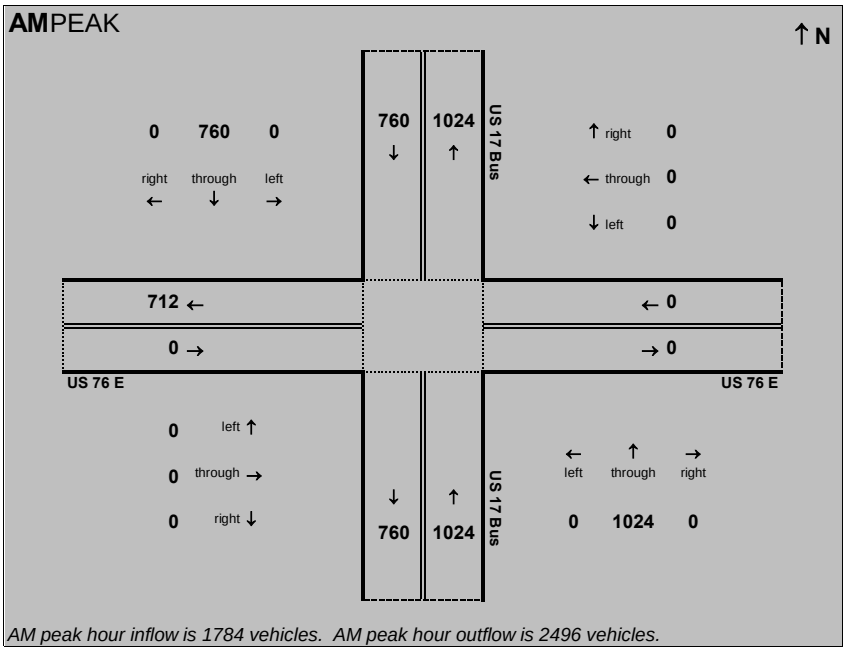
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



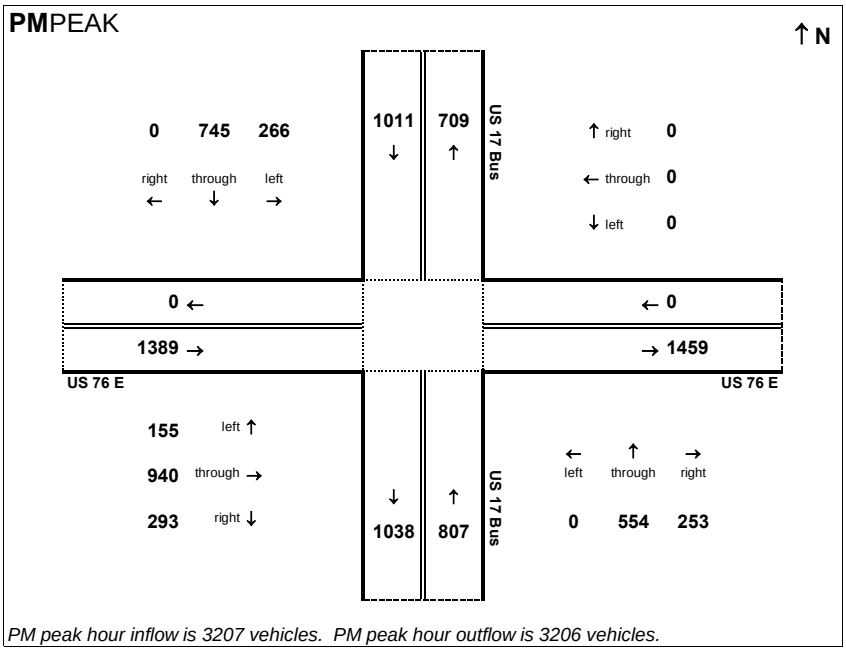
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt N



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



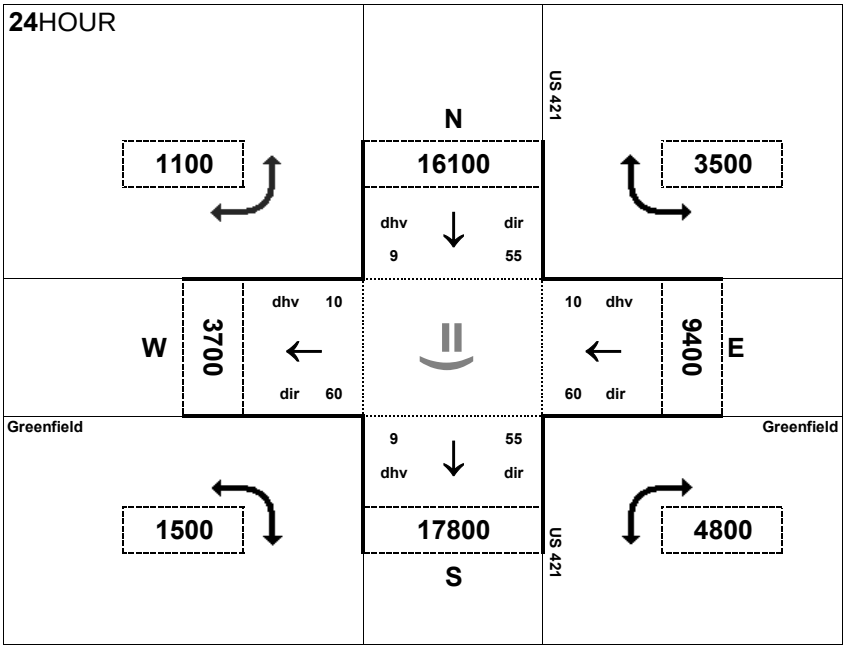
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

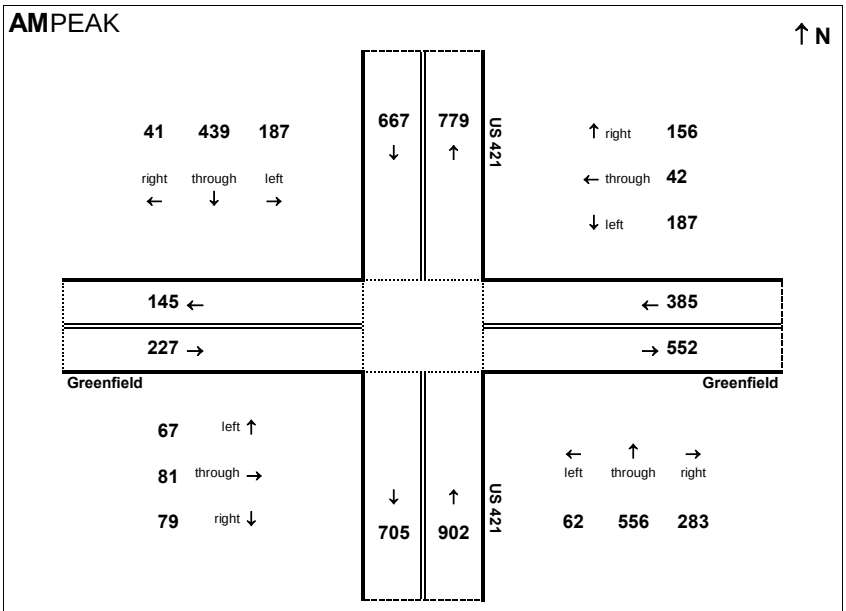
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

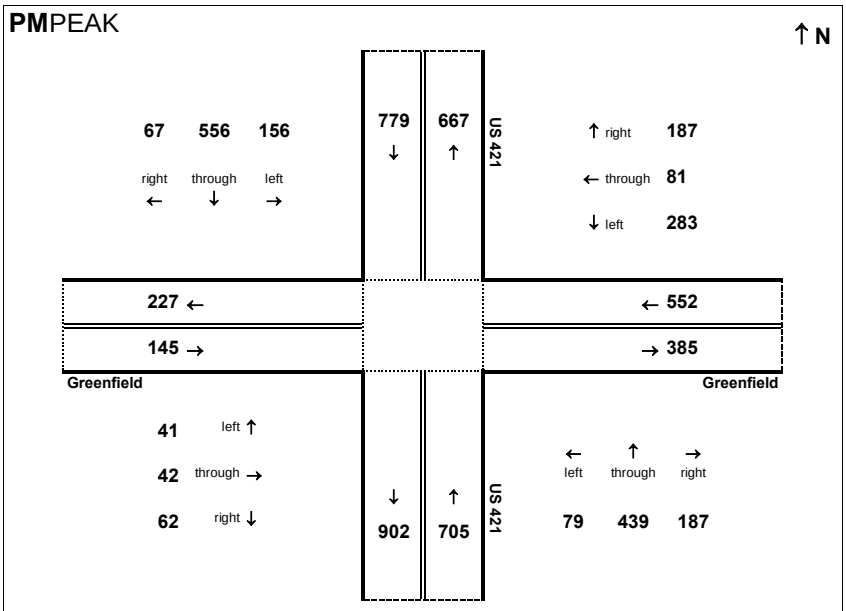
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



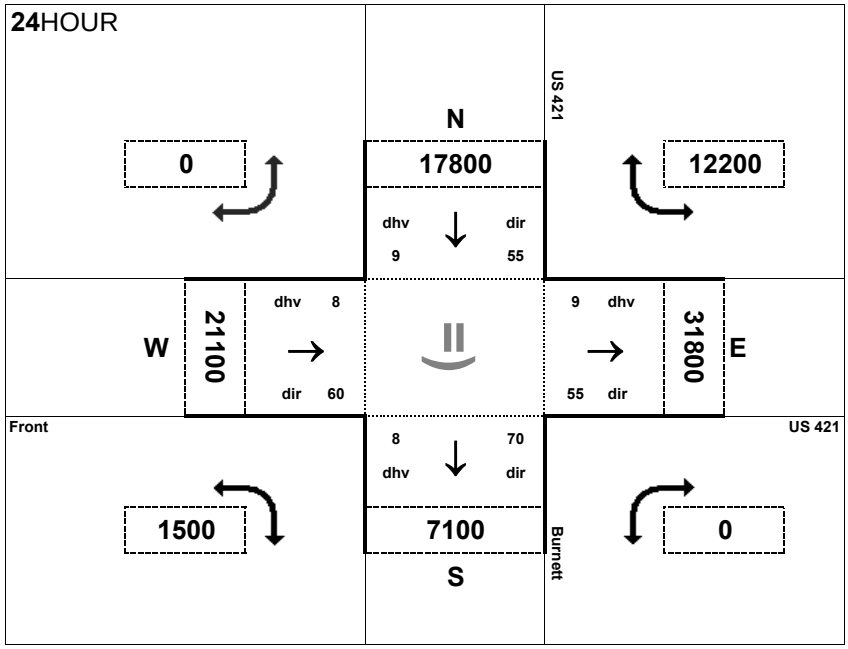
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

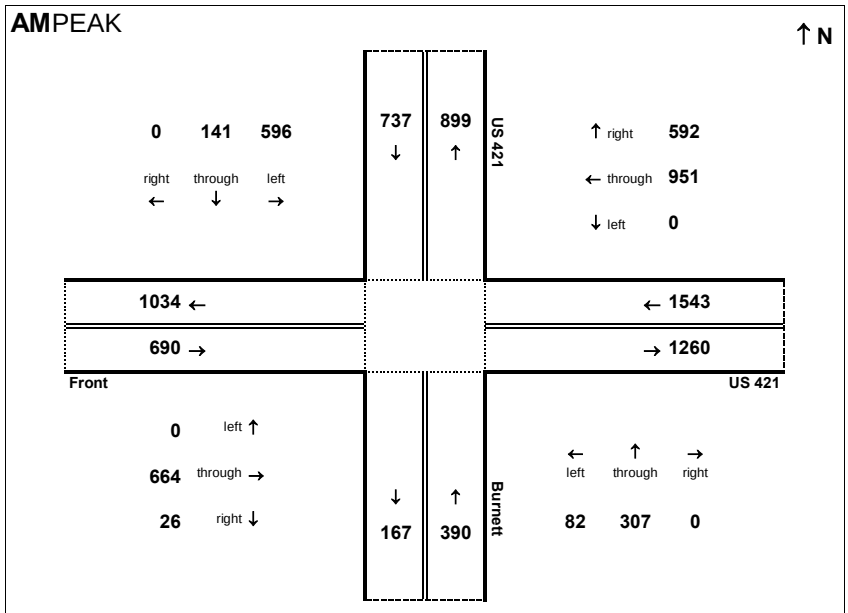
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

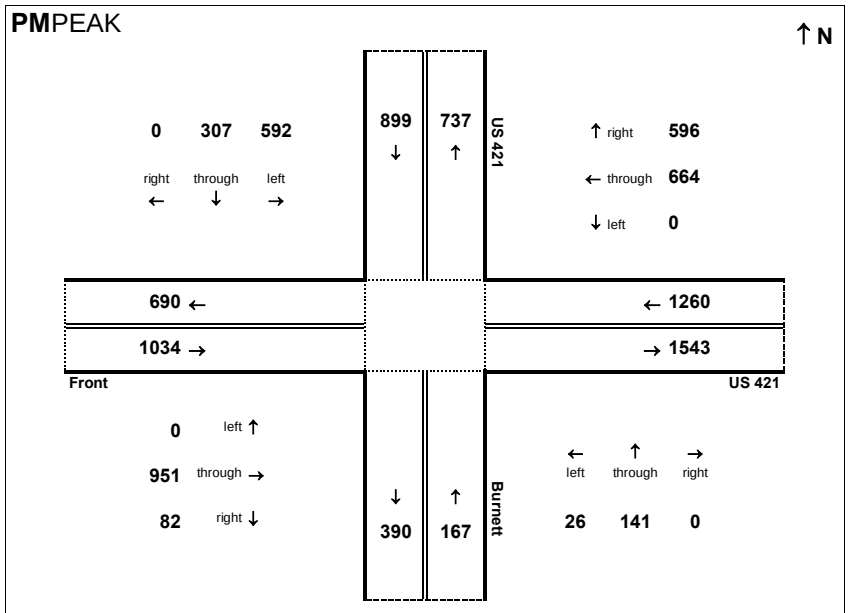
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N

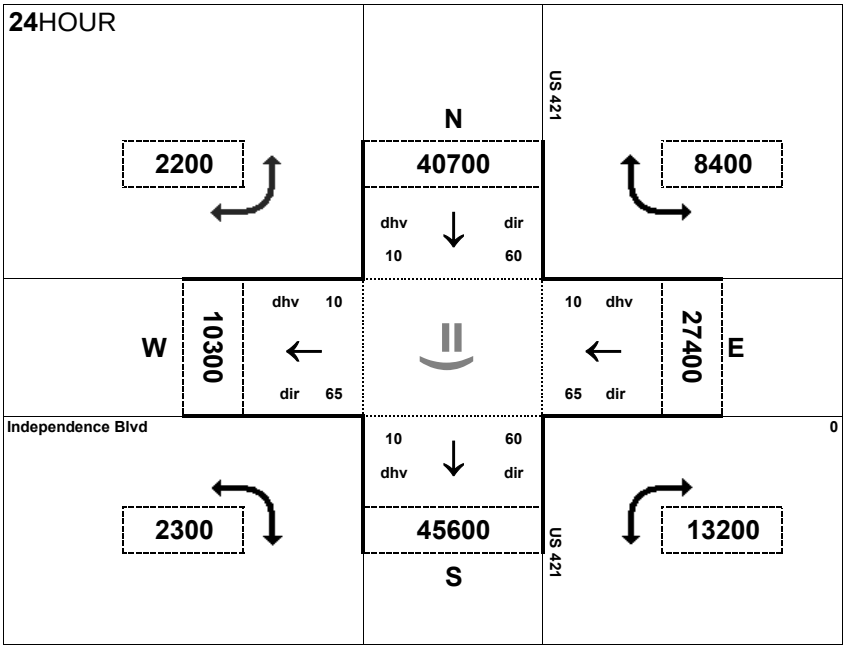




AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3360 vehicles.

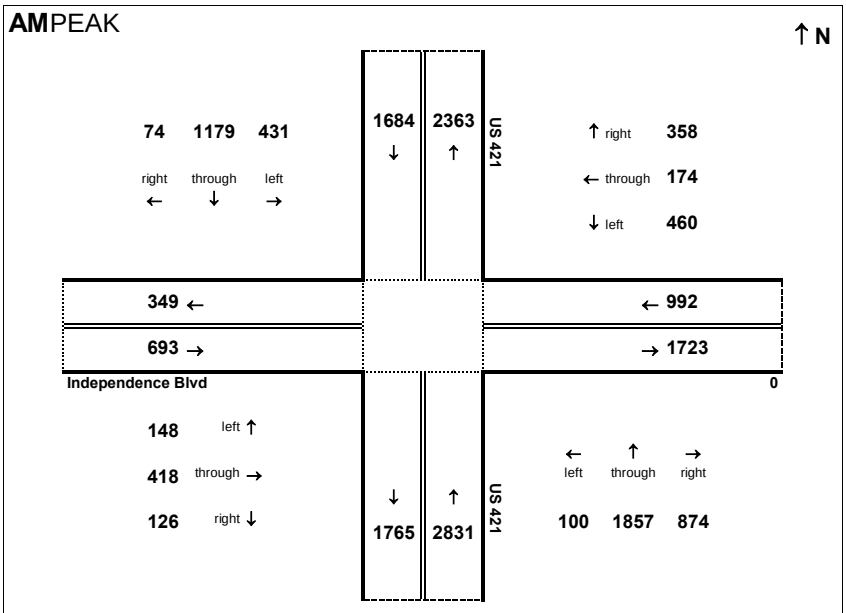


Peak Hour Volume Breakouts Report:
31 - US 421 and Realigned Independence Boulevard

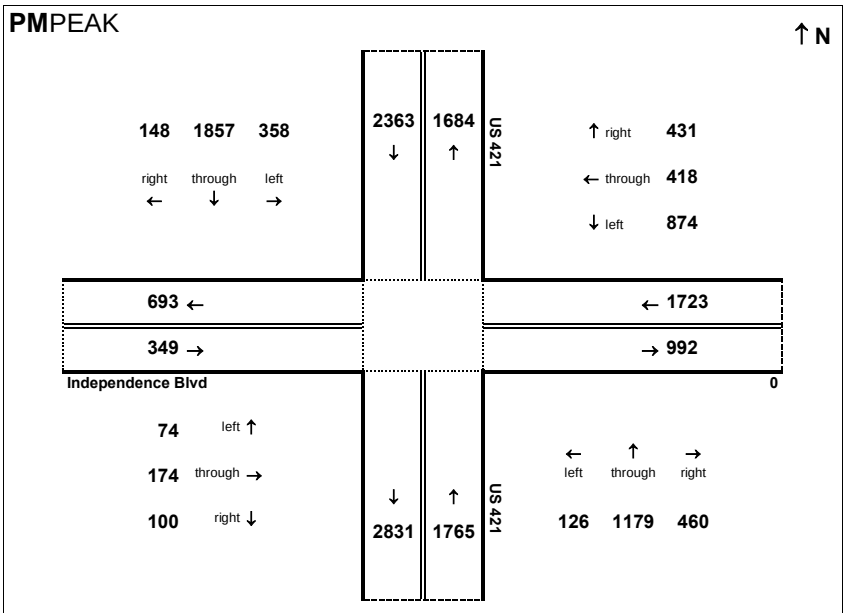
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N



AM peak hour inflow is 6200 vehicles. AM peak hour outflow is 6200 vehicles.



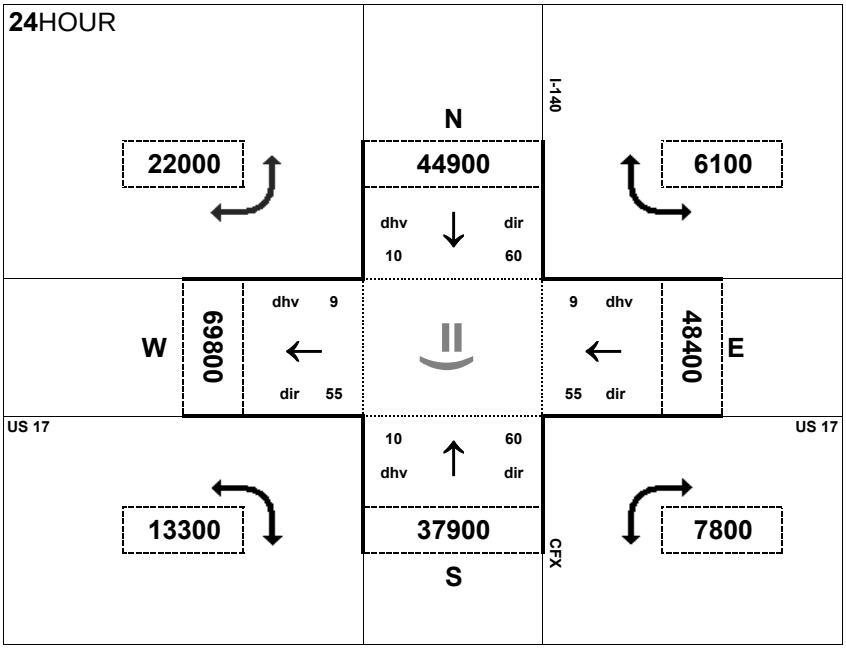
PM peak hour inflow is 6200 vehicles. PM peak hour outflow is 6200 vehicles.

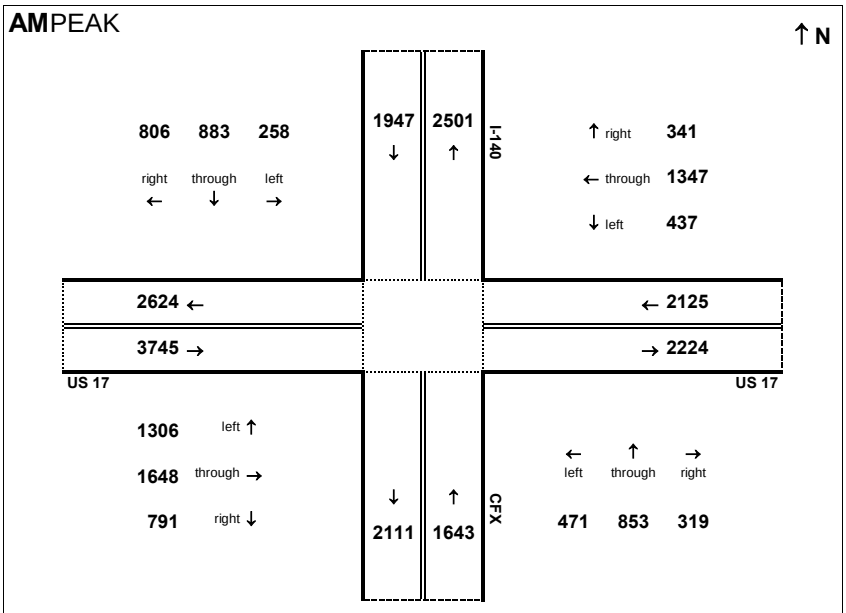
Peak Hour Volume Breakouts Report:
103 - CFX and US 17 - I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

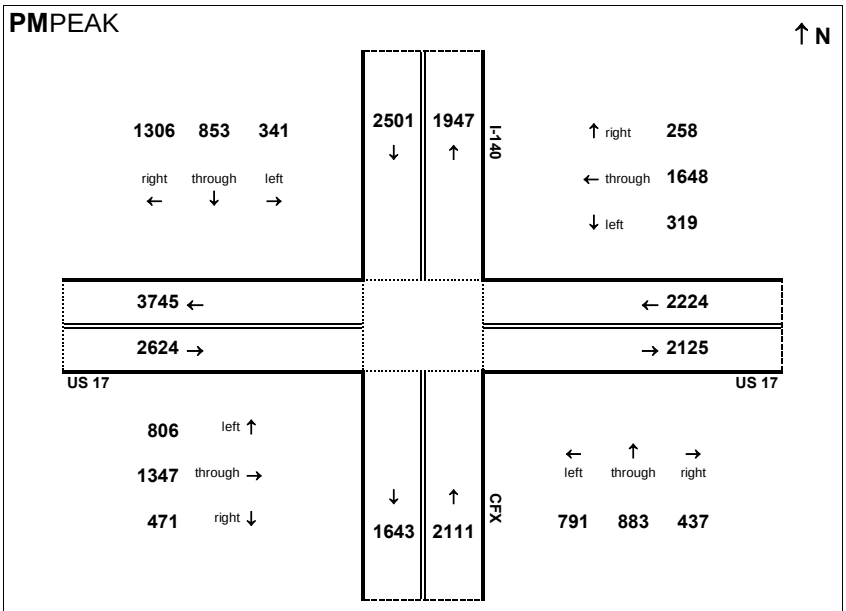
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 9460 vehicles. AM peak hour outflow is 9460 vehicles.



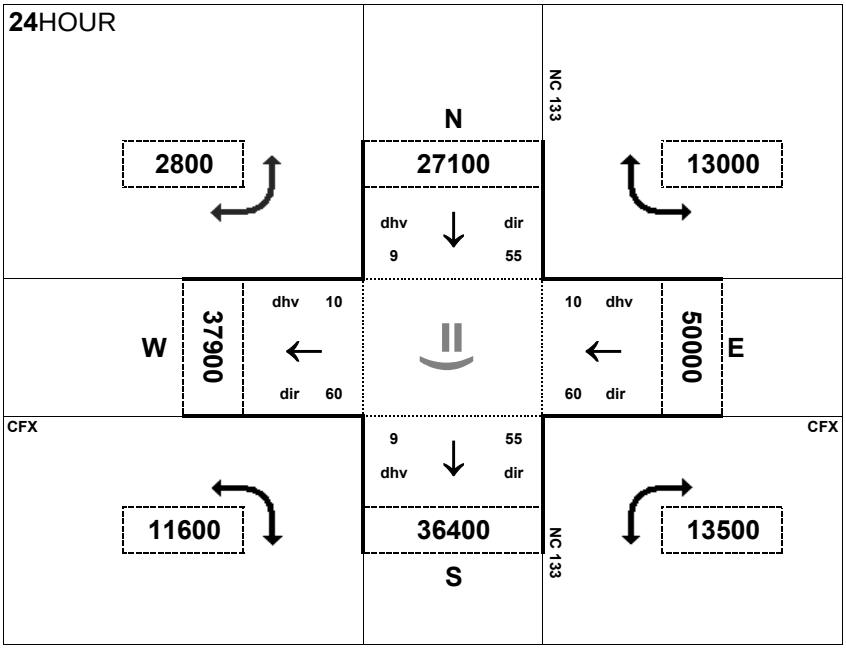
PM peak hour inflow is 9460 vehicles. PM peak hour outflow is 9460 vehicles.

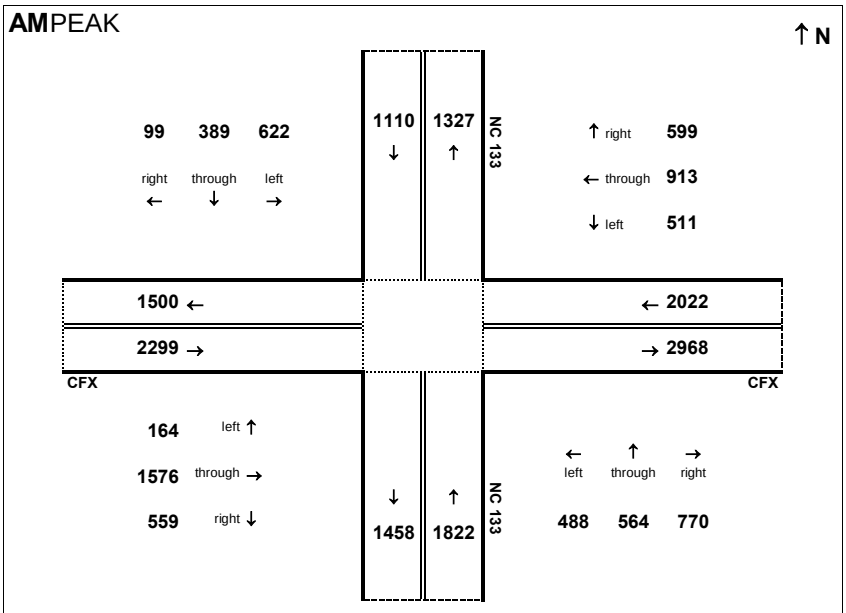
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

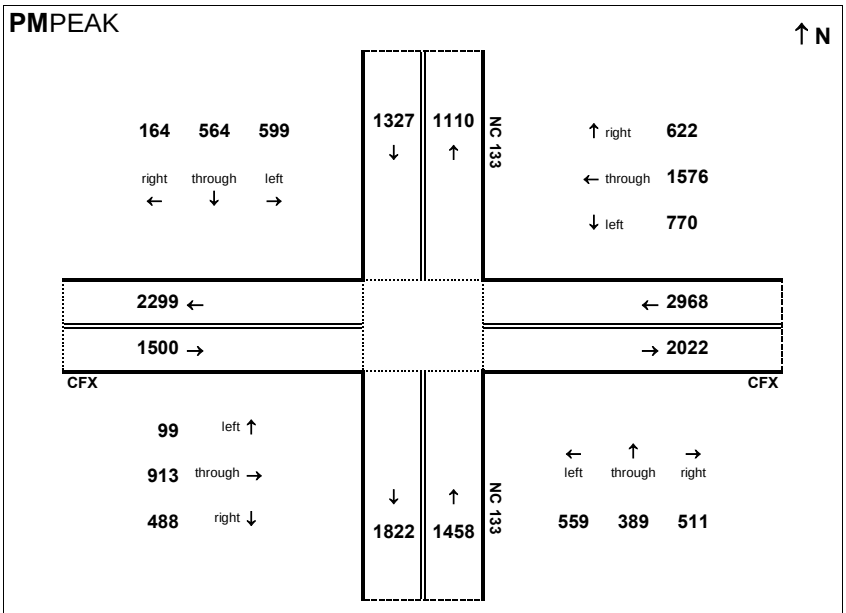
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N

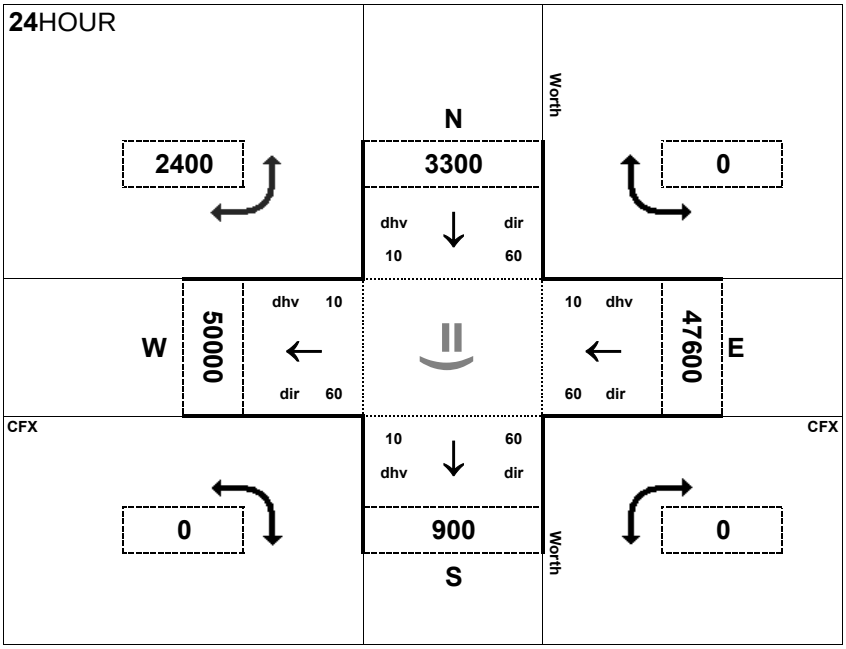




AM peak hour inflow is 7253 vehicles. AM peak hour outflow is 7253 vehicles.



PM peak hour inflow is 7253 vehicles. PM peak hour outflow is 7253 vehicles.

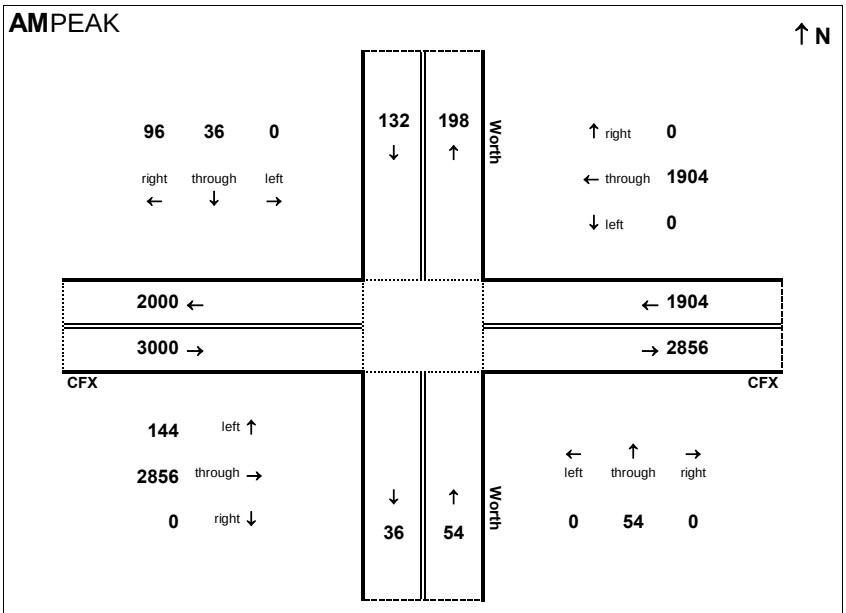


Peak Hour Volume Breakouts Report:
106 - CFX and Worth Dr

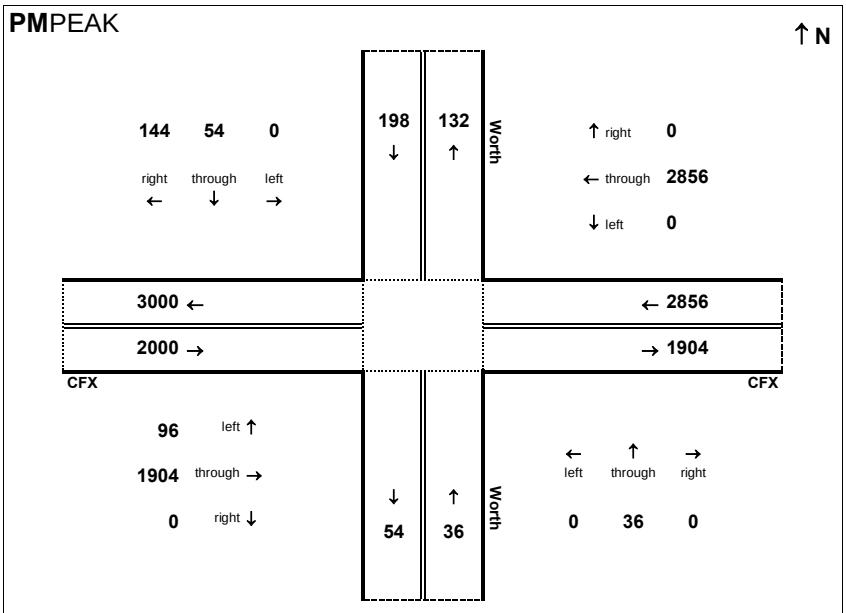
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N



AM peak hour inflow is 5090 vehicles. AM peak hour outflow is 5090 vehicles.



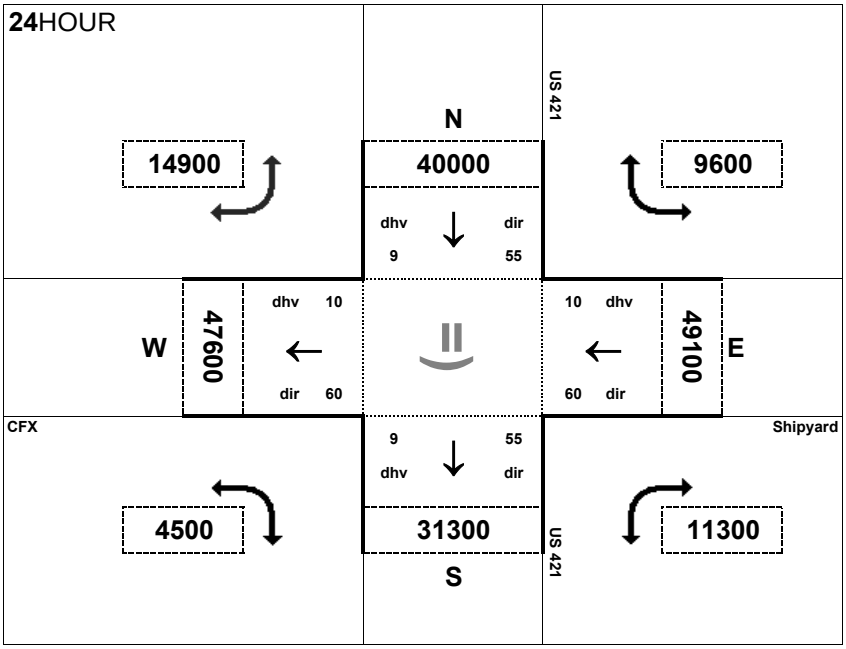
PM peak hour inflow is 5090 vehicles. PM peak hour outflow is 5090 vehicles.

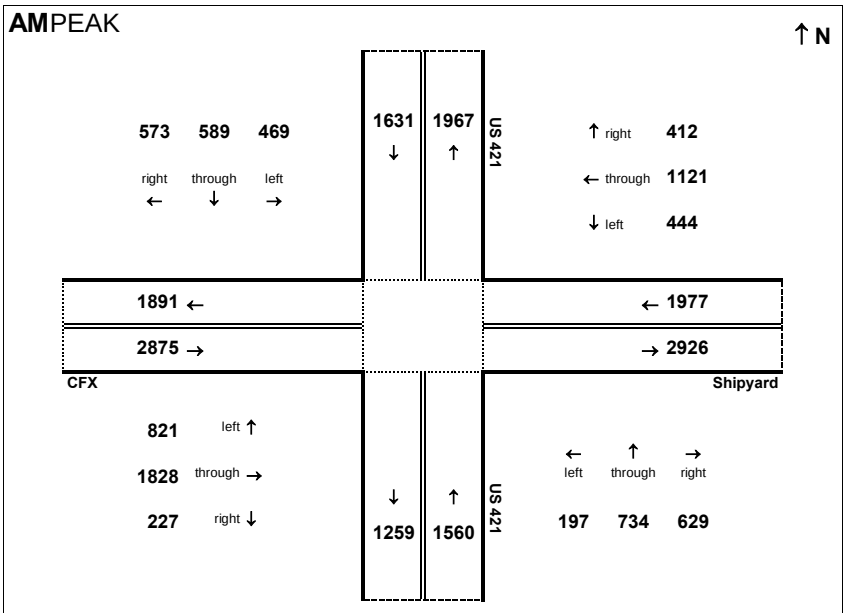
Peak Hour Volume Breakouts Report:
108 - CFX and US 421-Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

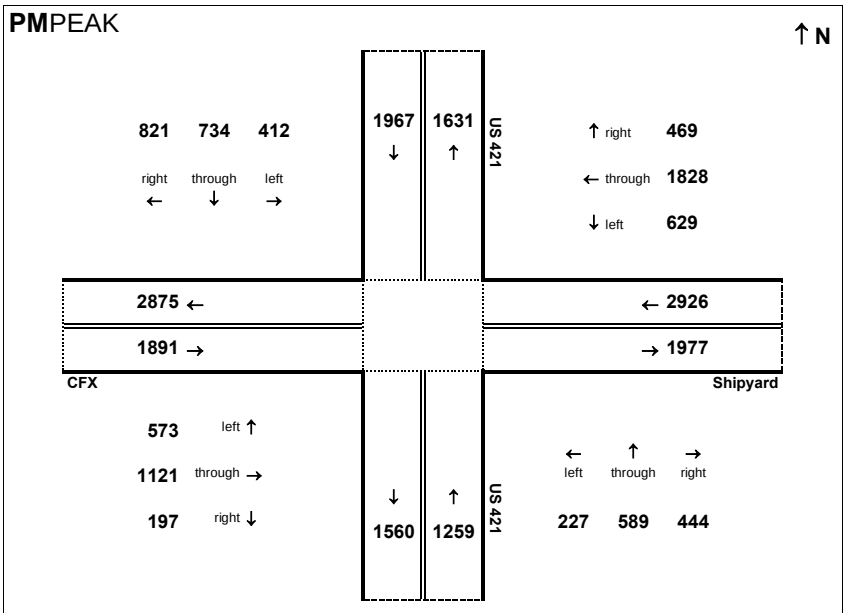
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 8043 vehicles. AM peak hour outflow is 8043 vehicles.



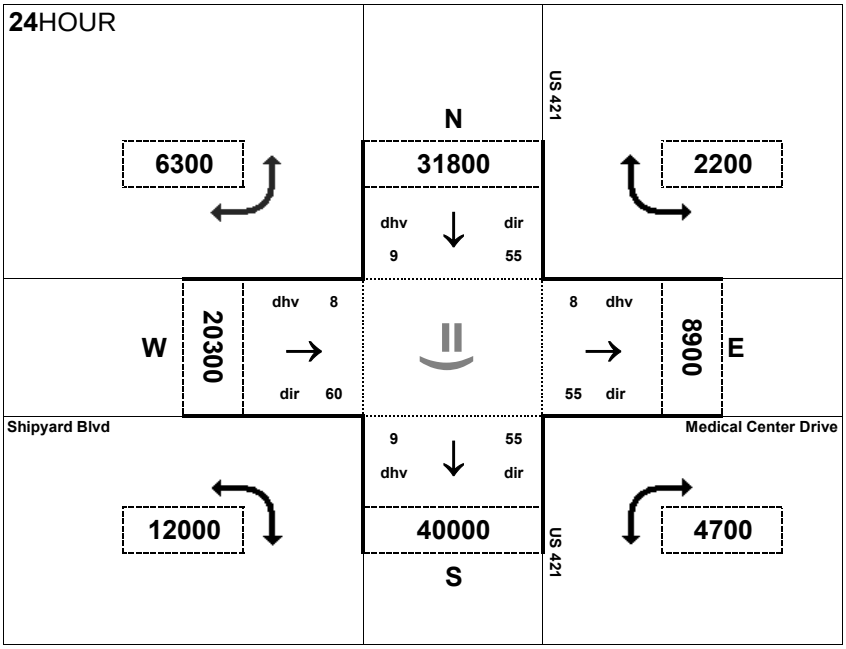
PM peak hour inflow is 8043 vehicles. PM peak hour outflow is 8043 vehicles.

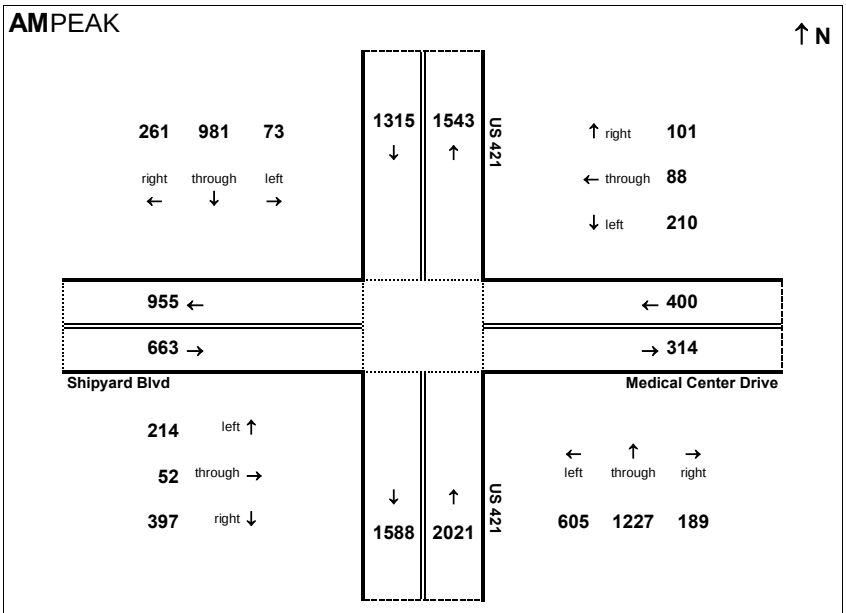
Peak Hour Volume Breakouts Report:
109 - US 421 and Realigned Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

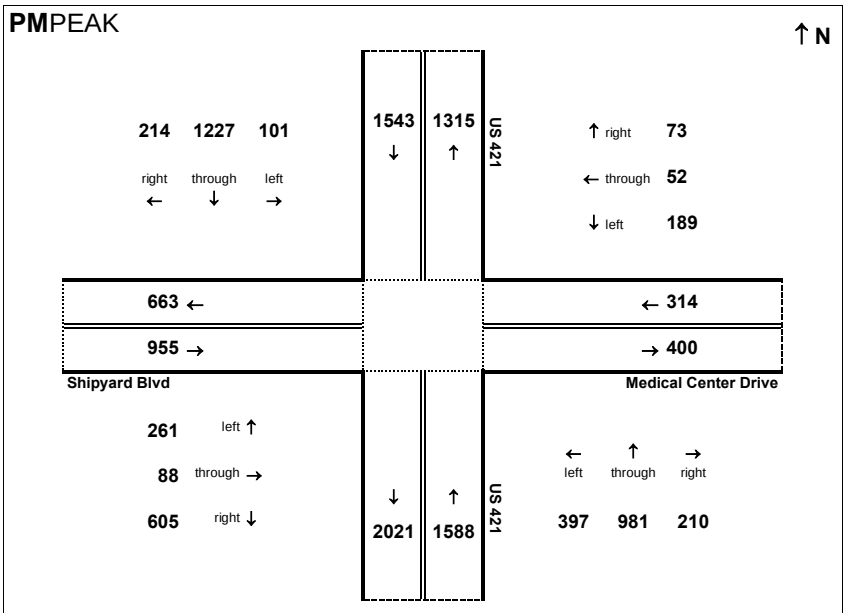
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. N





AM peak hour inflow is 4399 vehicles. AM peak hour outflow is 4400 vehicles.



PM peak hour inflow is 4400 vehicles. PM peak hour outflow is 4399 vehicles.

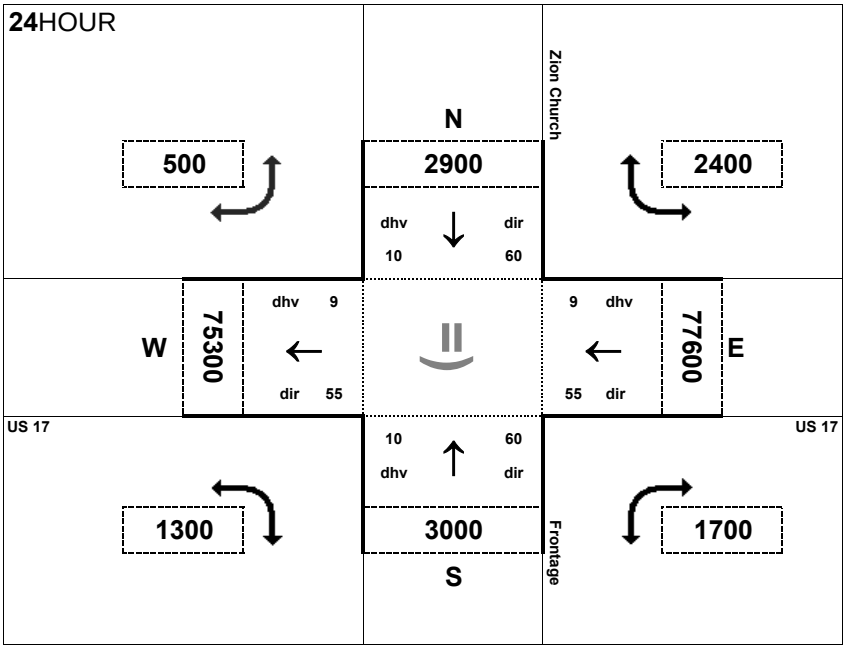
2040 Build DSA Alternative P

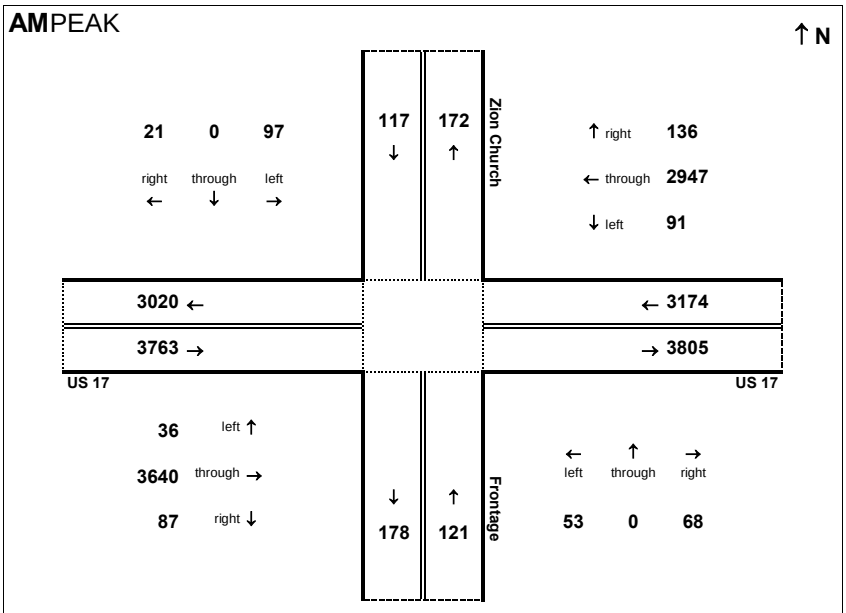
Peak Hour Volume Breakouts Report:
01 - US 17 and Zion Church Rd

Traffic Forecast Release Date:
Oct. 2014

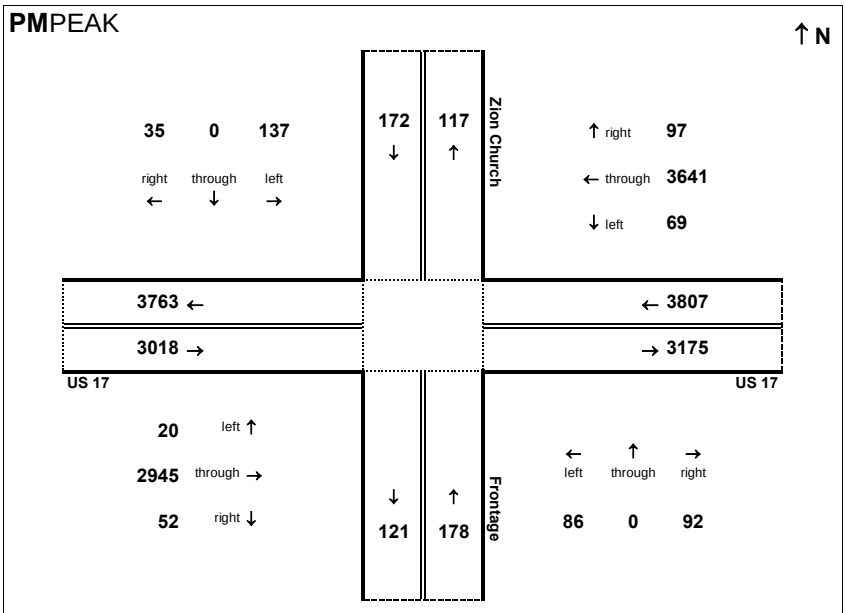
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 7175 vehicles. AM peak hour outflow is 7175 vehicles.



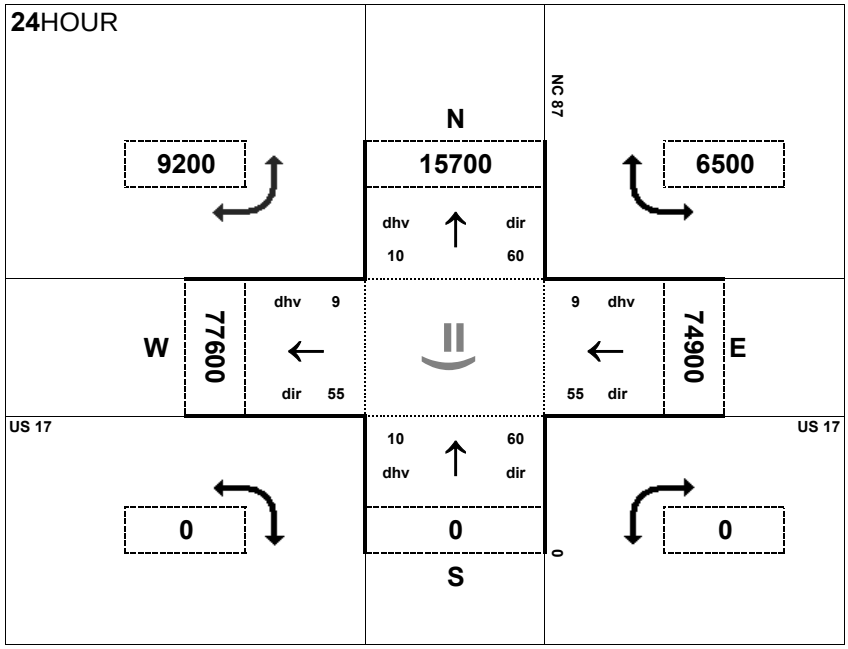
PM peak hour inflow is 7175 vehicles. PM peak hour outflow is 7176 vehicles.

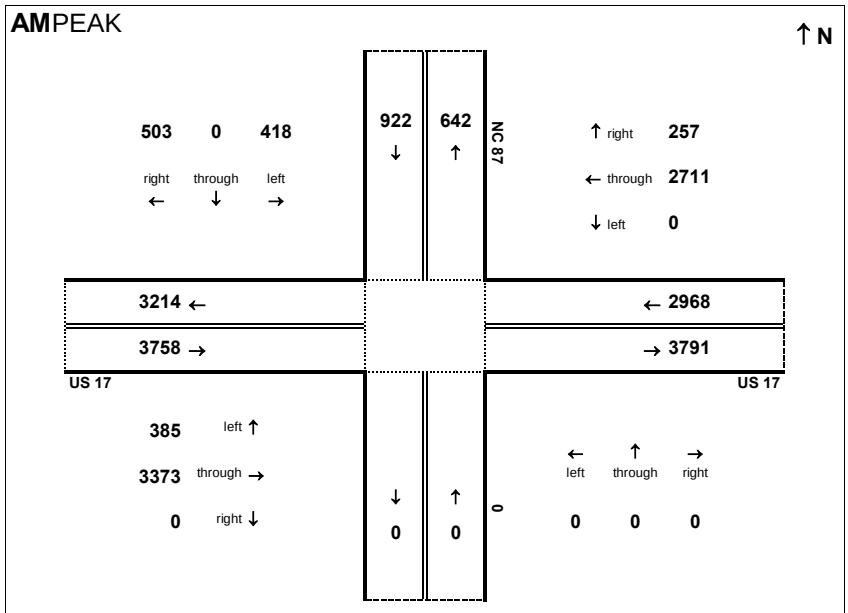
Peak Hour Volume Breakouts Report:
02 - US 17 and NC 87

Traffic Forecast Release Date:
Oct. 2014

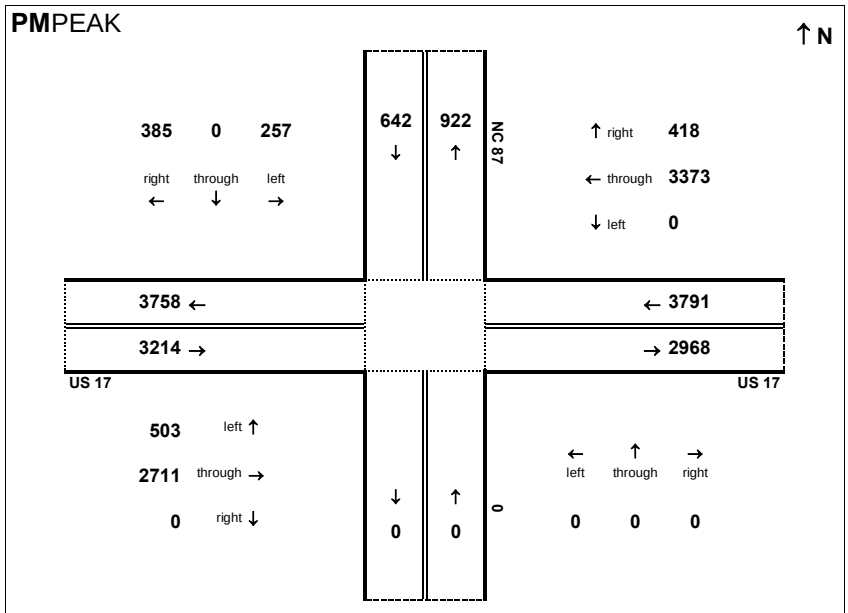
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 7648 vehicles. AM peak hour outflow is 7647 vehicles.



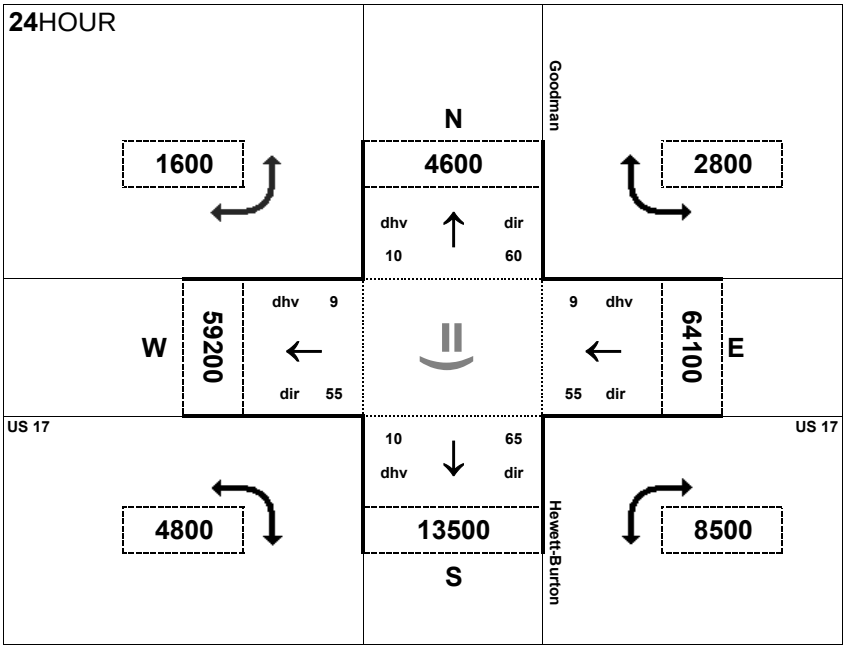
PM peak hour inflow is 7647 vehicles. PM peak hour outflow is 7648 vehicles.

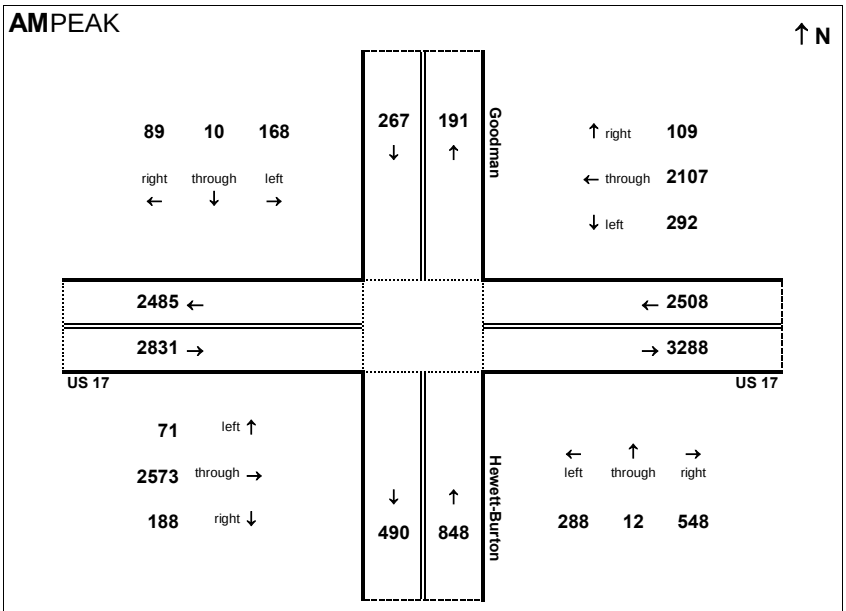
Peak Hour Volume Breakouts Report:
03 - US 17 and Goodman Rd

Traffic Forecast Release Date:
Oct. 2014

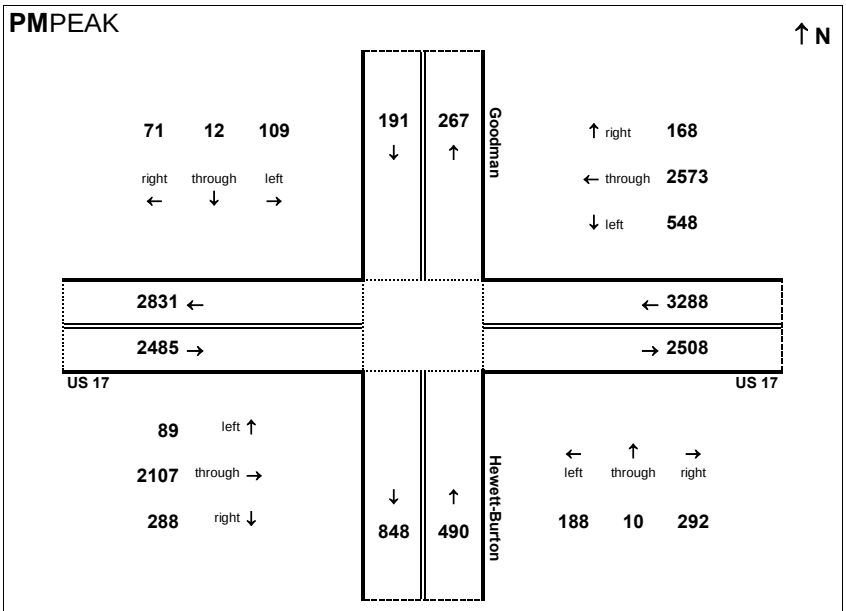
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 6454 vehicles. AM peak hour outflow is 6454 vehicles.



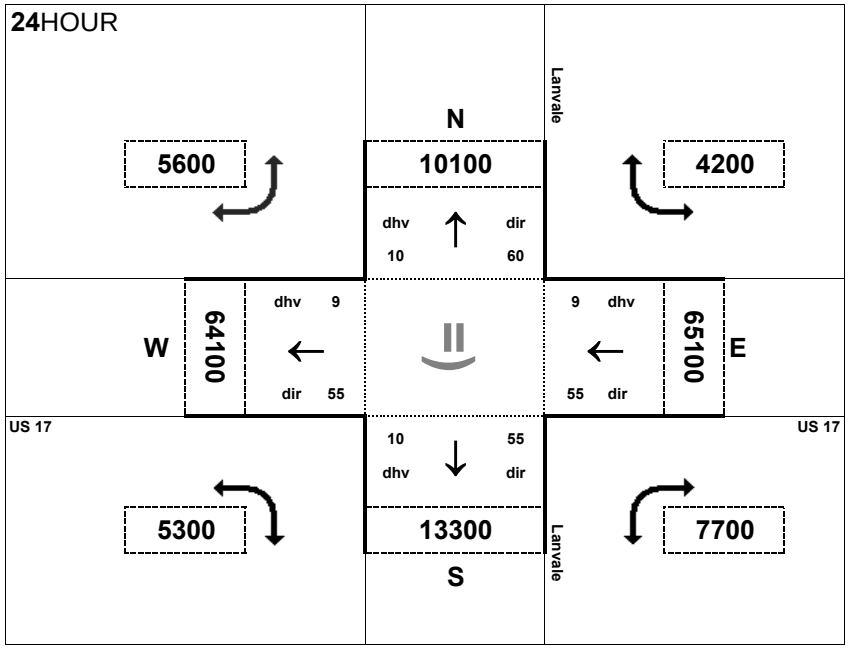
PM peak hour inflow is 6454 vehicles. PM peak hour outflow is 6454 vehicles.

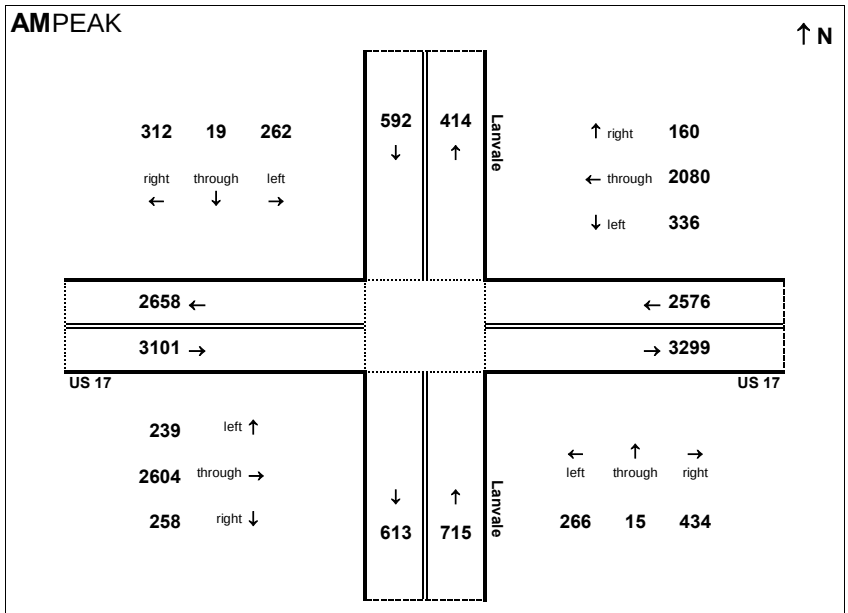
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

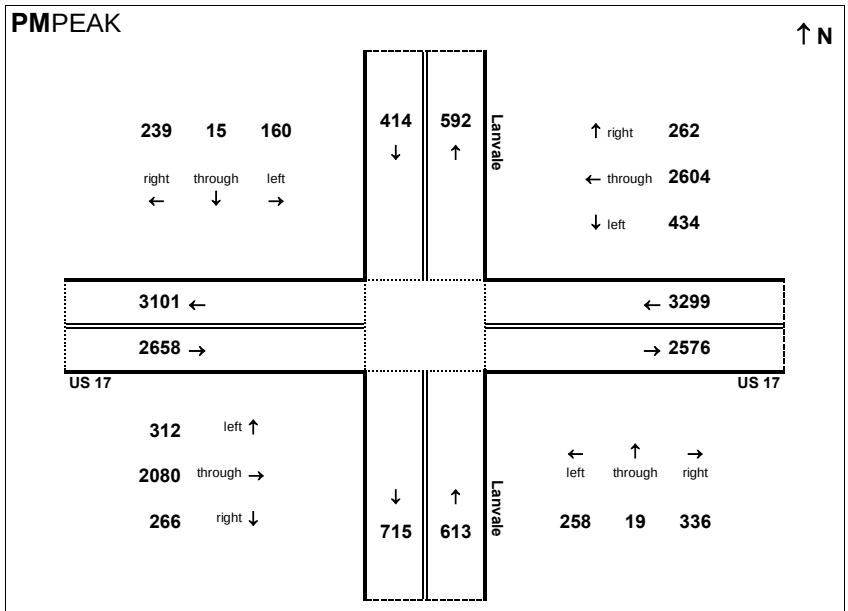
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 6984 vehicles. AM peak hour outflow is 6984 vehicles.



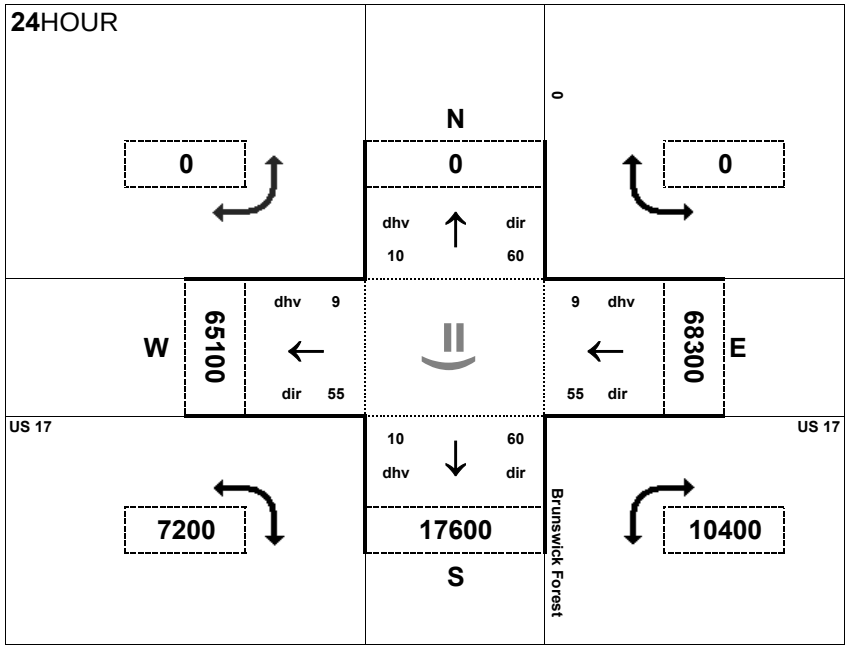
PM peak hour inflow is 6984 vehicles. PM peak hour outflow is 6984 vehicles.

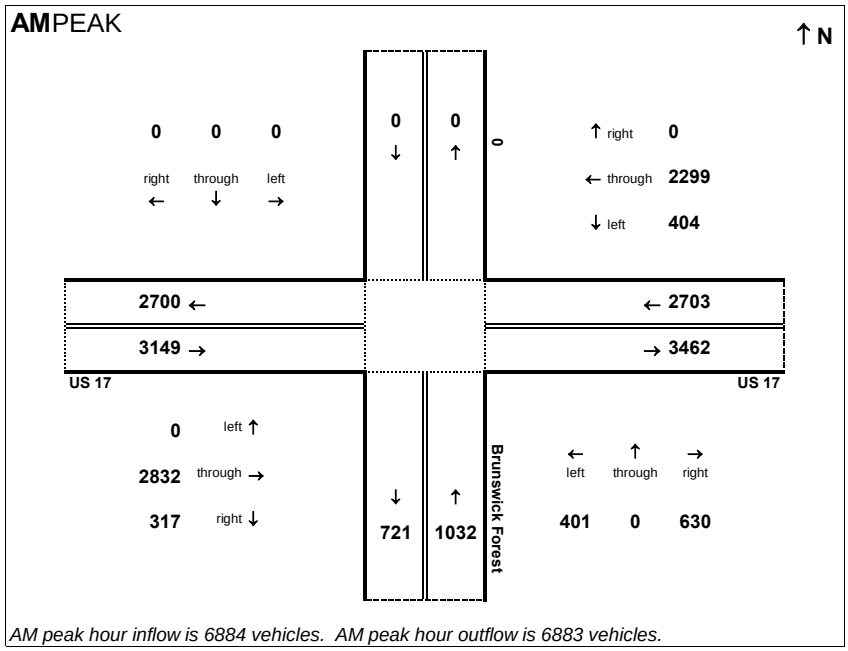
Peak Hour Volume Breakouts Report:
05 - US 17 and Brunswick Forest Pkwy

Traffic Forecast Release Date:
Oct. 2014

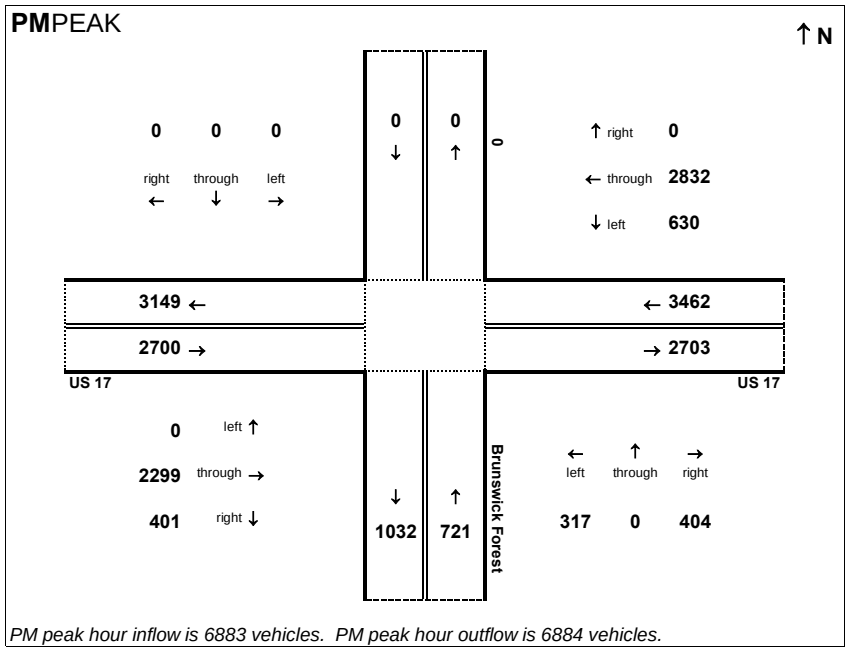
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 6884 vehicles. AM peak hour outflow is 6883 vehicles.



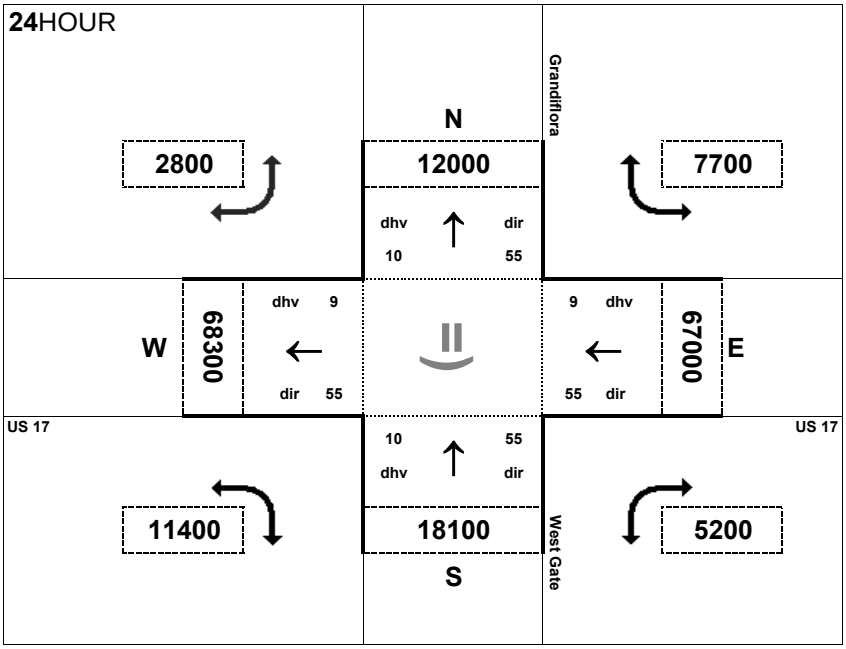
PM peak hour inflow is 6883 vehicles. PM peak hour outflow is 6884 vehicles.

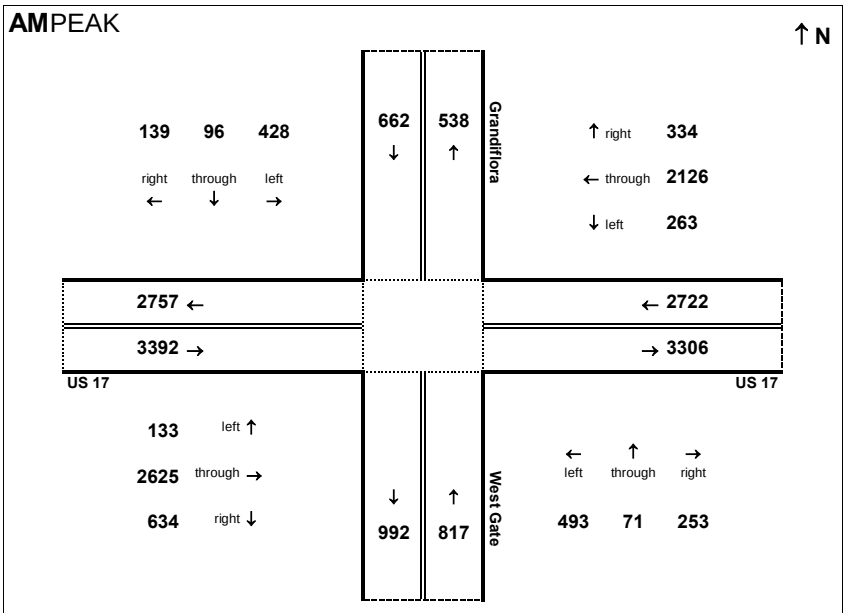
Peak Hour Volume Breakouts Report:
06 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

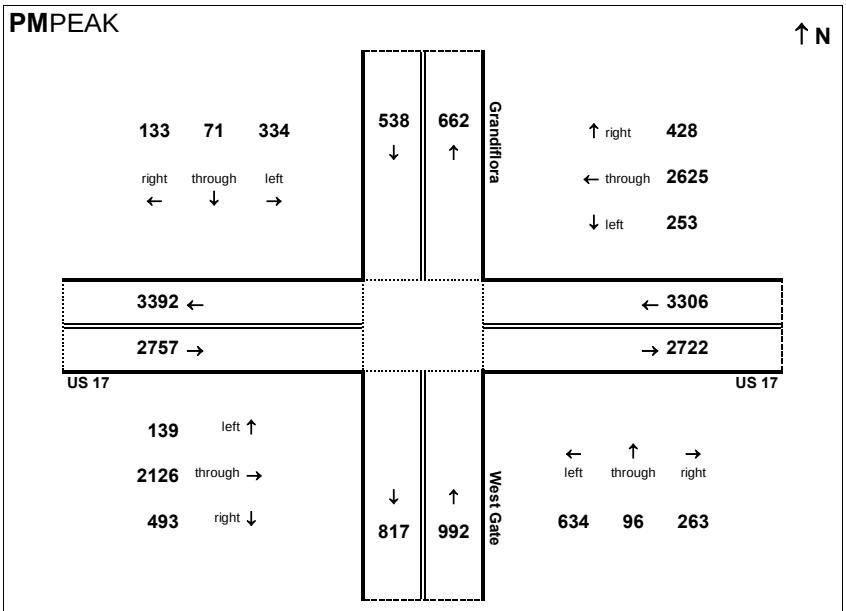
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 7593 vehicles. AM peak hour outflow is 7593 vehicles.



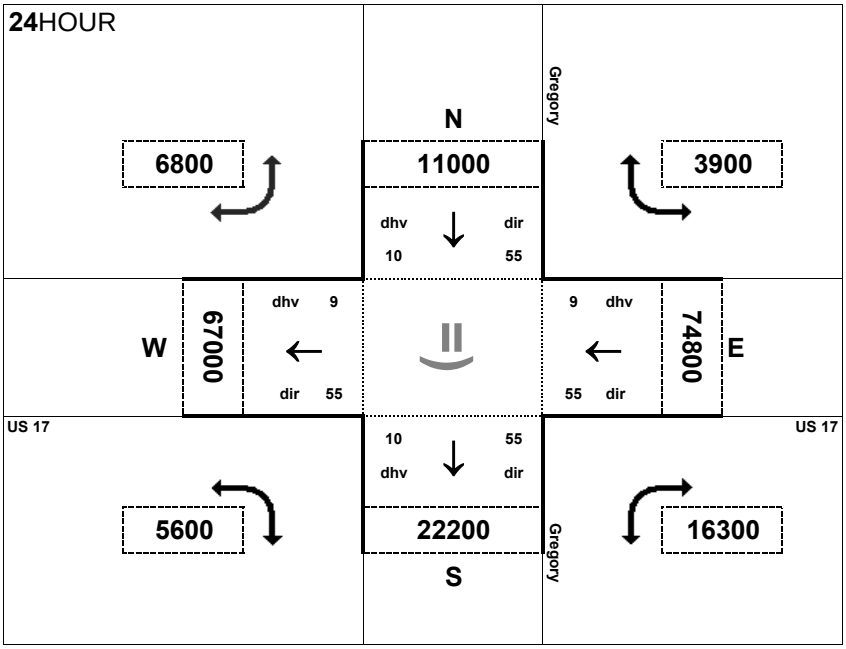
PM peak hour inflow is 7593 vehicles. PM peak hour outflow is 7593 vehicles.

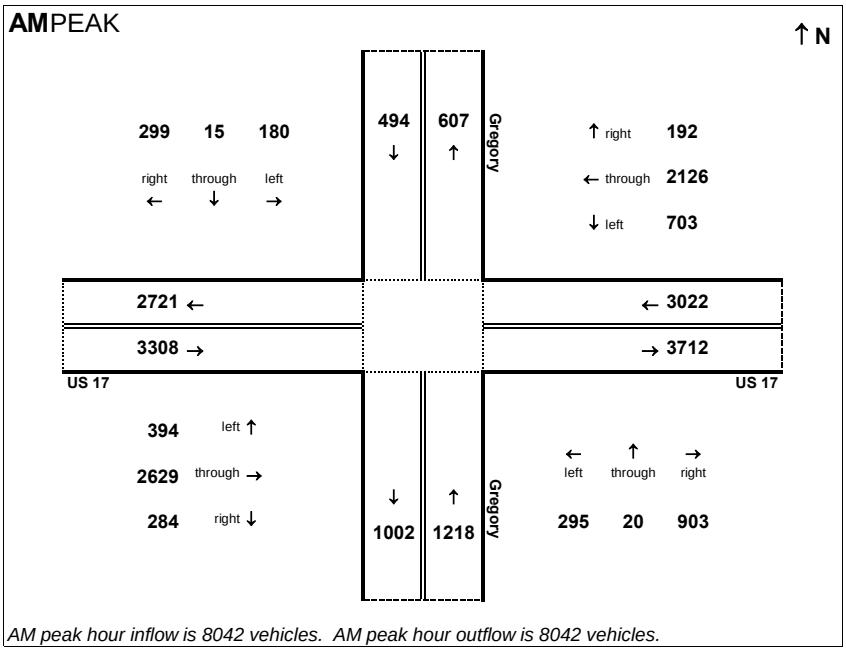
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

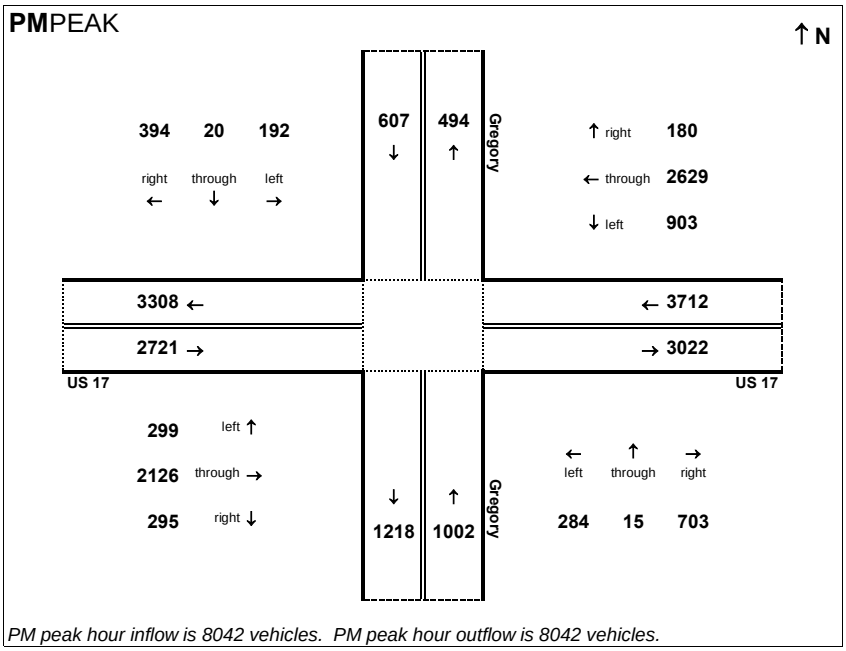
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 8042 vehicles. AM peak hour outflow is 8042 vehicles.

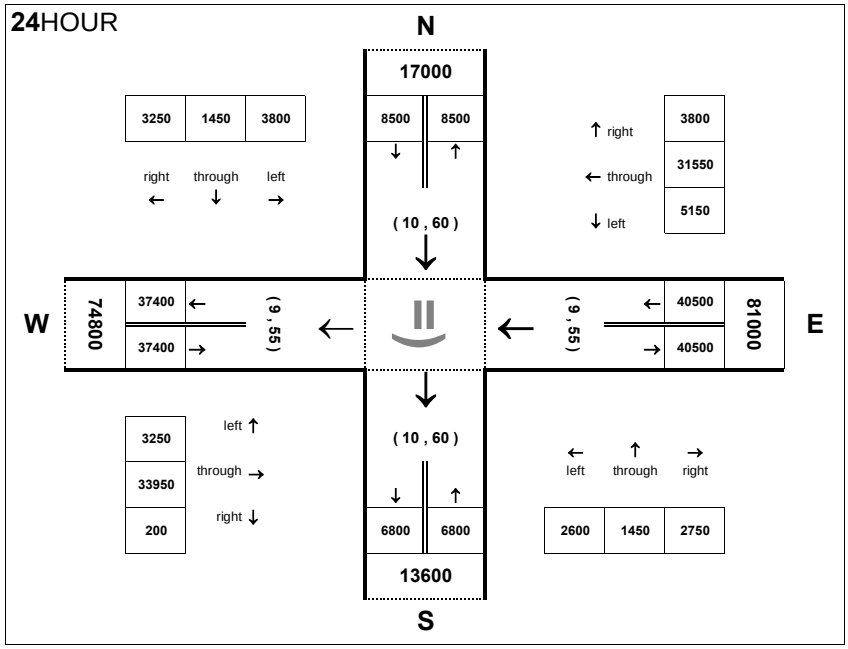


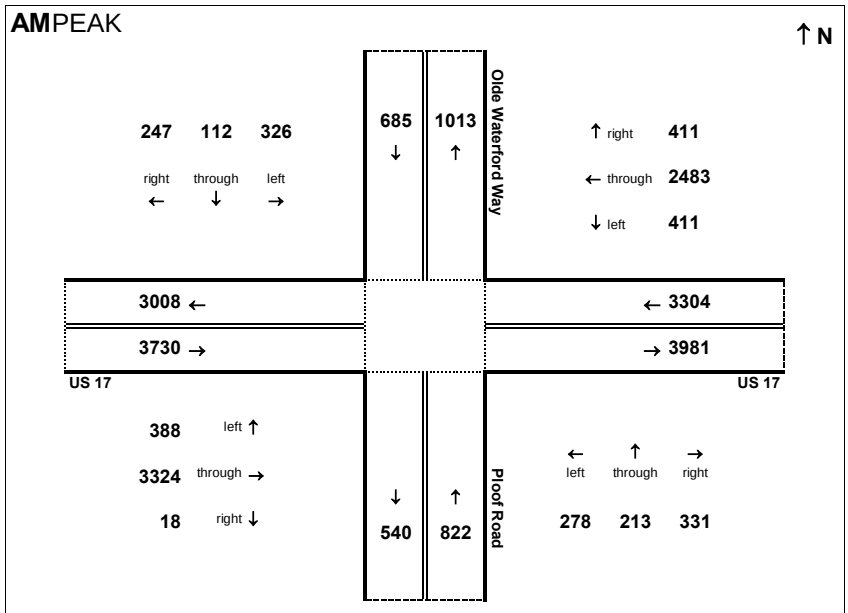
PM peak hour inflow is 8042 vehicles. PM peak hour outflow is 8042 vehicles.

Peak Hour Volume Breakouts Report:
08 - Intersection of US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

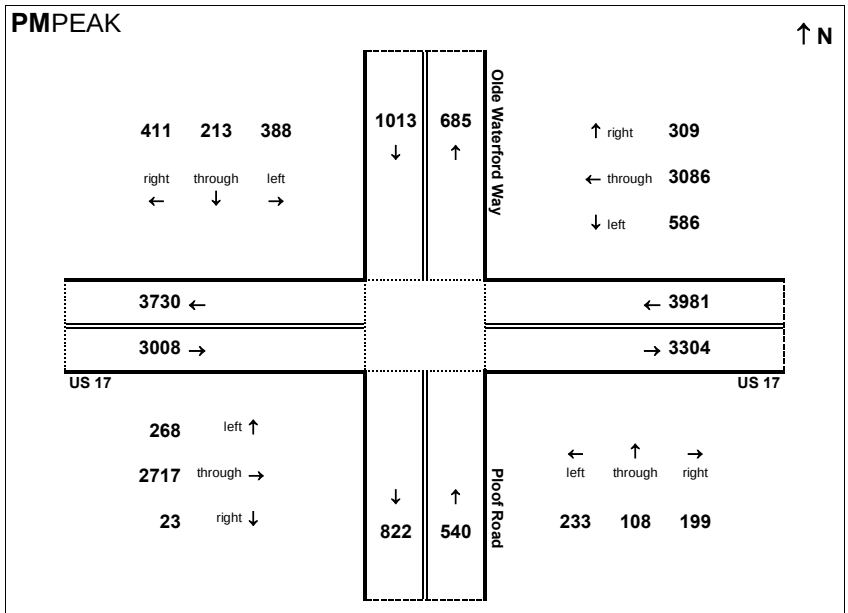
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. P





AM peak hour inflow is 8541 vehicles. AM peak hour outflow is 8542 vehicles.



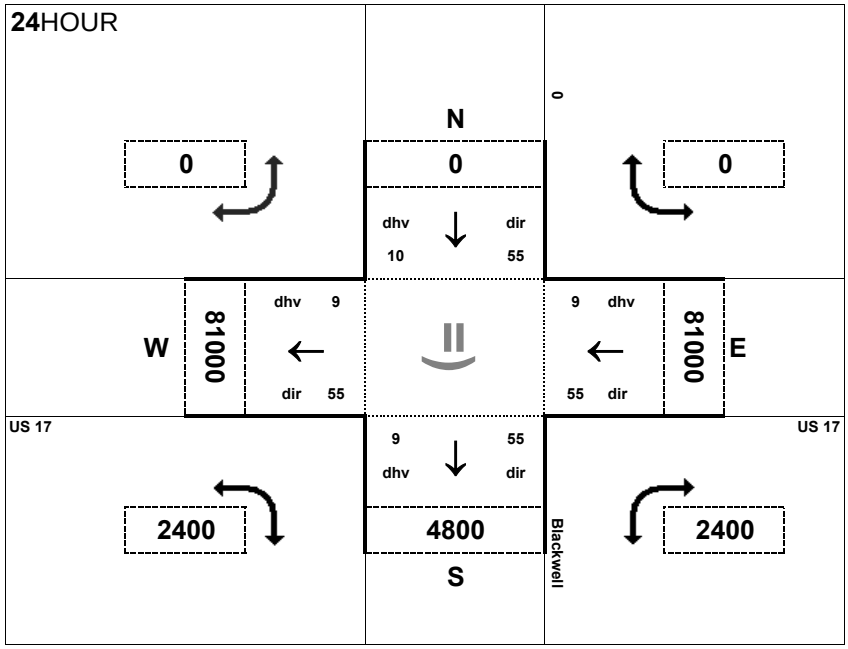
PM peak hour inflow is 8542 vehicles. PM peak hour outflow is 8541 vehicles.

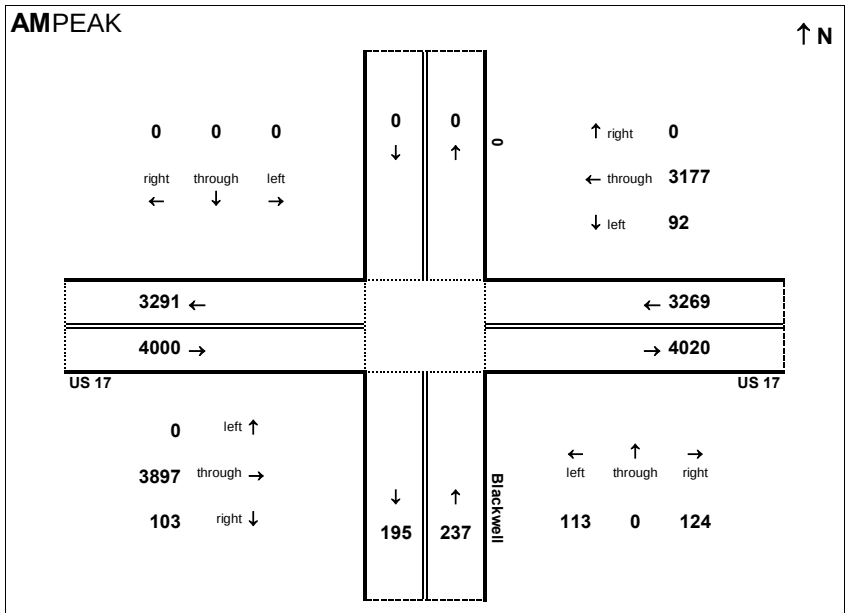
Peak Hour Volume Breakouts Report:
09 - US 17 and Blackwell Rd

Traffic Forecast Release Date:
Oct. 2014

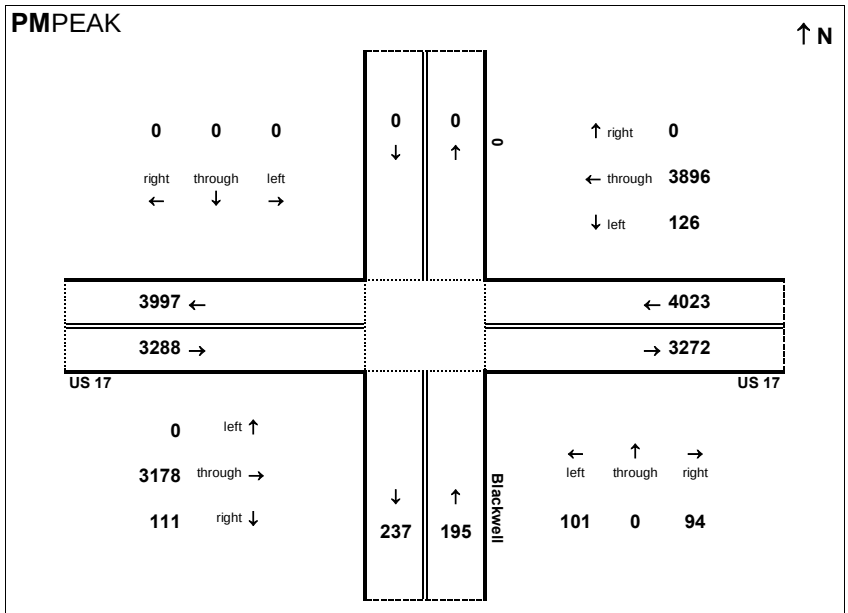
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 7506 vehicles. AM peak hour outflow is 7506 vehicles.



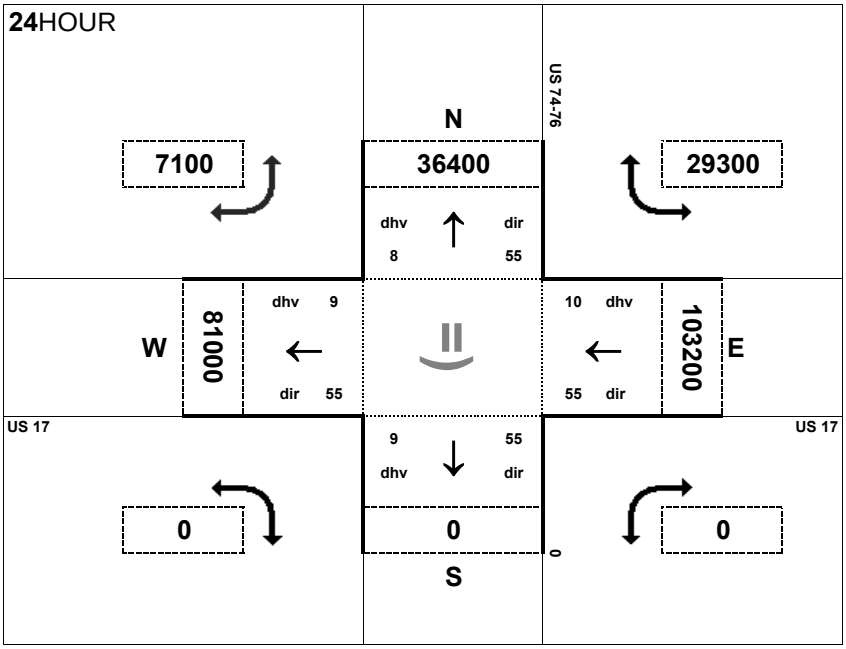
PM peak hour inflow is 7506 vehicles. PM peak hour outflow is 7506 vehicles.

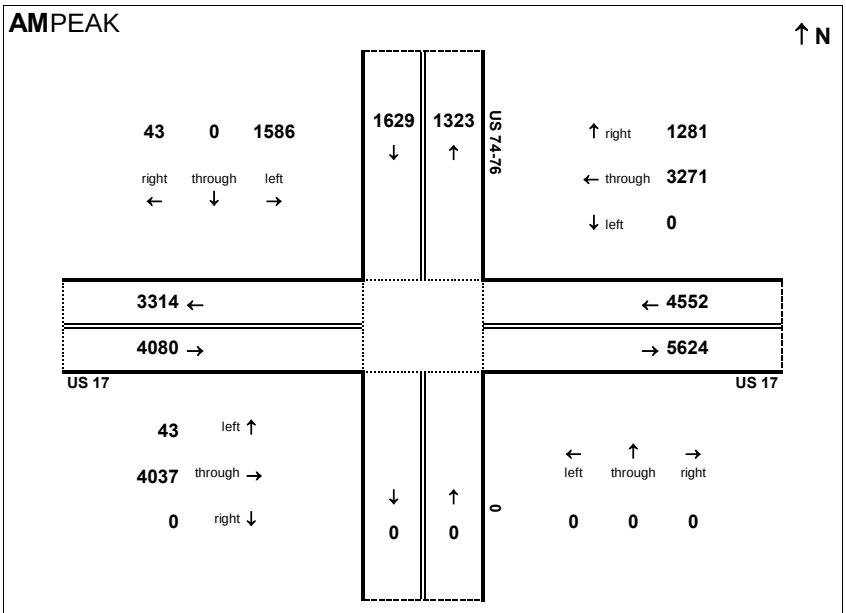
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74/76

Traffic Forecast Release Date:
Oct. 2014

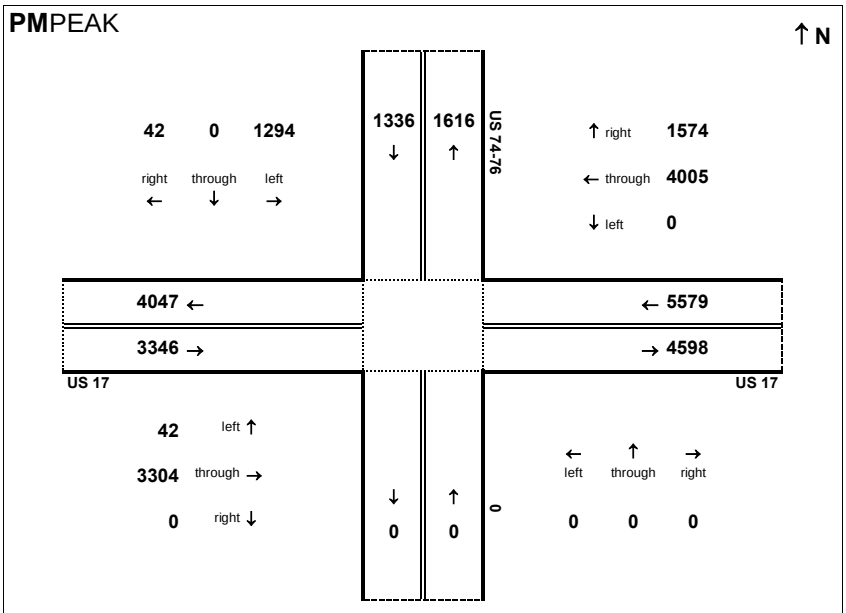
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 10261 vehicles. AM peak hour outflow is 10261 vehicles.



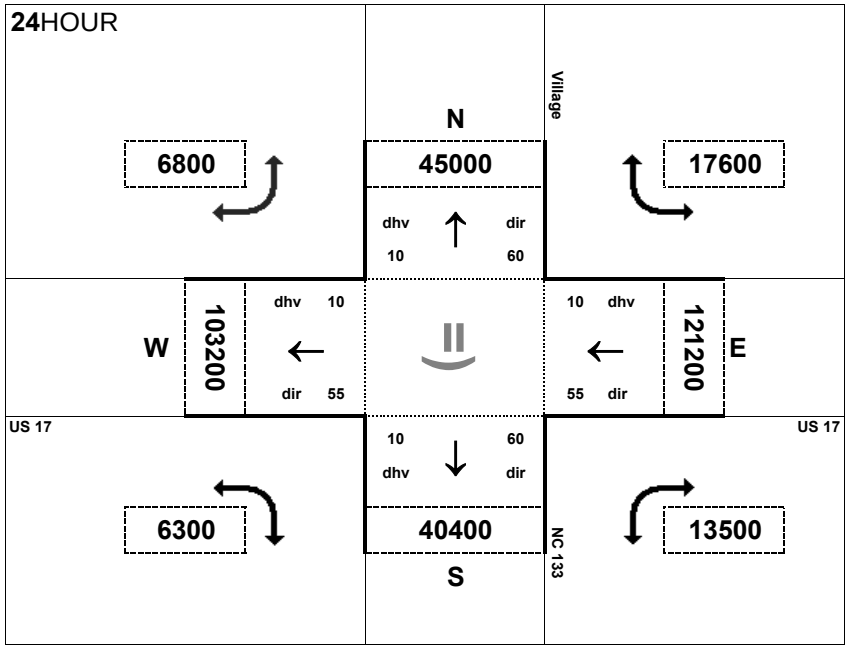
PM peak hour inflow is 10261 vehicles. PM peak hour outflow is 10261 vehicles.

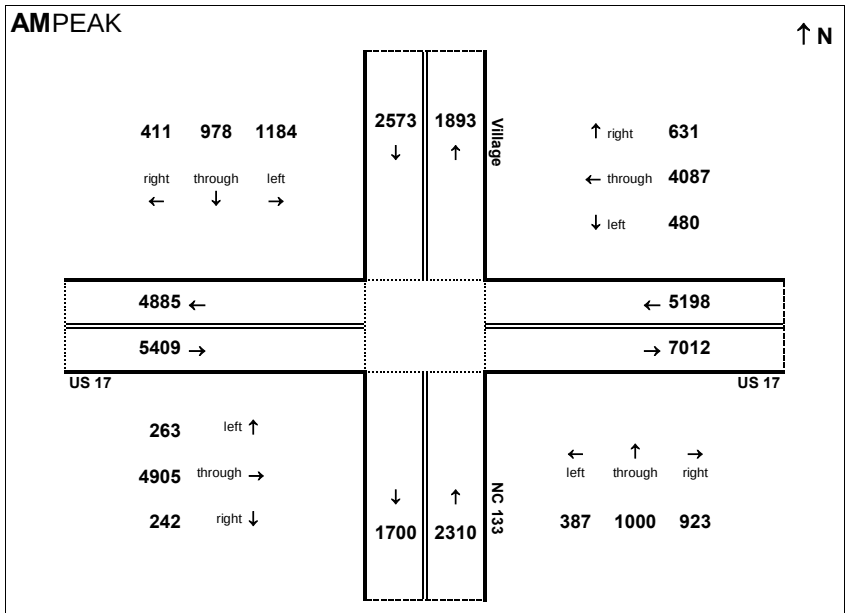
Peak Hour Volume Breakouts Report:
11 - US 17 and NC 133

Traffic Forecast Release Date:
Oct. 2014

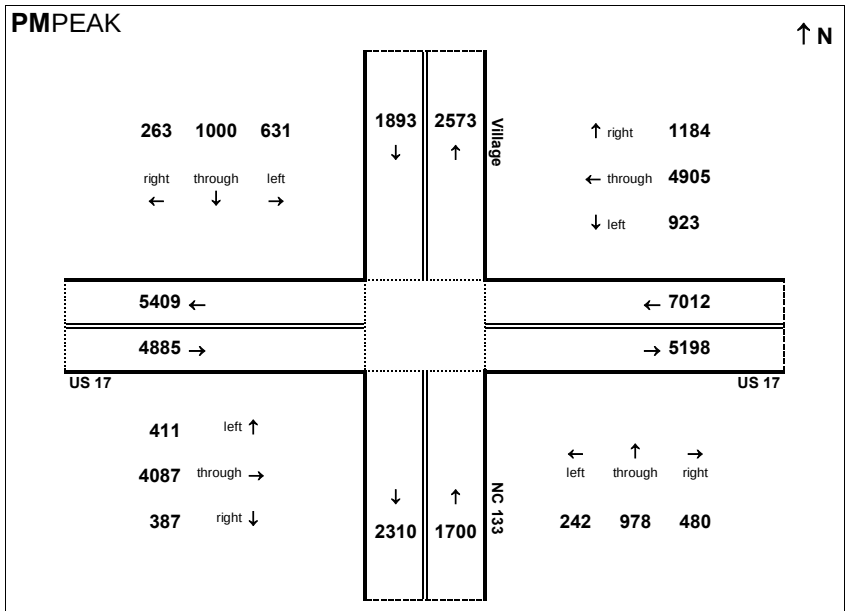
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 15490 vehicles. AM peak hour outflow is 15490 vehicles.



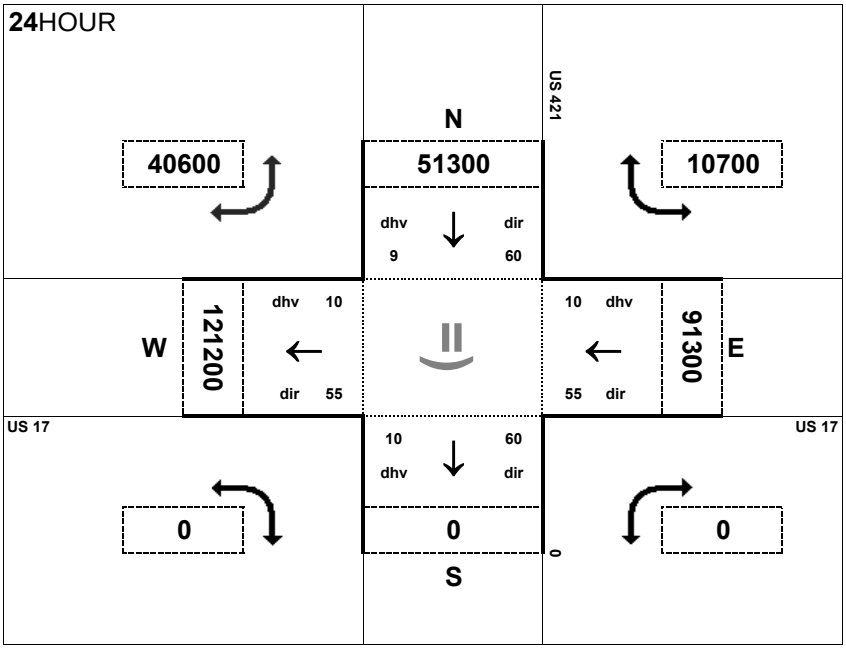
PM peak hour inflow is 15490 vehicles. PM peak hour outflow is 15490 vehicles.

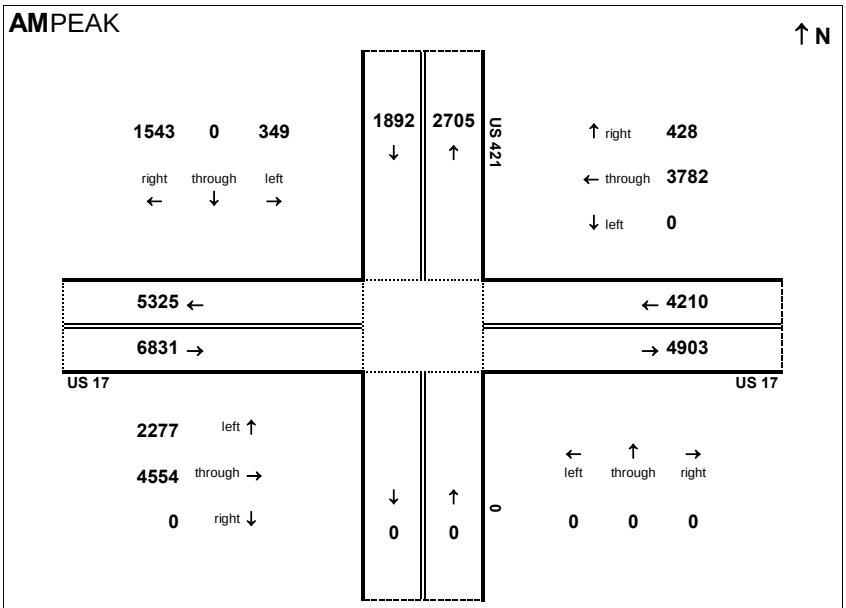
Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

Traffic Forecast Release Date:
Oct. 2014

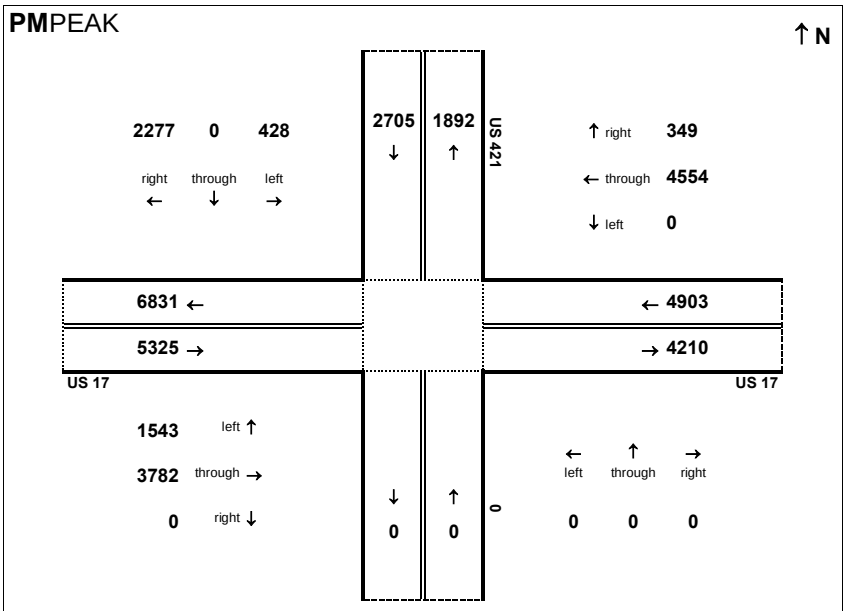
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 12933 vehicles. AM peak hour outflow is 12933 vehicles.



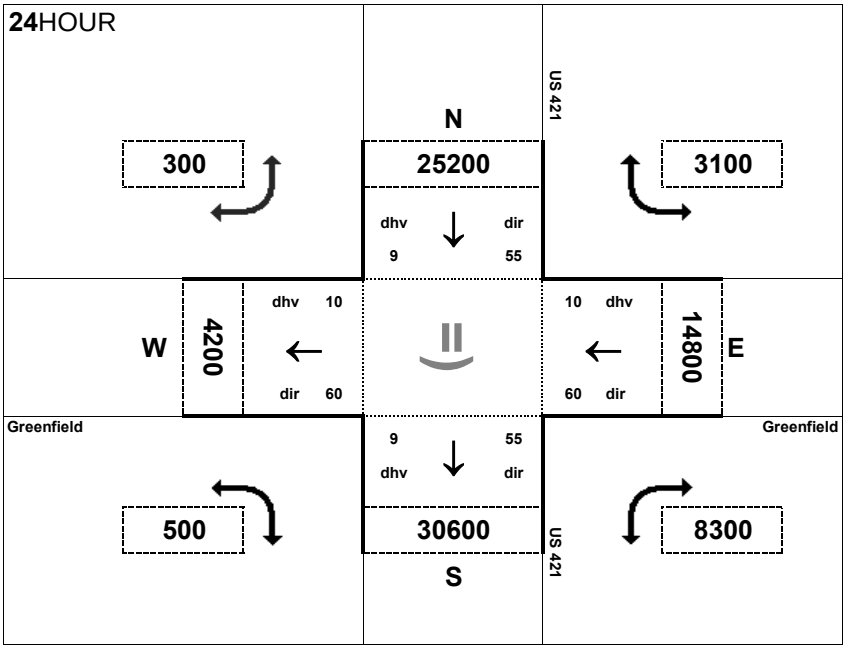
PM peak hour inflow is 12933 vehicles. PM peak hour outflow is 12933 vehicles.

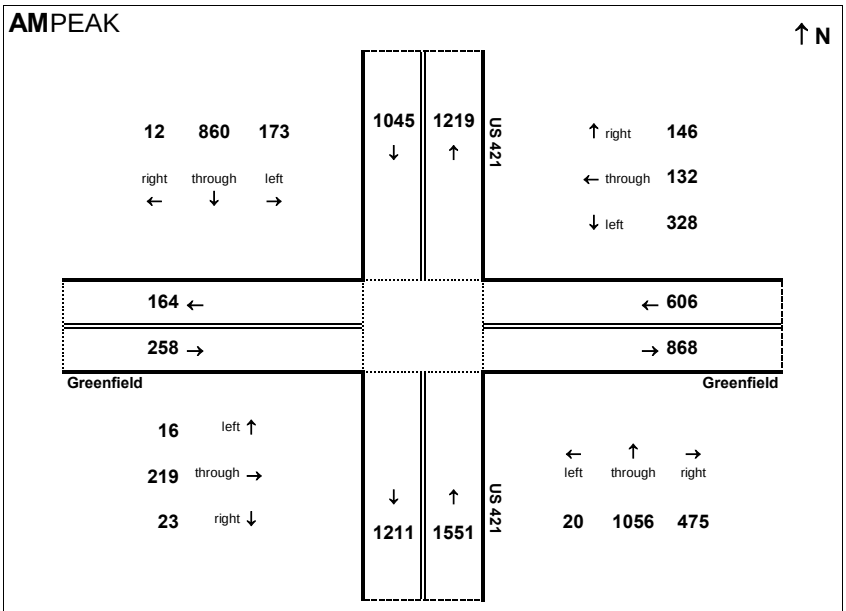
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

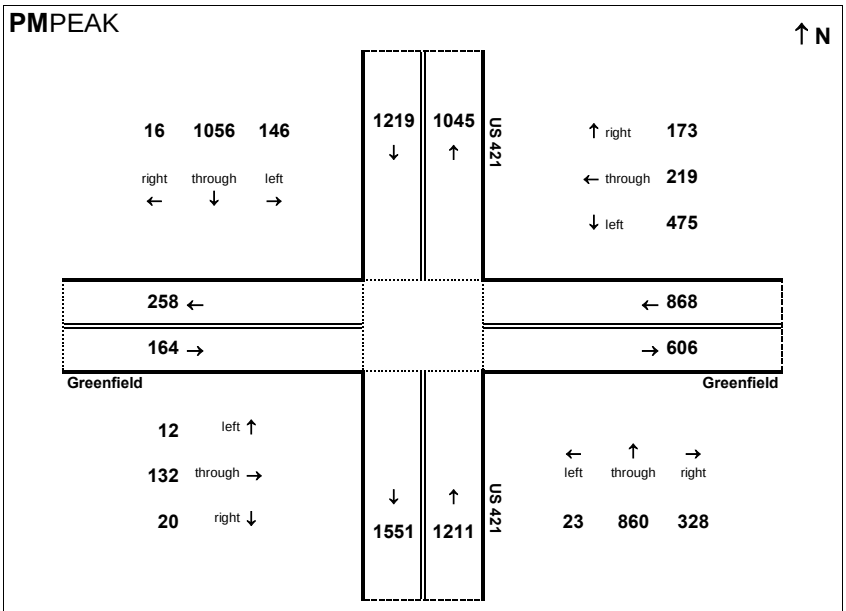
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 3460 vehicles. AM peak hour outflow is 3462 vehicles.



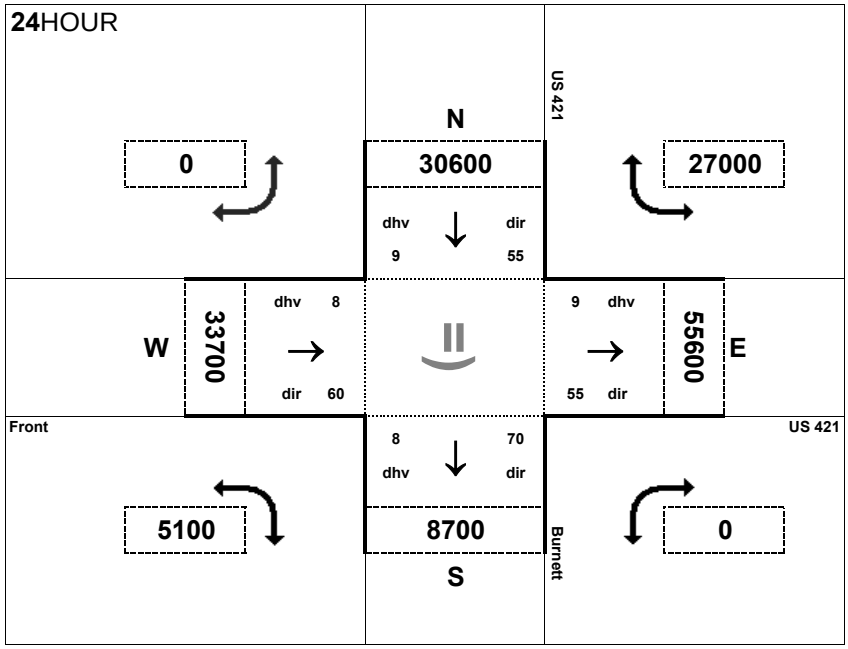
PM peak hour inflow is 3462 vehicles. PM peak hour outflow is 3460 vehicles.

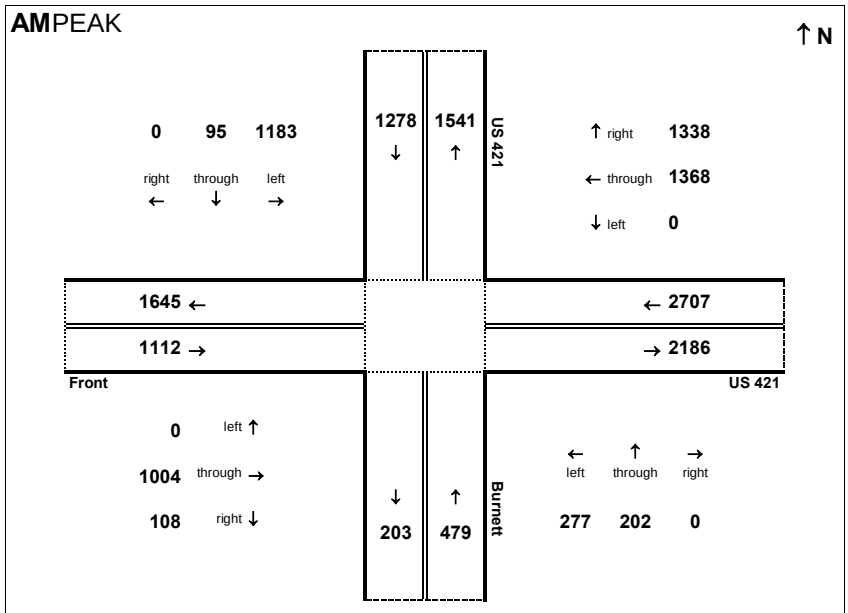
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

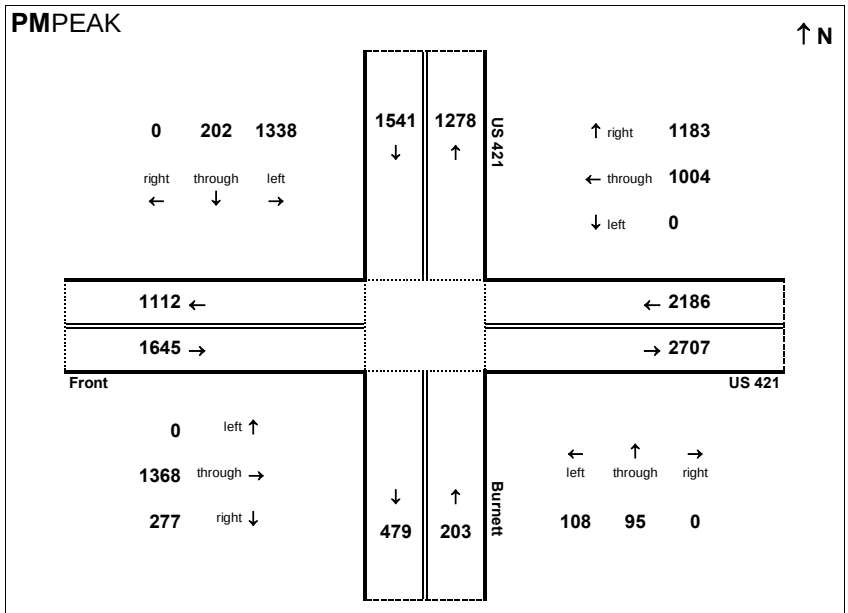
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 5576 vehicles. AM peak hour outflow is 5575 vehicles.



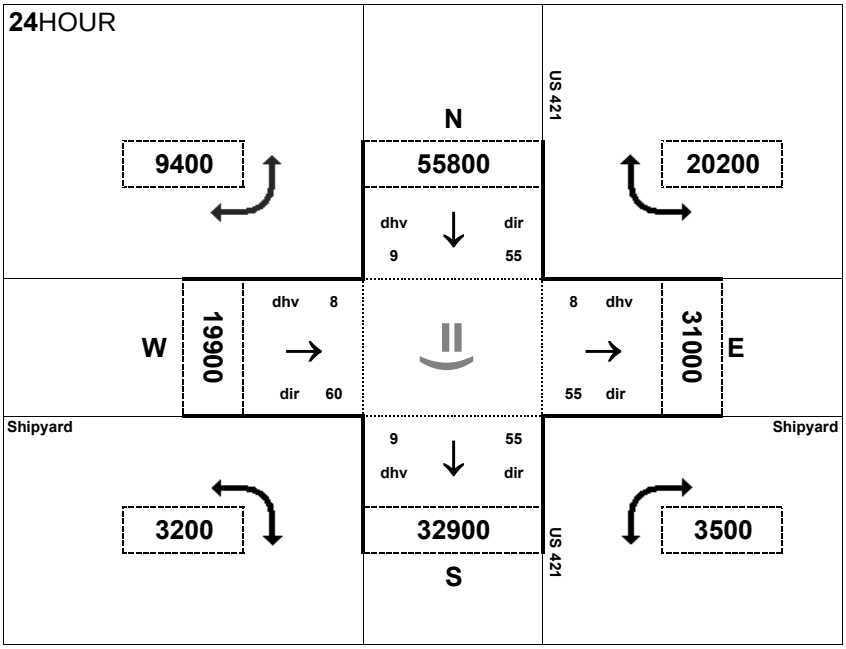
PM peak hour inflow is 5575 vehicles. PM peak hour outflow is 5576 vehicles.

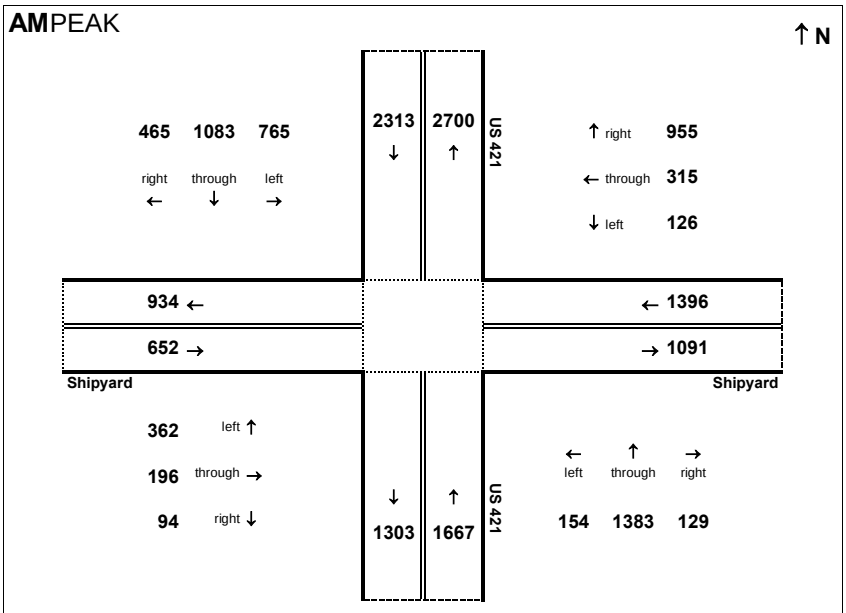
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

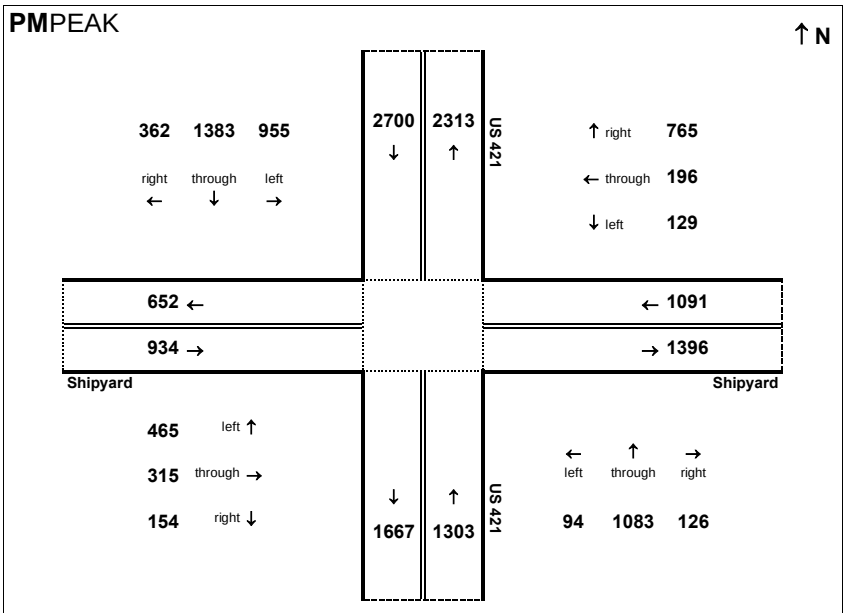
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 6028 vehicles. AM peak hour outflow is 6028 vehicles.



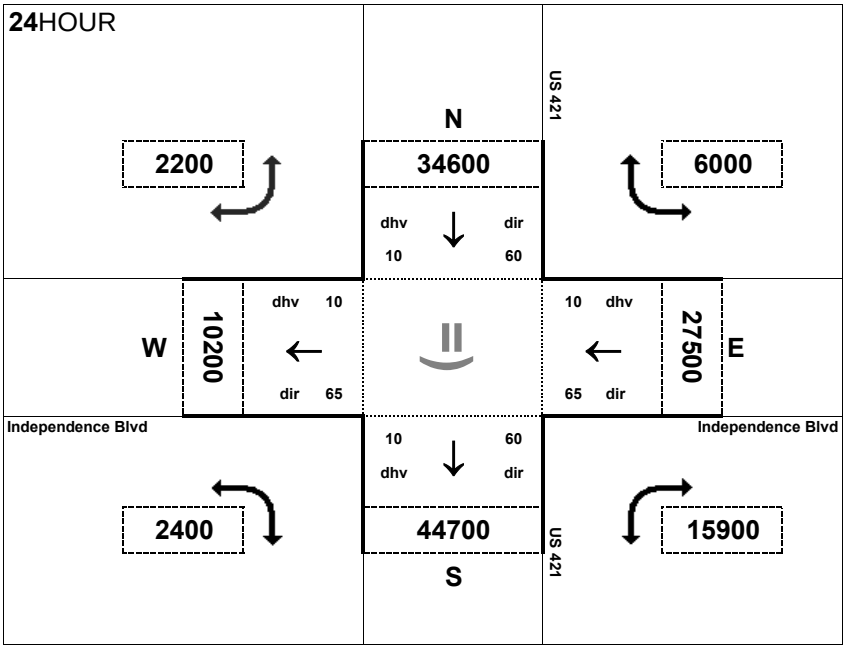
PM peak hour inflow is 6028 vehicles. PM peak hour outflow is 6028 vehicles.

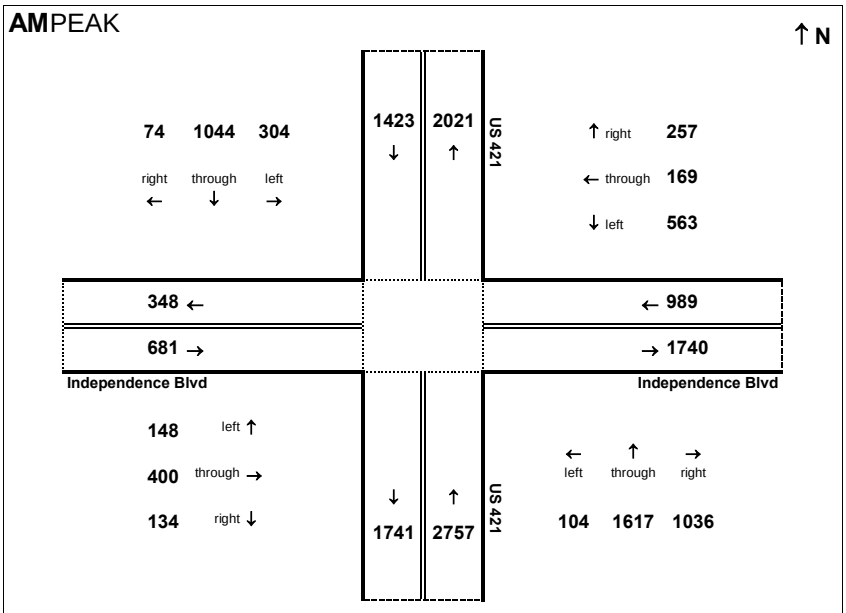
Peak Hour Volume Breakouts Report:
31 - US 421 & Independence

Traffic Forecast Release Date:
Oct. 2014

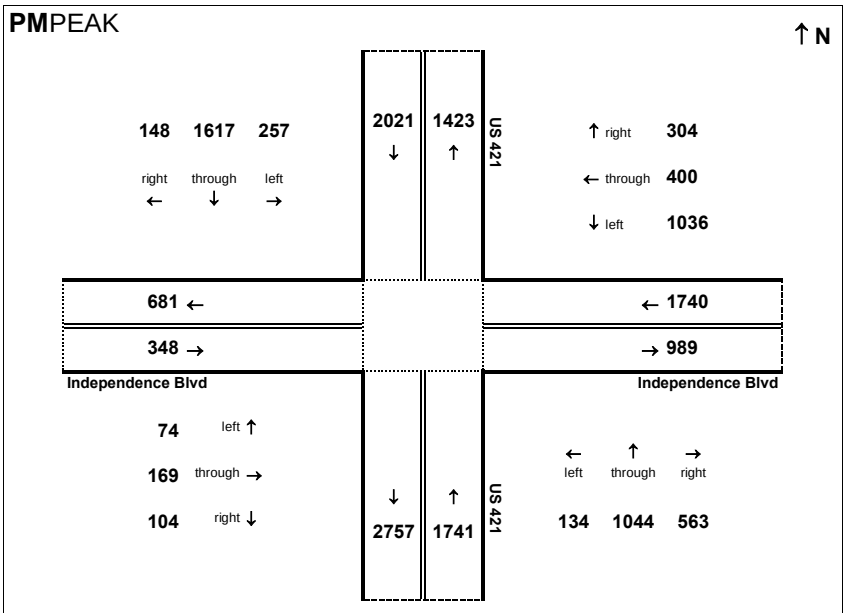
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 5850 vehicles. AM peak hour outflow is 5850 vehicles.



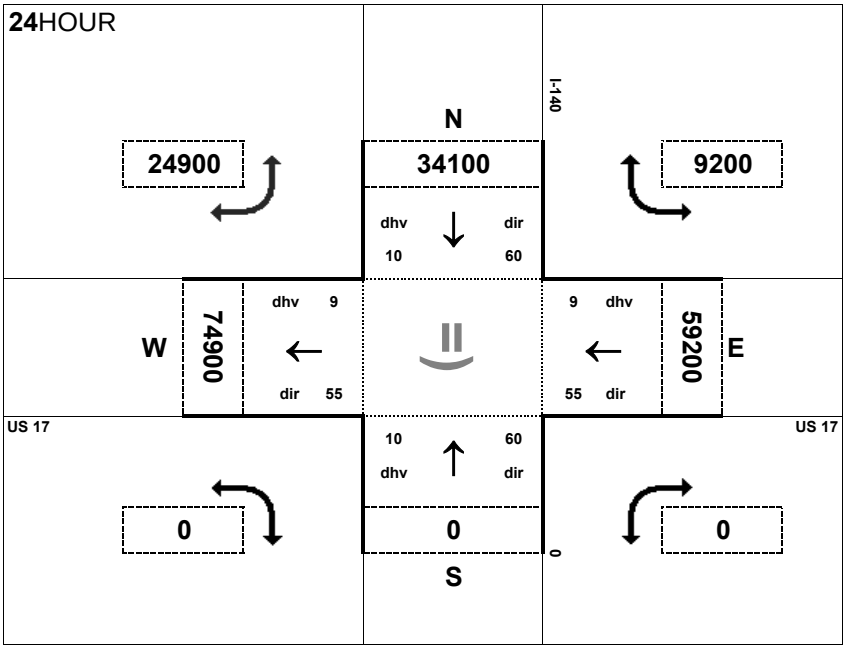
PM peak hour inflow is 5850 vehicles. PM peak hour outflow is 5850 vehicles.

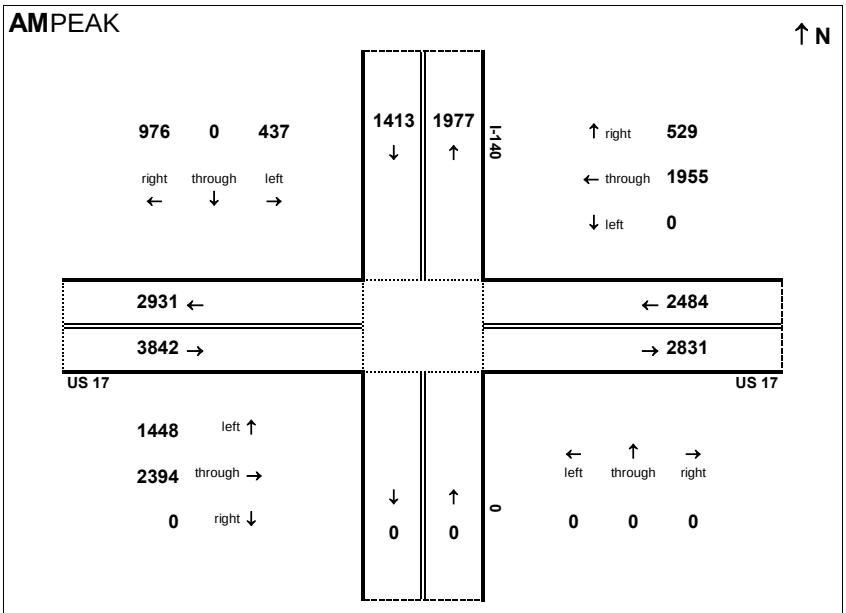
Peak Hour Volume Breakouts Report:
43 - US 17 and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

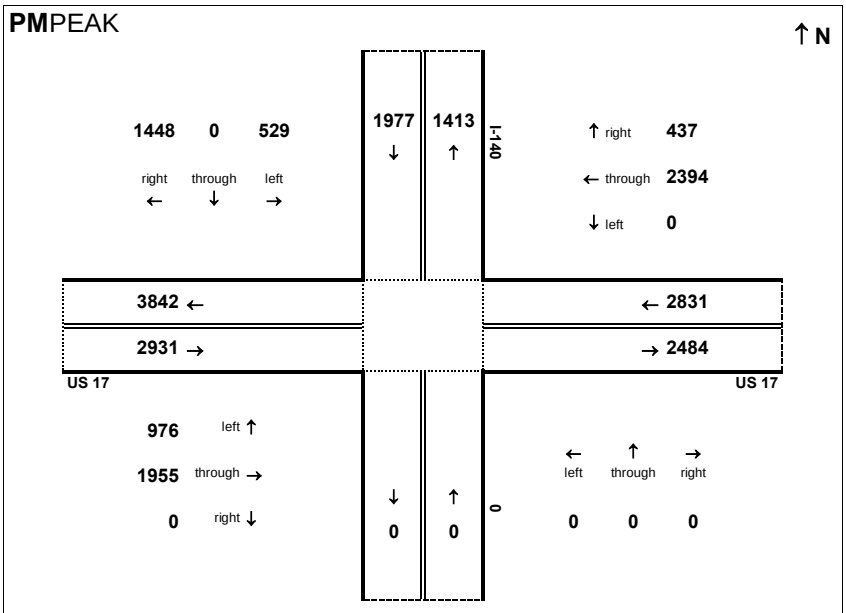
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 7739 vehicles. AM peak hour outflow is 7739 vehicles.



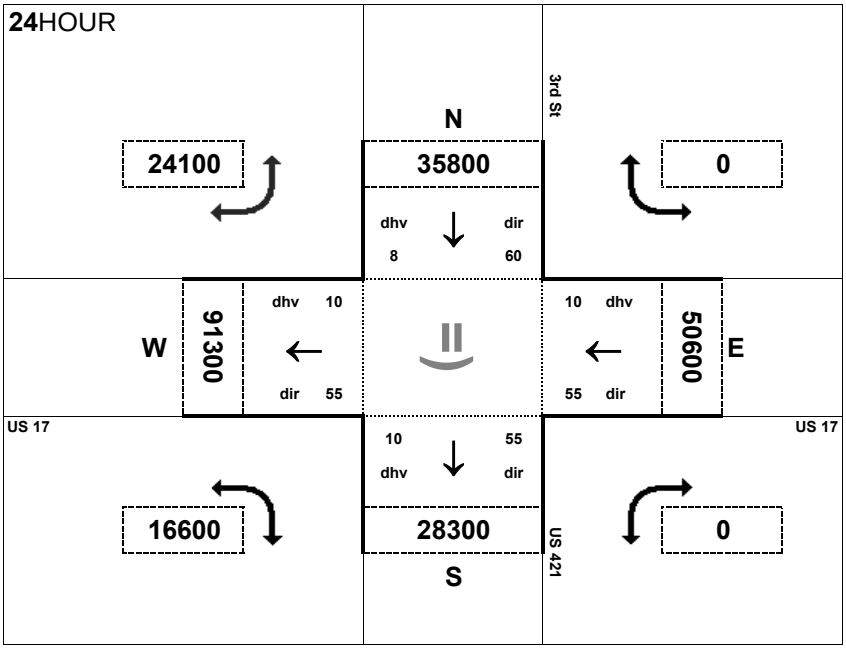
PM peak hour inflow is 7739 vehicles. PM peak hour outflow is 7739 vehicles.

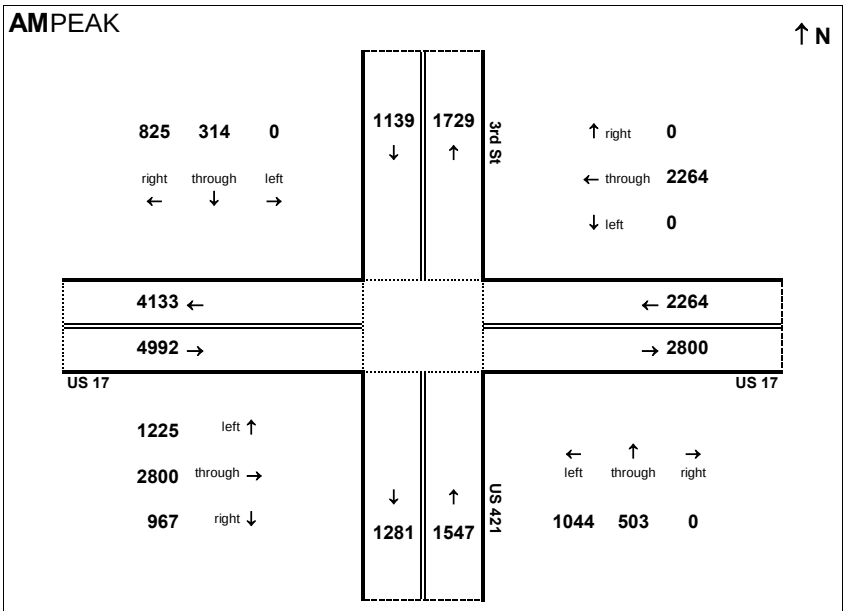
Peak Hour Volume Breakouts Report:
110 - US 17 and Third

Traffic Forecast Release Date:
Oct. 2014

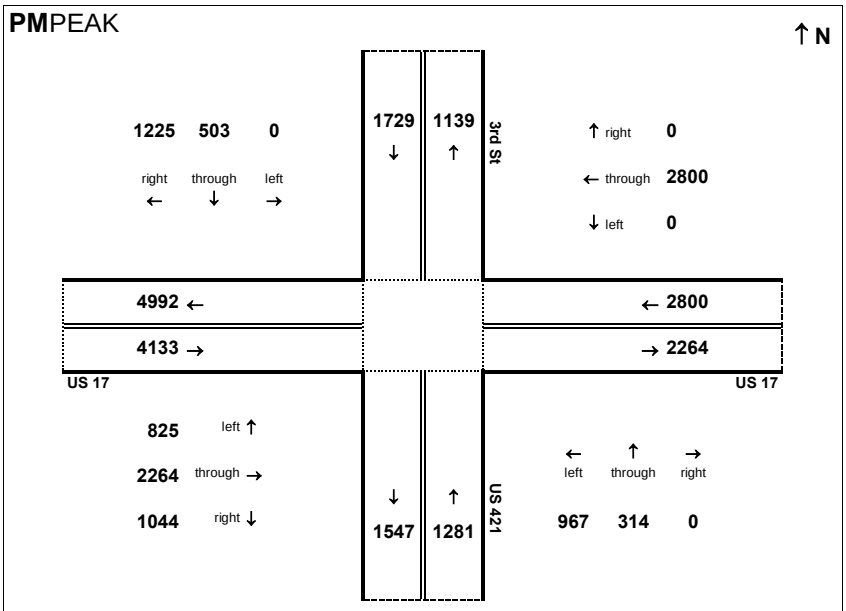
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. P





AM peak hour inflow is 9942 vehicles. AM peak hour outflow is 9943 vehicles.



PM peak hour inflow is 9943 vehicles. PM peak hour outflow is 9942 vehicles.

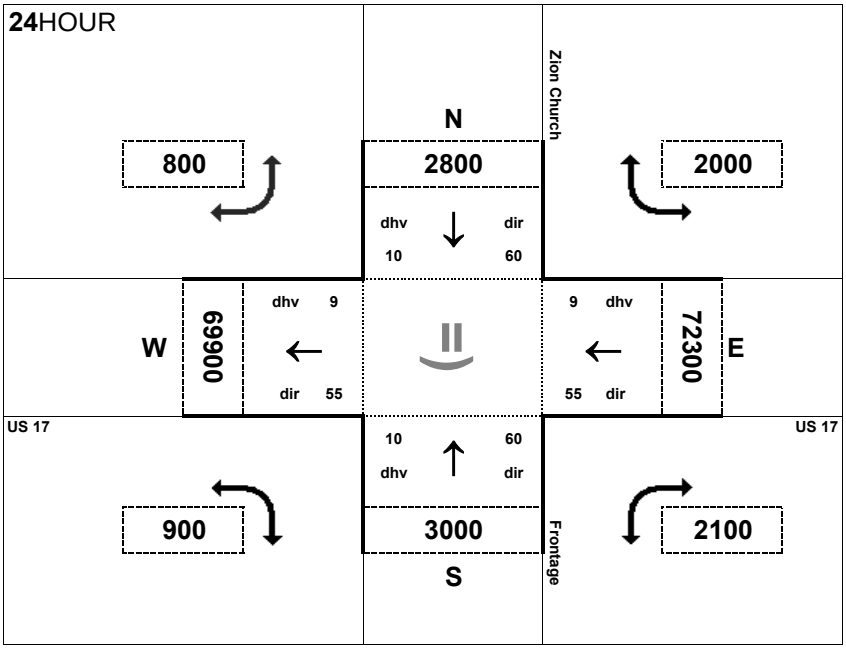
2040 Build DSA Alternative Q

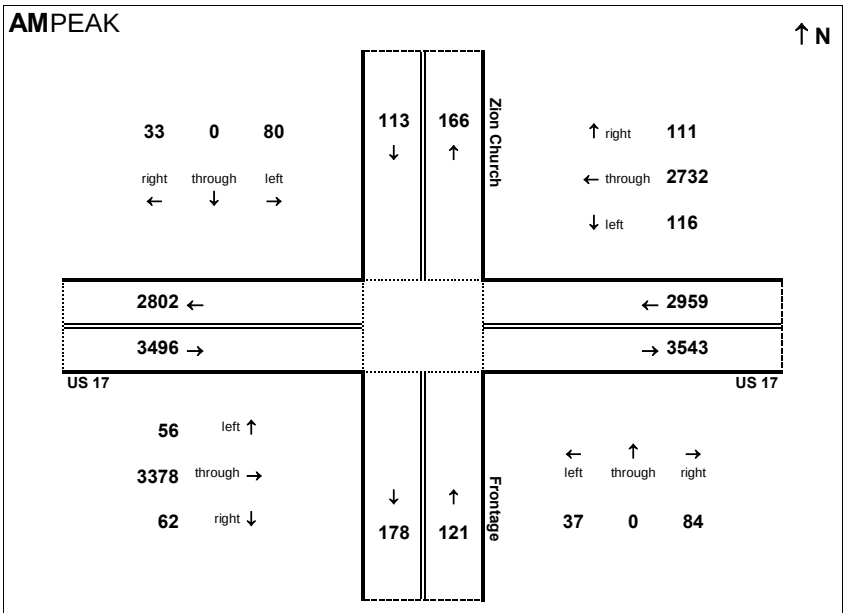
Peak Hour Volume Breakouts Report:
01 - US 17 and Zion Church Rd

Traffic Forecast Release Date:
Oct. 2014

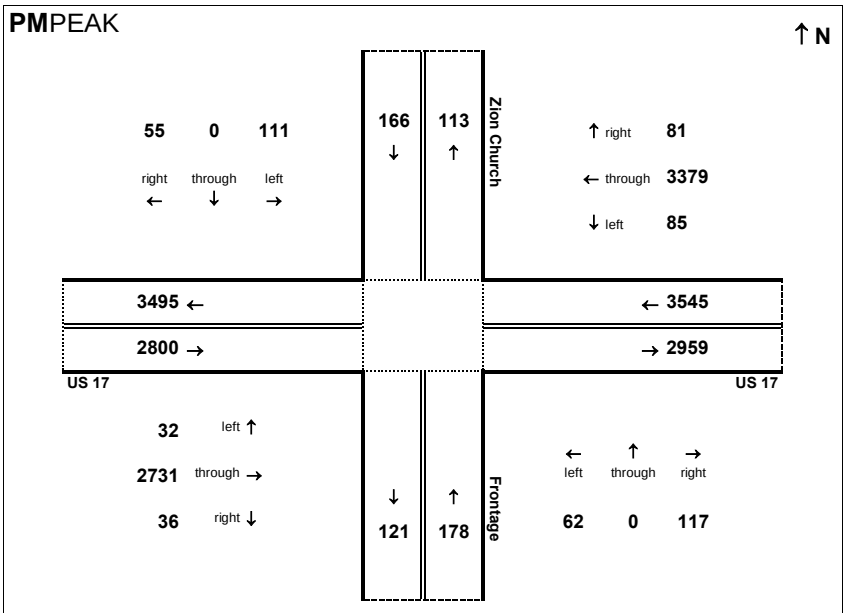
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



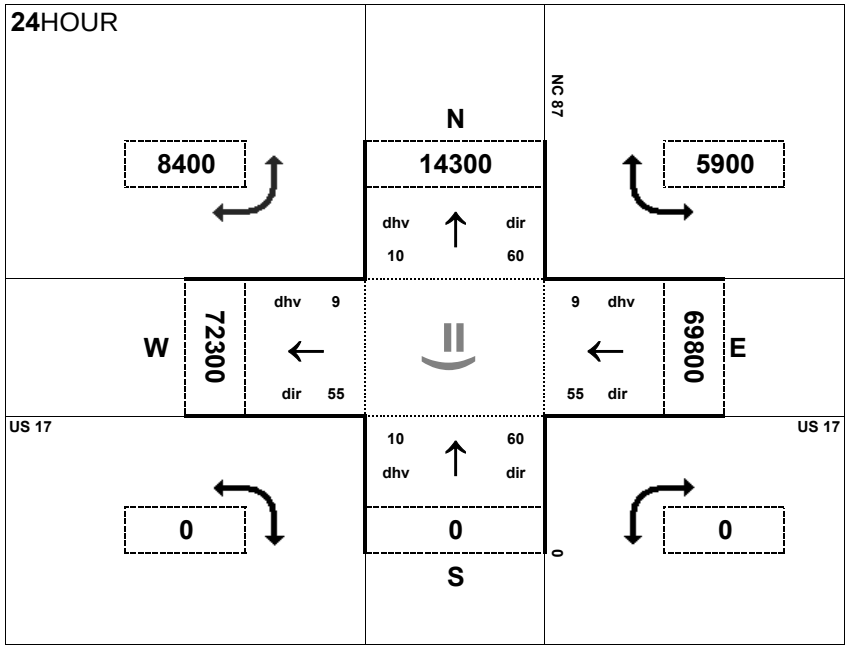
PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

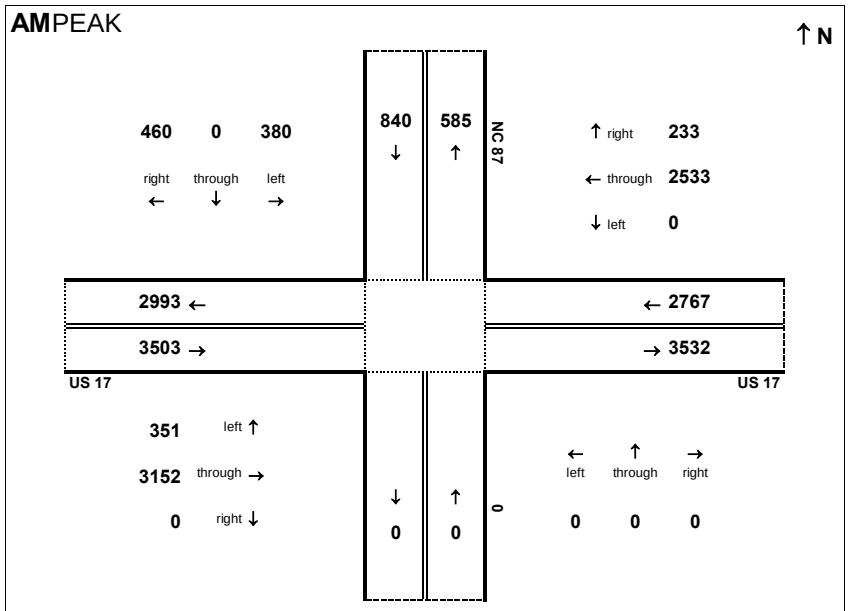
Peak Hour Volume Breakouts Report:
02 - US 17 and NC 87

Traffic Forecast Release Date:
Oct. 2014

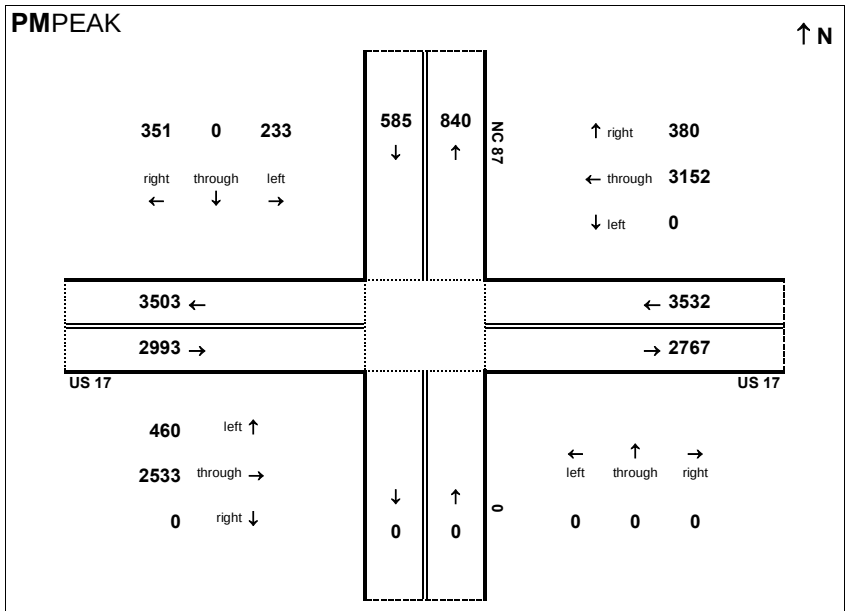
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



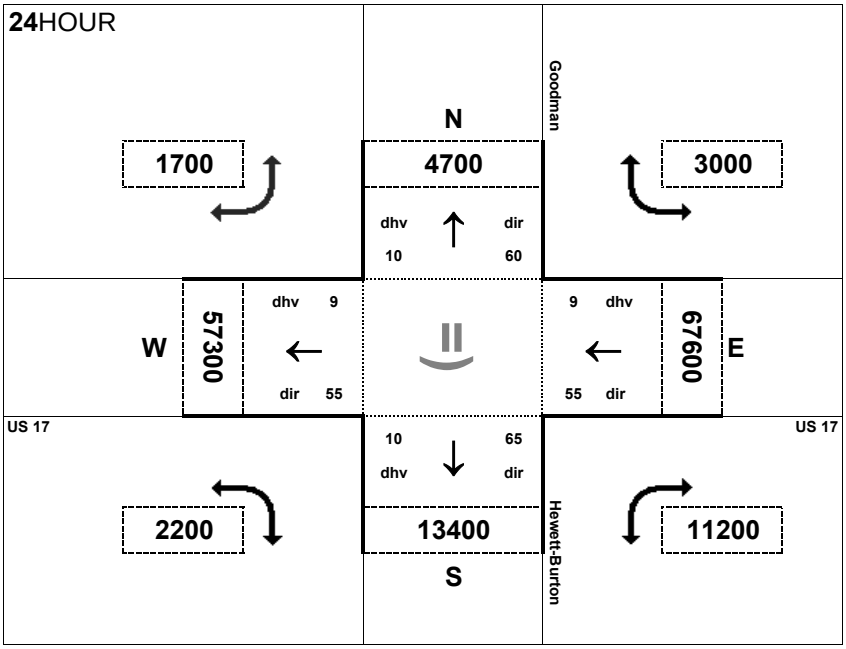
PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

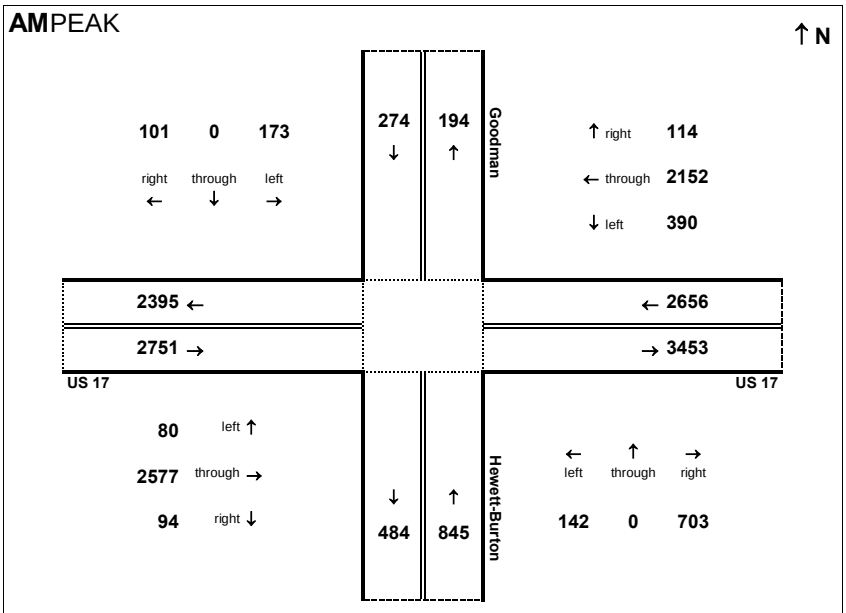
Peak Hour Volume Breakouts Report:
03 - US 17 and Goodman Rd

Traffic Forecast Release Date:
Oct. 2014

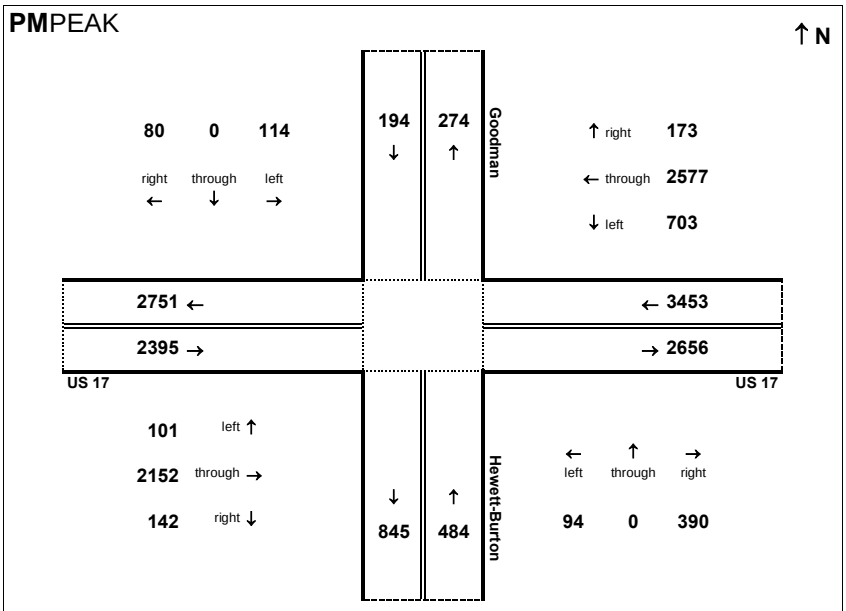
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 6526 vehicles. AM peak hour outflow is 6526 vehicles.



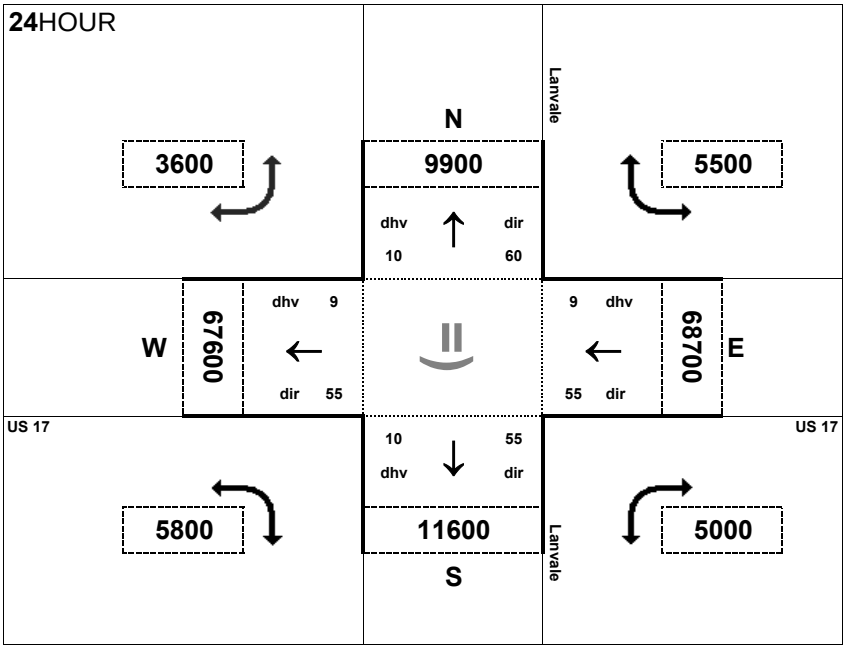
PM peak hour inflow is 6526 vehicles. PM peak hour outflow is 6526 vehicles.

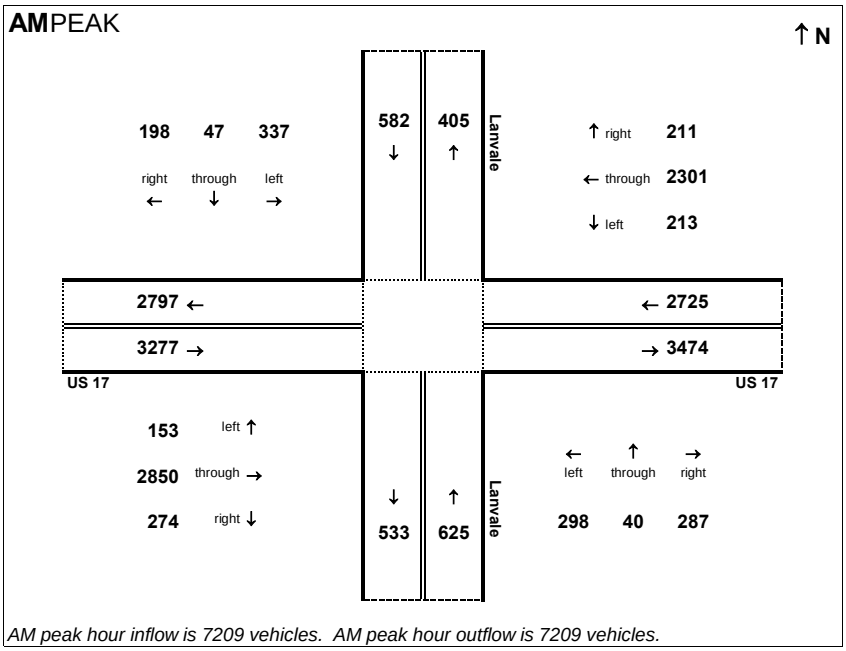
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

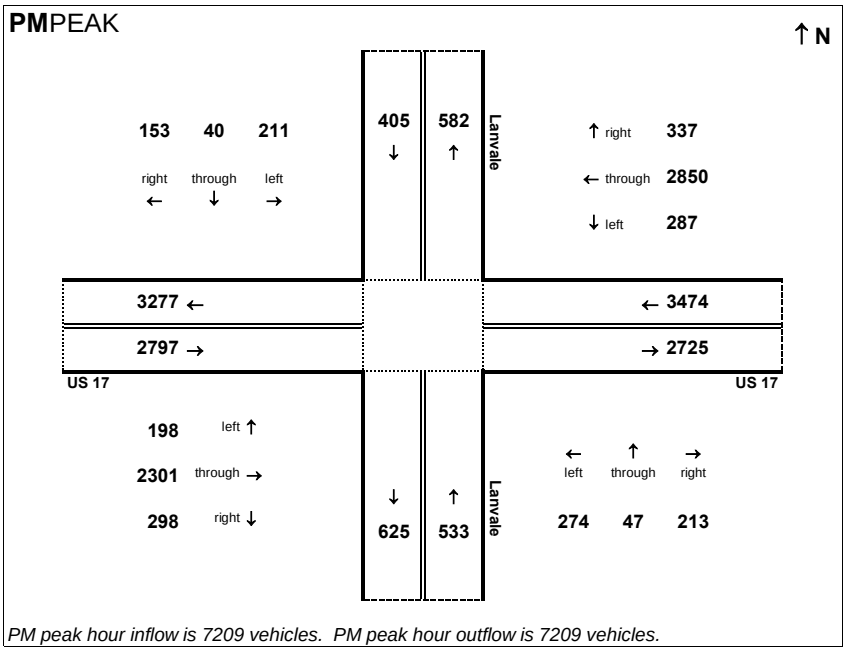
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7209 vehicles. AM peak hour outflow is 7209 vehicles.



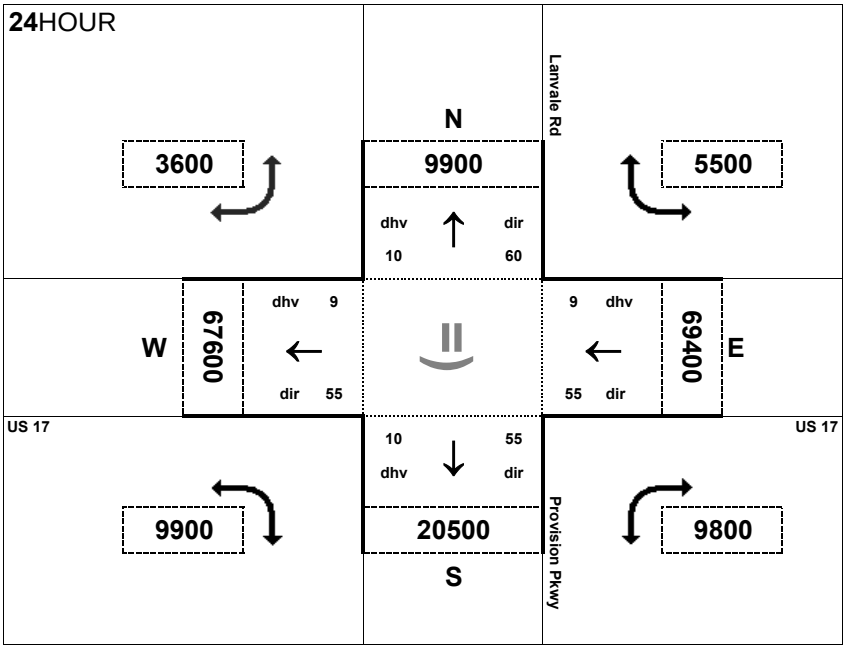
PM peak hour inflow is 7209 vehicles. PM peak hour outflow is 7209 vehicles.

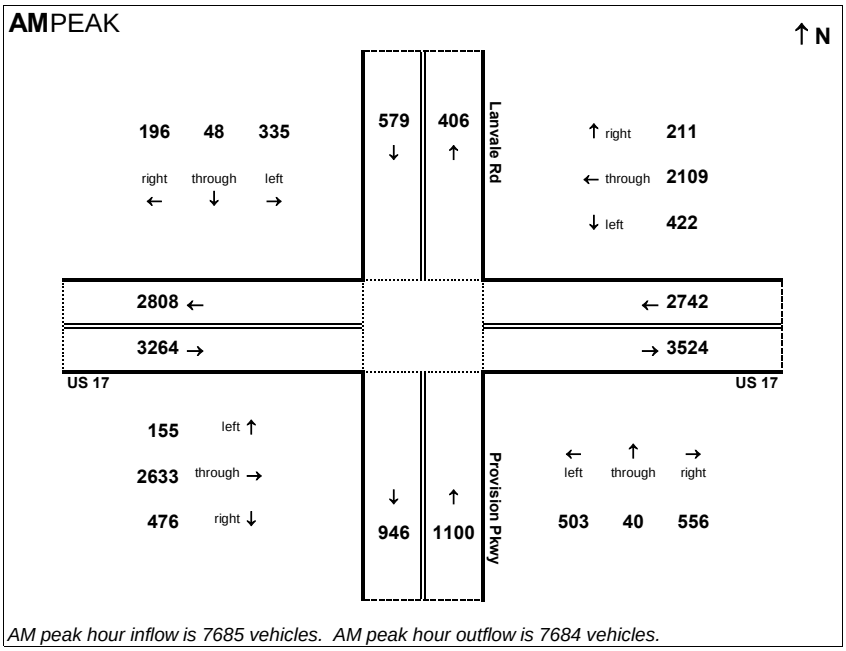
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd & Brunswick Forest Pkwy

Traffic Forecast Release Date:
Oct. 2014

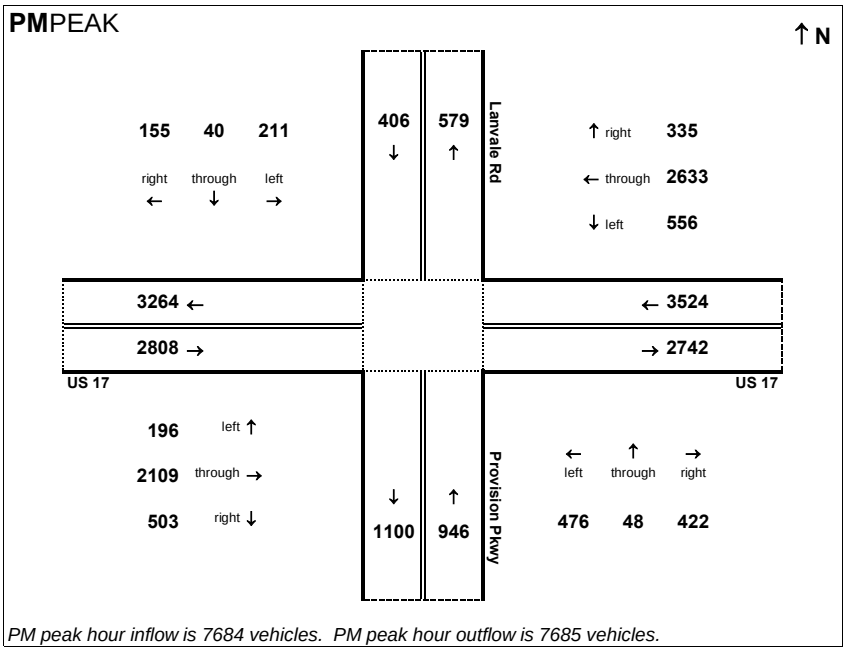
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7685 vehicles. AM peak hour outflow is 7684 vehicles.



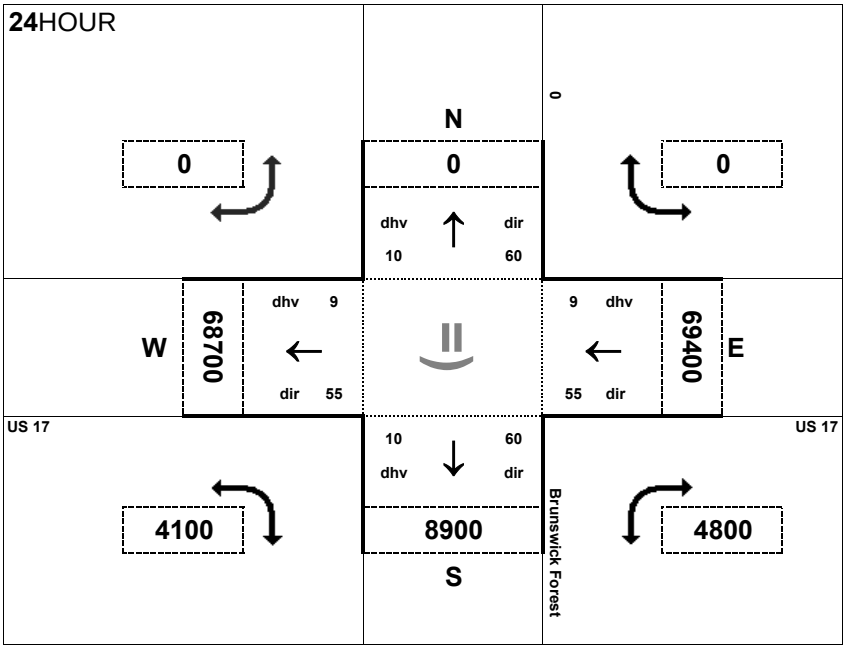
PM peak hour inflow is 7684 vehicles. PM peak hour outflow is 7685 vehicles.

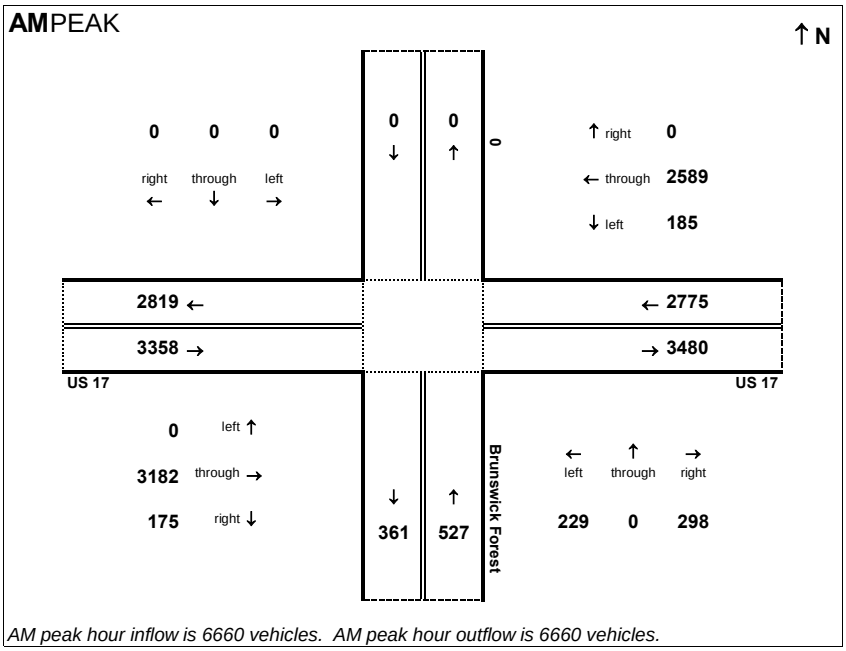
Peak Hour Volume Breakouts Report:
05 - US 17 and Brunswick Forest Pkwy

Traffic Forecast Release Date:
Oct. 2014

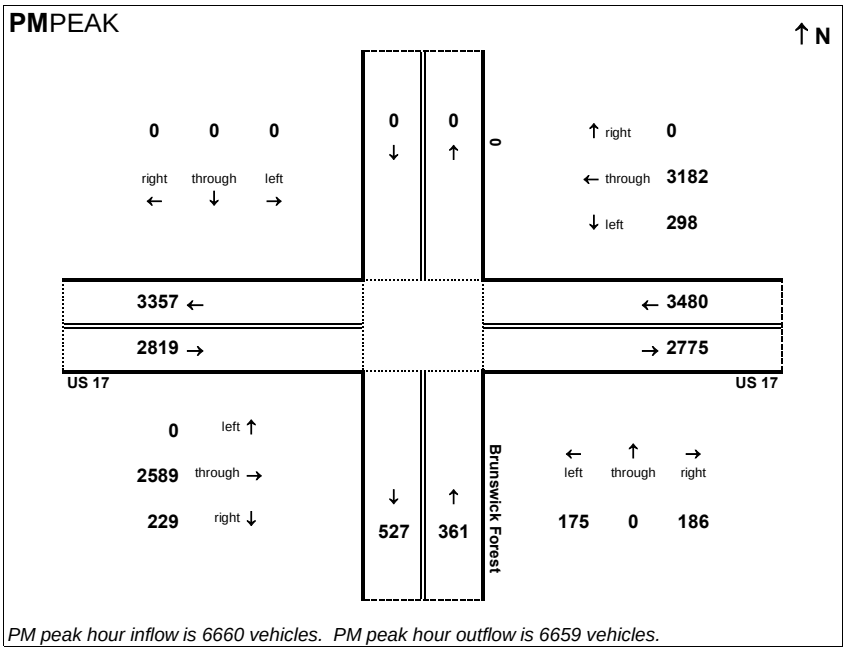
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 6660 vehicles. AM peak hour outflow is 6660 vehicles.



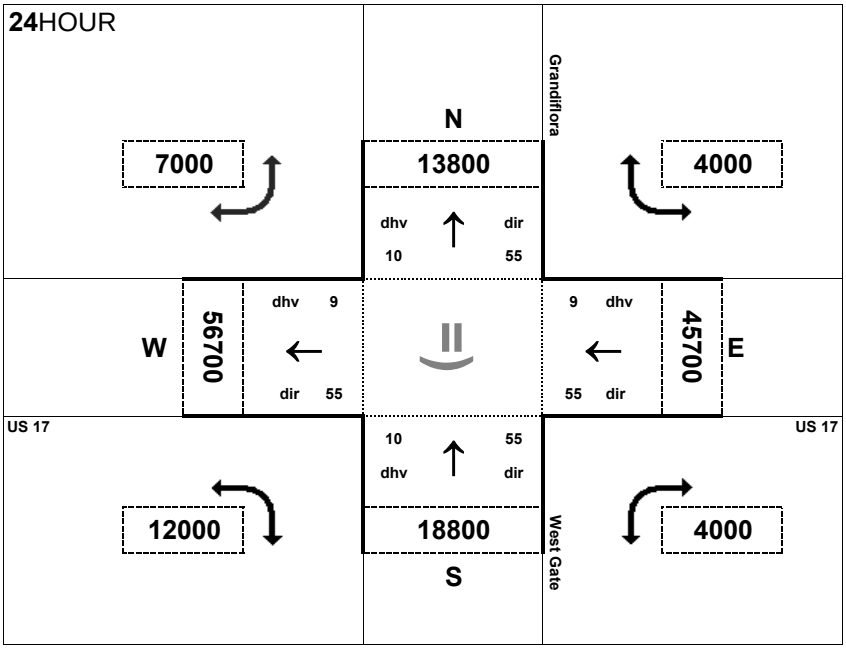
PM peak hour inflow is 6660 vehicles. PM peak hour outflow is 6659 vehicles.

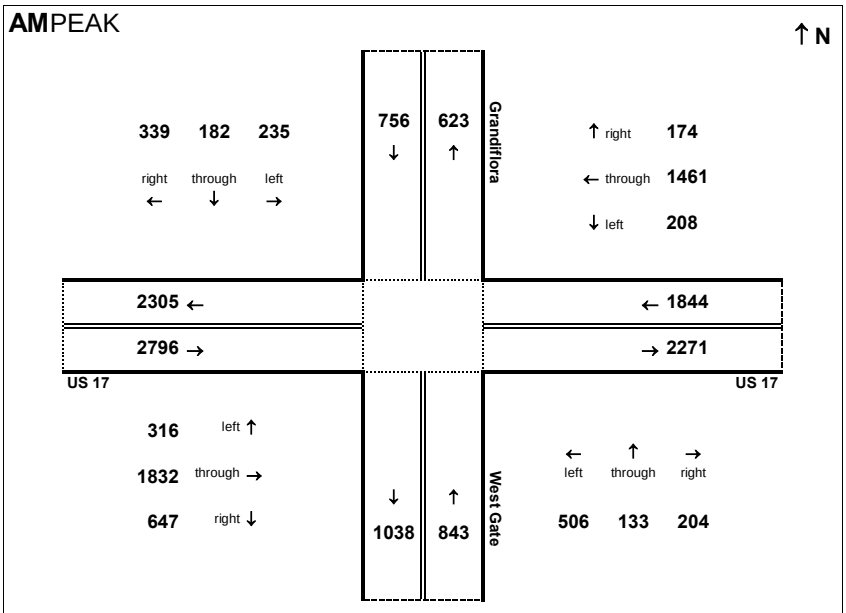
Peak Hour Volume Breakouts Report:
06 - US 17 and West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

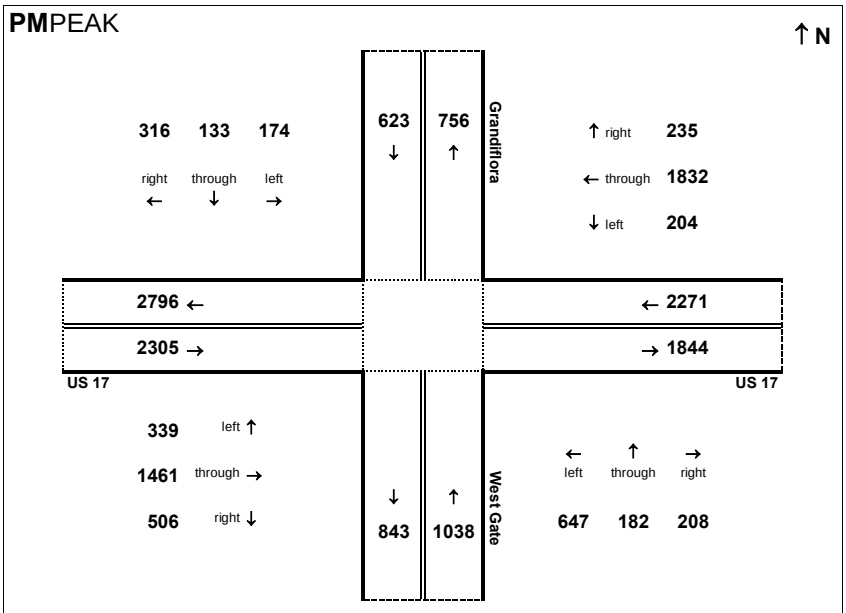
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



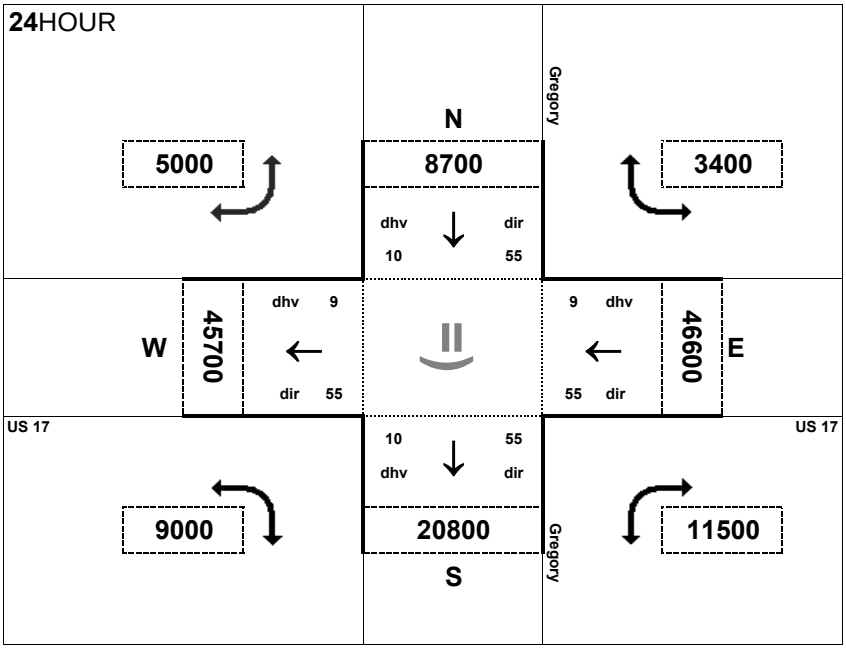
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

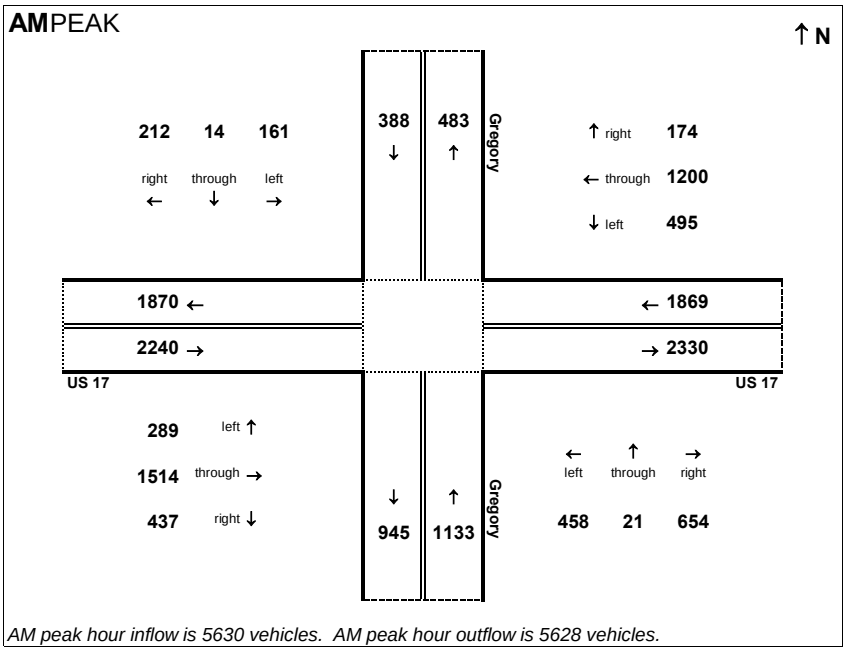
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

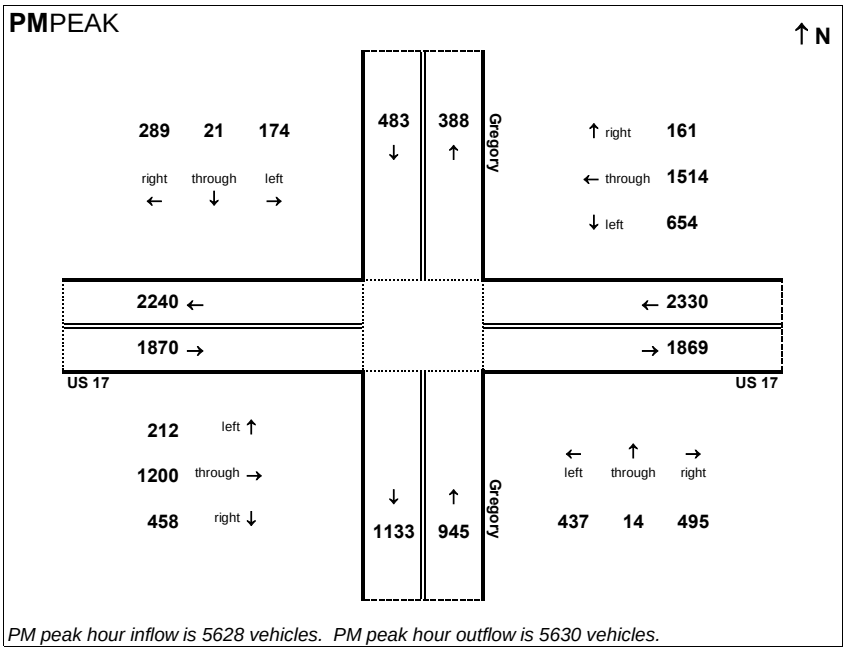
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

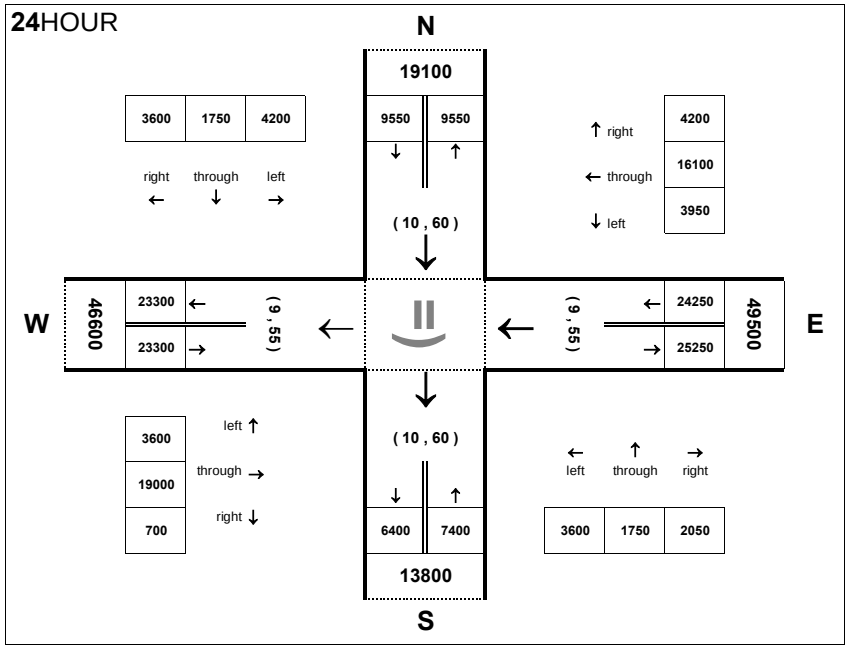


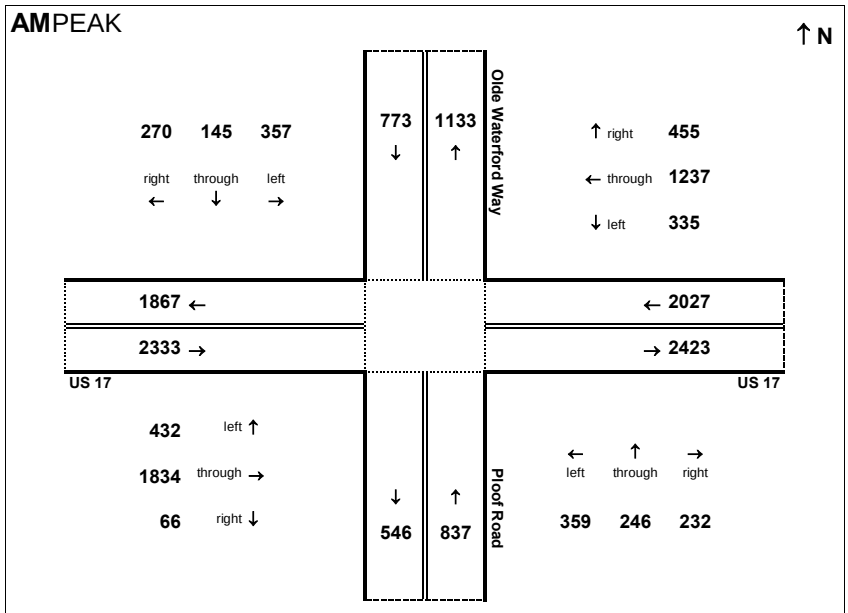
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

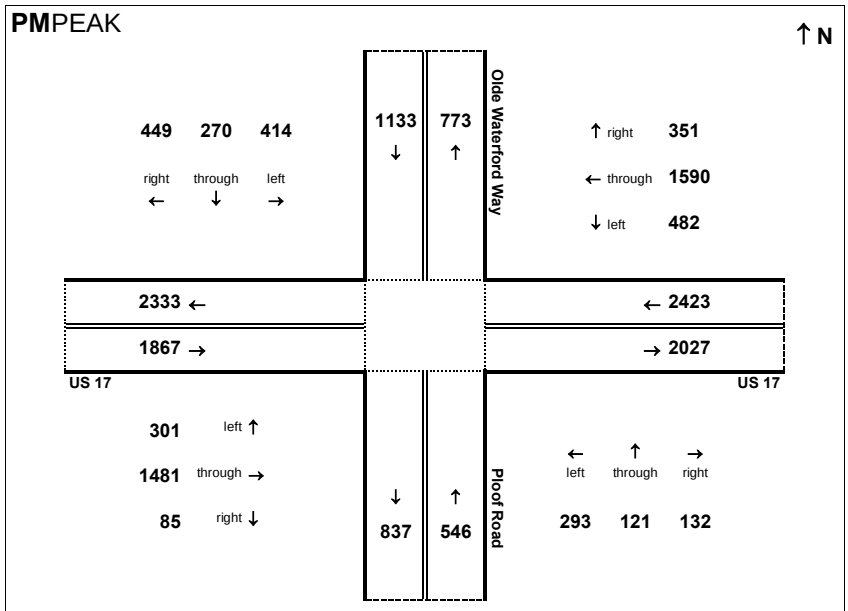
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. Q





AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



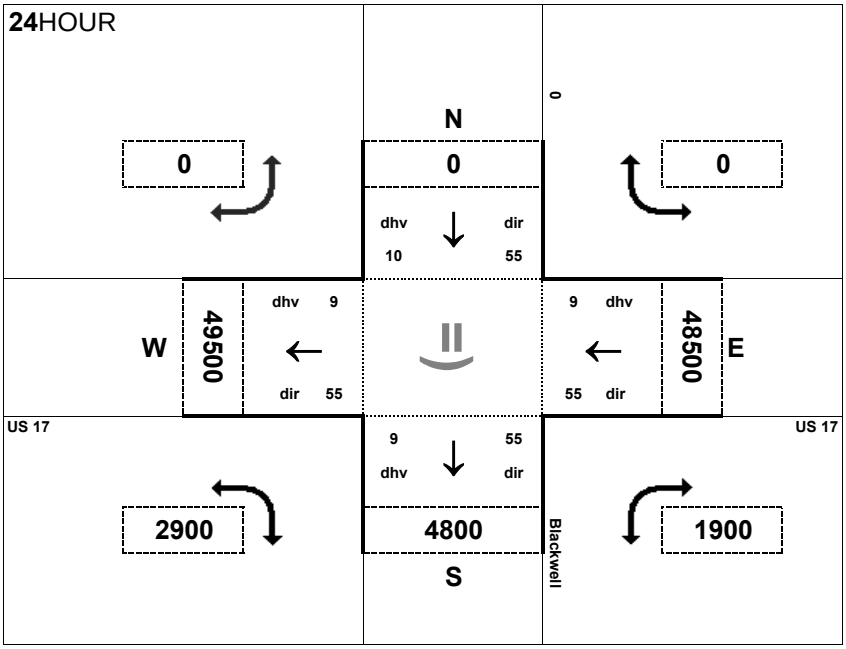
PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

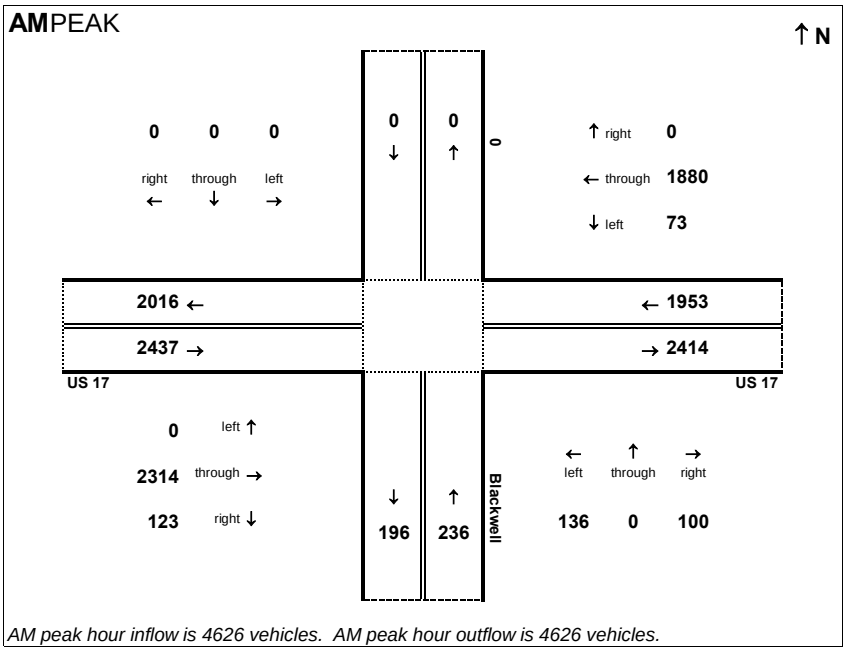
Peak Hour Volume Breakouts Report:
09 - US 17 and Blackwell Rd

Traffic Forecast Release Date:
Oct. 2014

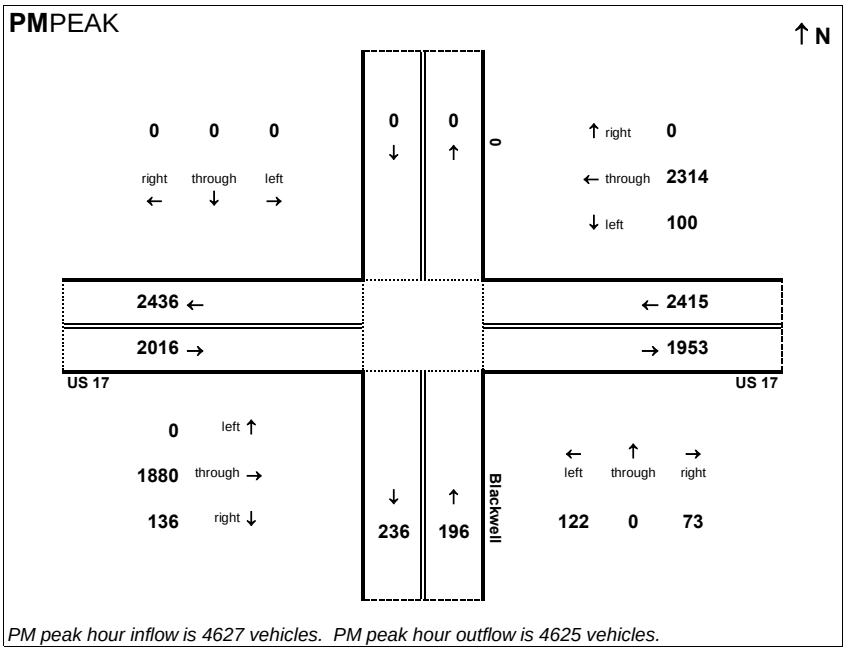
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



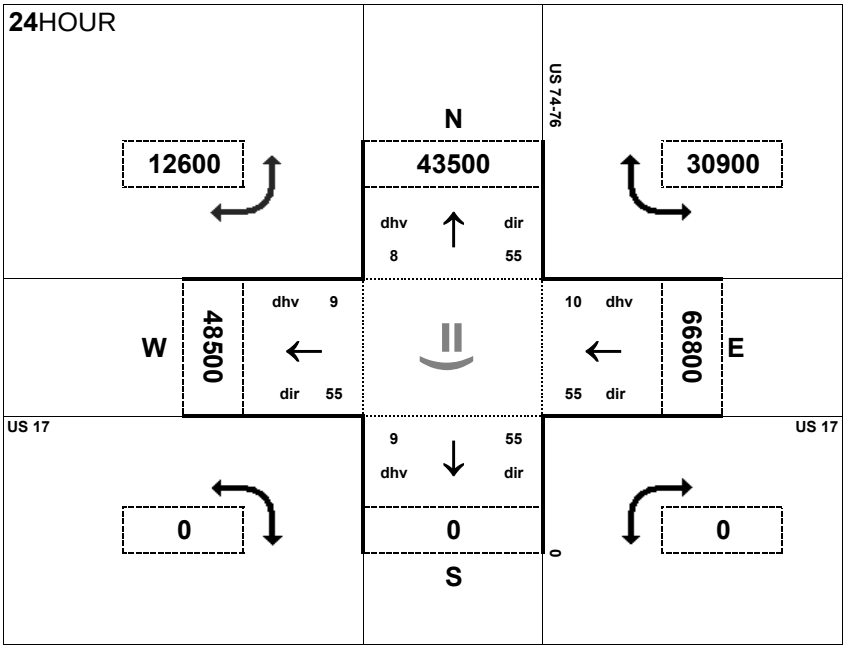
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

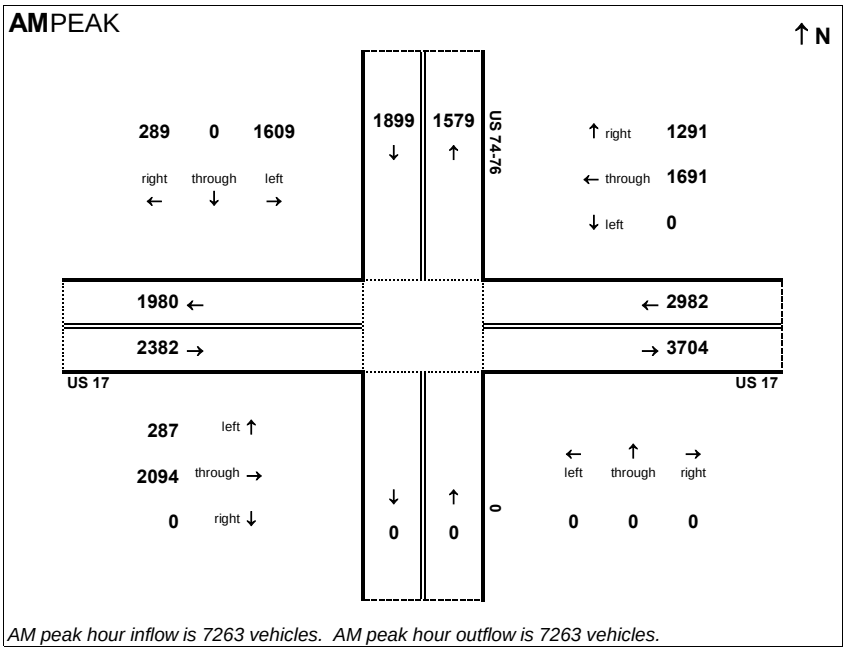
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

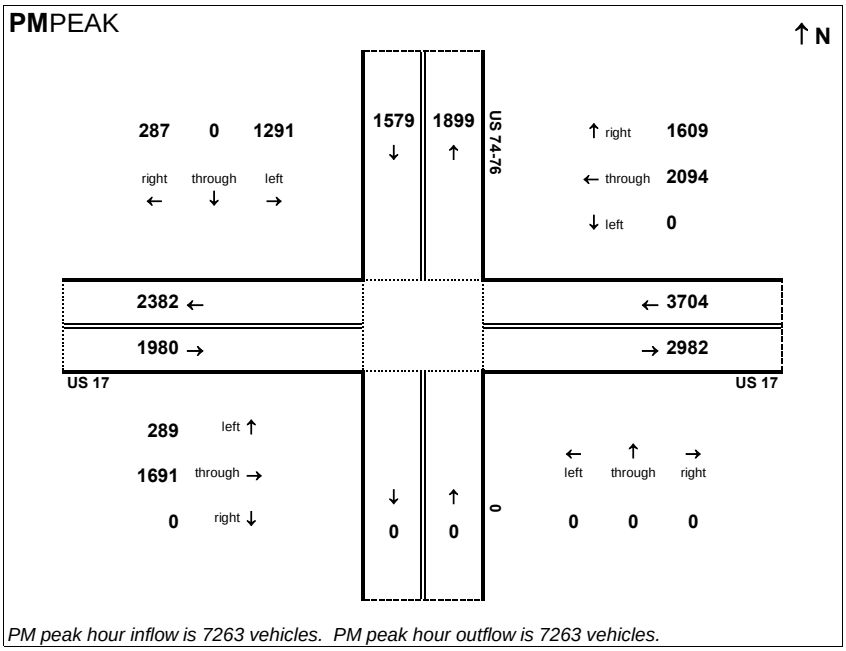
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7263 vehicles. AM peak hour outflow is 7263 vehicles.



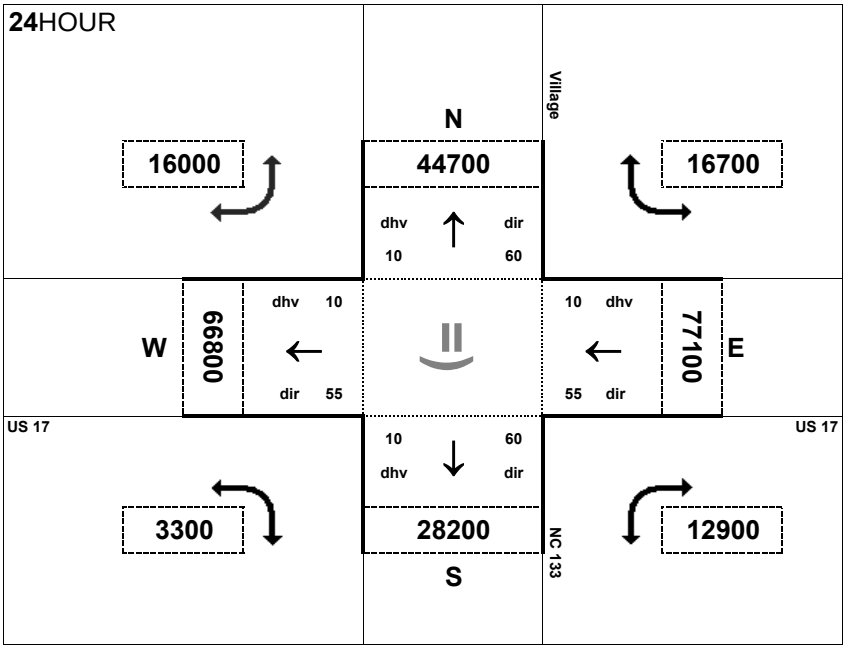
PM peak hour inflow is 7263 vehicles. PM peak hour outflow is 7263 vehicles.

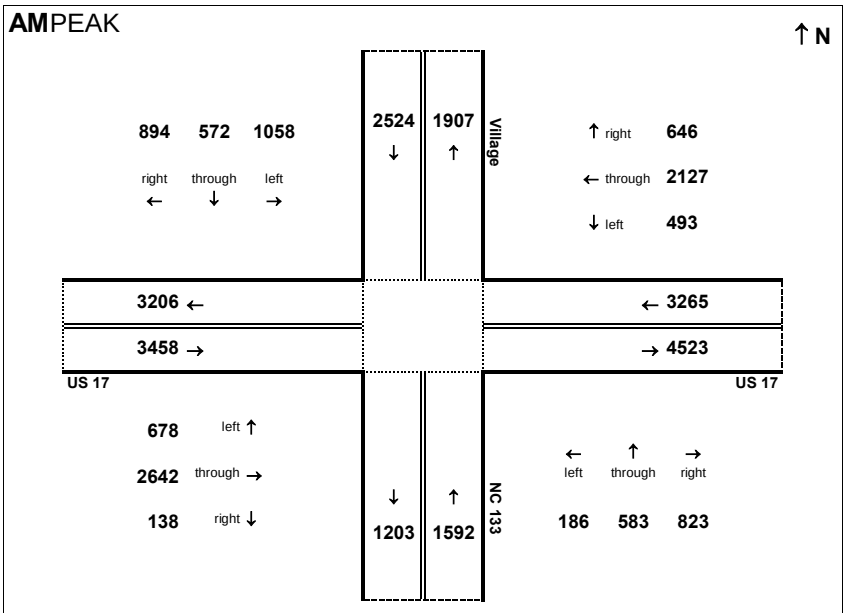
Peak Hour Volume Breakouts Report:
11 - US 17 and NC 133/Village Road

Traffic Forecast Release Date:
Oct. 2014

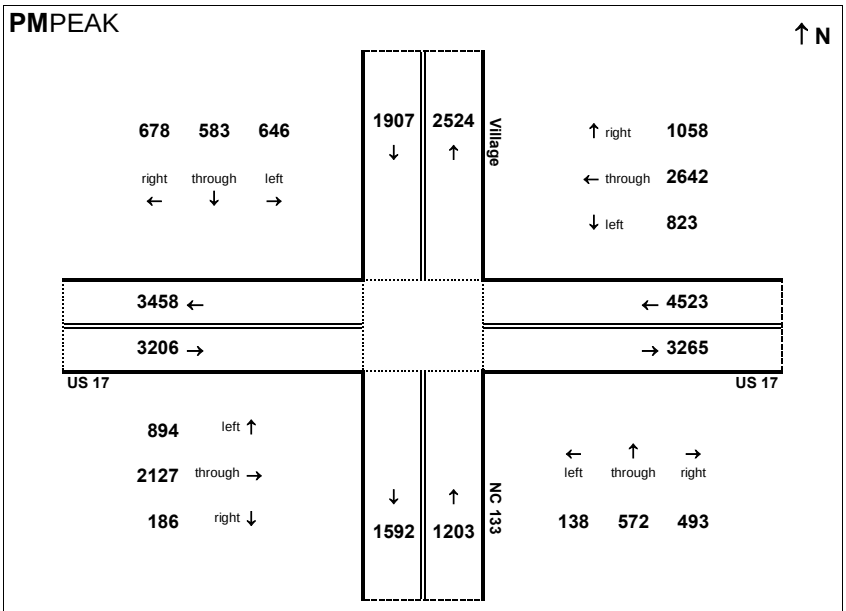
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q

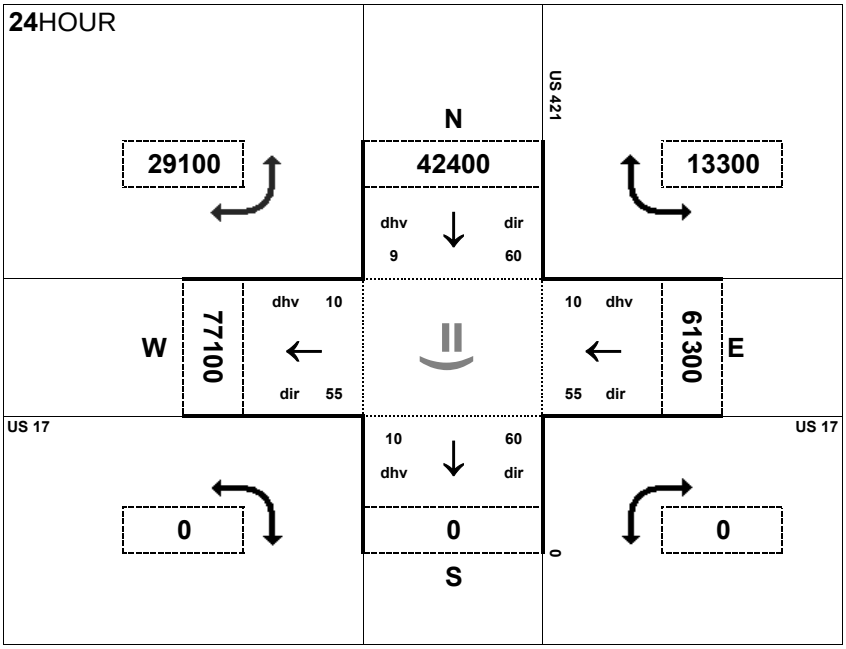




AM peak hour inflow is 10839 vehicles. AM peak hour outflow is 10839 vehicles.



PM peak hour inflow is 10839 vehicles. PM peak hour outflow is 10839 vehicles.

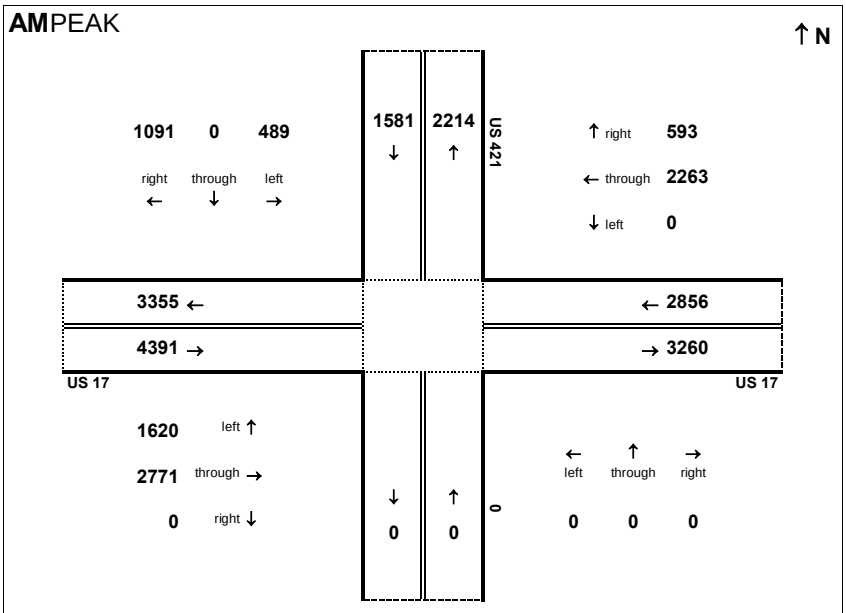


Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

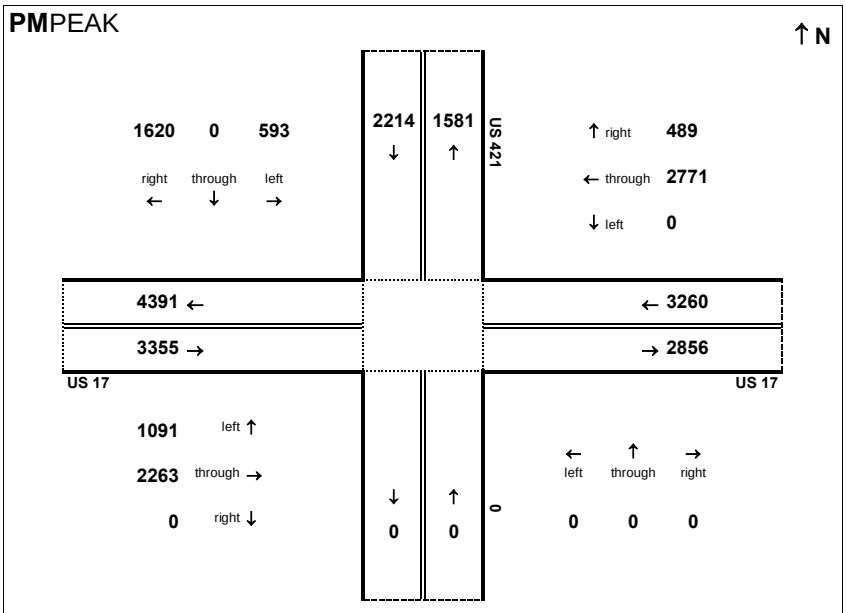
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q



AM peak hour inflow is 8828 vehicles. AM peak hour outflow is 8829 vehicles.



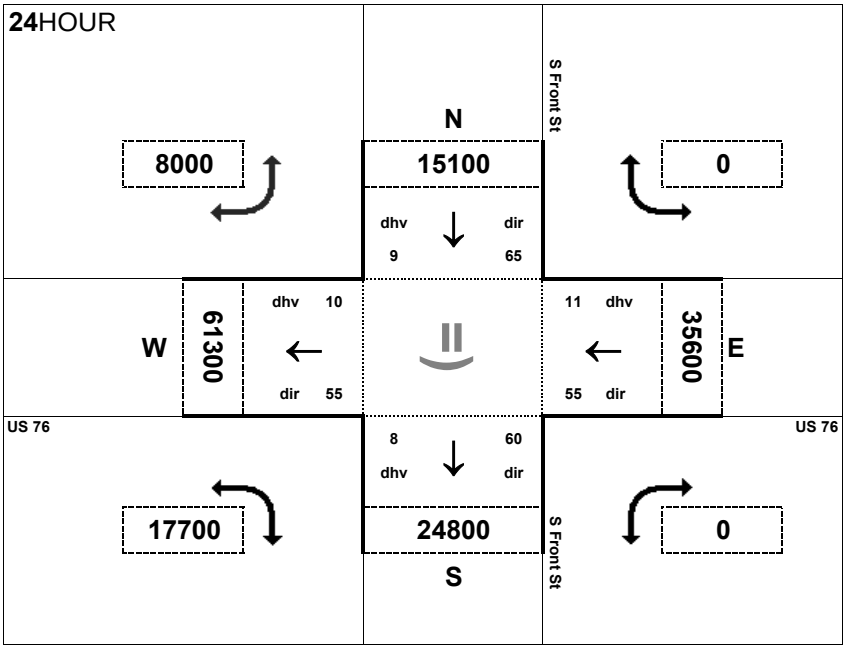
PM peak hour inflow is 8829 vehicles. PM peak hour outflow is 8828 vehicles.

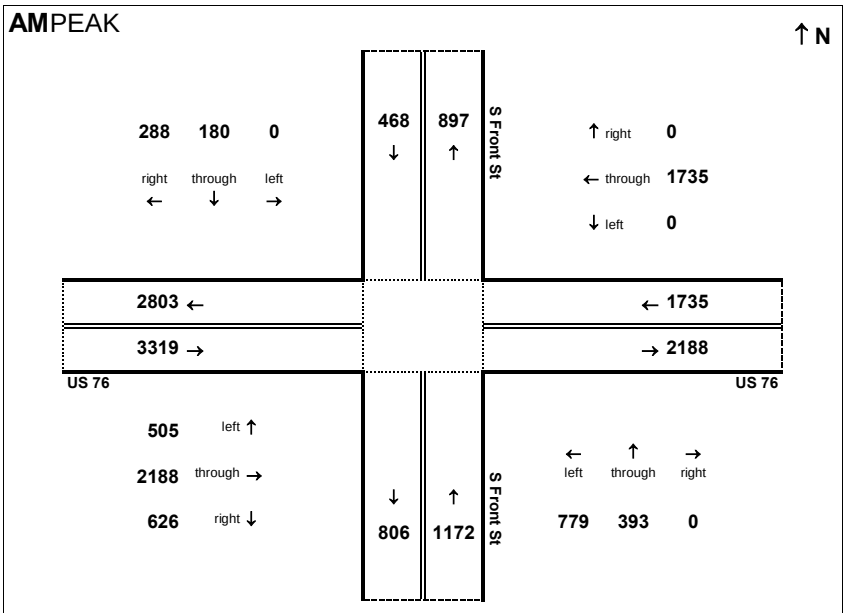
Peak Hour Volume Breakouts Report:
16 - S Front Street and US 17 Bus

Traffic Forecast Release Date:
Oct. 2014

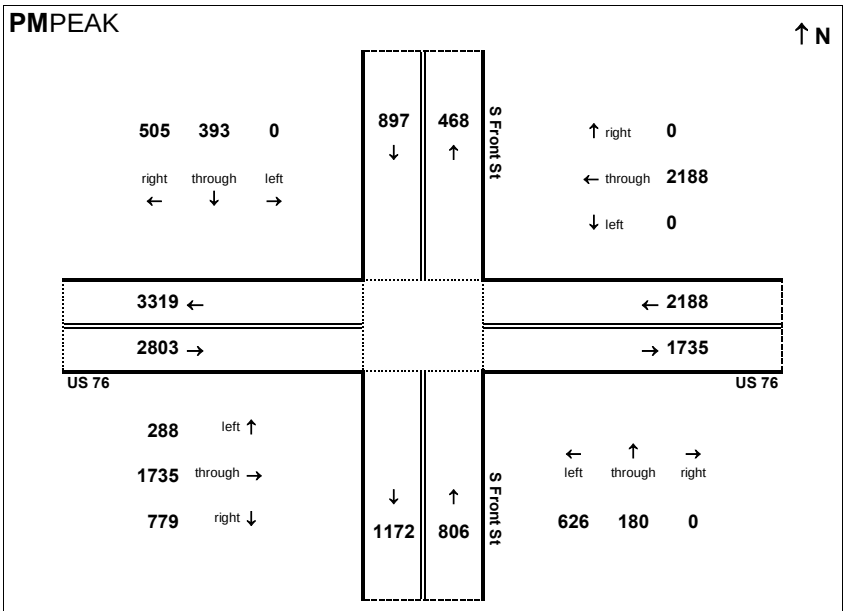
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q

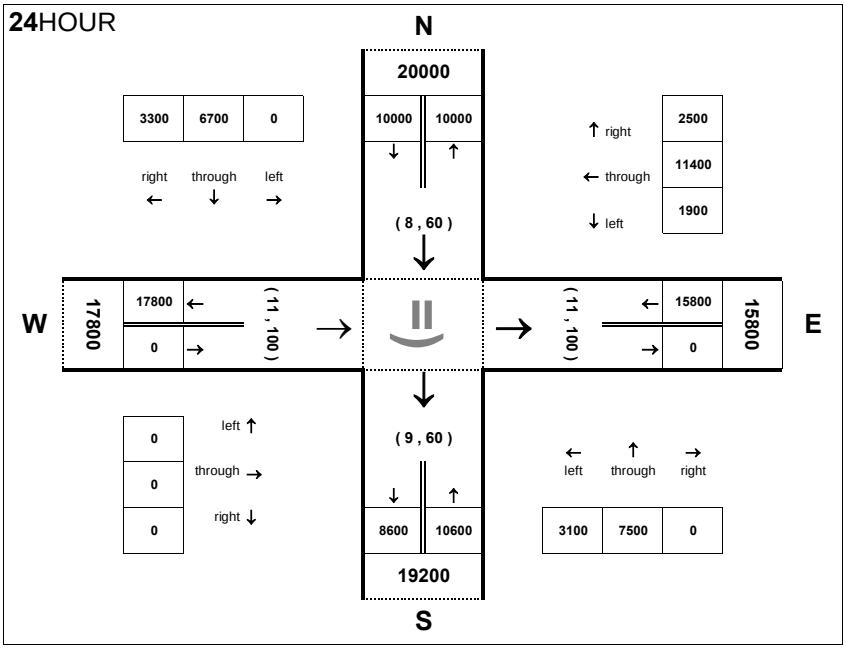




AM peak hour inflow is 6694 vehicles. AM peak hour outflow is 6694 vehicles.



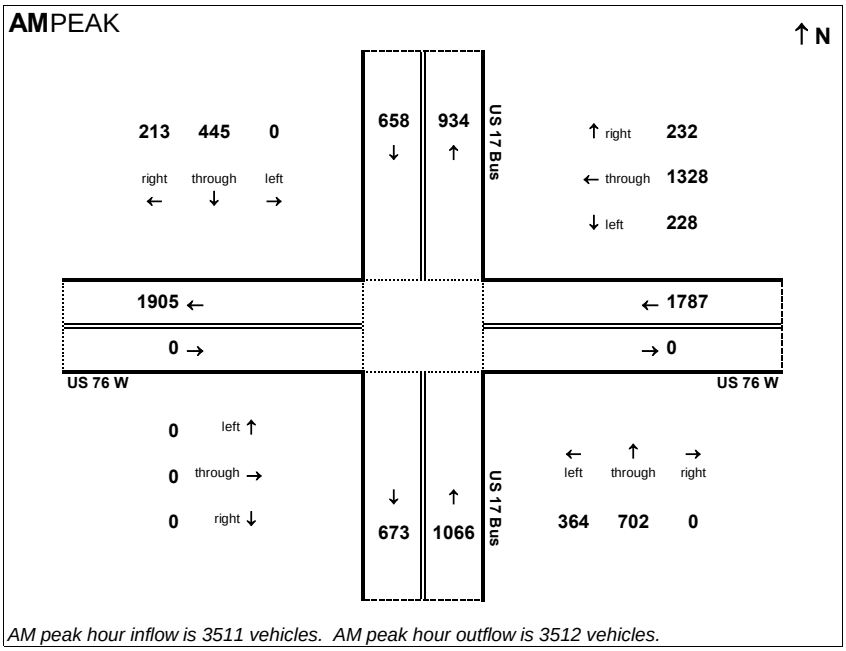
PM peak hour inflow is 6694 vehicles. PM peak hour outflow is 6694 vehicles.



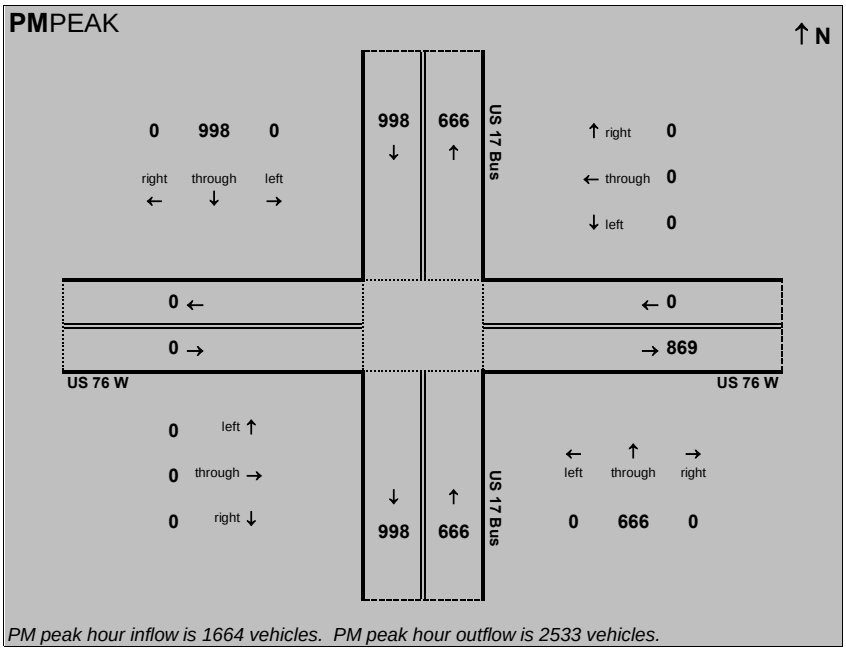
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

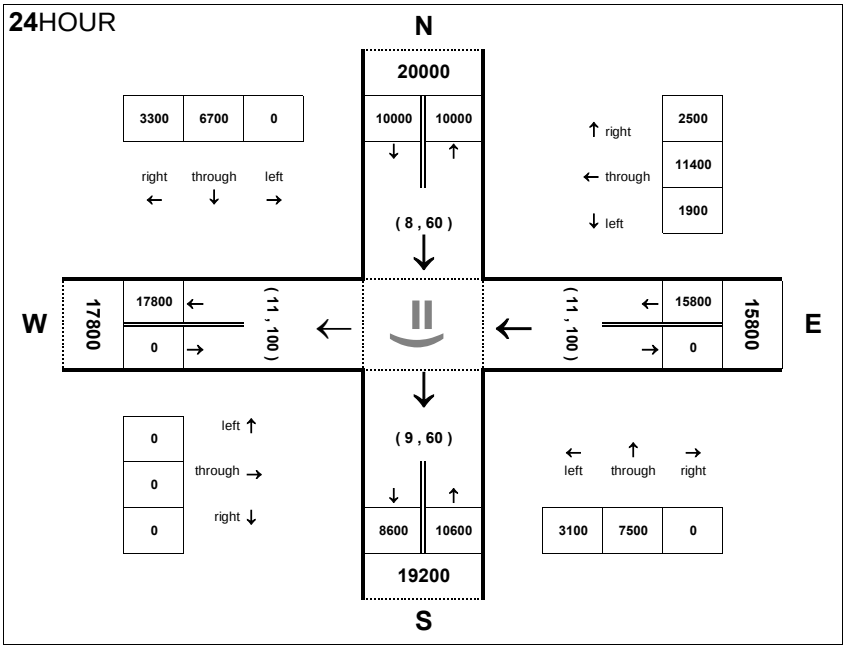
Traffic Data Year:
2040 Alt Q



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



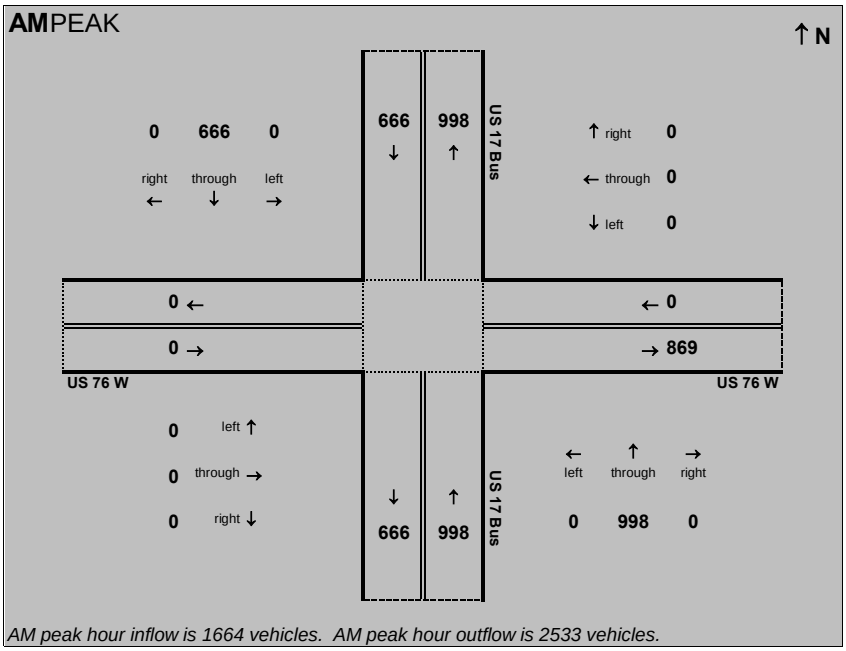
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



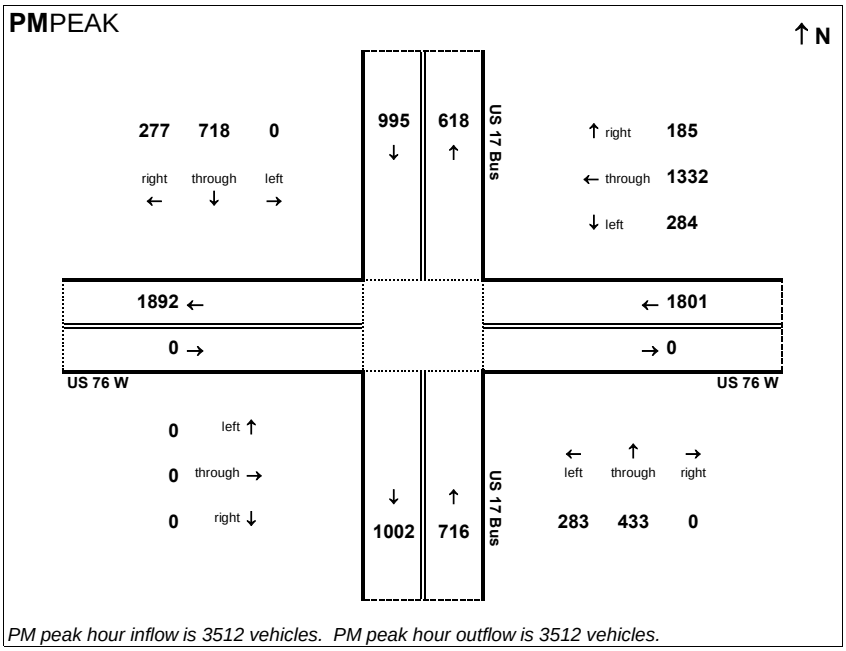
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

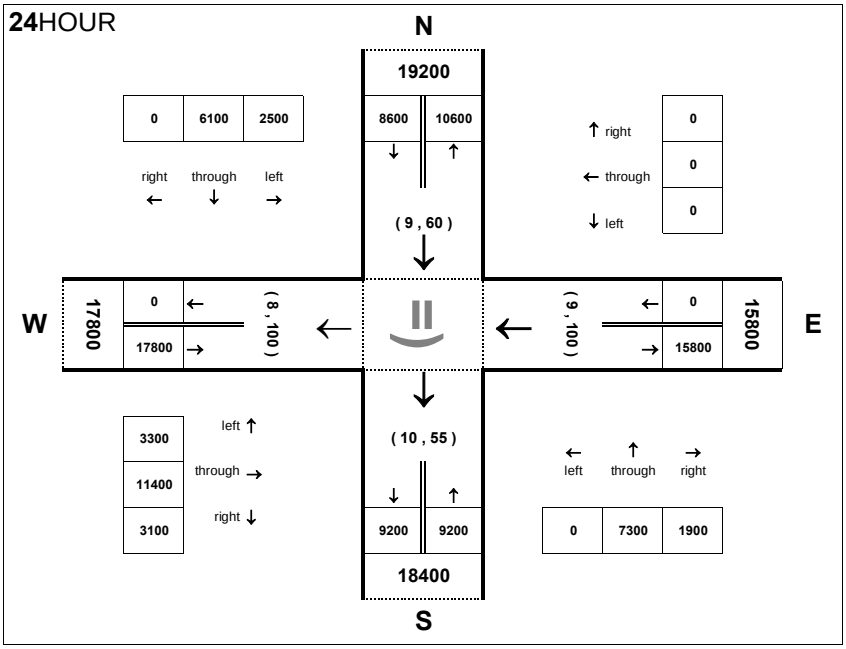
Traffic Data Year:
2040 Alt Q



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



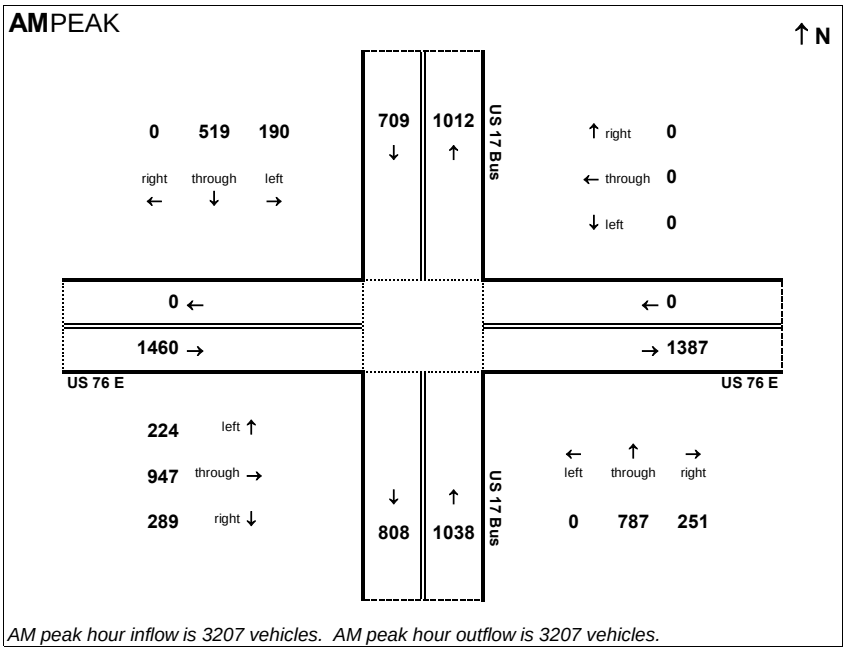
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



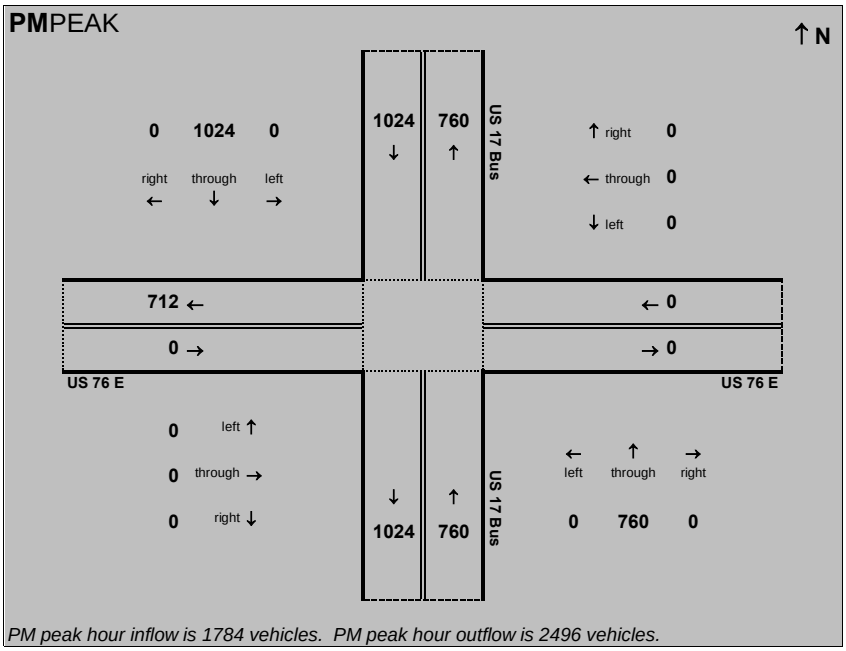
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

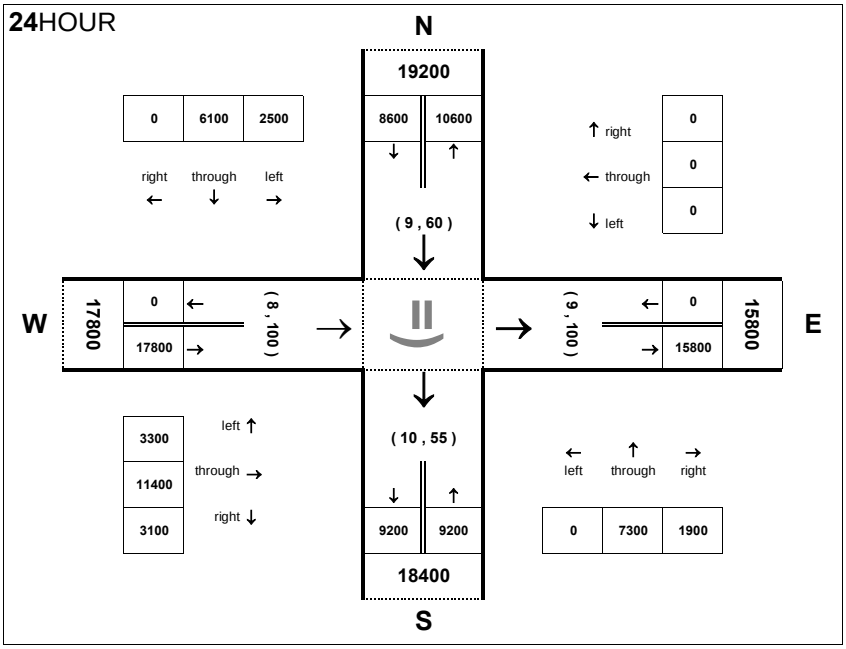
Traffic Data Year:
2040 Alt Q



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



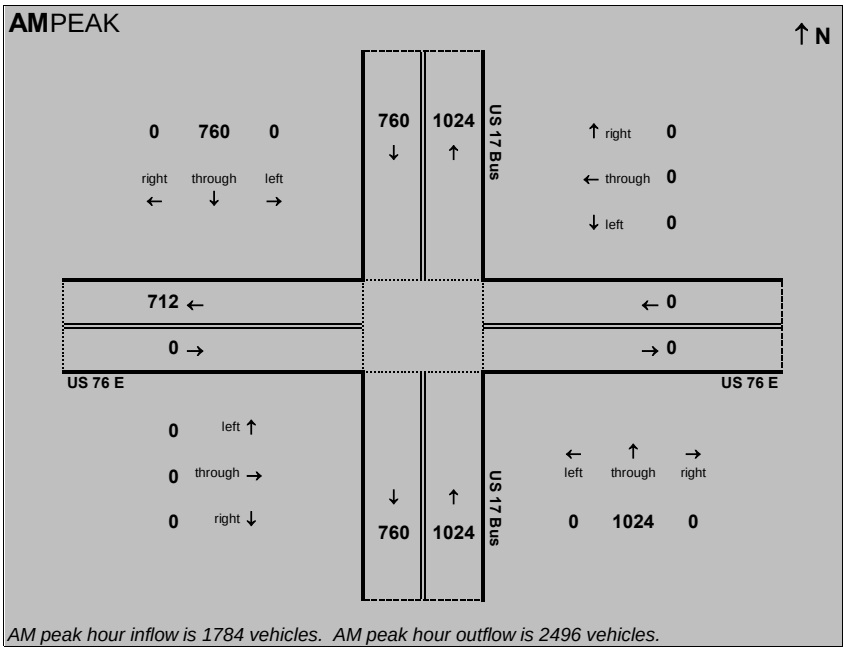
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



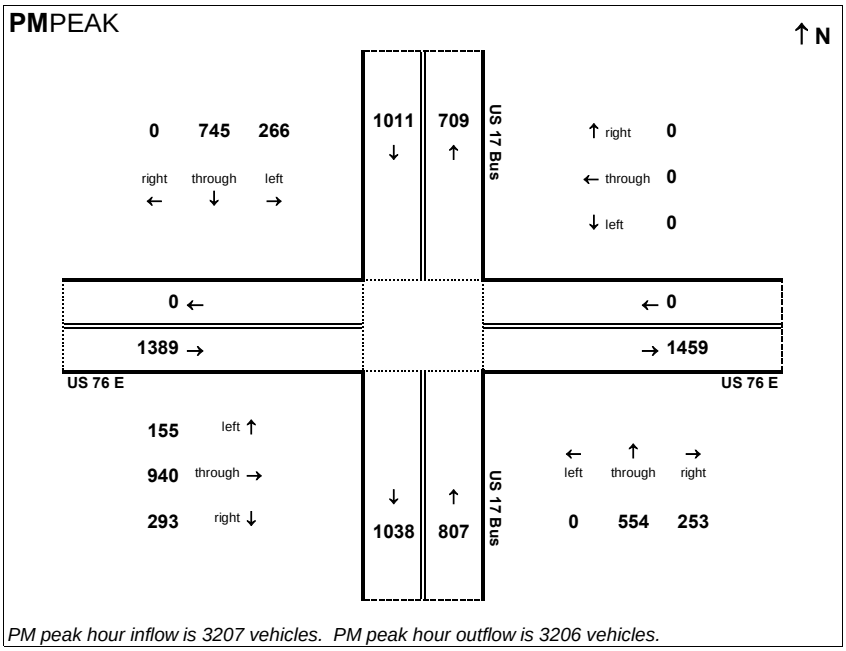
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt Q



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



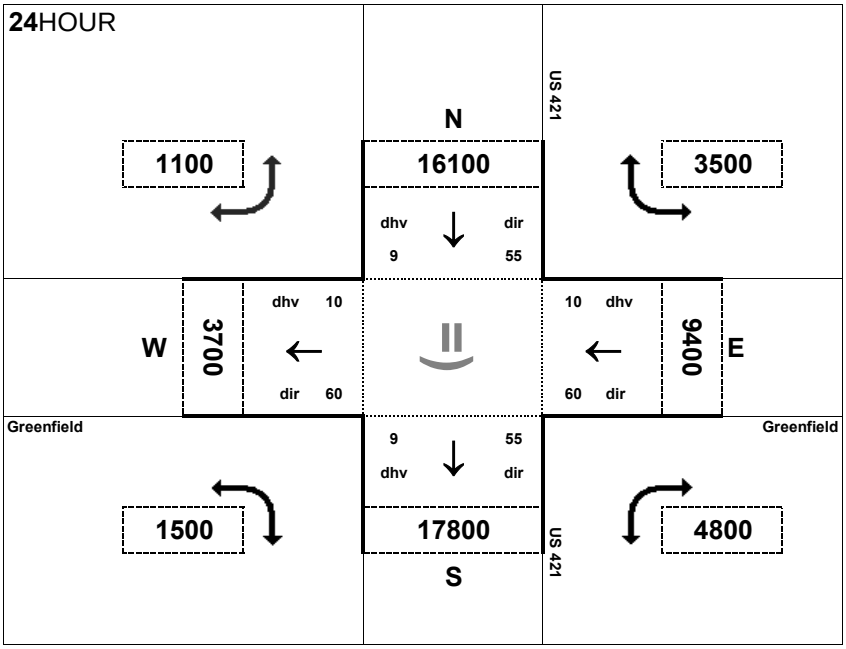
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

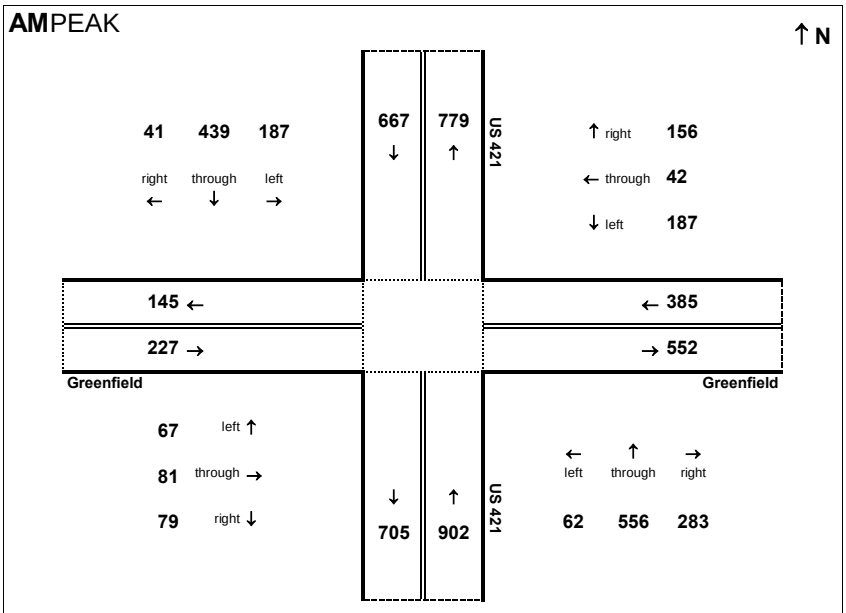
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

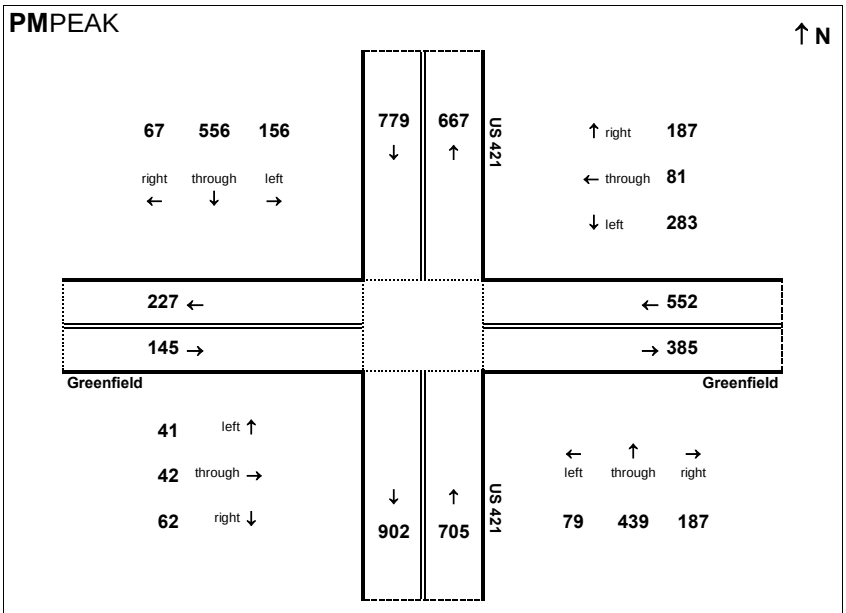
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



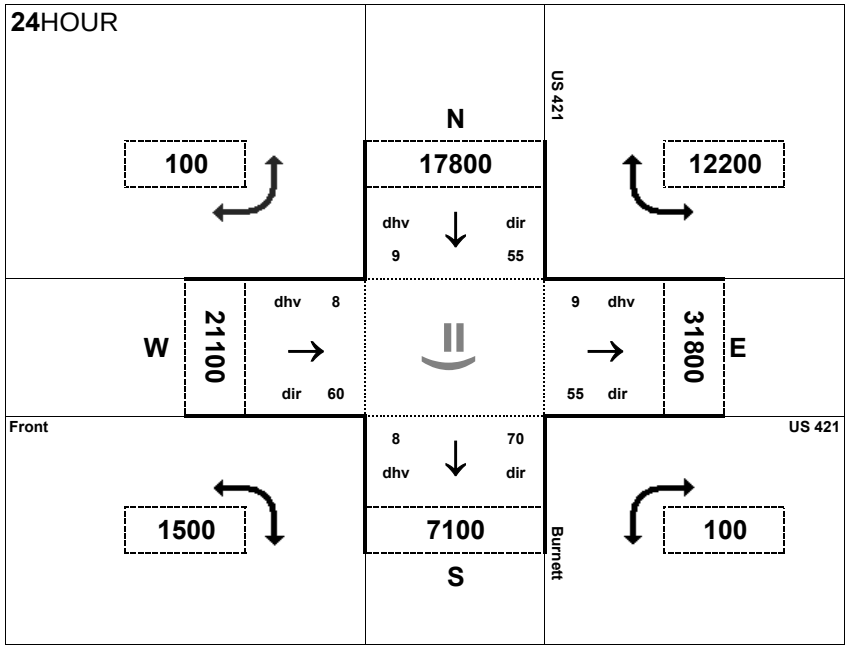
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

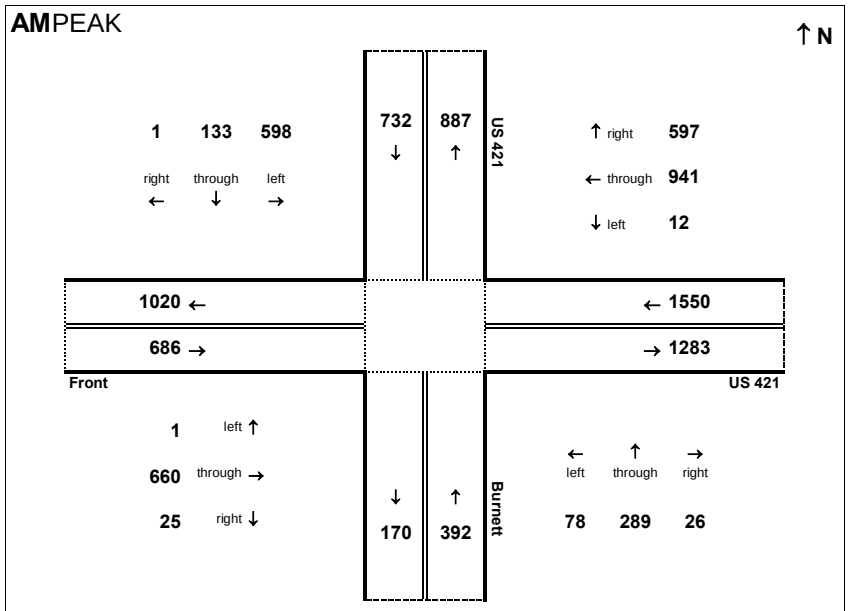
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct.2014

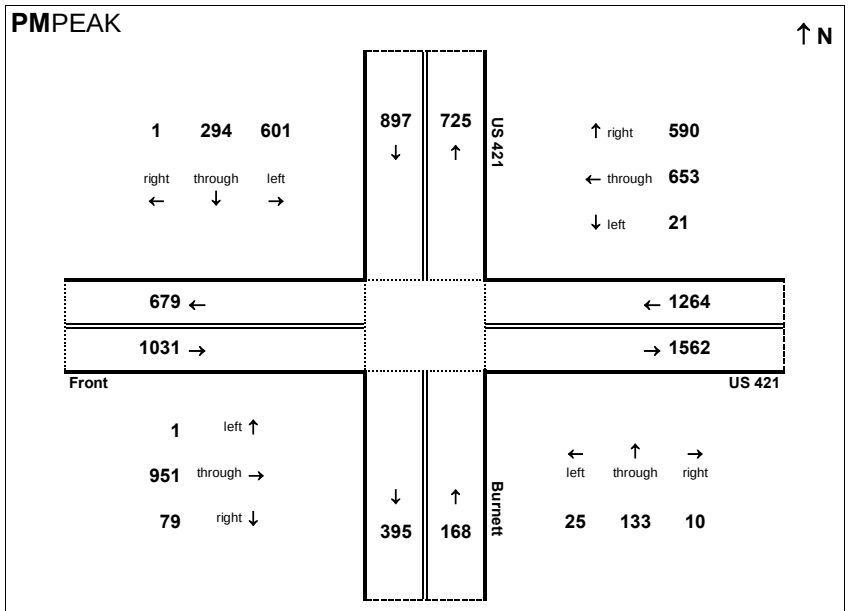
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Alt Q





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



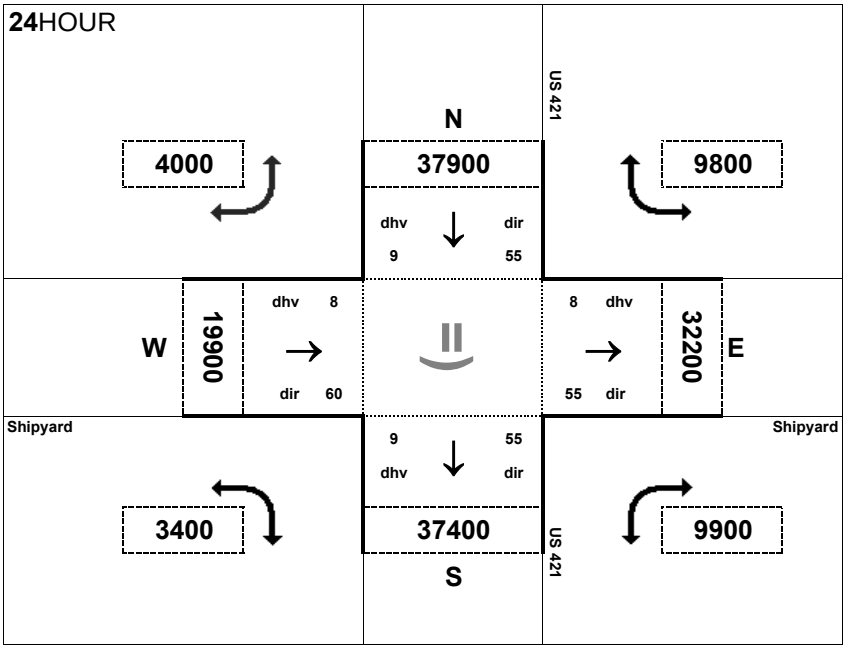
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3361 vehicles.

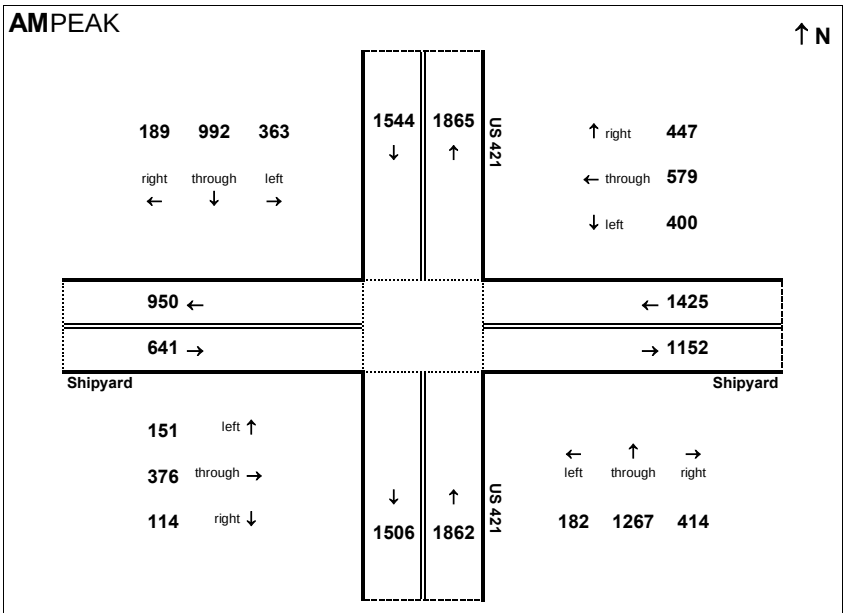
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

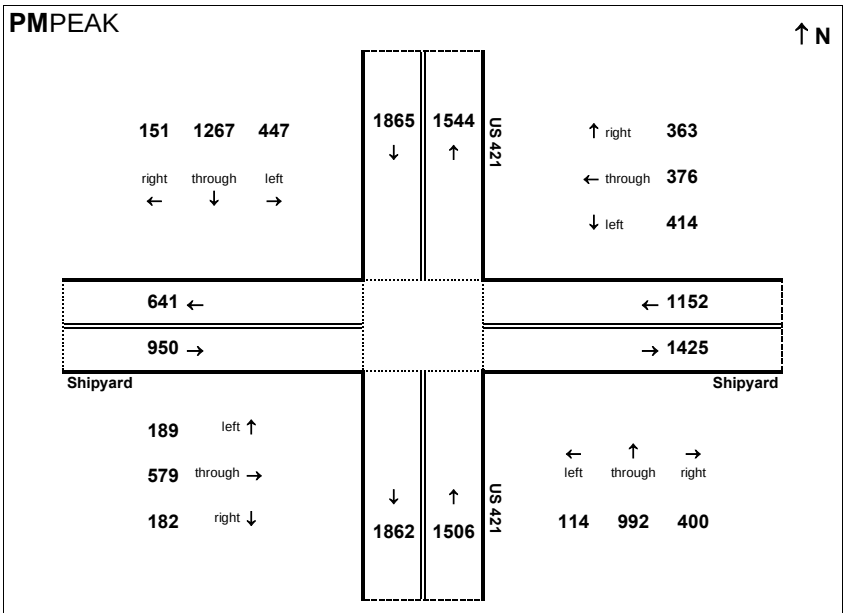
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q

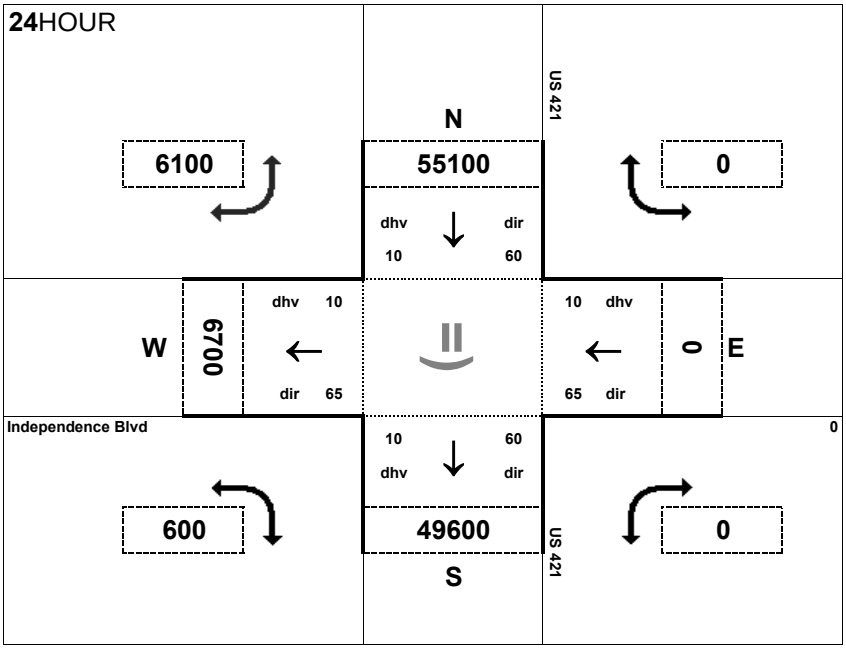




AM peak hour inflow is 5472 vehicles. AM peak hour outflow is 5473 vehicles.



PM peak hour inflow is 5473 vehicles. PM peak hour outflow is 5472 vehicles.

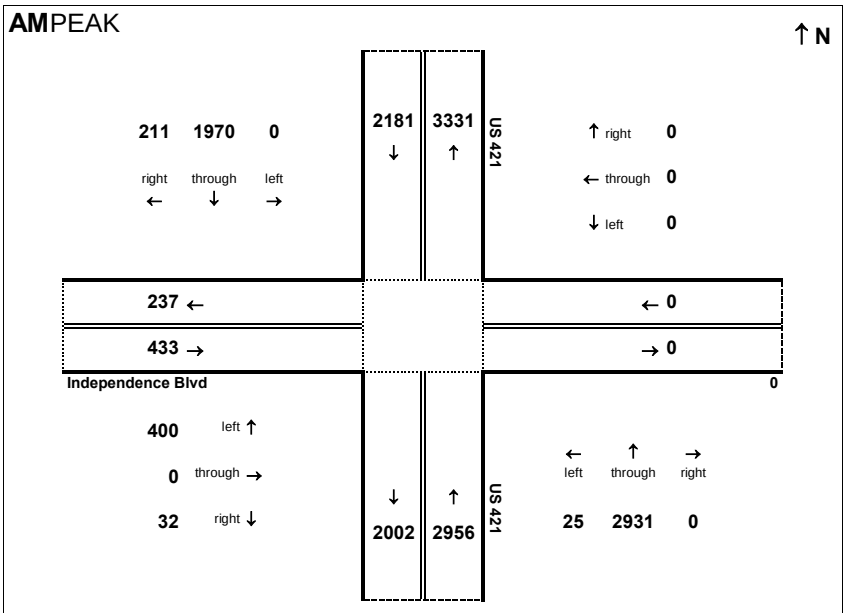


Peak Hour Volume Breakouts Report:
31 - US 421 and Realigned Independence Boulevard

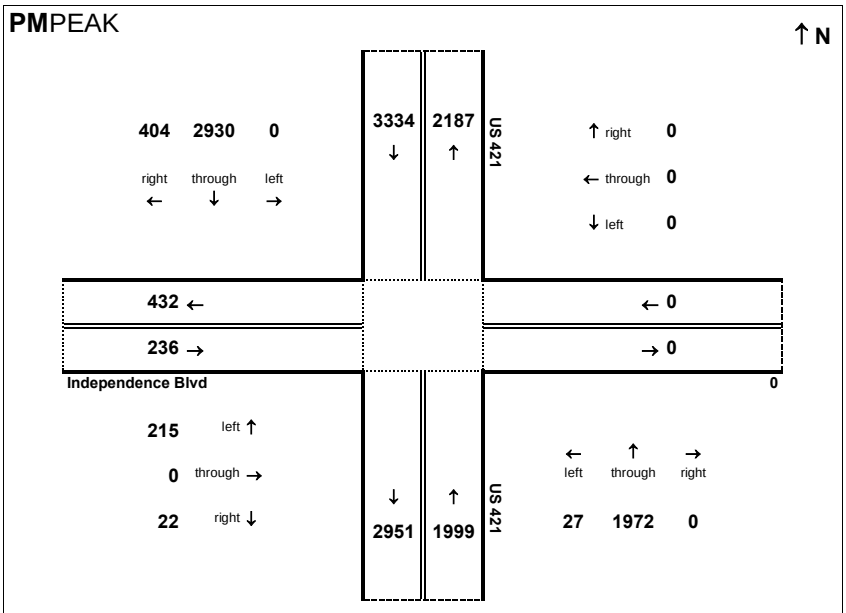
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q



AM peak hour inflow is 5570 vehicles. AM peak hour outflow is 5570 vehicles.



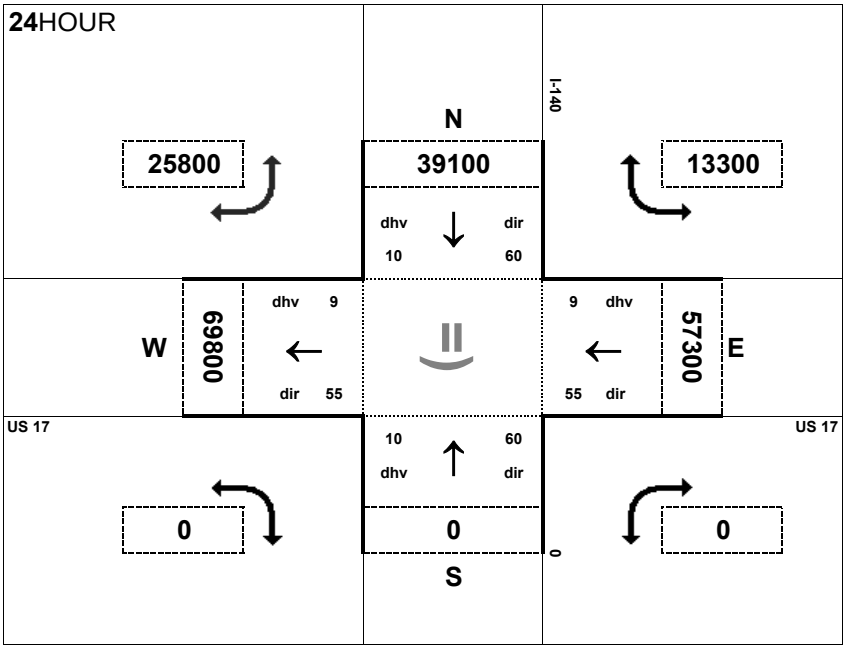
PM peak hour inflow is 5569 vehicles. PM peak hour outflow is 5570 vehicles.

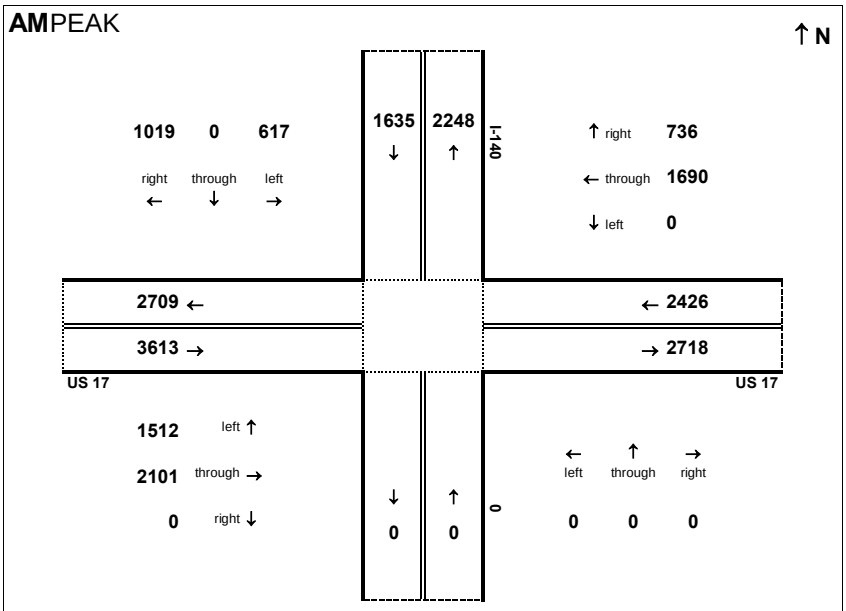
Peak Hour Volume Breakouts Report:
43 - US 17 and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

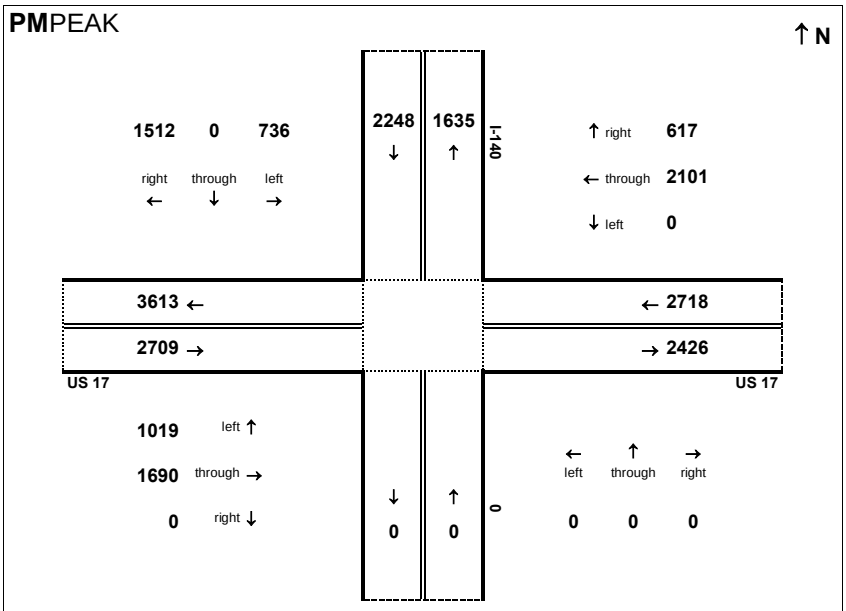
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7674 vehicles. AM peak hour outflow is 7675 vehicles.



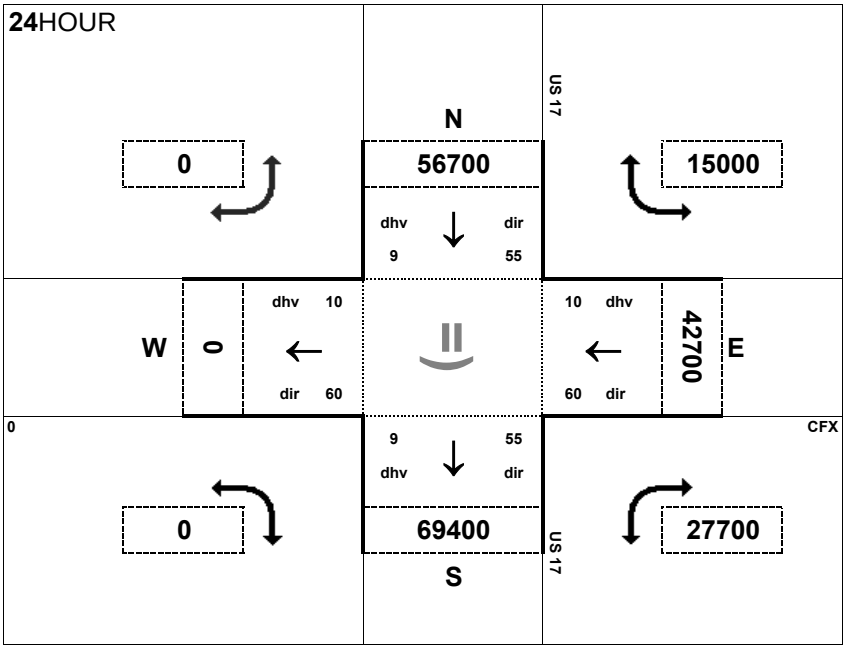
PM peak hour inflow is 7675 vehicles. PM peak hour outflow is 7674 vehicles.

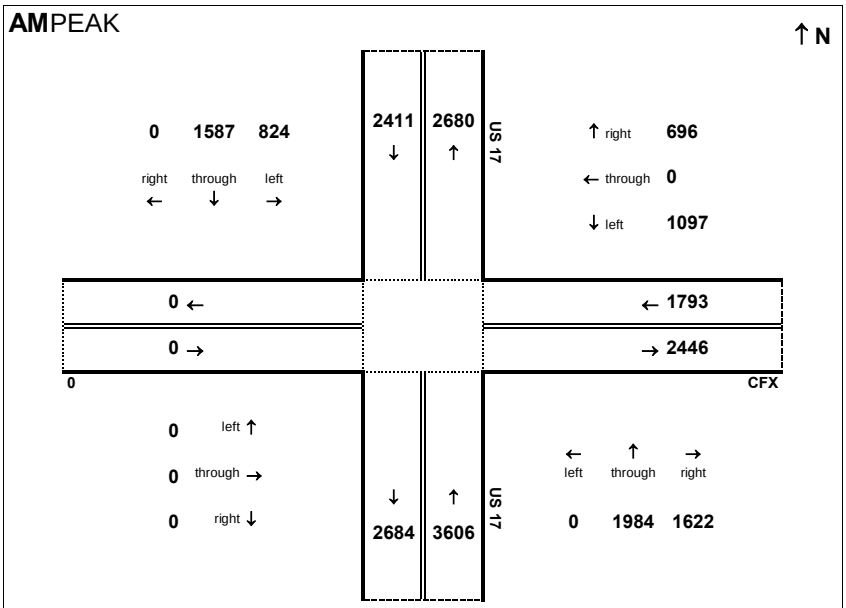
Peak Hour Volume Breakouts Report:
102 - CFX and US 17 Interchange

Traffic Forecast Release Date:
Oct. 2014

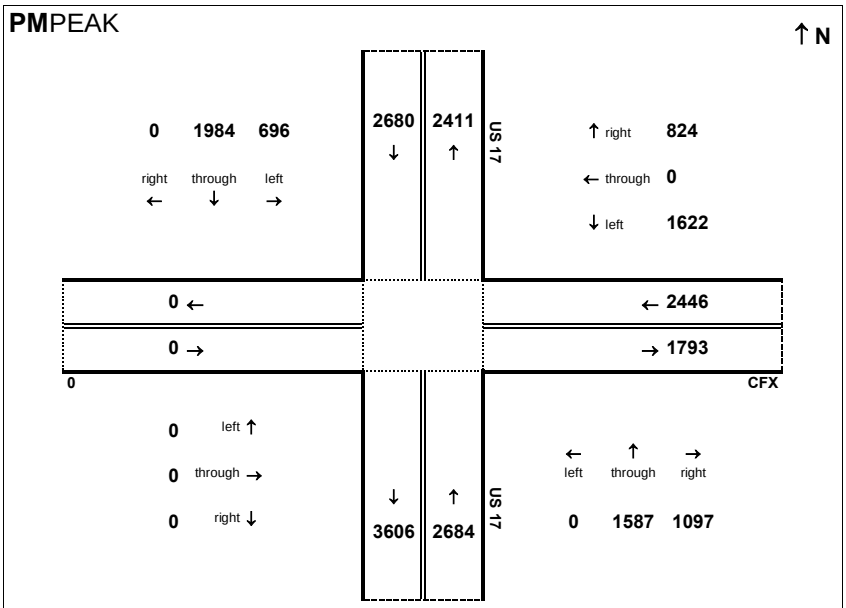
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7810 vehicles. AM peak hour outflow is 7810 vehicles.



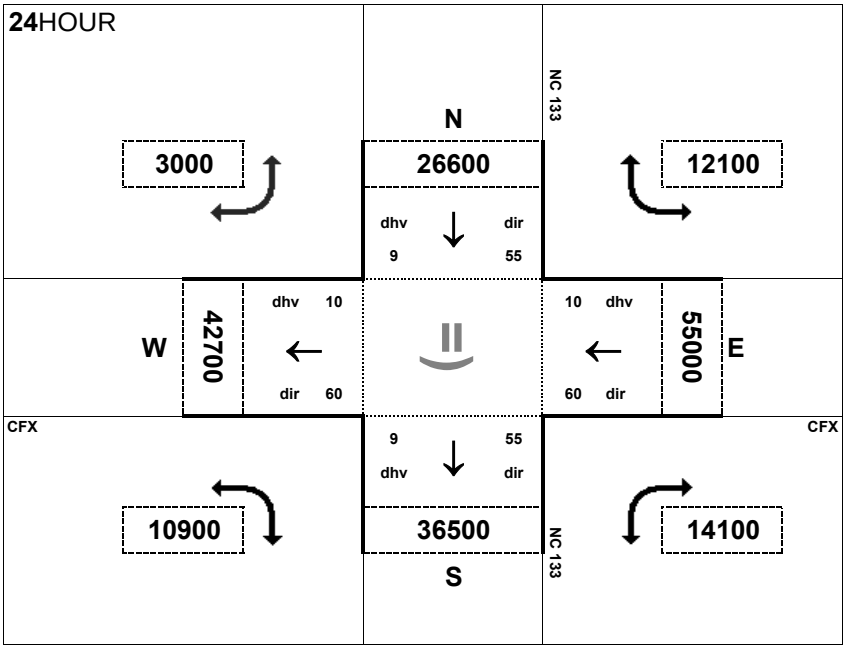
PM peak hour inflow is 7810 vehicles. PM peak hour outflow is 7810 vehicles.

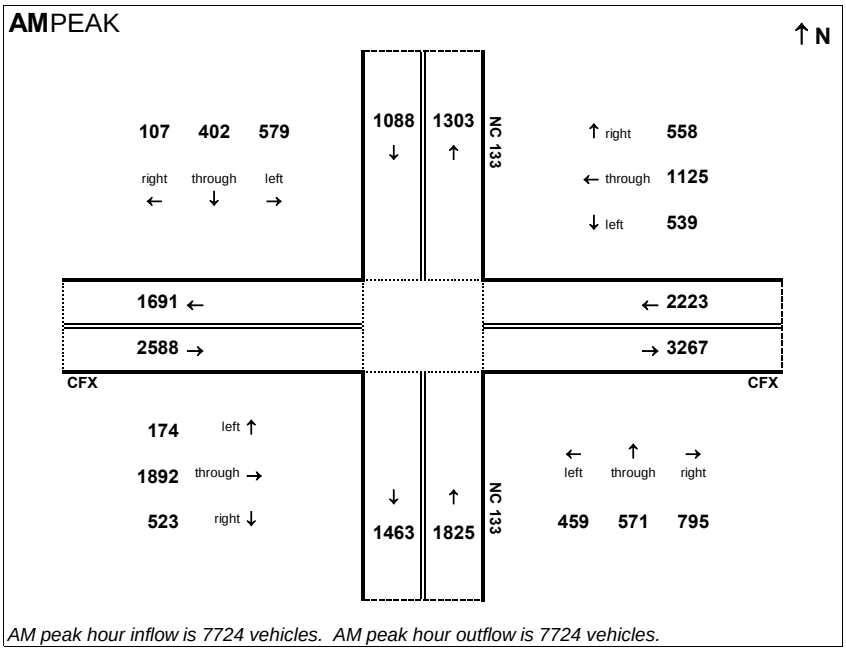
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

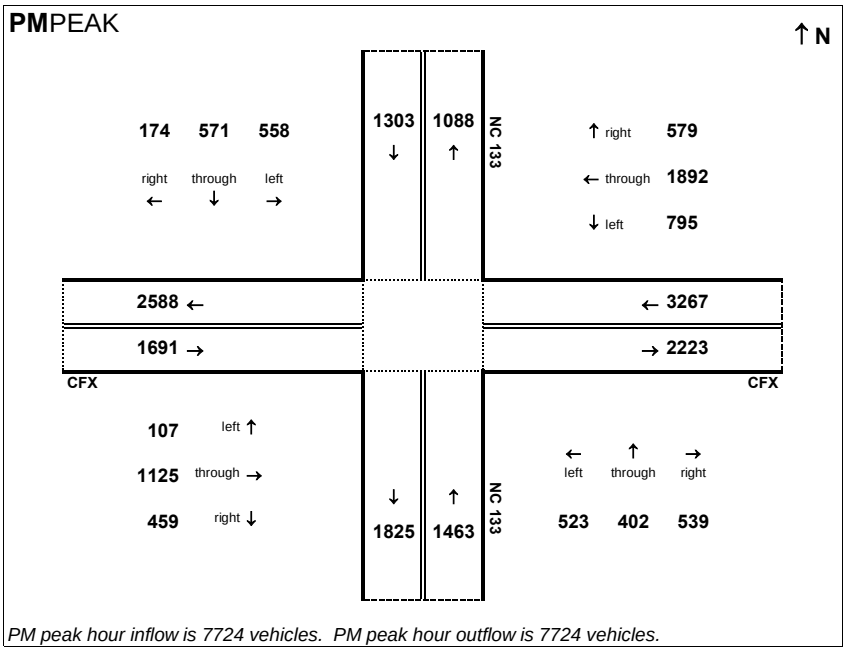
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 7724 vehicles. AM peak hour outflow is 7724 vehicles.



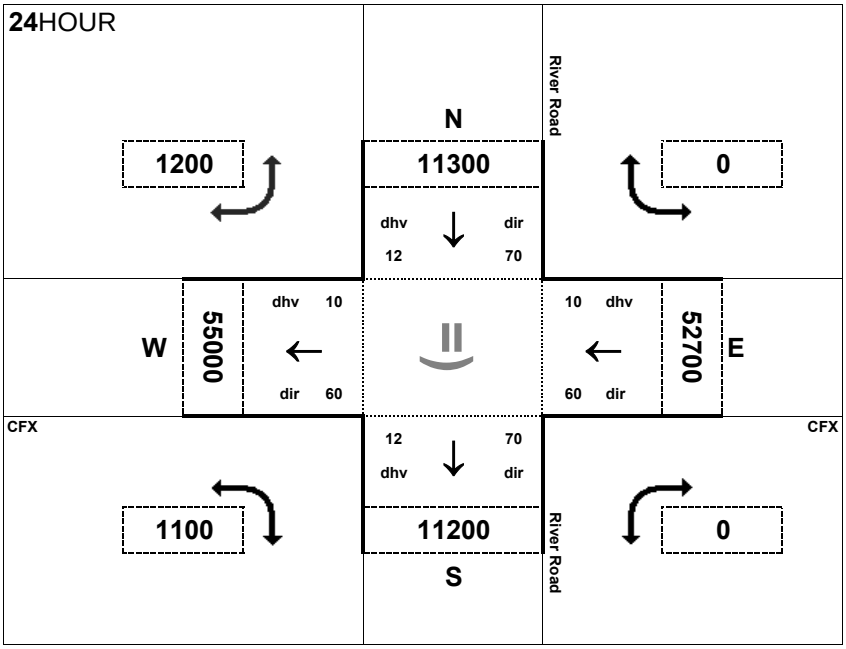
PM peak hour inflow is 7724 vehicles. PM peak hour outflow is 7724 vehicles.

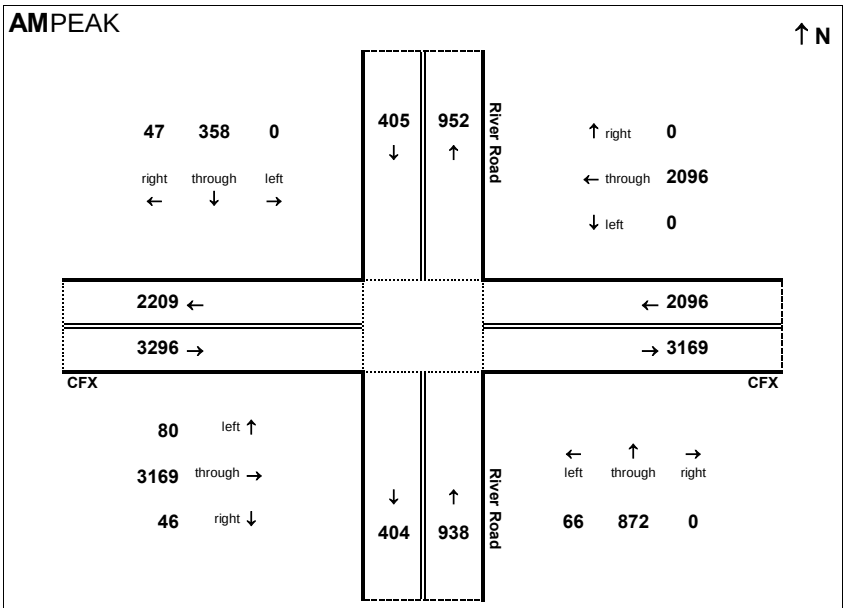
Peak Hour Volume Breakouts Report:
105 - CFX and River Road

Traffic Forecast Release Date:
Oct. 2014

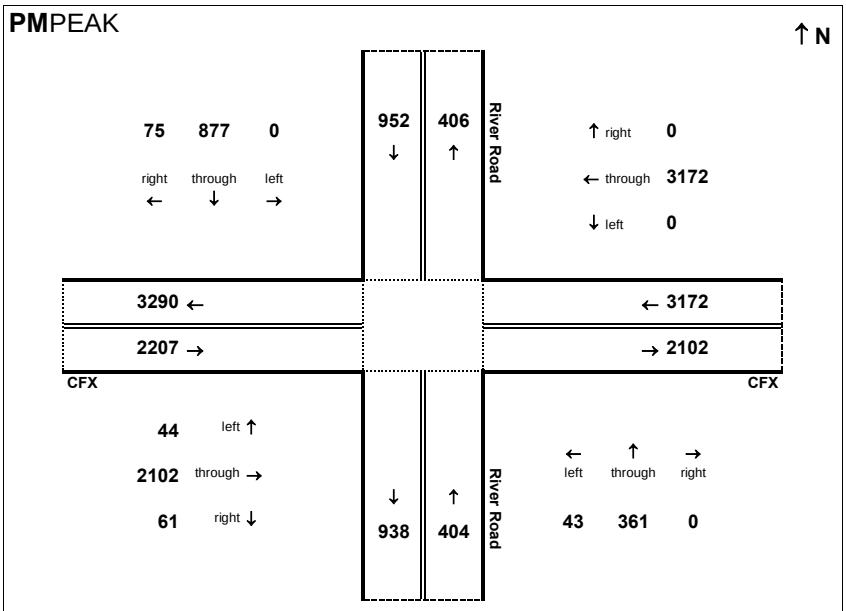
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 6735 vehicles. AM peak hour outflow is 6734 vehicles.



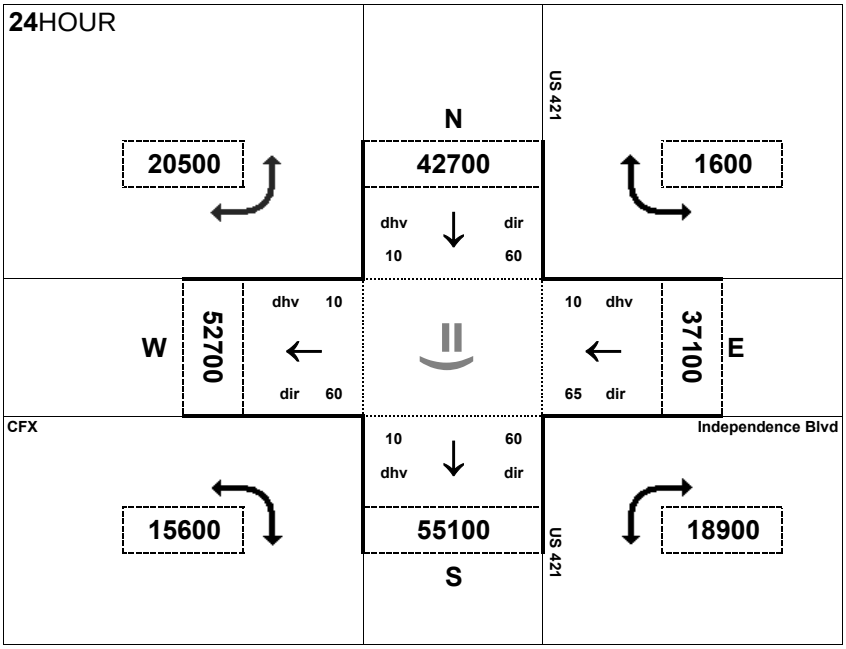
PM peak hour inflow is 6735 vehicles. PM peak hour outflow is 6736 vehicles.

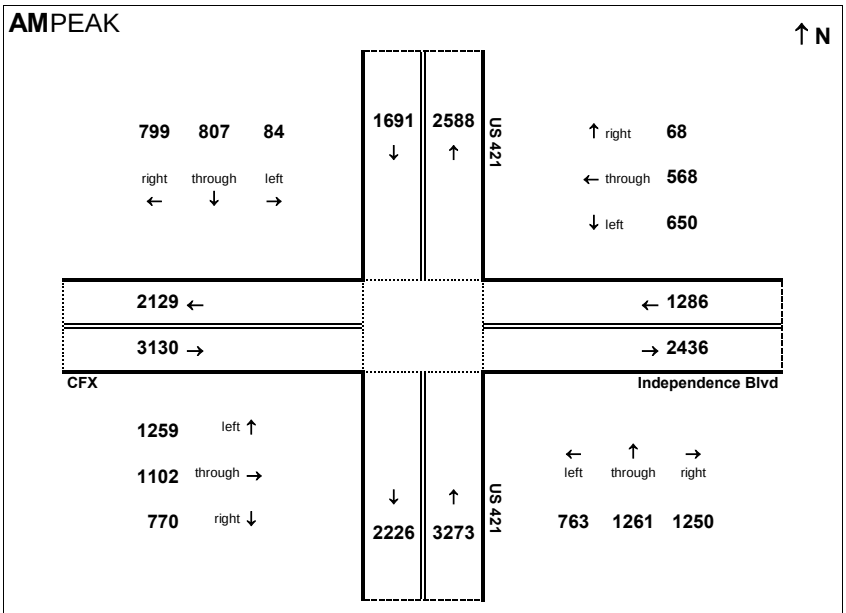
Peak Hour Volume Breakouts Report:
107 - CFX and US 421 - Independence

Traffic Forecast Release Date:
Oct. 2014

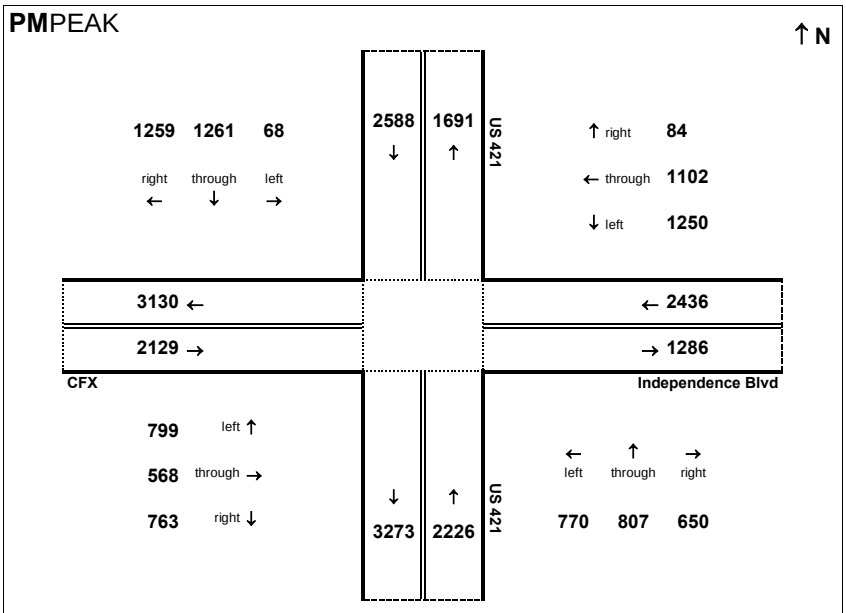
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. Q





AM peak hour inflow is 9380 vehicles. AM peak hour outflow is 9379 vehicles.



PM peak hour inflow is 9379 vehicles. PM peak hour outflow is 9380 vehicles.

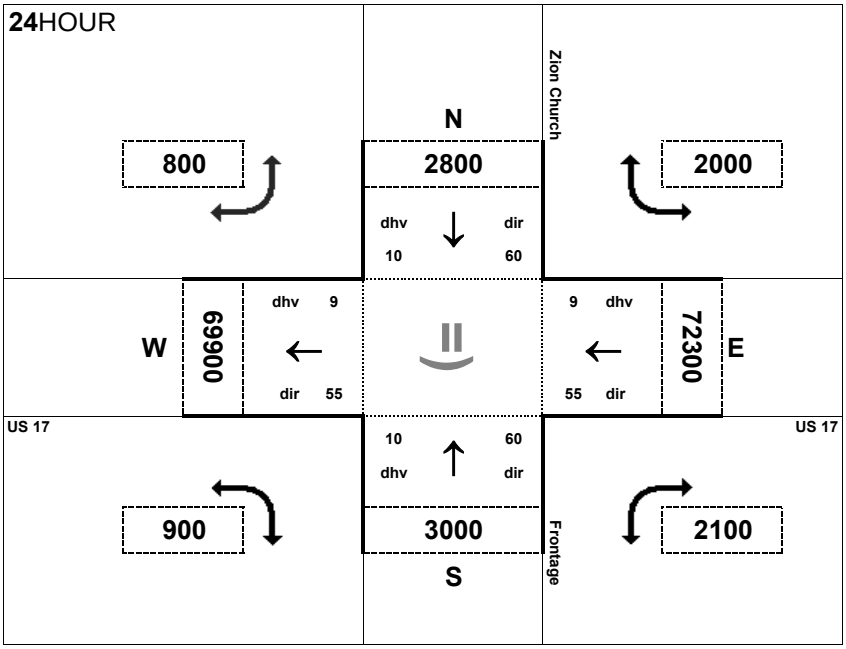
2040 Build DSA Alternative T

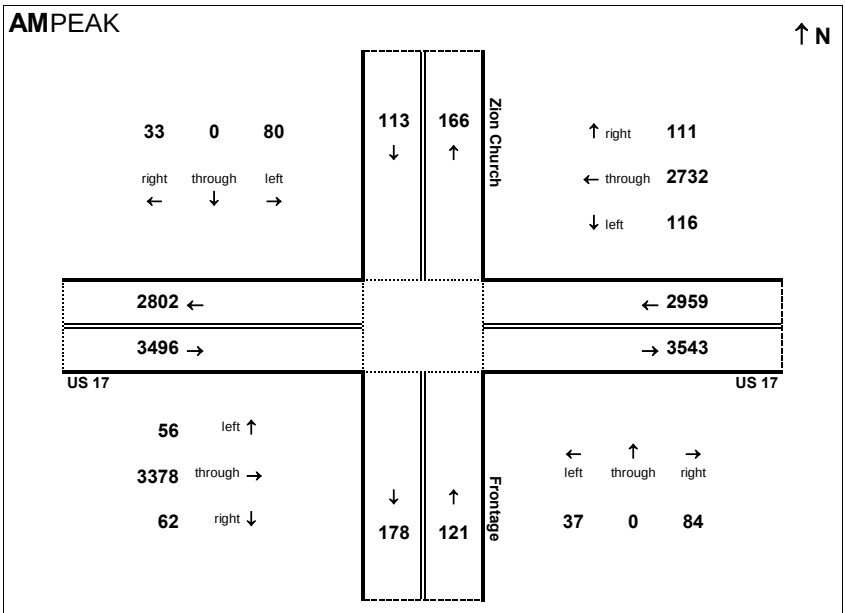
Peak Hour Volume Breakouts Report:
01 - US 17 and Zion Church Rd

Traffic Forecast Release Date:
Oct. 2014

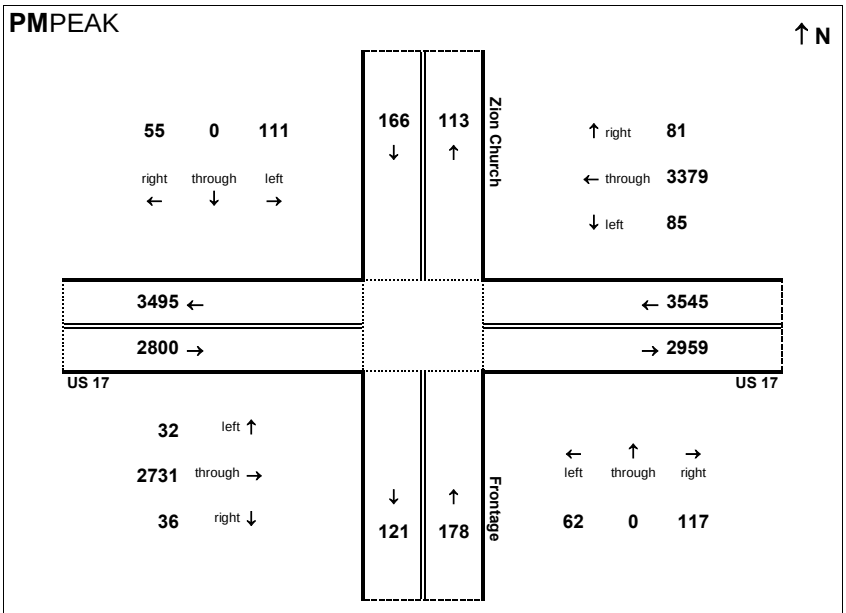
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T

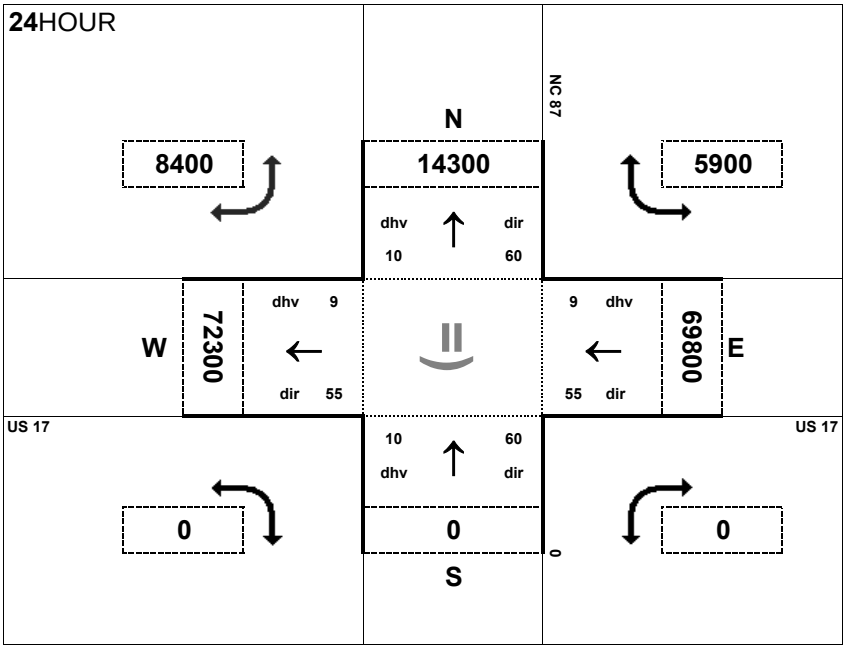




AM peak hour inflow is 6689 vehicles. AM peak hour outflow is 6689 vehicles.



PM peak hour inflow is 6689 vehicles. PM peak hour outflow is 6688 vehicles.

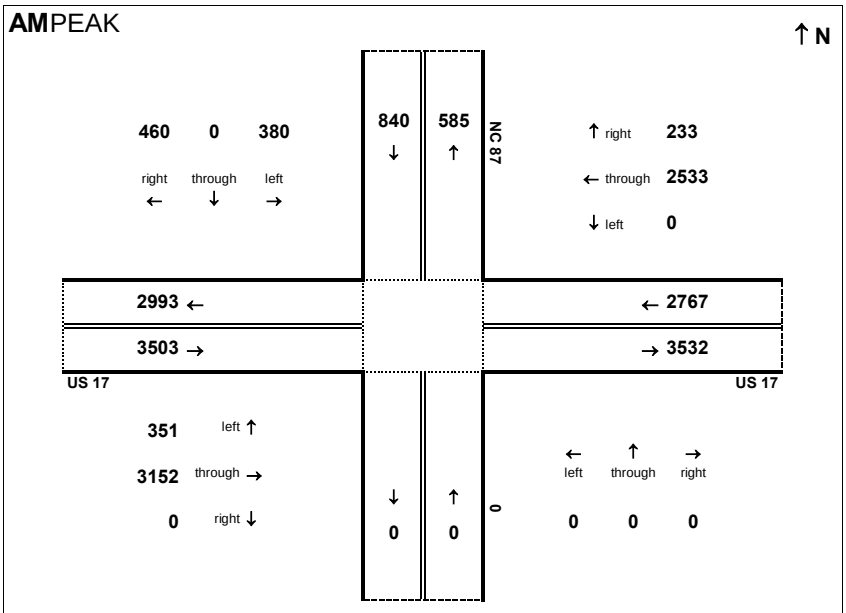


Peak Hour Volume Breakouts Report:
02 - US 17 and NC 87

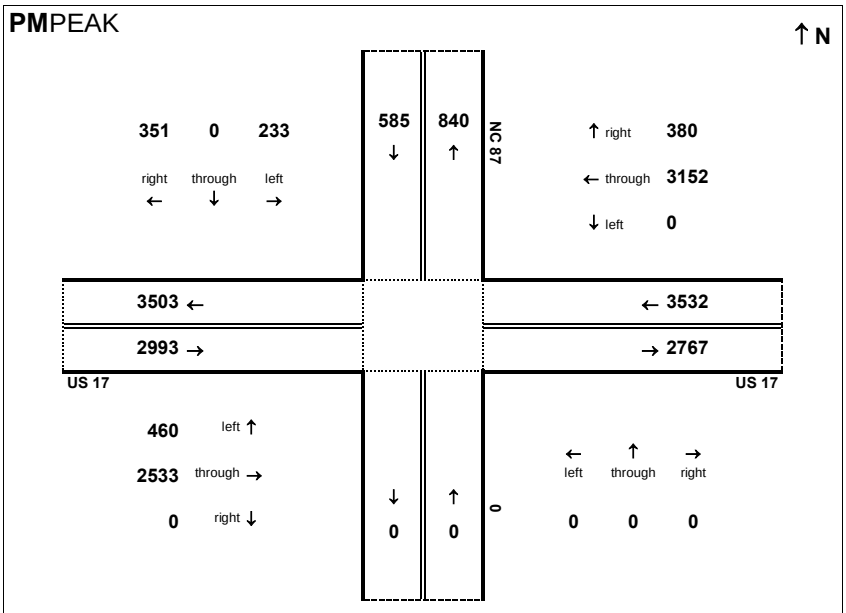
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T



AM peak hour inflow is 7110 vehicles. AM peak hour outflow is 7110 vehicles.



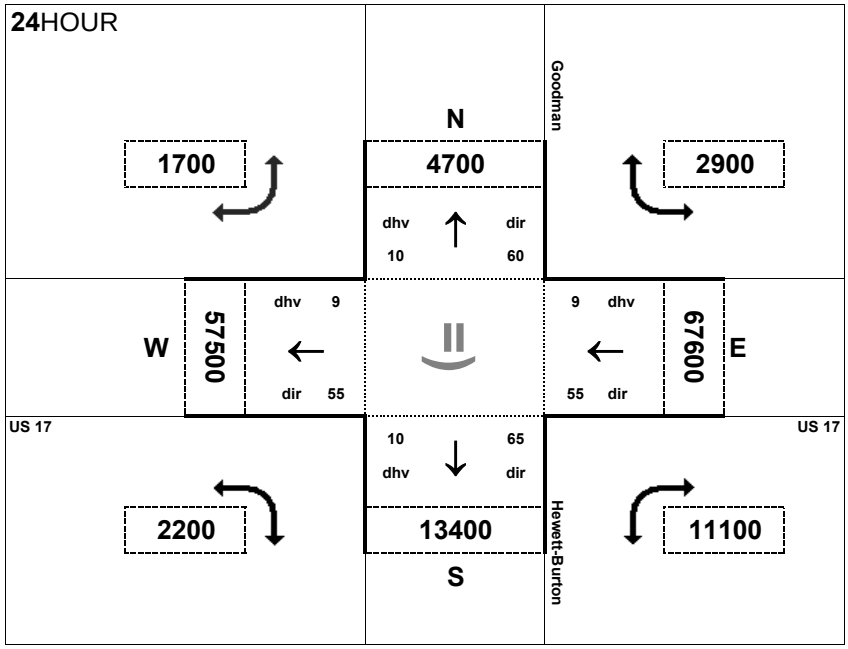
PM peak hour inflow is 7110 vehicles. PM peak hour outflow is 7110 vehicles.

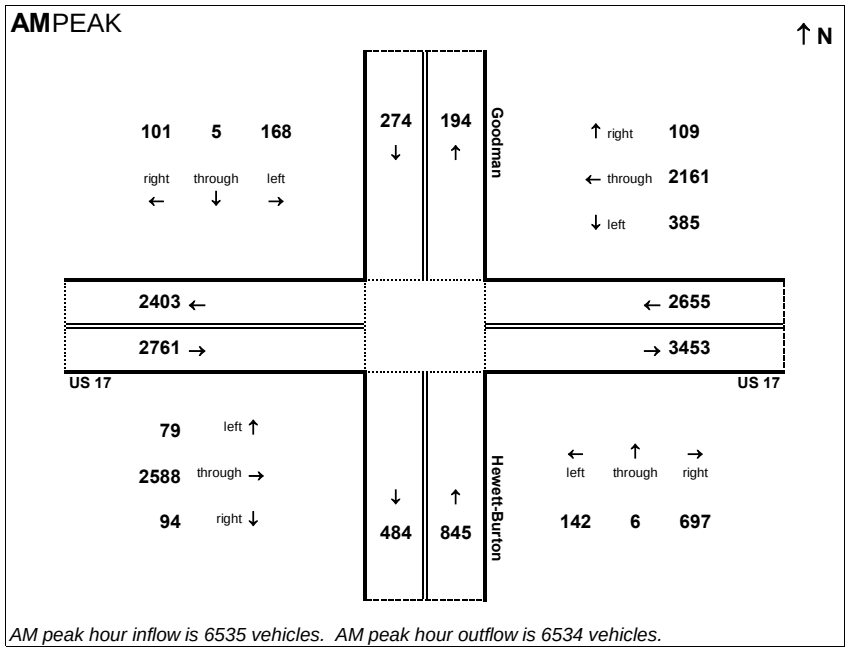
Peak Hour Volume Breakouts Report:
03 - US 17 and Goodman Rd/Hewett-Burton Rd

Traffic Forecast Release Date:
Oct. 2014

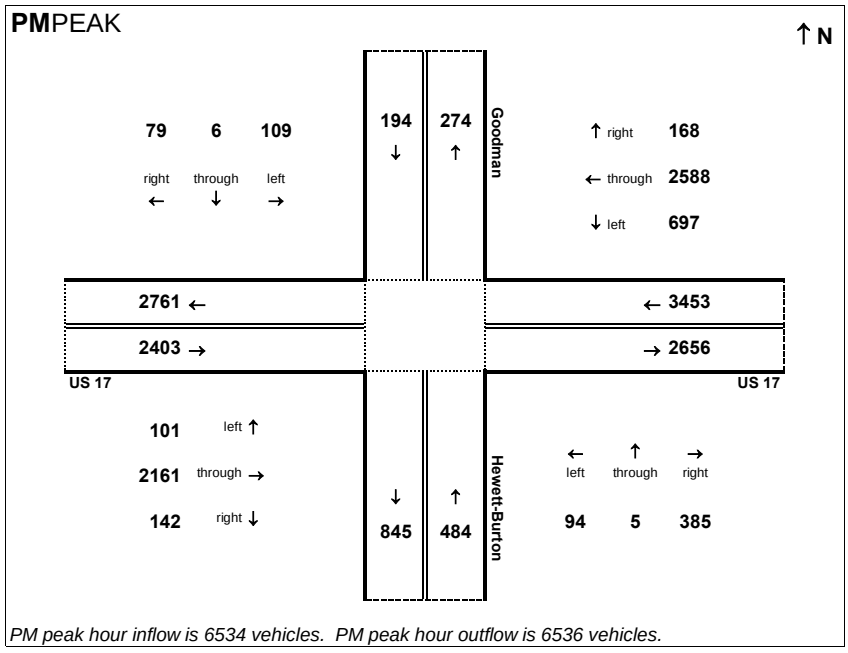
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 6535 vehicles. AM peak hour outflow is 6534 vehicles.



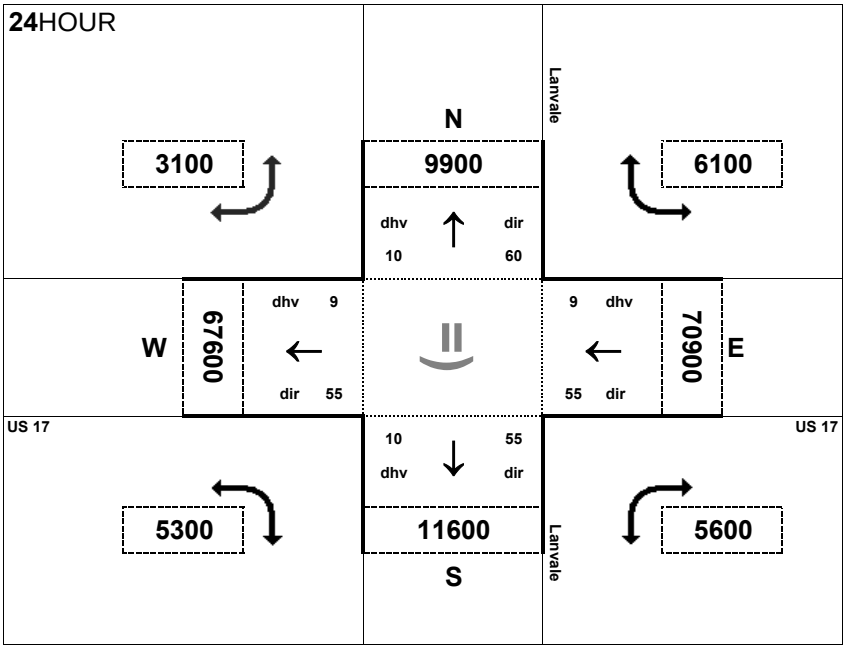
PM peak hour inflow is 6534 vehicles. PM peak hour outflow is 6536 vehicles.

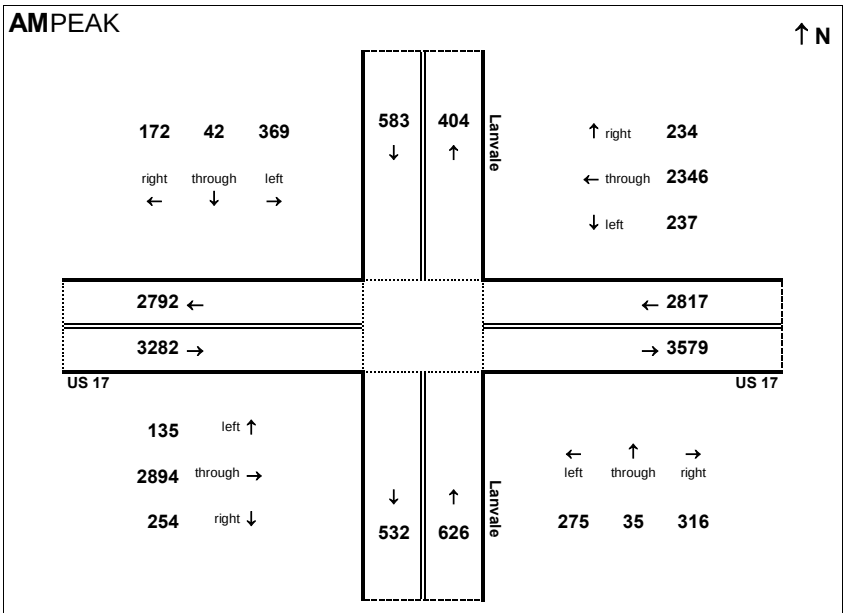
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

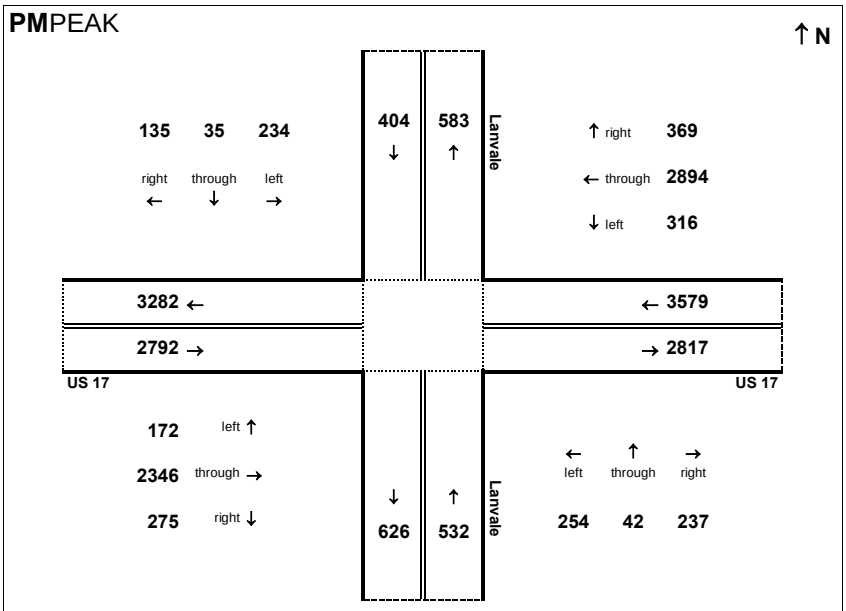
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 7308 vehicles. AM peak hour outflow is 7307 vehicles.



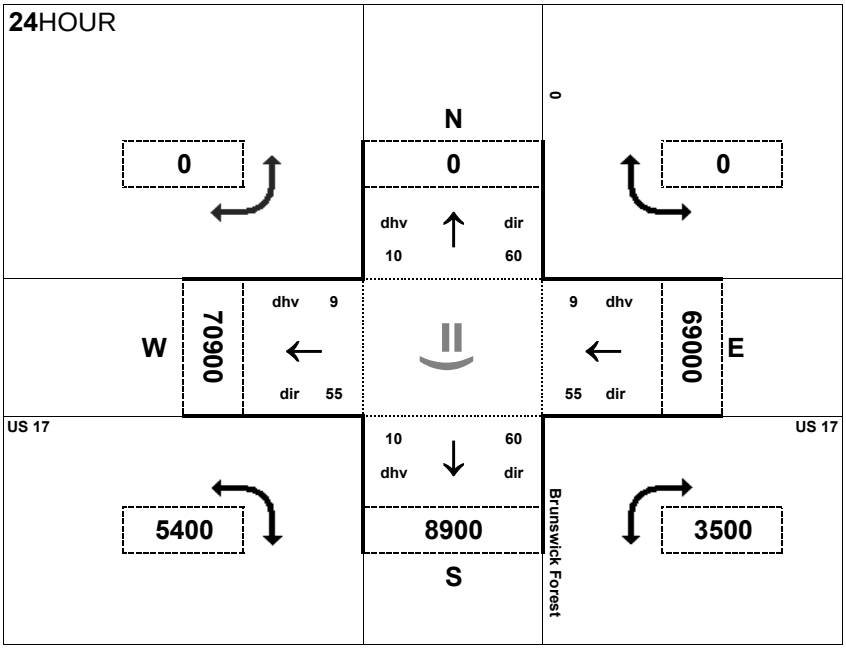
PM peak hour inflow is 7307 vehicles. PM peak hour outflow is 7308 vehicles.

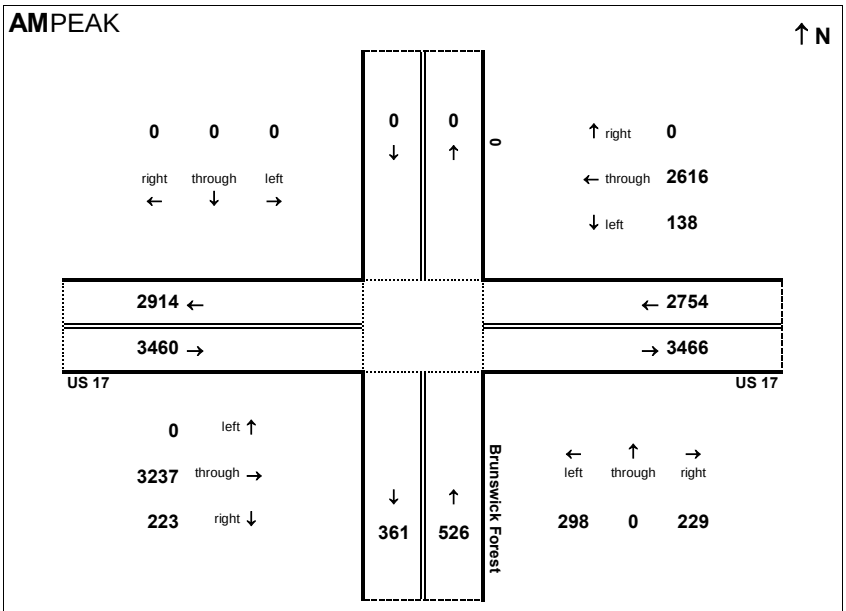
Peak Hour Volume Breakouts Report:
05 - US 17 and Brunswick Forest Pkwy

Traffic Forecast Release Date:
Oct. 2014

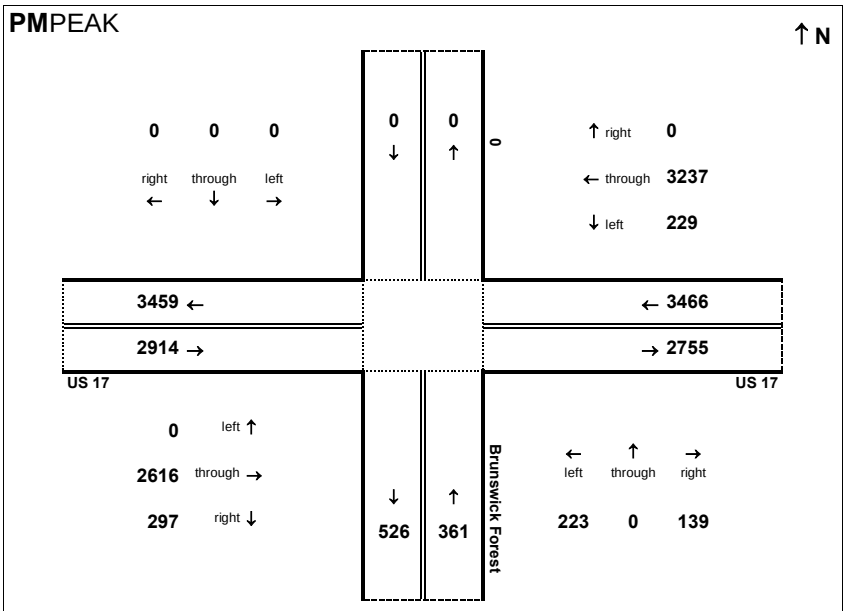
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 6740 vehicles. AM peak hour outflow is 6741 vehicles.



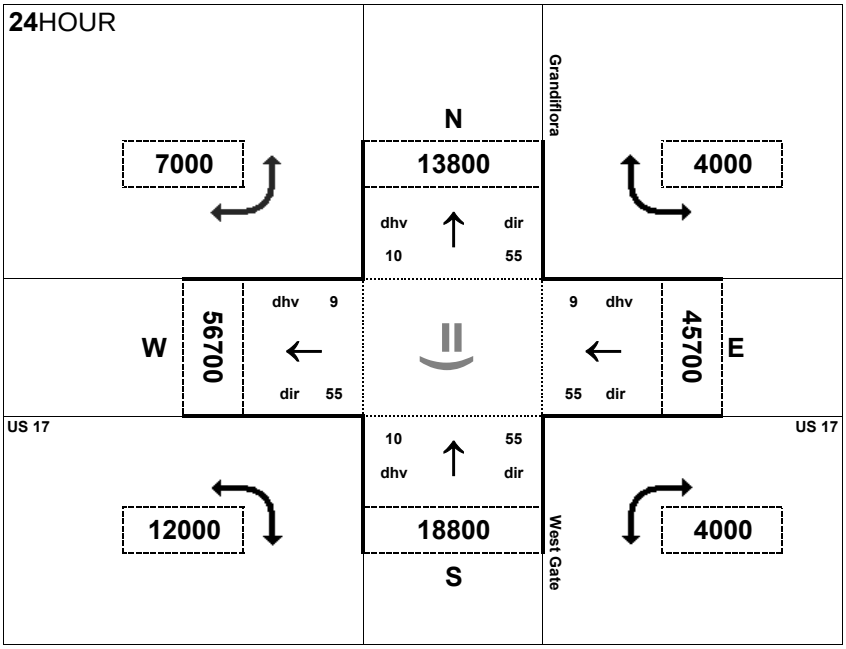
PM peak hour inflow is 6741 vehicles. PM peak hour outflow is 6740 vehicles.

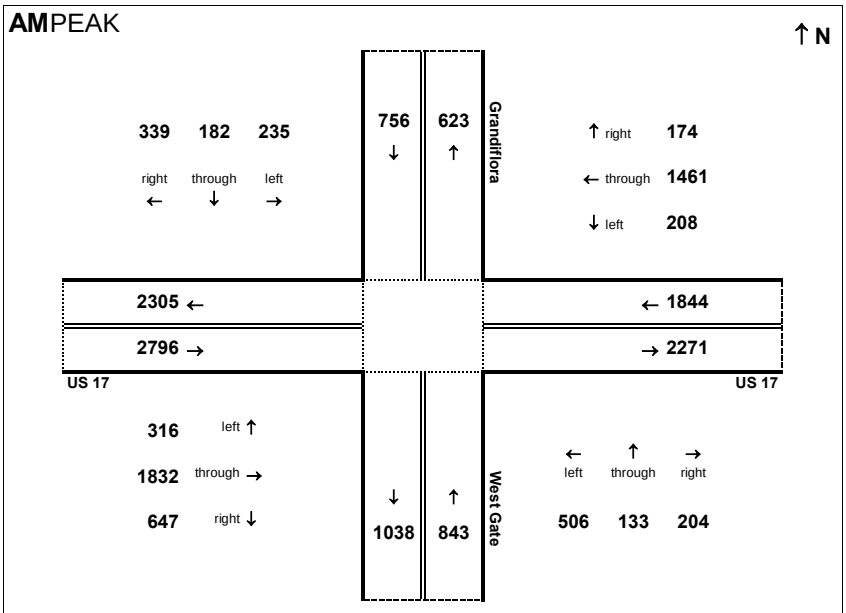
Peak Hour Volume Breakouts Report:
06 - US 17 and Grandiflora Dr/West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

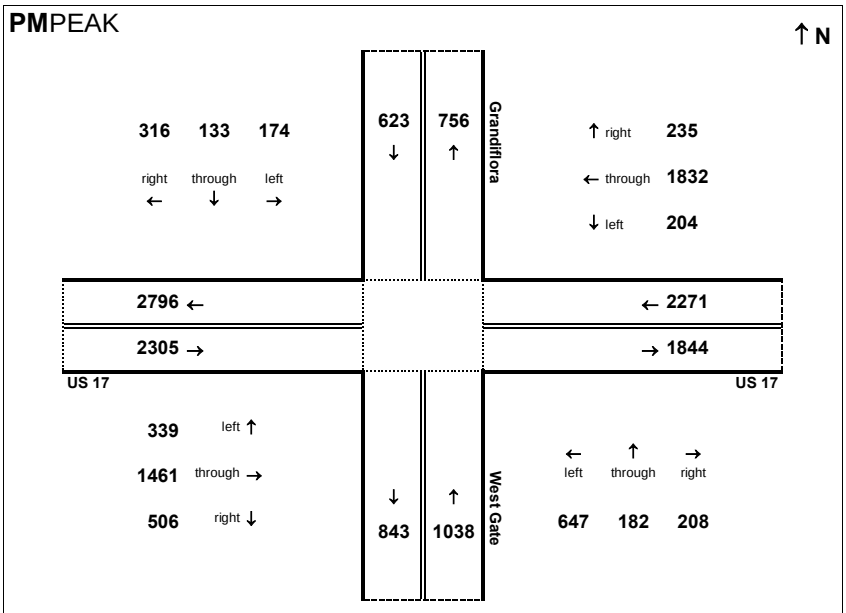
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 6239 vehicles. AM peak hour outflow is 6237 vehicles.



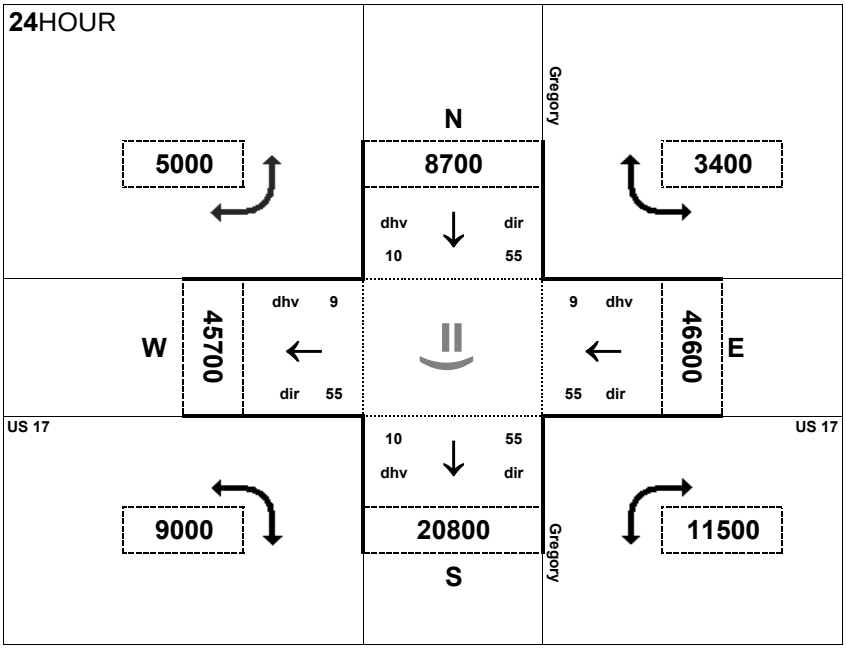
PM peak hour inflow is 6237 vehicles. PM peak hour outflow is 6239 vehicles.

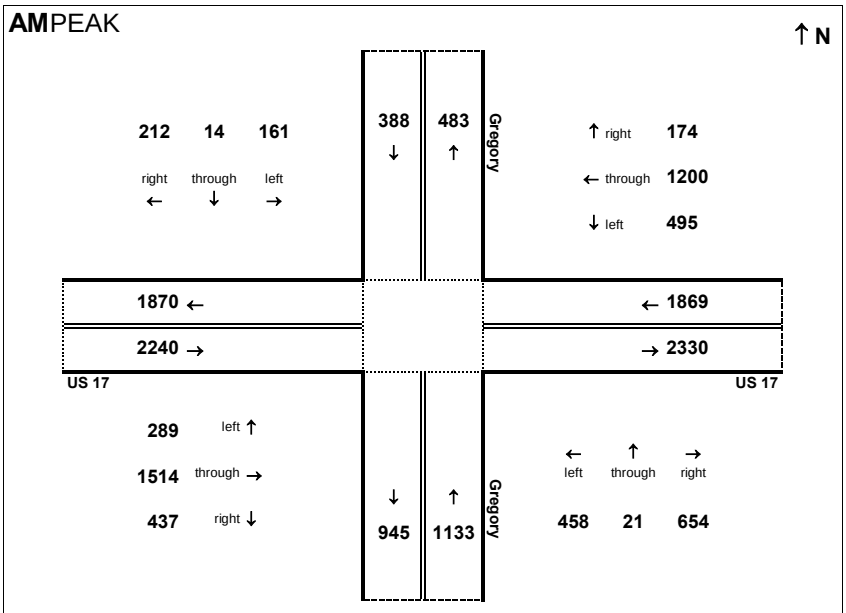
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

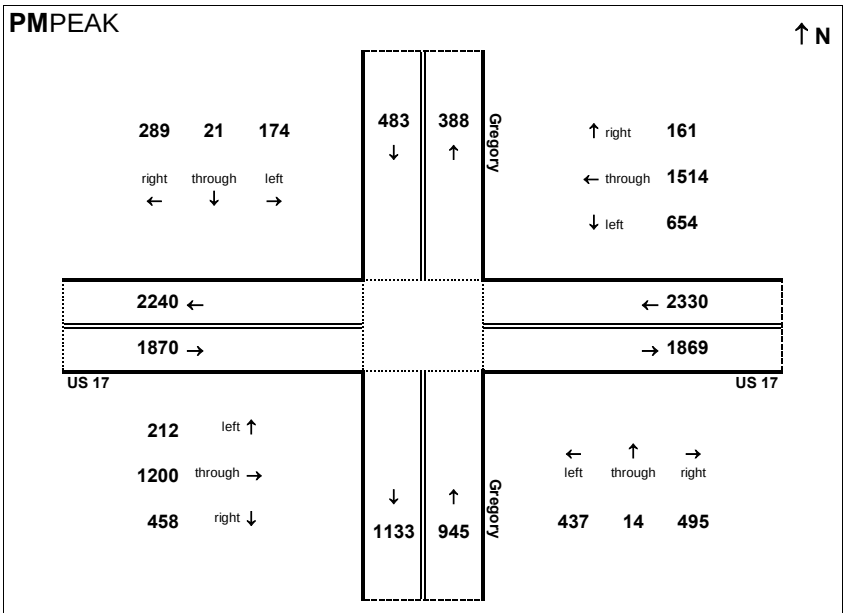
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 5630 vehicles. AM peak hour outflow is 5628 vehicles.

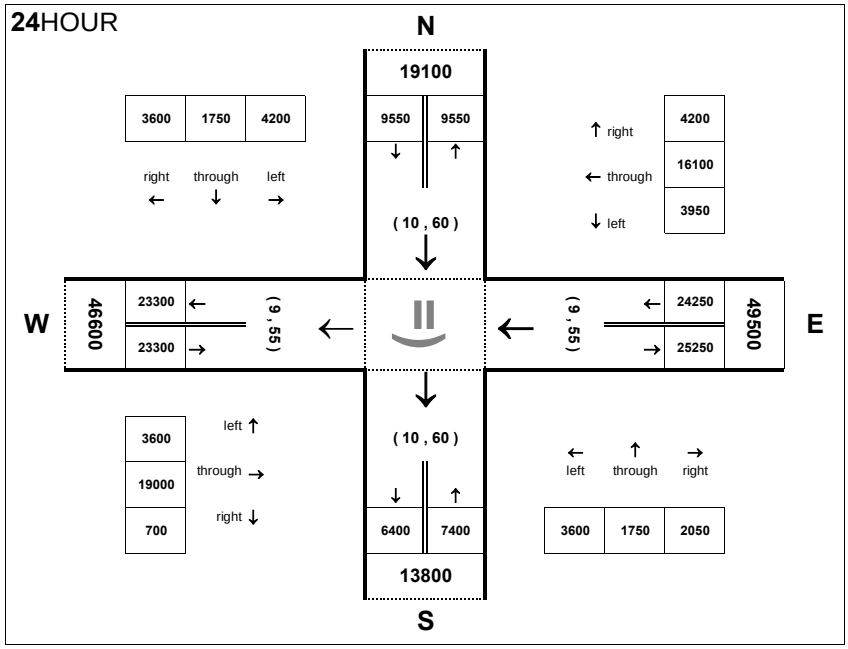


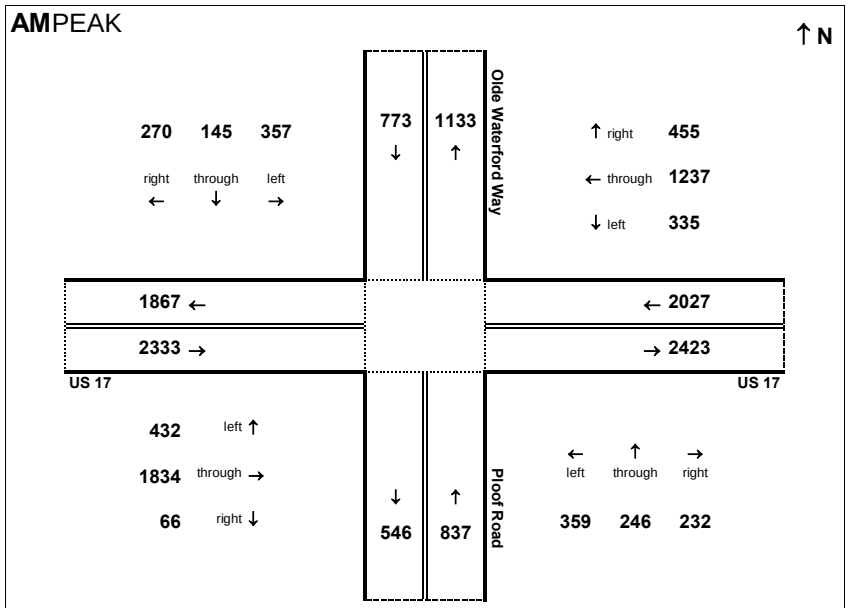
PM peak hour inflow is 5628 vehicles. PM peak hour outflow is 5630 vehicles.

Peak Hour Volume Breakouts Report:
08 - US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

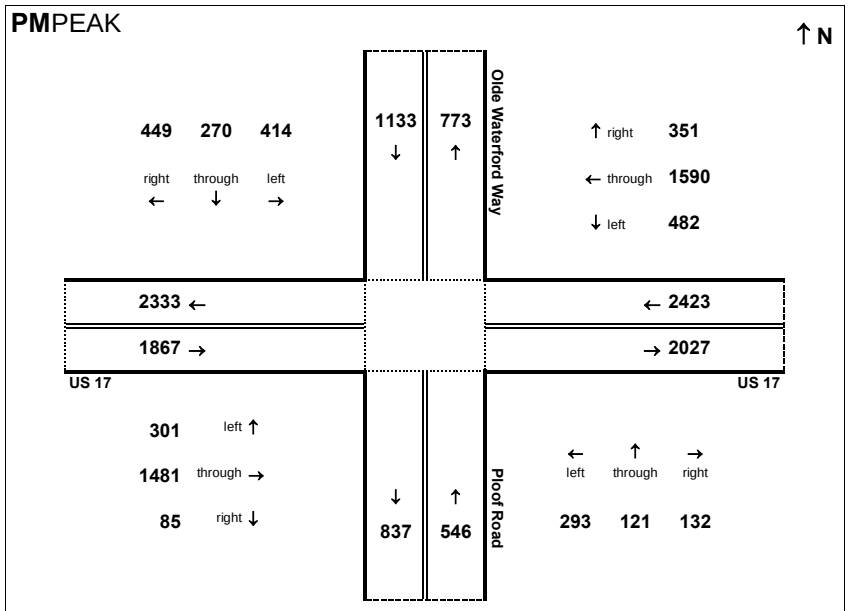
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. T





AM peak hour inflow is 5970 vehicles. AM peak hour outflow is 5969 vehicles.



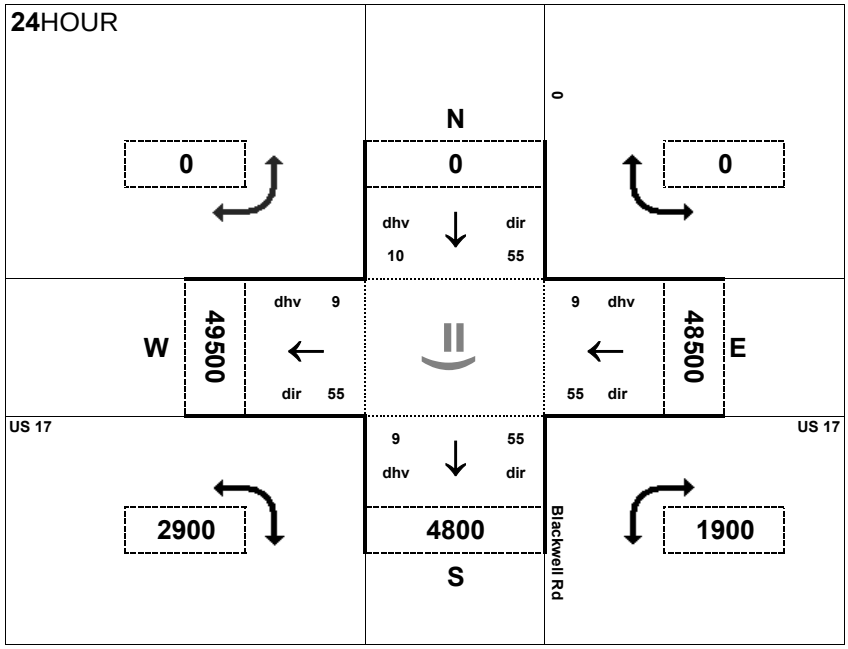
PM peak hour inflow is 5969 vehicles. PM peak hour outflow is 5970 vehicles.

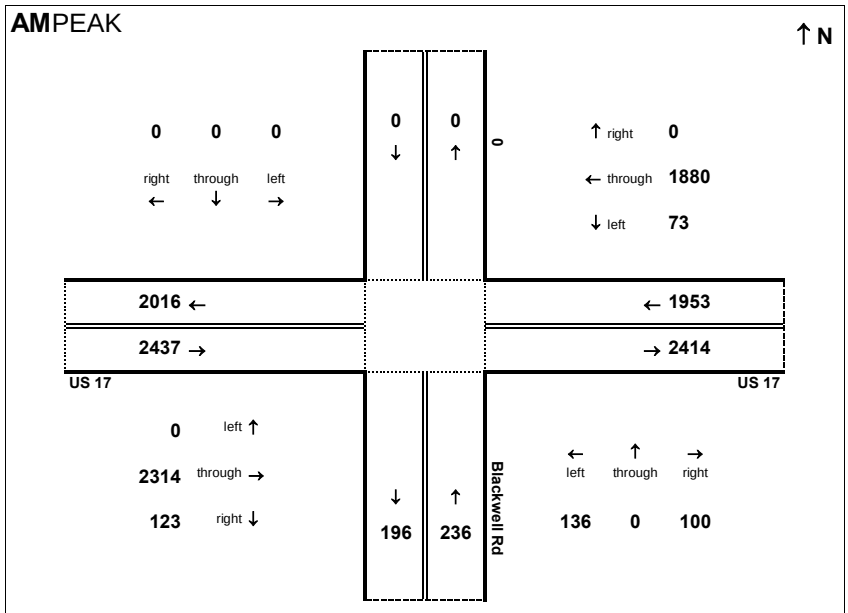
Peak Hour Volume Breakouts Report:
09 - US 17 and Blackwell Rd

Traffic Forecast Release Date:
Oct. 2014

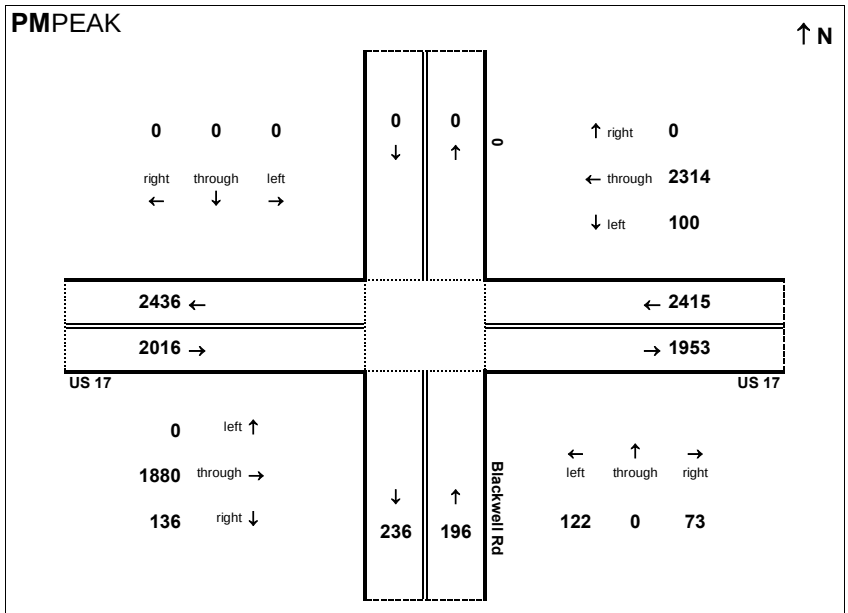
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 4626 vehicles. AM peak hour outflow is 4626 vehicles.



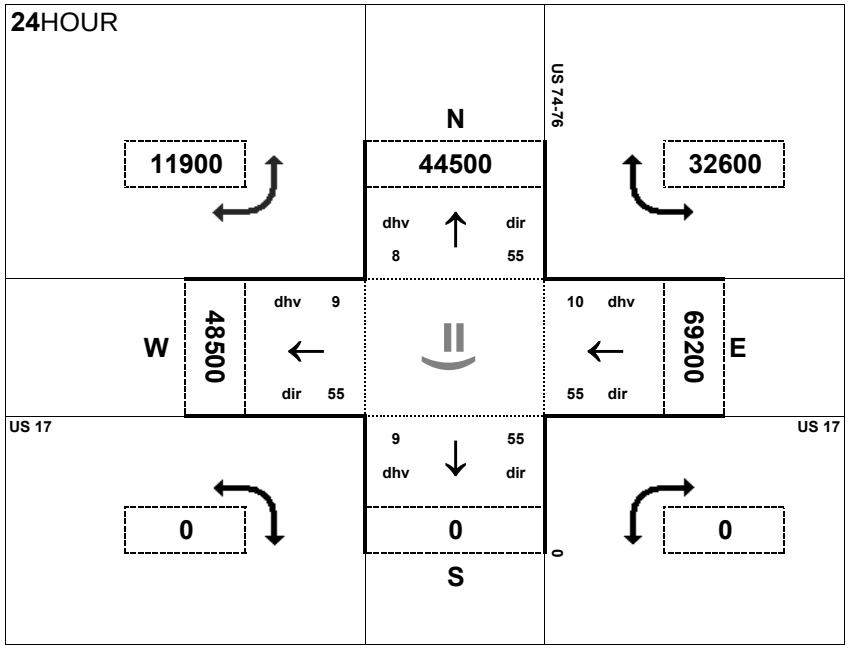
PM peak hour inflow is 4627 vehicles. PM peak hour outflow is 4625 vehicles.

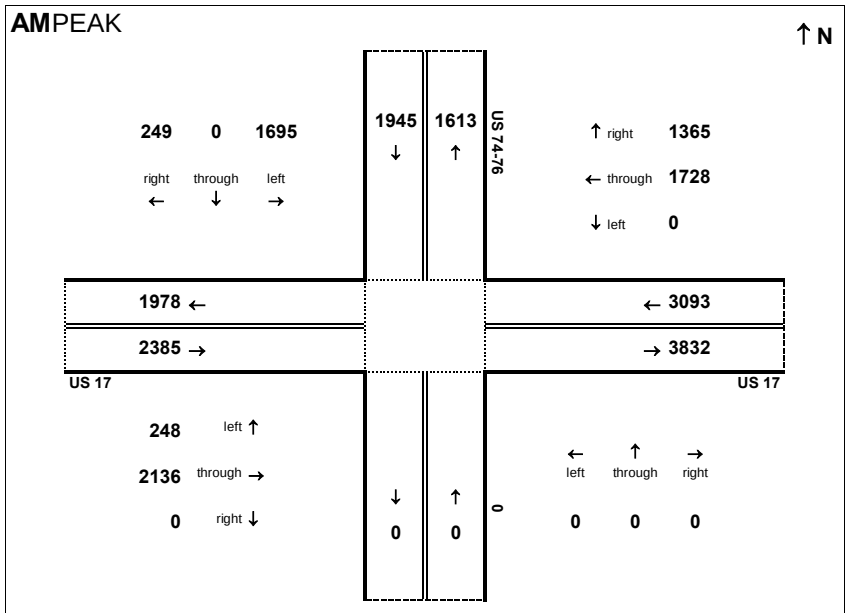
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

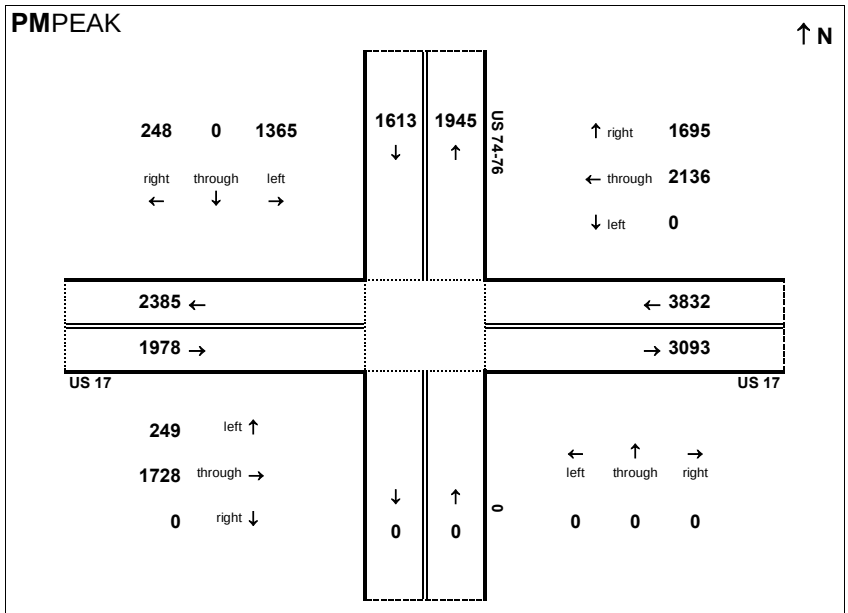
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 7423 vehicles. AM peak hour outflow is 7423 vehicles.



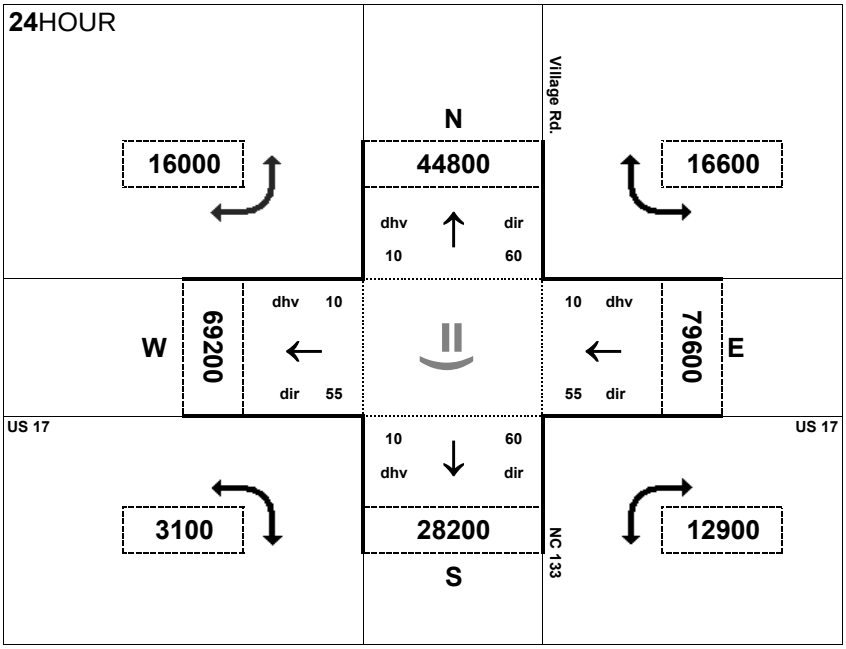
PM peak hour inflow is 7423 vehicles. PM peak hour outflow is 7423 vehicles.

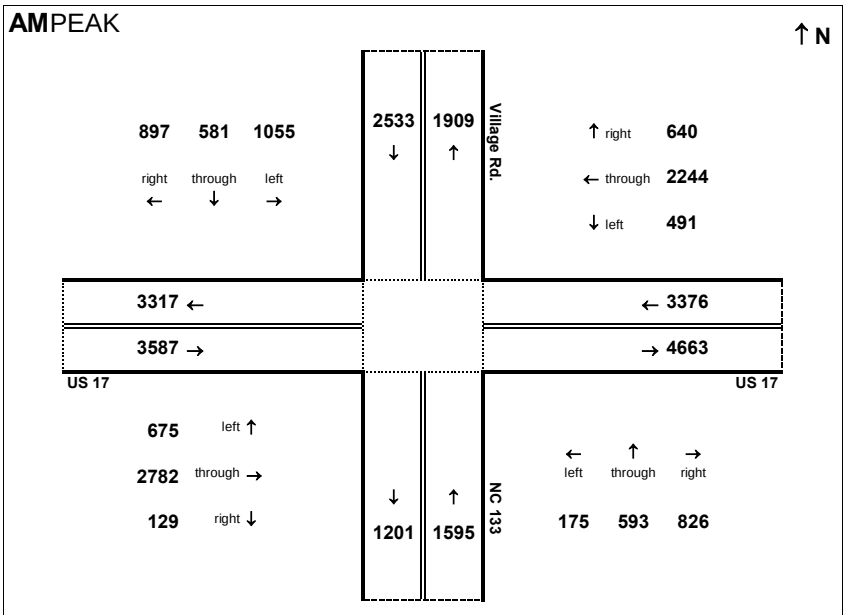
Peak Hour Volume Breakouts Report:
11 - US 17 and NC 133/Village Rd

Traffic Forecast Release Date:
Oct. 2014

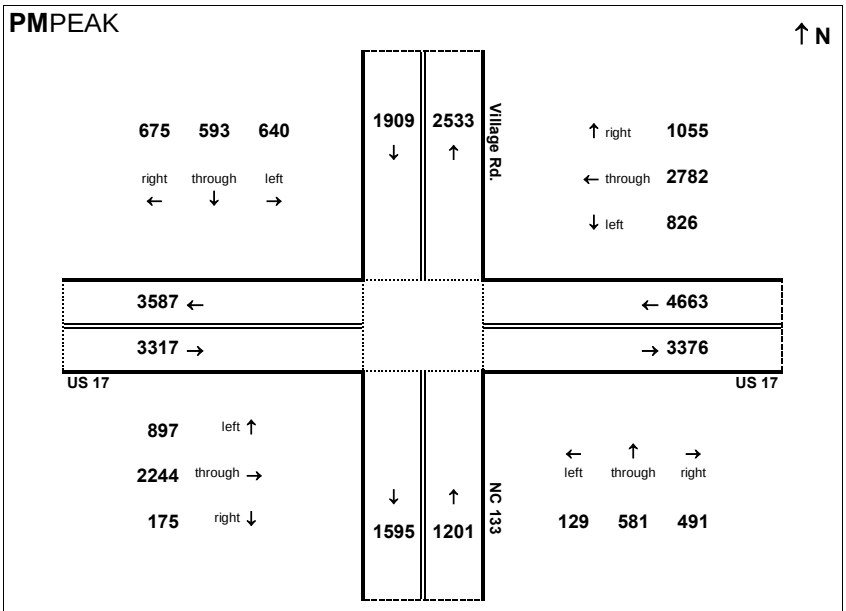
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T

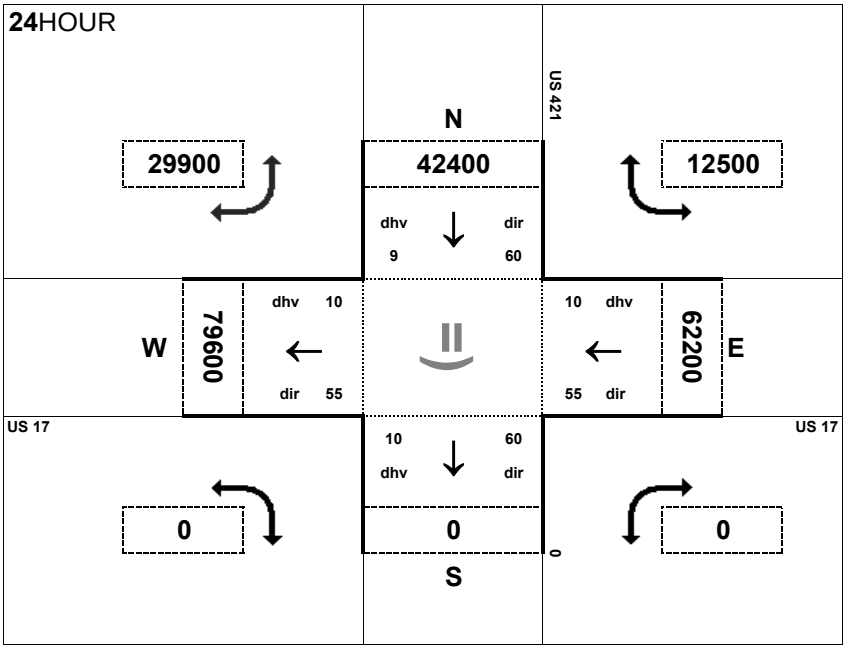




AM peak hour inflow is 11091 vehicles. AM peak hour outflow is 11090 vehicles.



PM peak hour inflow is 11090 vehicles. PM peak hour outflow is 11091 vehicles.

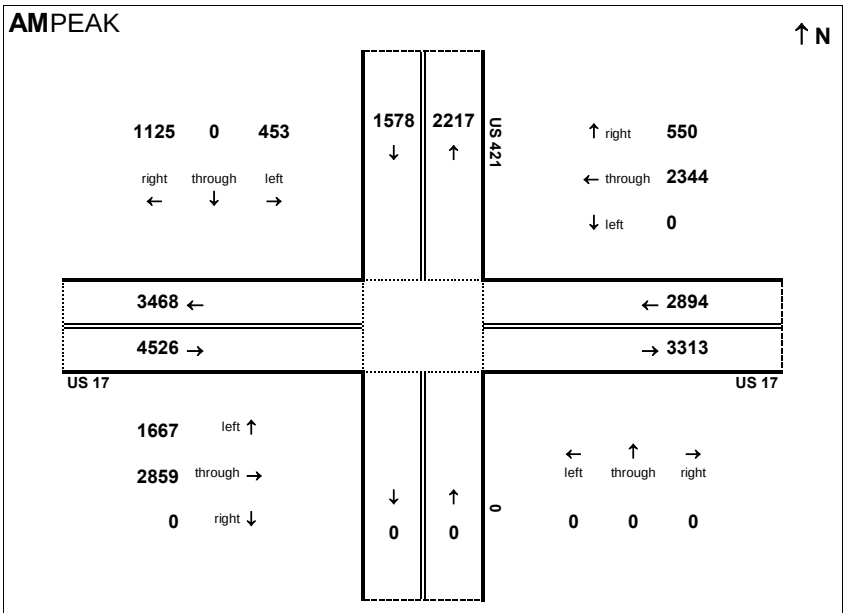


Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

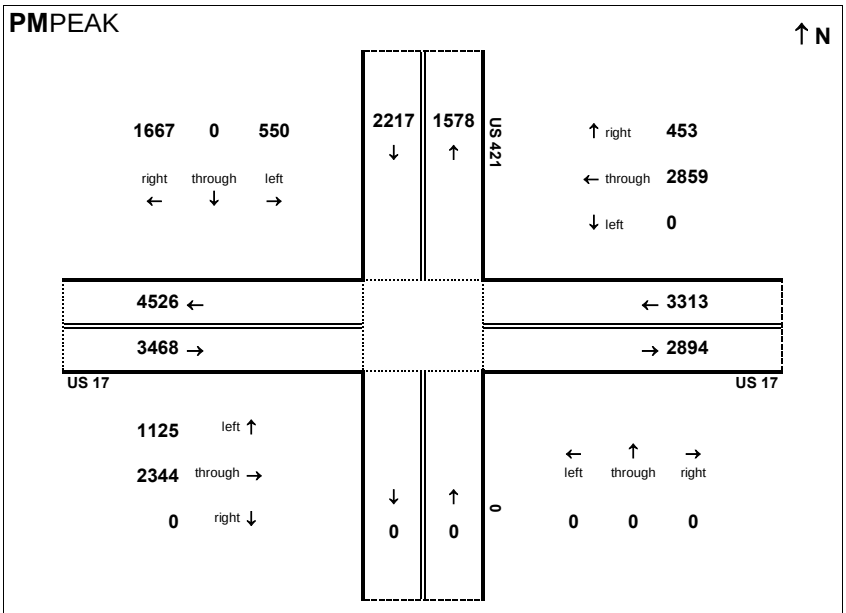
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

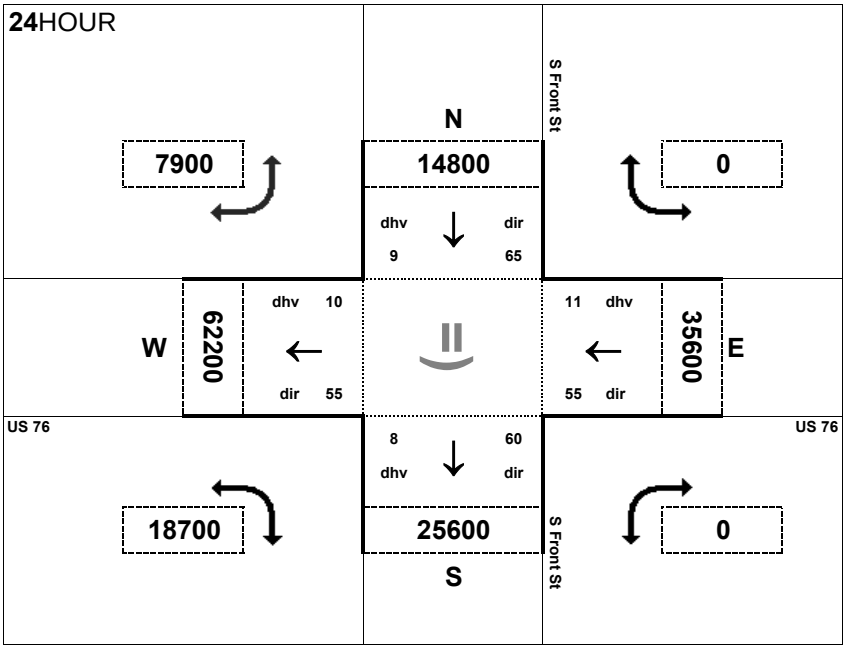
Project:
Cape Fear Crossing - Build Alt. T



AM peak hour inflow is 8998 vehicles. AM peak hour outflow is 8998 vehicles.



PM peak hour inflow is 8998 vehicles. PM peak hour outflow is 8998 vehicles.

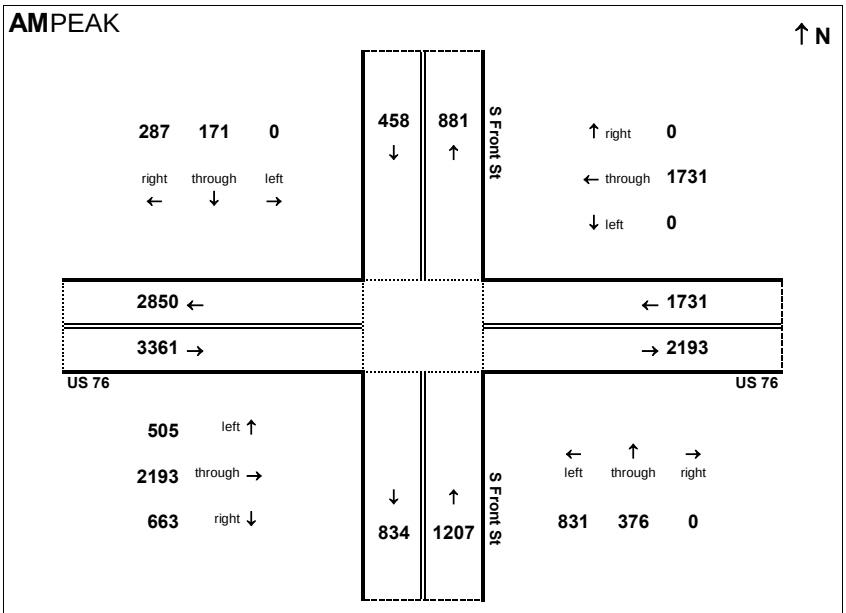


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

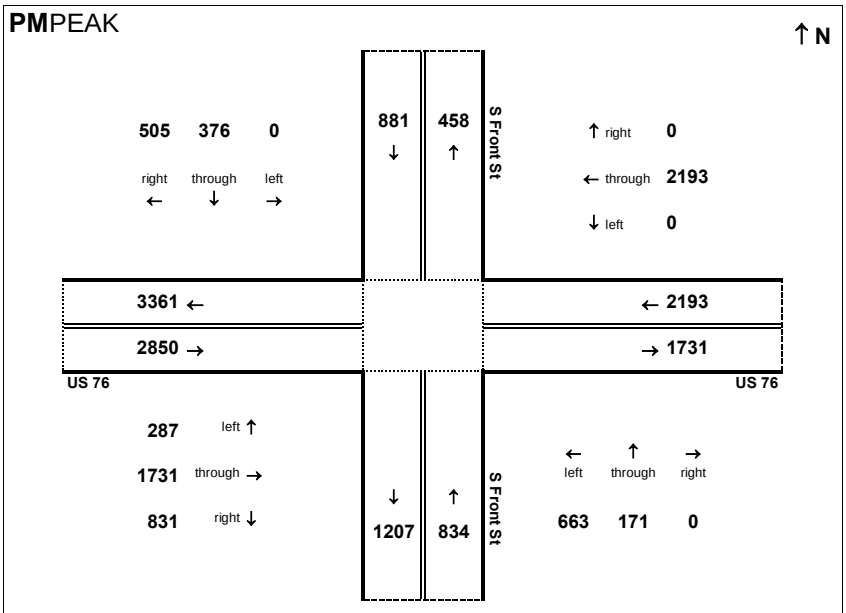
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

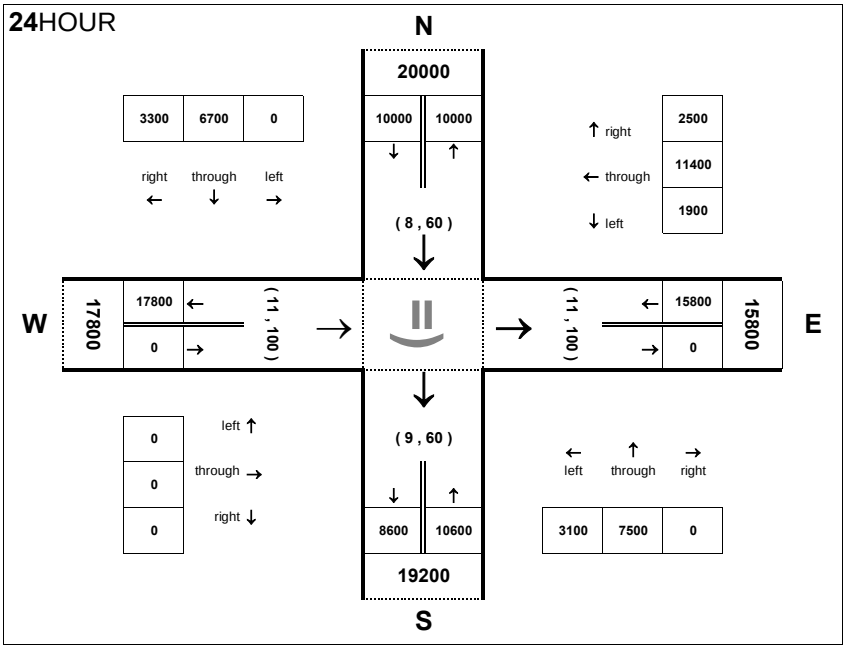
Project:
Cape Fear Crossing - Build Alt. T



AM peak hour inflow is 6757 vehicles. AM peak hour outflow is 6758 vehicles.



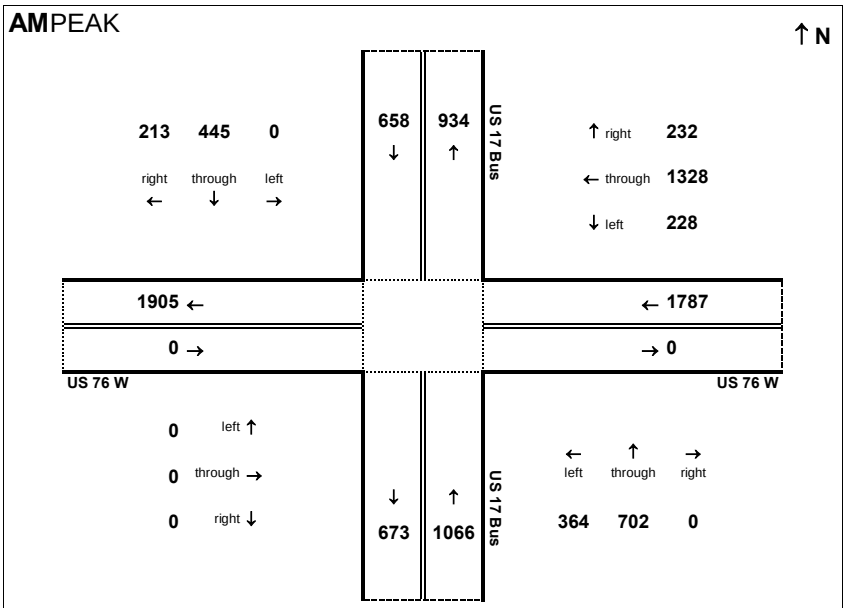
PM peak hour inflow is 6758 vehicles. PM peak hour outflow is 6757 vehicles.



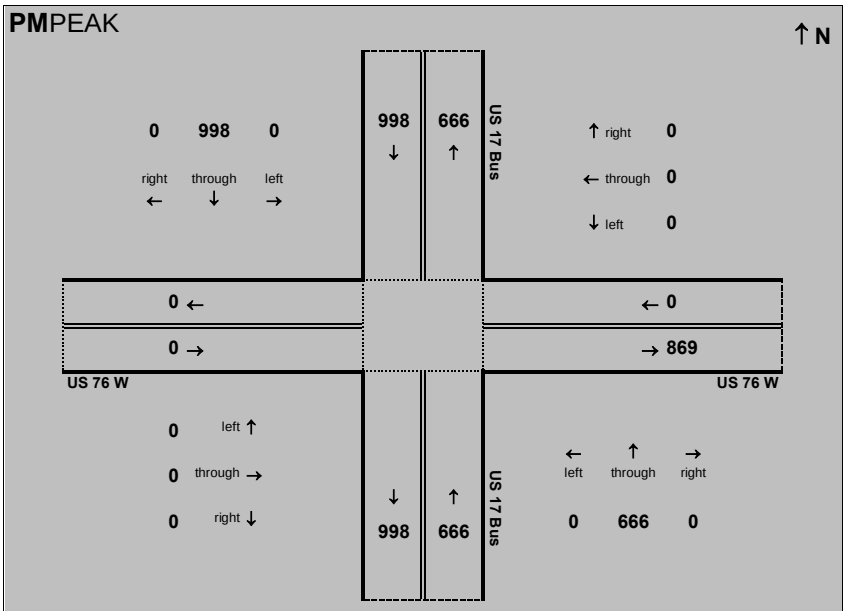
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

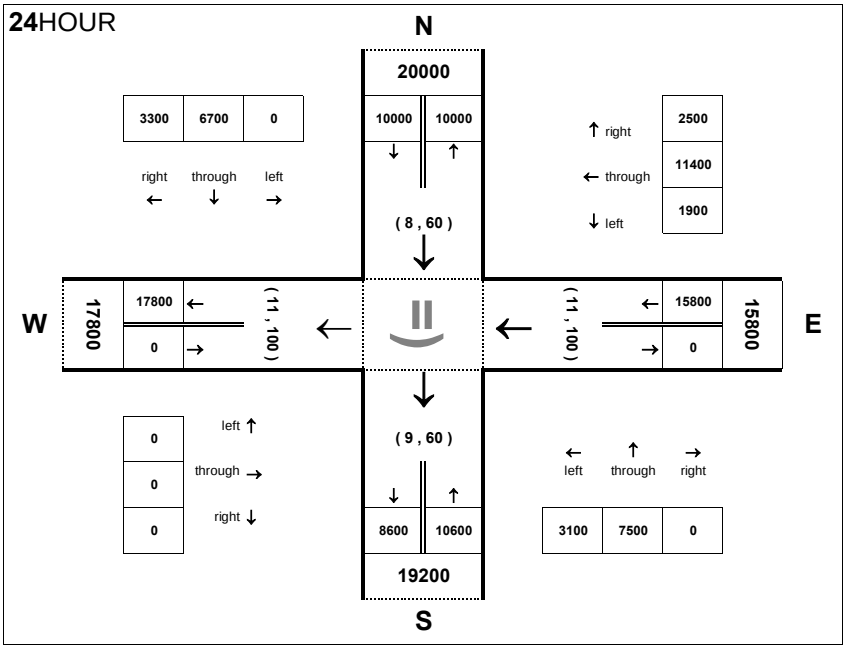
Traffic Data Year:
2040 Alt T



AM peak hour inflow is 3511 vehicles. AM peak hour outflow is 3512 vehicles.



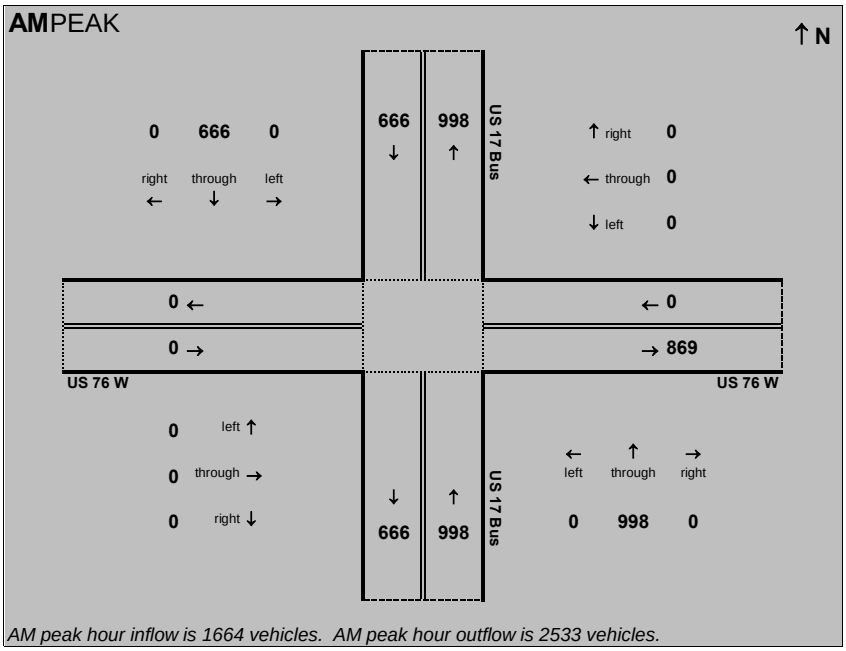
PM peak hour inflow is 1664 vehicles. PM peak hour outflow is 2533 vehicles.



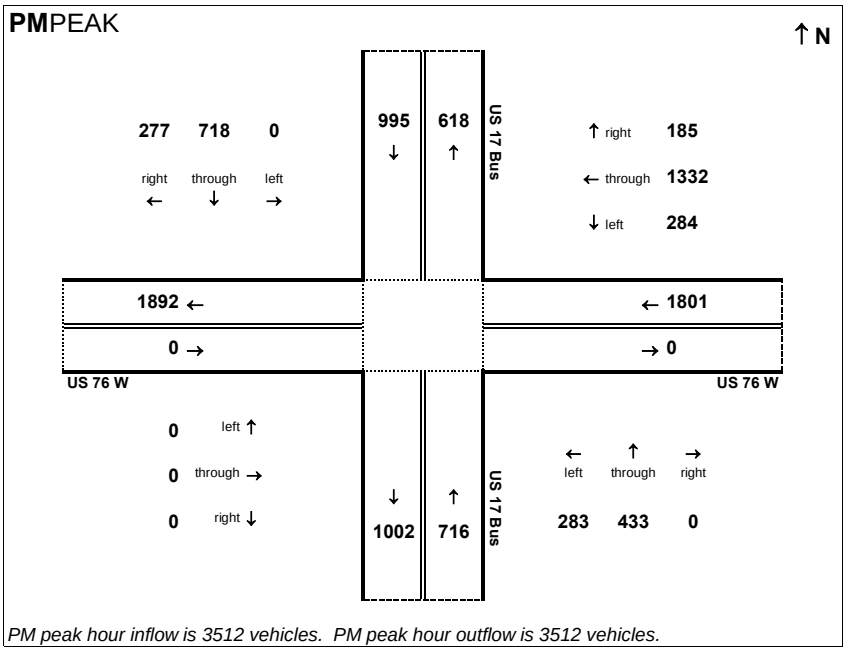
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

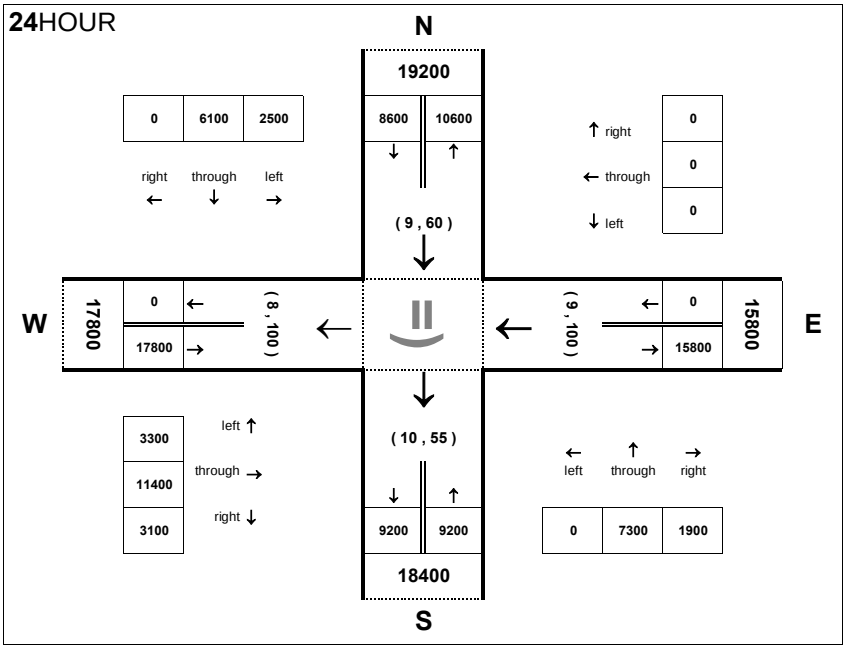
Traffic Data Year:
2040 Alt T



AM peak hour inflow is 1664 vehicles. AM peak hour outflow is 2533 vehicles.



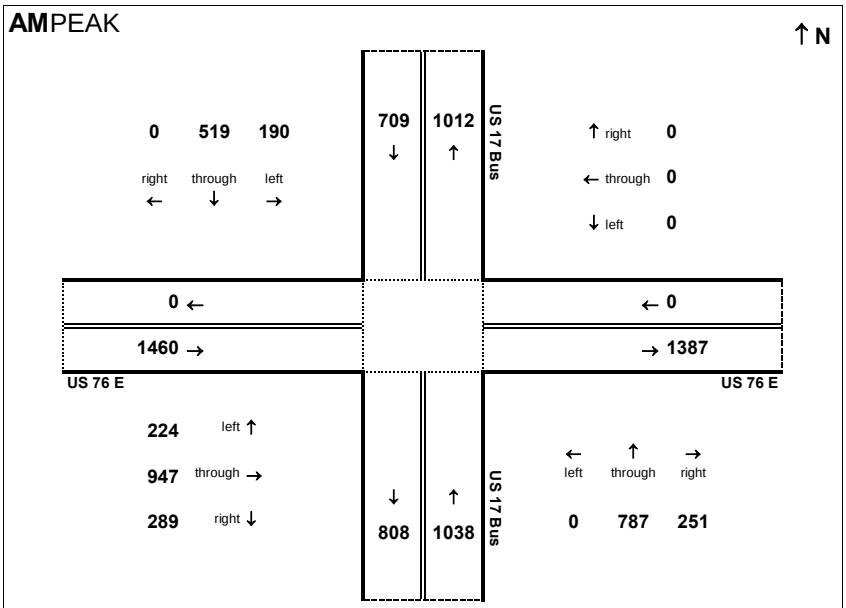
PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.



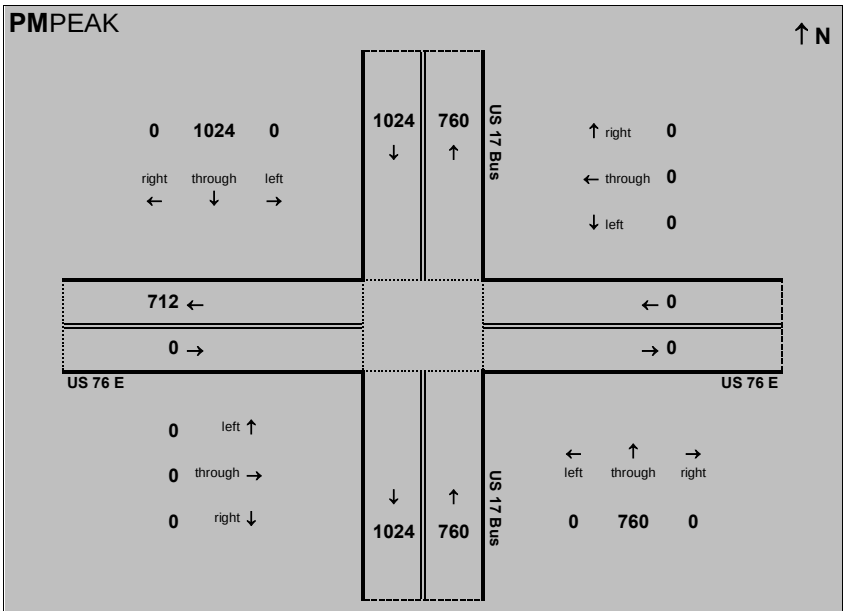
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

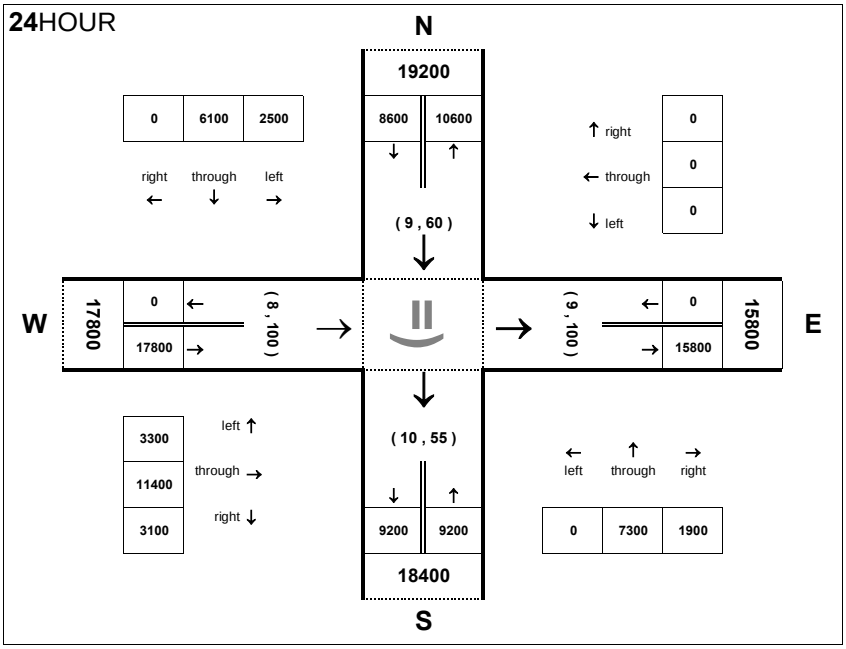
Traffic Data Year:
2040 Alt T



AM peak hour inflow is 3207 vehicles. AM peak hour outflow is 3207 vehicles.



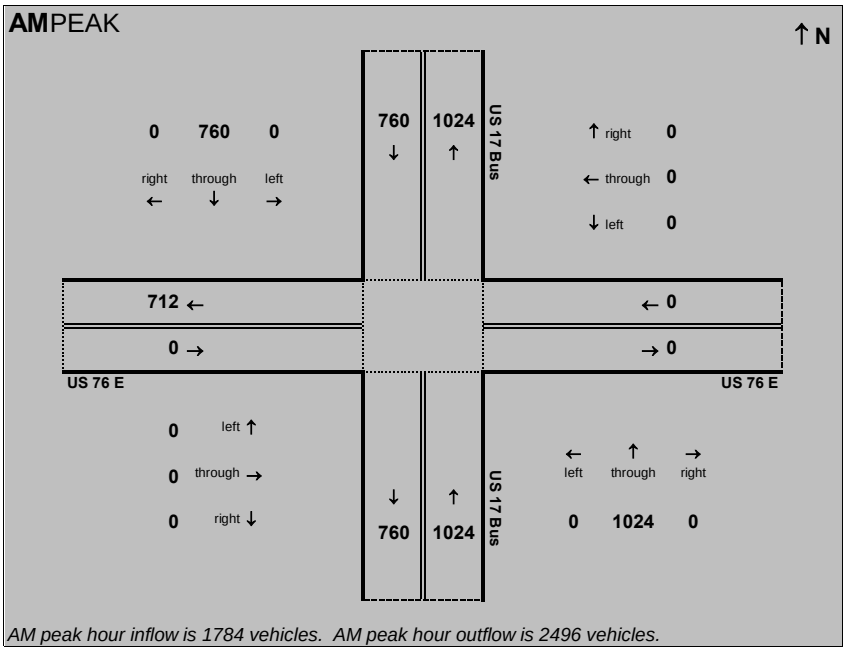
PM peak hour inflow is 1784 vehicles. PM peak hour outflow is 2496 vehicles.



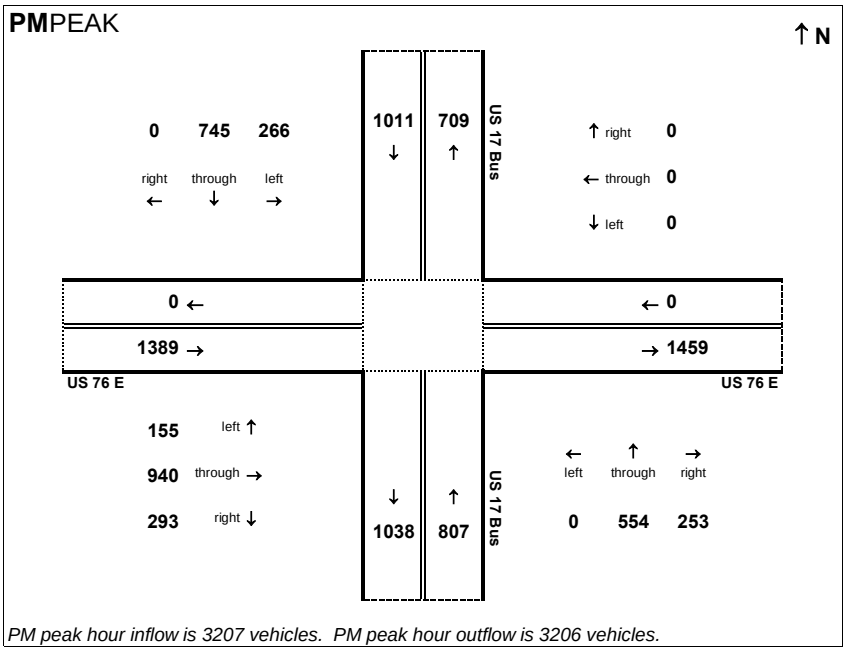
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt T



AM peak hour inflow is 1784 vehicles. AM peak hour outflow is 2496 vehicles.



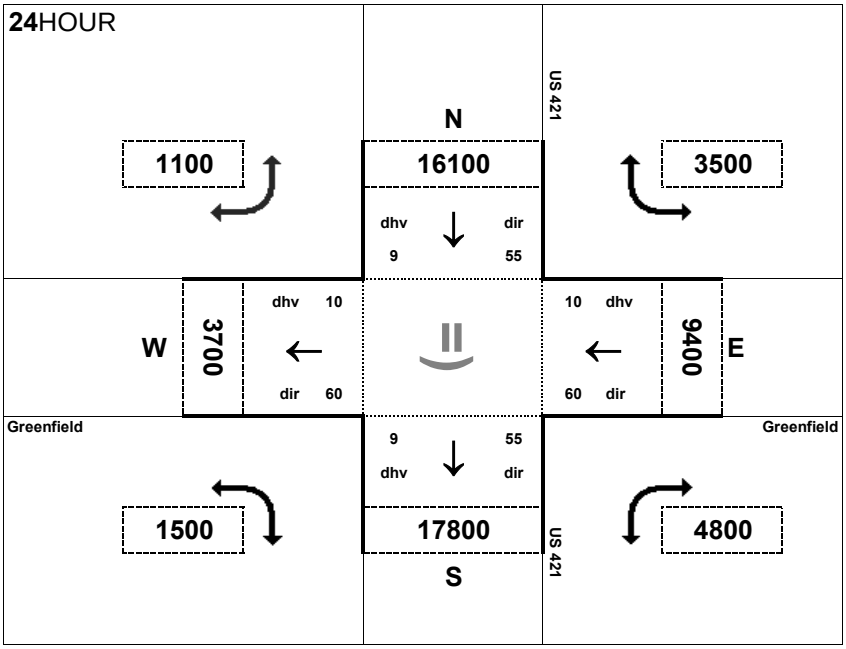
PM peak hour inflow is 3207 vehicles. PM peak hour outflow is 3206 vehicles.

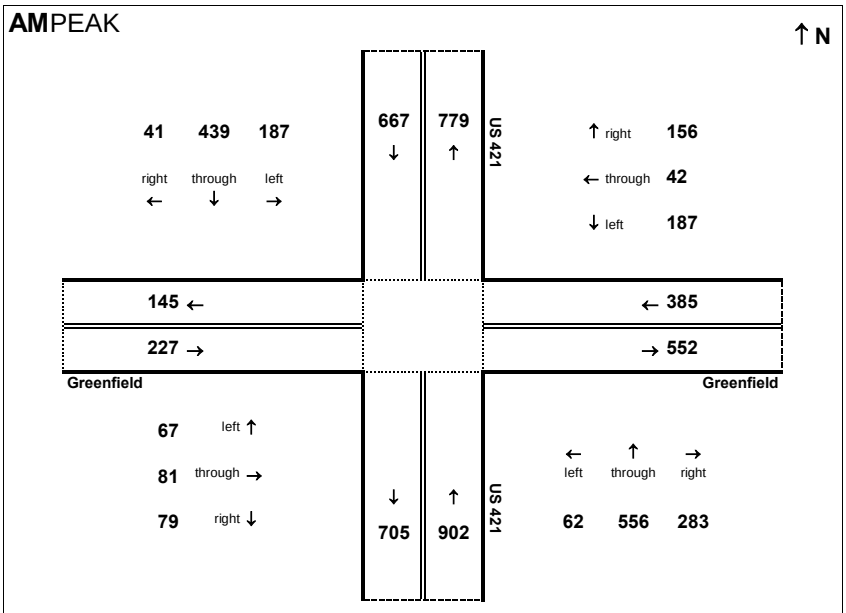
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

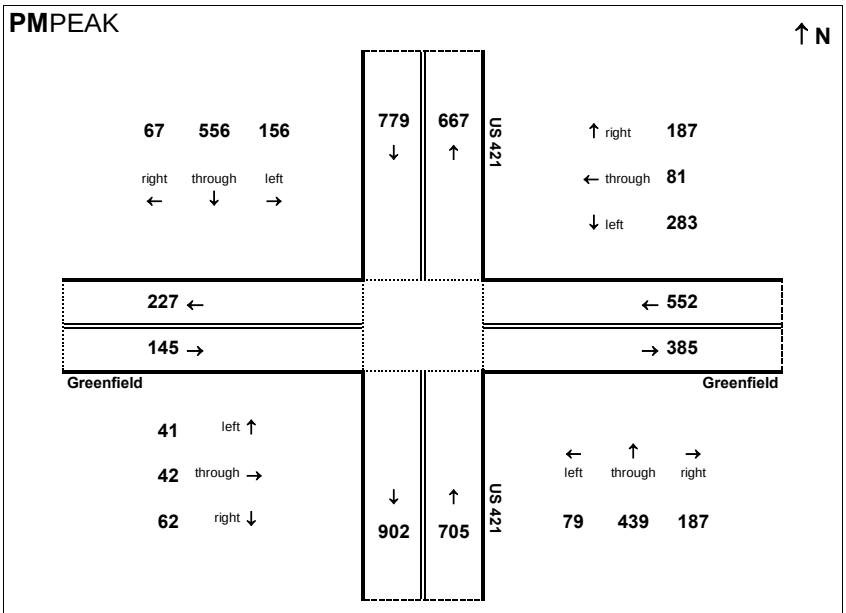
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 2181 vehicles. AM peak hour outflow is 2181 vehicles.



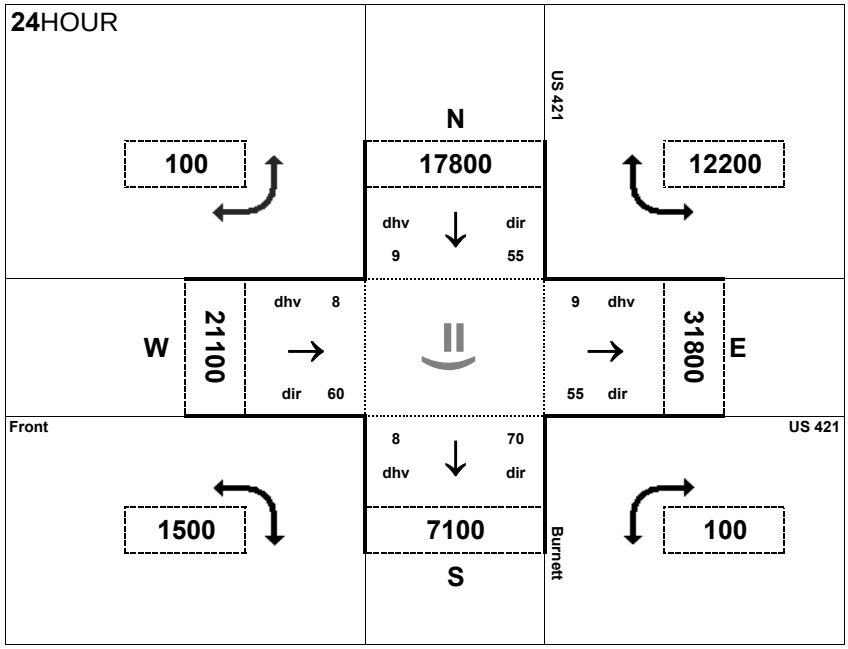
PM peak hour inflow is 2181 vehicles. PM peak hour outflow is 2181 vehicles.

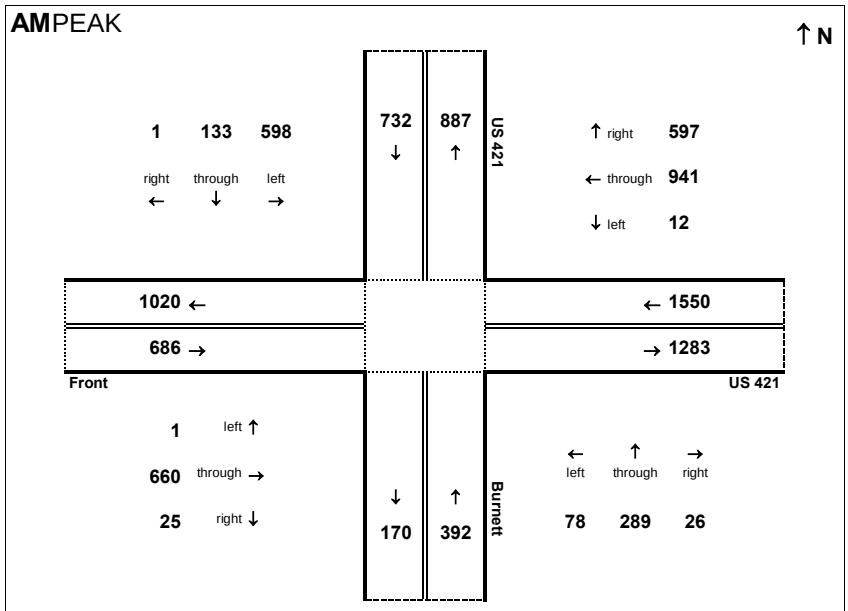
Peak Hour Volume Breakouts Report:
29 - US 421 and Burnett

Traffic Forecast Release Date:
Oct. 2014

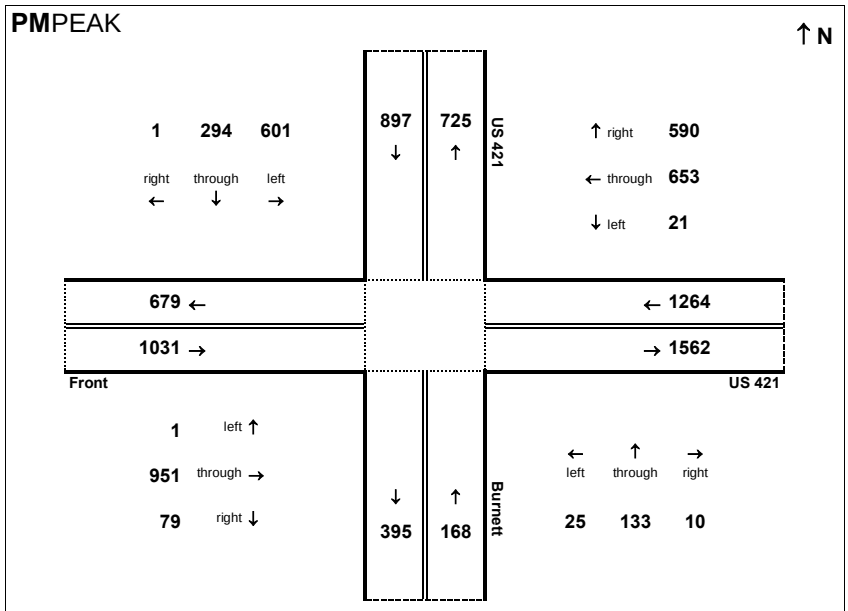
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 3360 vehicles. AM peak hour outflow is 3360 vehicles.



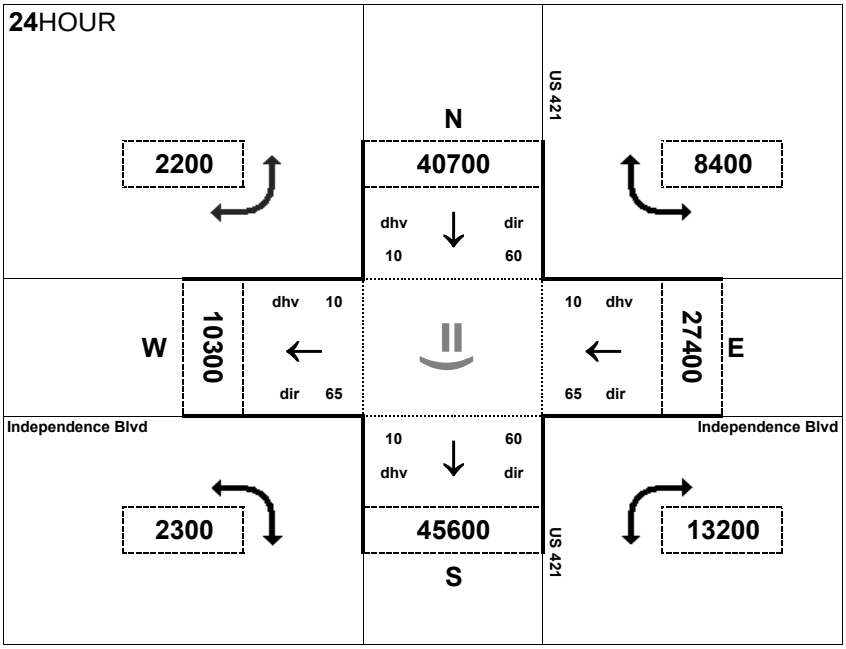
PM peak hour inflow is 3360 vehicles. PM peak hour outflow is 3361 vehicles.

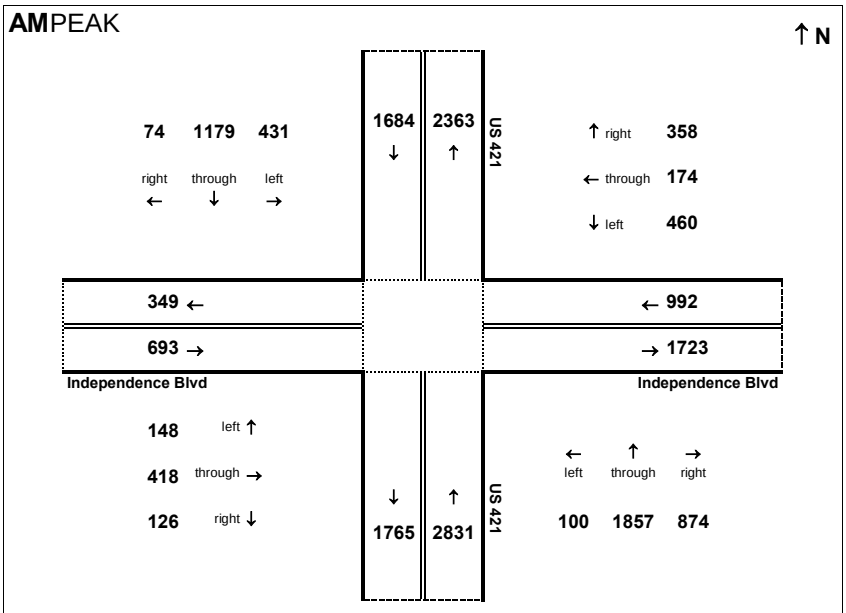
Peak Hour Volume Breakouts Report:
31 - US 421 and Independence Boulevard

Traffic Forecast Release Date:
Oct. 2014

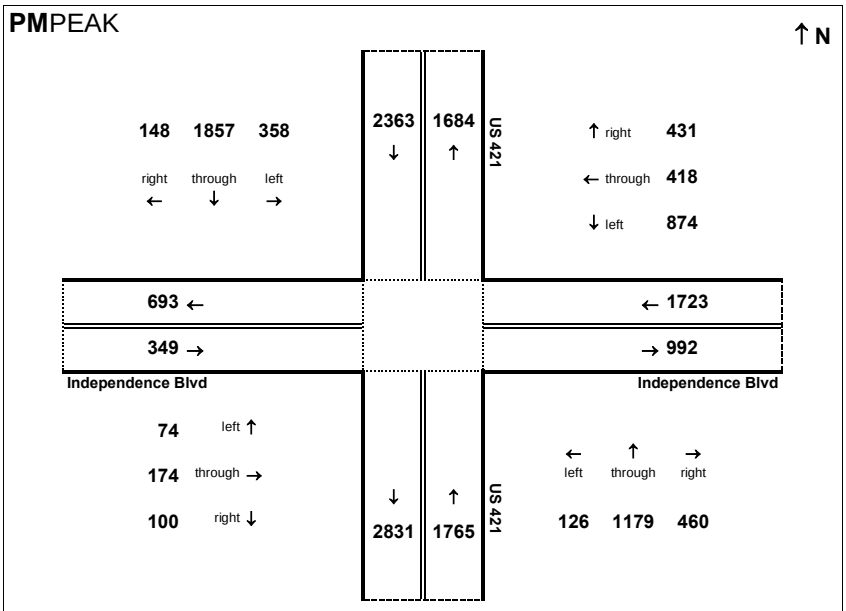
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 6200 vehicles. AM peak hour outflow is 6200 vehicles.



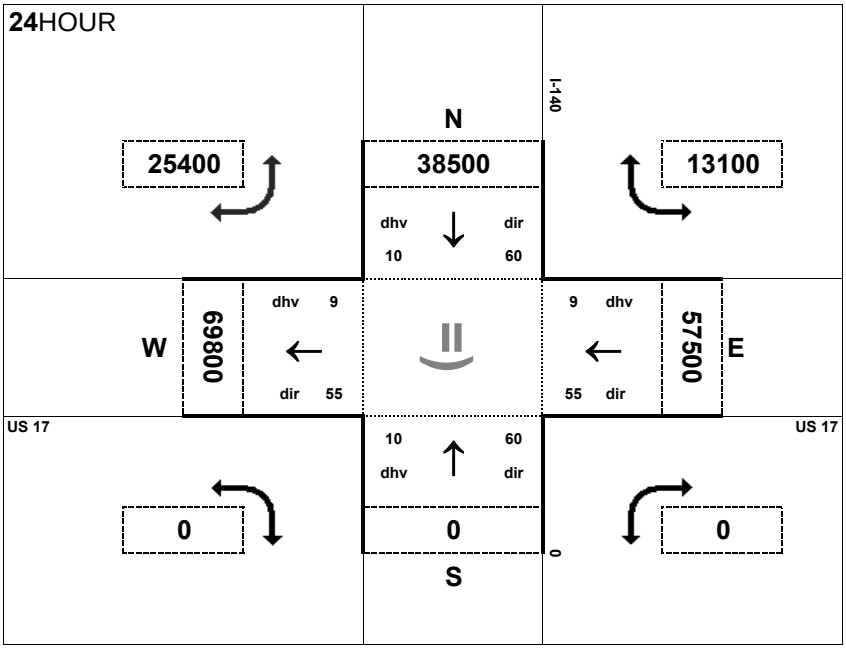
PM peak hour inflow is 6200 vehicles. PM peak hour outflow is 6200 vehicles.

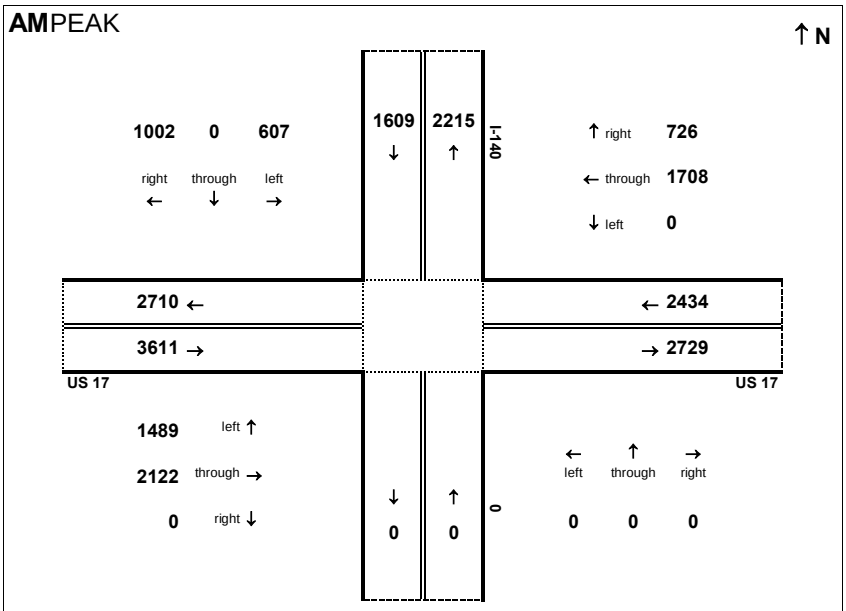
Peak Hour Volume Breakouts Report:
43 - US 17 and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

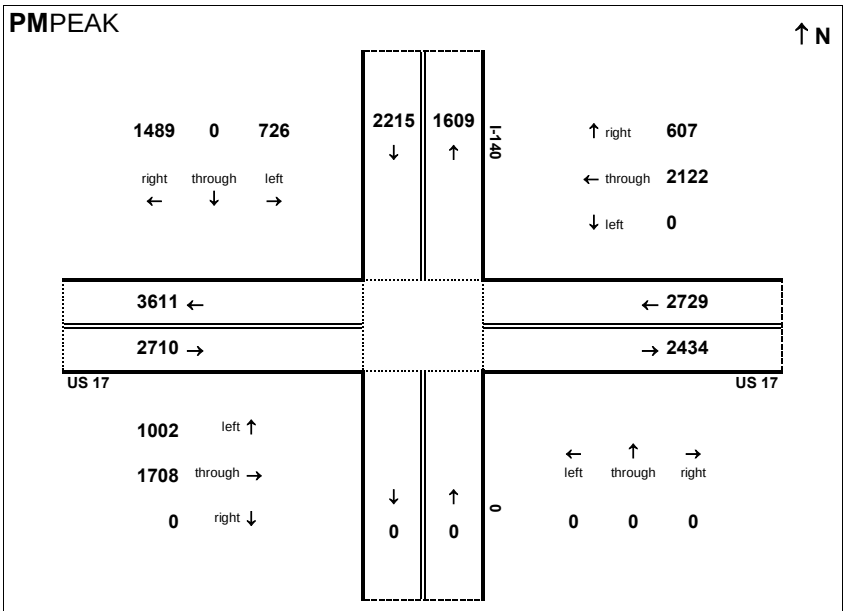
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 7654 vehicles. AM peak hour outflow is 7654 vehicles.



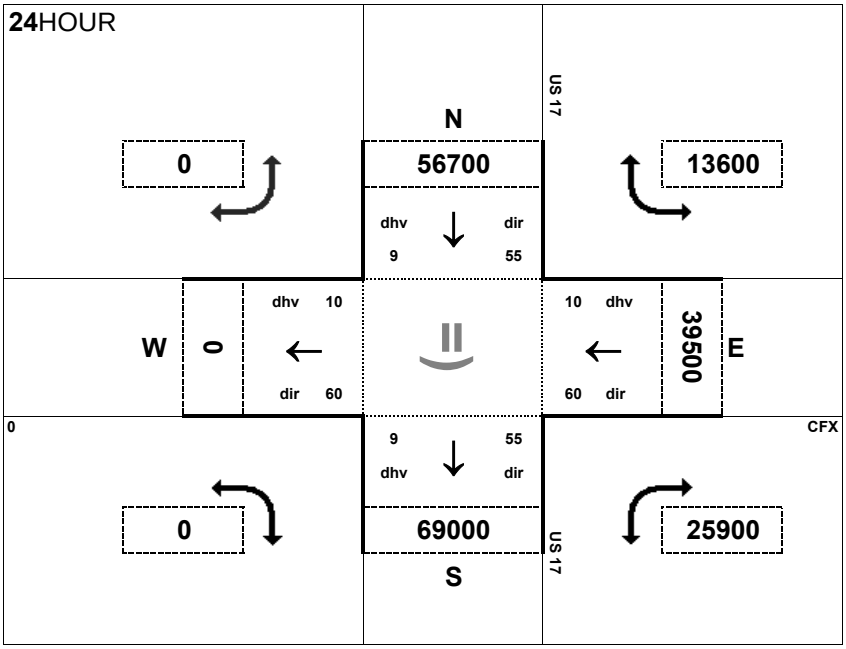
PM peak hour inflow is 7654 vehicles. PM peak hour outflow is 7654 vehicles.

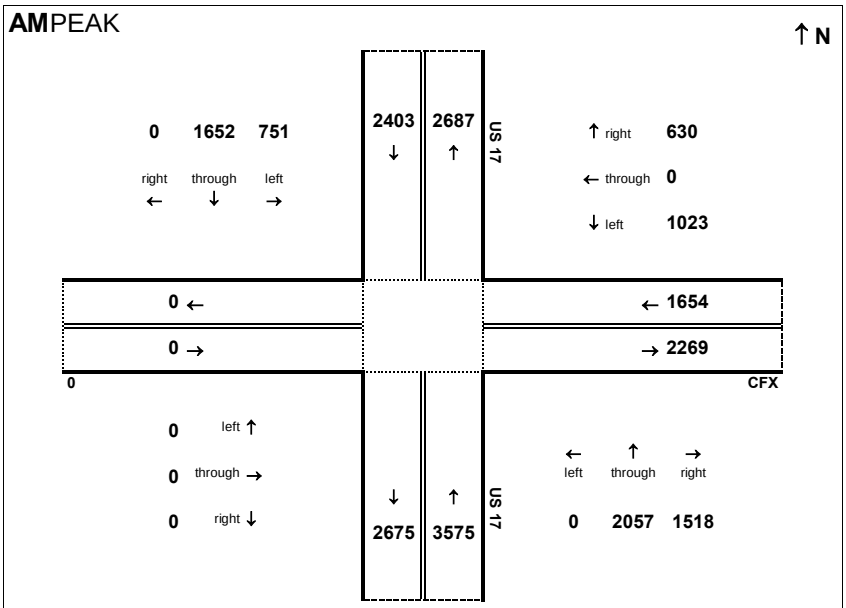
Peak Hour Volume Breakouts Report:
102 - CFX and US 17 Interchange

Traffic Forecast Release Date:
Oct. 2014

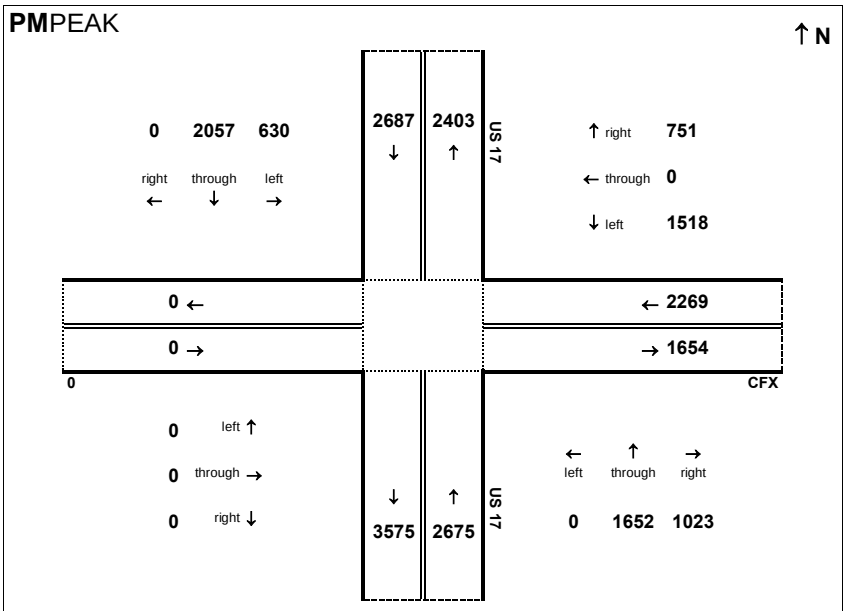
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 7632 vehicles. AM peak hour outflow is 7631 vehicles.



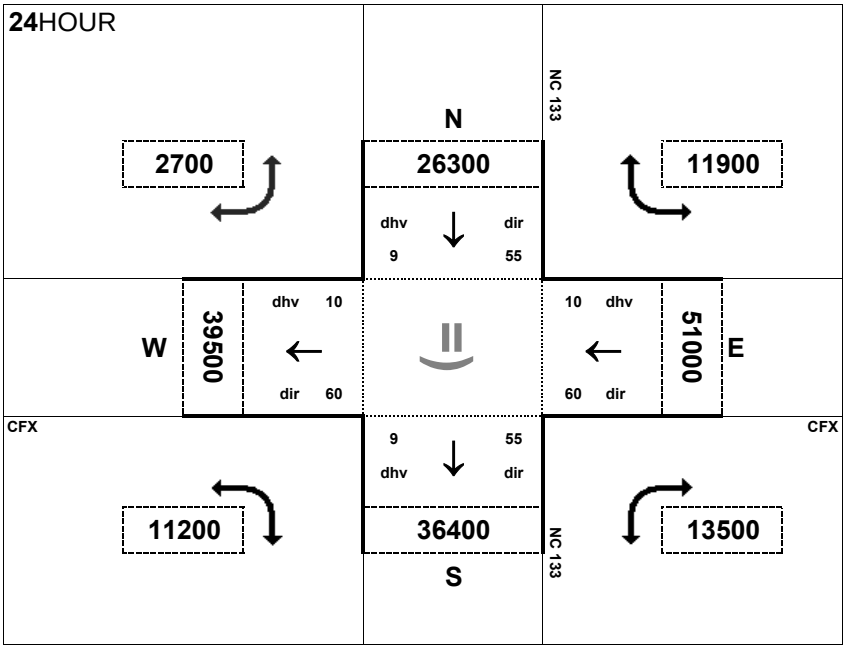
PM peak hour inflow is 7631 vehicles. PM peak hour outflow is 7632 vehicles.

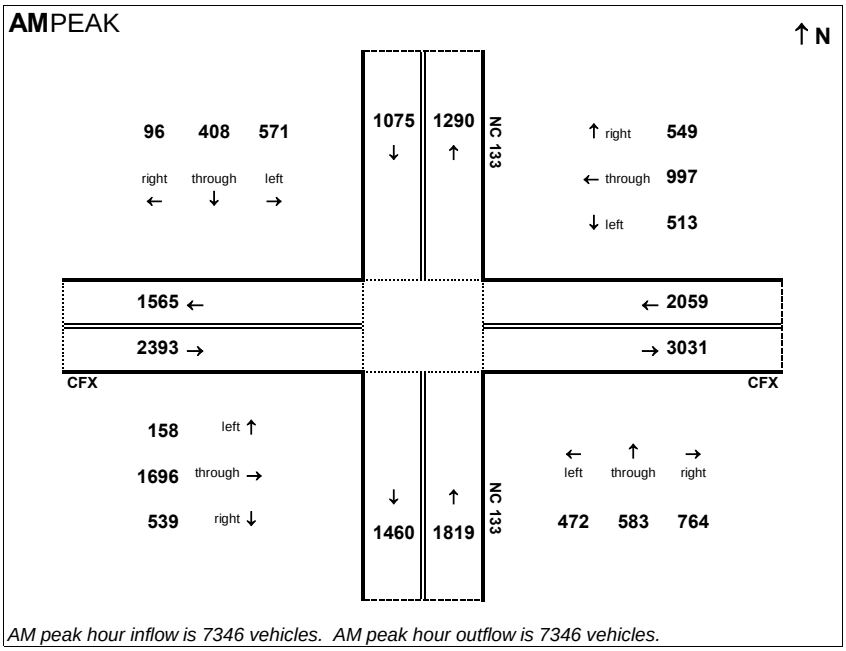
Peak Hour Volume Breakouts Report:
104 - CFX and NC 133

Traffic Forecast Release Date:
Oct. 2014

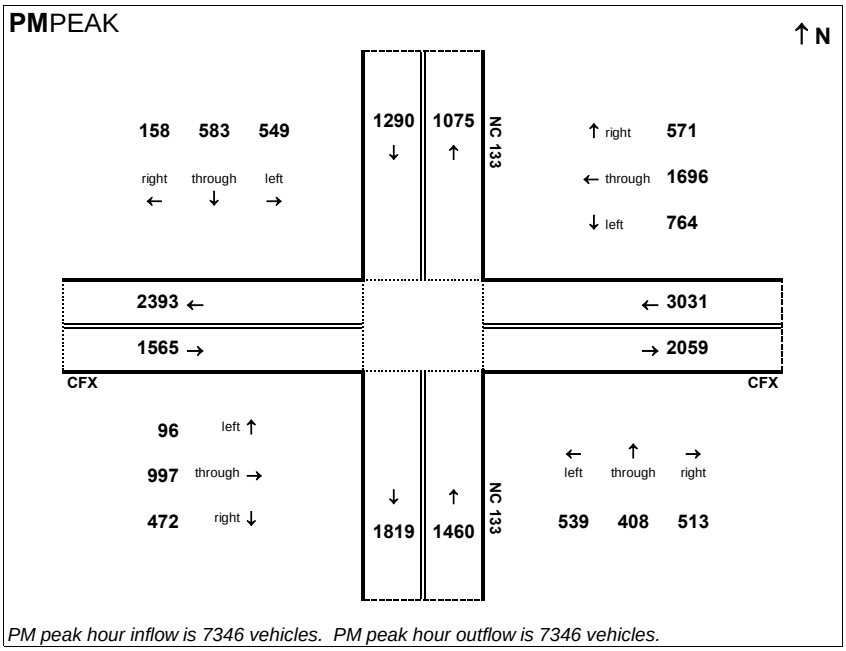
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 7346 vehicles. AM peak hour outflow is 7346 vehicles.



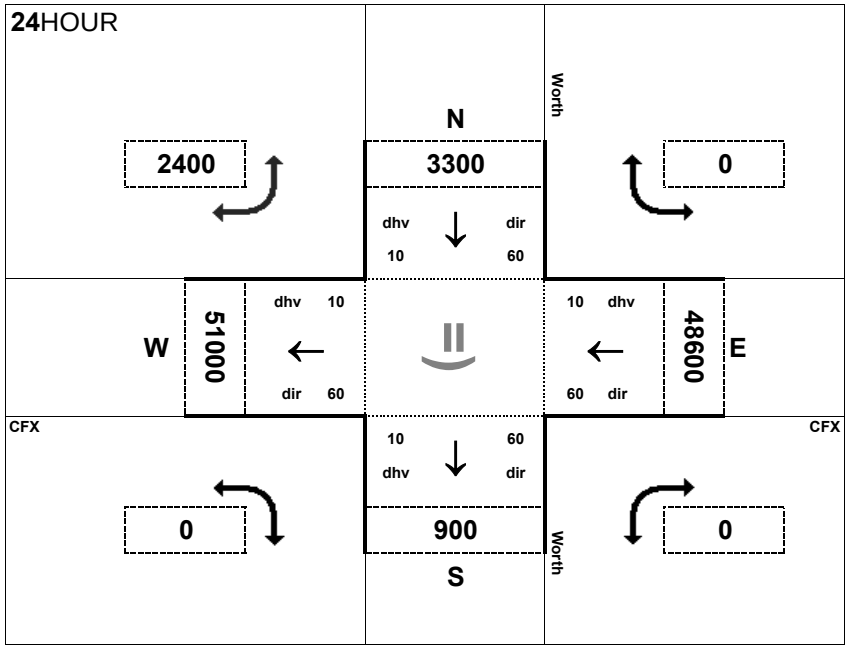
PM peak hour inflow is 7346 vehicles. PM peak hour outflow is 7346 vehicles.

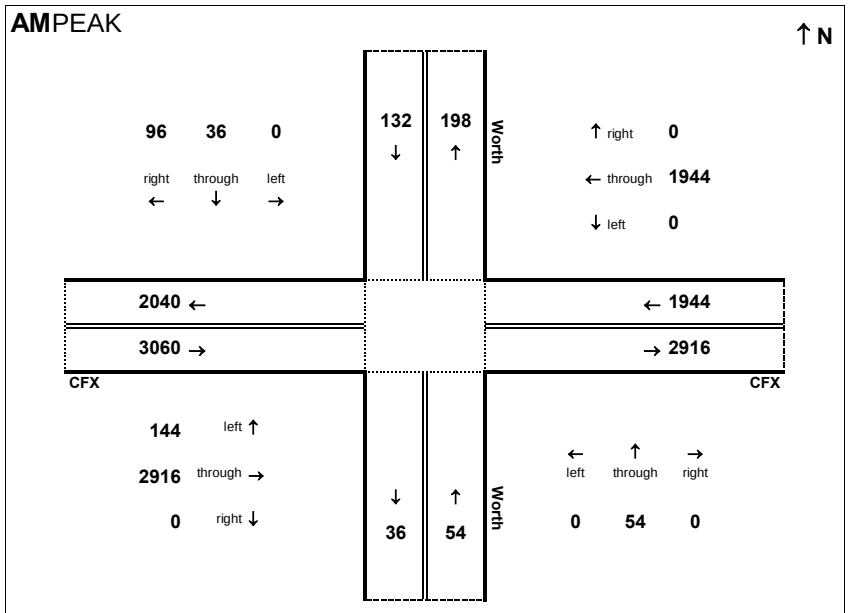
Peak Hour Volume Breakouts Report:
106 - CFX and Worth Dr

Traffic Forecast Release Date:
Oct. 2014

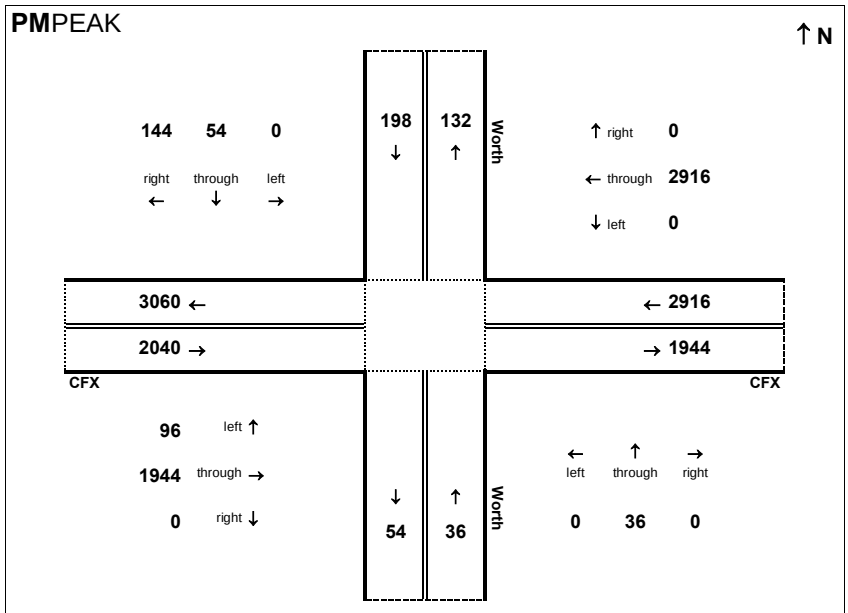
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 5190 vehicles. AM peak hour outflow is 5190 vehicles.



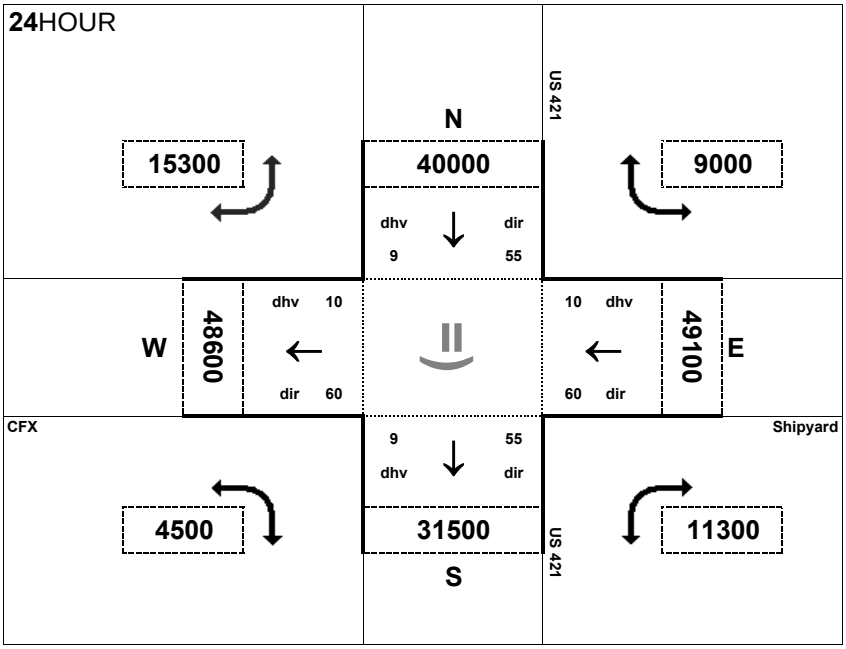
PM peak hour inflow is 5190 vehicles. PM peak hour outflow is 5190 vehicles.

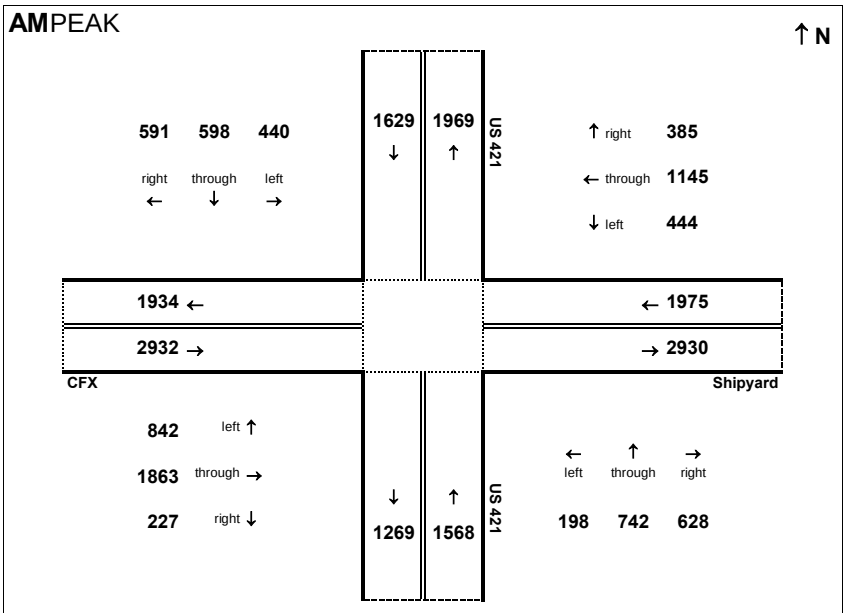
Peak Hour Volume Breakouts Report:
108 -CFX and US 421-Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

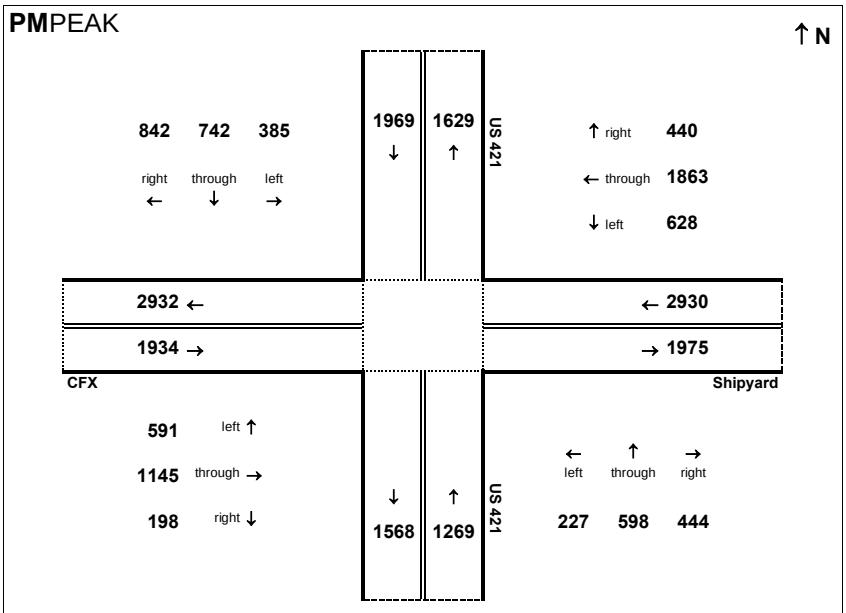
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 8104 vehicles. AM peak hour outflow is 8102 vehicles.



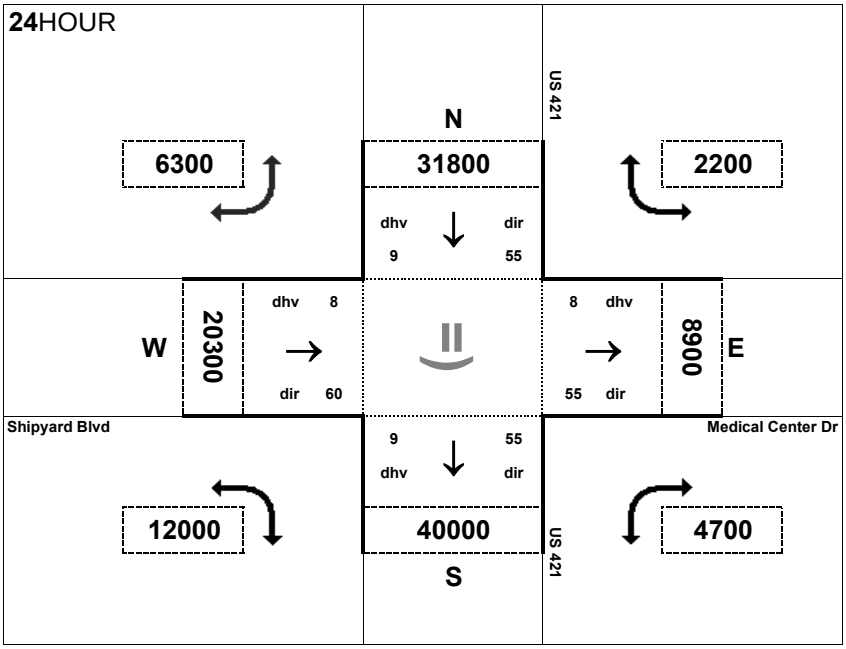
PM peak hour inflow is 8102 vehicles. PM peak hour outflow is 8104 vehicles.

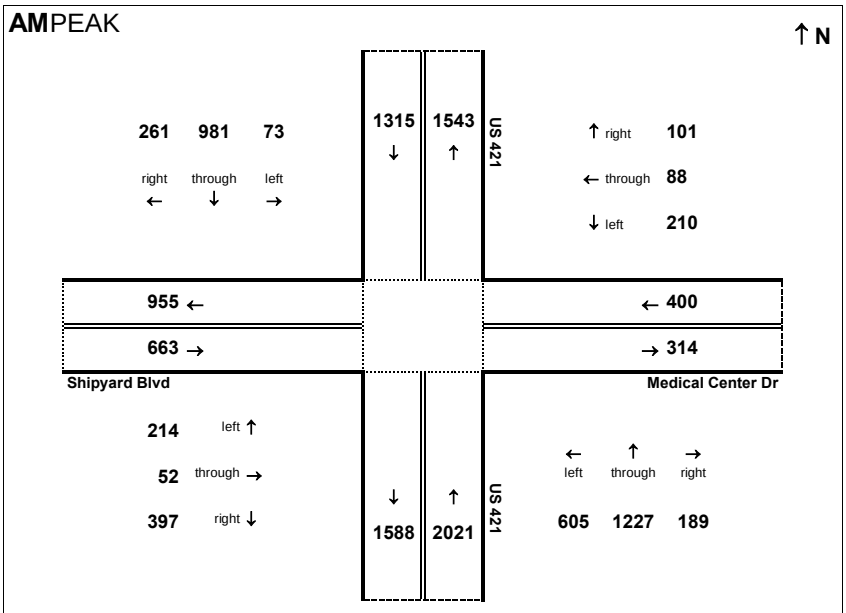
Peak Hour Volume Breakouts Report:
109 - US 421 & Realigned Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

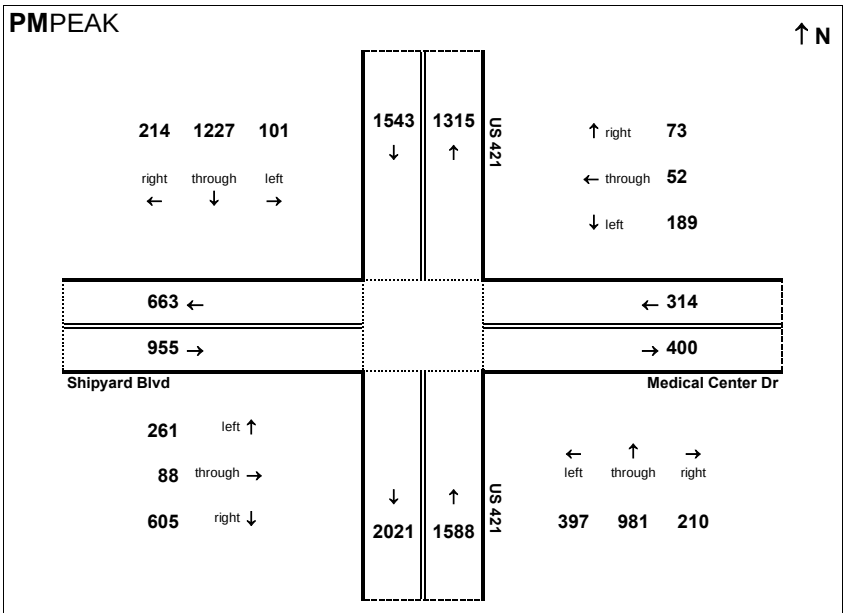
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. T





AM peak hour inflow is 4399 vehicles. AM peak hour outflow is 4400 vehicles.



PM peak hour inflow is 4400 vehicles. PM peak hour outflow is 4399 vehicles.

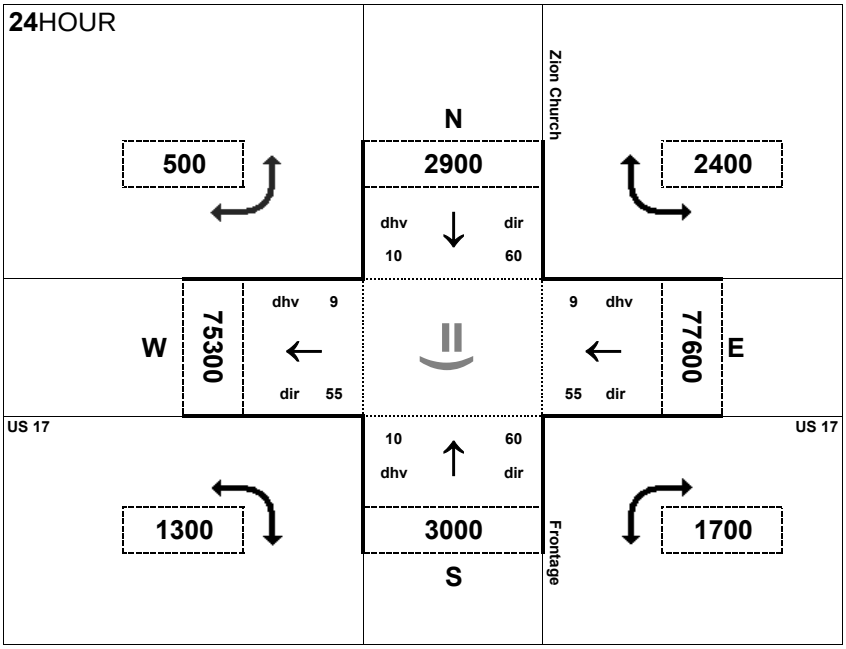
2040 Build DSA Alternative V (Freeway)

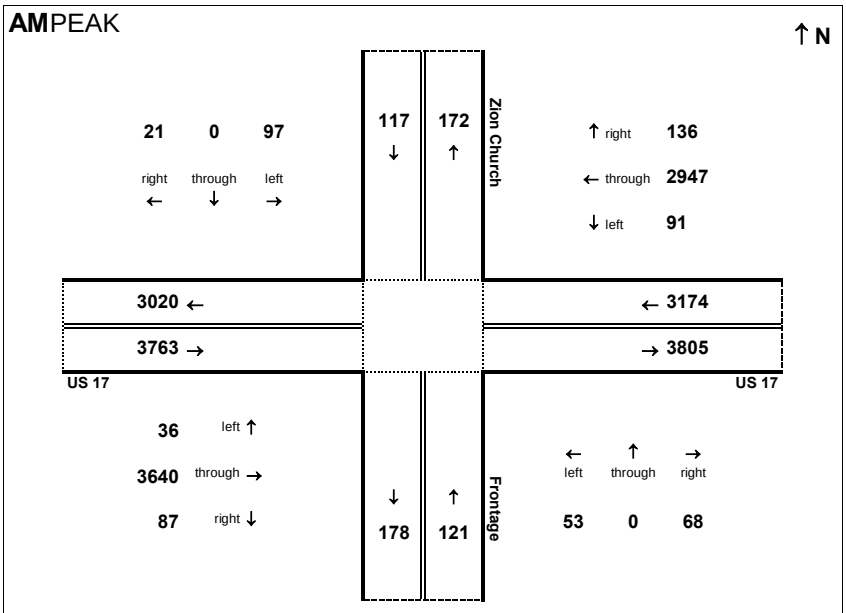
Peak Hour Volume Breakouts Report:
01 - US 17 and Zion Church Rd

Traffic Forecast Release Date:
Oct. 2014

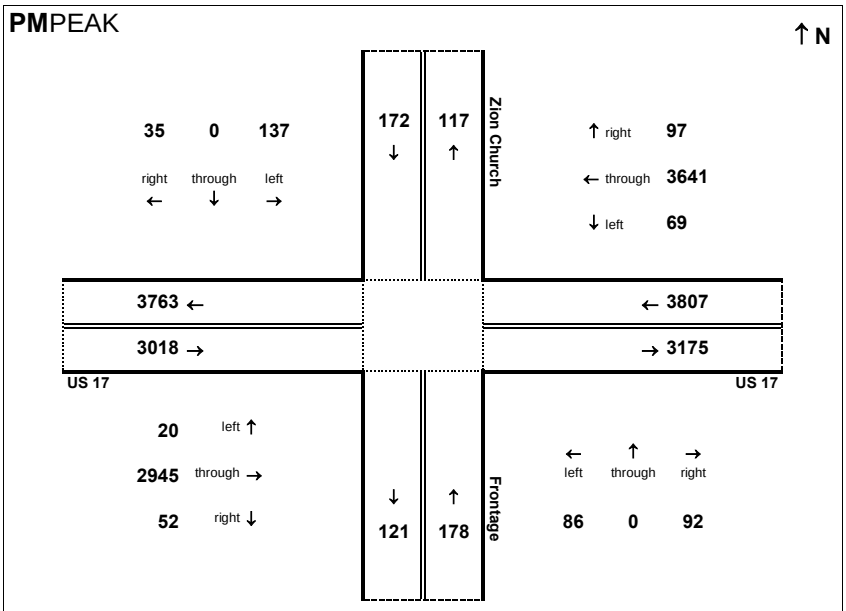
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 7175 vehicles. AM peak hour outflow is 7175 vehicles.



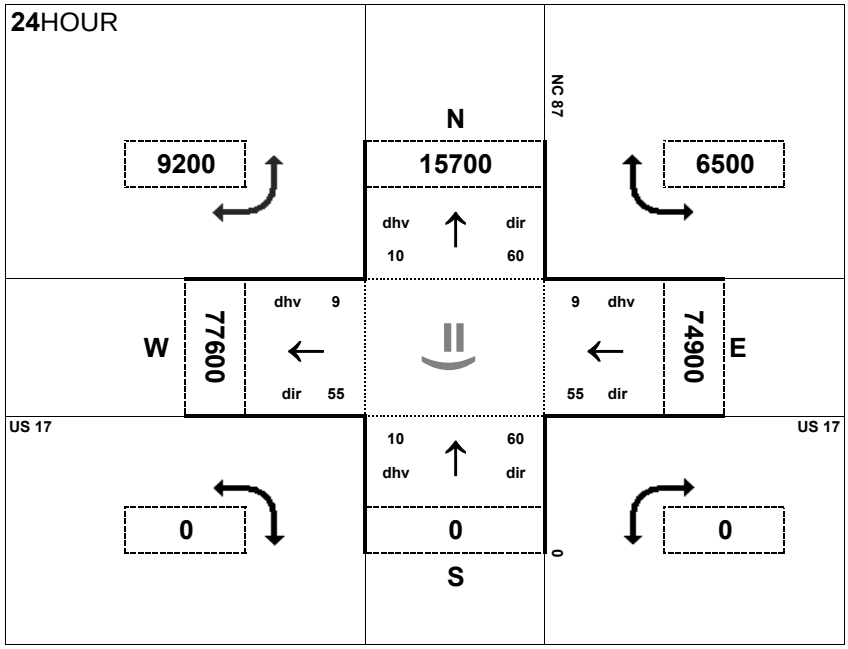
PM peak hour inflow is 7175 vehicles. PM peak hour outflow is 7176 vehicles.

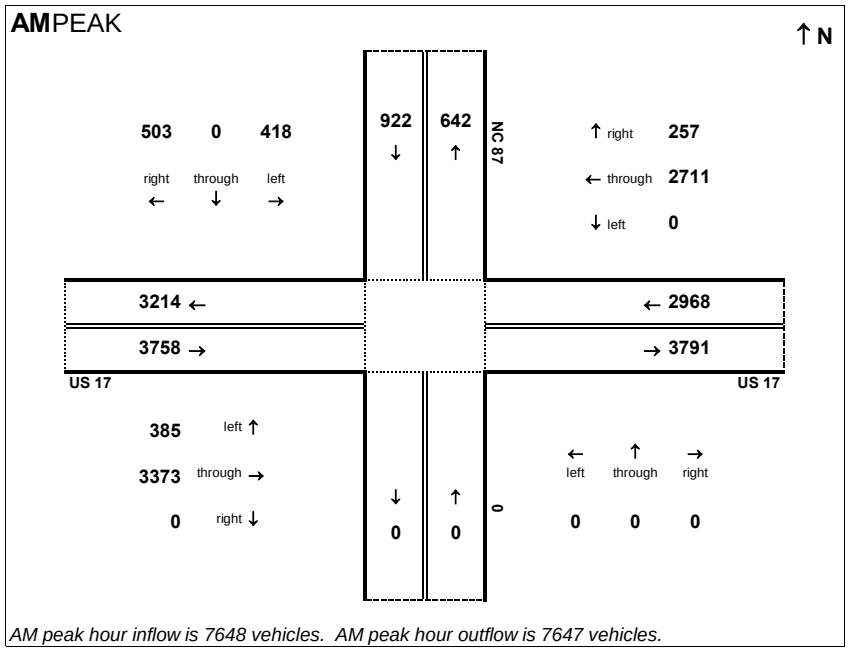
Peak Hour Volume Breakouts Report:
02 - US 17 and NC 87

Traffic Forecast Release Date:
Oct. 2014

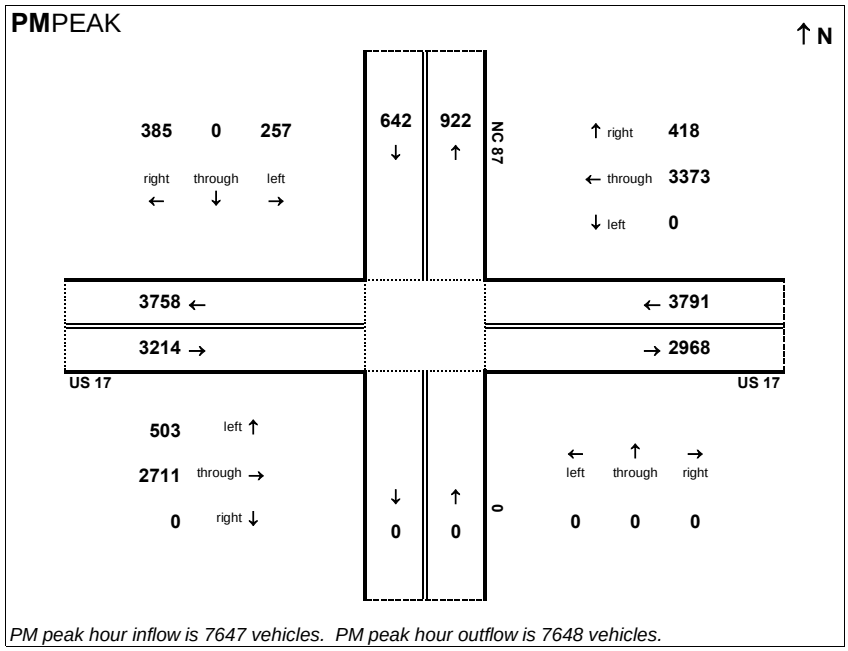
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 7648 vehicles. AM peak hour outflow is 7647 vehicles.



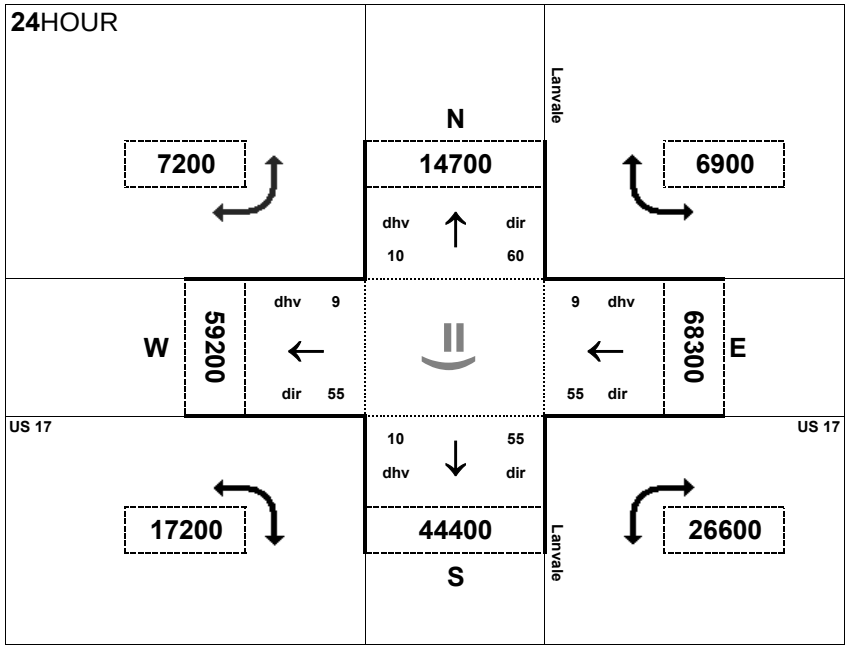
PM peak hour inflow is 7647 vehicles. PM peak hour outflow is 7648 vehicles.

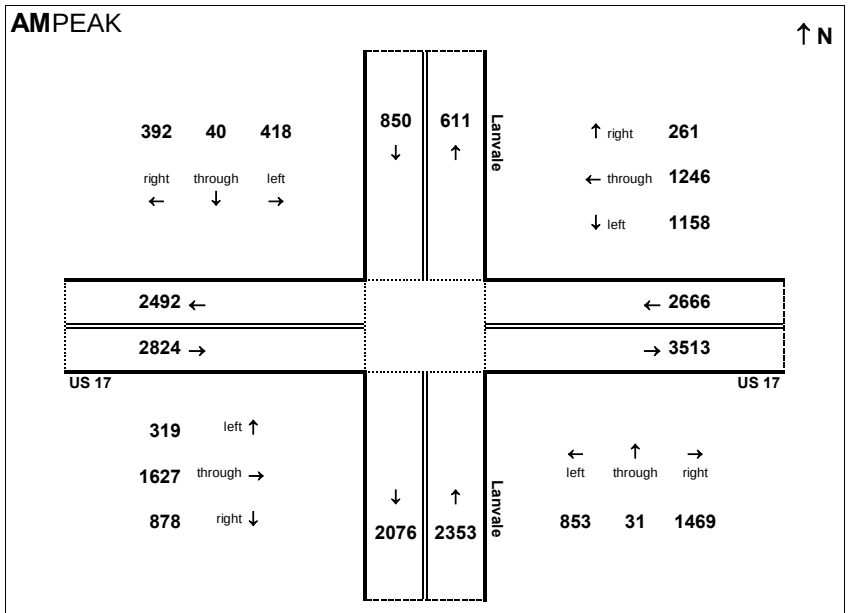
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

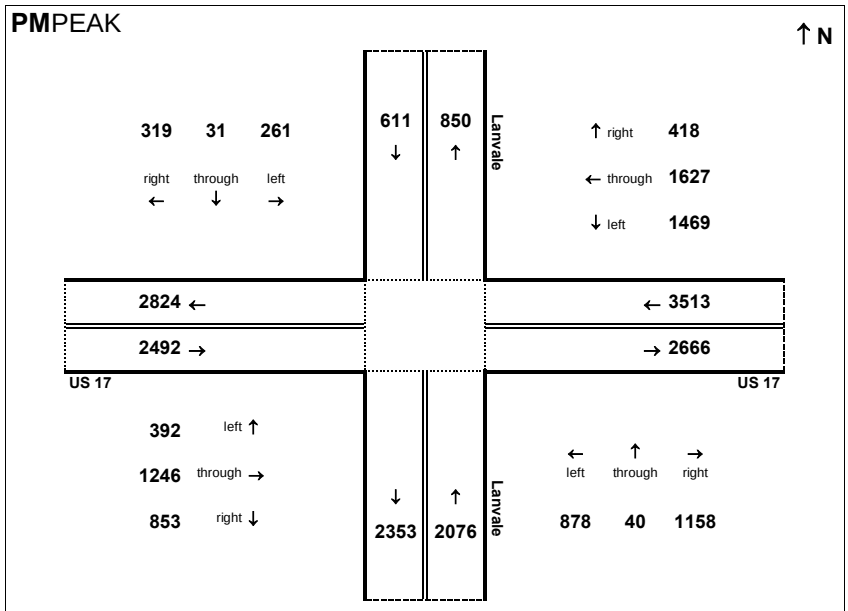
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 8693 vehicles. AM peak hour outflow is 8692 vehicles.



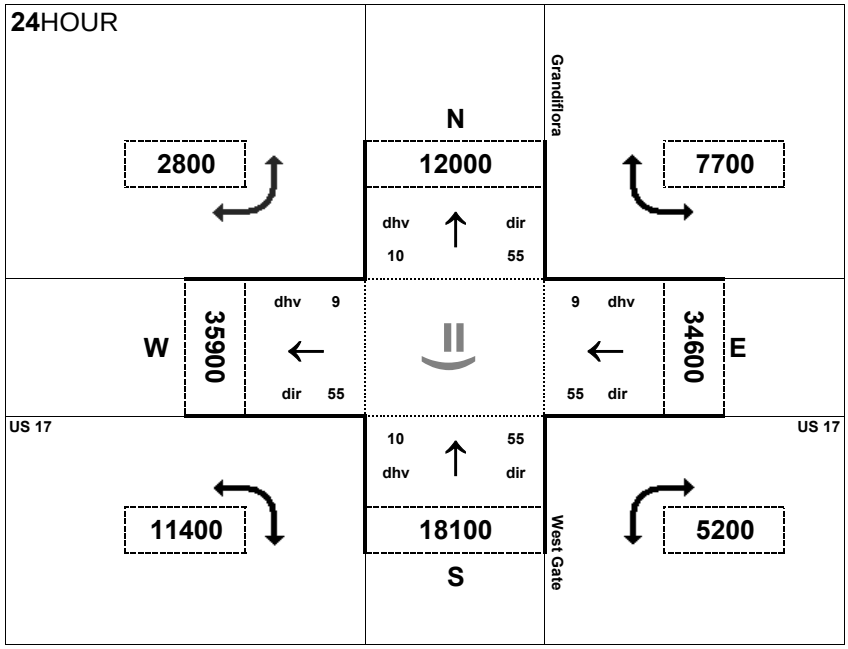
PM peak hour inflow is 8692 vehicles. PM peak hour outflow is 8693 vehicles.

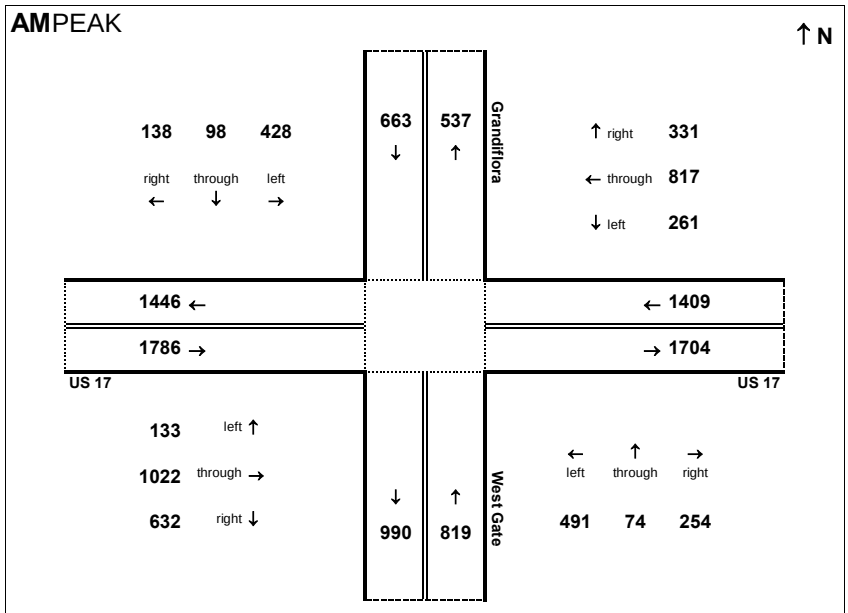
Peak Hour Volume Breakouts Report:
06 - US 17 and Grandiflora Dr/West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

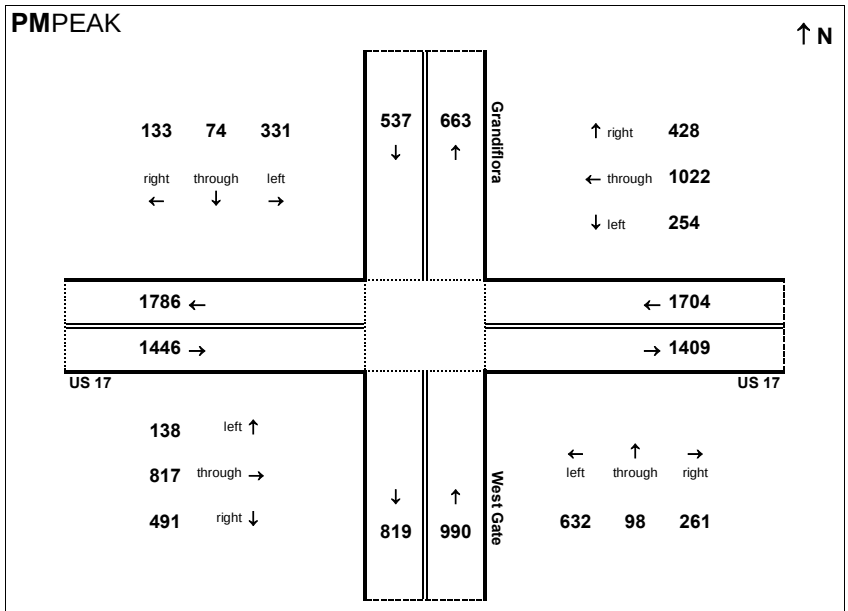
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)

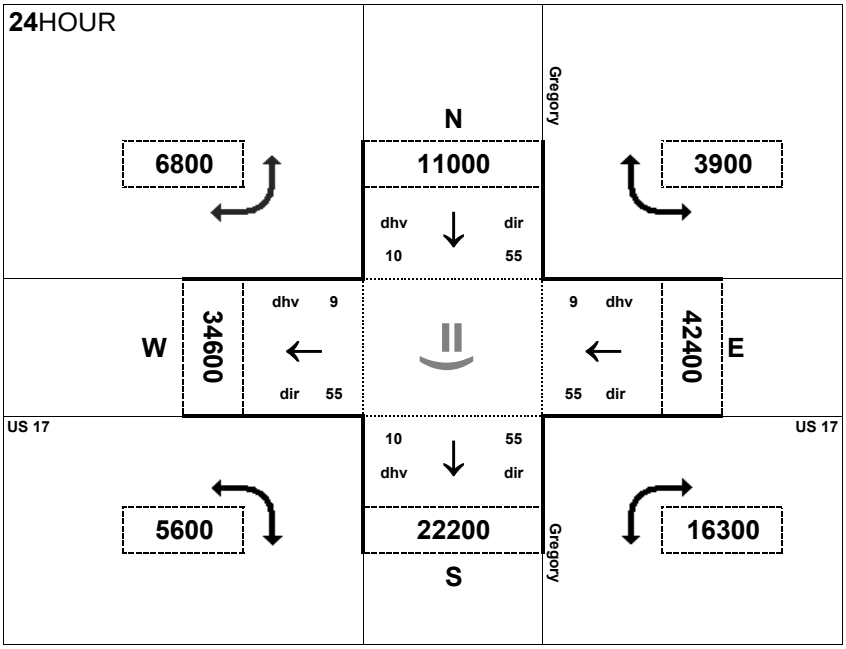




AM peak hour inflow is 4677 vehicles. AM peak hour outflow is 4677 vehicles.



PM peak hour inflow is 4677 vehicles. PM peak hour outflow is 4677 vehicles.

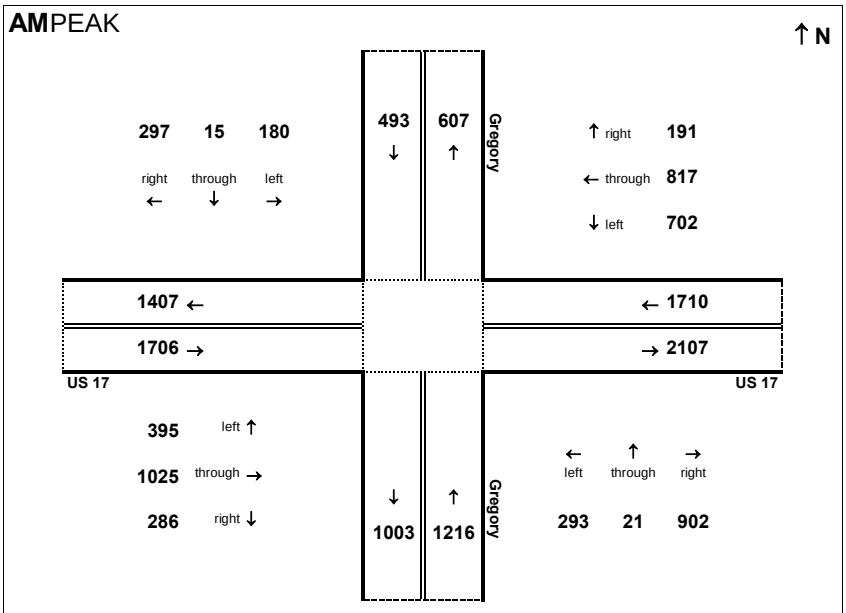


Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

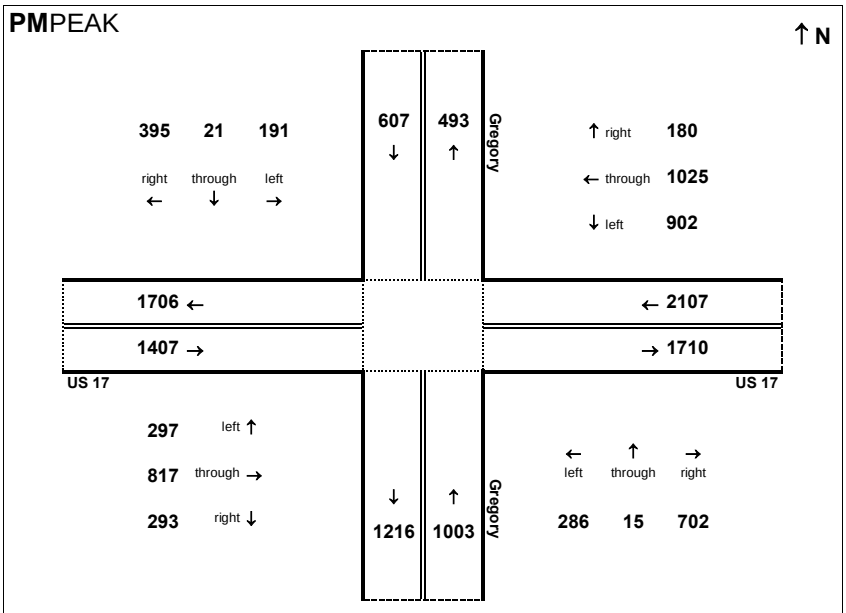
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)



AM peak hour inflow is 5125 vehicles. AM peak hour outflow is 5124 vehicles.



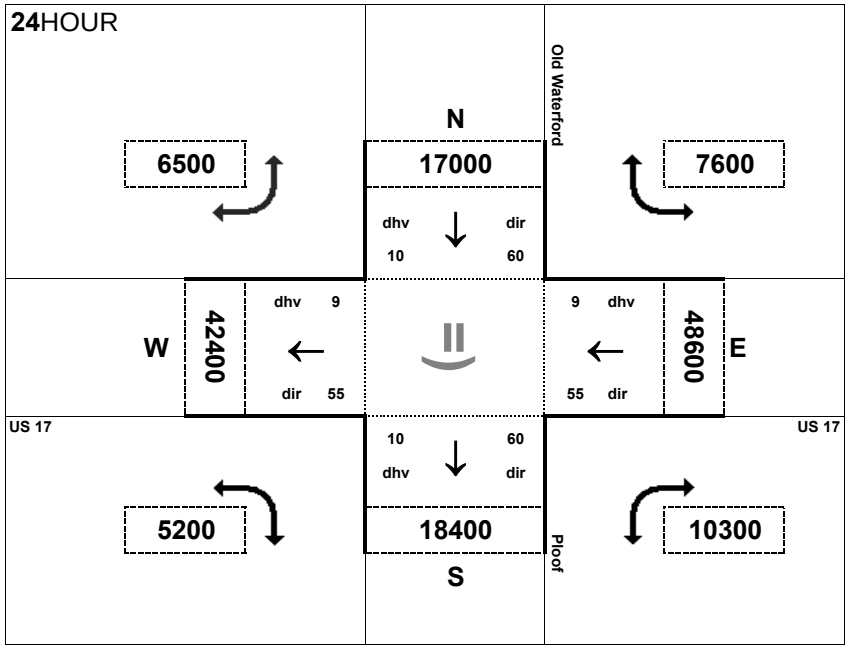
PM peak hour inflow is 5124 vehicles. PM peak hour outflow is 5125 vehicles.

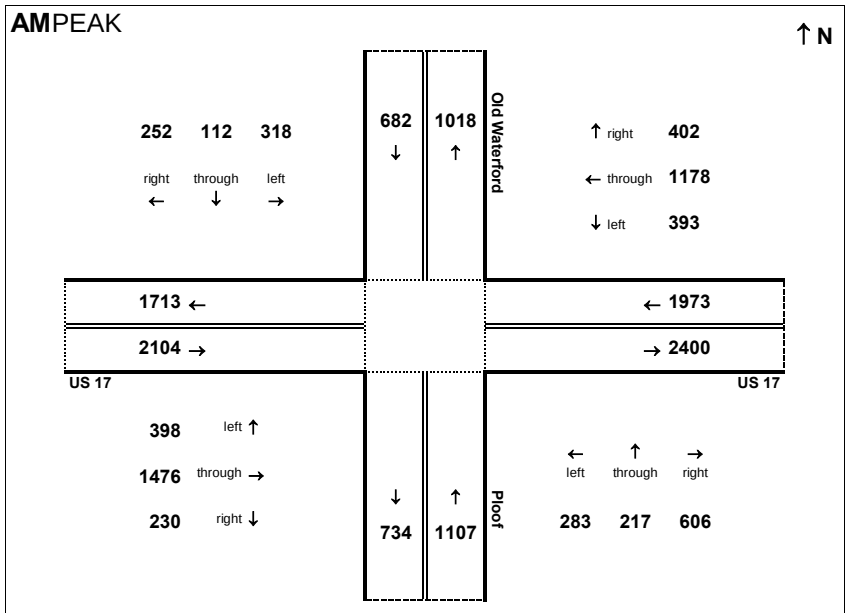
Peak Hour Volume Breakouts Report:
08 - US 17 and Ploof Rd

Traffic Forecast Release Date:
Oct. 2014

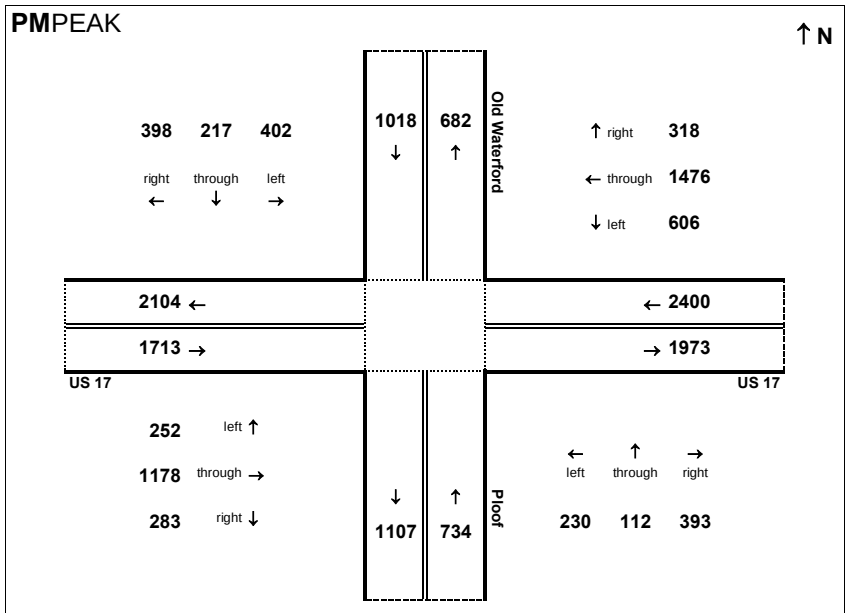
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 5866 vehicles. AM peak hour outflow is 5865 vehicles.



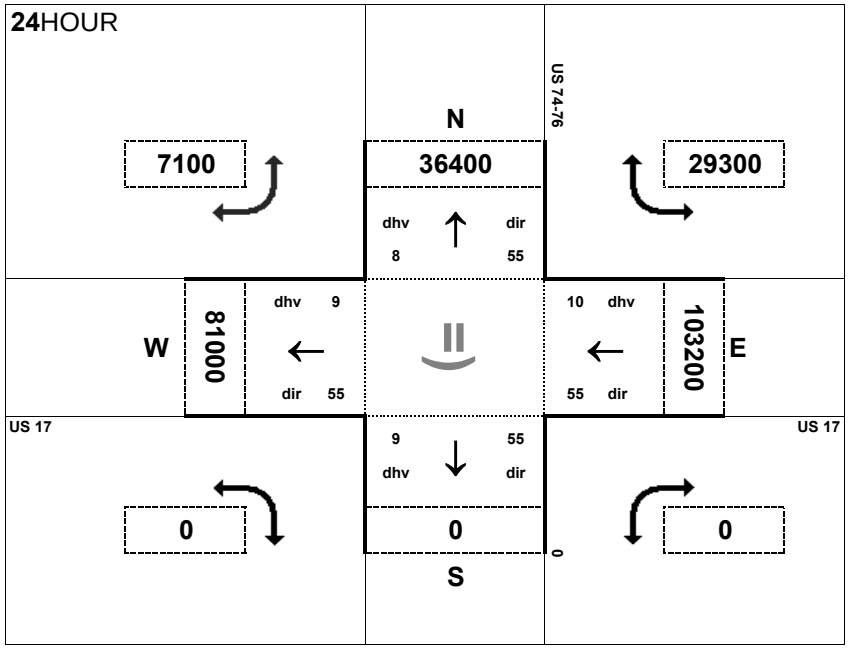
PM peak hour inflow is 5865 vehicles. PM peak hour outflow is 5866 vehicles.

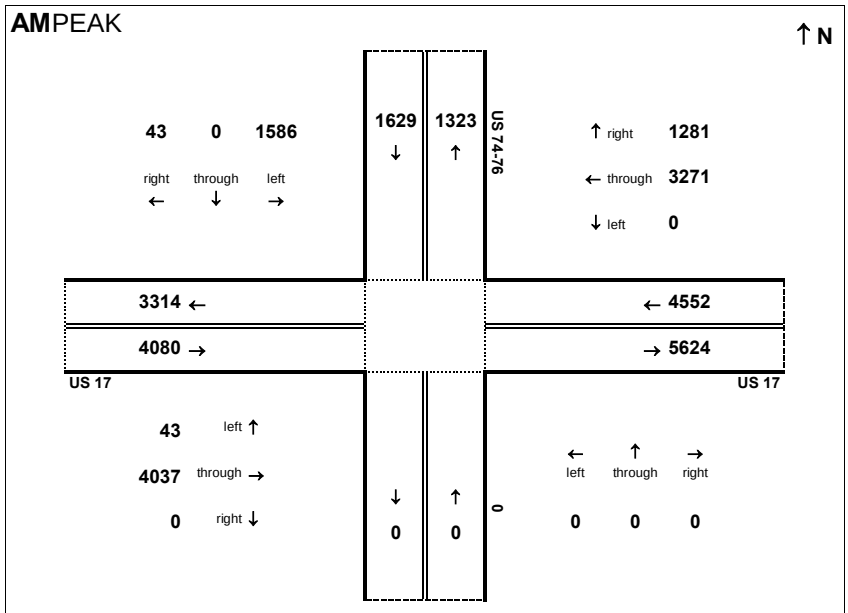
Peak Hour Volume Breakouts Report:
10 - US 17 and Blackwell Rd

Traffic Forecast Release Date:
Oct. 2014

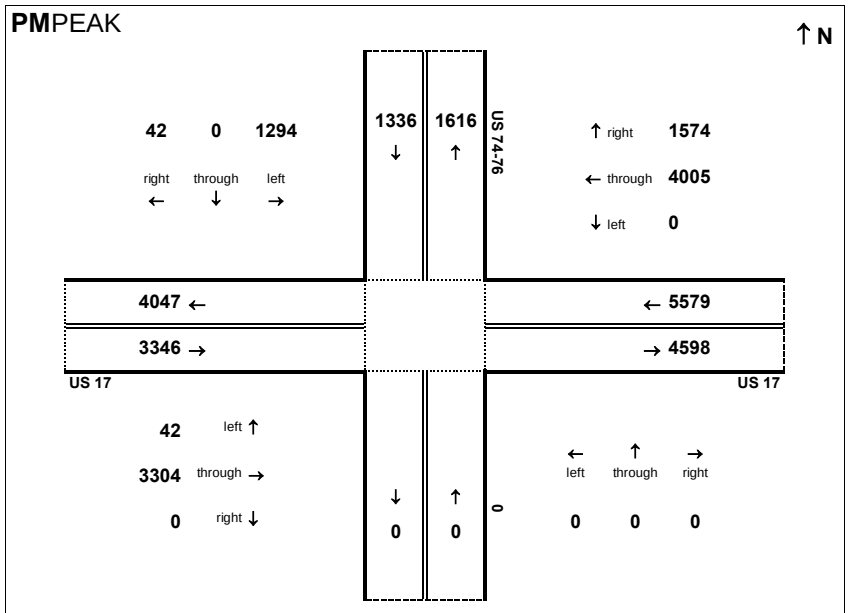
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 10261 vehicles. AM peak hour outflow is 10261 vehicles.



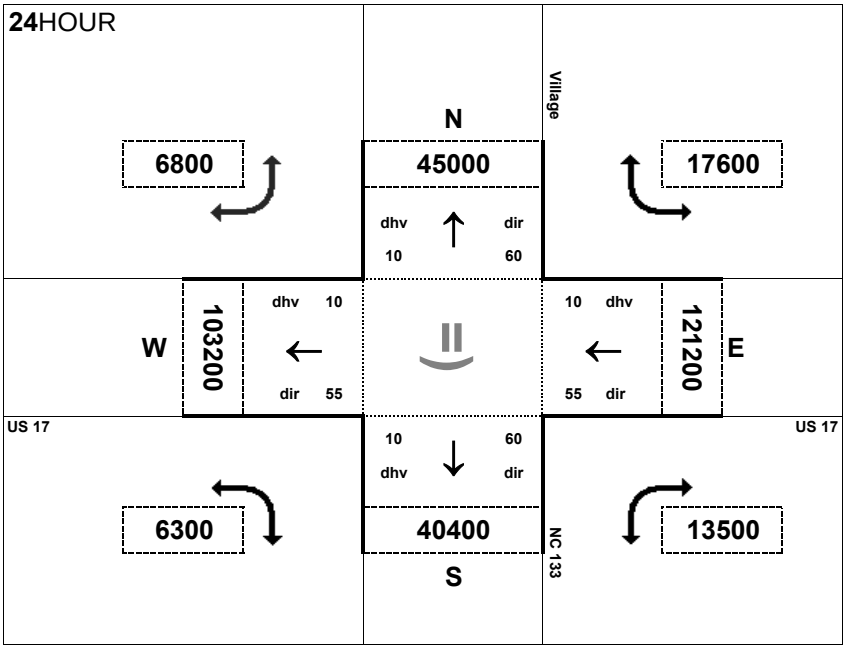
PM peak hour inflow is 10261 vehicles. PM peak hour outflow is 10261 vehicles.

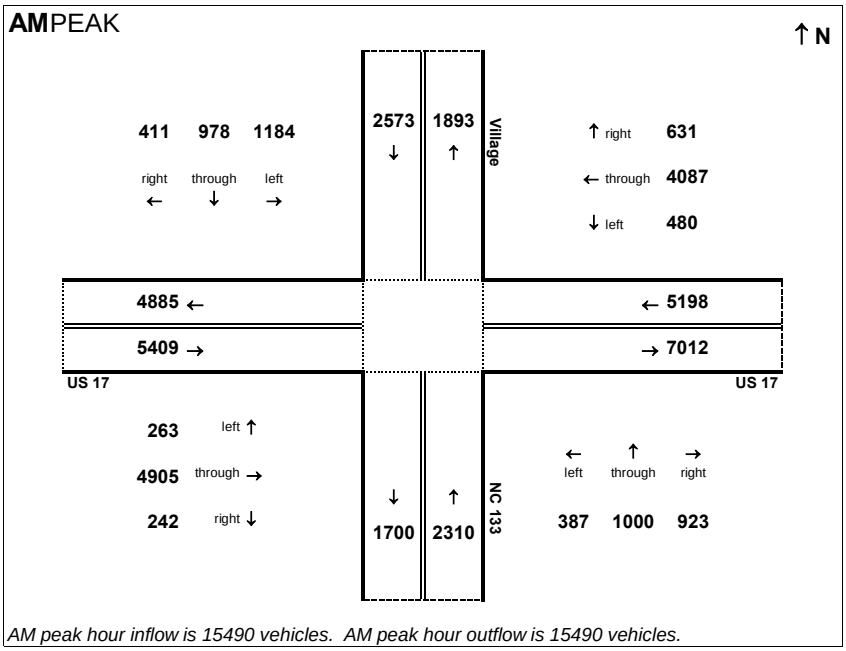
Peak Hour Volume Breakouts Report:
11 - US 17 and NC 133

Traffic Forecast Release Date:
Oct. 2014

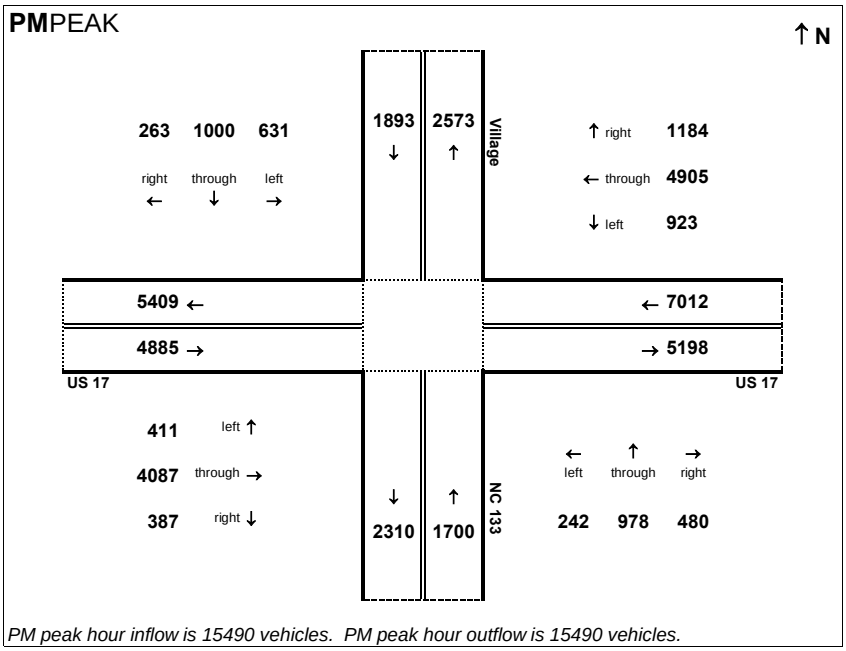
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)

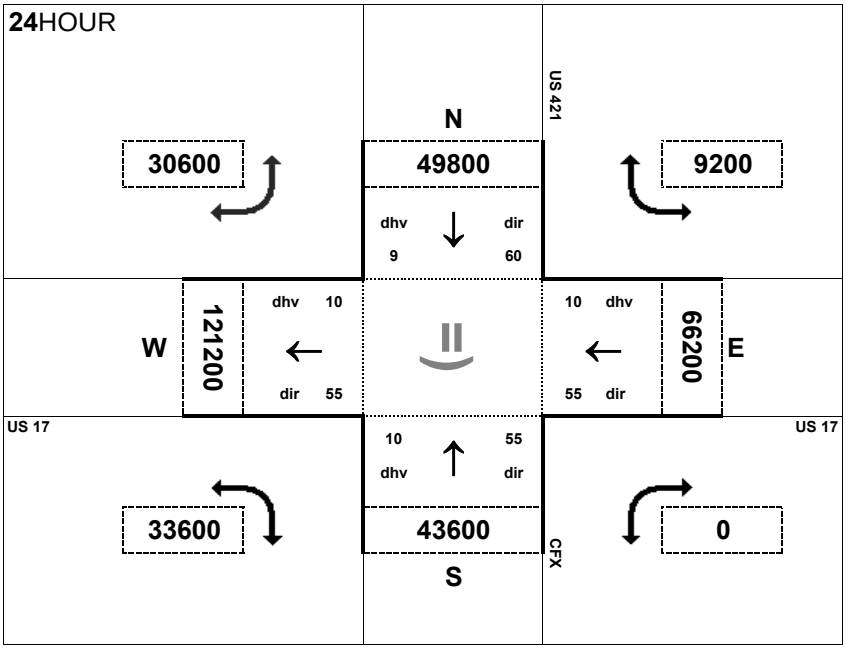




AM peak hour inflow is 15490 vehicles. AM peak hour outflow is 15490 vehicles.



PM peak hour inflow is 15490 vehicles. PM peak hour outflow is 15490 vehicles.

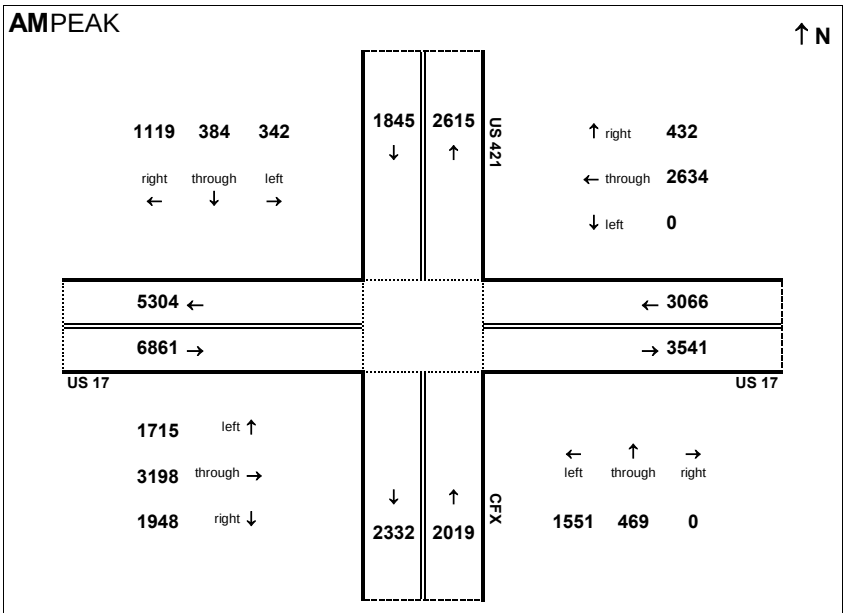


Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

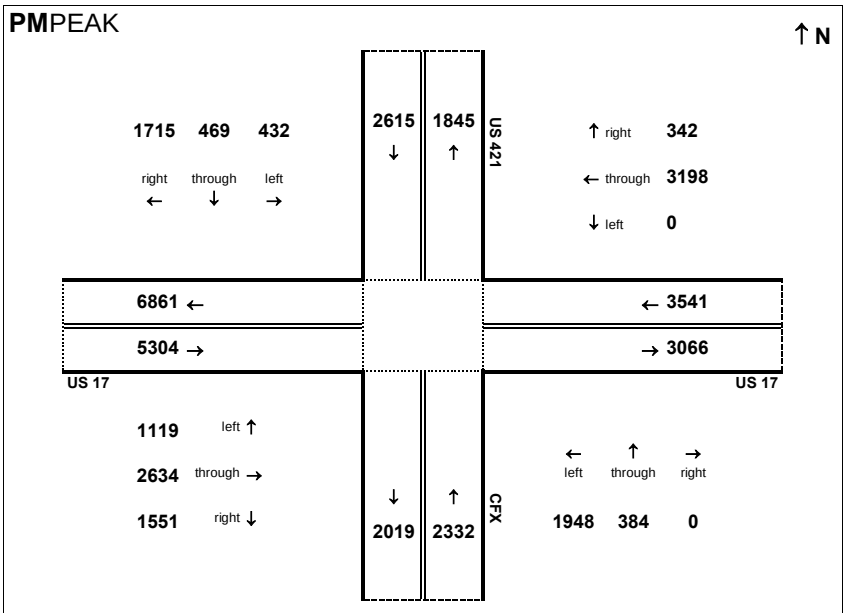
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

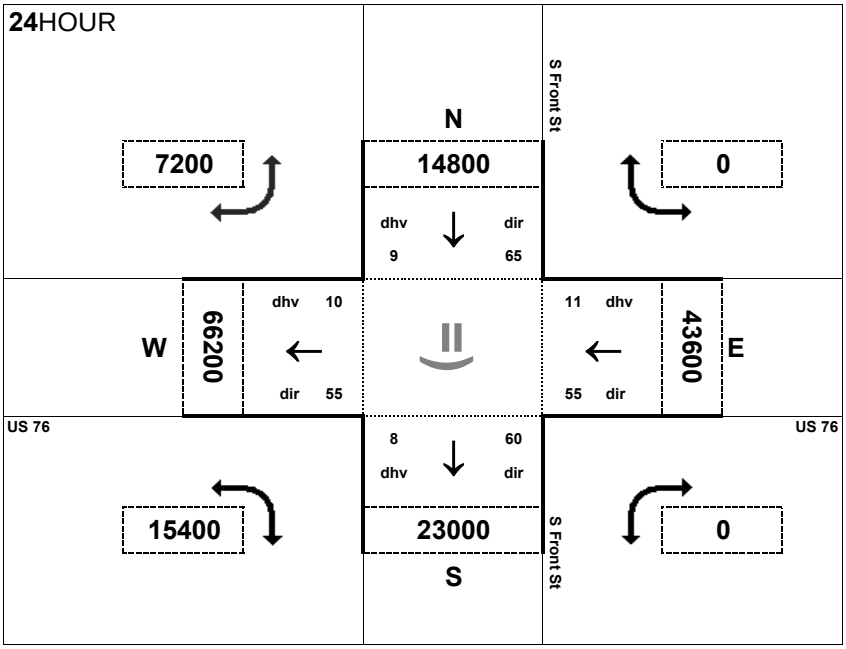
Project:
Cape Fear Crossing - Build Alt. V (Freeway)



AM peak hour inflow is 13791 vehicles. AM peak hour outflow is 13792 vehicles.



PM peak hour inflow is 13792 vehicles. PM peak hour outflow is 13791 vehicles.

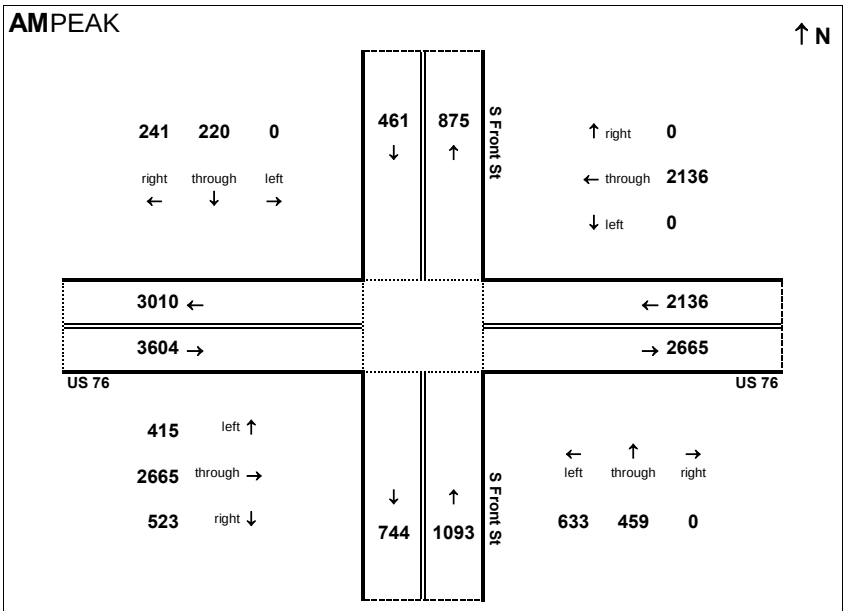


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

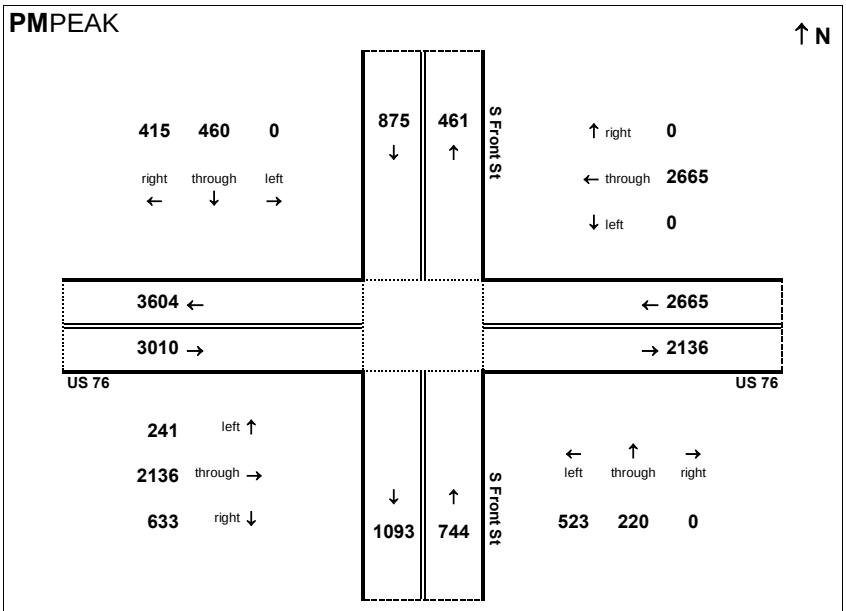
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

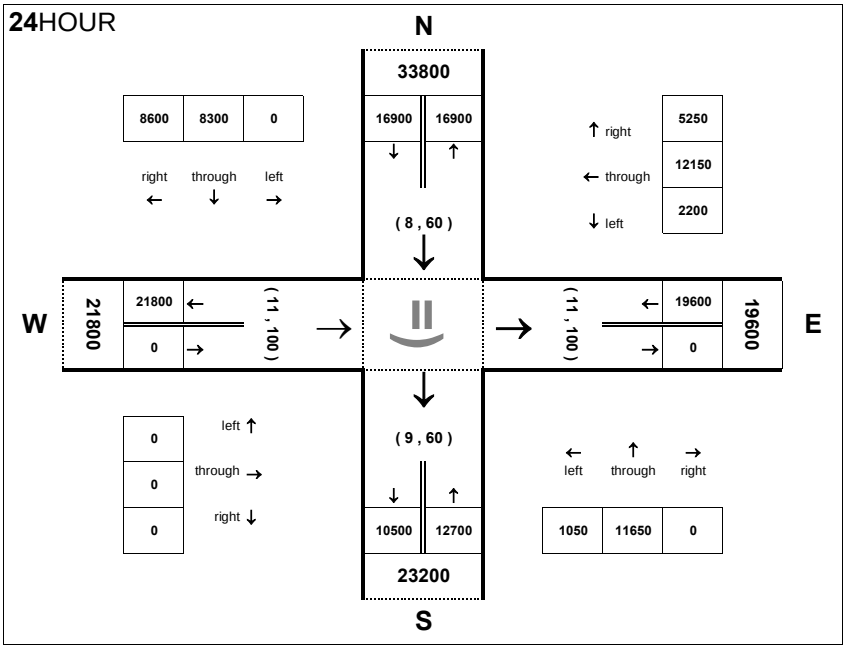
Project:
Cape Fear Crossing - Build Alt. V (Freeway)



AM peak hour inflow is 7294 vehicles. AM peak hour outflow is 7294 vehicles.



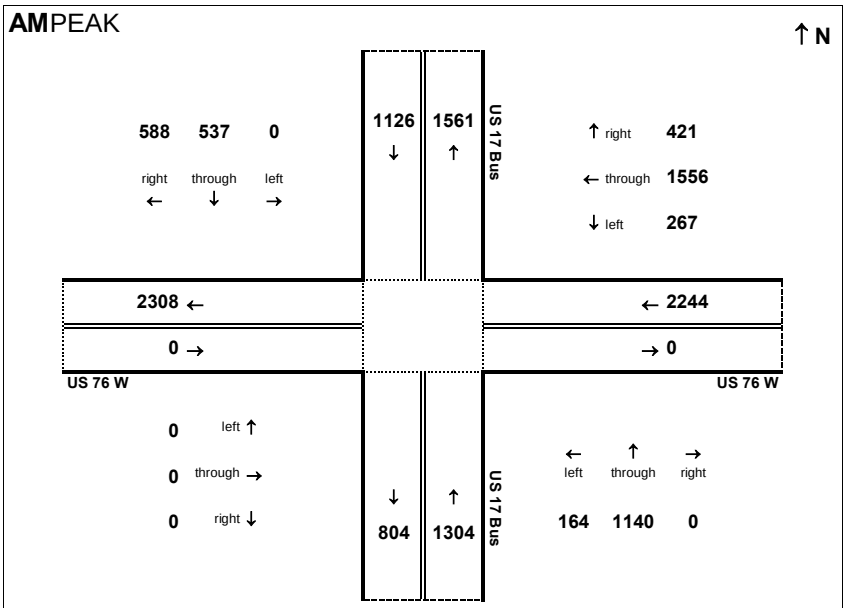
PM peak hour inflow is 7294 vehicles. PM peak hour outflow is 7294 vehicles.



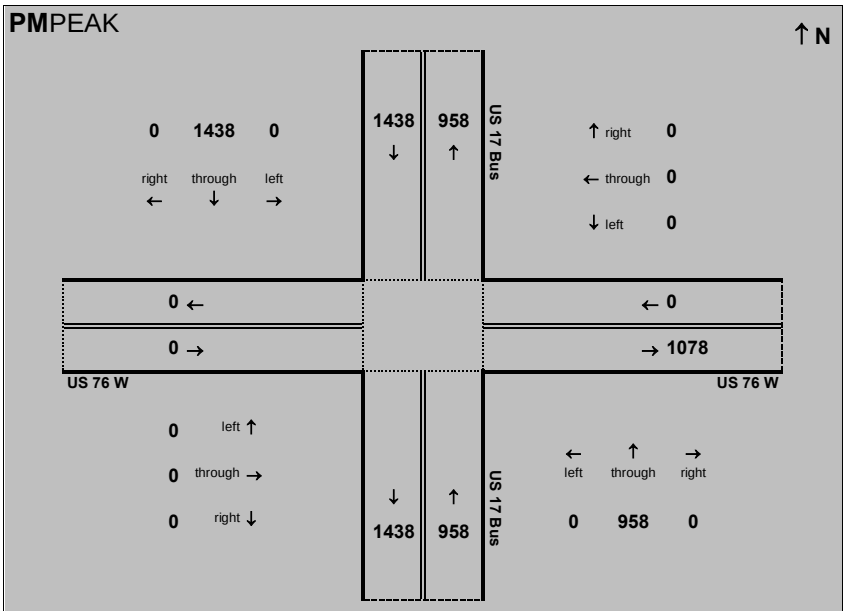
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

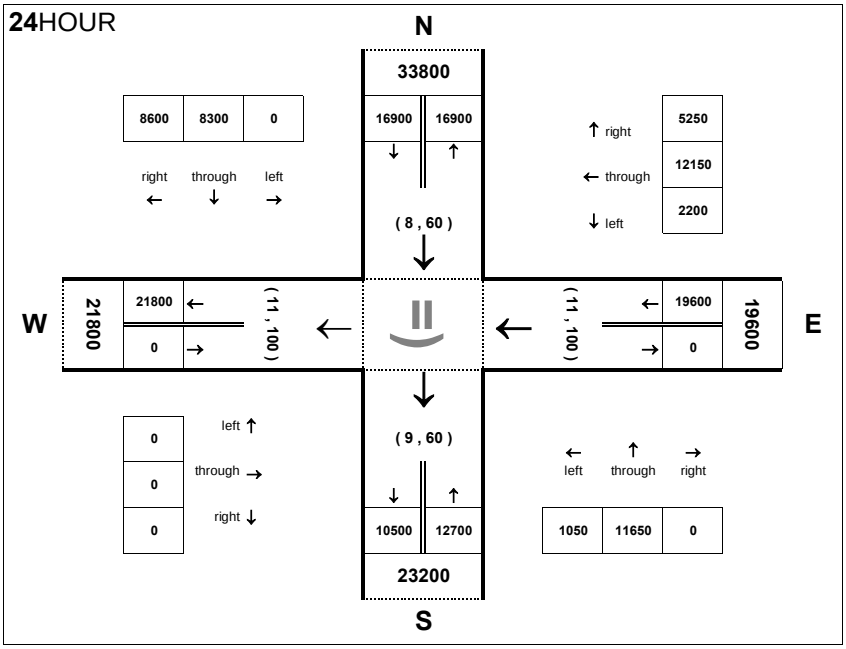
Traffic Data Year:
2040 Alt V (Freeway)



AM peak hour inflow is 4674 vehicles. AM peak hour outflow is 4673 vehicles.



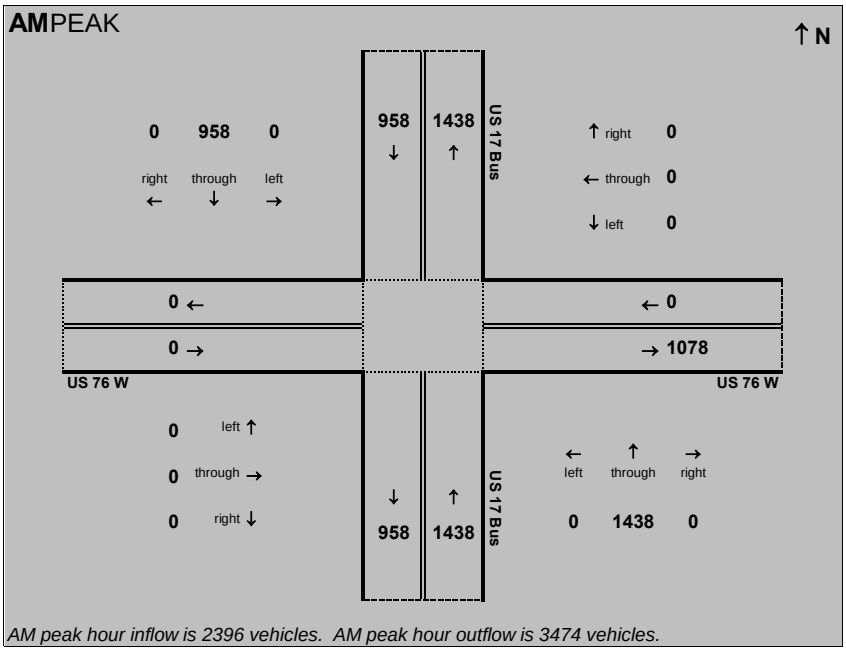
PM peak hour inflow is 2396 vehicles. PM peak hour outflow is 3474 vehicles.



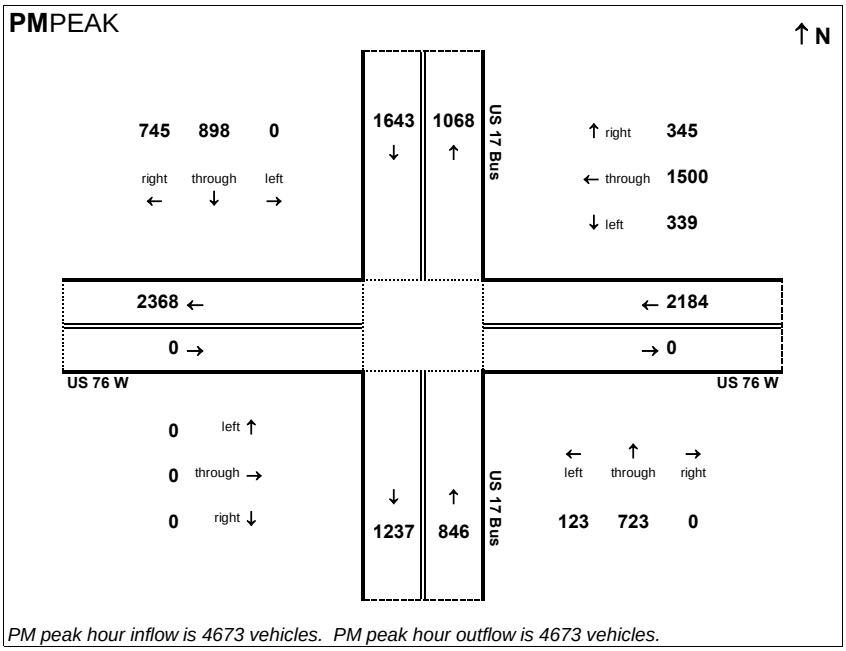
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

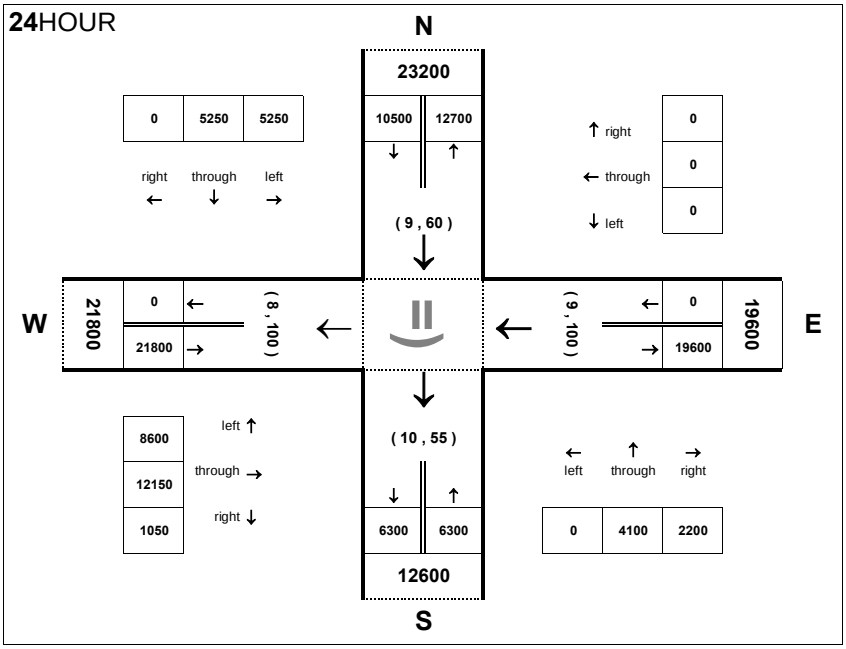
Traffic Data Year:
2040 Alt V (Freeway)



AM peak hour inflow is 2396 vehicles. AM peak hour outflow is 3474 vehicles.



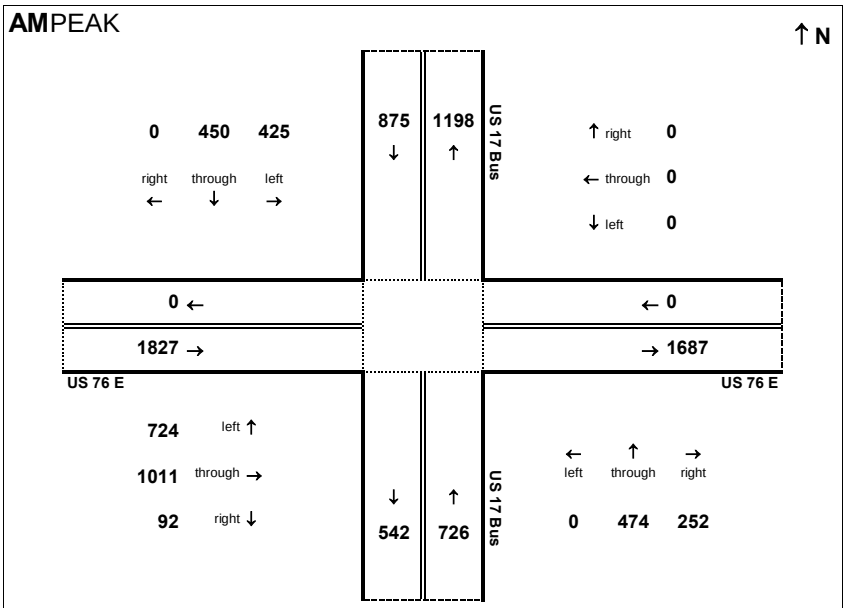
PM peak hour inflow is 4673 vehicles. PM peak hour outflow is 4673 vehicles.



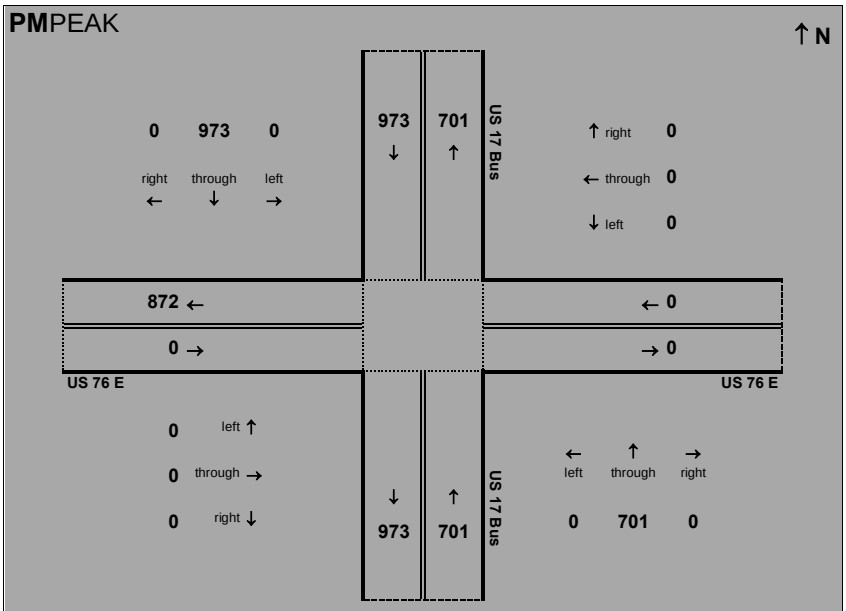
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

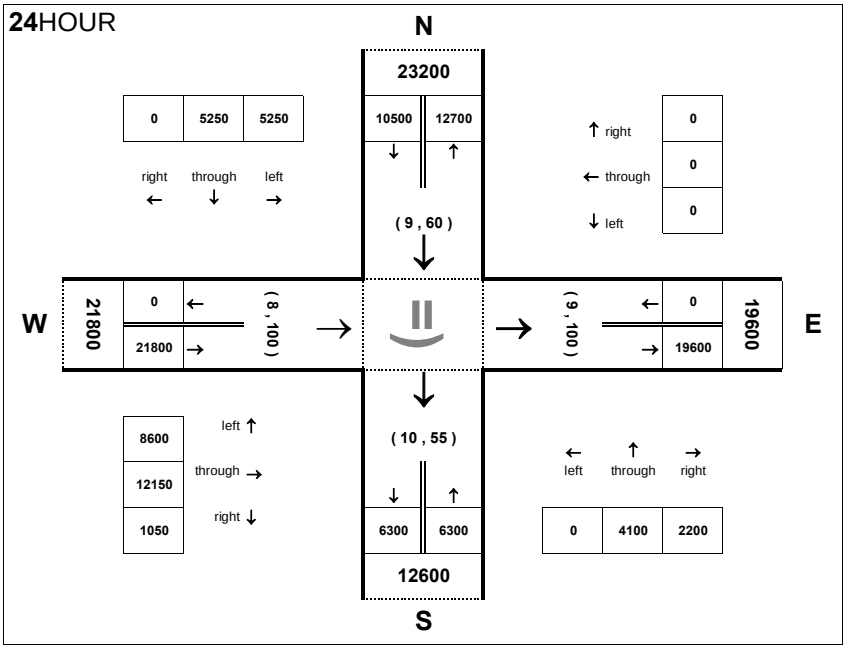
Traffic Data Year:
2040 Alt V (Freeway)



AM peak hour inflow is 3428 vehicles. AM peak hour outflow is 3427 vehicles.



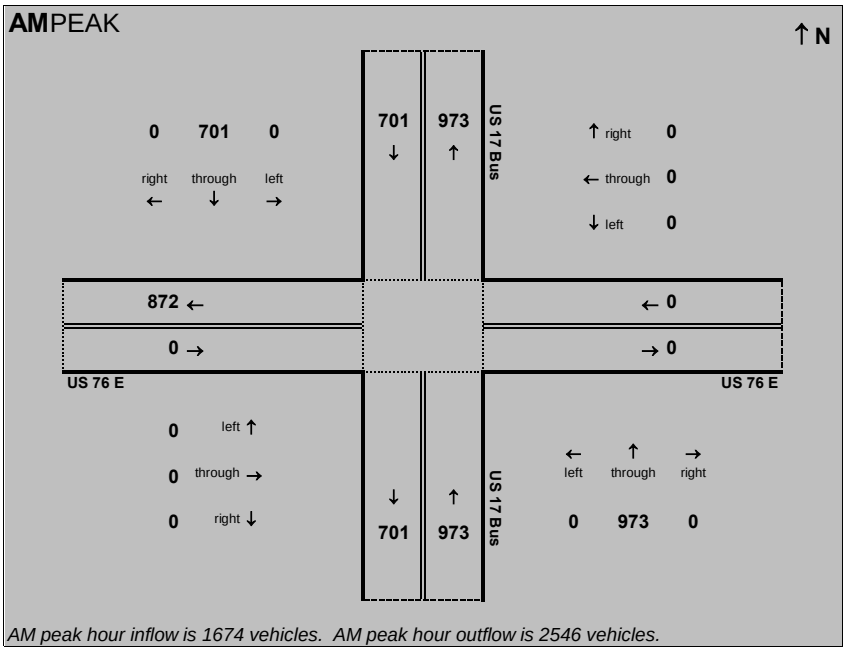
PM peak hour inflow is 1674 vehicles. PM peak hour outflow is 2546 vehicles.



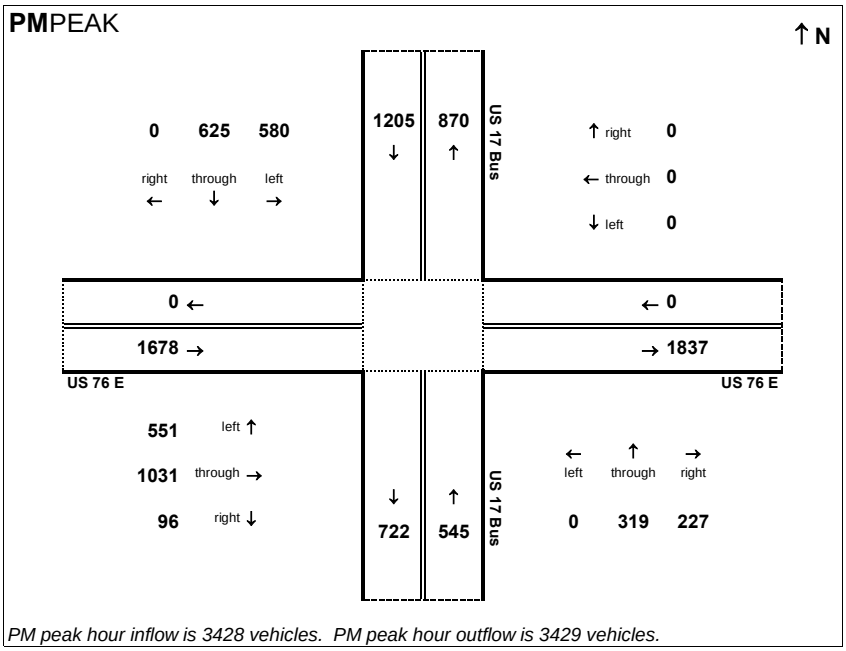
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt V (Freeway)



AM peak hour inflow is 1674 vehicles. AM peak hour outflow is 2546 vehicles.



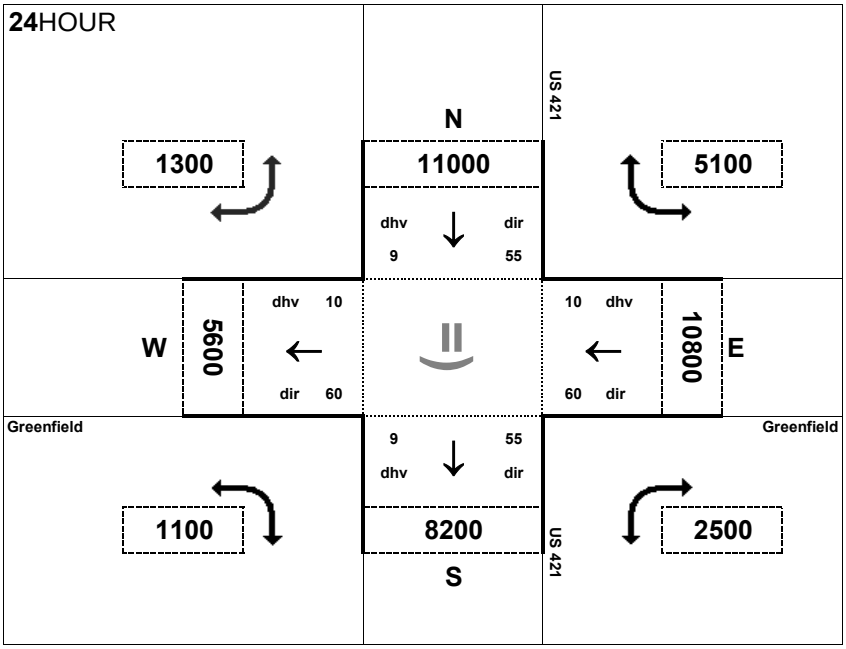
PM peak hour inflow is 3428 vehicles. PM peak hour outflow is 3429 vehicles.

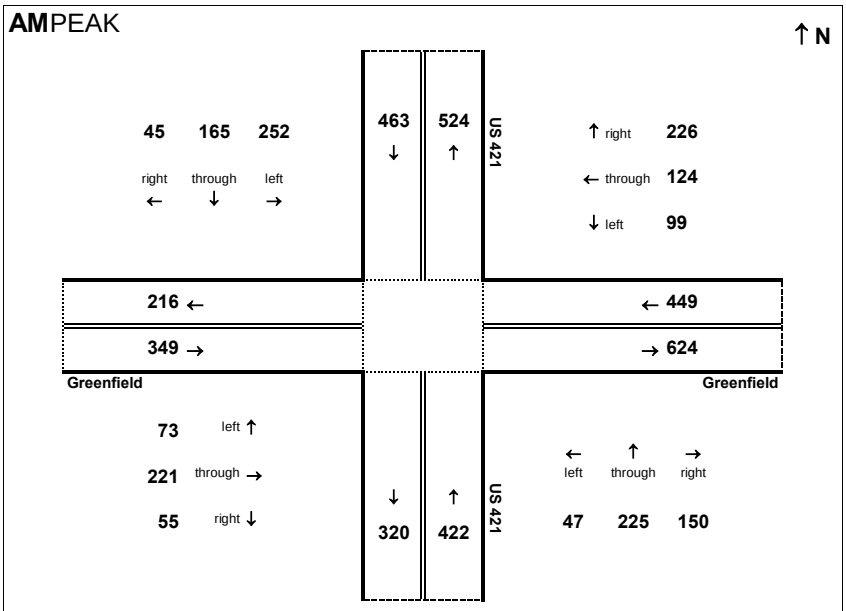
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

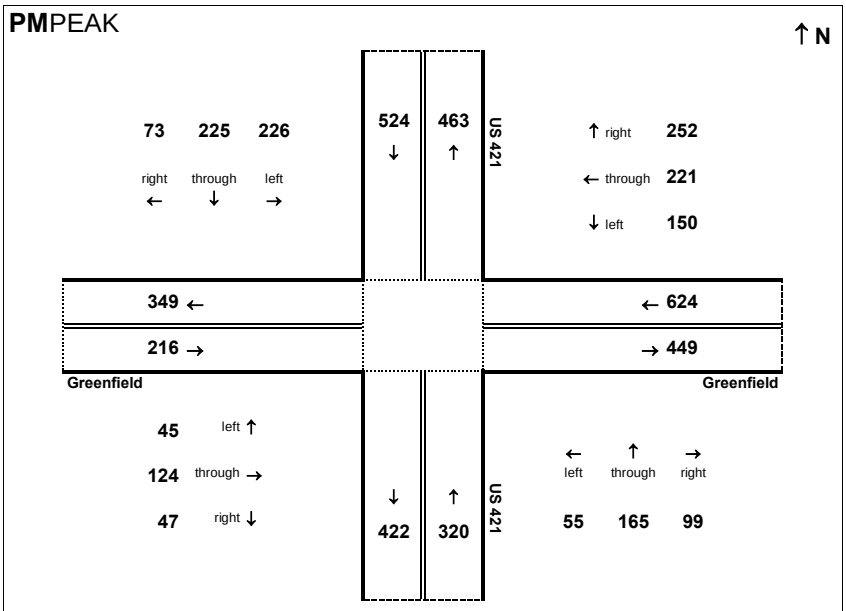
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 1683 vehicles. AM peak hour outflow is 1684 vehicles.



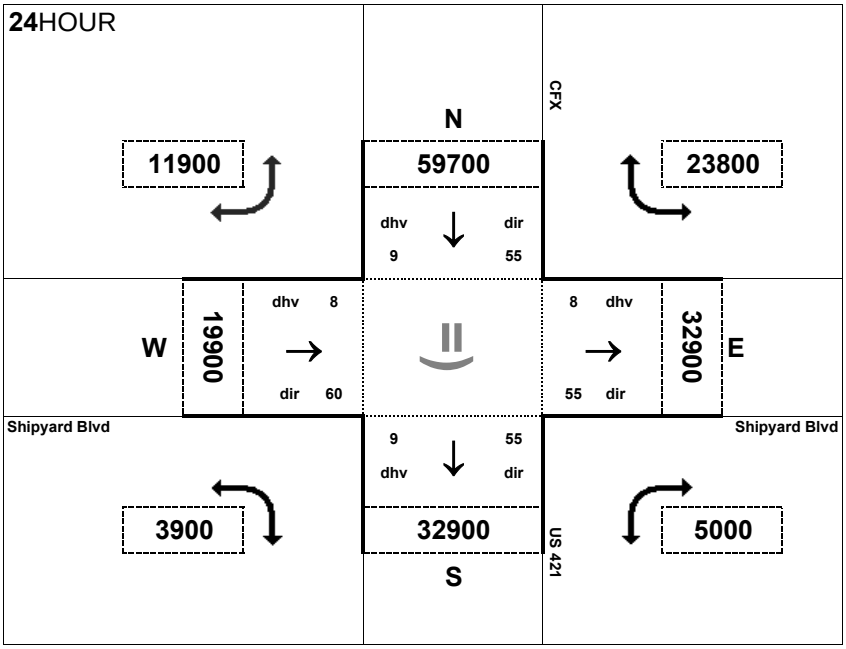
PM peak hour inflow is 1684 vehicles. PM peak hour outflow is 1683 vehicles.

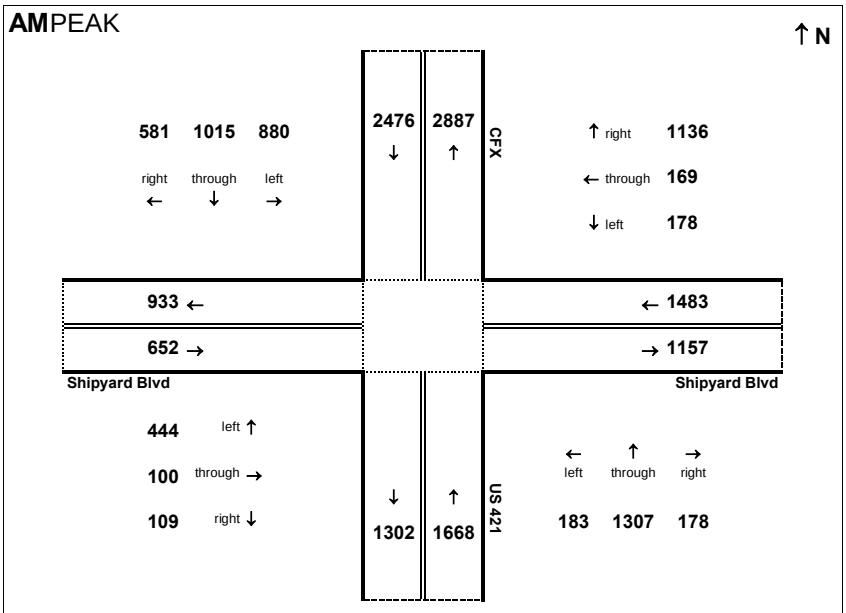
Peak Hour Volume Breakouts Report:
108 -CFX and US 421-Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

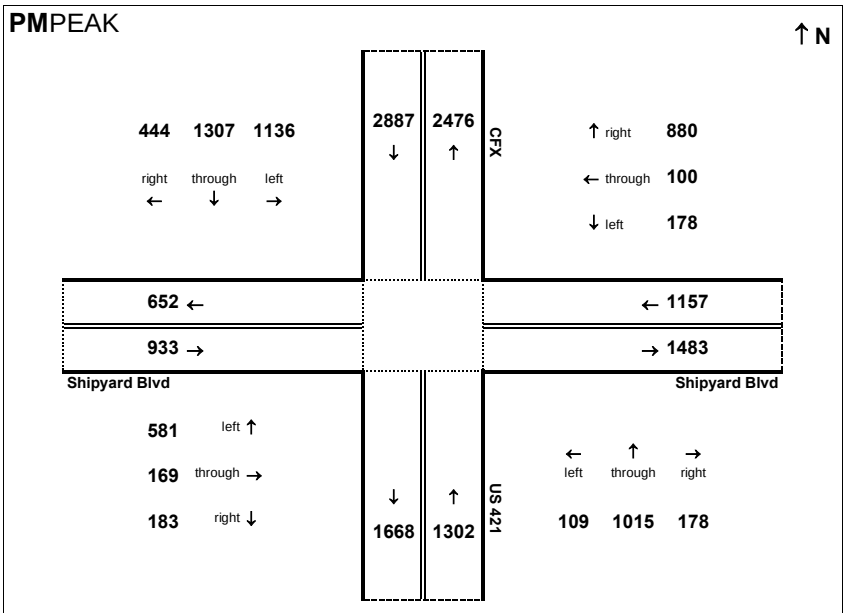
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 6279 vehicles. AM peak hour outflow is 6279 vehicles.



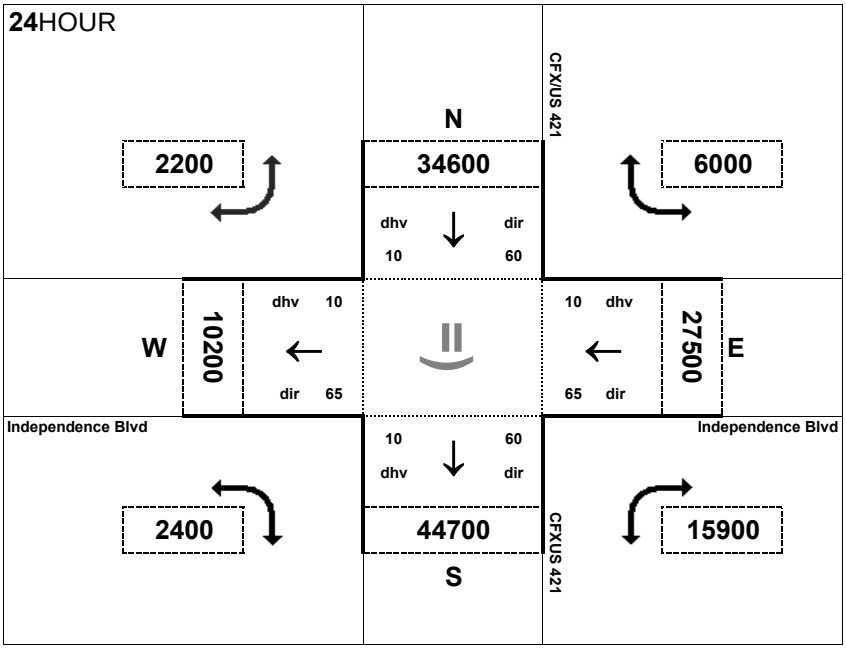
PM peak hour inflow is 6279 vehicles. PM peak hour outflow is 6279 vehicles.

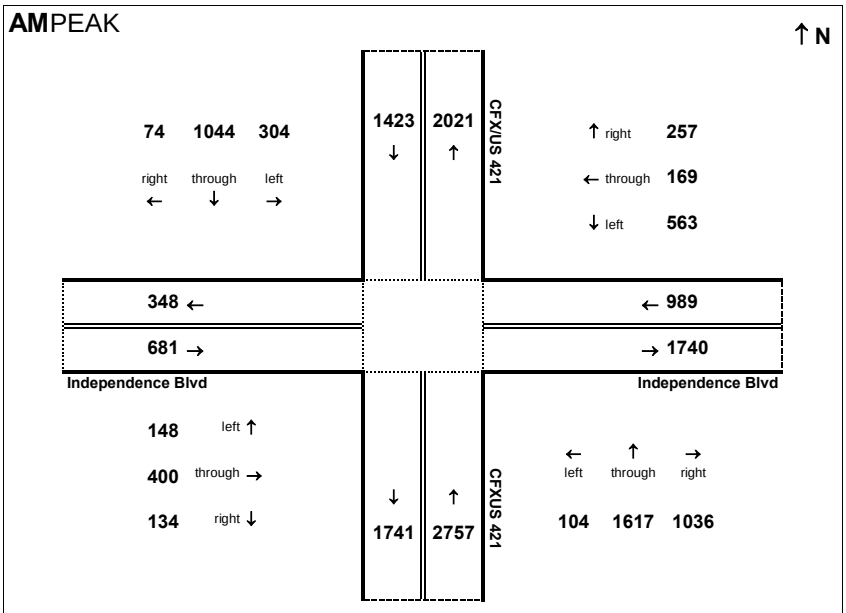
Peak Hour Volume Breakouts Report:
31 - CFX/US 421 - Independence Boulevard

Traffic Forecast Release Date:
Oct. 2014

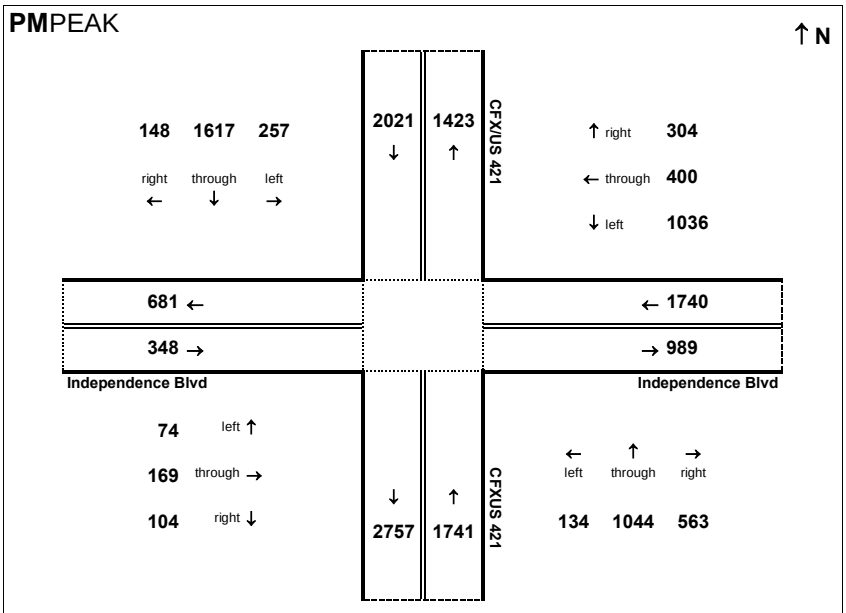
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 5850 vehicles. AM peak hour outflow is 5850 vehicles.



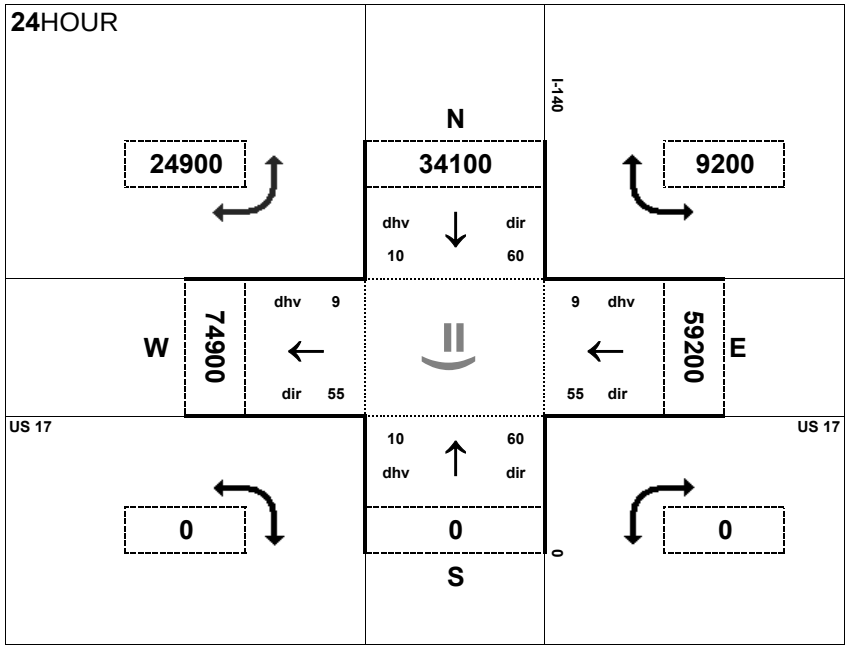
PM peak hour inflow is 5850 vehicles. PM peak hour outflow is 5850 vehicles.

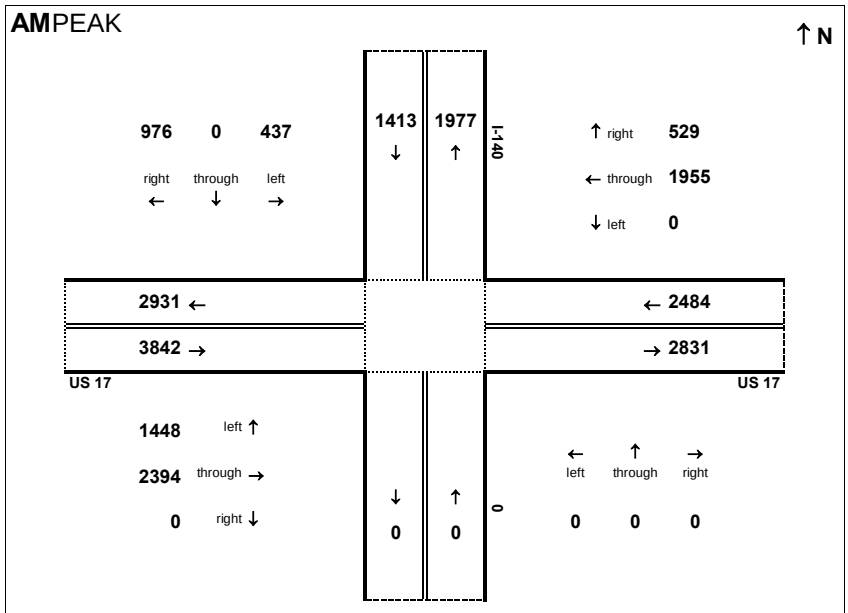
Peak Hour Volume Breakouts Report:
43 - US 17 and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

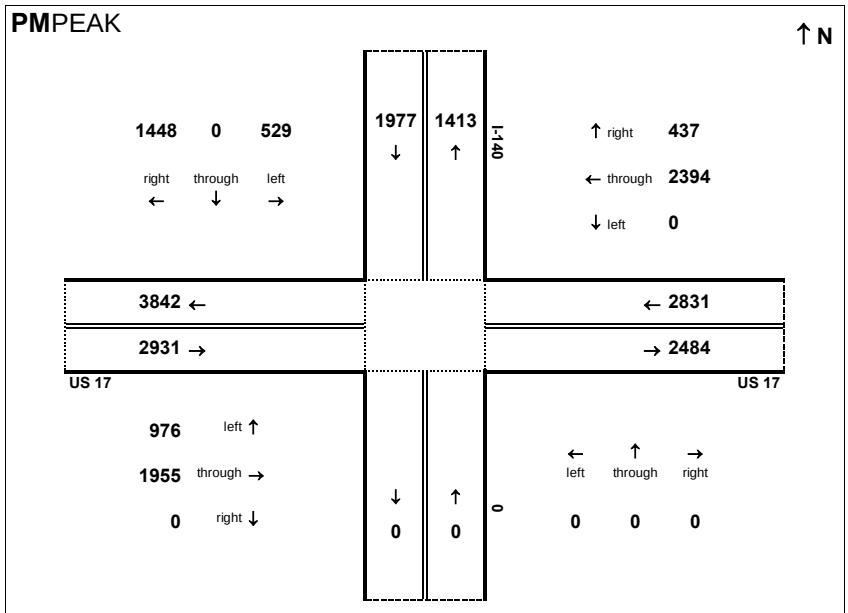
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 7739 vehicles. AM peak hour outflow is 7739 vehicles.



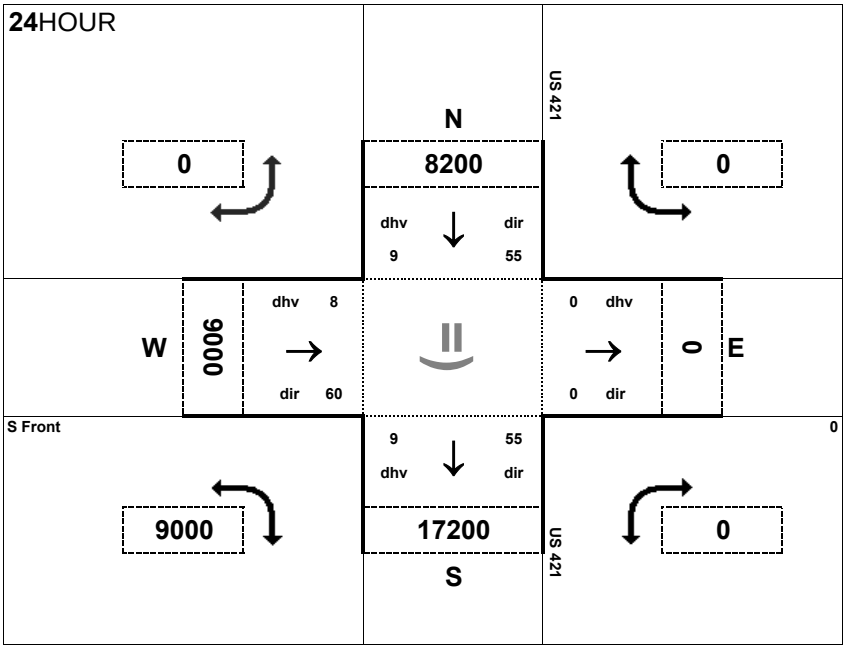
PM peak hour inflow is 7739 vehicles. PM peak hour outflow is 7739 vehicles.

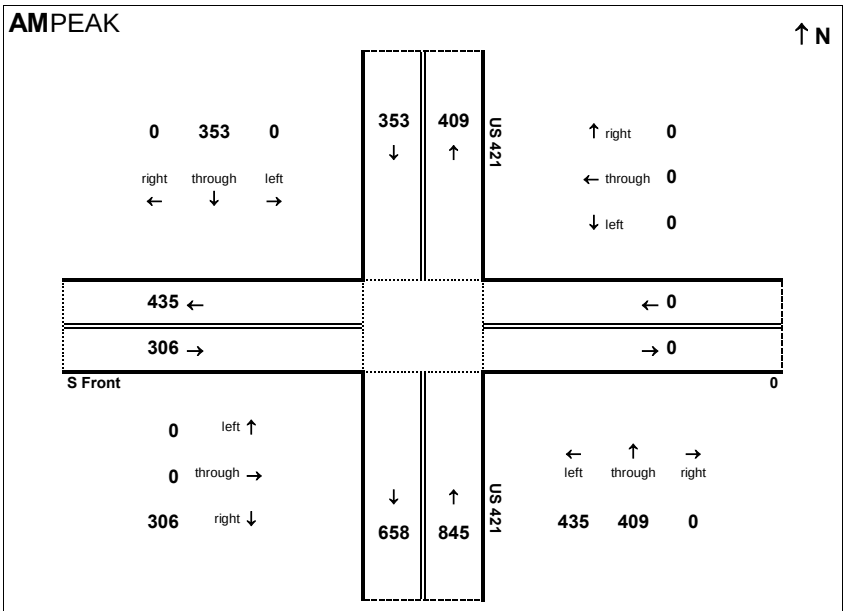
Peak Hour Volume Breakouts Report:
111 - US 421 and S Front

Traffic Forecast Release Date:
Oct. 2014

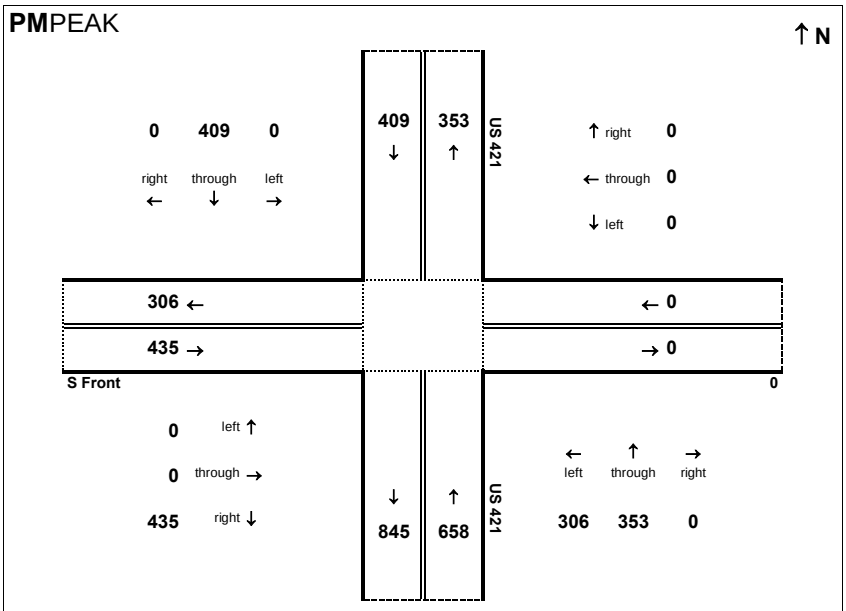
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 1504 vehicles. AM peak hour outflow is 1502 vehicles.



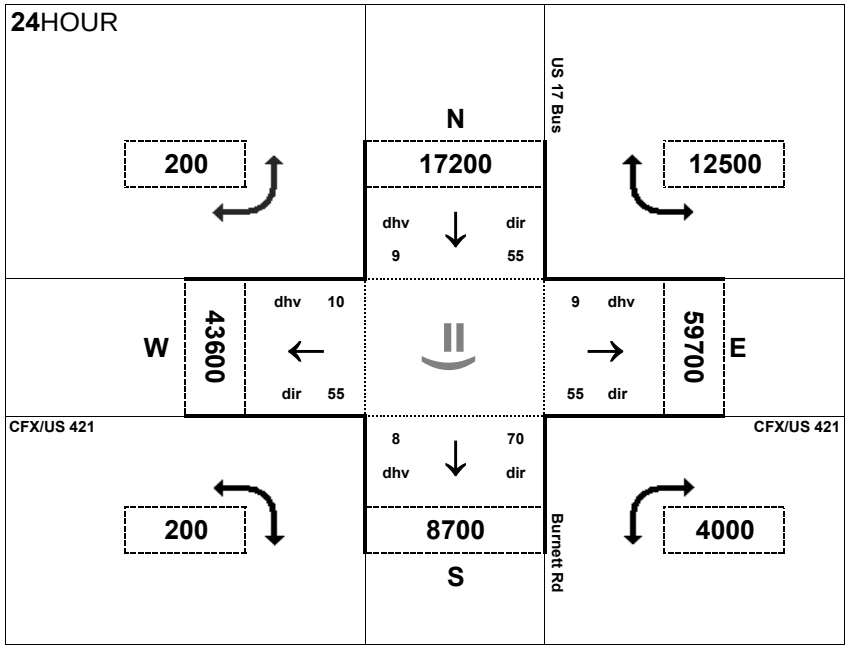
PM peak hour inflow is 1502 vehicles. PM peak hour outflow is 1504 vehicles.

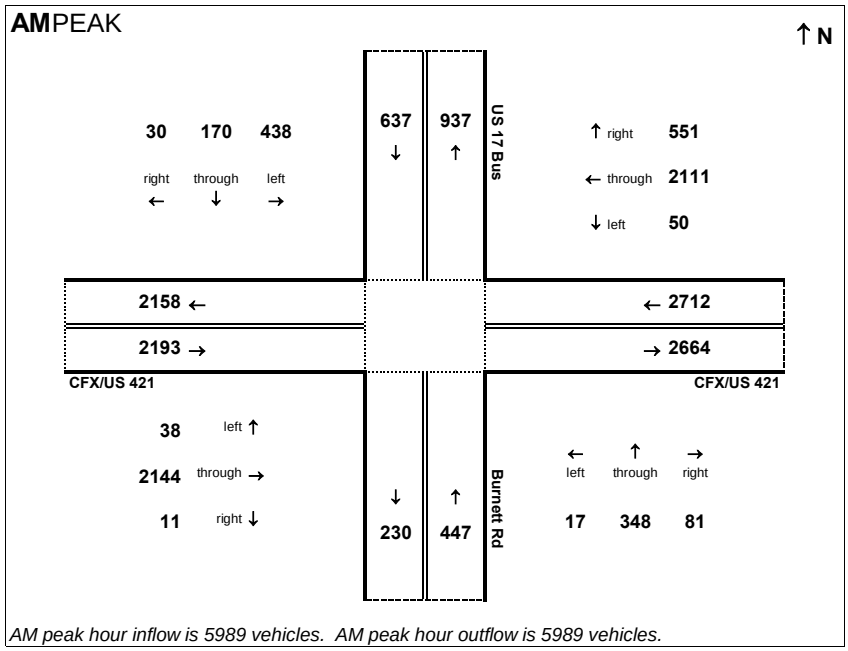
Peak Hour Volume Breakouts Report:
112 - CFX/US 421 and Burnett Rd

Traffic Forecast Release Date:
Oct. 2014

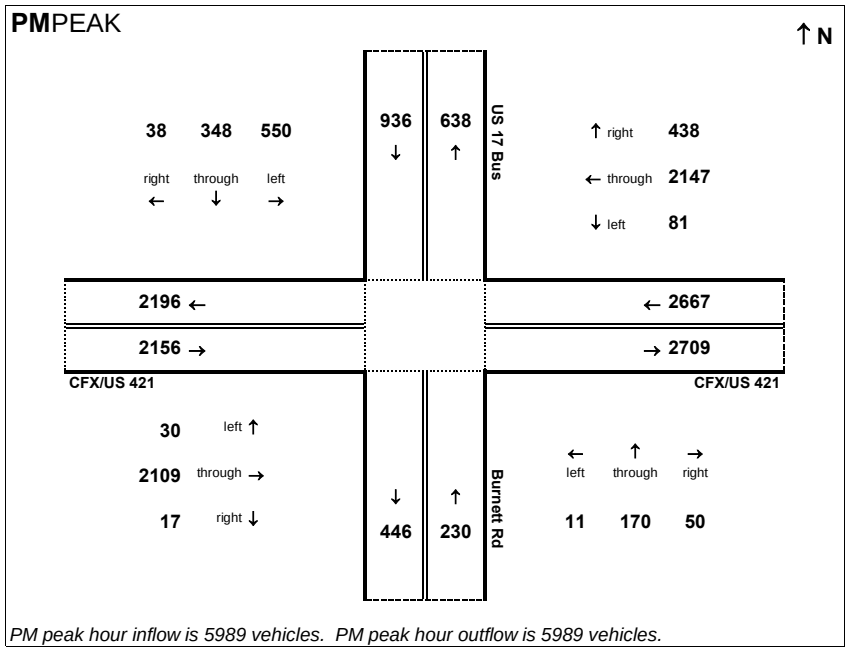
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Freeway)





AM peak hour inflow is 5989 vehicles. AM peak hour outflow is 5989 vehicles.



PM peak hour inflow is 5989 vehicles. PM peak hour outflow is 5989 vehicles.

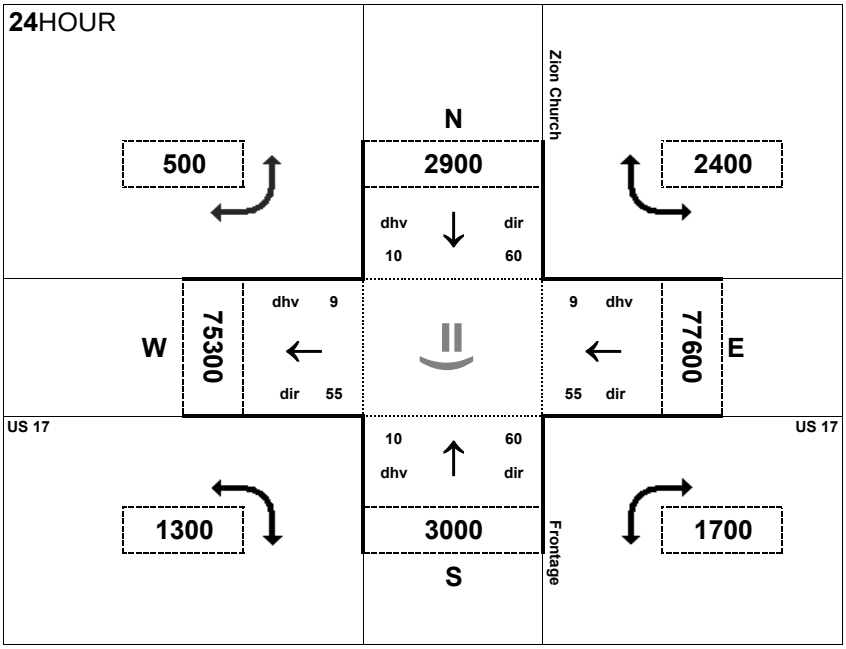
2040 Build DSA Alternative V (Arterial)

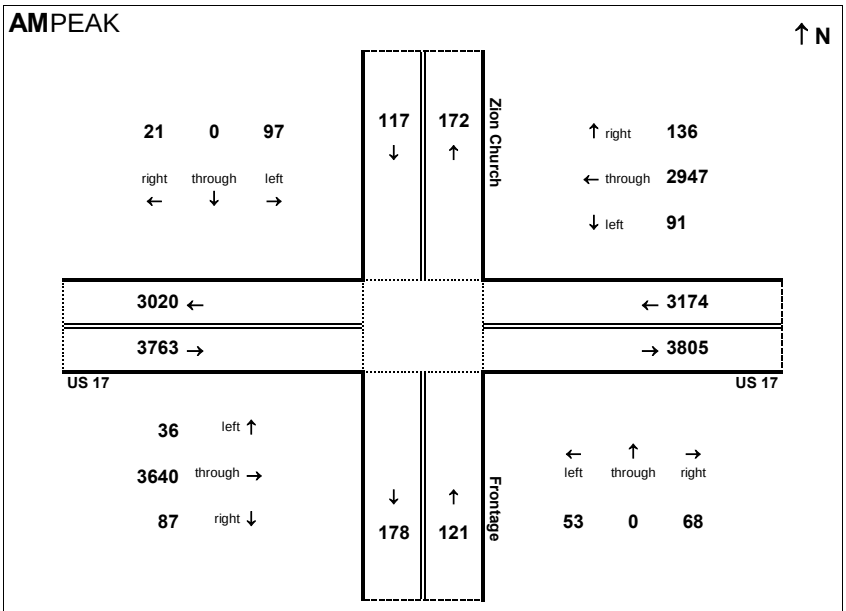
Peak Hour Volume Breakouts Report:
01 - US 17 and Zion Church Rd

Traffic Forecast Release Date:
Oct. 2014

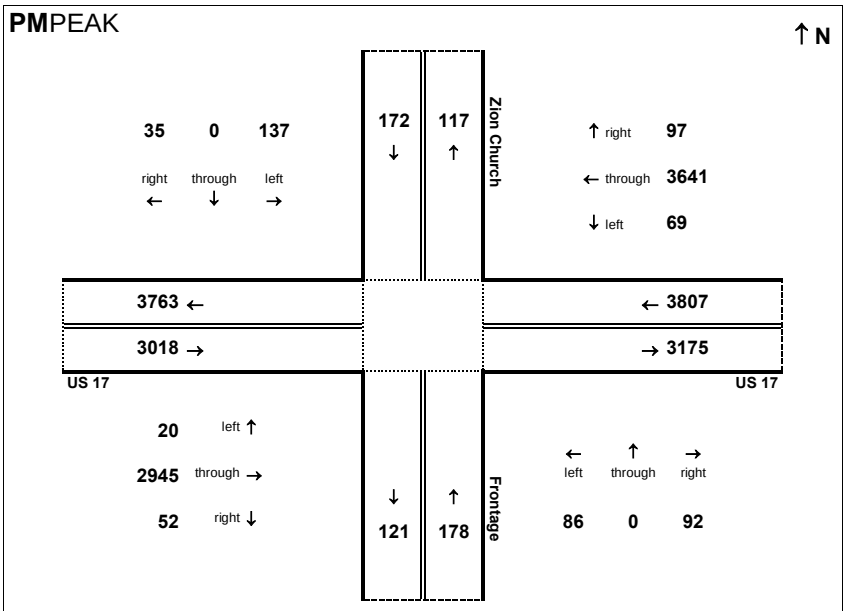
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 7175 vehicles. AM peak hour outflow is 7175 vehicles.



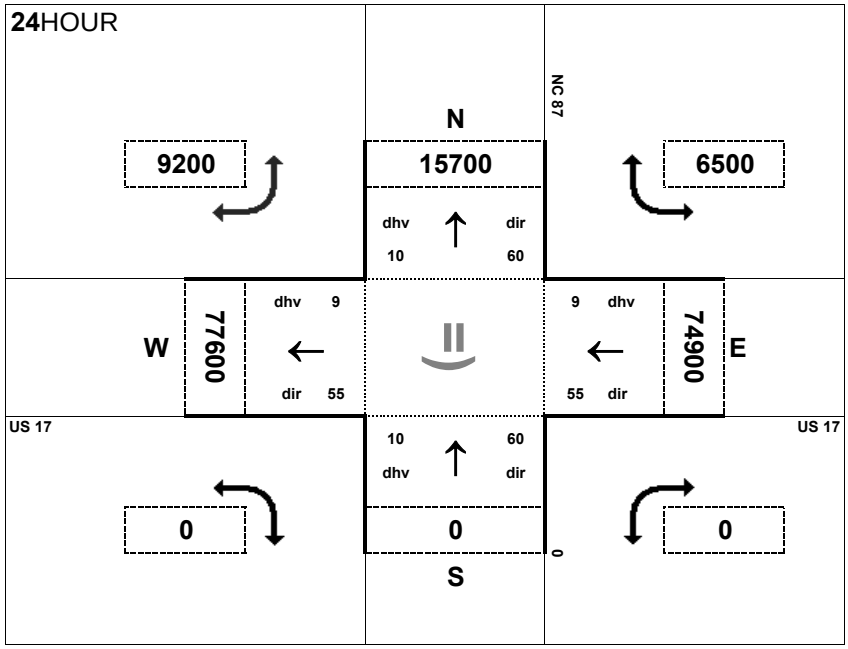
PM peak hour inflow is 7175 vehicles. PM peak hour outflow is 7176 vehicles.

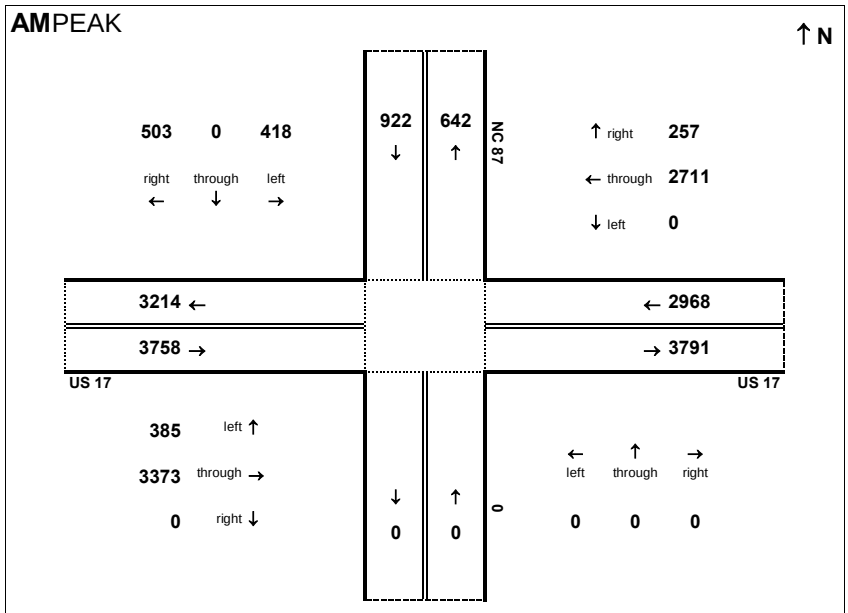
Peak Hour Volume Breakouts Report:
02 - US 17 and NC 87

Traffic Forecast Release Date:
Oct. 2014

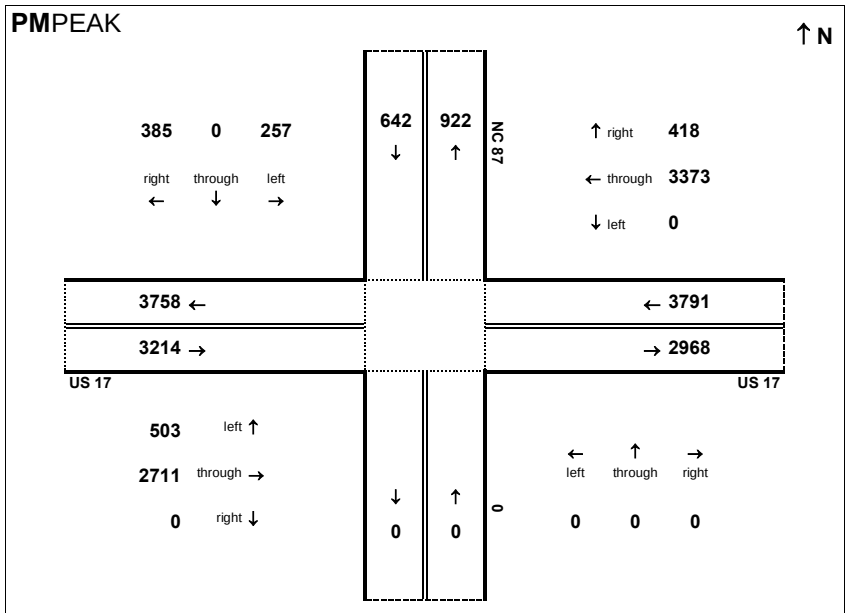
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 7648 vehicles. AM peak hour outflow is 7647 vehicles.



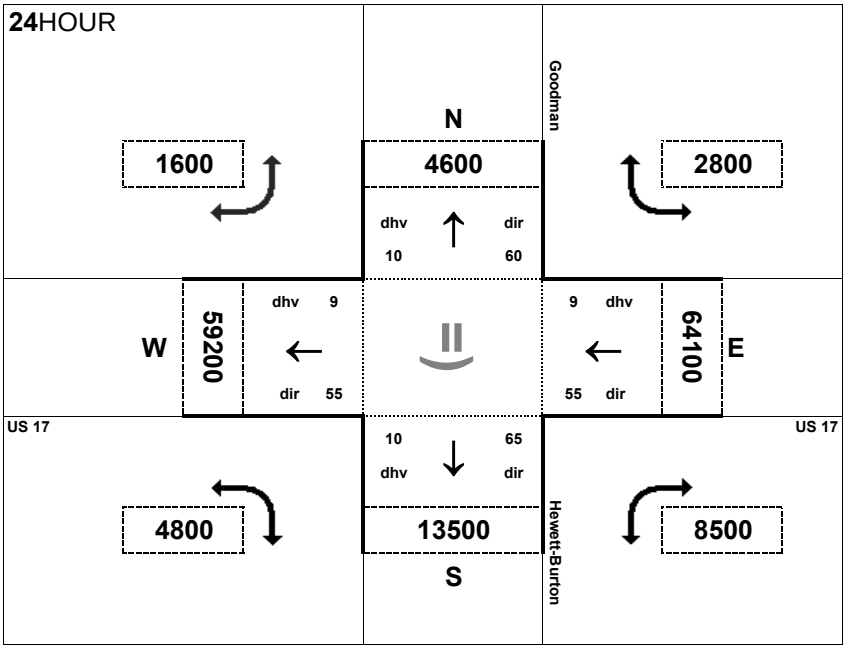
PM peak hour inflow is 7647 vehicles. PM peak hour outflow is 7648 vehicles.

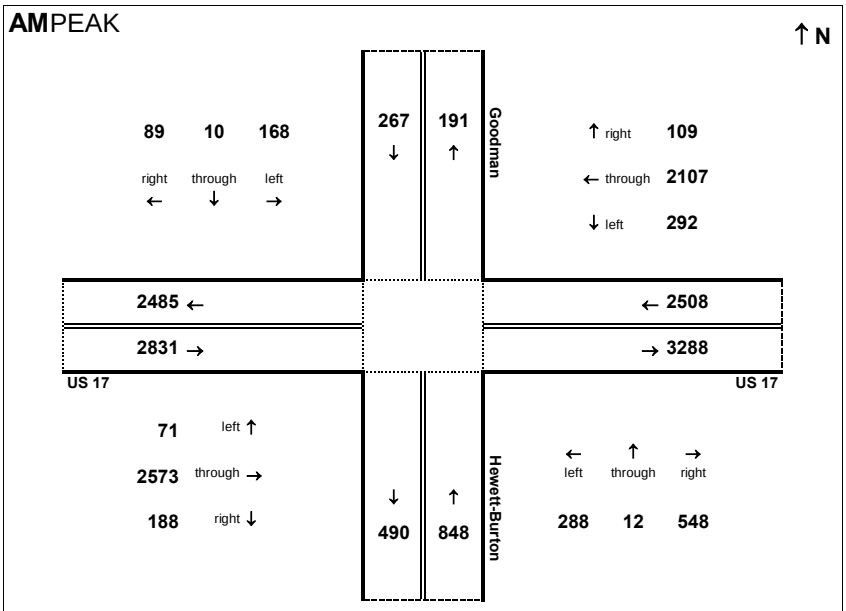
Peak Hour Volume Breakouts Report:
03 - US 17 and Goodman Rd/Hewett-Burton Rd

Traffic Forecast Release Date:
Oct. 2014

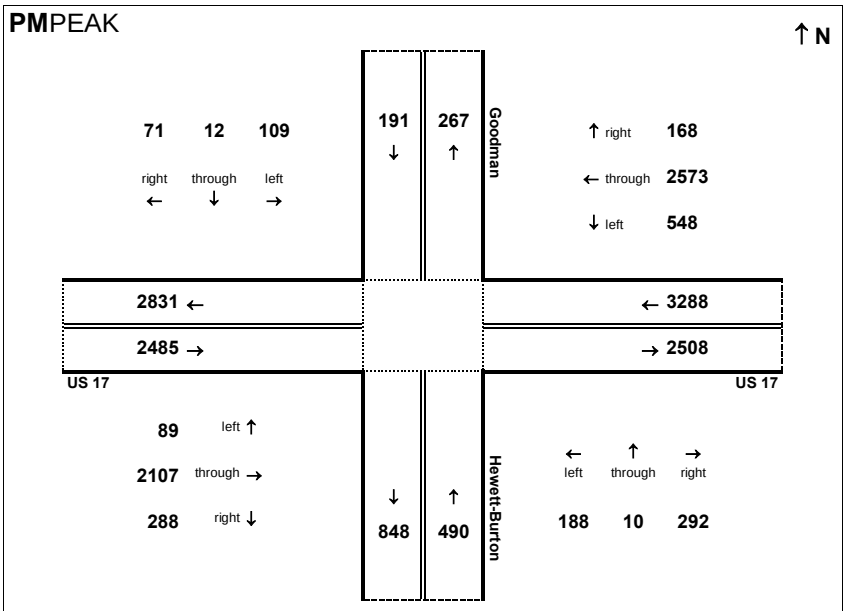
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 6454 vehicles. AM peak hour outflow is 6454 vehicles.



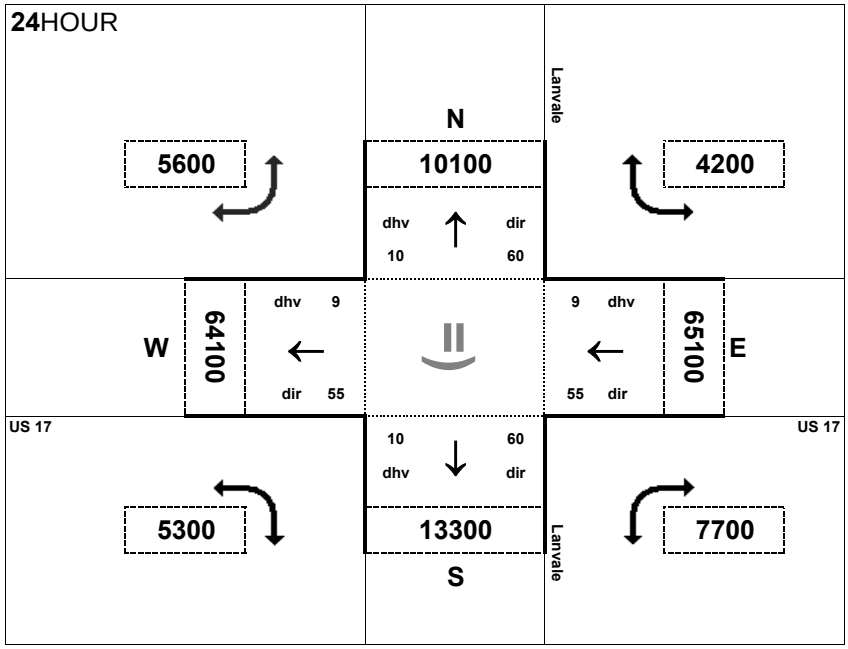
PM peak hour inflow is 6454 vehicles. PM peak hour outflow is 6454 vehicles.

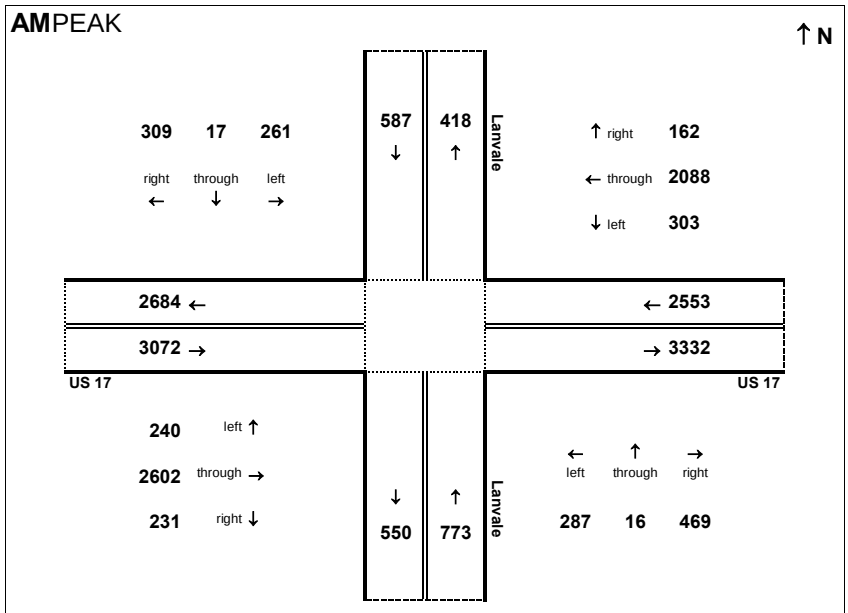
Peak Hour Volume Breakouts Report:
04 - US 17 and Lanvale Rd

Traffic Forecast Release Date:
Oct. 2014

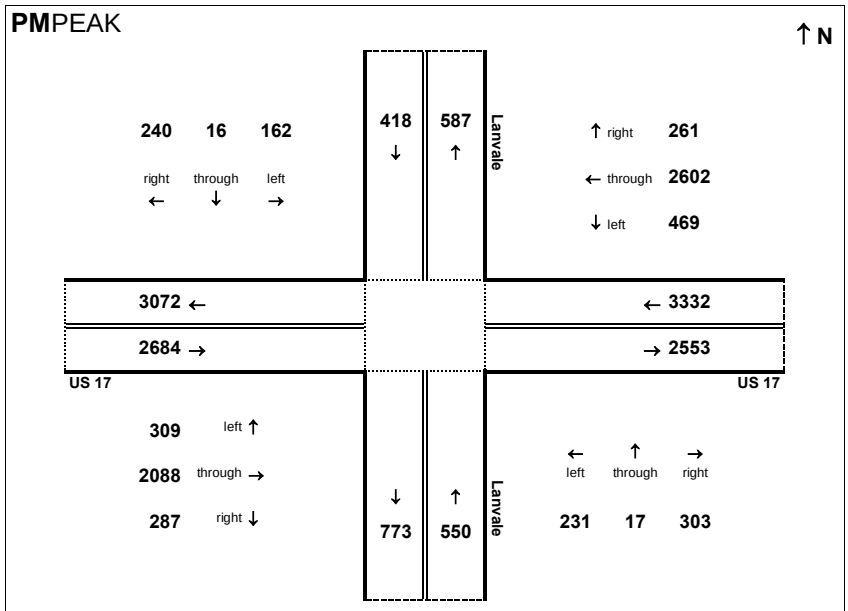
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 6985 vehicles. AM peak hour outflow is 6984 vehicles.



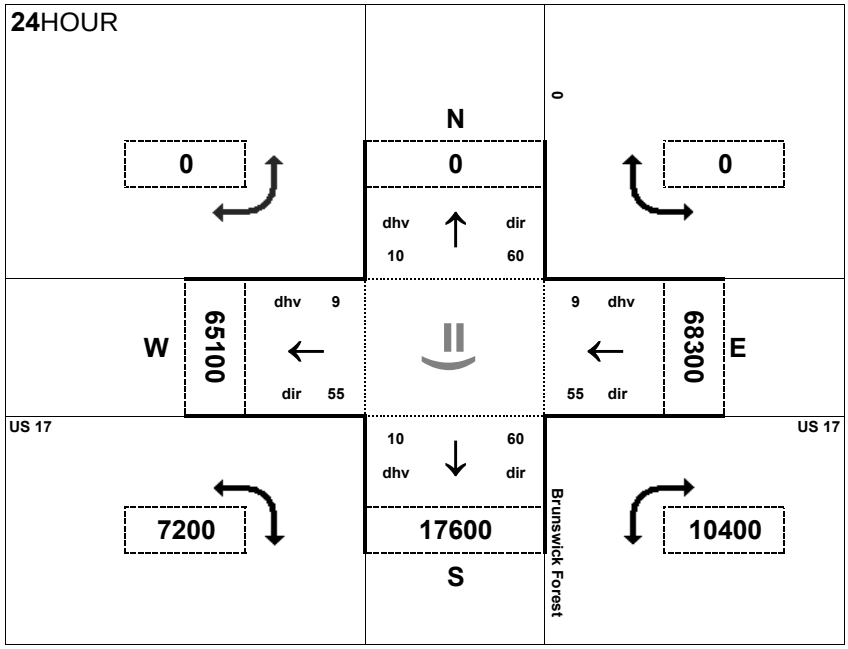
PM peak hour inflow is 6984 vehicles. PM peak hour outflow is 6985 vehicles.

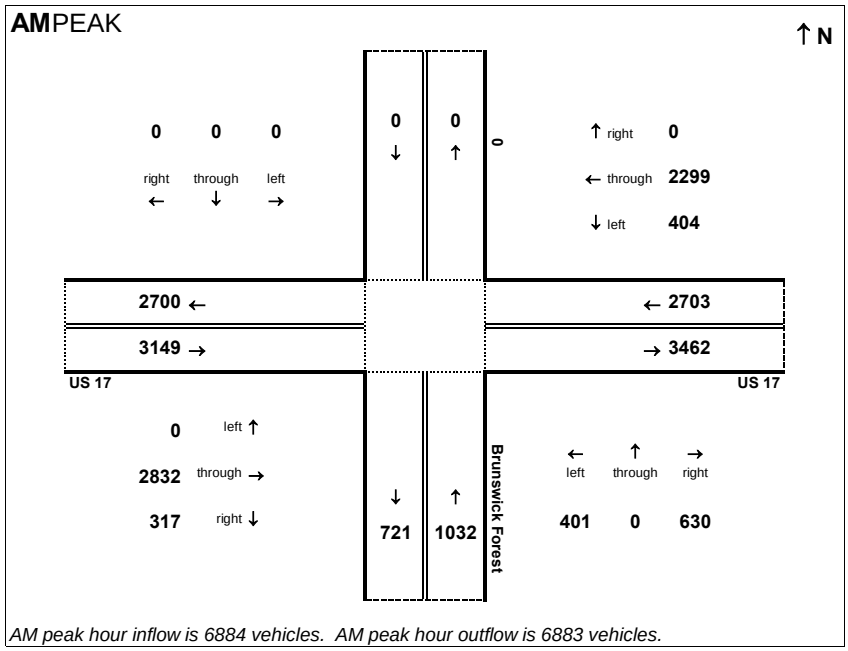
Peak Hour Volume Breakouts Report:
05 - US 17 and Brunswick Forest Pkwy

Traffic Forecast Release Date:
Oct. 2014

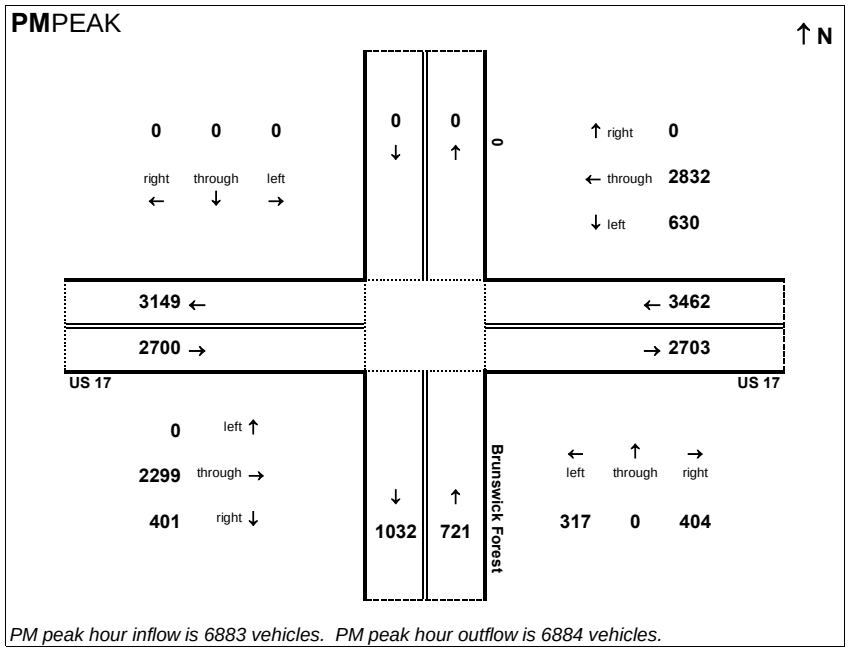
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 6884 vehicles. AM peak hour outflow is 6883 vehicles.



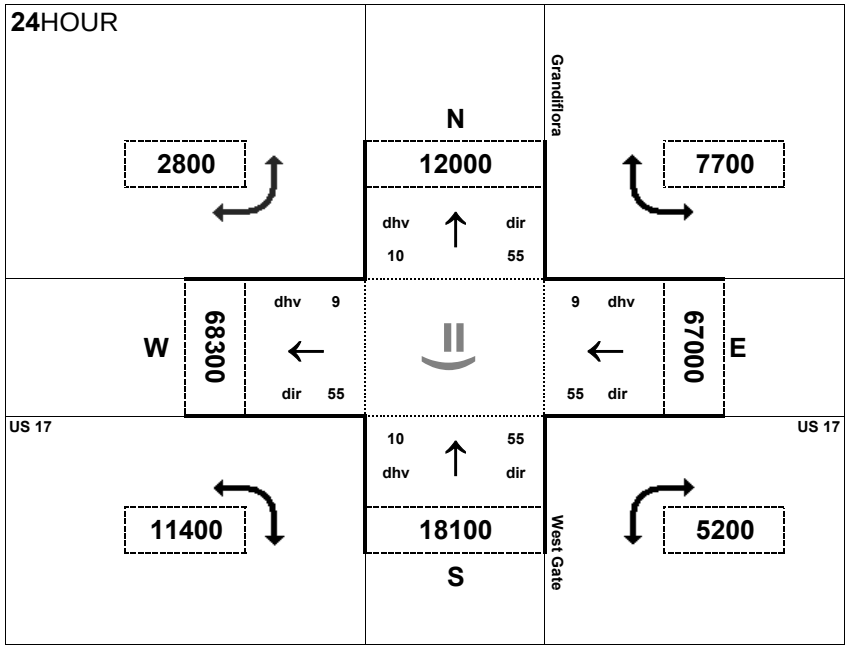
PM peak hour inflow is 6883 vehicles. PM peak hour outflow is 6884 vehicles.

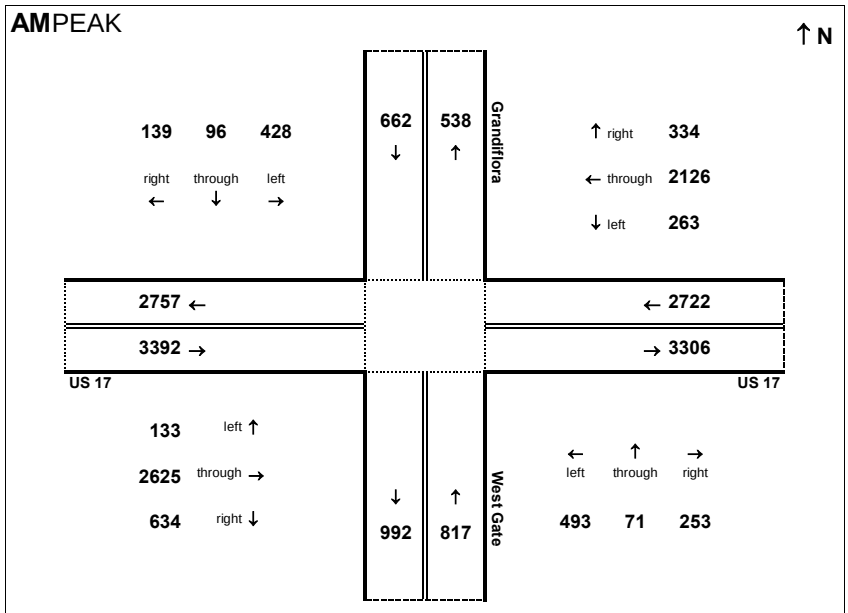
Peak Hour Volume Breakouts Report:
06 - US 17 and Grandiflora Dr/West Gate Dr

Traffic Forecast Release Date:
Oct. 2014

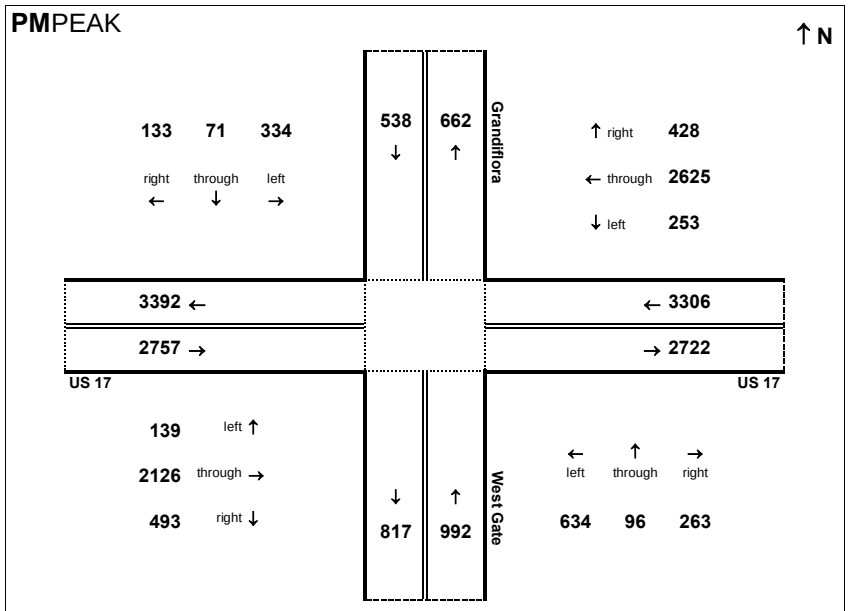
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 7593 vehicles. AM peak hour outflow is 7593 vehicles.



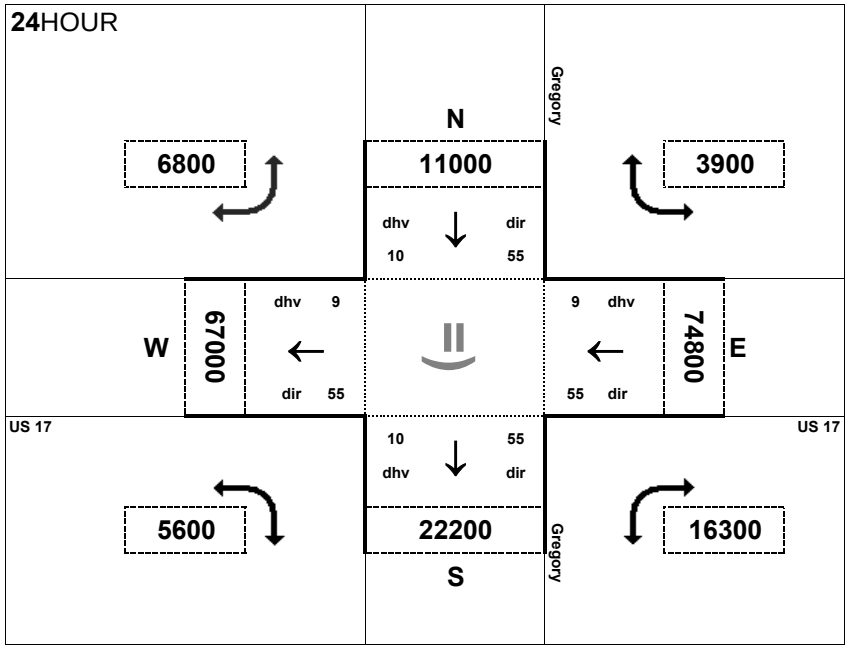
PM peak hour inflow is 7593 vehicles. PM peak hour outflow is 7593 vehicles.

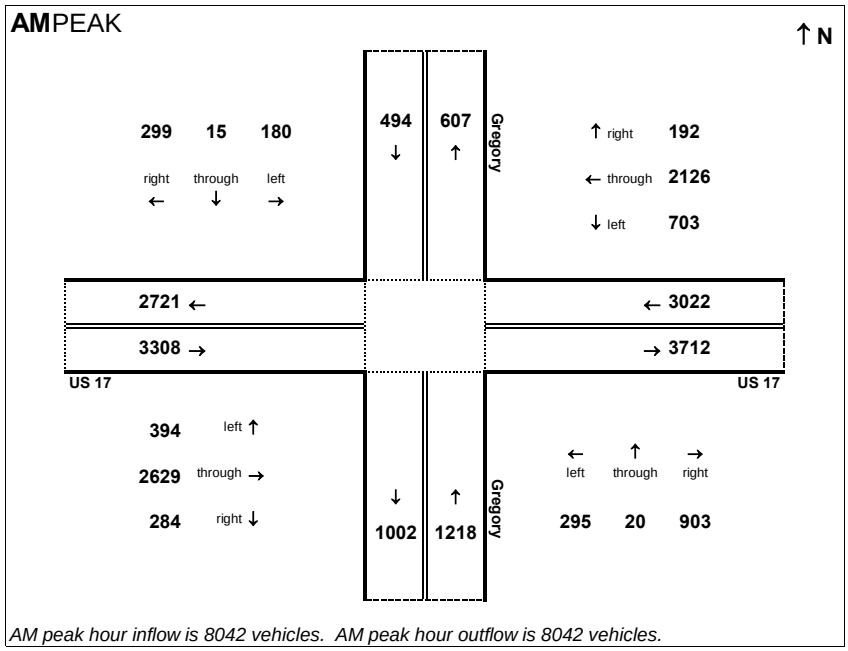
Peak Hour Volume Breakouts Report:
07 - US 17 and Gregory Rd

Traffic Forecast Release Date:
Oct. 2014

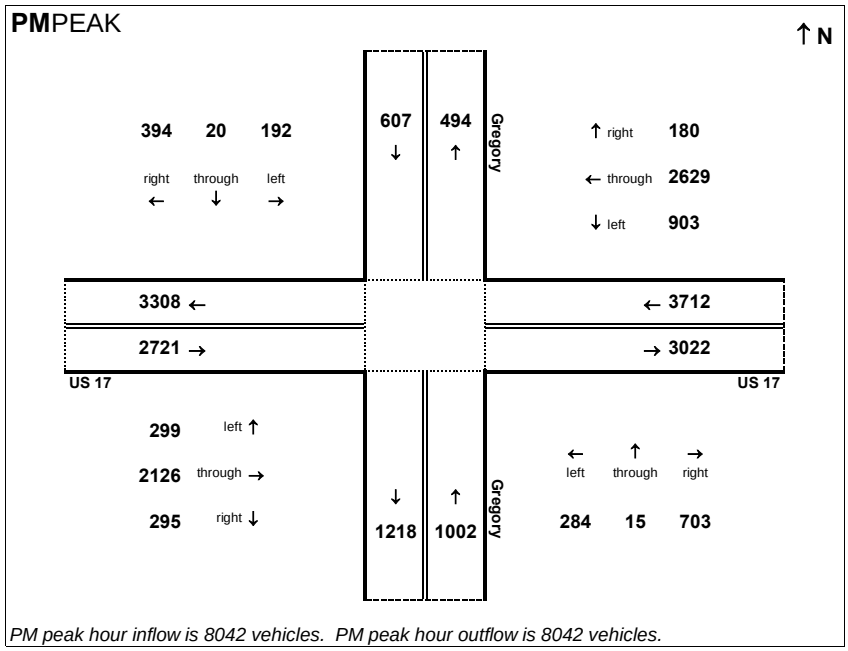
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 8042 vehicles. AM peak hour outflow is 8042 vehicles.

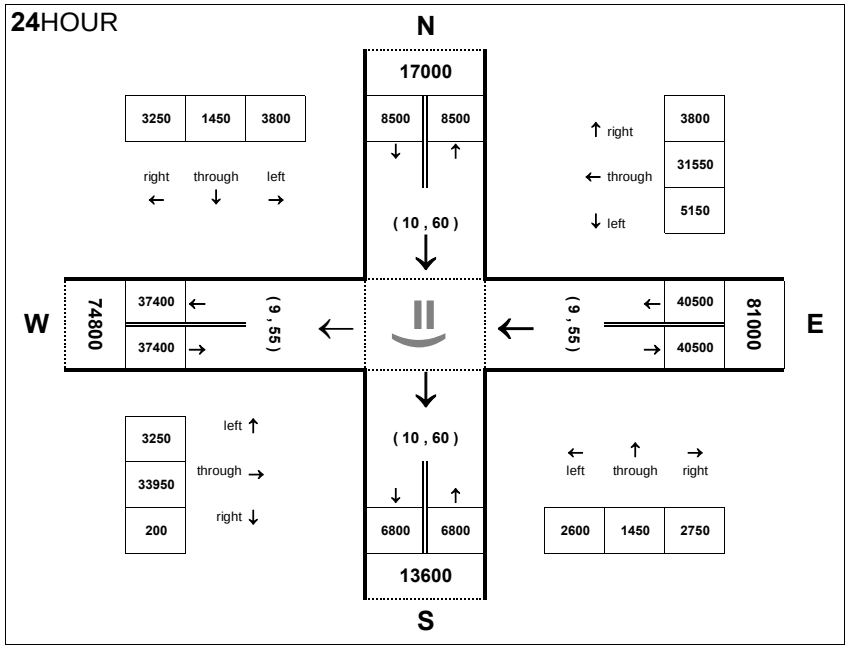


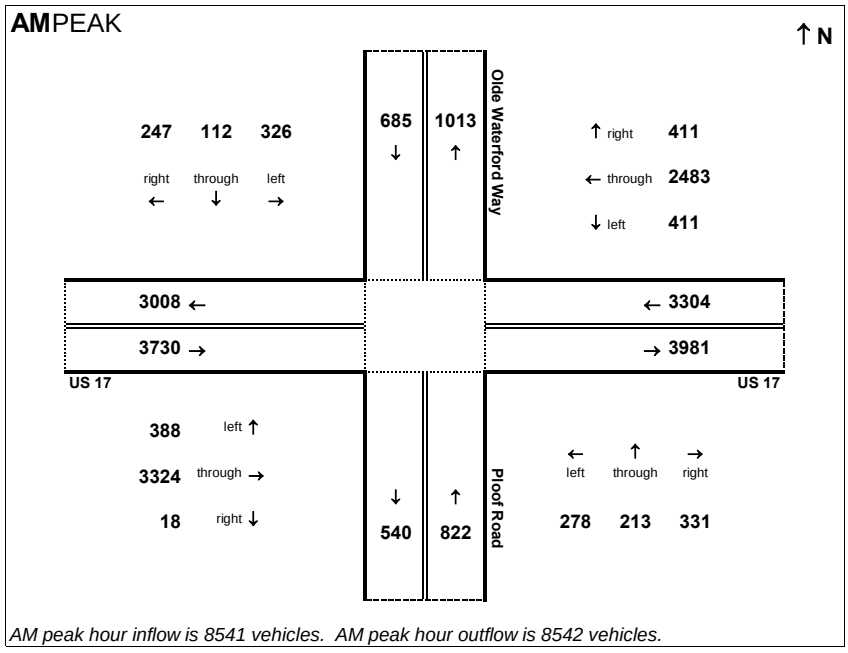
PM peak hour inflow is 8042 vehicles. PM peak hour outflow is 8042 vehicles.

Peak Hour Volume Breakouts Report:
08 - US 17 and Olde Waterford Way / Ploof Road in Brunswick County, NC

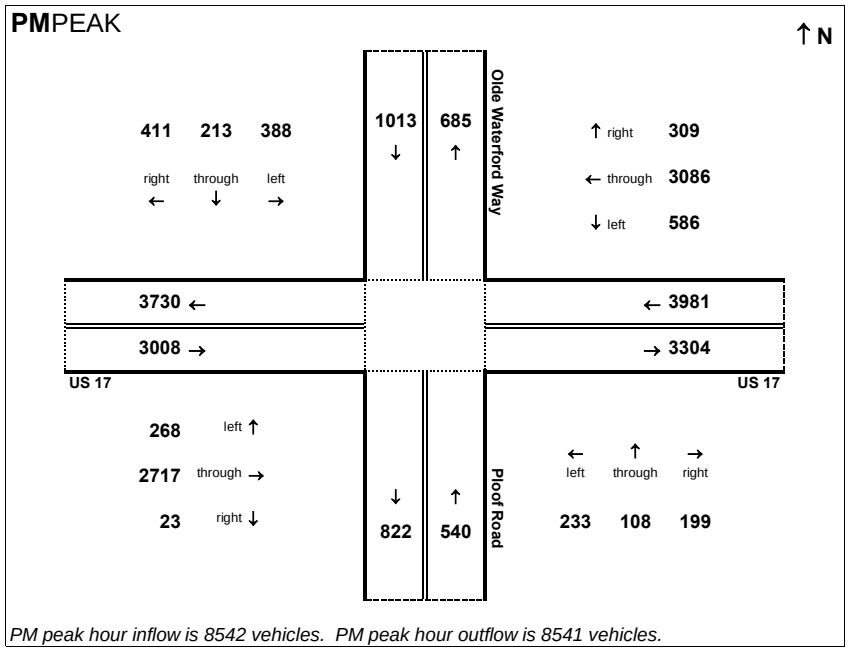
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Build Alt. V





AM peak hour inflow is 8541 vehicles. AM peak hour outflow is 8542 vehicles.



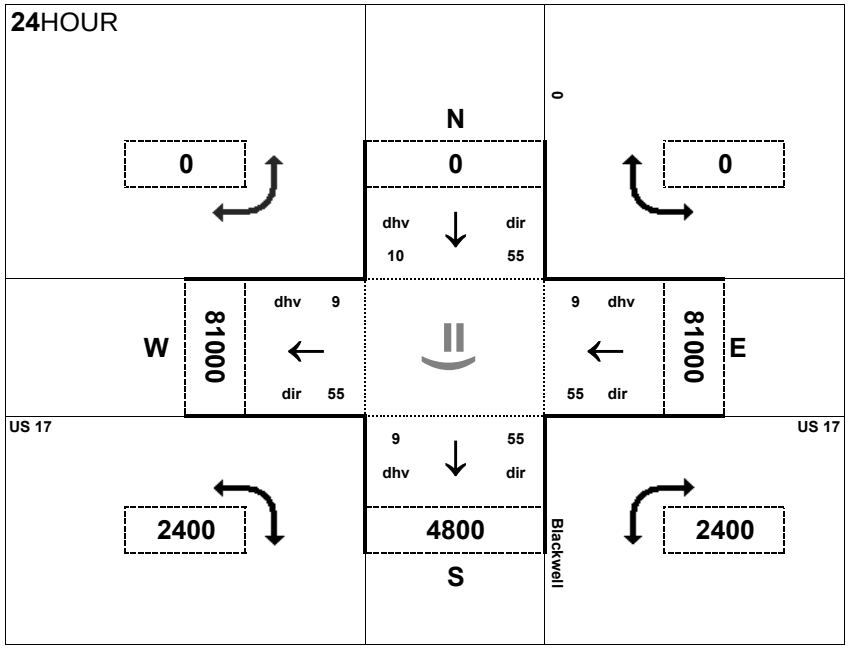
PM peak hour inflow is 8542 vehicles. PM peak hour outflow is 8541 vehicles.

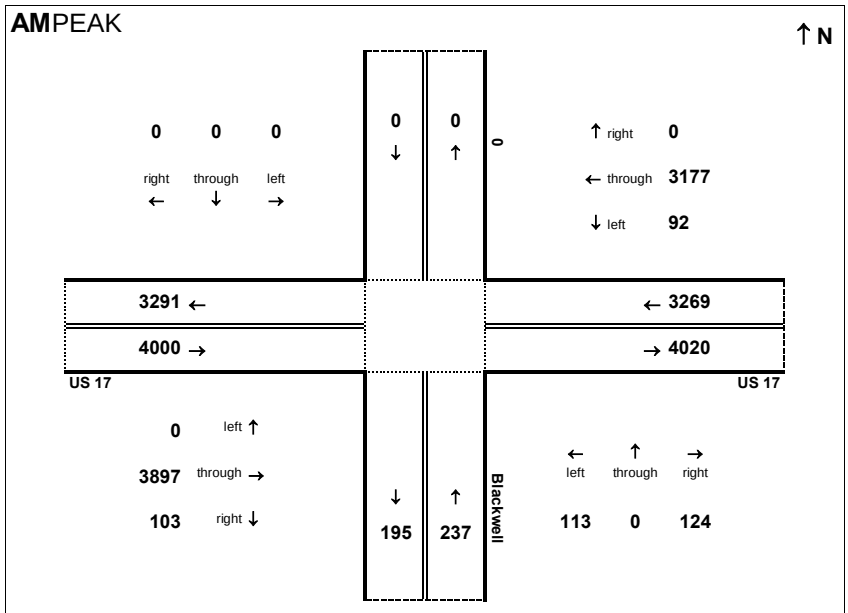
Peak Hour Volume Breakouts Report:
09 - US 17 and Blackwell Rd

Traffic Forecast Release Date:
Oct. 2014

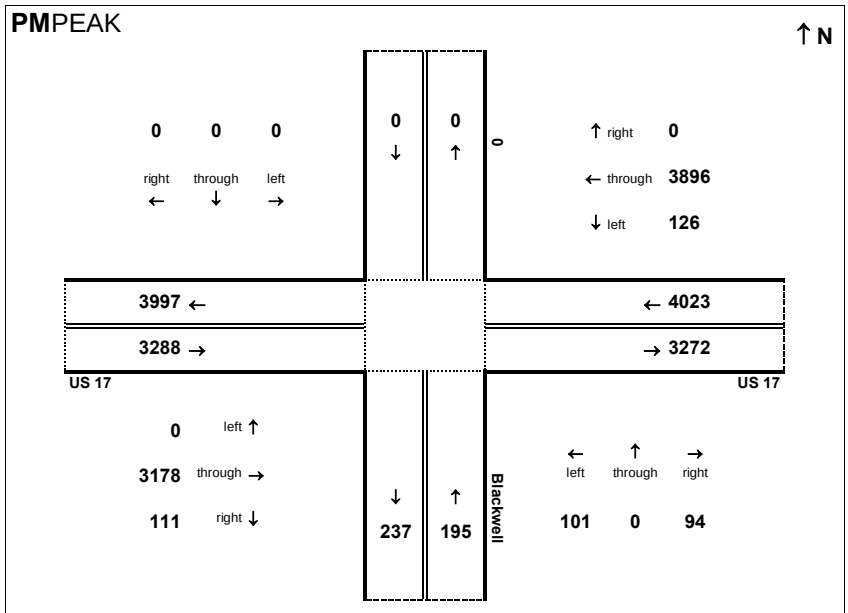
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 7506 vehicles. AM peak hour outflow is 7506 vehicles.



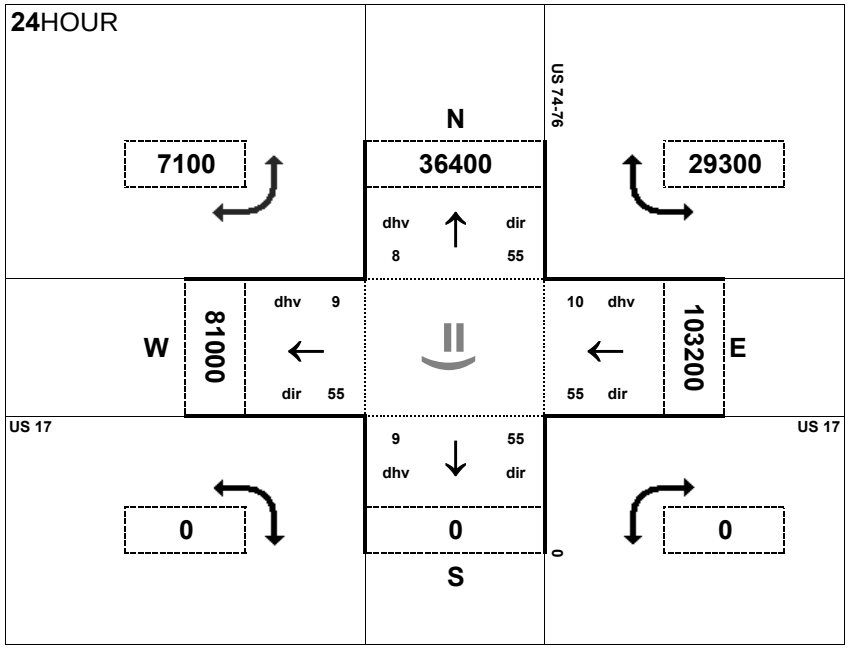
PM peak hour inflow is 7506 vehicles. PM peak hour outflow is 7506 vehicles.

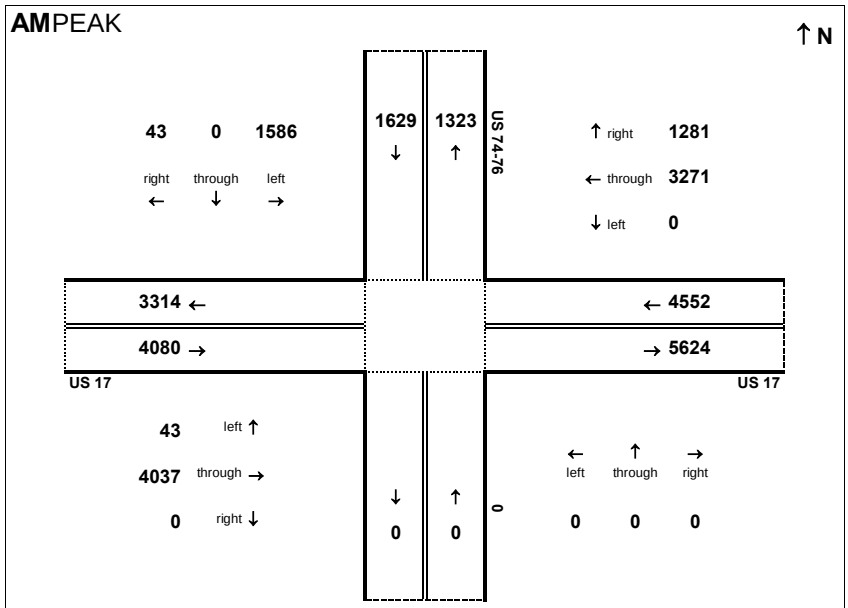
Peak Hour Volume Breakouts Report:
10 - US 17 and US 74-76

Traffic Forecast Release Date:
Oct. 2014

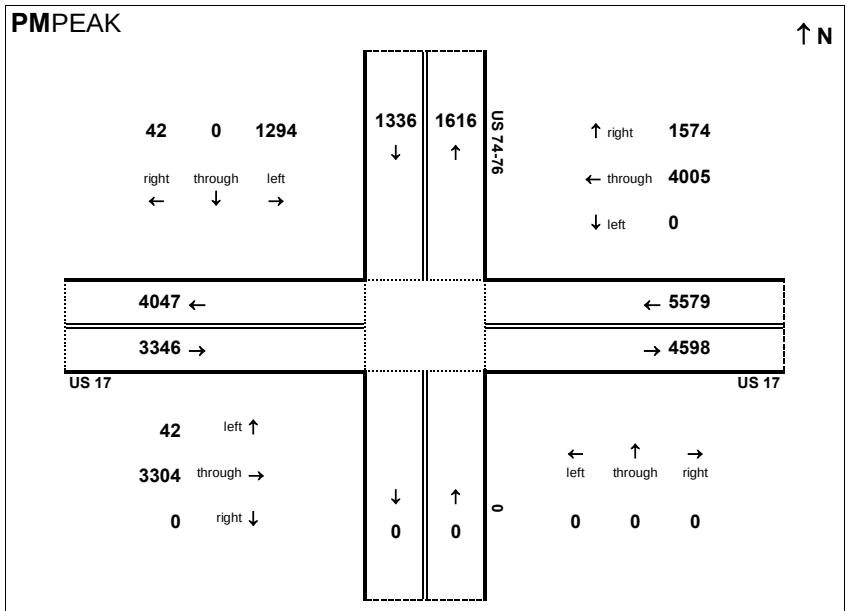
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 10261 vehicles. AM peak hour outflow is 10261 vehicles.



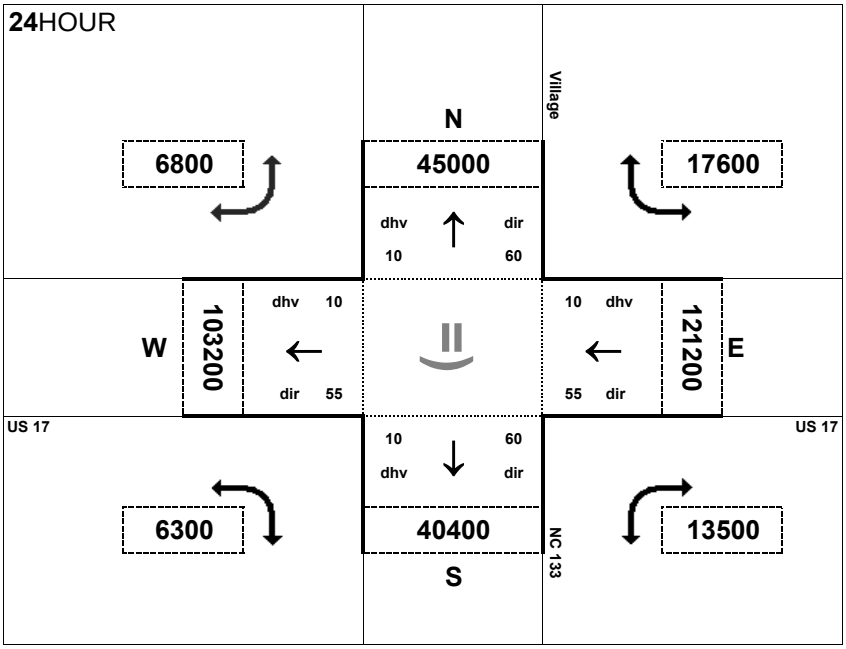
PM peak hour inflow is 10261 vehicles. PM peak hour outflow is 10261 vehicles.

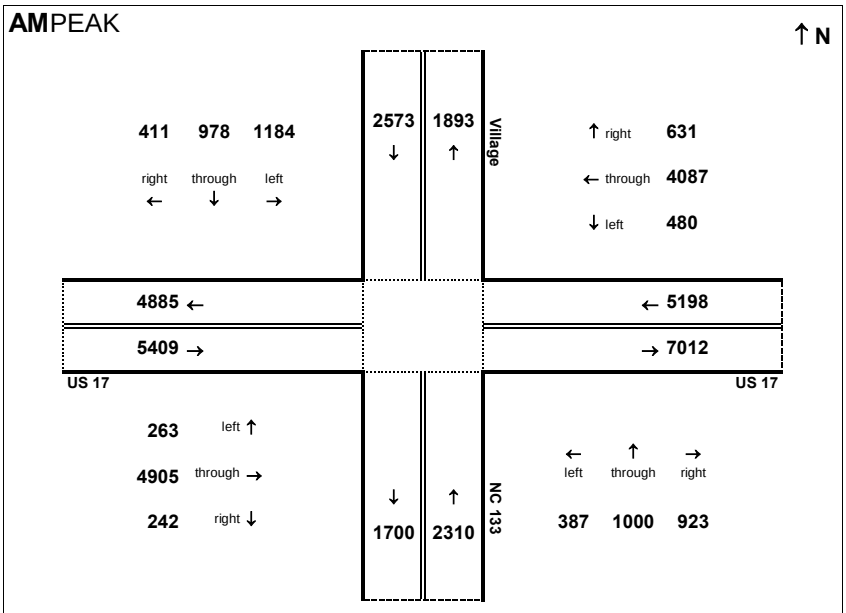
Peak Hour Volume Breakouts Report:
11 - US 17 and NC 133

Traffic Forecast Release Date:
Oct. 2014

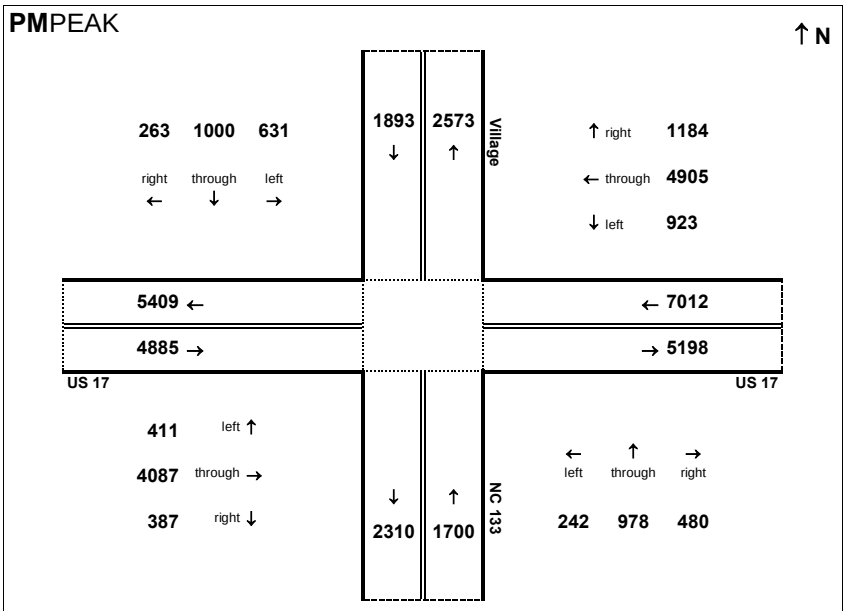
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)

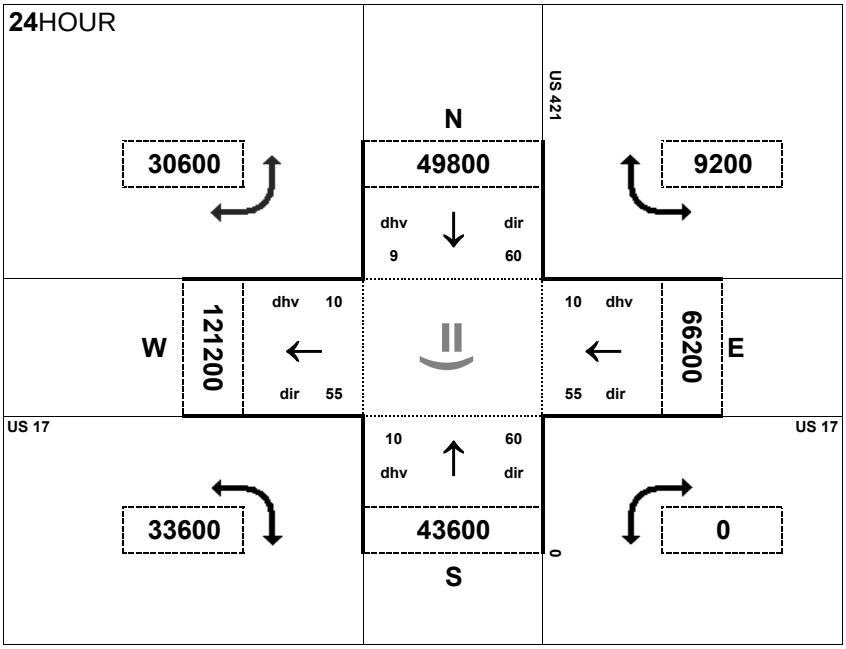




AM peak hour inflow is 15490 vehicles. AM peak hour outflow is 15490 vehicles.



PM peak hour inflow is 15490 vehicles. PM peak hour outflow is 15490 vehicles.

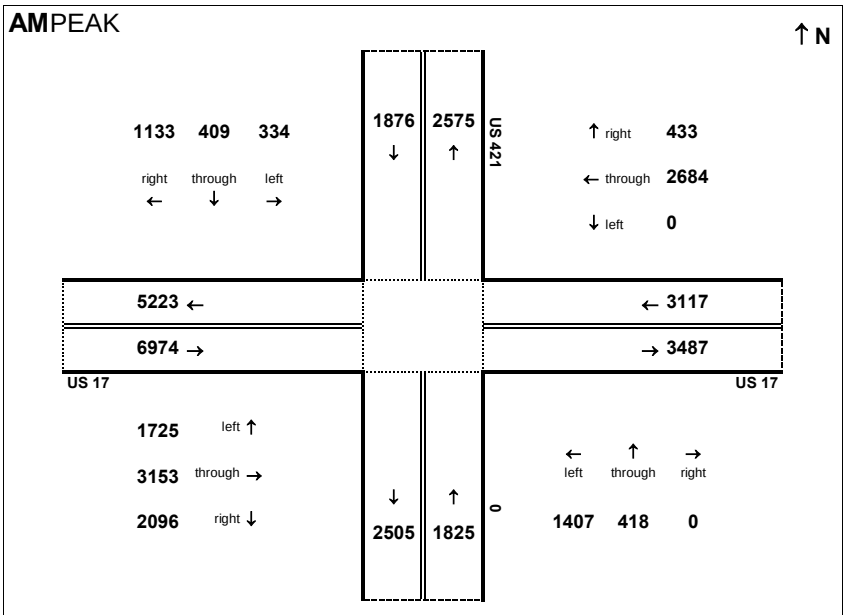


Peak Hour Volume Breakouts Report:
12 - US 17 and US 421

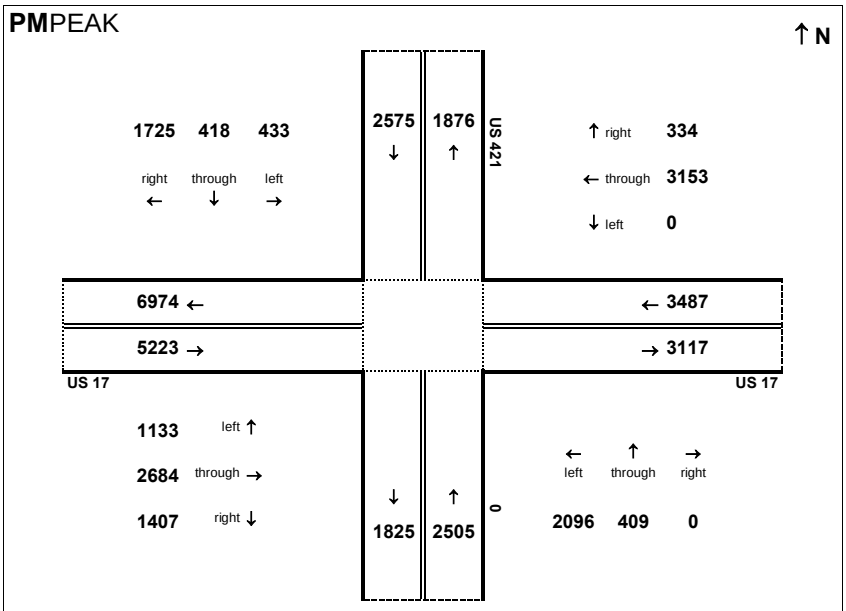
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

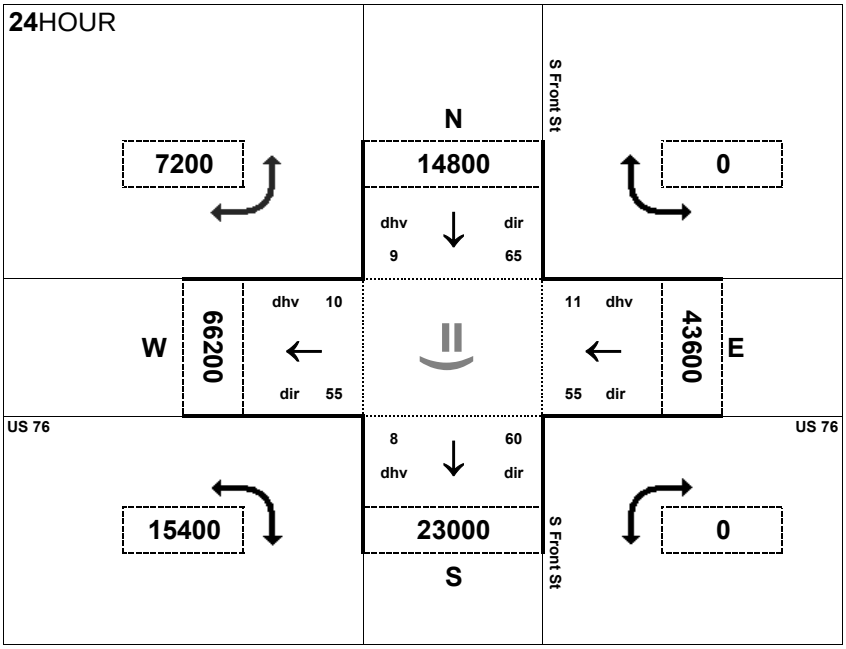
Project:
Cape Fear Crossing - Build Alt. V (Arterial)



AM peak hour inflow is 13792 vehicles. AM peak hour outflow is 13790 vehicles.



PM peak hour inflow is 13790 vehicles. PM peak hour outflow is 13792 vehicles.

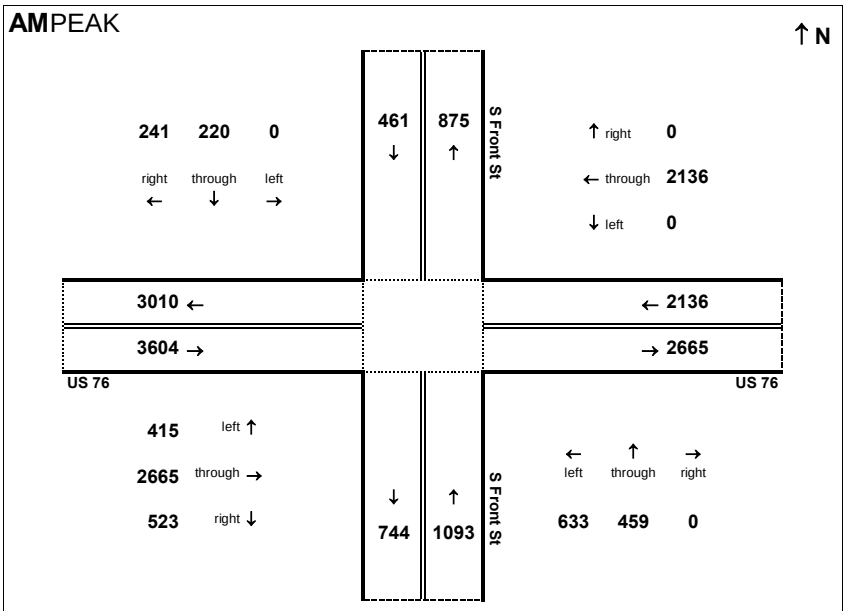


Peak Hour Volume Breakouts Report:
16 - Intersection of S Front Street and US 17 Bus

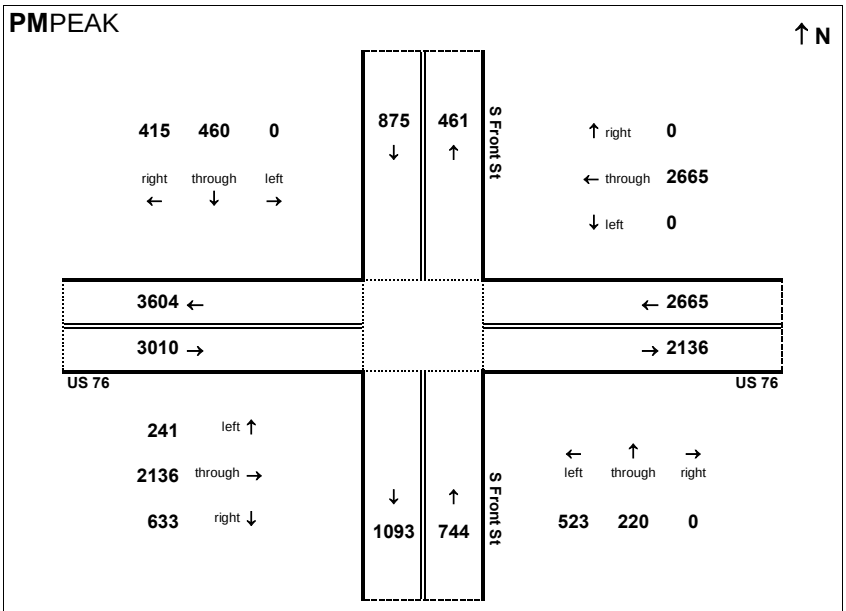
Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

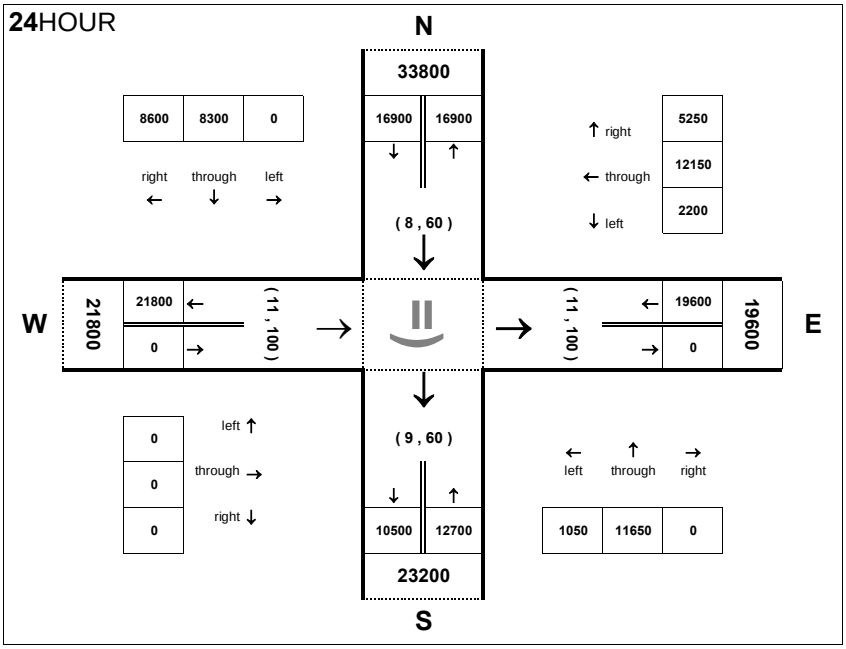
Project:
Cape Fear Crossing - Build Alt. V (Arterial)



AM peak hour inflow is 7294 vehicles. AM peak hour outflow is 7294 vehicles.



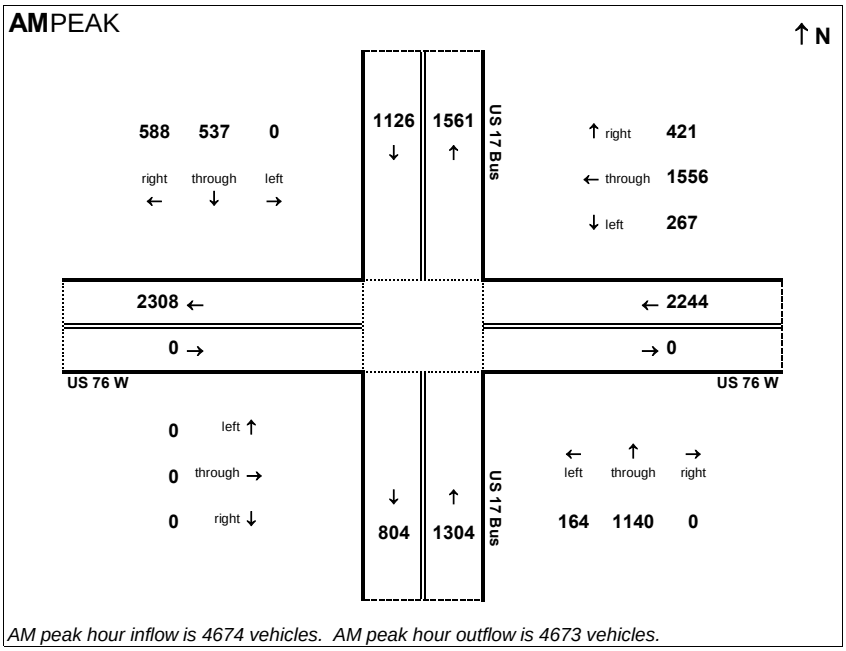
PM peak hour inflow is 7294 vehicles. PM peak hour outflow is 7294 vehicles.



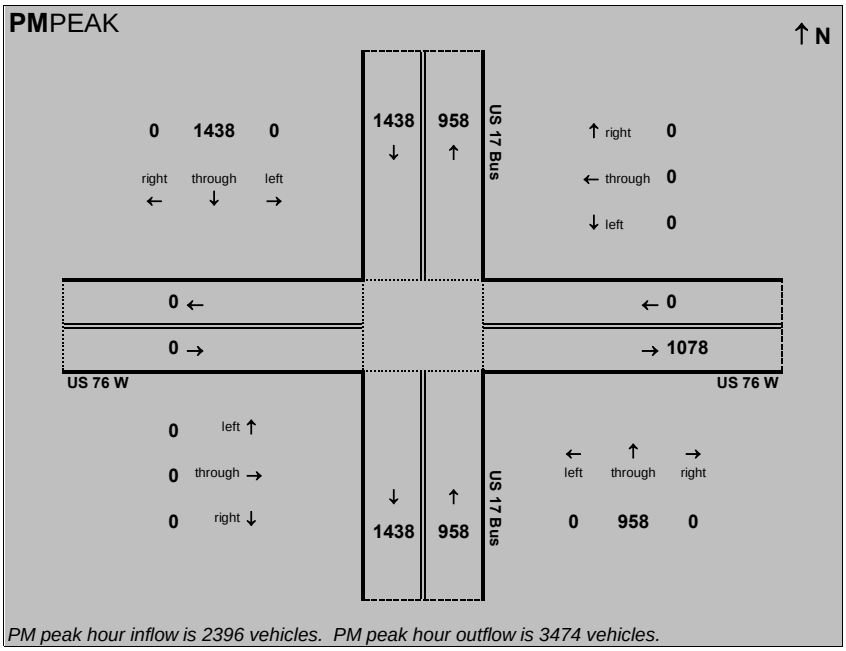
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

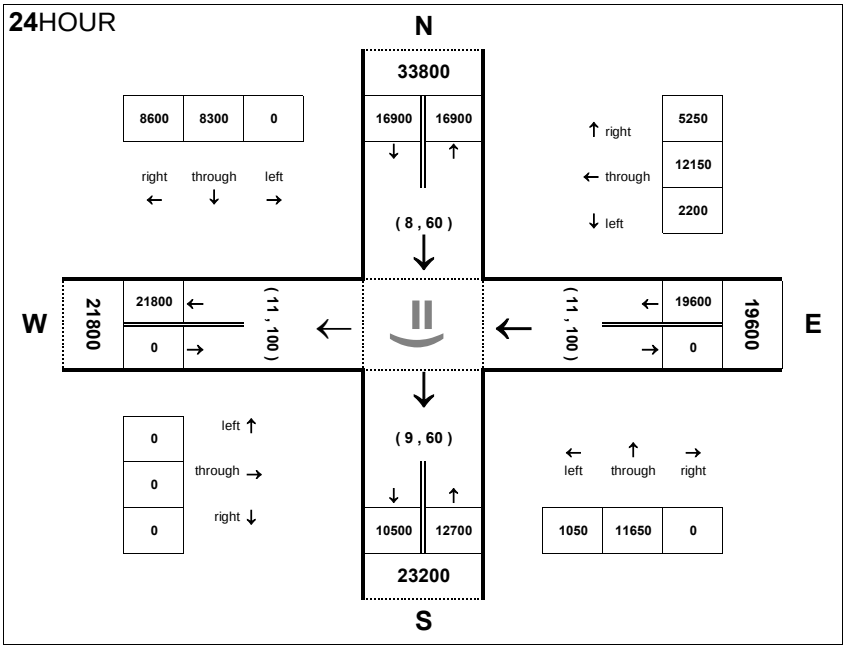
Traffic Data Year:
2040 Alt V (Arterial)



AM peak hour inflow is 4674 vehicles. AM peak hour outflow is 4673 vehicles.



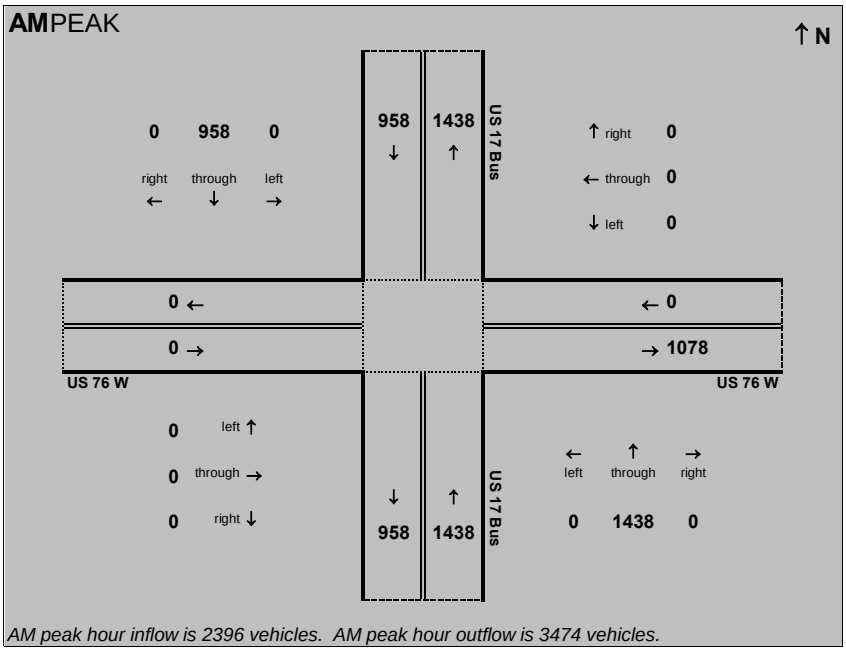
PM peak hour inflow is 2396 vehicles. PM peak hour outflow is 3474 vehicles.



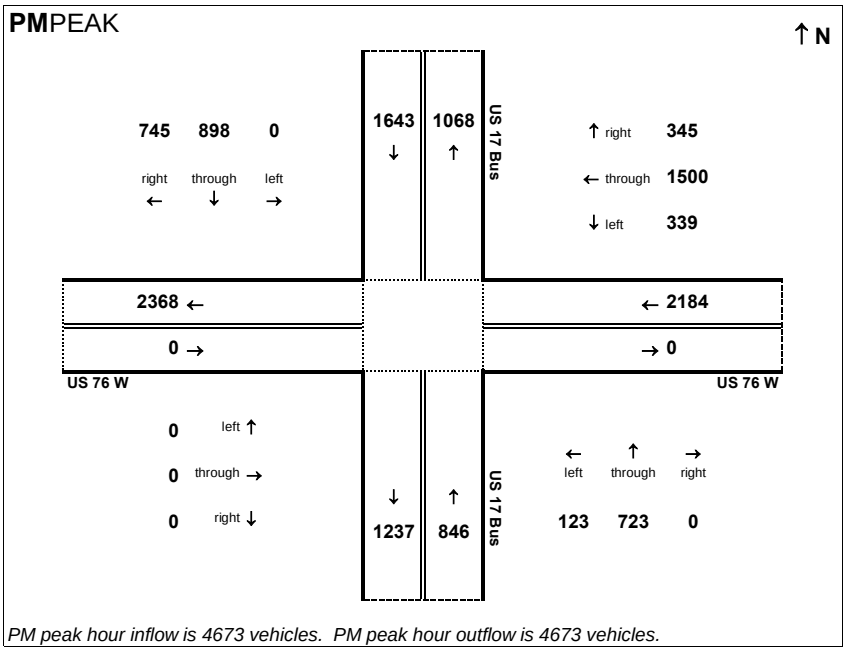
Peak Hour Volume Breakouts Report:
17 - Intersection of US 17 Business and US 76 West

Traffic Forecast Release Date:
Oct. 2014

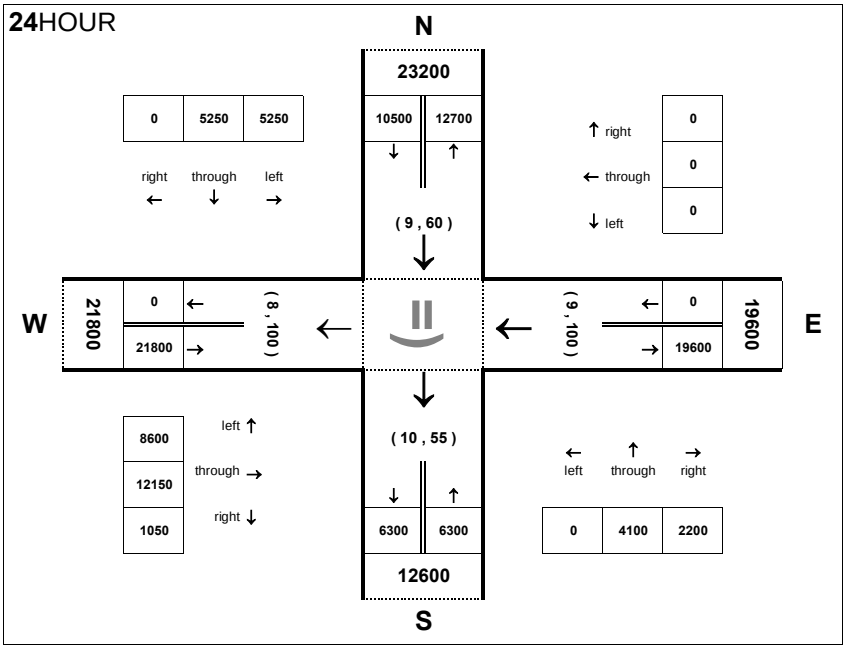
Traffic Data Year:
2040 Alt V (Arterial)



AM peak hour inflow is 2396 vehicles. AM peak hour outflow is 3474 vehicles.



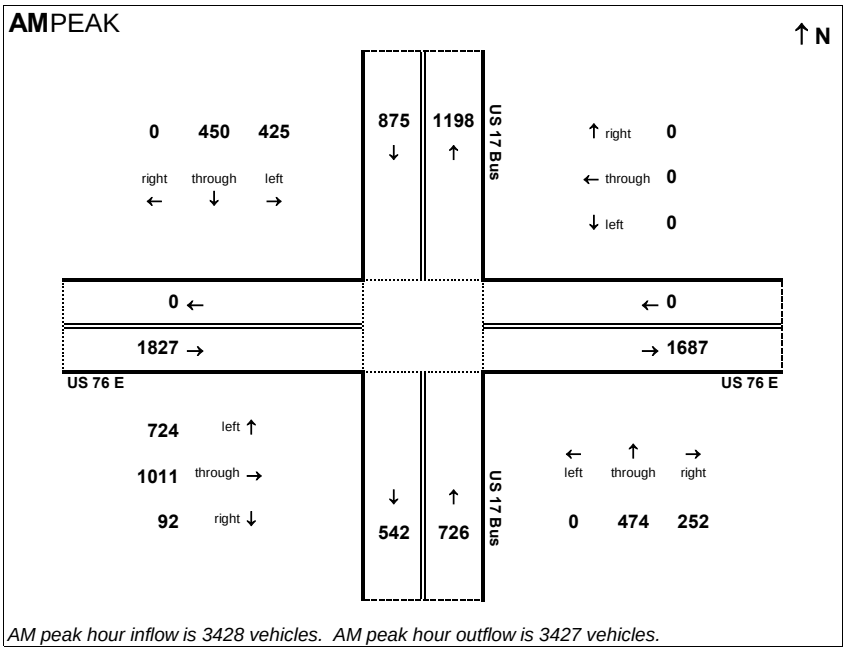
PM peak hour inflow is 4673 vehicles. PM peak hour outflow is 4673 vehicles.



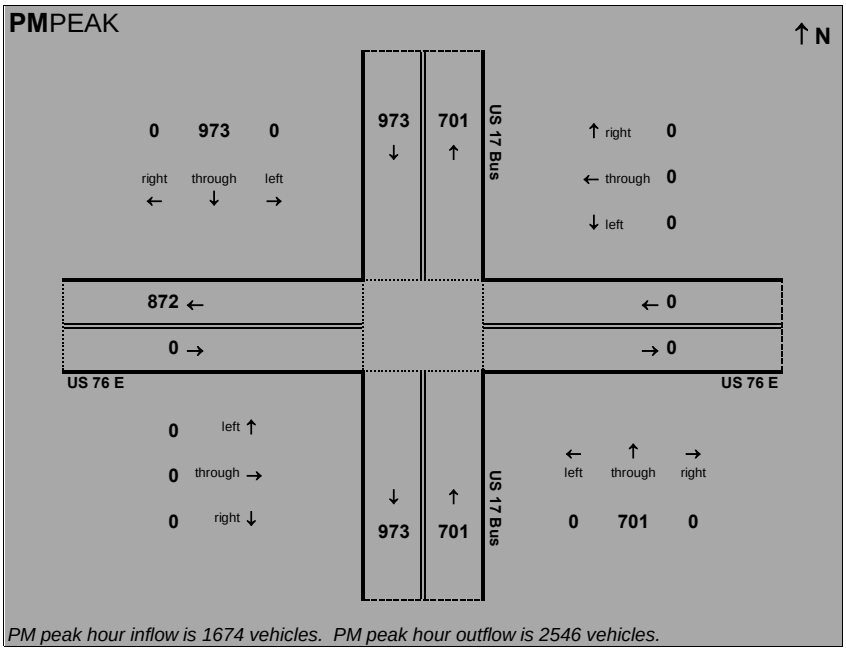
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

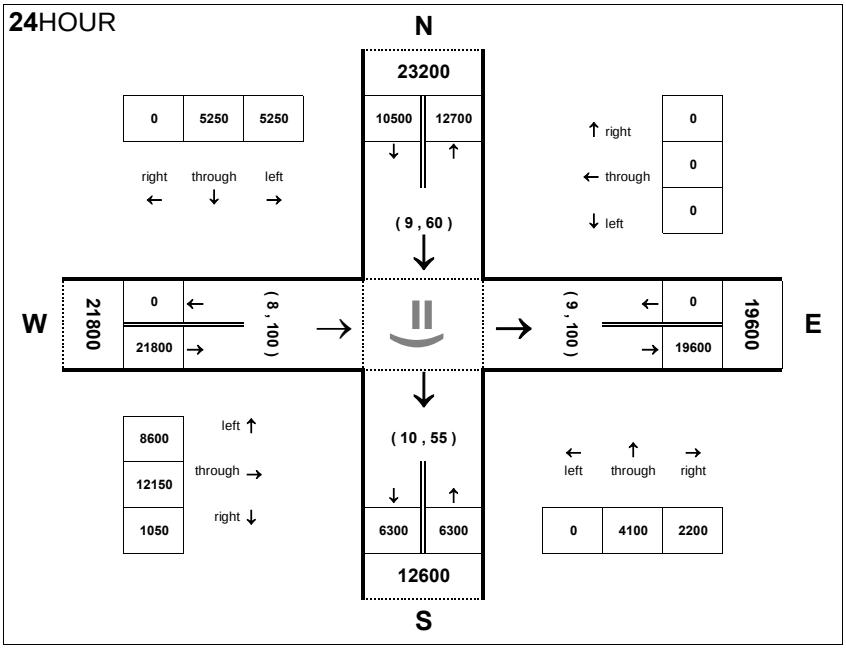
Traffic Data Year:
2040 Alt V (Arterial)



AM peak hour inflow is 3428 vehicles. AM peak hour outflow is 3427 vehicles.



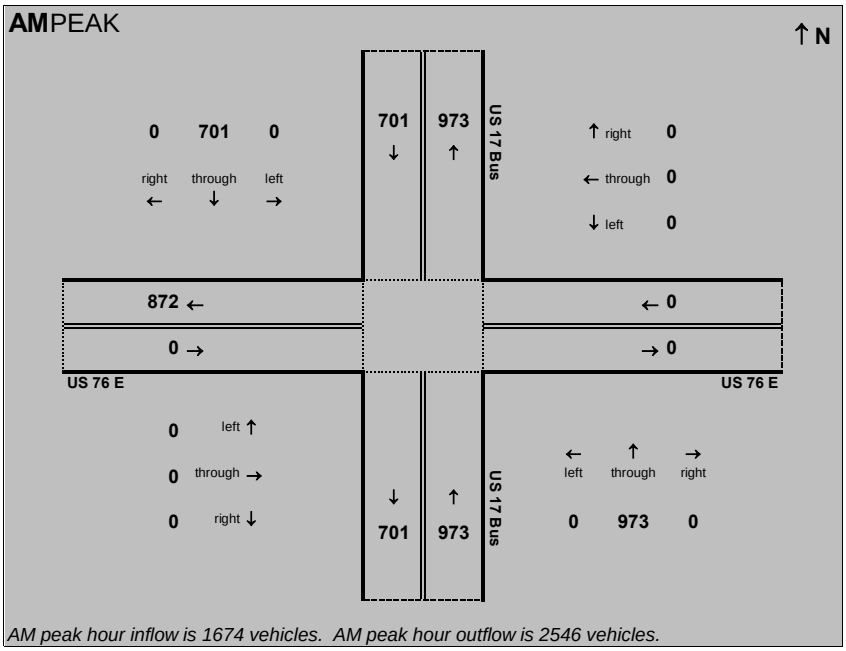
PM peak hour inflow is 1674 vehicles. PM peak hour outflow is 2546 vehicles.



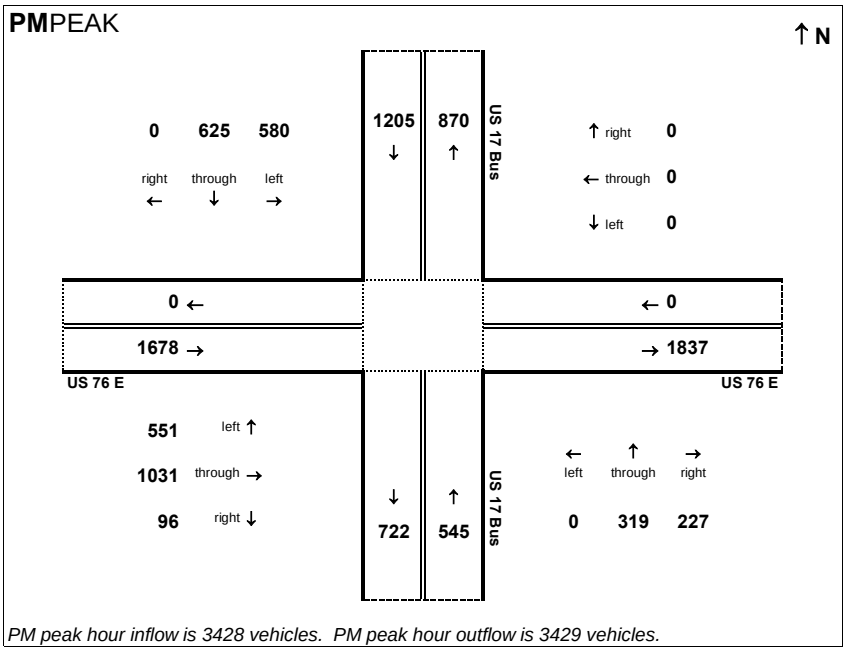
Peak Hour Volume Breakouts Report:
18 - Intersection of US 17 Business and US 76 East

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040 Alt V (Arterial)



AM peak hour inflow is 1674 vehicles. AM peak hour outflow is 2546 vehicles.



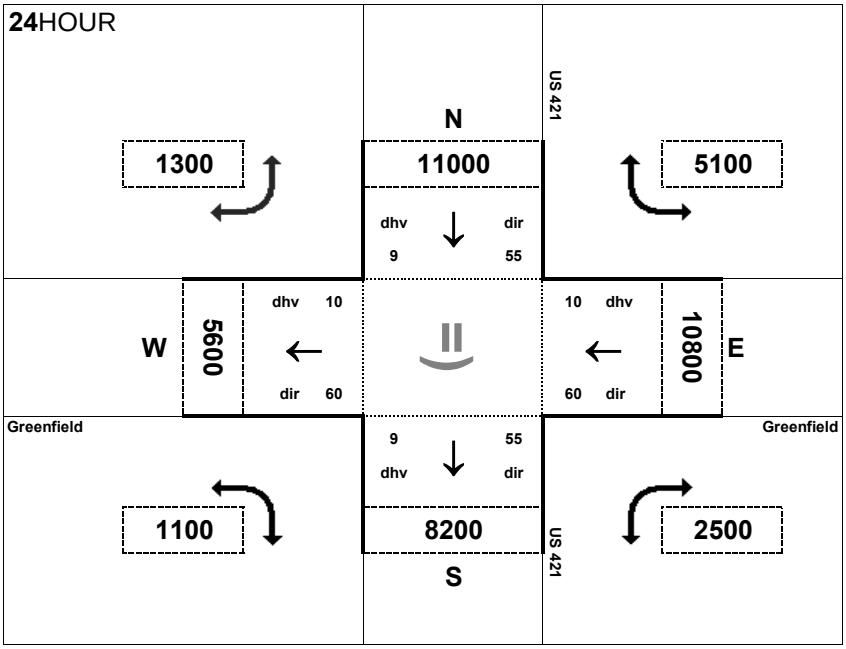
PM peak hour inflow is 3428 vehicles. PM peak hour outflow is 3429 vehicles.

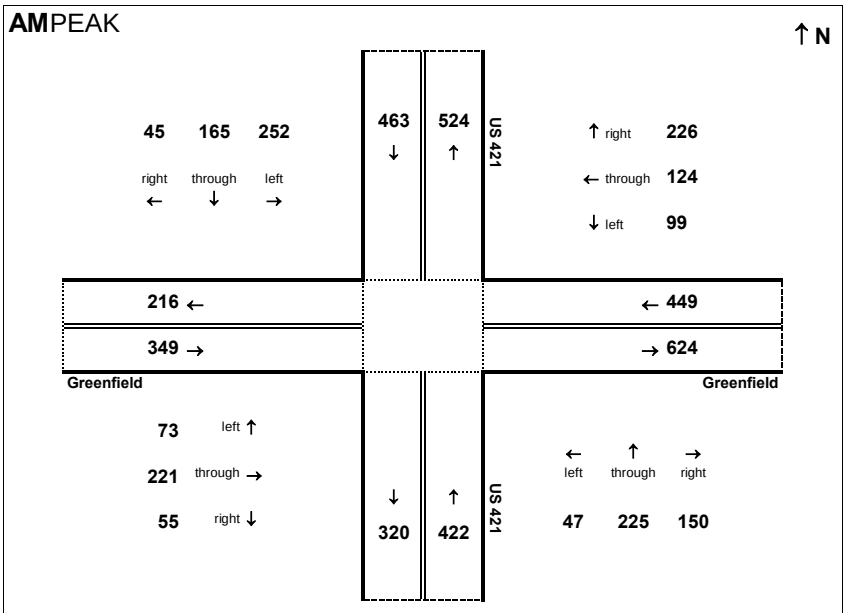
Peak Hour Volume Breakouts Report:
28 - US 421 and Greenfield St

Traffic Forecast Release Date:
Oct. 2014

Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 1683 vehicles. AM peak hour outflow is 1684 vehicles.

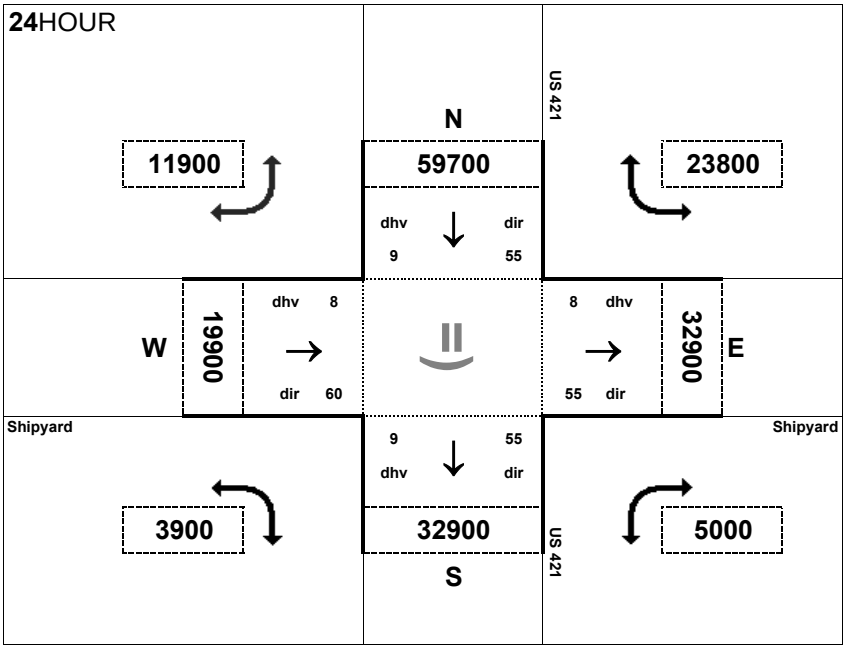
PM peak hour inflow is 1684 vehicles. PM peak hour outflow is 1683 vehicles.

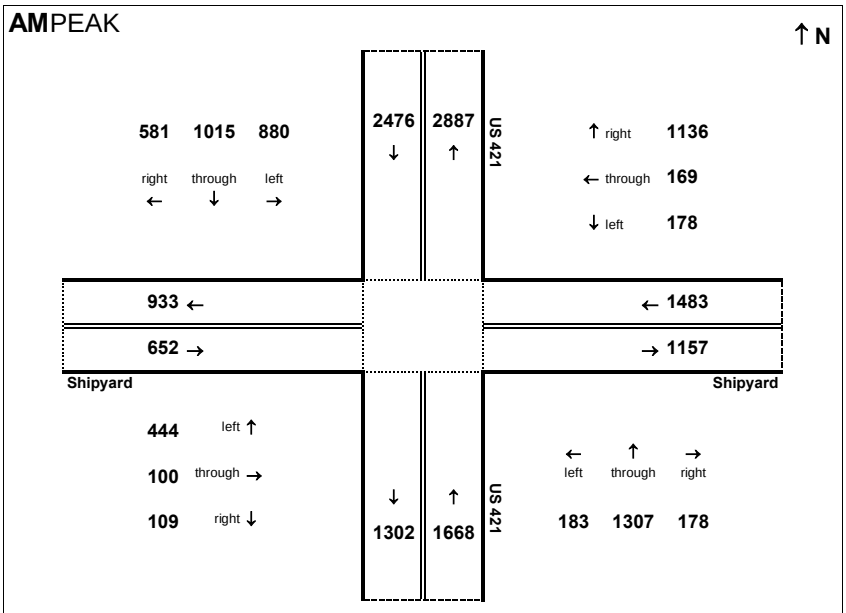
Peak Hour Volume Breakouts Report:
30 - US 421 and Shipyard Blvd

Traffic Forecast Release Date:
Oct. 2014

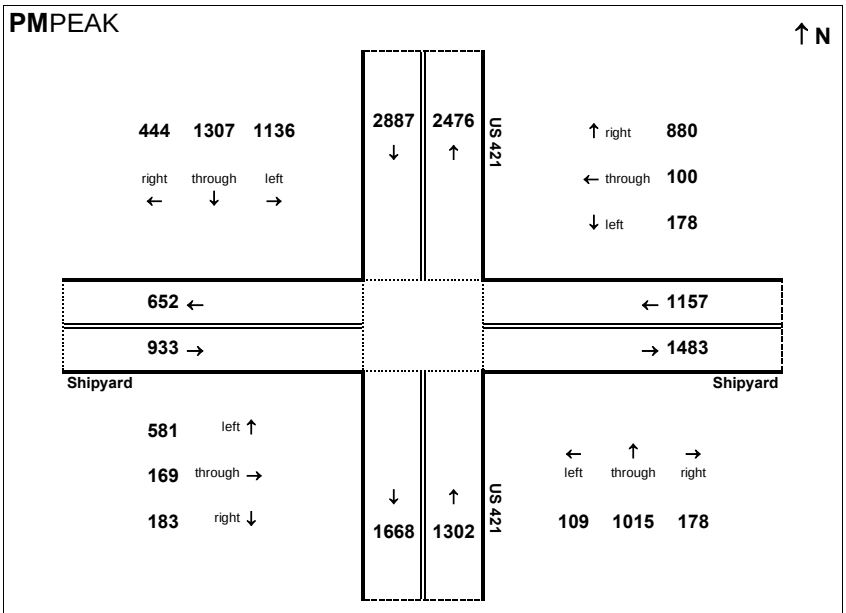
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 6279 vehicles. AM peak hour outflow is 6279 vehicles.



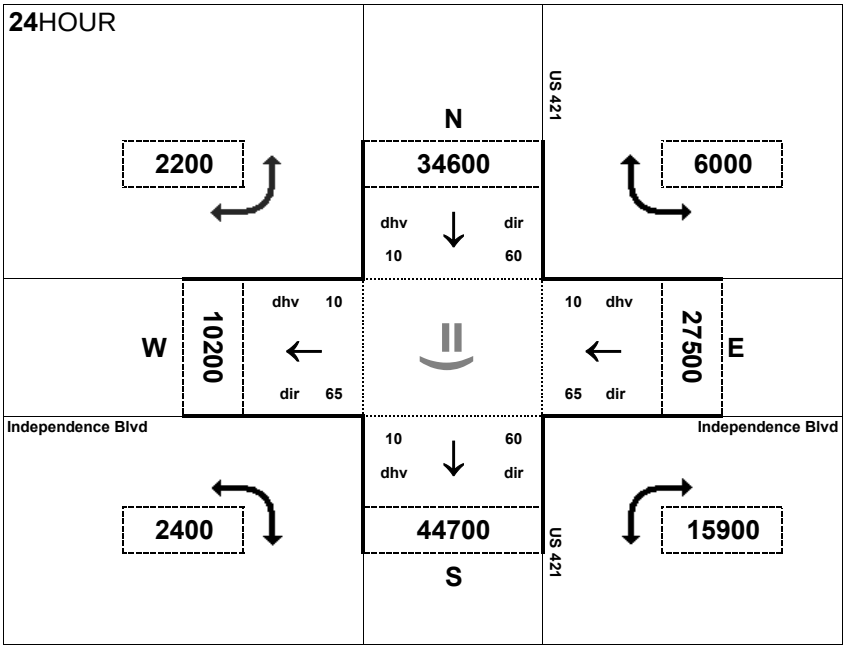
PM peak hour inflow is 6279 vehicles. PM peak hour outflow is 6279 vehicles.

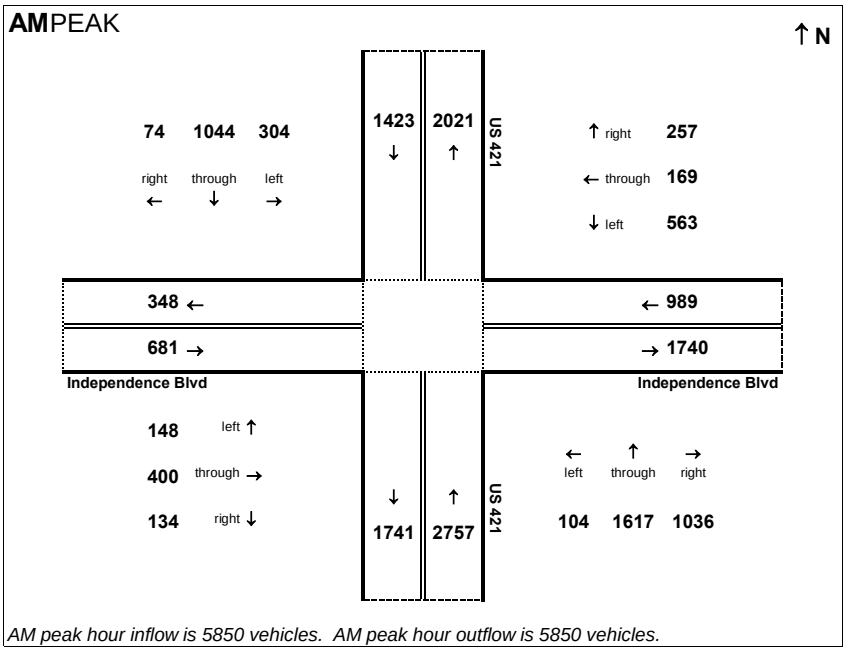
Peak Hour Volume Breakouts Report:
31 - CFX/US 421 - Independence Boulevard

Traffic Forecast Release Date:
Oct. 2014

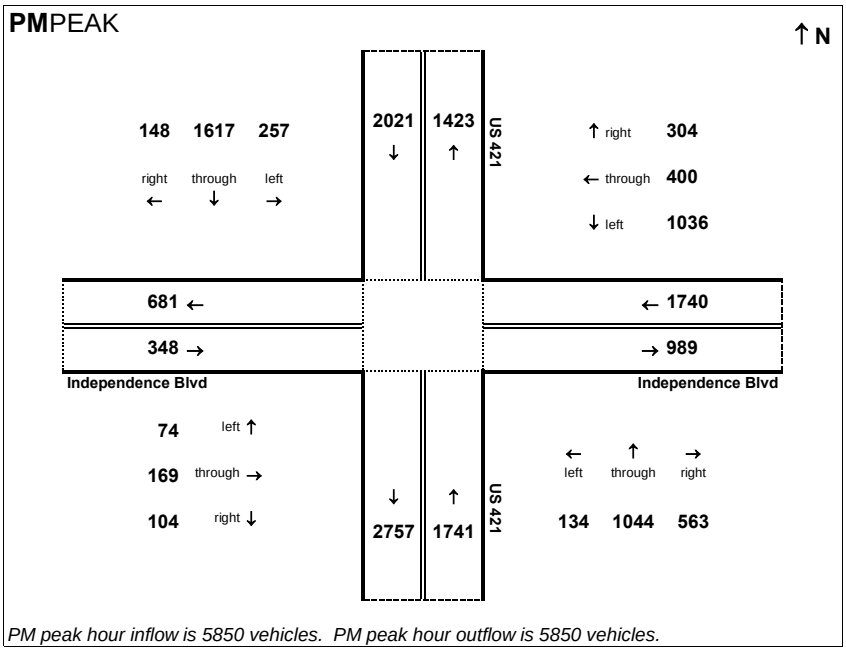
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 5850 vehicles. AM peak hour outflow is 5850 vehicles.



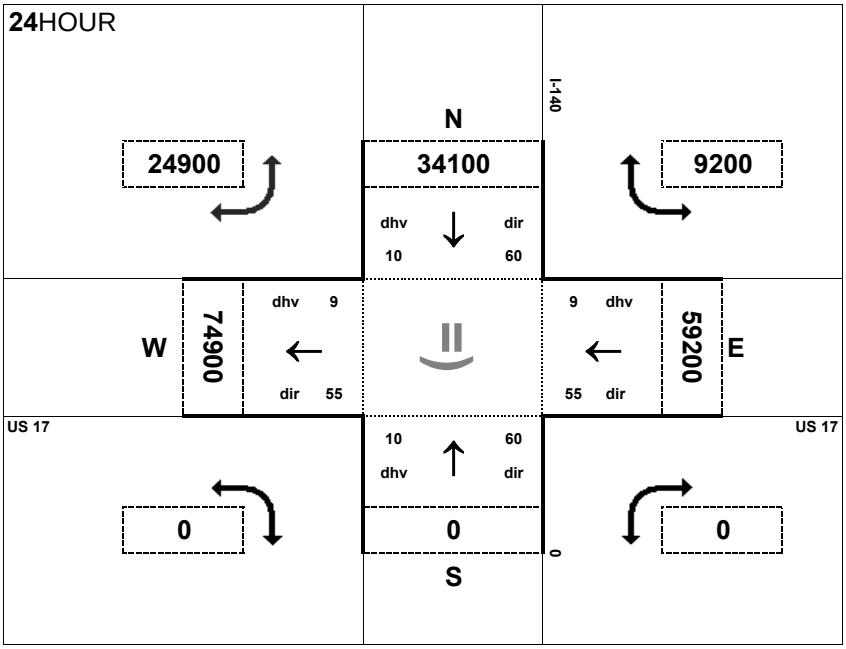
PM peak hour inflow is 5850 vehicles. PM peak hour outflow is 5850 vehicles.

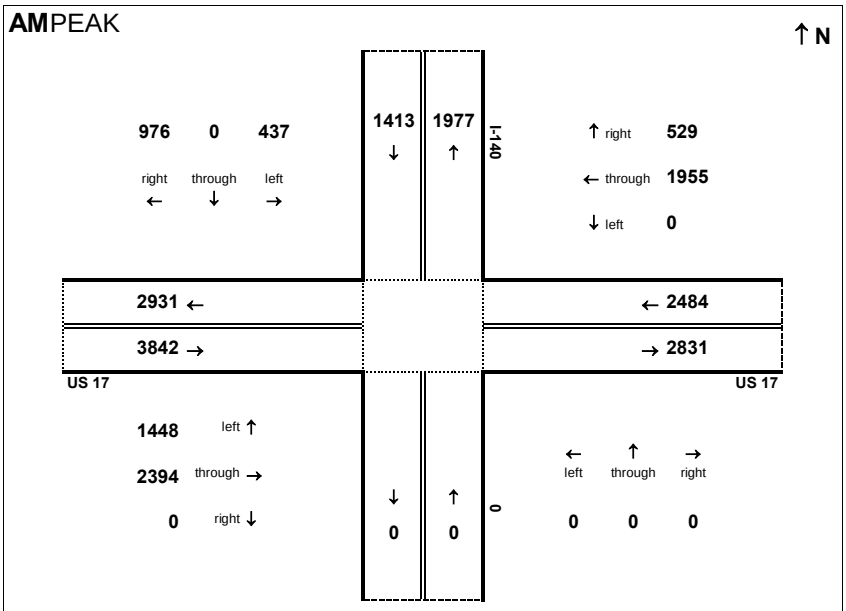
Peak Hour Volume Breakouts Report:
43 - US 17 and I-140 Interchange

Traffic Forecast Release Date:
Oct. 2014

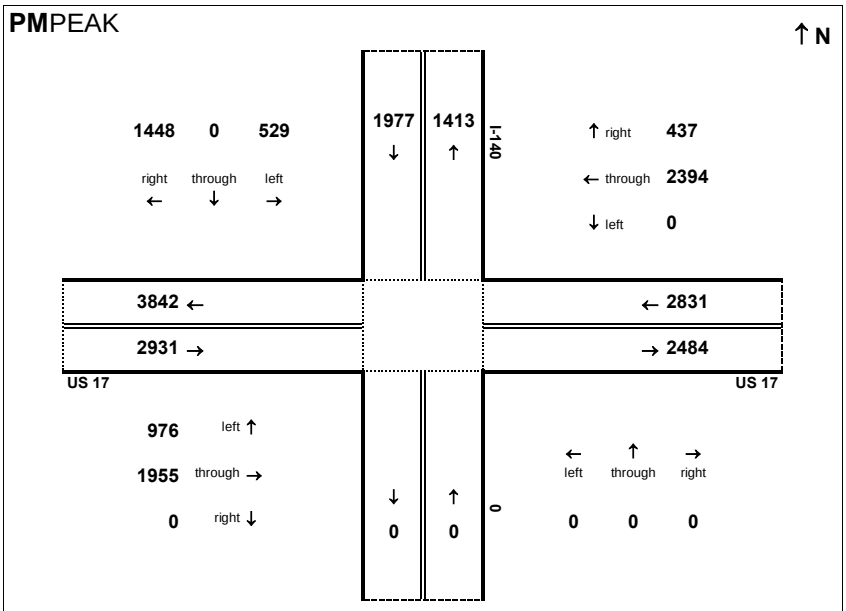
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 7739 vehicles. AM peak hour outflow is 7739 vehicles.



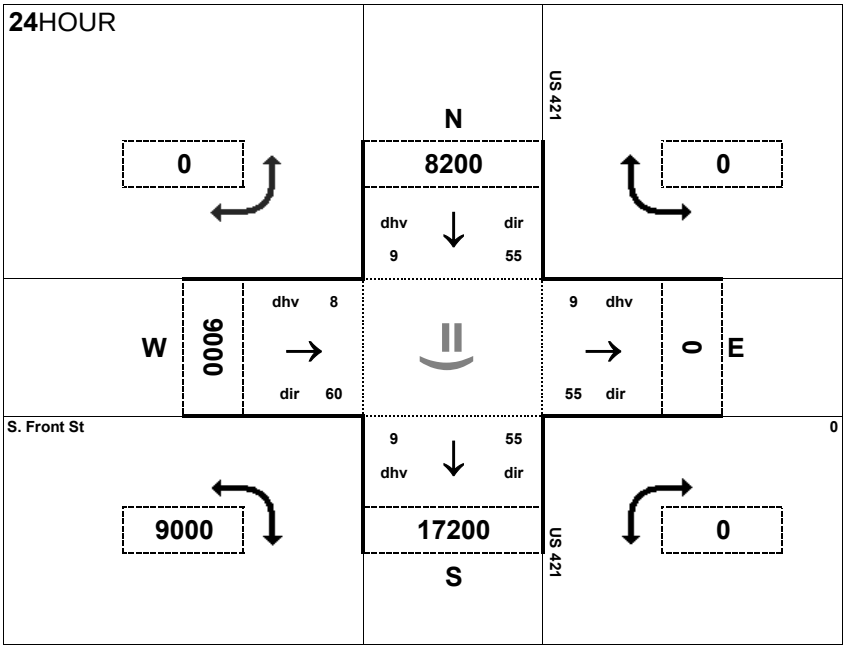
PM peak hour inflow is 7739 vehicles. PM peak hour outflow is 7739 vehicles.

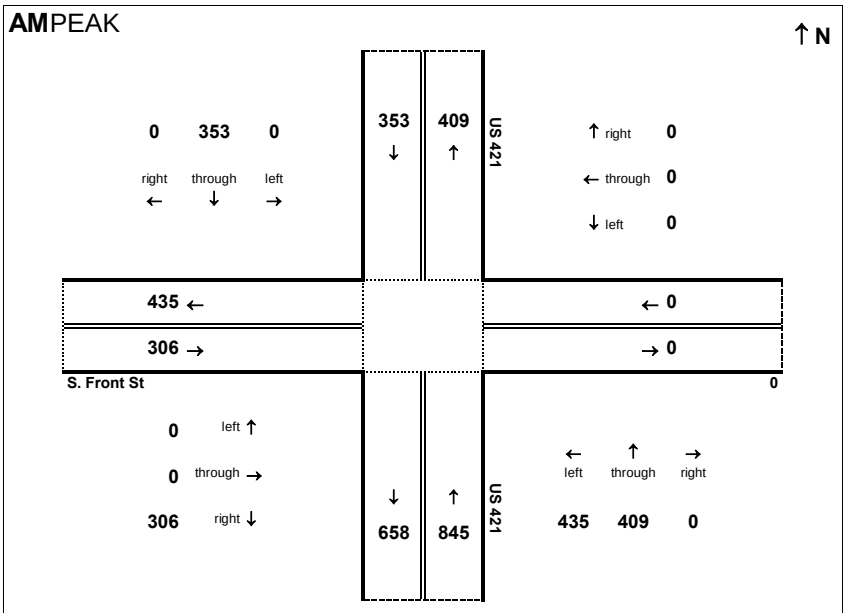
Peak Hour Volume Breakouts Report:
111 - S. Front St & US 421

Traffic Forecast Release Date:
Oct. 2014

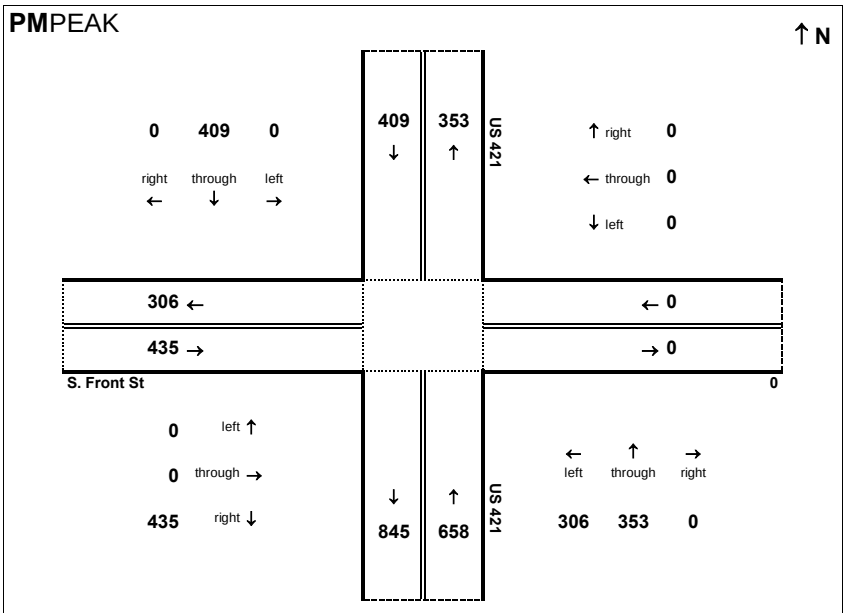
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 1504 vehicles. AM peak hour outflow is 1502 vehicles.



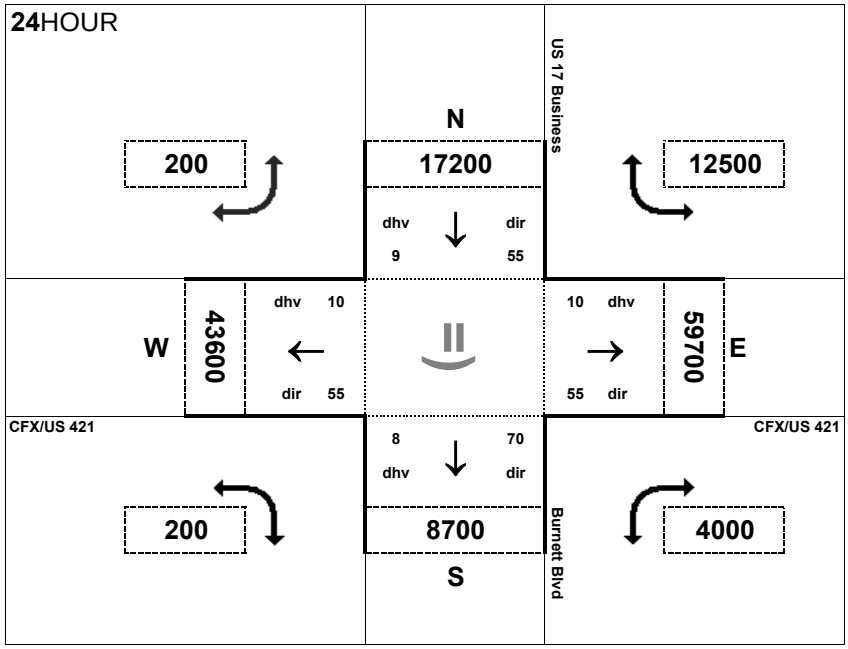
PM peak hour inflow is 1502 vehicles. PM peak hour outflow is 1504 vehicles.

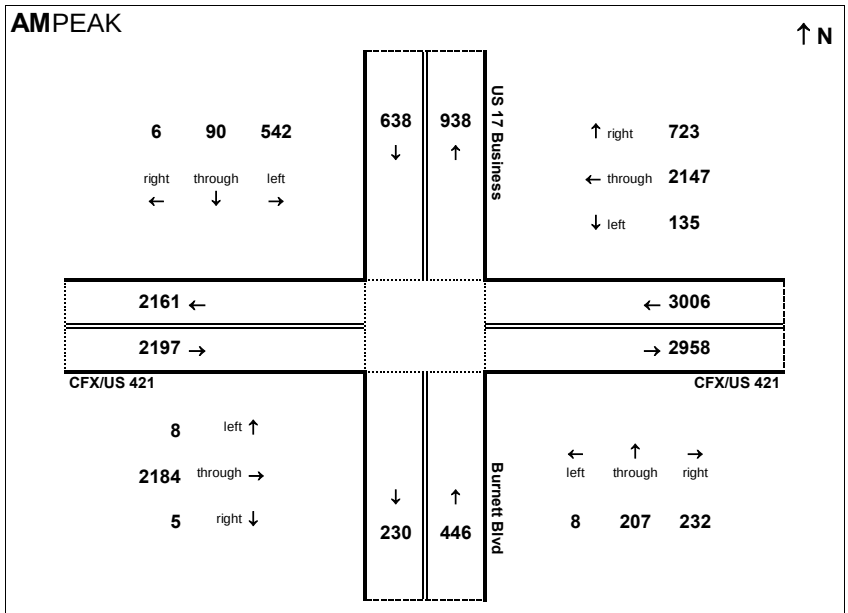
Peak Hour Volume Breakouts Report:
112 - CFX/US 421 and Burnett Blvd

Traffic Forecast Release Date:
Oct. 2014

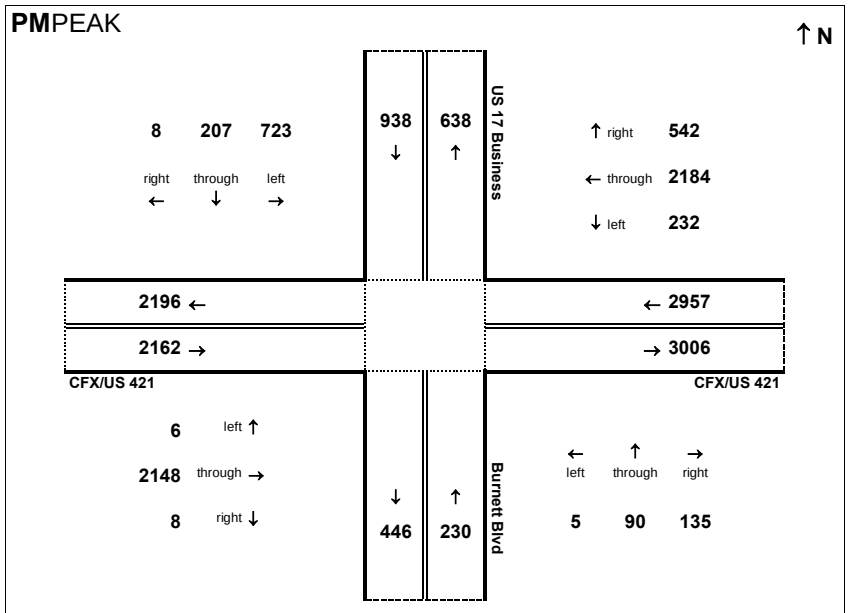
Traffic Data Year:
2040

Project:
Cape Fear Crossing - Build Alt. V (Arterial)





AM peak hour inflow is 6287 vehicles. AM peak hour outflow is 6287 vehicles.



PM peak hour inflow is 6287 vehicles. PM peak hour outflow is 6286 vehicles.

Appendix C

Summarized INRIX Data

	TMC	Road	Segment	Miles	AM Travel Time (mm:ss)	AM Speed (mph)	PM Travel Time (mm:ss)	PM Speed (mph)
EB (Inbound)	125+06290	US 17 NB	Blackwell Rd. to Ramp to US 74-76 WB	5.02	06:23	47.17	06:07	49.16
	125P06290	US 17 NB	Ramp to US 74-76 WB to Ramp from US 74-76 EB	0.63	00:39	57.98	00:38	59.37
	125+10221	US 17 NB/US 74-76 EB	Ramp from US 74-76 EB to Ramp to NC 133	0.36	00:26	49.33	00:20	62.83
	125P10221	US 17 NB/US 74-76 EB	Ramp to NC 133 to Ramp from NC 133	0.69	01:20	30.97	00:40	61.97
	125+06291	US 17 NB/US 74-76 EB	Ramp from NC 133 to Ramp to US 17-421 NB/US 74 EB	1.26	01:35	47.57	01:19	57.50
	125P06291	US 76 EB	Ramp to US 17-421 NB/US 74 EB to Ramp from US 17-421 SB/US 74 WB	0.39	00:25	56.62	00:24	57.12
	125+06292	US 76 EB/US 421 SB	Ramp from US 17-421 SB/US 74 WB to US 421 (Third St.)	1.10	01:45	37.54	01:33	42.65
	125-07922	US 421 SB	US 76 EB (Dawson St.) to US 117 (Shipyard Blvd.)	2.42	04:59	29.16	04:57	29.39
			TOTAL	**11.86**	**17:32**	**40.58**	**15:59**	**44.54**
WB (Outbound)	125+07923	US 421 NB	US 117 (Shipyard Blvd.) to US 76 EB (Dawson St.)	2.41	04:43	30.68	04:33	31.85
	125P07923	US 421 NB	US 76 EB (Dawson St.) to US 76 WB (Wooster St.)	0.09	00:10	31.29	00:11	28.59
	125+06305*	US 76 WB/US 421 NB	US 421 (Third St.) to Ramp to US 17-421 NB/US 74 EB	0.79	01:06	43.14	01:12	39.50
	125N06291	US 76 WB	Ramp to US 17-421 NB/US 74 EB to Ramp from US 17-421 SB/US 74 WB	0.58	00:36	58.18	00:38	54.62
	125-10221	US 17 SB/US 74-76 WB	Ramp from US 17-421 SB/US 74 WB to Ramp to NC 133	1.34	01:24	57.49	01:39	49.03
	125N10221	US 17 SB/US 74-76 WB	Ramp to NC 133 to Ramp from NC 133	0.59	00:35	60.32	00:36	58.43
	125-06290	US 17 SB/US 74-76 WB	Ramp from NC 133 to Ramp to US 74-76 WB	0.22	00:13	61.32	00:13	61.17
	125N06290	US 17 SB	Ramp to US 74-76 WB to Ramp from US 74-76 EB	0.90	00:56	57.60	00:55	58.58
	125-06289	US 17 SB	Ramp from US 74-76 EB to Blackwell Rd.	5.05	06:45	44.86	06:37	45.72
			TOTAL	**11.97**	**16:28**	**43.59**	**16:34**	**43.33**
	Notes:							
	Inbound data is from 6:30 AM to 8:30 AM on October 7-8, 2014.							
	Outbound data is from 3:30 PM to 5:30 PM on October 6-7, 2014.							
	* Data is from April 2013. Data collection for this segment stopped after February 18, 2014.							

Appendix D

Areas of Congestion in Model Runs

Areas of Congestion in Model Runs

2013 No-Build

AM Peak

- US 74 eastbound merge from NC 133 (Village Road) – queues extend westward along US 74 to the NC 133 (Village Rd) overpass bridge
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange

PM Peak

- US 74 westbound - between US 421 merge and NC 131 (Village Rd) – noticeable slowing of traffic in this area

2040 No-Build

AM Peak

- US 74 eastbound - heavy congestion experienced along the entire corridor with queues extending from US 421 (3rd St)/Dawson St to the NC 133 (Village Road) interchange
- US 17 eastbound – the US 17 corridor experiences heavy congestion and queuing from Ploof Rd to Hewitt Burton Rd
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound experiences heavy congestion and excessive queuing. The queuing extends off of the network. Also, heavy congestion on the side streets (Independence Blvd).
- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 northbound experiences heavy congestion and excessive queuing. The queuing extends to Holbrook Ave. Also, heavy congestion on the side streets (Shipyard Blvd).
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends to Greenfield St.

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 17 westbound – the US 17 corridor experiences heavy congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.
- US 74 westbound -– congestion is very heavy along US 74 westbound and queuing extends from NC 131 (Village Rd) and US 421/Wooster St
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound experiences heavy congestion and excessive queuing. The queuing extends off of the network. US 421 southbound also experiences queuing that extends to Sunnyvale Dr. Also, heavy congestion on the side streets (Independence Blvd).
- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 southbound experiences heavy congestion and excessive queuing. The queuing extends to Front St/Burnett St. Also, heavy congestion on the side streets (Shipyard Blvd).
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends to Front St/Burnett St.

2040 Detailed Study Alternative B

AM Peak

- US 17 eastbound – the US 17 corridor experiences light congestion and queuing from Ploof Rd to Westgate Dr
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side streets (Independence Blvd).

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).
- US 421 (Carolina Beach Rd) at Shipyard Blvd Realignment/Medical Center Dr – US 421 experiences southbound queuing that extends to North St. Also, the side streets experience excessive queuing.
- US 17 westbound – the US 17 corridor experiences light congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.

2040 Detailed Study Alternative C

AM Peak

- US 17 eastbound – the US 17 corridor experiences light congestion and queuing from Ploof Rd to Westgate Dr.
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 northbound experiences heavy congestion and excessive queuing. The northbound queuing extends to Holbrook Ave and the southbound queuing extends to Bell St/Medical Center Dr. Also, heavy congestion on the side streets (Shipyard Blvd).
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends half way to Greenfield St.

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 17 westbound – the US 17 corridor experiences heavy congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.

- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends to Greenfield St.

2040 Detailed Study Alternative F

AM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side

PM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).
- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.

2040 Detailed Study Alternative G

AM Peak

- US 17 eastbound – the US 17 corridor experiences light congestion and queuing from Ploof Rd to Westgate Dr.
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 northbound experiences heavy congestion and excessive queuing. The northbound queuing extends to Holbrook Ave and the southbound queuing extends to Bell St/Medical Center Dr. Also, heavy congestion on the side streets (Shipyard Blvd).

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 421 (Carolina Beach Rd) at Shipyard Blvd – There is heavy congestion on the side streets (Shipyard Blvd).
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends halfway to Greenfield St.

2040 Detailed Study Alternative J

AM Peak

- US 17 eastbound – the US 17 corridor experiences congestion and queuing from Ploof Rd to Westgate Dr
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost

reaching the US 421 interchange

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side streets (Independence Blvd).

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).
- US 421 (Carolina Beach Rd) at Shipyard Blvd Realignment/Medical Center Dr – US 421 experiences southbound queuing that extends to North St. Also, the side streets experience excessive queuing.
- US 17 westbound – the US 17 corridor experiences light congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends half way to Greenfield St.

2040 Detailed Study Alternative M

AM Peak

- US 17 eastbound – the US 17 corridor experiences heavy congestion and queuing from Ploof Rd to Brunswick Forest Pkwy.
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 northbound experiences heavy congestion and excessive queuing. The northbound queuing extends to Holbrook Ave. Also, heavy congestion on the side streets (Shipyard Blvd).
- US 421 at Front St/Burnett St – northbound queuing that extends about half way to Greenfield St.

PM Peak

- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 southbound experiences heavy congestion and excessive queuing. The queuing extends to North St. Also, heavy congestion on the side streets (Shipyard Blvd).
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends about halfway to Greenfield St.

2040 Detailed Study Alternative N

AM Peak

- US 17 eastbound – the US 17 corridor experiences light congestion and queuing from Ploof Rd to Westgate Dr

- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side streets (Independence Blvd).

PM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound experienced heavy congestion and excessive queuing. The queuing extends off of the network to the south. Also, heavy congestion on the side streets (Independence Blvd).
- US 421 (Carolina Beach Rd) at Shipyard Blvd Realignment/Medical Center Dr – US 421 experiences southbound queuing that extends to North St. Also, the side streets experience excessive queuing.
- US 17 westbound – the US 17 corridor experiences light congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends to Front St/Burnett St.

2040 Detailed Study Alternative P

AM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side

PM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).
- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.

2040 Detailed Study Alternative Q

AM Peak

- US 17 eastbound – the US 17 corridor experiences heavy congestion and queuing from Ploof Rd to Westgate Dr.
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Shipyard Blvd – the side streets experience heavy congestion.

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 421 (Carolina Beach Rd) at Shipyard Blvd – US 421 experiences southbound queuing that extends to Central St. Also, the side streets experience excessive queuing.
- US 421 (3rd Street) at US 74/Wooster St – the northbound left turn onto US 74 causes queuing that extends halfway to Greenfield St.
- US 17 westbound – the US 17 corridor experiences light congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.

2040 Detailed Study Alternative T

AM Peak

- US 17 eastbound – the US 17 corridor experiences heavy congestion and queuing from Ploof Rd to Westgate Dr
- US 74 at US 421 (3rd Street)/Dawson St – signalized intersection queues extend westward almost reaching the US 421 interchange
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side streets (Independence Blvd).

PM Peak

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.
- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 southbound experiences heavy congestion and excessive queuing. The queuing extends past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).
- US 421 (Carolina Beach Rd) at Shipyard Blvd Realignment/Medical Center Dr – US 421 experiences southbound queuing that extends to North St. Also, the side streets experience excessive queuing.
- US 17 westbound – the US 17 corridor experiences light congestion and queuing that extends from Old Waterford Way to the US 74 eastbound ramp.

2040 Detailed Study Alternative V (Arterial)

AM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side

PM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to

the south and past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).

- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.

2040 Detailed Study Alternative V (Freeway)

AM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Parkway Blvd/Raleigh St to the north. Also, heavy congestion on the side

PM Peak

- US 421 (Carolina Beach Rd) at Independence Blvd – US 421 northbound and southbound experience heavy congestion and excessive queuing. The queuing extends off of the network to the south and past Sunnyvale Dr to the north. Also, heavy congestion on the side streets (Independence Blvd).
- US 17 and NC 87 (Maco Rd) – heavy congestion is experienced at this signalized intersection. Queuing westward along US 17 to the I-140 interchange. Also, the side street (Maco Rd) has queuing that extends off of the network.

Appendix E

Balanced Network Volumes vs. Model Run Volumes Comparison

Balanced Forecast Network Volumes vs. Model Run Volumes

AM Peak					
Location	Sensor ID	Balanced Network Volume	Model Run Volume	Difference	% Difference
US 17 EB, just east of NC 87 (Maco Rd)	1737	1375	1291	84	6.30%
US 17 WB, just east of NC 87 (Maco Rd)	1757	1380	1336	44	3.24%
US 17 EB, just west of US 74 On Ramp	1738	2197	2113	84	3.90%
US 74 WB, just east of US 17 On Ramp	1756	2860	2504	356	13.27%
US 74 WB, just west of US 421 On Ramp	1742	4265	4090	175	4.19%
US 74 EB, just west of US 421 Off Ramp	1753	2931	2620	311	11.21%
US 74 EB, just west of US 421 (3rd St)/Dawson St	1744	2204	2368	-164	-7.17%
US 74 WB, just west of US 421 (3rd St)/Wooster St	1751	1415	1370	45	3.23%
US 421 (Shipyard Blvd) SB, just south of Independence Blvd	1747	1024	999	25	2.47%
US 421 (Shipyard Blvd) NB, just south of Independence Blvd	1748	1293	1289	4	0.31%

PM Peak					
Location	Sensor ID	Balanced Network Volume	Model Run Volume	Difference	% Difference
US 17 EB, just east of NC 87 (Maco Rd)	1737	1321	1253	68	5.28%
US 17 WB, just east of NC 87 (Maco Rd)	1757	1374	1464	-90	-6.34%
US 17 EB, just west of US 74 On Ramp	1738	1857	1766	91	5.02%
US 74 WB, just east of US 17 On Ramp	1756	3531	3272	259	7.61%
US 74 WB, just west of US 421 On Ramp	1742	2965	2768	197	6.87%
US 74 EB, just west of US 421 Off Ramp	1753	4326	4068	258	6.15%
US 74 EB, just west of US 421 (3rd St)/Dawson St	1744	1449	1303	146	10.61%
US 74 WB, just west of US 421 (3rd St)/Wooster St	1751	2266	2141	125	5.67%
US 421 (Shipyard Blvd) SB, just south of Independence Blvd	1747	1293	1401	-108	-8.02%
US 421 (Shipyard Blvd) NB, just south of Independence Blvd	1748	1024	863	161	17.06%

Appendix F

Parameter Adjustments

Final AM Parameter Changes

- Lane Change Rule changed from 0.9 to 0.6
  - (Parameters → Respond to Traffic Control → Compliance Rate →Lane Change Rules (General))
- Stopped Gaps
  - Gap between Stopped vehicles changed to default 2 ft
  - Scenario Non Heavy Veh. in front Mean = 3.0 ft (Default Val is 8 ft); Std. Dev. = 4.0 (Default)
  - Scenario Heavy Veh. in front Mean = 8 ft (Default Val. Is 12 ft); St. Dev = 4 (Default Val.)

- Desired Speed Changed

Deviation from Speed	Default	Changed to
-10	2	0.5
-5	5	9.5
0	15	25
5	25	30
10	25	25
15	15	9.5
20	10	0.5
25	3	0
	100	100

- Remaining - Default Parameters

Final PM Parameter Changes

- Response to traffic control, following changes made:
  - Yield position offset from opposing through movement default = 12 ft, changed to 8 ft
  - Traffic Signal, Run Yellow threshold changed to 2.5 seconds, default is 1.5 sec
  - Compliance Rates, Lane Change Rule (General) changed from default 0.9 to 0.6,
- Gap between Stopped vehicles changed to Default 2 ft
  - Scenario Non Heavy Veh. in front Mean changed to 3 ft (Default is 8 ft) ; St. Dev. = 4 ft
  - Scenario Heavy Veh. in front Mean changed to 8 ft (Default is 12 ft); St. Dev = 4 ft
  - (Parameters → General → Microscopic Parameters →Gap between stopped vehicles

- Desired Speed Changed

Deviation of Speed Limit	Default	Changed to
-10	2	0.5
-5	5	9.5
0	15	15
5	25	40
10	25	25
15	15	9.5
20	10	0.5
25	3	0
	100	100

- Remaining - Default Parameters

Appendix G

Statistical Validity – Number of Runs Determination

Statisical Validity

NUMBER OF MODEL REPETITIONS		
Desired Confidence Level	95%	
Desired CI/S Ratio	1.50	
Model Statistics	**AM Peak Period**	**PM Peak Period**
Average Speed Sample Standard Deviation	0.5544	0.7237
Number of Samples	12	12
Average Speed (mph)	40.87	42.39
95% Confidence Interval	0.8301	1.0835
Calculated CI/S Ratio	1.50	1.50
Adequate Number of Runs?	Yes	Yes

Appendix B: Confidence Intervals

This section explains how to compute the confidence intervals for the microsimulation model results. It explains how to compute the minimum number of repeated field measurements or microsimulation model runs needed to estimate the mean with a certain level of confidence that the true mean actually falls within a target interval.

Three pieces of information are required: (1) sample standard deviation, (2) desired length of the confidence interval, and (3) desired level of confidence.

The required number of repetitions must be estimated by an iterative process. A preliminary set of repetitions is usually required to make the first estimate of the standard deviation for the results. The first estimate of the standard deviation is then used to estimate the number of repetitions required to make statistical conclusions about alternative highway improvements.

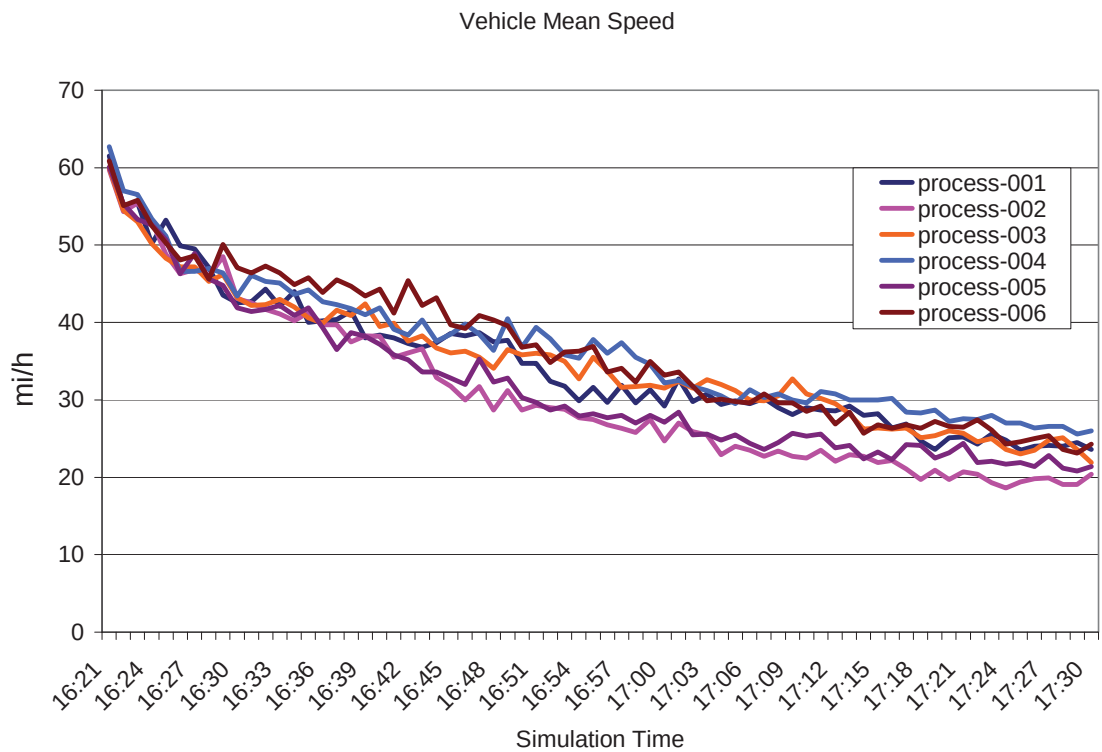
When all of the repetitions have been completed, the analyst then recomputes the standard deviation and the required number of repetitions based on all of the completed repetitions. If the required number of repetitions is less than or equal to the completed number of repetitions, then the analysis has been completed. If not, the analyst either relaxes the desired degree of confidence in the results or performs additional repetitions.

B.1 Why Are Multiple Model Runs Required?

Multiple repetitions of the same model are required because microsimulation results will vary depending on the random number seed used in each run. The random number seed is used to select a sequence of random numbers that are used to make numerous decisions throughout the simulation run (Should a vehicle be loaded on the network now or later? Should the driver be aggressive or timid? Which vehicle type should it be? Will the driver choose the shortest path or a slightly longer one instead?). The outcomes of all of these decisions will affect the simulation results. The results of each run will usually be close to the average of all of the runs; however, each run will be different from the other.

Microsimulation model results can vary by 25 percent between runs.

Figure 14 shows the range of results that can occur simply by varying the random number seed used in each run. The figure shows the mean system vehicle speed for a freeway-to-freeway interchange during each minute of the simulation run. A total of six simulation runs (called “processes” in the figure) were made. As can be seen, after the initial warmup period, results diverge. The range of mean speeds output by each process is about 8.1 to 9.7 km/h (5 to 6 mi/h) for most of the length of the simulation period. Running a longer simulation period does not reduce this variation. At the end of the simulation, the range of results is about 9.7 km/h (6 mi/h), or 25 percent of the mean system speed at the end of the simulation period.



Source: I-580/I-680 Freeway Interchange Model, Dowling Associates, 2002

1 mi/h = 1.61 km/h

Figure 14. Variation in the results between repetitions.

B.2 Estimation of Sample Standard Deviation

The standard deviation (an estimate of the variance) is required to estimate the number of repetitions. However, it takes a minimum number of repetitions to estimate the standard deviation in the first place. So either the analyst estimates the standard deviation directly (based on past experience) or executes a few model run repetitions (each run using a different random number seed) and uses the equation below to compute an initial estimate of the sample standard deviation.

$$s^2 = \frac{\sum \left(x - \bar{x}\right)^2}{N - 1} \tag{12}$$

where:

s = standard deviation

x = variable (such as delay) for which the sample variance is desired

$\bar{x}$ = average value of the variable produced by the model runs

N = number of model runs

Unless the analyst already knows the standard deviation from experience, it is recommended that four repetitions be performed for the initial estimation of the standard deviation. This initial estimate is then revisited and revised later if and when additional repetitions are performed for the purposes of obtaining more precise estimates of mean values or for alternatives analysis.

B.3 Selection of Desired Confidence Level

The confidence level is the probability that the true mean lies within the target confidence interval. The analyst must decide to what degree he or she wishes to know the interval in which the true mean value lies. The usual approach is to pick a 95-percent level of confidence; however, analysts may choose higher or lower levels of confidence. Higher levels of confidence require more repetitions.

B.4 Selection of Desired Confidence Interval

The confidence interval is the range of values within which the true mean value may lie. The length of the interval is at the discretion of the analyst and may vary according to the purposes for which the results will be used. For example, if the analyst is testing alternatives that are very similar, then a very small confidence interval will be desirable to distinguish between the alternatives. If the analyst is testing alternatives with greater differences, then a larger confidence interval can be tolerated. Smaller confidence intervals require more repetitions to achieve a given level of confidence. Confidence intervals that are less than half the value of the standard deviation will require a large number of repetitions to achieve reasonable confidence levels.[20]

B.4.1 Computation of Minimum Repetitions

It is impossible to know in advance exactly how many model runs will be needed to determine a mean (or any other statistical value) to the analyst's satisfaction. However, after a few model runs, the analyst can make an estimate of how many more runs may be required to obtain a statistically valid result.

The required minimum number of model repetitions is computed using the following equation:

$$CI_{1-\alpha\%} = 2 * t_{(1-\alpha/2),N-1} \frac{s}{\sqrt{N}} \tag{13}$$

[20]With such a tight confidence interval, the analyst may be striving for a degree of precision not reflected under real-world conditions.

where:

$CI_{(1\text{-alpha})\%}$ = (1-alpha)% confidence interval for the true mean, where alpha equals the probability of the true mean not lying within the confidence interval

$t_{(1\text{-alpha}/2),N-1}$ = Student's t-statistic for the probability of a two-sided error summing to alpha with N-1 degrees of freedom, where N equals the number of repetitions

s = standard deviation of the model results

Note that when solving this equation for N, it will be necessary to iterate until the estimated number of repetitions matches the number of repetitions assumed when looking up the t statistic. Table 8 shows the solutions to the above equation in terms of the minimum number of repetitions for various desired confidence intervals and desired degrees of confidence.

Table 8. Minimum number of repetitions needed to obtain the desired confidence interval.

Desired Range (CI/S)	Desired Confidence	Minimum Repetitions
0.5	99%	130
0.5	95%	83
0.5	90%	64
1.0	99%	36
1.0	95%	23
1.0	90%	18
1.5	99%	18
1.5	95%	12
1.5	90%	9
2.0	99%	12
2.0	95%	8
2.0	90%	6

Notes:

1. Desired Range = desired confidence interval (CI) divided by standard deviation (S)
2. For example, if the standard deviation in the delay is 1.5 s and the desired confidence interval is 3.0 s at a 95-percent confidence level, then it will take eight repetitions to estimate the mean delay to within ± 1.5 s.

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