



TOWN OF CHAPEL HILL NORTH CAROLINA

MEMORANDUM

TO: Transportation and Connectivity Advisory Board

FROM: David C. Bonk, Long Range and Transportation Planning Manager
Kumar Neppalli, Traffic Engineering Manager
Lt. Celisa Lehew, Special Operations

SUBJECT: **1600 East Franklin Street Corridor and Motor Vehicle Accident Data;
1609 East Franklin Street Hotel and Residential Units – Updated
Transportation Impact Analysis**

Background: At the June 23, 2015 Transportation and Connectivity Board meeting, the Board received presentations from staff and the applicant regarding the 1609 East Franklin Street Hotel/Apartments, Special Use Permit application. Questions were raised about the motor vehicle accidents that occur in this section of East Franklin Street, as well as the assumptions included in the Transportation Impact Analysis for the 1609 East Franklin Street Hotel and Residential Units proposal. We have provided additional information to address these concerns and provided a summary below.

- Summary of Motor Vehicle Accident Data and Associated Ongoing Town Initiatives
The number of motor vehicle crashes in this section of Franklin Street between period 2012-2015 have been consistent at approximately 50 incidents per year. Fall and spring periods appear to be months with slightly higher crash occurrences. There have been few motor vehicle crashes that resulted in injury, roughly 2 crashes with injuries for this same time period. The Chapel Hill Police (C.I.T.E (Crash Investigation Traffic Enforcement) unit reviews crash data. In response to the accidents in this area the Chapel Hill Police have implemented several initiatives, including: Speed Saturation Patrols, DWI Checkpoint, Seatbelt Compliance Checks, and Watch for Me NC Initiatives.

“Rear end, slow or stop” was the accident most reported. “Angle” and “Sideswipe, same direction” were also among the most common. Other accident types in the police data include: objects struck (animal, pedestrian, utility pole, parked vehicle, traffic island, highway sign), operational (ran of road, left/right turn). Accident reporting is provided from July 2012 to July 2015 and is for the 1600 Block of East Franklin Street which is roughly between Couch Road and Elliott Road.

The Chapel Hill Police C.I.T.E. (Crash Investigation Traffic Enforcement) unit reviews crash data on a monthly and quarterly basis. Initiatives are planned after identifying areas that have high incidences of crashes and employs highly visible, targeted traffic enforcement to these areas. Partnering with uniformed patrol officers and area law enforcement agencies we provide education and enforcement to those who share our roadways.

The use of social media is used to announce upcoming initiatives on the Town website, facebook and twitter. Safety announcements are also displayed on two message sign boards placed in areas which have high incidences of crashes, areas of enforcement and areas that have high number of vehicles using the roadways.

The following initiatives have occurred in the 1600 corridor of East Franklin Street over the past year and ongoing initiatives are planned on monthly basis:

Speed Saturation Patrols

A saturation patrol consists of numerous law enforcement officers patrolling a specific area for a set time to increase visibility of enforcement. These saturation patrols focus on speed. Vehicles are subject to speed verification utilizing a LIDAR speed-measuring device. The officer measuring the speed radio's the speed, and a description of the vehicle to enforcement units waiting nearby. We enforce speed during these saturation patrols as studies indicate that speed is a major cause of injury and fatalities on NC roadways. The purpose is to encourage drivers to slow down and follow the speed limit. Results suggest that combination of media usage and enforcement decreases speed violations.

DWI Checkpoint (East Franklin/Estes)

Sobriety checkpoints are a law enforcement technique where law enforcement officers evaluate drivers for signs of alcohol or drug impairment. Vehicles are stopped in a specific sequence. Having concentrated enforcement can help apprehend drunk drivers and deter those who hear about the checkpoints from driving under the influence. The Center for Disease Control studied sobriety checkpoints and found numerous studies that show they can reduce alcohol-related crashes and fatalities by 18-24%.

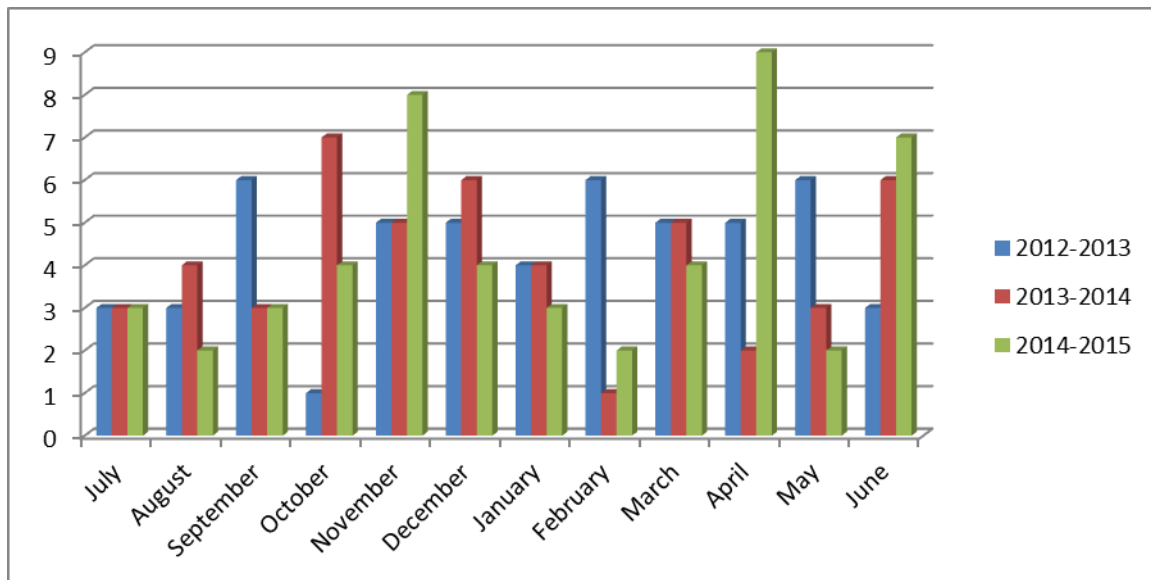
Seatbelt Compliance Checks (East Franklin/Couch)

The purpose of safety checkpoints is to ensure compliance with statutory and safety mandates regarding the safe operation of motor vehicles. We use a systematic method for stopping vehicles to ensure compliance with seat belt usage according to statute by observation of the driver and passengers. The goal is to decrease death and injury caused by unbelted drivers and passengers and to decrease the number of such drivers and passengers on our roadways.

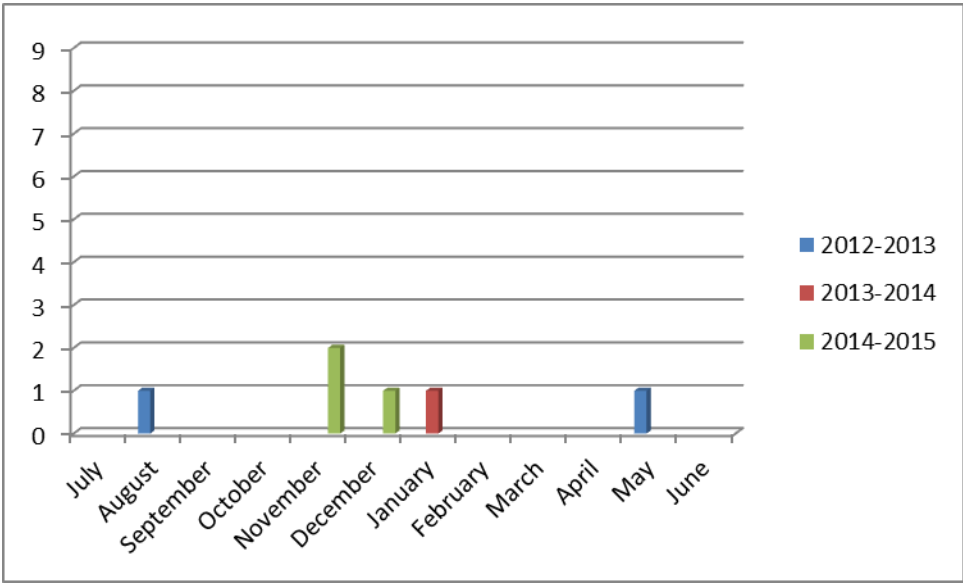
Watch For Me NC Initiatives (East Franklin/Couch/Estes/Eastgate)

The Watch for me NC program aims to reduce pedestrian and bicycle injuries and deaths through a comprehensive, targeted approach of public education and police enforcement. Law Enforcement officers monitor intersections and crosswalks for violations to those who share our roadways; pedestrians, motorists and bicyclists.

Motor Vehicle Crashes			
MONTH	2012-2013	2013-2014	2014-2015
July	3	3	3
August	3	4	2
September	6	3	3
October	1	7	4
November	5	5	8
December	5	6	4
January	4	4	3
February	6	1	2
March	5	5	4
April	5	2	9
May	6	3	2
June	3	6	7
TOTAL	52	49	51



Motor Vehicle Crashes w/ Injuries			
MONTH	2012-2013	2013-2014	2014-2015
July			
August	1		
September			
October			
November			2
December			1
January		1	
February			
March			
April			
May	1		
June			
TOTAL	2	1	3



07/01/2012-07/01/2015 Traffic Crashes 1600 Corridor of East Franklin (Eastgate to Estes)

Most Harmful	Number of Crashes
Ran off road right	1
Ran off road left	2
Fire/Explosion	1
Separation of Units	1
Pedestrian	2
Animal	6
Parked Motor Vehicle	1
Rear end, slow or stop	72
Rear end, turn	1
Left turn, same roadway	7
Left turn, different roadway	9
Right turn, different roadway	1
Sideswipe, same direction	16
Sideswipe, opposite direction	3
Angle	16
Backing up	7
Other collision with vehicle	2
Utility pole	1
Official highway sign	1
Traffic Island/Curb	1
Other fixed object	1

- Summary of 1609 East Franklin Street Hotel/Apartments, Traffic Impact Statement

This traffic impact study (TIS) addendum (attached) provides updated information on traffic impacts related to anticipated development in the Ephesus/Fordham Renewal District.

Background traffic growth for the 2017 analysis year is expected to come from two sources - ambient regional traffic growth and specific development-related traffic growth. This addendum examines the impact of specific background traffic growth estimated in previous planning and analysis studies for the full redevelopment and build-out of the Ephesus Church Road / Fordham Boulevard Small Area Plan (SAP). To account for ambient area-wide traffic growth percentage of 0.7 percent per year was applied to existing traffic volumes based on information from the historic daily traffic growth patterns in the project study (NCDOT and Town of Chapel Hill daily traffic information) and includes the impact of the SAP redevelopment would be a primary contributor to future traffic growth in the project study area.

Study results in the original 1609 E. Franklin Street Hotel TIS indicated existing traffic operations at all study area intersections are acceptable during all three peak hours analyzed, except for the E. Franklin Street and Estes Drive intersection in the noon and PM peak hours. Updates to the projected ambient background traffic growth and specific traffic growth generated by the full build-out of the Ephesus Church Road/Fordham Boulevard Small Area Plan show that these increases in study area peak hour traffic volumes will marginally increase impacts by 2017. Even with the addition of peak hour site-generated trips to the projected 2017 background traffic volumes, no additional study area intersections are expected to experience deficient traffic operations in any peak hour.

Below are numbers for the Elliot Road/Franklin Street intersection that compare the original TIA to the revised TIA (Orange box) for the LOS of the different legs of the intersection.

**Table 8. Capacity Analysis Results for Study Area Intersections
Condition 2 – 2017 Traffic Without Site**

Intersections	LOS			Average Vehicular Delay (seconds/vehicle)		
	AM	Noon	PM	AM	Noon	PM
E. Franklin Street and Elliott Road	C	C	C	22.0	31.7	33.6
EB LT	D	C	C	39.6	32.4	34.2
EB THRT	E	D	E	65.1	53.4	58.8
WB LT	D	D	D	40.8	36.9	39.1
WB THRT	E	E	E	68.3	66.4	66.8
NB LT	E	E	E	59.3	63.7	66.7
NB THRT	B	C	C	14.9	27.8	32.2
SB LT	A	B	D	7.9	17.0	42.4
SB THRT	B	B	B	12.5	18.8	19.4
E. Franklin Street and Elliott Road	C	C	D	24.1	33.6	36.0
EB LT	D	C	C	38.2	31.6	33.4
EB THRT	E	D	E	66.6	53.2	59.2
WB LT	D	D	D	40.9	36.7	39.4
WB THRT	E	E	E	67.5	65.1	66.3
NB LT	E	E	E	59.3	63.7	66.3
NB THRT	B	C	D	17.7	30.9	36.2
SB LT	A	C	D	8.9	24.5	45.6
SB THRT	B	B	C	13.2	19.8	20.5

UPDATED TIA DATA IN ORANGE

**Table 9. Capacity Analysis Results for Study Area Intersections
Condition 3 – 2017 Traffic With Site**

Intersections	LOS			Average Vehicular Delay (seconds/vehicle)		
	AM	Noon	PM	AM	Noon	PM
E. Franklin Street and Elliott Road	C	C	C	22.1	31.9	34.0
EB LT	D	C	C	39.7	32.5	34.2
EB THRT	E	D	E	66.7	54.3	60.0
WB LT	D	D	D	41.4	37.4	39.7
WB THRT	E	E	E	68.1	66.4	66.8
NB LT	E	E	E	59.3	63.7	66.7
NB THRT	B	C	C	15.0	28.1	32.9
SB LT	A	B	D	7.9	18.3	44.6
SB THRT	B	B	B	12.6	18.9	19.6
E. Franklin Street and Elliott Road	C	C	D	24.1	33.9	36.5
EB LT	D	C	C	38.0	31.6	33.4
EB THRT	E	D	E	66.6	53.8	60.3
WB LT	D	D	D	41.1	37.2	39.9
WB THRT	E	E	E	66.2	65.1	66.3
NB LT	E	E	E	59.3	63.7	66.3
NB THRT	B	C	D	18.0	31.5	37.2
SB LT	A	C	D	9.0	26.0	45.6
SB THRT	B	B	C	13.4	19.8	20.6

UPDATED TIA DATA IN ORANGE

**Table 10. Capacity Analysis Results for Study Area Intersections
Condition 4 – 2017 Traffic With Site & Mitigation**

Intersections	LOS			Average Vehicular Delay (seconds/vehicle)		
	AM	Noon	PM	AM	Noon	PM
E. Franklin Street and Elliott Road	C	C	C	22.4	30.2	29.0
EB LT	D	D	D	46.4	43.2	54.1
EB THRT	E	E	E	67.6	60.2	70.1
WB LT	D	D	E	49.5	49.7	64.5
WB THRT	E	E	F	74.2	74.6	84.9
NB LT	D	F	F	46.0	83.5	99.1
NB THRT	B	B	B	14.7	19.8	14.9
SB LT	A	B	C	7.1	16.4	28.6
SB THRT	B	B	B	11.2	14.4	15.4
E. Franklin Street and Elliott Road	C	C	C	24.5	31.9	31.4
EB LT	D	D	D	45.2	43.1	53.9
EB THRT	E	E	E	65.5	59.2	66.7
WB LT	D	D	E	50.9	51.7	69.6
WB THRT	E	E	F	73.9	76.0	86.2
NB LT	D	F	F	47.4	83.9	99.8
NB THRT	B	C	B	17.7	21.6	17.0
SB LT	A	C	D	8.0	21.1	36.5
SB THRT	B	B	B	12.0	14.6	16.2

UPDATED TIA DATA IN ORANGE

Below is a list of additional mitigation measures considered to alleviate the existing and projected future deficient overall traffic operations at the East Franklin Street/Estes Drive intersection.

Planned Improvements

There are no Town of Chapel Hill or North Carolina Department of Transportation improvement projects for study area roadway facilities within the analysis year time frame of 2014-2017.

Background Committed Improvements

There are no specific geometric or operational improvements to study area roadway intersections or facilities related to background private development projects that are expected to be completed between 2015 and 2017. An improvement recommended in the Ephesus Church Road / Fordham Boulevard SAP traffic analysis to lengthen the existing left-turn bay at the East Franklin Street / Elliot Road intersection was not considered for the 2017 build-out year analyses. To make a comparative assessment of changes in traffic operations between the 2014

existing year scenario, 2017 No-Build Scenario and 2017 Build Scenario, it is not assumed that signal timing reoptimization would occur for the East Franklin Street corridor by the year 2017.

Applicant Committed Improvements

Based on the preliminary site concept plans and supporting development information provided, there are no specific external transportation-related improvements proposed adjacent to the 1609 E. Franklin Street Hotel.

Necessary Improvements

Based on traffic capacity analyses for the 2017 design year, and analyses of existing study area turning bay storage lengths and site access, the following improvements are recommended as being necessary for adequate transportation network operations (see **Figure 8**).

- 1) Retime the E. Franklin Street and Estes Drive intersection to optimize overall capacity given the existing intersection geometrics and progression along E. Franklin Street. Also, retime the upstream signals at Elliot Drive and the Eastgate Shopping Center access driveway to promote coordinated traffic operations along E. Franklin Street. Current information from the Town of Chapel Hill suggests that the Estes Drive corridor may not be coordinated with the E. Franklin Street intersections at Elliot Drive and the Eastgate Shopping Center. Bringing those two intersections into coordination with the Estes Drive corridor may marginally improve operations at the critical E. Franklin Street/Estes Drive intersection. If additional measures are required to improve traffic operations at this intersection, geometric improvements may likely be needed. Since the recommended signal timing improvements allow the intersection to operate slightly better than the 2017 No-Build operations analysis results, and thus meet Town requirements for mitigation, no additional geometric improvements were tested.

The proposed signal timing improvements are recommended in order to mitigate impacts from the 1609 E. Franklin Street Hotel site and improve conditions to at least 2017 No-Build levels.

- 2) The original TIS included a recommendation to provide a single driveway access point to align with the existing Chapel Hill Health and Rehabilitation Center driveway to minimize the number of turning conflict points and potentially increase traffic safety. Due to size limitations of the proposed site parcel, building footprint and parking aisle arrangement, this recommendation is not feasible. The current proposed driveway access plan provides adequate traffic operations at each driveway location, so no further changes to the site access plan are recommended.
- 3) The SAP traffic analysis recommendation to extend the westbound left-turn lane on Elliott Road at the E. Franklin Street intersection to provide 300 feet of storage should only be considered if any redevelopment plans in the area limit the access at the current Whole Foods Market driveway along Elliot Road to prohibit left-turns into the existing site and allow the development of extra queue storage at the westbound Elliott Road approach at E. Franklin Street.