ATTACHMENT A

A RESOLUTION RECEIVING A REPORT ON THE FALL 2009 UPDATE OF THE CAROLINA NORTH TRANSPORTATION IMPACT ANALYSIS
Resolution No. 121/2009-10

WHEREAS, the Fall 2009 Update of the Carolina North Transportation Impact Analysis was received by the Chapel Hill Town Council in February 2010; and

WHEREAS, given Carolina North's proximity to Carrboro and potential impacts on the Carrboro street network, the Board finds that it is important to stay updated on the latest traffic impact estimates;

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Board of Aldermen receives the attached report on the Fall 2009 Update of the Carolina North Transportation Impact Analysis (Attachment B) and directs staff to forward the report to the Planning Board and the following advisory boards:

☐ Appearance Commission	☐ Recreation and Parks Commission
☒ Transportation Advisory Board	☐ Northern Transition Area Advisory Committee
☒ Environmental Advisory Board	☐ Greenways Commission
☐ Economic Sustainability Commission	☐ _____

ATTACHMENT B-1

TOWN OF CARRBORO

NORTH CAROLINA

MEMORANDUM

DELIVERED VIA: ☒ *HAND* ☐ *MAIL* ☐ *FAX* ☐ *EMAIL*

DATE: **March 12, 2010**

TO: **Steven Stewart, Town Manager**
Mayor and Board of Aldermen

VIA: **Roy Williford, Planning Director**
Patricia McGuire, Planning Administrator

FROM: **Jeff Brubaker, Transportation Planner**

RE: **Fall 2009 Update of the Carolina North Transportation Impact Analysis**

Introduction

The original *Transportation Impact Analysis for the Carolina North Development* ("Spring 2009 TIA") was released on June 3, 2009. On December 31, 2009, the Fall 2009 Update of the Carolina North Transportation Impact Analysis ("Fall 2009 TIA") was released. This memo summarizes changes in the Fall 2009 TIA that relate most closely to Carrboro; it does not cover every change.

To view the updated TIA, visit: http://www.ci.chapel-hill.nc.us/index.aspx?page=1387

Spring 2009 TIA Background

The Spring 2009 TIA estimated the transportation impacts of the proposed Carolina North development program for the years 2015 (Phase 1) and 2025 (Phase 2). This required assuming a certain amount of development for each phase. The TIA assumed that by Phase 1's completion in 2015, a total of 800,000 sq. ft. of academic, private, civic/retail, and residential development would exist at the site. For Phase 2, development would reach 3,000,000 sq. ft.

To estimate traffic impacts, the Spring 2009 TIA estimated growth in background traffic (i.e. growth that would occur regardless of Carolina North) for 2015 and 2025 and projected how many trips Carolina North would generate and where they would go. The TIA consultants collected existing traffic data at 52 intersections and 21 roadway segments in the Carolina North vicinity, including several in Carrboro. Transit ridership data and some bicycle and pedestrian information were also included in the report. The TIA assumed current traffic volume would grow by 2.25% per year to 2015 and 1.25%

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per year from 2015-2025. These annual growth rates were based on data from the Triangle Regional Model travel demand model. Furthermore, the TIA incorporated the effects of future traffic from other planned developments in Chapel Hill, some future roadway and intersection improvements, and a sensitivity analysis based on different levels of parking availability on Carolina North.

The Spring 2009 TIA results showed significant impact on several intersections and roadway segments in or near Carrboro for 2015 and 2025. The TIA also projected what traffic congestion would look like if certain mitigation measures – like optimizing signal timing, adding turn lanes, and so forth – were taken to improve traffic flow.

Table 1 shows "build" scenario levels of service (LOS) at intersections in or near Carrboro for the two horizon years. It should be noted that these LOS figures are based in part on an assumption that traffic grows every year based on the growth rates mentioned above. As is suggested below when discussing the Fall 2009 TIA, these growth rates do not always materialize. Significant congestion (LOS E or F) in 2015 or 2025 may not materialize if there is less driving due to factors such as higher gas prices, increased use of alternative modes of transportation, transportation demand management, or a smaller amount of development at Carolina North than is assumed by the TIA.

		2015 Build				2025 Build			
	Intersection	Morning Peak		Evening Peak		Morning Peak		Evening Peak	
No.		NM	M	NM	M	NM	M	NM	M
26	Homestead/Seawell School					F	D	A	A
27	Homestead/Rogers	F	F	D	D	F	F	F	F
28	Homestead/High School					F	D	B	B
29	Old NC-86/Homestead/Dairy-land					E	C	C	C
31	Estes/Airport Dr.	E	E	F	F	C	C	F	C
32	Estes/Seawell Sch.	B	B	E	B	E	C	F	D
33	Estes/Greensboro					C	C	D	D
35	NC-54/W. Main	C	C	C	C	D	D	C	C
37	Greensboro/Weaver	E	E	F	D	F	F	F	E
38	Greensboro/Main					E	D	F	E
39	Greensboro/Merritt Mill					B	B	D	D

Table 1. Projected 2015 and 2025 levels of service (LOS) for certain intersections in or near Carrboro in the Spring 2009 TIA with and without mitigation measures. LOS A = free flow traffic; LOS F = severely congested. Note: Some cells are blank because the TIA did not show the 2015 LOS for some intersections. Letters represent overall LOS for each intersection approach; LOS for an individual approach may be better or worse than the overall LOS. NM = No mitigation. M = Mitigation.

Fall 2009 TIA Background

The Fall 2009 TIA used smaller background traffic annual growth rates than the Spring 2009 TIA: 2% to 2015 and 1.25% from 2015-2030. However, setting the Phase 2 horizon date back five years (see below) means the 2030 traffic projections represent an additional five years of traffic growth.

Table 2 shows "build" scenario levels of service (LOS) at intersections in or near Carrboro for the two Fall 2009 TIA horizon years. A (+) next to an LOS grade shows that the projections have improved for that intersection, while a (-) shows that projections show more congestion than in the Spring 2009 TIA. All other LOS grades stayed the same.

		2015 Build				2030* Build			
	Intersection	Morning Peak		Evening Peak		Morning Peak		Evening Peak	
No.		NM	M	NM	M	NM	M	NM	M
26	Homestead/Seawell School					F	D	-C	A
27	Homestead/Rogers	F	+C	-E	-E	F	+B	F	+B
28	Homestead/High School					F	D	-A	-A
29	Old NC-86/Homestead/Dairy-land					-F	-D	-D	C
31	Estes/Airport Dr.	E	E	F	F	-F	C	F	C
32	Estes/Seawell Sch.	B	B	+C	-C	-F	-D	F	D
33	Estes/Greensboro					-E	-D	-F	D
35	NC-54/W. Main	C	C	C	C	+C	+C	C	C
37	Greensboro/Weaver	+C	+C	+D	D	-E	D	F	-F
38	Greensboro/Main					-F	D	F	+D
39	Greensboro/Merritt Mill					B	-D	D	D

Table 2. Projected 2015 and 2025 levels of service (LOS) for certain intersections in or near Carrboro in the Fall 2009 TIA with and without mitigation measures. LOS A = free flow traffic; LOS F = severely congested. Note: Some cells are blank because the TIA did not show the 2015 LOS for some intersections. Letters represent overall LOS for each intersection approach; LOS for an individual approach may be better or worse than the overall LOS. NM = No mitigation. M = Mitigation.

Changes in the Fall 2009 TIA compared with the Spring 2009 TIA

Horizon years and scope

The Phase 2 horizon year has been moved back from 2025 to 2030. The scope of the TIA, the study area, and the assumed development program have stayed the same.

Data

The Fall 2009 TIA includes "new traffic, transit, pedestrian and bicycle data collected in September and October of 2009". New vehicle turning movement counts were taken at 45 intersections during the peak and midday periods. Notably, almost all of them show an approximately 5% to 10% lower turning movement volume than in the Spring 2009 TIA.

Additionally, new average daily traffic (ADT) counts taken at 21 locations show a combined 8% decrease in traffic volumes, with changes ranging from a 31% decrease on Estes Dr. just west of MLK Blvd. to an 8% increase on Homestead Rd. just west of MLK Blvd. in Chapel Hill. Only 5 of 21 road segments showed an increase from the Spring 2009 TIA, while 16 showed a decrease.

None of the 21 segments are within Carrboro, but 4 are very near Town limits. Table 3 shows the differences for these segments.

Road segment	Spring 2009 ADT	Fall 2009 ADT	% Change
Seawell School Rd between Homestead Rd and Savannah Terrace	4581	4121	-10.04%
Seawell School Rd between Hanover Place and Railroad Xing 0.1 mi to the West	4974	3527	-29.09%
Estes Dr Ext between Seawell School Rd and Umstead Rd.	13662	12609	-7.71%
Homestead Rd between Seawell School Rd and Hearthstone Ln.	9472	9030	-4.67%

Table 3. New intersections surveyed.

The smaller traffic volumes are possibly due to the economic downturn. Figure 1 below shows the unemployment rate for Orange County. The traffic counts for the earlier TIA were taken in earlier 2008 and 2009, when unemployment was lower than in the fall of 2009.

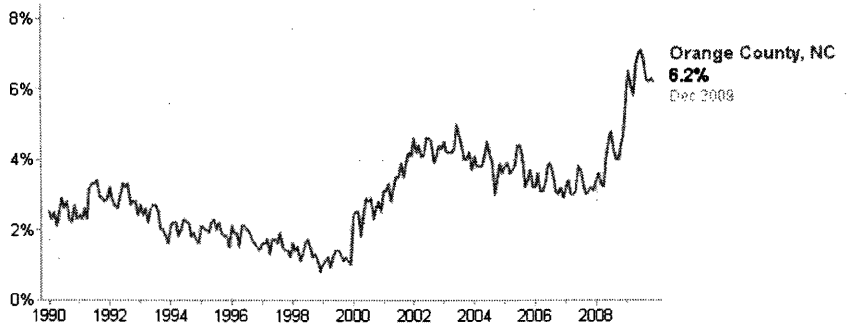

Figure 1. Orange County unemployment rate, 1990-2009. Source: Google/Bureau of Labor Statistics.

In the context of future transportation impacts from the Carolina North site, it is also important to note that UNC has recently expressed that it considers the site a lower priority now compared with the NC-54 corridor.[1]

Updated data on transit ridership show a 4% increase for all Chapel Hill Transit routes from Fall 2008 to Fall 2009. This was driven largely by an increase in the NS route on MLK Blvd. from higher-frequency service, although the RU and J routes showed ridership increases of 500 and 250 per day, respectively. For other Carrboro routes, CM, F, and HS ridership rose slightly, while CW, JFX, and N ridership fell slightly.

Parking occupancy at the two Carrboro park-and-rides also decreased from Fall 2007 to Fall 2009. Carrboro Plaza occupancy was 18% lower in fall 2009 (111 vehicles) compared with fall 2007 (136). Jones Ferry Park-and-Ride occupancy was 9% lower in fall 2009 (230 vehicles) compared with fall 2007 (252). (Note: the Fall 2007 counts are

[1] WCHL. "Transit Plan Raises Questions About Carolina North". Feb. 16, 2010. http://www.wchl1360.com/details3.html?id=13541

from a different TIA – one for the University as a whole and not just Carolina North. The parking occupancy figures are snapshots from counts over the course of one day.)

The Fall 2009 TIA includes "a higher level of detail...for the analysis of pedestrian facilities surrounding the site". It utilizes a pedestrian level-of-service (LOS) measure "based primarily on the existence of a sidewalk, lateral separation between pedestrians and motorized vehicles, motorized vehicle volumes, and motorized vehicle speeds". As with vehicle traffic LOS, grades of A through F are used. Similarly, the Fall 2009 TIA calculated bicycle LOS that takes into account effective width of the outside lane, auto and truck volumes and speeds, and pavement conditions.

Traffic mitigation measures

Based on the new traffic data, the Fall 2009 TIA has updated recommendations on potential mitigation measures. Most recommendations are the same or similar as the Spring 2009 TIA. Many suggested improvements relate to intersection geometry, signalization or signal timing, and adding turn lanes. Traffic calming measures (roundabouts, speed humps, speed tables, and lane narrowing) are recommended for some roads, including Seawell School Rd. It is not known what NCDOT's position is on these recommended traffic calming measures.

The Fall 2009 TIA recommends "[s]ubstantial reconstruction of Estes Drive in the immediate vicinity of the site...Several alternatives for the configurations of this roadway and respective intersections should be evaluated". Given the impact Carolina North may have on the Carrboro portion of Estes Dr. (for example, the southbound Estes Dr. approach to the Estes/Greensboro intersection is projected to have LOS F in the 2030 build scenario, compared to LOS D in the no-build scenario), staff recommend that the Board of Aldermen should consider future recommendations that address the extent to which the University should participate in reconstruction costs and-or bicycle/pedestrian mitigation measures along the affected Carrboro segment. (Currently, the TIA recommends sidewalks and bike lanes on Estes Dr. only extending south to Seawell School Rd.)

The TIA includes the following disclaimer (p. 5-1):

> It should be noted that the mitigations identified in this report represent one way to mitigate the Carolina North impacts, based on the professional judgment of the consultant team. Many of these measures will require refinement as conditions in the study area change and the development program for Carolina North evolves. Additionally, some of the more significant mitigation measures require more detailed study and evaluation of alternatives to address the potential impacts of the project.

The Fall 2009 TIA does not recommend any new transit vehicles needed to serve Carolina North by 2015 (Phase 1). This is different from the Spring 2009 TIA, which recommended one new vehicle for Phase 1. On the other hand, the Fall 2009 TIA recommends 13 new transit vehicles by 2030, whereas the Spring 2009 TIA only suggested 10. The Fall 2009 TIA recommends that Triangle Transit service improvements should be considered as well as local service improvements.

Pedestrian and bicycle improvements

The Fall 2009 TIA recommends 5-ft. sidewalks and 4- to 5-ft. bike lanes on both sides of Estes Dr. from Seawell School Rd. to Caswell Rd. in Chapel Hill and on both sides of Seawell School Rd. from Estes Dr. to Homestead Rd. The Spring 2009 TIA had recommended a sidewalk on only one side of Estes Dr. For Seawell School Rd., the earlier TIA's recommended bike lanes and sidewalk (on only one side) only extended from Estes Dr. to Hanover Pl. The Fall 2009 TIA also recommends bike lanes from MLK Blvd. west to Seawell School Rd.