



Town of Chapel Hill Town-wide Transportation Model

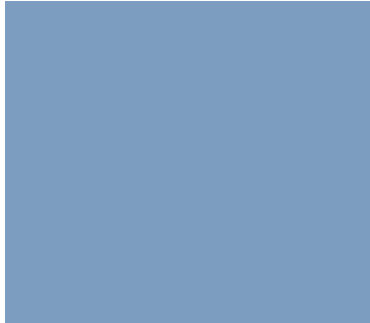
Estes Drive Scenario Test



Presentation to Town Council

May 12, 2021

Presented By:
Craig Scheffler, John Burris
HNTB North Carolina, PC



Town of Chapel Hill
**Town-wide
Transportation Model**

**Today's
Presentation**

- 2024 Estes Drive Scenario Test Format
- Model Results
- Questions and Answers



HNTB

Town of Chapel Hill
Town-wide
Transportation Model

Estes Drive Scenario
Testing

Model Scenarios

- Weekday AM and PM Peak Hours
- 2021 “Base Year”
- 2024 “No-Build Aura”
- 2024 “Build Aura”
- 2024 “Build Aura + Recommended TIA Improvements”
 - Somerset Stop Control
 - Somerset Signal Control



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Town of Chapel Hill
**Town-wide
Transportation Model**

**Estes Drive Scenario
Testing**

2024 Background
Development Information



HNTB

- Blue Hill District (4 Parcels)
- University Place Phase 1
- Central West Area Plan
- Town Municipal Services Center
- E. Rosemary Street Parking Deck & Office Building
- W. Rosemary Street Hotel
- Union Chapel Hill Apartments

- 0.5%/Year Regional Growth

Background Developments List for 2024 Aura/Estes Drive Scenario Testing

ID	Development Name	Area	Land Use	ITE LUC Density Change	AM Peak Trips			PM Peak Trips		
					IN	OUT	TOTAL	IN	OUT	TOTAL
1	Fordham Apartments	Blue Hill	Multi-Family Residential	273 Units - 50 Hotel units	11	89	100	85	40	125
2	Hillstone	Blue Hill	Multi-Family Residential	220 Units	29	115	144	112	60	172
3	Quality Inn	Blue Hill	Multi-Family Residential	236 Units + 125 Hotel Units	55	110	165	89	56	145
4	Park at Chapel Hill	Blue Hill	Multi-Family Residential	+500 Net Units	49	197	246	94	44	138
5	University Place - Phase 1	Mall Area	Commercial	Mixed Uses	367	291	658	704	632	1,336
6	Town Municipal Services Campus	NC 86	Institutional - Office	48k Office + 24k Police Station Net	126	16	142	38	150	188
7	E. Rosemary Parking Deck & Office	Downtown	Public Parking/General Office	Net Parking Incr + 200K Office	327	40	367	82	305	387
8	W. Rosemary St Hotel	Downtown	Hotel	125 Unit Hotel - 90 Existing Parking	17	26	43	36	19	55
9	Union Chapel Hill Apartments	Downtown	Multi-Family Residential	350 Condos - 111 Apartments	24	97	121	148	80	228
A	Aura	Central West	Mixed-Use	Mixed Uses	81	129	210	120	86	206
B	Rummel Property	Central West	Multi-Family Residential	175 units	14	42	57	45	66	111
C	Azalea	Central West	Senior Assisted Living	100 Units	18	9	27	23	28	51
D	Amity UMC	Central West	Institutional - Church	N/A	0	0	0	0	0	0
E		Central West	Multi-Family Residential	36 units	4	9	13	9	14	23
F	YMCA Expansion	Central West	Recreational	30K SF	35	18	53	46	52	98
G	Saw Mill	Central West	Multi-Family Residential	112 units	10	27	37	30	42	72
H	Richardson Property	Central West	Multi-Family Residential	117 units	10	29	39	31	45	76
I	Office Park	Central West	General Office	N/A	0	0	0	0	0	0
J	Peace Property	Central West	Multi-Family Residential	65 units	5	16	22	17	25	42

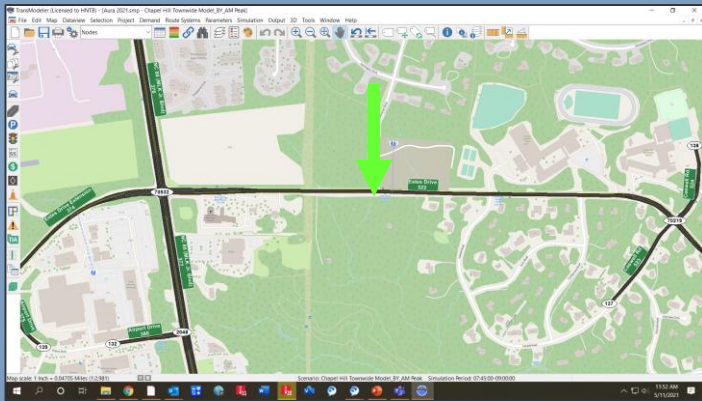
					1,182	1,260	2,443	1,708	1,745	3,453
	-2024 Build Scenario Only									

Town of Chapel Hill

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Estes Drive Scenario Testing

2021 Base Model Results



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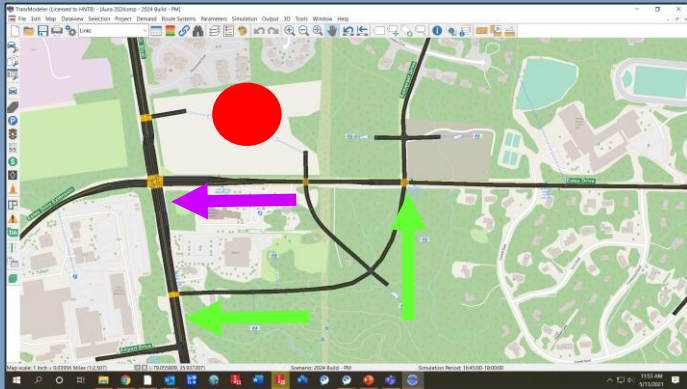
2021 Base Model	Intersection and Approach	Traffic Control	AM Peak Hour			PM Peak Hour		
			LOS	Delay (Sec/Veh)	Max Queue (ft)	LOS	Delay (Sec/Veh)	Max Queue (ft)
	NC 86 (MLK Blvd) and Estes Drive	Signal	D	47.3		E	58.5	
	Eastbound		E	76.3	900	E	70.1	650
	Westbound		D	46.8	350	E	63.0	850
	Northbound		C	33.5	400	E	59.6	625
	Southbound		C	34.6	450	D	45.6	475
	Estes Drive and Somerset Drive	Two-Way Stop	-	-	-	-	-	-
	Southbound		A	5.4	25	C	16.0	125
	Estes Drive and E. Franklin Street	Signal	C	28.7		D	47.9	
	Eastbound		C	33.5	425	E	58.0	625
	Westbound		C	33.0	225	D	54.8	525
	Northbound		C	24.0	200	D	41.8	475
	Southbound		C	25.3	375	D	43.2	500

Town of Chapel Hill

Town-wide Transportation Model

Estes Drive Scenario Testing

2024 No-Build Aura Results



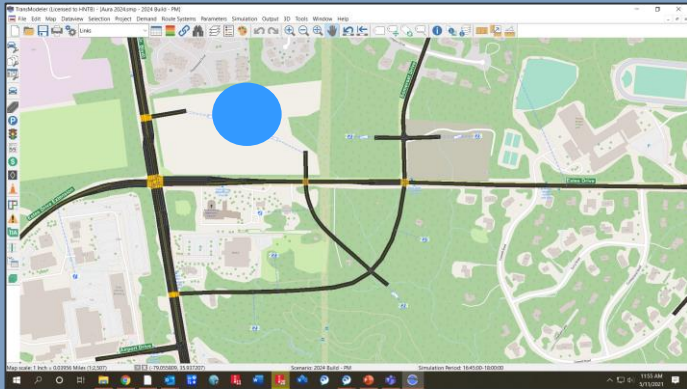
2024 No-Build Model	Intersection and Approach	Traffic Control	AM Peak Hour			PM Peak Hour			
			LOS	Delay (Sec/Veh)	Max Queue (ft)	LOS	Delay (Sec/Veh)	Max Queue (ft)	
NC 86 (MLK Blvd) and Estes Drive	Eastbound	Signal	D	40.9		E	55.1		
			E	76.3	1000	D	54.3	550	
			<i>Westbound</i>	D	37.3	225	D	43.0	725
			Northbound	C	30.4	300	E	65.7	675
			Southbound	C	38.2	375	D	53.8	375
Estes Drive and Somerset Drive	<i>Northbound</i>	Two-Way Stop	-	-	-	-	-	-	
			C	18.2	50	F	122.8	275	
			C	21.4	50	F	155.7	250	
Estes Drive and E. Franklin Street	Eastbound	Signal	D	43.4		F	119.3		
			D	50.5	650	F	91.4	750	
			E	56.4	450	F	160.6	1275	
			C	31.2	225	F	166.8	1600	
Southbound	D	36.4	525	E	69.5	700			
NC 86 (MLK Blvd) and Local Road Connection (RIRO)	<i>Westbound</i>	Two-Way Stop	-	-	-	-	-	-	
			A	5.6	50	C	18.0	50	

Town of Chapel Hill

Town-wide Transportation Model

Estes Drive Scenario Testing

2024 Build Aura Results



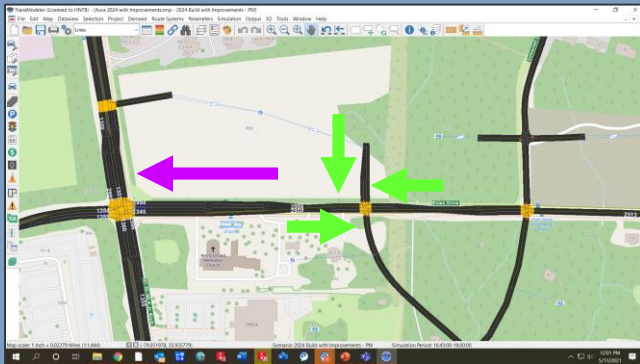
2024 Build-Aura Model	Intersection and Approach	Traffic Control	AM Peak Hour			PM Peak Hour		
			LOS	Delay (Sec/Veh)	Max Queue (ft)	LOS	Delay (Sec/Veh)	Max Queue (ft)
	NC 86 (MLK Blvd) and Estes Drive	Signal	D	39.5		D	51.6	
	Eastbound		E	67.8	850	E	57.1	575
	Westbound		D	39.1	250	D	44.0	575
	Northbound		C	30.3	325	E	59.8	675
	Southbound		C	29.0	375	D	45.8	375
	Estes Drive and Somerset Drive	Two-Way	-	-	-	-	-	-
	Northbound	Stop	B	13.6	50	F	76.4	200
	Southbound	Stop	B	14.9	100	F	103.0	250
	Estes Drive and E. Franklin Street	Signal	D	43.4		F	123.8	
	Eastbound		D	51.6	675	F	88.0	775
	Westbound		E	56.8	450	F	146.5	1275
	Northbound		C	31.7	225	F	193.8	1950
	Southbound		D	35.4	525	E	72.1	850
	MLK Blvd and Future Aura Access #1	Two-Way	-	-	-	-	-	-
	<i>Westbound</i>	Stop	A	6.1	25	A	5.4	25
	Estes Dr and Future Aura Access #2	Two-Way	-	-	-	-	-	-
	<i>Southbound</i>	Stop	C	15.3	50	E	42.9	100
	NC 86 (MLK Blvd) and Local Road Connection (RIRO)	Two-Way	-	-	-	-	-	-
	Westbound	Stop	A	6.8	25	C	21.3	50

Town of Chapel Hill

Town-wide Transportation Model

Estes Drive Scenario Testing

2024 Build Aura + Recommended Aura Improvements Results



2024 Build-Aura Model - With Improvements	Intersection and Approach	Traffic Control	AM Peak Hour			PM Peak Hour		
			LOS	Delay (Sec/Veh)	Max Queue (ft)	LOS	Delay (Sec/Veh)	Max Queue (ft)
NC 86 (MLK Blvd) and Estes Drive		Signal	D	37.5		D	47.4	
	Eastbound		E	59.2	650	E	55.1	475
	<i>Westbound</i>		C	38.7	250	D	38.1	425
	Northbound		C	30.2	375	D	53.1	625
	Southbound		C	28.8	375	D	45.1	375
Estes Drive and Somerset Drive		Two-Way Stop	-	-	-	-	-	-
	Eastbound		-	-	-	-	-	-
	Westbound		-	-	-	-	-	-
	Northbound		B	13.2	50	F	56.9	150
	Southbound		C	17.8	200	F	87.2	250
Estes Drive and E. Franklin Street		Signal	D	42.7		F	102.3	
	Eastbound		D	54.9	650	F	88.8	750
	Westbound		E	57.9	425	F	144.2	1275
	Northbound		C	31.0	225	F	135.7	1100
	<i>Southbound</i>		C	30.2	375	D	53.9	675
MLK Blvd and Future Aura Access #1		Two-Way Stop	-	-	-	-	-	-
	Westbound		A	5.1	25	A	6.2	25
Estes Dr and Future Aura Access #2		Two-Way Stop	-	-	-	-	-	-
	<i>Southbound</i>		B	14.1	50	D	31.1	75
NC 86 (MLK Blvd) and Local Road Connection (RIRO)		Two-Way Stop	-	-	-	-	-	-
	Westbound		A	5.3	50	B	12.2	50

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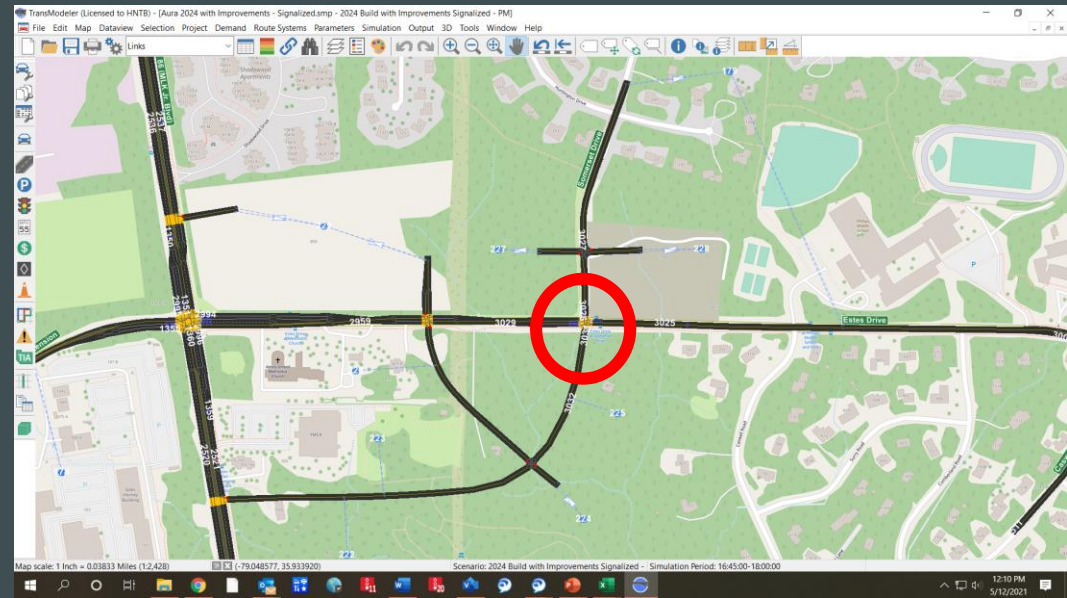
Estes Drive Scenario Testing

2024 Build Aura + Recommended Aura Improvements Results

Somerset Drive Signal



2024 Build-Aura Model - With Improvements	Traffic Control	AM Peak Hour			PM Peak Hour		
		LOS	Delay (Sec/Veh)	Max Queue (ft)	LOS	Delay (Sec/Veh)	Max Queue (ft)
Estes Drive and Somerset Drive	<i>Signal</i>	A	4.1		B	19.7	
Eastbound		A	2.9	75	A	9.6	425
Westbound		A	1.8	175	B	17.4	175
Northbound		E	75.8	75	F	61.7	250
Southbound		F	73.2	50	E	56.2	675





Town of Chapel Hill Town-Wide Transportation Model

Estes Drive Scenario Test



QUESTIONS AND DISCUSSION

