

NC 54 Multimodal Analysis – City of Durham Section (cont.) Delay Summary ¹ or v/c Ratio ²					
Peak Hour Delay (sec)	Existing (2016) Traffic	No-Build (2030) Traffic	Build (2030) Traffic – Queue Jump	Build (2030) Traffic – Transit Signal Priority	Build (2030) Traffic – Huntingridge Superstreet and Median U-Turn
NC-54 & Huntingridge Road/Service Road (Signalized)¹					
AM Peak Hour	EBT – 7.9 WBTR – 25.3 NBL – 42.7	EBT – 11.7 WBTR – 86.7 NBL – 43.3	EBT – 12.8 WBTR – 91.9 NBL – 44.3	EBT – 11.7 WBTR – 86.7 NBL – 43.3	EBT – 4.8 WBTR – 53.2 NBR – 57.6
Mid-Day Peak-Hour*	EBT – 6.8 WBTR – 5.1 NBL – 33.5	EBT – 8.7 WBTR – 7.2 NBL – 39.7	EBT – 11.1 WBTR – 4.7 NBL – 42.9	EBT – 8.2 WBTR – 6.7 NBL – 41.8	EBT – 5.2 WBTR – 1.0 WBL – 53.0
PM Peak Hour	EBT – 12.4 WBTR – 9.3 SBL – 42.2	EBT – 22.1 WBTR – 15.3 SBL – 44.1	EBT – 24.6 WBTR – 16.9 SBL – 50.7	EBT – 19.6 WBTR – 13.9 SBL – 48.5	EBT – 4.5 WBTR – 5.6 SBR – 54.6
NC-54 & Farrington Road (Signalized)¹					
AM Peak Hour	EBT – 90.2 WBTR – 80.8 NBL – 172.7	EBT – 92.7 WBTR – 89.4 NBT – 260.5	EBT – 47.4 WBTR – 100.7 NBT – 285.4	EBT – 87.6 WBTR – 60.5 NBT – 444.1	EBT – 24.8 WBTR – 97.8 NBR – 42.1
Mid-Day Peak-Hour*	EBT – 26.9 WBTR – 31.9 WBL – 79.5	EBT – 43.7 WBTR – 44.9 SBL – 109.6	EBT – 39.0 WBTR – 75.3 WBL – 115.4	EBT – 49.2 WBTR – 44.3 WBL – 104.8	EBT – 24.7 WBTR – 22.5 NBR – 32.4
PM Peak Hour	EBT – 93.0 WBTR – 30.6 WBL – 147.8	EBT – 96.0 WBT – 75.9 EBL – 219.9	EBT – 51.1 WBT – 84.0 EBL – 234.2	EBT – 91.0 WBT – 52.4 SBT – 231.0	EBT – 22.6 WBT – 17.6 WBR – 75.1
NC-54 & I-40 EB Ramps (Signalized)¹					
AM Peak Hour	EBT – 97.7 WBTR – 7.4 SBR – 156.1	EBT – 100.3 WBT – 26.4 SBR – 236.8	EBT – 85.9 WBT – 7.5 SBR – 233.4	EBT – 92.9 WBT – 7.5 SBL – 278.6	EBT – 33.7 WBT – 10.9 SBL – 113.2
Mid-Day Peak-Hour*	EBT – 30.3 WBTR – 3.6 SBR – 52.4	EBT – 83.1 WBT – 5.0 SBR – 112.7	EBT – 47.4 WBT – 4.9 SBR – 53.9	EBT – 83.7 WBT – 4.9 SBR – 76.5	EBT – 24.8 WBT – 5.0 SBR – 53.9
PM Peak Hour	EBT – 108.0 WBTR – 6.1 SBR – 167.9	EBT – 111.0 WBTR – 7.6 NBR – 166.6	EBT – 96.3 WBTR – 7.4 NBR – 163.0	EBT – 110.0 WBTR – 7.5 NBR – 166.6	EBT – 53.6 WBTR – 5.4 NBR – 156.1
NC-54 & I-40 WB Ramps (Signalized)¹					
AM Peak Hour	EBT – 2.1 WBTR – 21.9 NBR – 99.8	EBT – 2.6 WBTR – 26.6 NBR – 101.3	EBT – 2.6 WBTR – 26.6 NBR – 101.3	EBT – 2.6 WBTR – 26.6 NBR – 101.3	EBT – 1.0 WBTR – 31.2 NBR – 71.4
Mid-Day Peak-Hour*	EBT – 0.1 WBTR – 8.7 NBR – 45.0	EBT – 0.2 WBTR – 11.1 NBR – 43.7	EBT – 0.2 WBTR – 11.1 NBR – 43.7	EBT – 0.2 WBTR – 11.1 NBR – 43.7	EBT – 0.2 WBTR – 11.1 NBR – 43.7
PM Peak Hour	EBT – 1.3 WBTR – 18.5 NBR – 99.7	EBT – 1.3 WBTR – 20.9 NBR – 100.5	EBT – 1.3 WBTR – 20.9 NBR – 100.5	EBT – 1.3 WBTR – 20.9 NBR – 100.5	EBT – 0.1 WBTR – 20.4 NBR – 46.0

Reported delays represent seconds per vehicle of delay rounded to the nearest whole second.

*Note: Mid-day peak hour analysis studied the 1:00-2:00 PM time period at each study intersection

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NC-54 & Leigh Farm Road/Quadrangle Drive (Signalized)¹					
AM Peak Hour	EBT – 5.4 WBT – 5.6 SBTL – 48.2	EBT – 5.8 WBT – 6.4 SBTL – 48.9	EBT – 5.8 WBT – 6.4 SBTL – 48.9	EBT – 5.9 WBT – 6.4 SBTL – 48.9	EBT – 10.0 WBTR – 6.3 SBTL – 48.9
Mid-Day Peak-Hour*	EBT – 11.5 WBT – 9.8 NBTL – 20.9	EBT – 13.2 WBT – 9.4 NBTL – 24.3	EBT – 13.2 WBT – 9.4 NBTL – 24.3	EBT – 13.2 WBT – 9.4 NBTL – 24.3	EBT – 13.2 WBTR – 9.4 NBTL – 24.3
PM Peak Hour	EBT – 28.5 WBT – 11.6 NBTL – 88.8	EBT – 44.2 WBT – 12.7 NBTL – 142.5	EBT – 44.0 WBT – 12.7 NBTL – 142.5	EBT – 44.1 WBT – 12.7 NBTL – 142.5	EBT – 26.1 WBTR – 12.7 NBTL – 143.1
Farrington Road & Roundabouts (North and South of NC 54)^{2^A}					
AM Peak Hour	<u>Northern</u> Overall: 0.34 NB – 0.30 SB – 0.34 <u>Southern</u> Overall: 0.47 NB – 0.47 SB – 0.31	-	-	-	<u>Northern</u> Overall: 0.49 NB – 0.37 SB – 0.49 <u>Southern</u> Overall: 0.55 NB – 0.55 SB – 0.52
Mid-Day Peak-Hour*	<u>Northern</u> Overall: 0.27 NB – 0.27 SB – 0.25 <u>Southern</u> Overall: 0.28 NB – 0.28 SB – 0.27	-	-	-	<u>Northern</u> Overall: 0.35 NB – 0.31 SB – 0.35 <u>Southern</u> Overall: 0.42 NB – 0.34 SB – 0.42
PM Peak Hour	<u>Northern</u> Overall: 0.44 NB – 0.35 SB – 0.44 <u>Southern</u> Overall: 0.40 NB – 0.35 SB – 0.40	-	-	-	<u>Northern</u> Overall: 0.56 NB – 0.50 SB – 0.56 <u>Southern</u> Overall: 0.55 NB – 0.42 SB – 0.55

Reported delays represent seconds per vehicle of delay rounded to the nearest whole second.

*Note: Mid-day peak hour analysis studied the 1:00-2:00 PM time period at each study intersection

^Roundabout analysis performed using SIDRA software. Analysis assumed a “raindrop” design with bypass lanes for the northbound and southbound approaches and an exclusive lane for U-turn traffic. For this analysis it was assumed that the roundabout was located “mid-block” and did not align with other driveways. This configuration would require that Farrington Road be widened to a 4-lane section at the roundabouts, but it should be noted that no roadway designs (conceptual or otherwise) have been prepared to evaluate the constructability of that option. It should also be noted that SIDRA does not account for impacts of queues from adjacent intersections.