

NC 54 Multimodal Analysis – City of Durham Section			
Delay Summary			
Condition	AM Peak-Hour Delay (seconds)	Mid-Day Peak-Hour* Delay (seconds)	PM Peak-Hour Delay (seconds)
NC-54 & Huntingridge Road/Service Road (Signalized)			
Existing (2016) Traffic	Overall: B (18.7) EB – A (7.9) WB – C (25.2) NB – D (41.2) SB – D (38.6)	Overall: A (6.6) EB – A (6.7) WB – A (5.1) NB – C (33.3) SB – C (33.2)	Overall: B (11.4) EB – B (12.2) WB – A (9.2) NB – D (39.0) SB – D (41.1)
No-Build (2030) Traffic	Overall: D (55.0) EB – B (11.6) WB – F (86.5) NB – D (41.7) SB – D (38.6)	Overall: A (8.6) EB – A (8.5) WB – A (7.1) NB – D (39.3) SB – D (39.0)	Overall: B (19.0) EB – C (21.7) WB – B (15.1) NB – D (39.5) SB – D (42.6)
Build (2030) Traffic – <i>No WBL at Farrington</i>	Overall: D (45.0) EB – B (10.9) WB – E (69.2) NB – D (46.4) SB – D (42.5)	-	Overall: B (19.5) EB – B (19.8) WB – B (18.0) NB – D (42.3) SB – D (46.1)
Build (2030) Traffic – <i>No SBL at Farrington</i>	Overall: D (44.8) EB – B (10.9) WB – E (69.0) NB – D (46.4) SB – D (42.5)	-	Overall: B (19.2) EB – B (19.8) WB – B (17.3) NB – D (42.3) SB – D (46.1)
NC-54 & Celeste Circle/Falconbridge Road (Signalized)			
Build (2030) Traffic – <i>No WBL at Farrington^</i>	Overall: C (33.7) EB – B (17.7) WB – D (44.5) NBR – C (48.2) SBR – D (44.0) WBU Queue: 342'	-	Overall: C (21.4) EB – B (14.3) WB – C (27.0) NBR – D (45.5) SBR – D (47.4) WBU Queue: 456'
Build (2030) Traffic – <i>No SBL at Farrington^</i>	Overall: D (41.3) EB – C (26.7) WB – D (50.7) NBR – D (48.2) SBR – D (44.0) WBU Queue: 667'	-	Overall: D (43.2) EB – E (59.4) WB – C (29.3) NBR – D (45.5) SBR – D (47.4) WBU Queue: 834'

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

^Note: Reported queue is 95th percentile queue from Synchro

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Condition	AM Peak-Hour Delay (seconds)	Mid-Day Peak-Hour* Delay (seconds)	PM Peak-Hour Delay (seconds)
NC-54 & Farrington Road (Signalized)			
Existing (2016) Traffic	Overall: F (89.6) EB – F (91.4) WB – F (85.4) NB – F (105.7) SB – F (82.5)	Overall: C (32.9) EB – C (28.6) WB – D (38.8) NB – C (29.2) SB – C (30.8)	Overall: E (69.1) EB – F (94.9) WB – D (46.5) NB – E (61.7) SB – E (75.2)
No-Build (2030) Traffic	Overall: F (98.3) EB – F (95.6) WB – F (84.8) NB – F (159.1) SB – F (91.8)	Overall: D (47.9) EB – D (43.3) WB – D (46.1) NB – D (44.9) SB – E (67.0)	Overall: F (91.1) EB – F (104.3) WB – E (72.8) NB – F (86.9) SB – F (110.4)
Build (2030) Traffic – <i>No WBL at Farrington</i> [^]	Overall: F (94.1) EB – C (23.1) WB – F (97.4) NB – F (246.5) SB – F (110.2) EBL Queue: 361'	-	Overall: E (64.5) EB – C (22.8) WB – E (79.9) NB – F (135.4) SB – F (82.6) EBL Queue: 338'
Build (2030) Traffic – <i>No SBL at Farrington</i> [^]	Overall: E (59.4) EB – D (37.1) WB – E (61.2) NB – F (73.7) SB – F (102.3) EBL Queue: 264'	-	Overall: E (62.9) EB – E (63.3) WB – D (44.9) NB – E (57.7) SB – F (109.4) EBL Queue: 310'
NC-54 & I-40 EB Ramps (Signalized)			
Existing (2016) Traffic	Overall: D (46.4) EB – E (66.6) WB – A (7.4) SB – F (134.7)	Overall: B (15.9) EB – C (21.1) WB – A (3.6) SB – D (48.2)	Overall: D (53.8) EB – E (75.5) WB – B (14.8) SB – F (136.9)
No-Build (2030) Traffic	Overall: E (62.3) EB – E (69.4) WB – C (26.3) SB – F (198.4)	Overall: D (39.0) EB – E (57.8) WB – A (5.2) SB – F (95.2)	Overall: E (57.9) EB – E (78.3) WB – B (19.9) SB – F (138.3)
Build (2030) Traffic – <i>No WBL at Farrington</i>	Overall: C (34.9) EB – C (23.4) WB – B (11.8) SB – F (206.5)	-	Overall: D (41.5) EB – D (38.4) WB – C (26.9) SB – F (136.8)
Build (2030) Traffic – <i>No SBL at Farrington</i>	Overall: C (29.6) EB – B (12.3) WB – B (13.8) SB – F (195.8)	-	Overall: D (37.6) EB – D (36.2) WB – C (20.7) SB – F (135.8)

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

[^]Note: Reported queue is 95th percentile queue from Synchro

NC 54 Multimodal Analysis – City of Durham Section			
Delay Summary (cont.)			
Condition	AM Peak-Hour Delay (seconds)	Mid-Day Peak-Hour* Delay (seconds)	PM Peak-Hour Delay (seconds)
NC-54 & I-40 WB Ramps (Signalized)			
Existing (2016) Traffic	Overall: C (26.8) EB – B (13.7) WB – B (18.8) NB – F (98.9)	Overall: A (4.6) EB – A (0.5) WB – A (7.5) NB – D (44.9)	Overall: B (12.0) EB – A (2.8) WB – B (16.2) NB – F (98.5)
No-Build (2030) Traffic	Overall: D (38.2) EB – D (36.1) WB – C (23.1) NB – F (100.3)	Overall: A (5.5) EB – A (0.6) WB – A (9.6) NB – D (43.7)	Overall: B (16.8) EB – B (10.9) WB – B (18.2) NB – F (99.2)
Build (2030) Traffic – <i>No WBL at Farrington</i>	Overall: C (34.7) EB – C (28.2) WB – C (23.1) NB – F (100.3)	-	Overall: B (13.9) EB – A (5.8) WB – B (17.5) NB – F (99.4)
Build (2030) Traffic – <i>No SBL at Farrington</i>	Overall: D (37.7) EB – D (35.3) WB – C (22.8) NB – F (100.3)	-	Overall: B (14.5) EB – B (10.2) WB – B (14.0) NB – F (99.0)
NC-54 & Leigh Farm Road/Quadrangle Drive (Signalized)			
Existing (2016) Traffic	Overall: A (7.0) EB – A (4.6) WB – A (5.2) NB – D (39.4) SB – D (40.0)	Overall: B (10.5) EB – B (10.2) WB – A (9.3) NB – B (17.0) SB – B (14.1)	Overall: C (30.2) EB – C (26.3) WB – B (11.5) NB – E (64.8) SB – D (42.3)
No-Build (2030) Traffic	Overall: A (7.6) EB – A (5.2) WB – A (5.9) NB – D (39.4) SB – D (40.3)	Overall: B (11.2) EB – B (11.6) WB – A (9.0) NB – B (20.0) SB – B (16.9)	Overall: D (43.2) EB – D (40.6) WB – B (12.7) NB – F (98.3) SB – E (58.6)
Build (2030) Traffic – <i>No WBL at Farrington</i>	Overall: A (7.5) EB – A (5.1) WB – A (5.9) NB – D (39.4) SB – D (40.3)	-	Overall: D (39.6) EB – C (31.5) WB – B (12.7) NB – F (98.3) SB – E (58.6)
Build (2030) Traffic – <i>No SBL at Farrington</i>	Overall: A (7.5) EB – A (5.1) WB – A (5.9) NB – D (39.4) SB – D (40.3)	-	Overall: D (40.4) EB – C (33.4) WB – B (12.6) NB – F (98.3) SB – E (58.7)

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