

APPENDIX

APPENDIX A:
Accident Summary Report

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Fiche, Intersection, and Strip Reports Code Index**

T - Type of Accident Codes

0 = UNKNOWN
1 = RAN OFF ROAD - RIGHT
2 = RAN OFF ROAD - LEFT
3 = RAN OFF ROAD - STRAIGHT
4 = JACKKNIFE
5 = OVERTURN/ROLLOVER
13 = OTHER NON-COLLISION
14 = PEDESTRIAN
15 = PEDALCYCLIST
16 = RR TRAIN, ENGINE
17 = ANIMAL
18 = MOVABLE OBJECT
19 = FIXED OBJECT
20 = PARKED MOTOR VEHICLE
21 = REAR END, SLOW OR STOP
22 = REAR END, TURN
23 = LEFT TURN, SAME ROADWAY
24 = LEFT TURN, DIFFERENT ROADWAYS
25 = RIGHT TURN, SAME ROADWAY
26 = RIGHT TURN, DIFFERENT ROADWAYS
27 = HEAD ON
28 = SIDESWIPE, SAME DIRECTION
29 = SIDESWIPE, OPPOSITE DIRECTION
30 = ANGLE
31 = BACKING UP
32 = OTHER COLLISION WITH VEHICLE

F - Road Feature Codes

0 = NO SPECIAL FEATURE
1 = BRIDGE
2 = BRIDGE APPROACH
3 = UNDERPASS
4 = DRIVEWAY, PUBLIC
5 = DRIVEWAY, PRIVATE
6 = ALLEY INTERSECTION
7 = FOUR-WAY INTERSECTION
8 = T-INTERSECTION
9 = Y-INTERSECTION
10 = TRAFFIC CIRCLE/ROUNDBOUT
11 = FIVE-POINT, OR MORE
12 = RELATED TO INTERSECTION
13 = NON-INTERSECTION MEDIAN CROSSING
14 = END OR BEGINNING - DIVIDED HIGHWAY
15 = OFF RAMP ENTRY
16 = OFF RAMP PROPER
17 = OFF RAMP TERMINAL ON CROSSROAD
18 = MERGE LANE BETWEEN ON AND OFF RAMP
19 = ON RAMP ENTRY
20 = ON RAMP PROPER
21 = ON RAMP TERMINAL ON CROSSROAD
22 = RAILROAD CROSSING
23 = TUNNEL
24 = SHARED-USE PATHS OR TRAILS
25 = OTHER

R - Road Condition Codes

1 = DRY
2 = WET
3 = WATER (STANDING, MOVING)
4 = ICE
5 = SNOW
6 = SLUSH
7 = SAND, MUD, DIRT, GRAVEL
8 = FUEL, OIL
9 = OTHER
10 = UNKNOWN

L - Light Condition Codes

1 = DAYLIGHT
2 = DUSK
3 = DAWN
4 = DARK - LIGHTED ROADWAY
5 = DARK - ROADWAY NOT LIGHTED
6 = DARK - UNKNOWN LIGHTING
7 = OTHER
8 = UNKNOWN

W - Weather Condition Codes

1 = CLEAR
2 = CLOUDY
3 = RAIN
4 = SNOW
5 = FOG, SMOG, SMOKE
6 = SLEET, HAIL, FREEZING RAIN/DRIZZLE
7 = SEVERE CROSSWINDS
8 = BLOWING SAND, DIRT, SNOW
9 = OTHER

S - Accident Severity Codes

K = FATAL
A = A-LEVEL INJURY
B = B-LEVEL INJURY
C = C-LEVEL INJURY
O = PROPERTY DAMAGE ONLY

Ch - Road Character

1 = STRAIGHT, LEVEL
2 = STRAIGHT, HILLCREST
3 = STRAIGHT, GRADE
4 = STRAIGHT, BOTTOM (SAG)
5 = CURVE, LEVEL
6 = CURVE, HILLCREST
7 = CURVE, GRADE
8 = CURVE, BOTTOM (SAG)
9 = OTHER

Op - Traffic Control Operating

1 = YES
2 = NO
3 = UNKNOWN

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Fiche, Intersection, and Strip Reports Code Index**

Veh Mnvr - Vehicle Maneuver Codes

1 = STOPPED IN TRAVEL LANE
2 = PARKED OUT OF TRAVEL LANES
3 = PARKED IN TRAVEL LANES
4 = GOING STRAIGHT AHEAD
5 = CHANGING LANES OR MERGING
6 = PASSING
7 = MAKING RIGHT TURN
8 = MAKING LEFT TURN
9 = MAKING U-TURN
10 = BACKING
11 = SLOWING OR STOPPING
12 = STARTING IN ROADWAY
13 = PARKING
14 = LEAVING PARKED POSITION
15 = AVOIDING OBJECT IN ROAD

Dv - Traffic Control Device

0 = NO CONTROL PRESENT
1 = STOP SIGN
2 = YIELD SIGN
3 = STOP AND GO SIGNAL
4 = FLASHING SIGNAL WITH STOP SIGN
5 = FLASHING SIGNAL WITHOUT STOP SIGN
6 = RR GATE AND FLASHER
7 = RR FLASHER
8 = RR CROSSBUCKS ONLY
9 = HUMAN CONTROL
10 = WARNING SIGN
11 = SCHOOL ZONE SIGNS
12 = FLASHING STOP AND GO SIGNAL
13 = DOUBLE YELLOW LINE, NO PASSING ZONE
14 = OTHER

Alchl/Drugs - Driver Alcohol/Drugs Suspected Status Codes

0 = NO
1 = YES - ALCOHOL, IMPAIRMENT SUSPECTED
2 = YES - ALCOHOL, NO IMPAIRMENT DETECTED
3 = YES - OTHER DRUGS, IMPAIRMENT SUSPECTED
4 = YES - OTHER DRUGS, NO IMPAIRMENT DETECTED
5 = YES - ALCOHOL AND OTHER DRUGS, IMPAIRMENT SUSPECTED
6 = YES - ALCOHOL AND OTHER DRUGS, NO IMPAIRMENT DETECTED
7 = UNKNOWN

Ped Actn - Pedestrian Action Codes

1 = ENTERING OR CROSSING SPECIFIED LOCATION
2 = WALKING, RIDING, RUNNING/JOGGING WITH TRAFFIC
3 = WALKING, RIDING, RUNNING/JOGGING AGAINST TRAFFIC
4 = WORKING
5 = PUSHING VEHICLE
6 = APPROACHING OR LEAVING VEHICLE
7 = PLAYING
8 = STANDING
9 = OTHER

Ci - Roadway Contributing Circumstances

0 = NONE (NO UNUSUAL CONDITIONS)
1 = ROAD SURFACE CONDITION
2 = DEBRIS
3 = RUT, HOLES, BUMPS
4 = WORK ZONE (CONSTRUCTION, MAINTENANCE, UTILITY)
5 = WORN TRAVEL-POLISHED SURFACE
6 = OBSTRUCTION IN ROADWAY
7 = TRAFFIC CONTROL DEVICE INOPERATIVE, NOT VISIBLE OR MISSING
8 = SHOULDERS LOW, SOFT OR HIGH
9 = NO SHOULDERS
10 = NON-HIGHWAY WORK
11 = OTHER
12 = UNKNOWN

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Fiche, Intersection, and Strip Reports Code Index**

Obj Strk - Object Struck Codes

14 = PEDESTRIAN
15 = PEDALCYCLIST
17 = ANIMAL
18 = MOVABLE OBJECT
20 = PARKED MOTOR VEHICLE
33 = TREE
34 = UTILITY POLE
35 = LUMINAIRE POLE NON-BREAKAWAY
36 = LUMINAIRE POLE BREAKAWAY
37 = OFFICIAL HIGHWAY SIGN NON-BREAKAWAY
38 = OFFICIAL HIGHWAY SIGN BREAKAWAY
39 = OVERHEAD SIGN SUPPORT
40 = COMMERCIAL SIGN
41 = GUARDRAIL END ON SHOULDER
42 = GUARDRAIL FACE ON SHOULDER
43 = GUARDRAIL END IN MEDIAN
44 = GUARDRAIL FACE IN MEDIAN
45 = SHOULDER BARRIER END
46 = SHOULDER BARRIER FACE
47 = MEDIAN BARRIER END
48 = MEDIAN BARRIER FACE
49 = BRIDGE RAIL END
50 = BRIDGE RAIL FACE
51 = OVERHEAD PART UNDERPASS
52 = PIER ON SHOULDER OF UNDERPASS
53 = PIER IN MEDIAN OF UNDERPASS
54 = ABUTMENT OF UNDERPASS
55 = TRAFFIC ISLAND CURB OR MEDIAN
56 = CATCH BASIN OR CULVERT ON SHOULDER
57 = CATCH BASIN OR CULVERT ON MEDIAN
58 = DITCH
59 = EMBANKMENT
60 = MAILBOX
61 = FENCE OR FENCE POST
62 = CONSTRUCTION BARRIER
63 = CRASH CUSHION
64 = OTHER FIXED OBJECT

Unit # - Vehicle Style Codes

1 = PASSENGER CAR
2 = PICKUP
3 = LIGHT TRUCK (MINI-VAN, PANEL)
4 = SPORT UTILITY
5 = VAN
6 = COMMERCIAL BUS
7 = SCHOOL BUS
8 = ACTIVITY BUS
9 = OTHER BUS
10 = SINGLE UNIT TRUCK (2-AXLE, 6-TIRE)
11 = SINGLE UNIT TRUCK (3 OR MORE AXLES)
12 = TRUCK/TRAILER
13 = TRUCK/TRACTOR
14 = TRACTOR/SEMI-TRAILER
15 = TRACTOR/DOULBES
16 = UNKNOWN HEAVY TRUCK
17 = TAXICAB
18 = FARM EQUIPMENT
19 = FARM TRACTOR
20 = MOTORCYCLE
21 = MOPED
22 = MOTOR SCOOTER OR MOTOR BIKE
23 = PEDALCYCLE
24 = PEDESTRIAN
25 = MOTOR HOME/RECREATIONAL VEHICLE
26 = OTHER
27 = ALL TERRAIN VEHICLE (ATV)
28 = FIRETRUCK
29 = EMS VEHICLE, AMBULANCE, RESCUE SQUAD
30 = MILITARY
31 = POLICE
32 = UNKNOWN

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Acc No	Crash ID	Milepost	Date	Accident Type	Total Damage	Injuries				Condition			Road		Trfc Ctl	
						F	A	B	C	R	L	W	Ch	Ci	Dv	Op
9	102643411	14.910	07/29/2009 09:35	REAR END, SLOW OR STOP	\$ 4000	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 4	Alchl/Drugs:	0	Speed: 15 MPH	Dir: E	Veh Mnvr/Ped Actn: 4				Obj Strk:						
Unit	2 : 4	Alchl/Drugs:	0	Speed: 5 MPH	Dir: E	Veh Mnvr/Ped Actn: 11				Obj Strk:						
10	103075662	14.910	01/21/2011 19:42	REAR END, SLOW OR STOP	\$ 200	0	0	0	0	1	5	1	1	0	0	2
Unit	1 : 2	Alchl/Drugs:	0	Speed: 5 MPH	Dir: E	Veh Mnvr/Ped Actn: 11				Obj Strk:						
Unit	2 : 1	Alchl/Drugs:	7	Speed: 80 MPH	Dir: E	Veh Mnvr/Ped Actn: 4				Obj Strk:						
11	102815805	14.932	02/19/2010 17:16	REAR END, SLOW OR STOP	\$ 4500	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 1	Alchl/Drugs:	0	Speed: 35 MPH	Dir: E	Veh Mnvr/Ped Actn: 4				Obj Strk:						
Unit	2 : 1	Alchl/Drugs:	0	Speed: 0 MPH	Dir: E	Veh Mnvr/Ped Actn: 1				Obj Strk:						
12	102621418	15.222	06/25/2009 17:15	REAR END, SLOW OR STOP	\$ 3500	0	0	0	0	1	1	1	1	0	0	
Unit	1 : 2	Alchl/Drugs:	0	Speed: 35 MPH	Dir: E	Veh Mnvr/Ped Actn: 4				Obj Strk:						
Unit	2 : 2	Alchl/Drugs:	0	Speed: 35 MPH	Dir: E	Veh Mnvr/Ped Actn: 7				Obj Strk:						
13	103013879	15.230	11/16/2010 17:18	RAN OFF ROAD - LEFT	\$ 10500	0	0	0	1	1	2	1	1	0	0	
Unit	1 : 1	Alchl/Drugs:	0	Speed: 35 MPH	Dir: W	Veh Mnvr/Ped Actn: 4				Obj Strk:		58				

Legend for Report Details:
 Acc No - Accident Number
 Injuries: F - Fatal, A - Class A, B - Class B, C - Class C
 Condition: R - Road Surface, L - Ambient Light, W - Weather
 Rd Ch - Road Character
 Rd Ci - Roadway Contributing Circumstances
 Trfc Ctl - Traffic Control: Dv - Device, Op - Operating
 Alchl/Drugs - Alcohol Drugs Suspected
 Veh Mnvr/Ped Actn - Vehicle Maneuver/Pedestrian Action
 Obj Strk - Object Struck

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	13	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	5	38.46
Total Injury Crashes	5	38.46
Property Damage Only Crashes	8	61.54
Night Crashes	2	15.38
Wet Crashes	2	15.38
Alcohol/Drugs Involvement Crashes	1	7.69

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	13	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	1	7.69
Class C Crashes	4	30.77
Property Damage Only Crashes	8	61.54

Vehicle Exposure Statistics

Annual ADT = 8600

Total Length = 0.49 (Miles)

0.789 (Kilometers)

Total Vehicle Exposure = 4.61 (MVMT)

7.43 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	281.73	175.06
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	108.36	67.33
Night Crash Rate	43.34	26.93
Wet Crash Rate	43.34	26.93
EPDO Rate	1083.58	673.31

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index =	3.85
EPDO Crash Index =	50.00
Estimated Property Damage Total = \$	61200.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
RAN OFF ROAD - LEFT	2	15.38
REAR END, SLOW OR STOP	10	76.92
REAR END, TURN	1	7.69

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	1	20.00
Class C Injuries	4	80.00
Total Non-Fatal Injuries	5	100.00
Total Injuries	5	100.00

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	2	15.38
Feb	3	23.08
Mar	1	7.69
Apr	0	0.00
May	1	7.69
Jun	1	7.69
Jul	1	7.69
Aug	0	0.00
Sep	3	23.08
Oct	0	0.00
Nov	1	7.69
Dec	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	2	15.38
Tue	4	30.77
Wed	1	7.69
Thu	2	15.38
Fri	3	23.08
Sat	0	0.00
Sun	1	7.69

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	1	7.69
0700-0759	1	7.69
0800-0859	0	0.00
0900-0959	1	7.69
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	1	7.69
1500-1559	3	23.08
1600-1659	1	7.69
1700-1759	3	23.08
1800-1859	1	7.69
1900-1959	1	7.69
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	7	2	0	9
Dark	2	0	0	2
Other	2	0	0	2
Total	11	2	0	13

Object Struck Summary

Object Type	Times Struck	Percent of Total
DITCH	1	100.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	12	48.00
PICKUP	7	28.00
SPORT UTILITY	5	20.00
VAN	1	4.00

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2008	2	0	1	1
2009	6	0	2	4
2010	2	0	1	1
2011	3	0	1	2
Total	13	0	5	8

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2008	0	1
2009	0	2
2010	0	1
2011	0	1
Total	0	5

Miscellaneous Totals

Year	Property Damage	EPDO Index
2008	\$ 15500	9.40
2009	\$ 24300	20.80
2010	\$ 15000	9.40
2011	\$ 6400	10.40
Total	\$ 61200	50.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &				Other
				Fixed Object	Angle	Side Swipe		
2008	0	0	1	1	0	0	0	
2009	0	0	6	0	0	0	0	
2010	0	0	1	1	0	0	0	
2011	0	0	3	0	0	0	0	
Total	0	0	11	2	0	0	0	

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Strip Diagram

Features	Milepost	Crash IDs
HOLLYBROOK	14.760	102683668 103094849
	14.770	102525996
	14.780	
	14.790	
	14.800	
	14.810	
	14.820	
	14.830	
	14.840	
	14.850	102398644 103106890 102586639
	14.860	
	14.870	
	14.880	
	14.890	102484313
SR 2359 OLD ZEBULON	14.900	
	14.910	102388809 102643411 103075662
	14.920	
NC 231 SELMA	14.930	102815805
	14.940	
SR 2353 OLD WILSON	14.950	
	14.960	
	14.970	
	14.980	
	14.990	
	15.000	
	15.010	
	15.020	
	15.030	
	15.040	
	15.050	
	15.060	
	15.070	
	15.080	
	15.090	
	15.100	
	15.110	
	15.120	
	15.130	
	15.140	
15.150		
15.160		
15.170		
15.180		
15.190		

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Features	Milepost	Crash IDs
DEER LAKE	15.200	
	15.210	
	15.220	102621418
	15.230	103013879
	15.240	
RAYMOND	15.250	

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000012950				76.8	8.4	8600	

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality			Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
						WAKE	91	5	All and Rural		0	05/01/2008	04/30/2011	3.00

Location Text	Requestor
US 64B-Wendell Blvd from Hollybrook Rd to Raymond Dr.	Tommy Pate Martin/Alexious/Bryson, PC

Included Accidents	Old MP	New MP	Type
102388809		14.91	I
102643411		14.91	I
102815805		14.932	I
103075662		14.91	I
102586639		14.855	I

Excluded Accidents
102528257

Fiche Roads

Name	Code
US 64BUS	29000064
WENDELL	50032464

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
US 64BUS	29000064	14.760	15.250	0.490	0.789

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	4	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	1	25.00
Total Injury Crashes	1	25.00
Property Damage Only Crashes	3	75.00
Night Crashes	1	25.00
Wet Crashes	1	25.00
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	4	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	1	25.00
Property Damage Only Crashes	3	75.00

Vehicle Exposure Statistics

Annual ADT = 11600

Total Vehicle Exposure = 12.7 (MEV)

Crash Rate	Crashes Per 100 Million Vehicles Entered
Total Crash Rate	31.49
Fatal Crash Rate	0.00
Non Fatal Crash Rate	7.87
Night Crash Rate	7.87
Wet Crash Rate	7.87
EPDO Rate	89.75

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Miscellaneous Statistics

Severity Index =	2.85
EPDO Crash Index =	11.40
Estimated Property Damage Total = \$	12200.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
REAR END, SLOW OR STOP	4	100.00

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	1	100.00
Total Non-Fatal Injuries	1	100.00
Total Injuries	1	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	2	50.00
Feb	1	25.00
Mar	0	0.00
Apr	0	0.00
May	0	0.00
Jun	0	0.00
Jul	1	25.00
Aug	0	0.00
Sep	0	0.00
Oct	0	0.00
Nov	0	0.00
Dec	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	0	0.00
Wed	1	25.00
Thu	0	0.00
Fri	3	75.00
Sat	0	0.00
Sun	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	1	25.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	1	25.00
1600-1659	0	0.00
1700-1759	1	25.00
1800-1859	0	0.00
1900-1959	1	25.00
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	2	1	0	3
Dark	1	0	0	1
Other	0	0	0	0
Total	3	1	0	4

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	4	50.00
PICKUP	2	25.00
SPORT UTILITY	2	25.00

North Carolina Department of Transportation
 Traffic Engineering Accident Analysis System
 Intersection Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2008	0	0	0	0
2009	2	0	1	1
2010	1	0	0	1
2011	1	0	0	1
Total	4	0	1	3

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2008	0	0
2009	0	1
2010	0	0
2011	0	0
Total	0	1

Miscellaneous Totals

Year	Property Damage	EPDO Index
2008	\$ 0	0.00
2009	\$ 7500	9.40
2010	\$ 4500	1.00
2011	\$ 200	1.00
Total	\$ 12200	11.40

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &				Other
				Fixed Object	Angle	Side Swipe		
2008	0	0	0	0	0	0	0	
2009	0	0	2	0	0	0	0	
2010	0	0	1	0	0	0	0	
2011	0	0	1	0	0	0	0	
Total	0	0	4	0	0	0	0	

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000013000				76.8	8.4	11600	

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code					
WAKE	91	5	All and Rural		150	5/1/2008	4/30/2011	3.00	

Location Text	Requestor
US 64Bus-Wendell Blvd-Wilson Ave at SR 2359-Old Zebulon Rd.	Tommy Pate Martin/Alexious/Bryon, PC

Fiche Roads

Name	Code
US 64BUS	29000064
WENDELL	50032464
WILSON	50033187
SR 2359	40002359
OLD ZEBULON	50022907

Intersection Road Combinations

Name	Code	Code	Name
US 64BUS	29000064	40002359	SR 2359
US 64BUS	29000064	50022907	OLD ZEBULON
WENDELL	50032464	40002359	SR 2359
WENDELL	50032464	50022907	OLD ZEBULON
WILSON	50033187	40002359	SR 2359
WILSON	50033187	50022907	OLD ZEBULON

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	1	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	0	0.00
Total Injury Crashes	0	0.00
Property Damage Only Crashes	1	100.00
Night Crashes	0	0.00
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	1	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	0	0.00
Property Damage Only Crashes	1	100.00

Vehicle Exposure Statistics

Annual ADT = 5900

Total Length = 0.073 (Miles)

0.117 (Kilometers)

Total Vehicle Exposure = 0.47 (MVMT)

0.76 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	212.04	131.75
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	0.00	0.00
Night Crash Rate	0.00	0.00
Wet Crash Rate	0.00	0.00
EPDO Rate	212.04	131.75

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index = 1.00
EPDO Crash Index = 1.00
Estimated Property Damage Total = \$ 3600.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
RAN OFF ROAD - RIGHT	1	100.00

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	0	0.00
Total Non-Fatal Injuries	0	0.00
Total Injuries	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	0	0.00
Feb	0	0.00
Mar	0	0.00
Apr	1	100.00
May	0	0.00
Jun	0	0.00
Jul	0	0.00
Aug	0	0.00
Sep	0	0.00
Oct	0	0.00
Nov	0	0.00
Dec	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	0	0.00
Wed	0	0.00
Thu	0	0.00
Fri	0	0.00
Sat	0	0.00
Sun	1	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	0	0.00
1600-1659	0	0.00
1700-1759	1	100.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	1	0	0	1
Dark	0	0	0	0
Other	0	0	0	0
Total	1	0	0	1

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
VAN	1	100.00

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2008	0	0	0	0
2009	1	0	0	1
2010	0	0	0	0
2011	0	0	0	0
Total	1	0	0	1

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2008	0	0
2009	0	0
2010	0	0
2011	0	0
Total	0	0

Miscellaneous Totals

Year	Property Damage	EPDO Index
2008	\$ 0	0.00
2009	\$ 3600	1.00
2010	\$ 0	0.00
2011	\$ 0	0.00
Total	\$ 3600	1.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2008	0	0	0	0	0	0	0
2009	0	0	0	1	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Strip Diagram

Features	Milepost	Crash IDs
US 64BUS WILSON	0.000	
	0.010	102575639
	0.020	
	0.030	
	0.040	
	0.050	
	0.060	
FOURTH	0.070	

North Carolina Department of Transportation
 Traffic Engineering Accident Analysis System
 Strip Analysis Report

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000012981				76.8	8.4	5900	

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality			Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
						WAKE	91	5	All and Rural		0	5/1/2008	4/30/2011	3.00

Location Text	Requestor
NC 231 from US 64B-Wendell Blvd-Wilson Ave to Fourth St.	Tommy Pate Martin/Alexious/Bryson, PC

Included Accidents	Old MP	New MP	Type
102575639		0.008	I

Fiche Roads	
Name	Code
NC 231	30000231
SELMA	50027540
SALEM	50026949

Strip Road						
Name	Code	Begin MP	End MP	Miles	Kilometers	
NC 231	30000231	0.000	0.073	0.073	0.117	

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	2	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	0	0.00
Total Injury Crashes	0	0.00
Property Damage Only Crashes	2	100.00
Night Crashes	0	0.00
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	2	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	0	0.00
Property Damage Only Crashes	2	100.00

Vehicle Exposure Statistics

Annual ADT = 14500

Total Vehicle Exposure = 15.88 (MEV)

Crash Rate	Crashes Per 100 Million Vehicles Entered
Total Crash Rate	12.60
Fatal Crash Rate	0.00
Non Fatal Crash Rate	0.00
Night Crash Rate	0.00
Wet Crash Rate	0.00
EPDO Rate	12.60

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Miscellaneous Statistics

Severity Index =	1.00
EPDO Crash Index =	2.00
Estimated Property Damage Total = \$	6300.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
ANGLE	1	50.00
RAN OFF ROAD - RIGHT	1	50.00

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	0	0.00
Total Non-Fatal Injuries	0	0.00
Total Injuries	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	0	0.00
Feb	0	0.00
Mar	0	0.00
Apr	1	50.00
May	0	0.00
Jun	0	0.00
Jul	0	0.00
Aug	0	0.00
Sep	0	0.00
Oct	1	50.00
Nov	0	0.00
Dec	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	0	0.00
Wed	1	50.00
Thu	0	0.00
Fri	0	0.00
Sat	0	0.00
Sun	1	50.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	1	50.00
1600-1659	0	0.00
1700-1759	1	50.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	2	0	0	2
Dark	0	0	0	0
Other	0	0	0	0
Total	2	0	0	2

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	2	66.67
VAN	1	33.33

North Carolina Department of Transportation
 Traffic Engineering Accident Analysis System
 Intersection Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2008	0	0	0	0
2009	1	0	0	1
2010	1	0	0	1
2011	0	0	0	0
Total	2	0	0	2

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2008	0	0
2009	0	0
2010	0	0
2011	0	0
Total	0	0

Miscellaneous Totals

Year	Property Damage	EPDO Index
2008	\$ 0	0.00
2009	\$ 3600	1.00
2010	\$ 2700	1.00
2011	\$ 0	0.00
Total	\$ 6300	2.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2008	0	0	0	0	0	0	0
2009	0	0	0	1	0	0	0
2010	0	0	0	0	1	0	0
2011	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report**

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000012993				76.8	8.4	14500	

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality			Y-Line Ft.	Begin Date	End Date	Years
Name	Code	Div.	Name	Code					
WAKE	91	5	All and Rural		150	05/01/2008	04/30/2011	3.00	

Location Text	Requestor
US 64Bus-Wendell Blvd-Wilson Ave at NC 231-Selma Rd-Old Wilson Rd.	Tommy Pate Martin/Alexious/Bryson, PC

Included Accidents
102985643

Fiche Roads

Name	Code
SELMA	50027540
US 64BUS	29000064
WENDELL	50032464
WILSON	50033187
NC 231	30000231
SALEM	50026949
OLD WILSON	50022890

Intersection Road Combinations

Name	Code	Code	Name
US 64	20000064	30000231	NC 231
US 64	20000064	50027540	SELMA
US 64BUS	29000064	30000231	NC 231
US 64BUS	29000064	50022890	OLD WILSON
US 64BUS	29000064	50026949	SALEM
US 64BUS	29000064	50027540	SELMA
WENDELL	50032464	30000231	NC 231
WENDELL	50032464	50022890	OLD WILSON
WENDELL	50032464	50026949	SALEM
WENDELL	50032464	50027540	SELMA
WILSON	50033187	30000231	NC 231
WILSON	50033187	50022890	OLD WILSON
WILSON	50033187	50026949	SALEM

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Intersection Analysis Report

Intersection Road Combinations

Name	Code	Code	Name
WILSON	50033187	50027540	SELMA

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	1	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	0	0.00
Total Injury Crashes	0	0.00
Property Damage Only Crashes	1	100.00
Night Crashes	0	0.00
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	1	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	0	0.00
Class C Crashes	0	0.00
Property Damage Only Crashes	1	100.00

Vehicle Exposure Statistics

Annual ADT = 5900

Total Length = 0.073 (Miles)

0.117 (Kilometers)

Total Vehicle Exposure = 0.47 (MVMT)

0.76 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	212.04	131.75
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	0.00	0.00
Night Crash Rate	0.00	0.00
Wet Crash Rate	0.00	0.00
EPDO Rate	212.04	131.75

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index = 1.00
EPDO Crash Index = 1.00
Estimated Property Damage Total = \$ 3600.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
RAN OFF ROAD - RIGHT	1	100.00

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	0	0.00
Class C Injuries	0	0.00
Total Non-Fatal Injuries	0	0.00
Total Injuries	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	0	0.00
Feb	0	0.00
Mar	0	0.00
Apr	1	100.00
May	0	0.00
Jun	0	0.00
Jul	0	0.00
Aug	0	0.00
Sep	0	0.00
Oct	0	0.00
Nov	0	0.00
Dec	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	0	0.00
Wed	0	0.00
Thu	0	0.00
Fri	0	0.00
Sat	0	0.00
Sun	1	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	0	0.00
1600-1659	0	0.00
1700-1759	1	100.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	0	0.00
2100-2159	0	0.00
2200-2259	0	0.00
2300-2359	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	1	0	0	1
Dark	0	0	0	0
Other	0	0	0	0
Total	1	0	0	1

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
VAN	1	100.00

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2008	0	0	0	0
2009	1	0	0	1
2010	0	0	0	0
2011	0	0	0	0
Total	1	0	0	1

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2008	0	0
2009	0	0
2010	0	0
2011	0	0
Total	0	0

Miscellaneous Totals

Year	Property Damage	EPDO Index
2008	\$ 0	0.00
2009	\$ 3600	1.00
2010	\$ 0	0.00
2011	\$ 0	0.00
Total	\$ 3600	1.00

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2008	0	0	0	0	0	0	0
2009	0	0	0	1	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Strip Diagram

Features	Milepost	Crash IDs
US 64BUS WILSON	0.000	
	0.010	102575639
	0.020	
	0.030	
	0.040	
	0.050	
	0.060	
FOURTH	0.070	

North Carolina Department of Transportation
 Traffic Engineering Accident Analysis System
 Strip Analysis Report

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000012981				76.8	8.4	5900	

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality			Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
						WAKE	91	5	All and Rural		0	5/1/2008	4/30/2011	3.00

Location Text	Requestor
NC 231 from US 64B-Wendell Blvd-Wilson Ave to Fourth St.	Tommy Pate Martin/Alexious/Bryson, PC

Included Accidents	Old MP	New MP	Type
102575639		0.008	I

Fiche Roads	
Name	Code
NC 231	30000231
SELMA	50027540
SALEM	50026949

Strip Road						
Name	Code	Begin MP	End MP	Miles	Kilometers	
NC 231	30000231	0.000	0.073	0.073	0.117	

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Summary Statistics

High Level Crash Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	2	100.00
Fatal Crashes	0	0.00
Non-Fatal Injury Crashes	2	100.00
Total Injury Crashes	2	100.00
Property Damage Only Crashes	0	0.00
Night Crashes	2	100.00
Wet Crashes	0	0.00
Alcohol/Drugs Involvement Crashes	0	0.00

Crash Severity Summary

Crash Type	Number of Crashes	Percent of Total
Total Crashes	2	100.00
Fatal Crashes	0	0.00
Class A Crashes	0	0.00
Class B Crashes	1	50.00
Class C Crashes	1	50.00
Property Damage Only Crashes	0	0.00

Vehicle Exposure Statistics

Annual ADT = 1600

Total Length = 0.4 (Miles)

0.644 (Kilometers)

Total Vehicle Exposure = 0.7 (MVMT)

1.13 (MVKMT)

Crash Rate	Crashes Per 100 Million Vehicle Miles	Crashes Per 100 Million Vehicle Kilometers
Total Crash Rate	285.39	177.33
Fatal Crash Rate	0.00	0.00
Non Fatal Crash Rate	285.39	177.33
Night Crash Rate	285.39	177.33
Wet Crash Rate	0.00	0.00
EPDO Rate	2397.26	1489.59

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Miscellaneous Statistics

Severity Index =	8.40
EPDO Crash Index =	16.80
Estimated Property Damage Total = \$	7000.00

Accident Type Summary

Accident Type	Number of Crashes	Percent of Total
FIXED OBJECT	2	100.00

Injury Summary

Injury Type	Number of Injuries	Percent of Total
Fatal Injuries	0	0.00
Class A Injuries	0	0.00
Class B Injuries	1	50.00
Class C Injuries	1	50.00
Total Non-Fatal Injuries	2	100.00
Total Injuries	2	100.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Monthly Summary

Month	Number of Crashes	Percent of Total
Jan	1	50.00
Feb	0	0.00
Mar	0	0.00
Apr	0	0.00
May	0	0.00
Jun	0	0.00
Jul	0	0.00
Aug	1	50.00
Sep	0	0.00
Oct	0	0.00
Nov	0	0.00
Dec	0	0.00

Daily Summary

Day	Number of Crashes	Percent of Total
Mon	0	0.00
Tue	0	0.00
Wed	0	0.00
Thu	1	50.00
Fri	1	50.00
Sat	0	0.00
Sun	0	0.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Hourly Summary

Hour	Number of Crashes	Percent of Total
0000-0059	0	0.00
0100-0159	0	0.00
0200-0259	0	0.00
0300-0359	0	0.00
0400-0459	0	0.00
0500-0559	0	0.00
0600-0659	0	0.00
0700-0759	0	0.00
0800-0859	0	0.00
0900-0959	0	0.00
1000-1059	0	0.00
1100-1159	0	0.00
1200-1259	0	0.00
1300-1359	0	0.00
1400-1459	0	0.00
1500-1559	0	0.00
1600-1659	0	0.00
1700-1759	0	0.00
1800-1859	0	0.00
1900-1959	0	0.00
2000-2059	0	0.00
2100-2159	1	50.00
2200-2259	0	0.00
2300-2359	1	50.00

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Light and Road Conditions Summary

Condition	Dry	Wet	Other	Total
Day	0	0	0	0
Dark	2	0	0	2
Other	0	0	0	0
Total	2	0	0	2

Object Struck Summary

Object Type	Times Struck	Percent of Total
OTHER FIXED OBJECT	1	50.00
UTILITY POLE	1	50.00

Vehicle Type Summary

Vehicle Type	Number Involved	Percent of Total
PASSENGER CAR	2	100.00

North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report

Yearly Totals Summary

Accident Totals

Year	Total Accidents	Fatal Accidents	Injury Accidents	Property Damage Only Accidents
2008	1	0	1	0
2009	0	0	0	0
2010	0	0	0	0
2011	1	0	1	0
Total	2	0	2	0

Injury Totals

Year	Fatal Injuries	Class A, B, or C Injuries
2008	0	1
2009	0	0
2010	0	0
2011	0	1
Total	0	2

Miscellaneous Totals

Year	Property Damage	EPDO Index
2008	\$ 4000	8.40
2009	\$ 0	0.00
2010	\$ 0	0.00
2011	\$ 3000	8.40
Total	\$ 7000	16.80

Type of Accident Totals

Year	Left Turn	Right Turn	Rear End	Run Off Road &			
				Fixed Object	Angle	Side Swipe	Other
2008	0	0	0	1	0	0	0
2009	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	1	0	0	0
Total	0	0	0	2	0	0	0

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Strip Diagram

Features	Milepost	Crash IDs
SR 2356 OLD QUARRY	1.510	103073194
	1.520	102369548
	1.530	
	1.540	
	1.550	
	1.560	
	1.570	
	1.580	
	1.590	
	1.600	
	1.610	
	1.620	
	1.630	
	1.640	
	1.650	
	1.660	
	1.670	
	1.680	
	1.690	
	1.700	
	1.710	
	1.720	
	1.730	
	1.740	
	1.750	
ML-WENDELL	1.760	
	1.770	
	1.780	
	1.790	
	1.800	
	1.810	
	1.820	
	1.830	
	1.840	
	1.850	
	1.860	
	1.870	
	1.880	
	1.890	
	1.900	
US 64 US 64BUS WENDELL	1.910	

**North Carolina Department of Transportation
Traffic Engineering Accident Analysis System
Strip Analysis Report**

Study Criteria

Study Name	Log No.	PH No.	TIP No.	K/A Cf.	B/C Cf.	ADT	ADT Route
41000012980				76.8	8.4	1600	

Request Date	Courier Service	Phone No.	Ext.	Fax No.

County			Municipality			Name	Code	Div.	Name	Code	Y-Line Ft.	Begin Date	End Date	Years
						WAKE	91	5	All and Rural		0	5/1/2008	4/30/2011	3.00

Location Text	Requestor
SR 2353-Old Wilson Rd from US 64B-Wendell Blvd to SR 2356-Old Quarry Rd	Tommy Pate Martin/Alexious/Bryson, PC

Included Accidents	Old MP	New MP	Type
103073194		1.51	I

Excluded Accidents
102370218

Fiche Roads

Name	Code
SR 2353	40002353
MORPHUS BRIDGE	50020592
OLD WILSON	50022890

Strip Road

Name	Code	Begin MP	End MP	Miles	Kilometers
SR 2353	40002353	1.510	1.910	0.400	0.644

APPENDIX B:

Existing (2011) Turning Movement Counts

Martin/Alexiou/Bryson, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

File Name : US64@Selma

Site Code : 00000000

Start Date : 5/18/2011

Page No : 1

Groups Printed- All Traffic

Start Time	US 64 (Wendell Blvd) Southbound				Old Wilson Road Westbound				NC 231 (N. Selma Road) Northbound				US 64 (Wendell Blvd) Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks			
06:00 AM	0	9	14	1	2	9	1	0	33	3	1	0	9	0	10	3	4	91	95
06:15 AM	0	10	27	1	0	10	3	0	48	9	1	3	16	5	7	4	8	136	144
06:30 AM	0	6	26	0	1	12	2	2	63	14	1	6	25	4	13	11	19	167	186
06:45 AM	2	7	29	4	1	20	2	1	61	17	6	3	21	2	10	3	11	178	189
Total	2	32	96	6	4	51	8	3	205	43	9	12	71	11	40	21	42	572	614
07:00 AM	1	13	52	4	0	11	0	0	65	24	3	1	27	4	8	1	6	208	214
07:15 AM	3	17	62	4	0	11	0	2	79	29	1	5	31	3	14	3	14	250	264
07:30 AM	1	17	56	5	1	14	2	3	65	19	1	4	43	15	21	5	17	255	272
07:45 AM	0	6	51	4	1	12	0	2	58	31	3	3	36	10	16	3	12	224	236
Total	5	53	221	17	2	48	2	7	267	103	8	13	137	32	59	12	49	937	986
08:00 AM	4	15	42	2	2	9	0	0	36	13	2	3	34	6	16	4	9	179	188
08:15 AM	0	15	42	2	4	13	1	2	45	15	3	5	36	9	17	6	15	200	215
08:30 AM	3	9	46	4	2	15	2	2	38	15	2	1	26	8	8	3	10	174	184
08:45 AM	1	6	37	2	2	8	0	3	35	13	3	0	27	12	15	7	12	159	171
Total	8	45	167	10	10	45	3	7	154	56	10	9	123	35	56	20	46	712	758
09:00 AM	3	15	33	3	0	4	4	0	23	7	1	2	32	10	27	3	8	159	167
09:15 AM	3	11	30	2	0	5	2	1	29	9	1	1	28	8	17	4	8	143	151
09:30 AM	2	7	27	1	0	6	1	2	35	11	0	0	24	6	8	4	7	127	134
09:45 AM	0	10	33	1	0	5	5	2	23	15	4	5	37	6	13	7	15	151	166
Total	8	43	123	7	0	20	12	5	110	42	6	8	121	30	65	18	38	580	618
10:00 AM	2	8	32	2	2	7	1	1	28	16	1	1	33	10	21	4	8	161	169
10:15 AM	1	9	31	1	2	7	2	2	21	18	2	1	33	12	28	3	7	166	173
10:30 AM	4	9	40	0	2	8	3	1	23	12	1	3	48	8	14	8	12	172	184
10:45 AM	2	11	33	0	1	8	5	0	20	12	1	1	27	7	15	5	6	142	148
Total	9	37	136	3	7	30	11	4	92	58	5	6	141	37	78	20	33	641	674
11:00 AM	0	12	35	3	2	14	0	2	20	16	1	3	32	9	20	2	10	161	171
11:15 AM	3	12	44	2	1	10	4	0	32	16	4	2	39	9	19	4	8	193	201
11:30 AM	0	9	35	1	1	10	1	0	31	13	2	4	42	4	24	2	7	172	179
11:45 AM	3	7	35	3	3	7	2	0	15	17	2	2	40	10	32	5	10	173	183
Total	6	40	149	9	7	41	7	2	98	62	9	11	153	32	95	13	35	699	734
12:00 PM	3	14	43	1	4	14	5	1	23	18	2	3	52	15	27	1	6	220	226
12:15 PM	2	15	44	1	2	8	2	1	20	19	5	2	46	15	25	3	7	203	210
12:30 PM	3	19	45	0	2	7	5	0	17	13	4	0	54	9	29	1	1	207	208
12:45 PM	2	15	44	1	2	12	3	0	21	15	4	3	36	12	23	2	6	189	195
Total	10	63	176	3	10	41	15	2	81	65	15	8	188	51	104	7	20	819	839
01:00 PM	3	18	41	3	0	7	6	1	23	19	2	5	44	7	19	6	15	189	204
01:15 PM	1	11	39	0	3	9	6	1	25	13	2	1	47	10	22	5	7	188	195
01:30 PM	4	10	49	2	4	8	1	1	19	14	2	2	40	10	20	7	12	181	193
01:45 PM	2	10	32	1	3	11	5	1	21	15	5	1	38	10	18	1	4	170	174
Total	10	49	161	6	10	35	18	4	88	61	11	9	169	37	79	19	38	728	766
02:00 PM	2	10	39	1	4	5	3	0	16	14	2	0	44	13	23	7	8	175	183
02:15 PM	4	20	41	4	2	16	4	1	28	21	3	2	59	10	38	8	15	246	261
02:30 PM	2	12	37	5	2	12	2	0	22	17	2	4	48	9	35	4	13	200	213
02:45 PM	3	16	41	3	1	13	3	3	17	22	3	5	39	10	22	5	16	190	206
Total	11	58	158	13	9	46	12	4	83	74	10	11	190	42	118	24	52	811	863
03:00 PM	0	18	35	1	0	6	4	1	20	20	1	0	51	14	43	10	12	212	224
03:15 PM	8	16	41	2	2	12	8	0	21	18	2	2	60	16	39	3	7	243	250
03:30 PM	6	16	39	2	2	8	4	0	17	15	2	2	54	17	44	4	8	224	232
03:45 PM	4	17	37	3	3	4	1	0	12	12	2	3	48	17	49	4	10	206	216
Total	18	67	152	8	7	30	17	1	70	65	7	7	213	64	175	21	37	885	922
04:00 PM	5	21	39	1	2	6	2	0	23	32	1	1	60	15	32	7	9	238	247
04:15 PM	1	15	37	1	1	11	4	0	16	19	2	0	39	13	64	5	6	222	228

Martin/Alexiou/Bryson, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

File Name : US64@Selma

Site Code : 00000000

Start Date : 5/18/2011

Page No : 2

Groups Printed- All Traffic

Start Time	US 64 (Wendell Blvd) Southbound				Old Wilson Road Westbound				NC 231 (N. Selma Road) Northbound				US 64 (Wendell Blvd) Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks			
04:30 PM	4	23	41	4	1	2	4	0	16	18	2	2	57	9	48	3	9	225	234
04:45 PM	2	16	49	2	4	5	4	0	23	27	4	2	52	11	68	3	7	265	272
Total	12	75	166	8	8	24	14	0	78	96	9	5	208	48	212	18	31	950	981
05:00 PM	4	28	51	3	1	5	3	0	20	25	2	1	49	16	73	4	8	277	285
05:15 PM	2	23	46	0	2	5	2	0	22	19	1	1	62	14	59	2	3	257	260
05:30 PM	1	21	44	0	5	9	2	0	24	19	0	1	72	15	75	3	4	287	291
05:45 PM	3	22	45	0	1	6	0	0	26	15	1	2	47	11	70	2	4	247	251
Total	10	94	186	3	9	25	7	0	92	78	4	5	230	56	277	11	19	1068	1087
06:00 PM	2	23	40	0	1	6	0	0	25	16	1	2	46	12	61	2	4	233	237
06:15 PM	2	23	36	0	0	6	0	0	24	18	1	1	44	12	51	2	3	217	220
06:30 PM	1	24	31	0	0	6	0	0	23	19	1	1	43	13	42	2	3	203	206
06:45 PM	1	16	33	0	0	5	0	0	23	13	0	1	44	7	50	2	3	192	195
Total	6	86	140	0	1	23	0	0	95	66	3	5	177	44	204	8	13	845	858
07:00 PM	1	4	36	0	2	2	0	0	16	16	0	0	30	9	36	1	1	152	153
07:15 PM	0	19	30	0	1	7	2	0	22	8	1	0	43	6	56	1	1	195	196
07:30 PM	0	9	38	0	0	2	1	0	29	11	0	0	32	4	32	0	0	158	158
07:45 PM	1	17	18	0	0	5	0	0	12	11	0	0	32	5	33	0	0	134	134
Total	2	49	122	0	3	16	3	0	79	46	1	0	137	24	157	2	2	639	641
08:00 PM	0	12	11	0	0	5	0	0	15	9	0	0	35	10	34	0	0	131	131
08:15 PM	1	16	26	0	0	5	0	0	18	14	0	0	32	4	25	0	0	141	141
08:30 PM	0	15	21	0	0	3	1	0	9	10	0	1	20	8	26	0	1	113	114
08:45 PM	1	11	19	0	0	1	0	0	15	8	0	0	19	3	22	0	0	99	99
Total	2	54	77	0	0	14	1	0	57	41	0	1	106	25	107	0	1	484	485
09:00 PM	1	13	22	0	0	1	1	0	33	10	0	0	22	3	28	1	1	134	135
09:15 PM	0	5	8	0	1	2	1	0	14	10	0	0	20	5	24	2	2	90	92
09:30 PM	1	2	13	0	0	5	1	0	7	0	0	0	22	4	17	2	2	72	74
09:45 PM	2	6	7	0	0	0	1	0	9	8	0	0	13	3	8	0	0	57	57
Total	4	26	50	0	1	8	4	0	63	28	0	0	77	15	77	5	5	353	358
Grand Total	123	871	2280	93	88	497	134	39	1712	984	107	110	2441	583	1903	219	461	11723	12184
Apprch %	3.8	26.6	69.6		12.2	69.1	18.6		61.1	35.1	3.8		49.5	11.8	38.6				
Total %	1	7.4	19.4		0.8	4.2	1.1		14.6	8.4	0.9		20.8	5	16.2		3.8	96.2	

Martin/Alexiou/Bryson, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

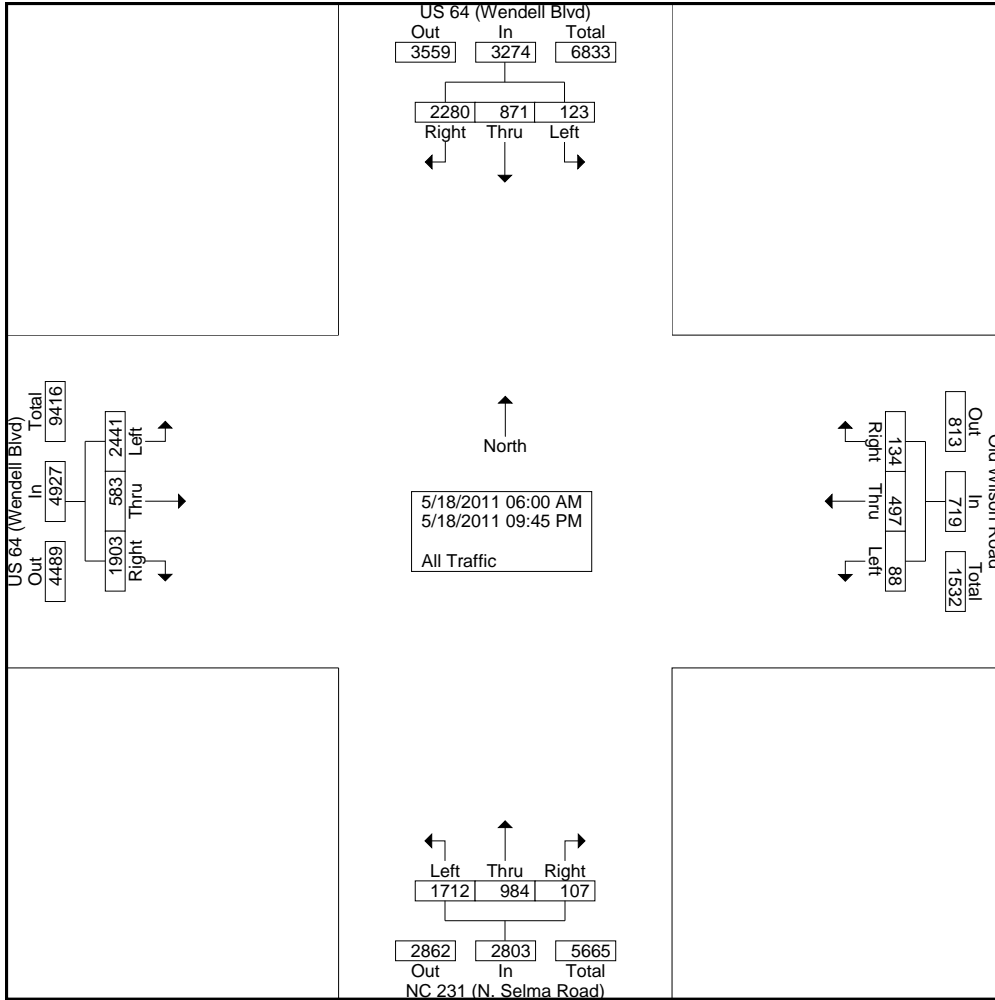
p: 919.829.0328 f: 919.829.0329

File Name : US64@Selma

Site Code : 00000000

Start Date : 5/18/2011

Page No : 3



Martin/Alexiou/Bryson, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

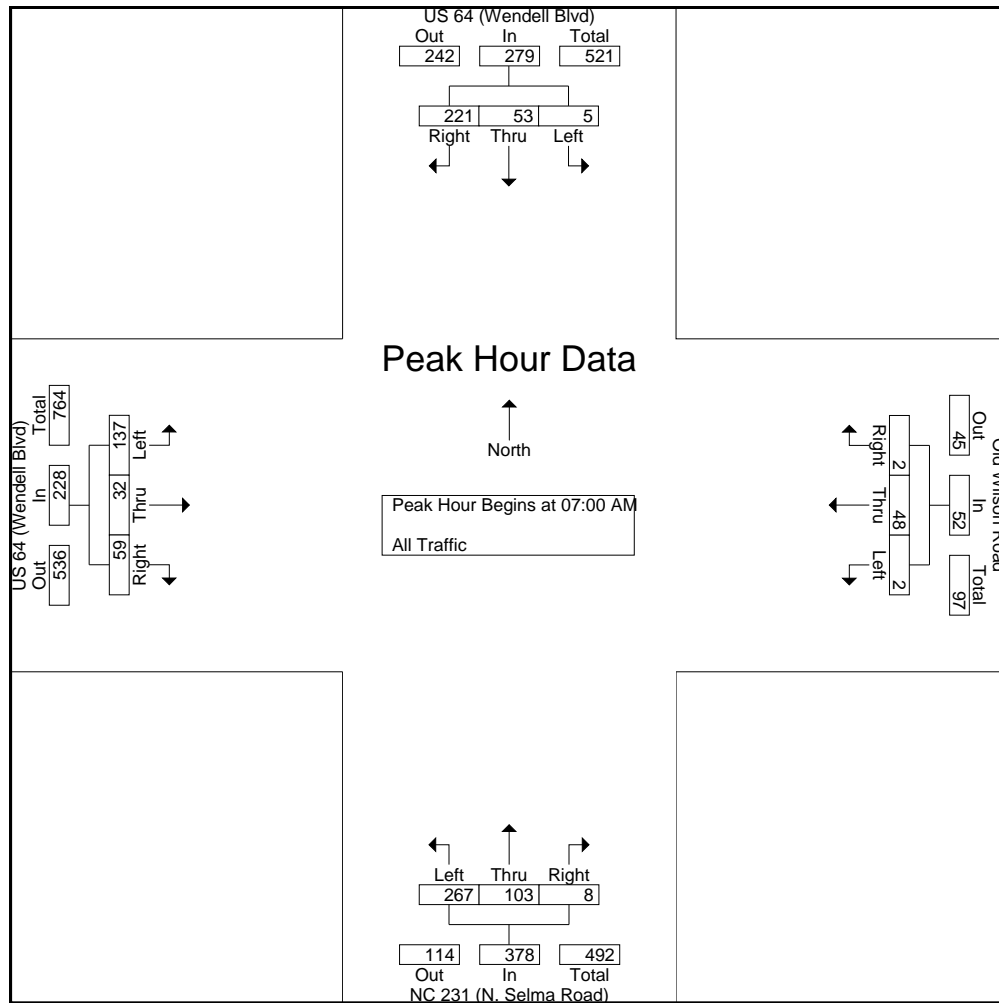
File Name : US64@Selma

Site Code : 00000000

Start Date : 5/18/2011

Page No : 4

Start Time	US 64 (Wendell Blvd) Southbound				Old Wilson Road Westbound				NC 231 (N. Selma Road) Northbound				US 64 (Wendell Blvd) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	13	52	66	0	11	0	11	65	24	3	109	31	3	14	48	250
07:15 AM	3	17	62	82	0	11	0	11	79	29	1	109	43	15	21	79	255
07:30 AM	1	17	56	74	1	14	2	17	65	19	1	85	36	10	16	62	224
07:45 AM	0	6	51	57	1	12	0	13	58	31	3	92	36	10	16	62	224
Total Volume	5	53	221	279	2	48	2	52	267	103	8	378	137	32	59	228	937
% App. Total	1.8	19	79.2		3.8	92.3	3.8		70.6	27.2	2.1		60.1	14	25.9		
PHF	.417	.779	.891	.851	.500	.857	.250	.765	.845	.831	.667	.867	.797	.533	.702	.722	.919



Martin/Alexiou/Bryson, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

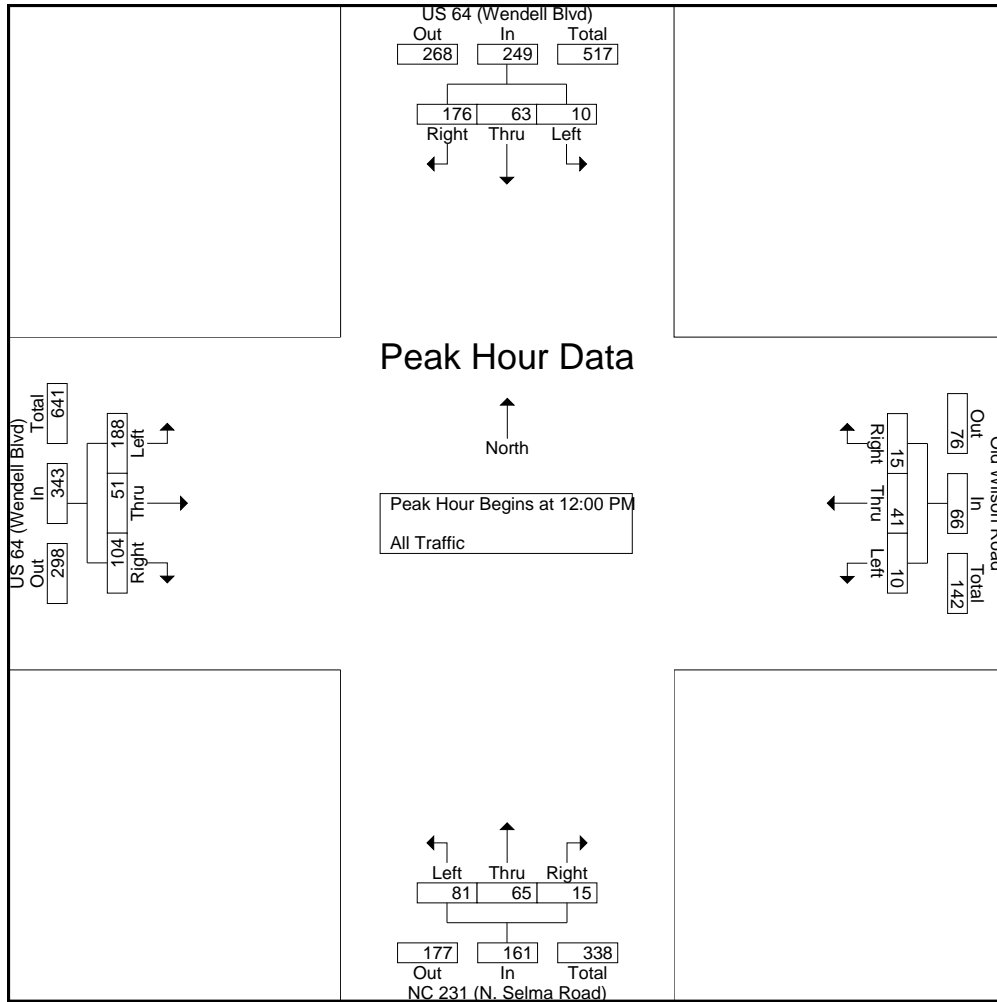
File Name : US64@Selma

Site Code : 00000000

Start Date : 5/18/2011

Page No : 5

Start Time	US 64 (Wendell Blvd) Southbound				Old Wilson Road Westbound				NC 231 (N. Selma Road) Northbound				US 64 (Wendell Blvd) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	3	14	43	60	4	14	5	23	23	18	2	43	52	15		94	220
12:15 PM	2	15	44	61	2	8	2	12	20	19	5	44	46	15	25	86	203
12:30 PM	3	19	45	67	2	7	5	14	17	13	4	34	54	9	29	92	207
12:45 PM	2	15	44	61	2	12	3	17	21	15	4	40	36	12	23	71	189
Total Volume	10	63	176	249	10	41	15	66	81	65	15	161	188	51	104	343	819
% App. Total	4	25.3	70.7		15.2	62.1	22.7		50.3	40.4	9.3		54.8	14.9	30.3		
PHF	.833	.829	.978	.929	.625	.732	.750	.717	.880	.855	.750	.915	.870	.850	.897	.912	.931



Martin/Alexiou/Bryson, P.C.

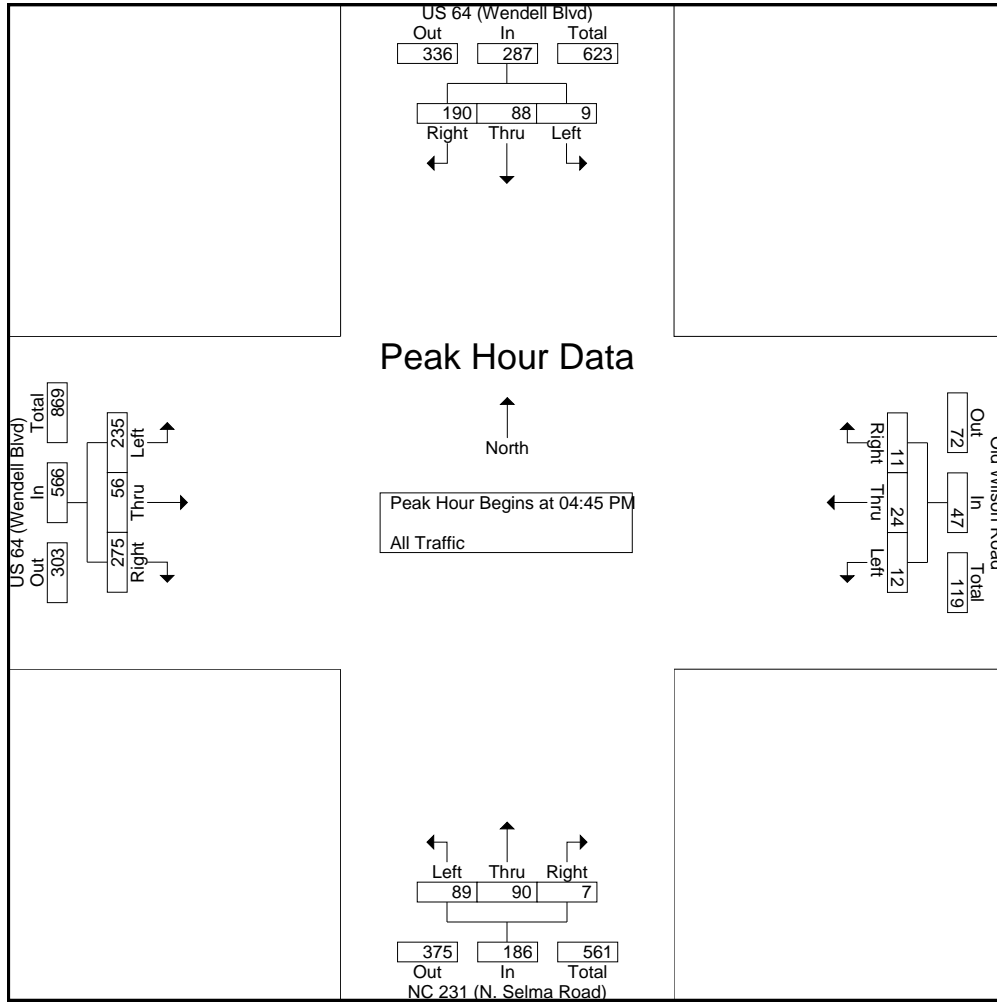
4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

File Name : US64@Selma
 Site Code : 00000000
 Start Date : 5/18/2011
 Page No : 6

Start Time	US 64 (Wendell Blvd) Southbound				Old Wilson Road Westbound				NC 231 (N. Selma Road) Northbound				US 64 (Wendell Blvd) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 09:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	16	49	67	4	5	4	13	23	27	4	54	52	11	68	131	265
05:00 PM	4	28	51	83	1	5	3	9	20	25	2	47	49	16	65	130	257
05:15 PM	2	23	46	71	2	5	2	9	22	19	1	42	62	14	59	135	257
05:30 PM	1	21	44	66	5	9	2	16	24	19	0	43	72	15	75	162	287
Total Volume	9	88	190	287	12	24	11	47	89	90	7	186	235	56	275	566	1086
% App. Total	3.1	30.7	66.2		25.5	51.1	23.4		47.8	48.4	3.8		41.5	9.9	48.6		
PHF	.563	.786	.931	.864	.600	.667	.688	.734	.927	.833	.438	.861	.816	.875	.917	.873	.946



Martin/Alexiou/Bryson, P.C.

4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

File Name : US64@OldZebulon

Site Code : 00000000

Start Date : 5/18/2011

Page No : 1

Groups Printed- All Traffic

Start Time	Old Zebulon Road Southbound				US 64 (Wendell Blvd) Westbound				Northbound				US 64 (Wendell Blvd) Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks			
06:00 AM	0	0	3	0	0	60	0	4	0	0	0	0	0	19	0	3	7	82	89
06:15 AM	1	0	9	0	0	85	1	2	0	0	0	0	1	27	0	4	6	124	130
06:30 AM	1	0	7	1	0	96	1	7	0	0	0	0	1	41	0	11	19	147	166
06:45 AM	1	0	18	1	0	109	1	5	0	0	0	0	2	31	0	3	9	162	171
Total	3	0	37	2	0	350	3	18	0	0	0	0	4	118	0	21	41	515	556
07:00 AM	1	0	33	0	0	127	1	5	0	0	0	0	2	39	0	1	6	203	209
07:15 AM	3	0	20	0	0	145	1	11	0	0	0	0	4	46	0	3	14	219	233
07:30 AM	2	0	15	0	0	139	2	10	0	0	0	0	6	75	0	5	15	239	254
07:45 AM	2	0	15	0	0	119	2	12	0	0	0	0	3	60	0	3	15	201	216
Total	8	0	83	0	0	530	6	38	0	0	0	0	15	220	0	12	50	862	912
08:00 AM	3	0	9	0	0	84	0	3	0	0	0	0	2	52	0	4	7	150	157
08:15 AM	3	0	14	0	0	99	3	10	0	0	0	0	4	58	0	6	16	181	197
08:30 AM	1	0	4	0	0	93	2	9	0	0	0	0	3	43	0	3	12	146	158
08:45 AM	2	0	13	0	0	88	3	2	0	0	0	0	6	53	0	7	9	165	174
Total	9	0	40	0	0	364	8	24	0	0	0	0	15	206	0	20	44	642	686
09:00 AM	1	0	9	0	0	72	1	11	0	0	0	0	5	67	0	3	14	155	169
09:15 AM	1	0	7	0	0	68	1	7	0	0	0	0	4	53	0	4	11	134	145
09:30 AM	0	0	5	0	0	63	1	2	0	0	0	0	3	39	0	4	6	111	117
09:45 AM	1	0	5	1	0	60	1	4	0	0	0	0	4	55	0	7	12	126	138
Total	3	0	26	1	0	263	4	24	0	0	0	0	16	214	0	18	43	526	569
10:00 AM	2	0	8	1	0	70	0	5	0	0	0	0	5	60	0	4	10	145	155
10:15 AM	4	0	6	0	0	66	0	4	0	0	0	0	6	70	0	3	7	152	159
10:30 AM	6	0	6	0	0	66	4	5	0	0	0	0	6	63	0	8	13	151	164
10:45 AM	1	0	6	0	0	56	2	3	0	0	0	0	2	48	0	5	8	115	123
Total	13	0	26	1	0	258	6	17	0	0	0	0	19	241	0	20	38	563	601
11:00 AM	4	0	6	2	0	67	1	5	0	0	0	0	8	57	0	2	9	143	152
11:15 AM	0	0	10	0	0	81	5	8	0	0	0	0	8	67	0	4	12	171	183
11:30 AM	0	0	7	2	0	72	1	4	0	0	0	0	4	70	0	2	8	154	162
11:45 AM	5	0	2	0	0	62	0	5	0	0	0	0	14	78	0	5	10	161	171
Total	9	0	25	4	0	282	7	22	0	0	0	0	34	272	0	13	39	629	668
12:00 PM	1	0	8	0	0	66	1	4	0	0	0	0	9	80	0	1	5	165	170
12:15 PM	3	0	3	0	0	73	1	4	0	0	0	0	5	89	0	3	7	174	181
12:30 PM	3	0	10	0	0	72	1	4	0	0	0	0	7	94	0	1	5	187	192
12:45 PM	0	0	8	0	0	82	2	5	0	0	0	0	7	73	0	2	7	172	179
Total	7	0	29	0	0	293	5	17	0	0	0	0	28	336	0	7	24	698	722
01:00 PM	4	0	5	0	0	69	4	5	0	0	0	0	10	68	0	6	11	160	171
01:15 PM	3	0	7	0	0	68	1	4	0	0	0	0	8	82	0	5	9	169	178
01:30 PM	4	0	6	0	0	71	4	6	0	0	0	0	6	64	0	7	13	155	168
01:45 PM	0	0	5	1	0	69	1	4	0	0	0	0	5	64	0	1	6	144	150
Total	11	0	23	1	0	277	10	19	0	0	0	0	29	278	0	19	39	628	667
02:00 PM	0	0	8	0	0	59	3	2	0	0	0	0	8	79	0	7	9	157	166
02:15 PM	2	0	13	1	0	87	4	5	0	0	0	0	7	101	0	8	14	214	228
02:30 PM	4	0	7	2	0	62	1	11	0	0	0	0	6	90	0	4	17	170	187
02:45 PM	0	0	9	1	0	70	2	9	0	0	0	0	13	69	0	5	15	163	178
Total	6	0	37	4	0	278	10	27	0	0	0	0	34	339	0	24	55	704	759
03:00 PM	1	0	9	0	0	55	0	3	0	0	0	0	14	106	0	10	13	185	198
03:15 PM	1	0	6	0	0	71	5	3	0	0	0	0	12	111	0	3	6	206	212
03:30 PM	3	0	8	0	0	65	3	5	0	0	0	0	13	109	0	4	9	201	210
03:45 PM	5	0	10	1	0	59	1	6	0	0	0	0	14	111	0	4	11	200	211
Total	10	0	33	1	0	250	9	17	0	0	0	0	53	437	0	21	39	792	831
04:00 PM	3	0	9	2	0	71	1	6	0	0	0	0	9	102	0	7	15	195	210
04:15 PM	3	0	12	0	0	75	3	3	0	0	0	0	13	111	0	5	8	217	225

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4000 WestChase Boulevard, Suite 530

Raleigh, North Carolina 27607

p: 919.829.0328 f: 919.829.0329

File Name : US64@OldZebulon

Site Code : 00000000

Start Date : 5/18/2011

Page No : 2

Groups Printed- All Traffic

Start Time	Old Zebulon Road Southbound				US 64 (Wendell Blvd) Westbound				Northbound				US 64 (Wendell Blvd) Eastbound				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks	Left	Thru	Right	Trks			
04:30 PM	0	0	13	0	0	63	0	5	0	0	0	0	11	111	0	3	8	198	206
04:45 PM	2	0	13	1	0	80	3	3	0	0	0	0	20	131	0	3	7	249	256
Total	8	0	47	3	0	289	7	17	0	0	0	0	53	455	0	18	38	859	897
05:00 PM	2	0	11	0	0	70	1	0	0	0	0	0	15	134	0	4	4	233	237
05:15 PM	2	0	12	0	0	62	3	2	0	0	0	0	24	134	0	2	4	237	241
05:30 PM	1	0	13	0	0	80	4	3	0	0	0	0	21	160	0	3	6	279	285
05:45 PM	3	0	8	0	0	83	1	2	0	0	0	0	17	122	0	2	4	234	238
Total	8	0	44	0	0	295	9	7	0	0	0	0	77	550	0	11	18	983	1001
06:00 PM	2	0	10	0	0	74	1	1	0	0	0	0	15	113	0	2	3	215	218
06:15 PM	2	0	12	0	0	65	1	1	0	0	0	0	12	105	0	2	3	197	200
06:30 PM	1	0	14	0	0	56	1	0	0	0	0	0	10	96	0	2	2	178	180
06:45 PM	7	0	6	0	0	58	3	2	0	0	0	0	10	93	0	2	4	177	181
Total	12	0	42	0	0	253	6	4	0	0	0	0	47	407	0	8	12	767	779
07:00 PM	1	0	5	0	0	56	1	0	0	0	0	0	4	74	0	1	1	141	142
07:15 PM	2	0	5	0	0	56	1	0	0	0	0	0	6	102	0	1	1	172	173
07:30 PM	3	0	2	0	0	66	3	0	0	0	0	0	3	65	0	0	0	142	142
07:45 PM	5	0	5	0	0	34	2	0	0	0	0	0	6	65	0	0	0	117	117
Total	11	0	17	0	0	212	7	0	0	0	0	0	19	306	0	2	2	572	574
08:00 PM	2	0	8	1	0	35	4	0	0	0	0	0	11	78	0	0	1	138	139
08:15 PM	1	0	2	0	0	45	6	0	0	0	0	0	3	62	0	0	0	119	119
08:30 PM	0	0	7	0	0	30	1	0	0	0	0	0	11	52	0	0	0	101	101
08:45 PM	1	0	0	0	0	35	6	0	0	0	0	0	2	43	0	0	0	87	87
Total	4	0	17	1	0	145	17	0	0	0	0	0	27	235	0	0	1	445	446
09:00 PM	1	0	2	1	0	55	0	0	0	0	0	0	4	52	0	1	2	114	116
09:15 PM	0	0	2	0	0	23	2	0	0	0	0	0	5	49	0	2	2	81	83
09:30 PM	1	0	0	0	0	20	2	0	0	0	0	0	5	42	0	2	2	70	72
09:45 PM	0	0	0	0	0	14	0	1	0	0	0	0	2	24	0	0	1	40	41
Total	2	0	4	1	0	112	4	1	0	0	0	0	16	167	0	5	7	305	312
Grand Total	124	0	530	19	0	4451	118	252	0	0	0	0	486	4781	0	219	490	10490	10980
Apprch %	19	0	81		0	97.4	2.6		0	0	0		9.2	90.8	0				
Total %	1.2	0	5.1		0	42.4	1.1		0	0	0		4.6	45.6	0		4.5	95.5	

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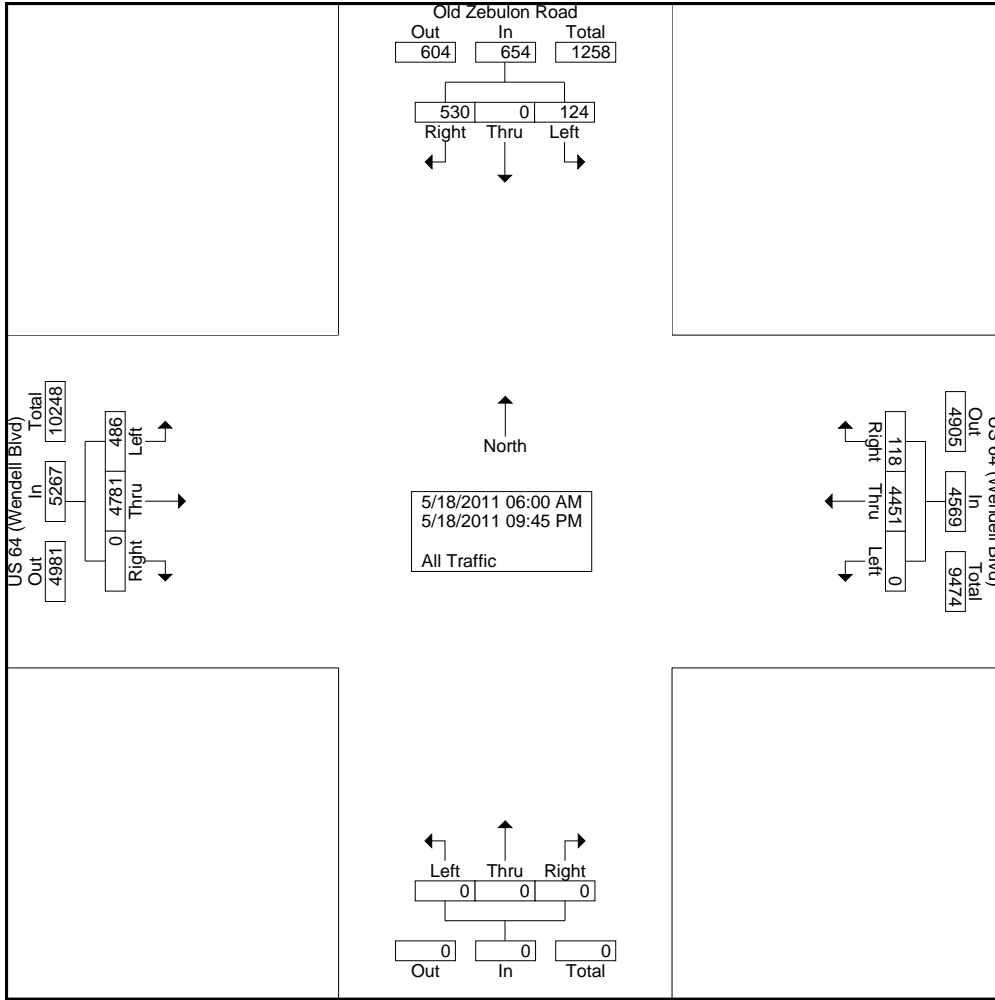
p: 919.829.0328 f: 919.829.0329

File Name : US64@OldZebulon

Site Code : 00000000

Start Date : 5/18/2011

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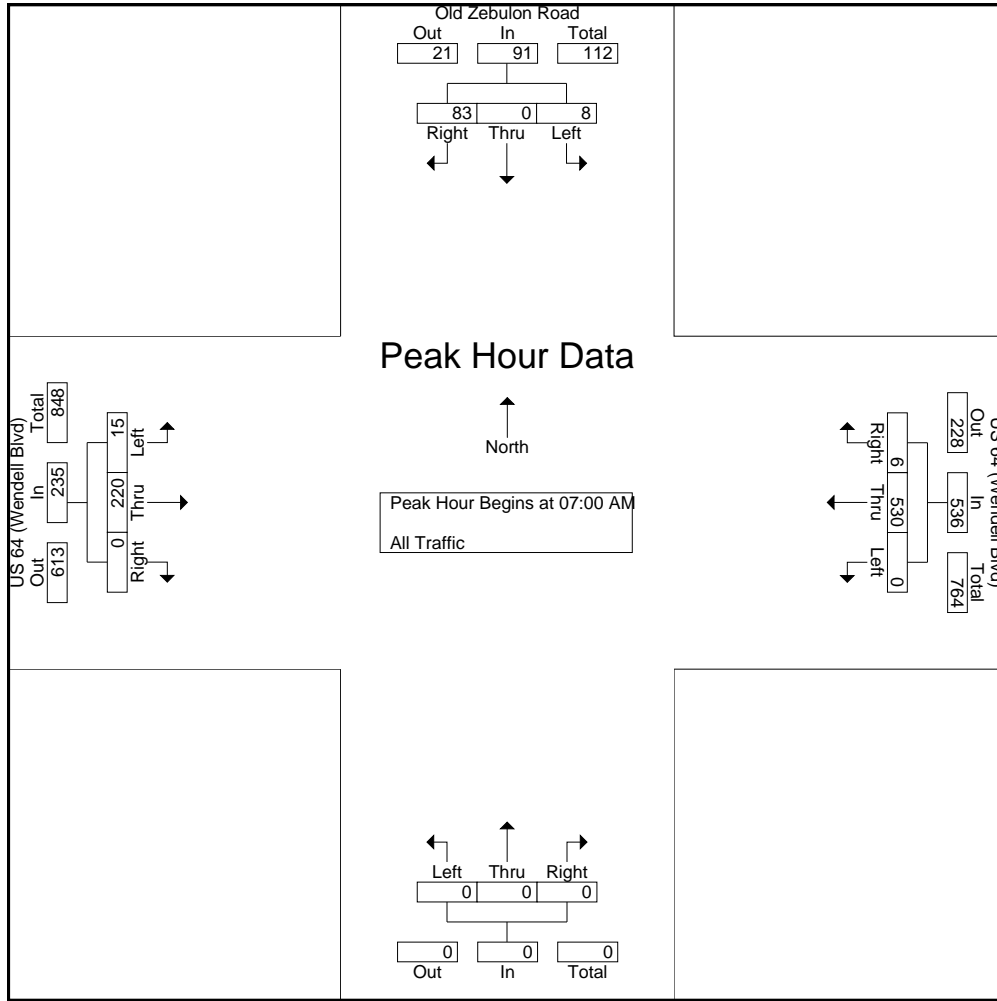
File Name : US64@OldZebulon

Site Code : 00000000

Start Date : 5/18/2011

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Start Time	Old Zebulon Road Southbound				US 64 (Wendell Blvd) Westbound				Northbound				US 64 (Wendell Blvd) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	1	0	33	34	0	127	1	128	0	0	0	0	2	39	0	41	203
07:15 AM	3	0	20	23	0	145	1	146	0	0	0	0	4	46	0	50	219
07:30 AM	2	0	15	17	0	139	2	141	0	0	0	0	6	75	0	81	239
07:45 AM	2	0	15	17	0	119	2	121	0	0	0	0	3	60	0	63	201
Total Volume	8	0	83	91	0	530	6	536	0	0	0	0	15	220	0	235	862
% App. Total	8.8	0	91.2		0	98.9	1.1		0	0	0		6.4	93.6	0		
PHF	.667	.000	.629	.669	.000	.914	.750	.918	.000	.000	.000	.000	.625	.733	.000	.725	.902



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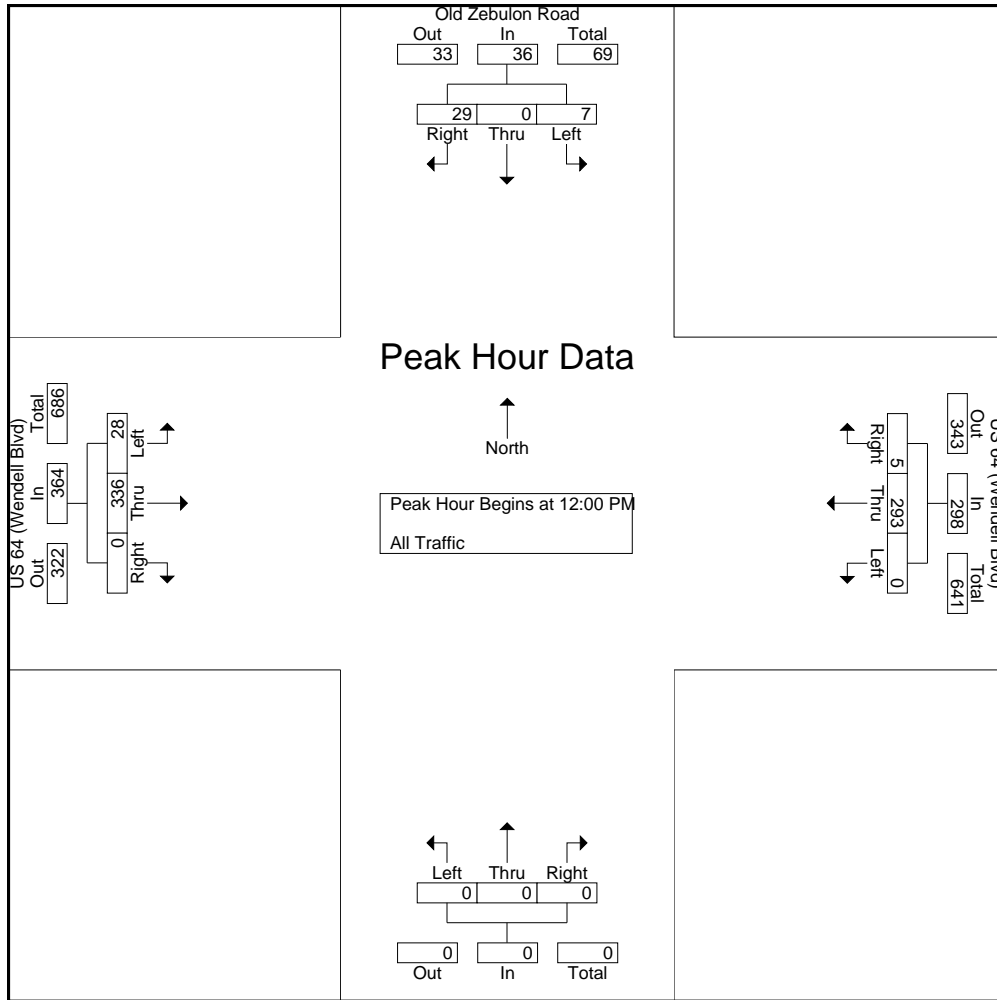
File Name : US64@OldZebulon

Site Code : 00000000

Start Date : 5/18/2011

Page No : 5

Start Time	Old Zebulon Road Southbound				US 64 (Wendell Blvd) Westbound				Northbound				US 64 (Wendell Blvd) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	1	0	8	9	0	66	1	67	0	0	0	0	9	80	0	89	165
12:15 PM	3	0	3	6	0	73	1	74	0	0	0	0	5	89	0	94	174
12:30 PM	3	0	10	13	0	72	1	73	0	0	0	0	7	94	0	101	187
12:45 PM	0	0	8	8	0	82	2	84	0	0	0	0	7	73	0	80	172
Total Volume	7	0	29	36	0	293	5	298	0	0	0	0	28	336	0	364	698
% App. Total	19.4	0	80.6		0	98.3	1.7		0	0	0		7.7	92.3	0		
PHF	.583	.000	.725	.692	.000	.893	.625	.887	.000	.000	.000	.000	.778	.894	.000	.901	.933



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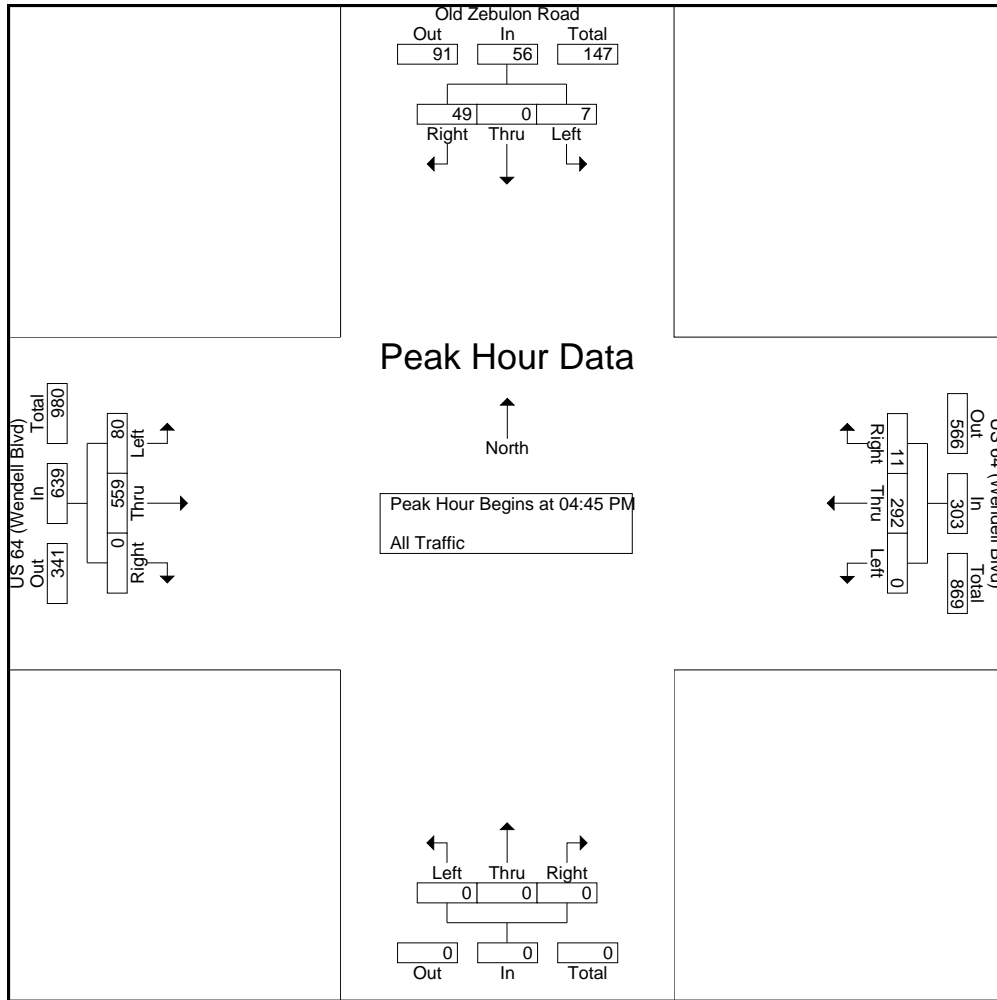
File Name : US64@OldZebulon

Site Code : 00000000

Start Date : 5/18/2011

Page No : 6

Start Time	Old Zebulon Road Southbound				US 64 (Wendell Blvd) Westbound				Northbound				US 64 (Wendell Blvd) Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 02:00 PM to 09:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	2	0	13	15	0	80	3	83	0	0	0	0	20	131	0	151	249
05:00 PM	2	0	11	13	0	70	1	71	0	0	0	0	15	134	0	149	233
05:15 PM	2	0	12	14	0	62	3	65	0	0	0	0	24	134	0	158	237
05:30 PM	1	0	13	14	0	80	4	84	0	0	0	0	21	160	0	181	279
Total Volume	7	0	49	56	0	292	11	303	0	0	0	0	80	559	0	639	998
% App. Total	12.5	0	87.5		0	96.4	3.6		0	0	0		12.5	87.5	0		
PHF	.875	.000	.942	.933	.000	.913	.688	.902	.000	.000	.000	.000	.833	.873	.000	.883	.894



APPENDIX C:
Capacity Analysis

Existing (2011)

AM, Noon, PM Peaks

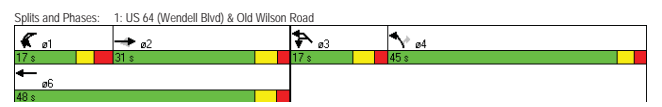
Wendell Boulevard Intersection Study
1: US 64 (Wendell Blvd) & Old Wilson Road
Existing (2011) AM
6/30/2011

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Lane Configurations	↑	↓	↔	↔	↔	↑	↓	↔	↔	↔	↔	↓
Volume (vph)	137	32	59	5	53	221	267	103	8	2	48	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	11	10	13	13	12	12	16
Grade (%)	1%				0%	-2%				1%		
Storage Length (ft)		0			300	125	0			0	0	0
Storage Lanes		1			1	1	1			1	1	0
Taper Length (ft)		100			100	100	100			100	100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.850				0.850				0.992		0.955
Fit Protected					0.950		0.950			0.955		0.955
Satd. Flow (prot)	1740	1479	0	0	1760	1733	1652	1636	0	0	1585	0
Fit Permitted					0.950		0.950			0.955		0.955
Satd. Flow (perm)	1740	1479	0	0	1760	1733	1652	1636	0	0	1585	0
Right Turn on Red			No						No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30				35	35				35		
Link Distance (ft)	216				822	489				701		
Travel Time (s)	4.9				16.0	9.5				13.7		
Peak Hour Factor	0.80	0.53	0.70	0.50	0.78	0.89	0.85	0.83	0.67	0.50	0.86	0.50
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	3%	3%	3%	13%	13%	13%
Adj. Flow (vph)	171	60	84	10	68	248	314	124	12	4	56	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	144	0	0	78	248	314	136	0	0	64	0
Turn Type		Perm		Prot	Prot			Perm		Split		
Protected Phases	2				1	6	4			3	3	
Permitted Phases		2						4				
Detector Phase	2	2		1	1	6	4	4		3	3	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	7.0	10.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	14.0	20.0	14.0	14.0		14.0	14.0	
Total Split (s)	31.0	31.0	0.0	17.0	17.0	48.0	45.0	45.0	0.0	17.0	17.0	0.0
Total Split (%)	28.2%	28.2%	0.0%	15.5%	15.5%	43.6%	40.9%	40.9%	0.0%	15.5%	15.5%	0.0%
Maximum Green (s)	24.8	24.8		10.7	10.7	41.7	39.7	39.7		10.8	10.8	
Yellow Time (s)	3.8	3.8		3.0	3.0	3.8	3.0	3.0		3.8	3.8	
All-Red Time (s)	2.4	2.4		3.3	3.3	2.5	2.3	2.3		2.4	2.4	
Lost Time Adjust (s)	-1.2	-1.2	-2.0	-2.0	-1.3	-1.3	-0.3	-0.3	0.0	-2.0	-1.2	-1.2
Total Lost Time (s)	5.0	5.0	2.0	4.3	5.0	5.0	5.0	5.0	4.0	4.2	5.0	2.8
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	None	Min	None	None		None	None	
Act Effct Green (s)	16.6	16.6		11.4	27.7	20.2	20.2	20.2		11.1	11.1	
Actuated g/C Ratio	0.24	0.24		0.16	0.39	0.29	0.29	0.29		0.16	0.16	
v/c Ratio	0.42	0.41		0.27	0.36	0.67	0.29	0.26		0.26	0.26	
Control Delay	33.0	33.9		36.9	19.3	32.9	25.1	25.1		37.3	37.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	33.0	33.9		36.9	19.3	32.9	25.1	25.1		37.3	37.3	
LOS	C	C		D	B	C	C	C		D	D	

M/A/B P:\Traffic\CAMPO-WendellBldStudy\Traffic\Synchro\Existing (2011) AM.syn

Wendell Boulevard Intersection Study
1: US 64 (Wendell Blvd) & Old Wilson Road
Existing (2011) AM
6/30/2011

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Approach Delay	33.4					23.5	30.6					37.3
Approach LOS	C					C	C					D
Queue Length 50th (ft)	71	60				33	78	130	50			27
Queue Length 95th (ft)	136	74				78	167	235	101			75
Internal Link Dist (ft)	136					742	409					621
Turn Bay Length (ft)						300	125					
Base Capacity (vph)	759	645				354	1103	1001	992			319
Starvation Cap Reductn	0	0				0	0	0	0			0
Spillback Cap Reductn	0	0				0	0	0	0			0
Storage Cap Reductn	0	0				0	0	0	0			0
Reduced v/c Ratio	0.23	0.22				0.22	0.22	0.31	0.14			0.20



Splits and Phases: 1: US 64 (Wendell Blvd) & Old Wilson Road

Phase	Duration (s)	Green	Yellow	All-Red
e1	17	14	3	0
e2	31	28	3	0
e3	17	14	3	0
e4	45	42	3	0
e6	48	45	3	0

M/A/B P:\Traffic\CAMPO-WendellBldStudy\Traffic\Synchro\Existing (2011) AM.syn

Wendell Boulevard Intersection Study
2: US 64 (Wendell Blvd) & Old Zebulon Road
Existing (2011) AM
6/30/2011

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔	↔	↔	↔
Volume (veh/h)	15	220	530	6	8	83
Sign Control		Free	Free		Slop	
Grade (%)		1%	-1%		1%	
Peak Hour Factor	0.63	0.73	0.91	0.75	0.67	0.63
Hourly flow rate (vph)	24	301	582	8	12	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.91			0.91	0.91	
vC, conflicting volume	590			935	586	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	502			881	498	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue free %	98			96	75	
cM capacity (veh/h)	954			282	522	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	325	590	144			
Volume Left	24	0	12			
Volume Right	0	8	132			
cSH	954	1700	487			
Volume to Capacity	0.02	0.35	0.29			
Queue Length 95th (ft)	2	0	30			
Control Delay (s)	0.9	0.0	15.4			
Lane LOS	A		C			
Approach Delay (s)	0.9	0.0	15.4			
Approach LOS			C			
Intersection Summary						
Average Delay		2.4				
Intersection Capacity Utilization		40.5%		ICU Level of Service	A	
Analysis Period (min)		15				

M/A/B P:\Traffic\CAMPO-WendellBldStudy\Traffic\Synchro\Existing (2011) AM.syn

Wendell Boulevard Intersection Study
1: US 64 (Wendell Blvd) & Old Wilson Road
Existing (2011) Noon
6/30/2011

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Lane Configurations	↑	↓	↔	↔	↔	↑	↓	↔	↔	↔	↓	
Volume (vph)	189	51	104	10	33	176	81	65	15	10	41	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	11	10	13	13	12	12	16
Grade (%)	1%				0%	-2%				1%		
Storage Length (ft)		0			300	125	0			0	0	0
Storage Lanes		1			1	1	1			1	1	0
Taper Length (ft)		100			100	100	100			100	100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.850				0.850		0.850		0.971		0.962
Fit Protected					0.950		0.950			0.962		0.962
Satd. Flow (prot)	1792	1523	0	0	1829	1801	1620	1605	0	0	1714	0
Fit Permitted					0.950		0.950			0.962		0.962
Satd. Flow (perm)	1792	1523	0	0	1829	1801	1620	1605	0	0	1714	0
Right Turn on Red			No						No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30				35	35				35		
Link Distance (ft)	216				822	489				701		
Travel Time (s)	4.9				16.0	9.5				13.7		
Peak Hour Factor	0.87	0.85	0.90	0.83	0.83	0.98	0.88	0.86	0.75	0.63	0.73	0.75
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	3%	3%	3%
Adj. Flow (vph)	216	60	1									

Wendell Boulevard Intersection Study
1: US 64 (Wendell Blvd) & Old Wilson Road

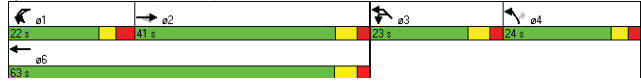
Existing (2011) Noon

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Approach Delay	25.2					18.2	32.4					31.0
Approach LOS	C					B	C					C
Queue Length 50th (ft)	75	61			31	40	33	35				33
Queue Length 95th (ft)	160	132			80	94	89	89				72
Internal Link Dist (ft)	136					742	409					621
Turn Bay Length (ft)					300	125						
Base Capacity (vph)	1099	934			555	1560	550	545				551
Starvation Cap Reductn	0	0			0	0	0	0				0
Spillback Cap Reductn	0	0			0	0	0	0				0
Storage Cap Reductn	0	0			0	0	0	0				0
Reduced v/c Ratio	0.20	0.19			0.16	0.12	0.17	0.18				0.17

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 63.4
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 25.2
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 1: US 64 (Wendell Blvd) & Old Wilson Road



M/A/B

Synchro 7 - Report
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Wendell Boulevard Intersection Study
2: US 64 (Wendell Blvd) & Old Zebulon Road

Existing (2011) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	2		1	2
Volume (veh/h)	28	336	293	5	7	29
Sign Control		Free	Free		Stop	
Grade		1%	-1%		1%	
Peak Hour Factor	0.78	0.89	0.89	0.63	0.58	0.73
Hourly flow rate (vph)	36	378	329	8	12	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh						
Upstream signal (ft)			216			
pX, platoon unblocked	0.96			0.96	0.96	
vC, conflicting volume	337			783	333	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	290			753	286	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue: free %	97			97	95	
cM capacity (veh/h)	1222			352	724	

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 63.4
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 25.2
 Intersection Capacity Utilization 48.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

M/A/B

Synchro 7 - Report
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Wendell Boulevard Intersection Study
1: US 64 (Wendell Blvd) & Old Wilson Road

Existing (2011) Noon

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Lane Configurations	4	2			2	2	2	2			2	2
Volume (vph)	188	51	104	10	33	176	81	65	15	10	41	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	11	10	13	13	12	12	16
Grade (%)	1%				0%	-2%		1%				
Storage Length (ft)		0			300	125	0				0	0
Storage Lanes		1			1	1	1				1	0
Taper Length (ft)		100			100	100	100			100	100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850		0.850			0.971	
Flt Protected					0.950		0.950				0.962	
Satd. Flow (prot)	1792	1523	0	0	1829	1801	1620	1605	0	0	1714	0
Flt Permitted					0.950		0.950				0.962	
Satd. Flow (perm)	1792	1523	0	0	1829	1801	1620	1605	0	0	1714	0
Right Turn on Red			No						No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30				35	35					35	
Link Distance (ft)	216				822	489					701	
Travel Time (s)	4.9				16.0	9.5					13.7	
Peak Hour Factor	0.87	0.85	0.90	0.83	0.83	0.98	0.88	0.86	0.75	0.63	0.73	0.75
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	3%	3%	3%
Adj. Flow (vph)	216	60	116	12	76	180	92	76	20	16	56	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	176	0	0	88	180	92	96	0	0	92	0
Turn Type		Perm			Prot	Prot		Perm		Split		
Protected Phases	2				1	1	6	4		3		3
Permitted Phases		2										
Detector Phase	2	2			1	1	6	4		3		3
Switch Phase												
Minimum Initial (s)	10.0	10.0			7.0	7.0	10.0	7.0		7.0		7.0
Minimum Split (s)	17.0	17.0			14.0	14.0	20.0	14.0		14.0		14.0
Total Split (s)	41.0	41.0	0.0	0.0	22.0	22.0	63.0	24.0	0.0	23.0	0.0	23.0
Total Split (%)	37.3%	37.3%	0.0%	20.0%	20.0%	57.3%	21.8%	21.8%	0.0%	20.9%	20.9%	0.0%
Maximum Green (s)	34.8	34.8			15.7	15.7	56.7	18.7		16.8		16.8
Yellow Time (s)	3.8	3.8			3.0	3.0	3.8	3.0		3.8		3.8
All-Red Time (s)	2.4	2.4			3.3	3.3	2.5	2.3		2.4		2.4
Lost Time Adjust (s)	-1.2	-1.2	-2.0	-2.0	-1.3	-1.3	-0.3	-0.3	0.0	-2.0	-1.2	-1.2
Total Lost Time (s)	5.0	5.0	2.0	4.3	5.0	5.0	5.0	5.0	4.0	4.2	5.0	2.8
Lead/Lag	Lag	Lag			Lead	Lead	Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0		3.0
Recall Mode	Min	Min			None	None	Min	None		None		None
Act Effect Green (s)	24.9	24.9			11.3	36.4	10.9	10.9				11.5
Actuated g/C Ratio	0.39	0.39			0.18	0.57	0.17	0.17				0.18
v/c Ratio	0.31	0.29			0.27	0.17	0.33	0.35				0.30
Control Delay	25.0	25.5			30.9	12.0	32.2	32.6				31.0
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0				0.0
Total Delay	25.0	25.5			30.9	12.0	32.2	32.6				31.0
LOS	C	C			C	B	C	C				C

M/A/B

Synchro 7 - Report
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Wendell Boulevard Intersection Study
1: US 64 (Wendell Blvd) & Old Wilson Road

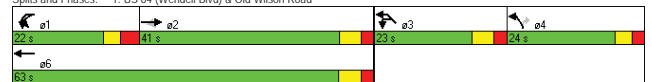
Existing (2011) Noon

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Approach Delay	25.2					18.2	32.4					31.0
Approach LOS	C					B	C					C
Queue Length 50th (ft)	75	61			31	40	33	35				33
Queue Length 95th (ft)	160	132			80	94	89	89				72
Internal Link Dist (ft)	136					742	409					621
Turn Bay Length (ft)					300	125						
Base Capacity (vph)	1099	934			555	1560	550	545				551
Starvation Cap Reductn	0	0			0	0	0	0				0
Spillback Cap Reductn	0	0			0	0	0	0				0
Storage Cap Reductn	0	0			0	0	0	0				0
Reduced v/c Ratio	0.20	0.19			0.16	0.12	0.17	0.18				0.17

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 63.4
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.35
 Intersection Signal Delay: 25.2
 Intersection Capacity Utilization 44.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A

Splits and Phases: 1: US 64 (Wendell Blvd) & Old Wilson Road



M/A/B

Synchro 7 - Report
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Wendell Boulevard Intersection Study
 2: US 64 (Wendell Blvd) & Old Zebulon Road

Existing (2011) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	28	336	293	5	7	29
Sign Control		Free	Free		Stop	
Grade		1%	-1%		1%	
Peak Hour Factor	0.78	0.89	0.89	0.63	0.58	0.73
Hourly flow rate (vph)	36	378	329	8	12	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	337				783	333
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	290				753	286
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1222				352	724
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	413	337	52			
Volume Left	36	0	12			
Volume Right	0	8	40			
cSH	1222	1700	581			
Volume to Capacity	0.03	0.20	0.09			
Queue Length 95th (ft)	2	0	7			
Control Delay (s)	1.0	0.0	11.8			
Lane LOS	A		B			
Approach Delay (s)	1.0	0.0	11.8			
Approach LOS			B			
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			48.3%	ICU Level of Service		A
Analysis Period (min)			15			

No-Build (2020)

AM, Noon, PM Peaks

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Wilson Road

NoBuild (2020) AM

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Lane Configurations	175	41	75	6	68	262	341	151	10	3	62	3
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	11	11	11	13	13	11	10	13	13	12	12	16
Lane Width (ft)	11	11	11	13	13	11	10	13	13	12	12	16
Grade (%)	1%					0%	-2%			1%		
Storage Length (ft)		0			300	125	0			0	0	0
Storage Lanes		1			1	1	1			1	1	0
Taper Length (ft)		100			100	100	100			100	100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.850				0.850				0.995		
Fit Protected					0.950		0.950			0.954		
Satd. Flow (prot)	1740	1479	0	0	1760	1733	1652	1636	0	0	1588	0
Fit Permitted					0.950		0.950			0.954		
Satd. Flow (perm)	1740	1479	0	0	1760	1733	1652	1636	0	0	1588	0
Right Turn on Red			No						No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30				35	35				35		
Link Distance (ft)	216				822	489				701		
Travel Time (s)	4.9				16.0	9.5				13.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	5%	6%	6%	6%	3%	3%	3%	13%	13%	13%
Adj. Flow (vph)	194	46	83	7	76	313	379	146	11	3	69	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	129	0	0	83	313	379	157	0	0	75	0
Turn Type		Perm			Prot	Prot		Perm		Split		
Protected Phases	2				1	1	6	4		3	3	
Permitted Phases		2						4				
Detector Phase	2	2			1	1	6	4		3	3	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	7.0	10.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	14.0	20.0	14.0	14.0		14.0	14.0	
Total Split (s)	31.0	31.0	0.0	17.0	17.0	48.0	46.0	46.0	0.0	16.0	16.0	0.0
Total Split (%)	28.2%	28.2%	0.0%	15.5%	15.5%	43.6%	41.8%	41.8%	0.0%	14.5%	14.5%	0.0%
Maximum Green (s)	24.8	24.8		10.7	10.7	41.7	40.7	40.7		9.8	9.8	
Yellow Time (s)	3.8	3.8		3.0	3.0	3.8	3.0	3.0		3.8	3.8	
All-Red Time (s)	2.4	2.4		3.3	3.3	2.3	2.3	2.3		2.4	2.4	
Lost Time Adjust (s)	-1.2	-1.2	-2.0	-2.0	-1.3	-1.3	-0.3	-0.3	0.0	-2.0	-1.2	-1.2
Total Lost Time (s)	5.0	5.0	2.0	4.3	5.0	5.0	5.0	5.0	4.0	4.2	5.0	2.8
Lead/Lag	Lag	Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	None	Min	None	None		None	None	
Act Effct Green (s)	18.1	18.1		11.7	29.3	24.5	24.5	24.5		11.3		
Actuated g/C Ratio	0.24	0.24		0.15	0.38	0.32	0.32	0.32		0.15		
v/c Ratio	0.47	0.37		0.31	0.47	0.72	0.30	0.32		0.32		
Control Delay	36.1	35.2		41.5	23.0	34.4	24.8	24.8		43.0		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0		
Total Delay	36.1	35.2		41.5	23.0	34.4	24.8	24.8		43.0		
LOS	D	D		D	C	C	C	C		D		

MAB Synchro 7 - Report
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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Wilson Road

NoBuild (2020) AM

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Approach Delay	35.8					26.9	31.6					43.0
Approach LOS	D					C	C					D
Queue Length 50th (ft)	91	59			39	117	175	62				36
Queue Length 95th (ft)	188	133			104	239	318	127				98
Internal Link Dist (ft)	136				742	409						621
Turn Bay Length (ft)					300	125						0
Base Capacity (vph)	707	601			330	1040	961	952				273
Starvation Cap Reductn	0	0			0	0	0	0				0
Spillback Cap Reductn	0	0			0	0	0	0				0
Storage Cap Reductn	0	0			0	0	0	0				0
Reduced v/c Ratio	0.27	0.21			0.25	0.30	0.39	0.16				0.27

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 76.8

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

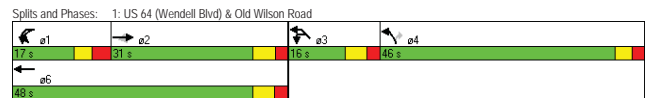
Maximum v/c Ratio: 0.72

Intersection Signal Delay: 31.8

Intersection Capacity Utilization 56.4%

Analysis Period (min) 15

Intersection LOS: C
ICU Level of Service B



MAB Synchro 7 - Report
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Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

NoBuild (2020) AM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	4		8	10
Volume (veh/h)	19	261	677	8	10	106
Sign Control		Free	Free		Stop	
Grade		1%	-1%		1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	312	752	9	11	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.87			0.87	0.87	
vC, conflicting volume	761			1111	757	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	652			1053	646	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue free %	97			95	71	
cM capacity (veh/h)	802			212	410	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	333	761	129			
Volume Left	21	0	11			
Volume Right	0	9	118			
cSH	802	1700	380			
Volume to Capacity	0.03	0.45	0.34			
Queue Length 95th (ft)	2	0	37			
Control Delay (s)	0.9	0.0	19.3			
Lane LOS	A		C			
Approach Delay (s)	0.9	0.0	19.3			
Approach LOS	C		C			

Intersection Summary

Average Delay: 2.3

Intersection Capacity Utilization: 49.9%

ICU Level of Service: A

Analysis Period (min): 15

MAB Synchro 7 - Report
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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Wilson Road

NoBuild (2020) Noon

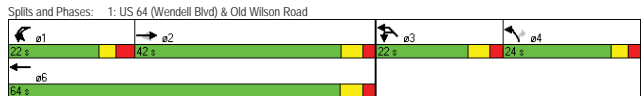
Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Lane Configurations	240	133	13	13	225	103	19	13	13	12	16	19
Volume (vph)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Ideal Flow (vphpl)	11	11	11	13	13	11	10	13	13	12	12	16
Lane Width (ft)	11	11	11	13	13	11	10	13	13	12	12	16
Grade (%)	1%					0%	-2%			1%		
Storage Length (ft)		0			300	125	0			0	0	0
Storage Lanes		1			1	1	1			1	1	0
Taper Length (ft)		100			100	100	100			100	100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.850				0.850				0.970		
Fit Protected					0.950		0.950			0.963		
Satd. Flow (prot)	1792	1523	0	0	1829	1801	1620	1605	0	0	1714	0
Fit Permitted					0.950		0.950			0.963		
Satd. Flow (perm)	1792	1523	0	0	1829	1801	1620	1605	0	0	1714	0
Right Turn on Red			No						No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30				35	35				35		
Link Distance (ft)	216				822	489				701		
Travel Time (s)	4.9				16.0	9.5				13.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	5%	5%	5%	3%	3%	3%
Adj. Flow (vph)	267	72	148	14	89	250	114	92	21	14	58	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	267	220	0	0	103	250	114	113	0	0	93	0
Turn Type		Perm			Prot	Prot		Perm		Split		
Protected Phases	2				1	1	6	4		3	3	
Permitted Phases		2						4				
Detector Phase	2	2			1	1	6	4		3	3	
Switch Phase												

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Wilson Road

NoBuild (2020) Noon

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Approach Delay	28.3					19.2	36.4					34.8
Approach LOS	C					B	D					C
Queue Length 50th (ft)	101	83			41	62	46	46				37
Queue Length 95th (ft)	218	187			109	136	119	118				101
Internal Link Dist (ft)	136					742	409					621
Turn Bay Length (ft)					300	125						
Base Capacity (vph)	1058	899			516	1481	510	505				483
Starvation Cap Reductn	0	0			0	0	0	0				0
Spillback Cap Reductn	0	0			0	0	0	0				0
Storage Cap Reductn	0	0			0	0	0	0				0
Reduced v/c Ratio	0.25	0.24			0.20	0.17	0.22	0.22				0.19

Intersection Summary
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 69.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.48
Intersection Signal Delay: 27.6
Intersection Capacity Utilization 46.8%
Analysis Period (min) 15
Intersection LOS: C
ICU Level of Service A



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

NoBuild (2020) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		4	7	6	9	37
Volume (veh/h)	36	429	374	6	9	37
Sign Control		Free	Free		Stop	
Grade		1%	-1%		1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	477	416	7	10	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.92			0.92	0.92	
vC, conflicting volume	422			976	419	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	334			933	330	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue: free %	96			96	94	
cM capacity (veh/h)	1133			263	657	

Direction, Lane # EB 1 WB 1 SB 1
Volume Total 517 422 51
Volume Left 40 0 10
Volume Right 0 7 41
cSH 1133 1700 509
Volume to Capacity 0.04 0.25 0.10
Queue Length 95th (ft) 3 0 8
Control Delay (s) 1.0 0.0 12.9
Lane LOS A B
Approach Delay (s) 1.0 0.0 12.9
Approach LOS B

Intersection Summary
Average Delay 1.2
Intersection Capacity Utilization 57.9% ICU Level of Service B
Analysis Period (min) 15

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Wilson Road

NoBuild (2020) PM

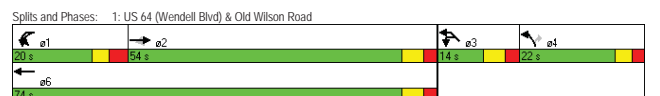
Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Lane Configurations	4	5			5	4	5	4			5	4
Volume (vph)	300	71	351	11	112	242	114	115	9	15	31	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	13	13	11	10	13	13	12	12	16
Grade (%)	1%				0%	-2%				1%		
Storage Length (ft)		0			300	125	0			0	0	0
Storage Lanes		1			1	1	1			1	0	0
Taper Length (ft)		100			100	100	100			100	100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850				0.968		
Flt Protected					0.950	0.950				0.963		
Satd. Flow (prot)	1792	1523	0	0	1829	1801	1652	1636	0	0	1728	0
Flt Permitted					0.950	0.950				0.963		
Satd. Flow (perm)	1792	1523	0	0	1829	1801	1652	1636	0	0	1728	0
Right Turn on Red			No						No			No
Satd. Flow (RTOR)												
Link Speed (mph)	30				35	35				35		
Link Distance (ft)	216				822	489				701		
Travel Time (s)	4.9				16.0	9.5				13.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	3%	3%	3%	2%	2%	2%
Adj. Flow (vph)	333	79	390	12	124	269	127	128	10	17	34	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	333	469	0	0	136	269	127	138	0	0	67	0
Turn Type		Perm		Prot	Prot			Perm		Split		
Protected Phases	2			1	1	6	4			3		3
Permitted Phases		2						4				
Detector Phase	2	2		1	1	6	4	4		3	3	
Switch Phase												
Minimum Initial (s)	10.0	10.0		7.0	7.0	10.0	7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		14.0	14.0	20.0	14.0	14.0		14.0	14.0	
Total Split (s)	54.0	54.0	0.0	20.0	20.0	74.0	22.0	22.0	0.0	14.0	14.0	0.0
Total Split (%)	49.1%	49.1%	0.0%	18.2%	18.2%	67.3%	20.0%	20.0%	0.0%	12.7%	12.7%	0.0%
Maximum Green (s)	47.8	47.8		13.7	13.7	67.7	16.7	16.7		7.8	7.8	
Yellow Time (s)	3.8	3.8		3.0	3.0	3.8	3.0	3.0		3.8	3.8	
All-Red Time (s)	2.4	2.4		3.3	3.3	2.5	2.3	2.3		2.4	2.4	
Lost Time Adjust (s)	-1.2	-1.2	-2.0	-2.0	-1.3	-1.3	-0.3	-0.3	0.0	-2.0	-1.2	-1.2
Total Lost Time (s)	5.0	5.0	2.0	4.3	5.0	5.0	5.0	5.0	4.0	4.2	5.0	2.8
Lead/Lag	Lag	Lag		Lead	Lead	Lag	Lag	Lag		Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		None	None	Min	None	None		None	None	
Act Effect Green (s)	35.0	35.0		12.9	53.4	13.1	13.1	13.1		9.5	9.5	
Actuated g/C Ratio	0.40	0.40		0.15	0.61	0.15	0.15	0.15		0.11	0.11	
v/c Ratio	0.47	0.77		0.50	0.25	0.51	0.56	0.56		0.36	0.36	
Control Delay	22.7	33.6		47.6	9.4	47.7	49.6	49.6		50.2	50.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	22.7	33.6		47.6	9.4	47.7	49.6	49.6		50.2	50.2	
LOS	C	C		D	A	D	D	D		D	D	

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Wilson Road

NoBuild (2020) PM

Lane Group	EBT	EBR	EBR2	WBL2	WBL	WBT	NBL	NBR	NBR2	NWL2	NWL	NWR
Approach Delay	29.1					22.2	48.7					50.2
Approach LOS	C					D	D					D
Queue Length 50th (ft)	143	236			75	70	71	77				38
Queue Length 95th (ft)	233	385			155	118	145	157				93
Internal Link Dist (ft)	136					742	409					621
Turn Bay Length (ft)					300	125						
Base Capacity (vph)	1090	926			343	1396	352	348				195
Starvation Cap Reductn	0	0			0	0	0	0				0
Spillback Cap Reductn	0	0			0	0	0	0				0
Storage Cap Reductn	0	0			0	0	0	0				0
Reduced v/c Ratio	0.31	0.51			0.40	0.19	0.36	0.40				0.34

Intersection Summary
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 87.6
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 31.6
Intersection Capacity Utilization 53.1% ICU Level of Service A
Analysis Period (min) 15

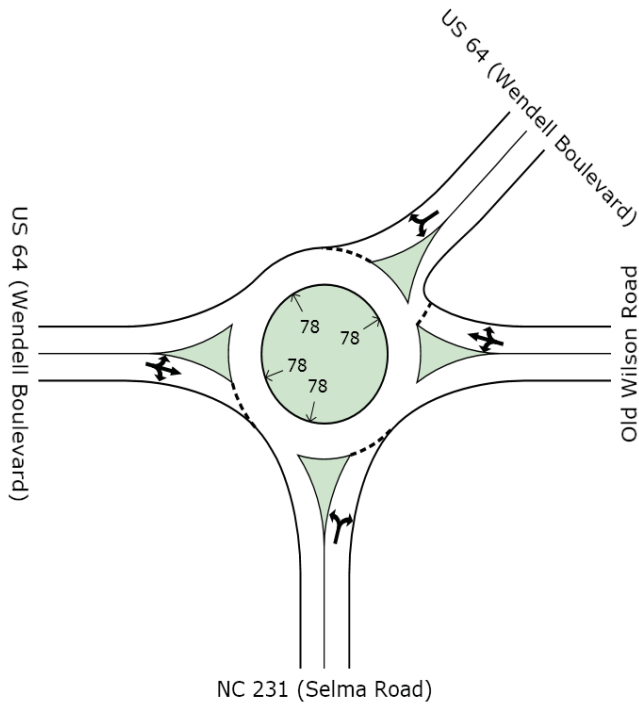


2: US 64 (Wendell Blvd) & Old Zebulon Road

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	102	714	373	14	8	63
Sign Control		Free	Free		Stop	
Grade		1%	-1%		1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	793	414	16	9	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.93			0.93	0.93	
vC, conflicting volume	430			1442	422	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	354			1438	346	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	90			93	89	
cM capacity (veh/h)	1125			123	651	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	907	430	79			
Volume Left	113	0	9			
Volume Right	0	16	70			
cSH	1125	1700	439			
Volume to Capacity	0.10	0.25	0.18			
Queue Length 95th (ft)	8	0	16			
Control Delay (s)	2.5	0.0	15.0			
Lane LOS	A		B			
Approach Delay (s)	2.5	0.0	15.0			
Approach LOS			B			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			78.0%	ICU Level of Service		D
Analysis Period (min)			15			

Build (2020) Alternative 1

AM, Noon, PM Peaks



INTERSECTION SUMMARY

Site: Wendell Blvd and Old Wilson Road AM Peak

Build (2020) Alternative 1 - AM Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	598 veh/h	717 pers/h
Percent Heavy Vehicles	4.6 %	
Degree of Saturation	0.316	
Practical Spare Capacity	134.6 %	
Effective Intersection Capacity	1649 veh/h	
Control Delay (Total)	1.42 veh-h/h	1.71 pers-h/h
Control Delay (Average)	8.6 sec	8.6 sec
Control Delay (Worst Lane)	10.5 sec	
Control Delay (Worst Movement)	13.1 sec	13.1 sec
Geometric Delay (Average)	8.1 sec	
Stop-Line Delay (Average)	0.5 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	1.9 veh	
95% Back of Queue - Distance (Worst Lane)	49.3 ft	
Total Effective Stops	345 veh/h	413 pers/h
Effective Stop Rate	0.58 per veh	0.58 per pers
Proportion Queued	0.18	0.18
Performance Index	10.9	10.9
Travel Distance (Total)	222.8 veh-mi/h	267.3 pers-mi/h
Travel Distance (Average)	1968 ft	1968 ft
Travel Time (Total)	8.1 veh-h/h	9.7 pers-h/h
Travel Time (Average)	48.7 sec	48.7 sec
Travel Speed	27.6 mph	27.6 mph
Cost (Total)	126.43 \$/h	126.43 \$/h
Fuel Consumption (Total)	10.4 gal/h	
Carbon Dioxide (Total)	98.3 kg/h	
Hydrocarbons (Total)	0.161 kg/h	
Carbon Monoxide (Total)	7.24 kg/h	
NOx (Total)	0.215 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).

LOS Method for individual vehicle movements and lanes: Delay (HCM).

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	286,864 veh/yr	344,237 pers/yr
Delay	683 veh-h/yr	819 pers-h/yr
Effective Stops	165,371 veh/yr	198,445 pers/yr
Travel Distance	106,936 veh-mi/yr	128,323 pers-mi/yr
Travel Time	3,879 veh-h/yr	4,655 pers-h/yr
Cost	60,689 \$/yr	60,689 \$/yr
Fuel Consumption	4,974 gal/yr	
Carbon Dioxide	47,170 kg/yr	
Hydrocarbons	77 kg/yr	
Carbon Monoxide	3,477 kg/yr	
NOx	103 kg/yr	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Wilson Road AM Peak

Build (2020) Alternative 1 - AM Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow (veh/h)	HV %	Deg. Satn v/c	Average Delay (sec)	Level of Service	95% Back of Queue Vehicles (veh)	Queue Distance (ft)	Prop. Queued	Effective Stop Rate (per veh)	Average Speed (mph)
South: NC 231 (Selma Road)											
3L	L	379	3.0	0.316	10.7	LOS B	1.9	49.3	0.18	0.65	27.3
8T	T	1	2.0	0.362	4.4	LOS A	1.9	49.3	0.18	0.34	30.4
8R	R	11	3.0	0.317	5.8	LOS A	1.9	49.3	0.18	0.45	29.7
Approach		391	3.0	0.316	10.5	LOS B	1.9	49.3	0.18	0.64	27.4
East: Old Wilson Road											
1L	L	3	13.0	0.101	13.1	LOS B	0.5	14.5	0.47	0.89	27.0
6T	T	69	13.0	0.102	6.9	LOS A	0.5	14.5	0.47	0.58	29.4
6R	R	1	2.0	0.099	7.9	LOS A	0.5	14.5	0.47	0.65	29.1
Approach		73	12.8	0.102	7.2	LOS B	0.5	14.5	0.47	0.60	29.2
North: US 64 (Wendell Boulevard)											
7L	L	1	2.0	0.004	6.0	LOS A	0.0	0.5	0.47	0.61	18.4
4T	T	1	2.0	0.004	2.2	LOS A	0.0	0.5	0.47	0.27	19.0
4R	R	1	2.0	0.004	2.7	LOS A	0.0	0.5	0.47	0.32	18.9
Approach		3	2.0	0.004	3.6	LOS A	0.0	0.5	0.47	0.40	18.8
West: US 64 (Wendell Boulevard)											
5L	L	1	2.0	0.099	8.5	LOS A	0.5	13.1	0.04	0.85	25.2
2T	T	46	5.0	0.095	2.6	LOS A	0.5	13.1	0.04	0.26	28.1
2R	R	83	5.0	0.095	4.0	LOS A	0.5	13.1	0.04	0.43	27.3
Approach		130	5.0	0.095	3.6	LOS A	0.5	13.1	0.04	0.37	27.6
All Vehicles		598	4.6	0.316	8.6	LOS A	1.9	49.3	0.18	0.58	27.6

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

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600655, MARTINALEX@BERRYSON, SINGLE



Wendell Boulevard

Build Alt 1 (2020) AM

2: US 64 (Wendell Blvd) & Old Zebulon Road

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↔
Volume (veh/h)	19	281	677	8	10	106
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%	-1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	312	752	9	11	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761				1111	757
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	761				1111	757
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				95	71
cM capacity (veh/h)	851				225	408
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	21	312	761	129		
Volume Left	21	0	0	11		
Volume Right	0	0	9	118		
cSH	851	1700	1700	381		
Volume to Capacity	0.02	0.18	0.45	0.34		
Queue Length 95th (ft)	2	0	0	37		
Control Delay (s)	9.3	0.0	0.0	19.2		
Lane LOS	A			C		
Approach Delay (s)	0.6		0.0	19.2		
Approach LOS				C		
Intersection Summary						
Average Delay	2.2					
Intersection Capacity Utilization	49.9%					
Analysis Period (min)	15					
ICU Level of Service	A					

INTERSECTION SUMMARY

Site: Wendell Blvd and Old Wilson
Road NOON Peak

Build (2020) Alternative 1 - Noon
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	434 veh/h	521 pers/h
Percent Heavy Vehicles	3.1 %	
Degree of Saturation	0.165	
Practical Spare Capacity	413.6 %	
Effective Intersection Capacity	2624 veh/h	
Control Delay (Total)	0.73 veh-h/h	0.87 pers-h/h
Control Delay (Average)	6.0 sec	6.0 sec
Control Delay (Worst Lane)	10.1 sec	
Control Delay (Worst Movement)	11.0 sec	11.0 sec
Geometric Delay (Average)	5.8 sec	
Stop-Line Delay (Average)	0.3 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	0.9 veh	
95% Back of Queue - Distance (Worst Lane)	23.1 ft	
Total Effective Stops	206 veh/h	247 pers/h
Effective Stop Rate	0.47 per veh	0.47 per pers
Proportion Queued	0.15	0.15
Performance Index	7.4	7.4
Travel Distance (Total)	156.8 veh-mi/h	188.1 pers-mi/h
Travel Distance (Average)	1906 ft	1906 ft
Travel Time (Total)	5.6 veh-h/h	6.8 pers-h/h
Travel Time (Average)	46.8 sec	46.8 sec
Travel Speed	27.8 mph	27.8 mph
Cost (Total)	88.98 \$/h	88.98 \$/h
Fuel Consumption (Total)	7.4 gal/h	
Carbon Dioxide (Total)	70.1 kg/h	
Hydrocarbons (Total)	0.103 kg/h	
Carbon Monoxide (Total)	4.77 kg/h	
NOx (Total)	0.159 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
LOS Method for individual vehicle movements and lanes: Delay (HCM).
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	208,464 veh/y	250,157 pers/y
Delay	949 veh-h/y	419 pers-h/y
Effective Stops	98,853 veh/y	118,624 pers/y
Travel Distance	75,244 veh-mi/y	90,292 pers-mi/y
Travel Time	2,710 veh-h/y	3,252 pers-h/y
Cost	42,708 \$/y	42,708 \$/y
Fuel Consumption	3,549 gal/y	
Carbon Dioxide	33,630 kg/y	
Hydrocarbons	50 kg/y	
Carbon Monoxide	2,289 kg/y	
NOx	76 kg/y	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Wilson
Road NOON Peak

Build (2020) Alternative 1 - Noon
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV %	Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed	
		veh/h		v/c	sec		veh	ft		per veh	mph	
South: NC 231 (Selma Road)												
3L	L	114	5.0	0.129	10.9	LOS B	0.7	17.0	0.20	0.67	27.3	
8T	T	1	2.0	0.136	4.6	LOS A	0.7	17.0	0.20	0.35	30.3	
8R	R	21	5.0	0.129	6.0	LOS A	0.7	17.0	0.20	0.46	29.7	
Approach		137	5.0	0.129	10.1	LOS B	0.7	17.0	0.20	0.63	27.7	
East: Old Wilson Road												
1L	L	14	3.0	0.073	11.0	LOS B	0.4	9.3	0.25	0.83	27.6	
6T	T	58	3.0	0.073	4.8	LOS A	0.4	9.3	0.25	0.41	30.3	
6R	R	1	2.0	0.072	6.1	LOS A	0.4	9.3	0.25	0.53	29.7	
Approach		73	3.0	0.073	6.1	LOS B	0.4	9.3	0.25	0.50	29.7	
North: US 64 (Wendell Boulevard)												
7L	L	1	2.0	0.003	4.6	LOS A	0.0	0.4	0.30	0.58	18.7	
4T	T	1	2.0	0.003	0.8	LOS A	0.0	0.4	0.30	0.13	19.3	
4R	R	1	2.0	0.003	1.4	LOS A	0.0	0.4	0.30	0.19	19.3	
Approach		3	2.0	0.003	2.3	LOS A	0.0	0.4	0.30	0.30	19.1	
West: US 64 (Wendell Boulevard)												
5L	L	1	2.0	0.155	8.5	LOS A	0.9	23.1	0.08	0.83	25.2	
2T	T	72	2.0	0.165	2.6	LOS A	0.9	23.1	0.08	0.26	27.9	
2R	R	148	2.0	0.165	4.0	LOS A	0.9	23.1	0.08	0.42	27.2	
Approach		221	2.0	0.165	3.6	LOS A	0.9	23.1	0.08	0.37	27.4	
All Vehicles		434	3.1	0.165	6.0	LOS A	0.9	23.1	0.15	0.47	27.8	

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

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000056, MARTINALEXOUERYSON, SINGLE



Wendell Boulevard

2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 1 (2020) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Volume (veh/h)	36	429	374	6	9	37
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%	1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	477	416	7	10	41
Pedestrians						
Lane Width (ft)			None	None		
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	422			976	419	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422			976	419	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	96			96	94	
cM capacity (veh/h)	1137			269	634	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	40	477	422	51		
Volume Left	40	0	0	10		
Volume Right	0	0	7	41		
cSH	1137	1700	1700	501		
Volume to Capacity	0.04	0.28	0.25	0.10		
Queue Length 95th (ft)	3	0	0	8		
Control Delay (s)	8.3	0.0	0.0	13.0		
Lane LOS	A			B		
Approach Delay (s)	0.6		0.0	13.0		
Approach LOS				B		
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			36.7%		ICU Level of Service	A
Analysis Period (min)			15			

MAB Synchro 7 - Report
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INTERSECTION SUMMARY

Site: Wendell Blvd and Old Wilson
Road PM Peak

Build (2020) Alternative 1 - PM Peak
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	663 veh/h	796 pers/h
Percent Heavy Vehicles	2.2 %	
Degree of Saturation	0.336	
Practical Spare Capacity	134.6 %	
Effective Intersection Capacity	1830 veh/h	
Control Delay (Total)	1.00 veh-h/h	1.20 pers-h/h
Control Delay (Average)	5.4 sec	5.4 sec
Control Delay (Worst Lane)	10.4 sec	
Control Delay (Worst Movement)	11.0 sec	11.0 sec
Geometric Delay (Average)	5.2 sec	
Stop-Line Delay (Average)	0.2 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	2.2 veh	
95% Back of Queue - Distance (Worst Lane)	56.9 ft	
Total Effective Stops	299 veh/h	359 pers/h
Effective Stop Rate	0.45 per veh	0.45 per pers
Proportion Queued	0.14	0.14
Performance Index	11.2	11.2
Travel Distance (Total)	236.2 veh-mi/h	283.4 pers-mi/h
Travel Distance (Average)	1881 ft	1881 ft
Travel Time (Total)	8.6 veh-h/h	10.4 pers-h/h
Travel Time (Average)	46.9 sec	46.9 sec
Travel Speed	27.4 mph	27.4 mph
Cost (Total)	132.36 \$/h	132.36 \$/h
Fuel Consumption (Total)	10.6 gal/h	
Carbon Dioxide (Total)	100.4 kg/h	
Hydrocarbons (Total)	0.151 kg/h	
Carbon Monoxide (Total)	6.65 kg/h	
NOx (Total)	0.220 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
LOS Method for individual vehicle movements and lanes: Delay (HCM).
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	318,331 veh/y	381,997 pers/y
Delay	479 veh-h/y	574 pers-h/y
Effective Stops	143,486 veh/y	172,183 pers/y
Travel Distance	113,379 veh-mi/y	136,054 pers-mi/y
Travel Time	4,143 veh-h/y	4,971 pers-h/y
Cost	63,534 \$/y	63,534 \$/y
Fuel Consumption	5,087 gal/y	
Carbon Dioxide	48,183 kg/y	
Hydrocarbons	72 kg/y	
Carbon Monoxide	3,194 kg/y	
NOx	106 kg/y	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Wilson Road PM Peak

Build (2020) Alternative 1 - PM Peak Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NC 231 (Selma Road)											
3L	L	127	3.0	0.129	10.8	LOS B	0.7	16.8	0.21	0.66	27.3
8T	T	1	2.0	0.136	4.6	LOS A	0.7	16.8	0.21	0.36	30.2
8R	R	10	3.0	0.130	6.0	LOS A	0.7	16.8	0.21	0.46	29.6
Approach		138	3.0	0.129	10.4	LOS B	0.7	16.8	0.21	0.64	27.4
East: Old Wilson Road											
1L	L	17	2.0	0.052	11.0	LOS B	0.3	6.5	0.26	0.79	27.6
6T	T	34	2.0	0.052	4.8	LOS A	0.3	6.5	0.26	0.41	30.2
6R	R	1	2.0	0.052	6.1	LOS A	0.3	6.5	0.26	0.52	29.6
Approach		52	2.0	0.052	6.8	LOS B	0.3	6.5	0.26	0.53	29.2
North: US 64 (Wendell Boulevard)											
7L	L	1	2.0	0.003	4.6	LOS A	0.0	0.4	0.29	0.58	18.7
4T	T	1	2.0	0.003	0.8	LOS A	0.0	0.4	0.29	0.12	19.3
4R	R	1	2.0	0.003	1.3	LOS A	0.0	0.4	0.29	0.19	19.3
Approach		3	2.0	0.003	2.2	LOS A	0.0	0.4	0.29	0.30	19.1
West: US 64 (Wendell Boulevard)											
5L	L	1	2.0	0.362	8.5	LOS A	2.2	56.9	0.10	0.79	25.1
2T	T	79	2.0	0.336	2.6	LOS A	2.2	56.9	0.10	0.26	27.8
2R	R	390	2.0	0.336	4.0	LOS A	2.2	56.9	0.10	0.41	27.1
Approach		470	2.0	0.336	3.8	LOS A	2.2	56.9	0.10	0.39	27.2
All Vehicles		663	2.2	0.336	5.4	LOS A	2.2	56.9	0.14	0.45	27.4

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
 Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
 Approach LOS values are based on the worst delay for any vehicle movement.
 Roundabout LOS Method: Same as Signalised Intersections.
 Roundabout Capacity Model: SIDRA Standard.

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 6000556, MARTINALEX/CU/BRVYSON, SINGLE



Wendell Boulevard

Build Alt 1 (2020) PM

2: US 64 (Wendell Blvd) & Old Zebulon Road

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↕	↕
Volume (veh/h)	102	714	373	14	8	63
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%	-1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	793	414	16	9	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	430				1442	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430				1442	422
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue: free %	90				93	89
cM capacity (veh/h)	1129				131	631
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	113	793	430	79		
Volume Left	113	0	0	9		
Volume Right	0	0	16	70		
cSH	1129	1700	1700	441		
Volume to Capacity	0.10	0.47	0.25	0.18		
Queue Length 95th (ft)	8	0	0	16		
Control Delay (s)	8.5	0.0	0.0	14.9		
Lane LOS	A			B		
Approach Delay (s)	1.1			14.9		
Approach LOS				B		
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			

MAB

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Build (2020) Alternative 2

AM, Noon, PM Peaks

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 2 (2020) AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (vph)	216	75	71	344	341	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	11	10	13
Grade (%)	1%			0%	-2%	
Storage Length (ft)		125	300		125	0
Storage Lanes		1	1		1	1
Taper Length (ft)		100	100		100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.850			0.850	
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1800	1530	1760	1733	1652	1636
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1800	1530	1760	1733	1652	1636
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			35	35	
Link Distance (ft)	216			915	489	
Travel Time (s)	4.9			17.8	9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	3%	3%
Adj. Flow (vph)	240	83	79	382	379	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	83	79	382	379	157
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	7.0	7.0	10.0	7.0	7.0
Minimum Split (s)	17.4	14.3	15.3	20.0	14.3	15.3
Total Split (s)	31.0	42.0	17.0	48.0	42.0	17.0
Total Split (%)	34.4%	46.7%	18.9%	53.3%	46.7%	18.9%
Maximum Green (s)	24.0	35.0	10.0	41.0	35.0	10.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	None	None	Min	None	None
Act Effct Green (s)	16.7	44.4	10.6	32.6	22.4	38.3
Actuated g/C Ratio	0.26	0.68	0.16	0.50	0.34	0.59
v/c Ratio	0.52	0.08	0.28	0.44	0.67	0.16
Control Delay	27.0	3.5	30.9	13.8	25.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	3.5	30.9	13.8	25.2	7.1
LOS	C	A	C	B	C	A

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 2 (2020) AM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	21.0			16.7	19.9	
Approach LOS	C			B	B	
Queue Length 50th (ft)	80	9	27	88	121	24
Queue Length 95th (ft)	177	20	81	206	244	61
Internal Link Dist (ft)	136			835	409	
Turn Bay Length (ft)		125	300		125	
Base Capacity (vph)	743	1385	335	1182	970	1003
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.06	0.24	0.32	0.39	0.16

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 65.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

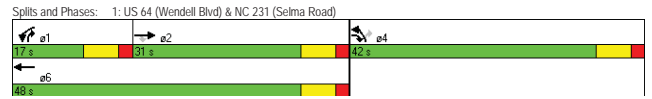
Intersection Signal Delay: 19.1

Intersection Capacity Utilization 48.6%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 2 (2020) AM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (veh/h)	19	281	677	8	10	106
Sign Control	Free	Free	Free	Slop		
Grade	1%	-1%		1%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	312	752	9	11	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		None	None			
Median type						
Median storage (veh)			216			
Upstream signal (ft)						
pX, platoon unblocked	0.86			0.86	0.86	
vC, conflicting volume	761			1111	757	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643			1049	638	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue free %	97			95	71	
cM capacity (veh/h)	800			211	411	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	21	312	761	129		
Volume Left	21	0	0	11		
Volume Right	0	0	0	9		
cSH	800	1700	1700	380		
Volume to Capacity	0.03	0.18	0.45	0.34		
Queue Length 95th (ft)	2	0	0	37		
Control Delay (s)	9.6	0.0	0.0	19.3		
Lane LOS	A			C		
Approach Delay (s)	0.6		0.0	19.3		
Approach LOS				C		
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			49.9%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 2 (2020) AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (veh/h)	306	51	6	350	65	3
Sign Control	Free			Free	Slop	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	340	57	7	389	72	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	915					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			397		771	368
vC1, stage 1 conf vol					368	
vC2, stage 2 conf vol					402	
vCu, unblocked vol			308		712	277
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	100
cM capacity (veh/h)			1139		549	681
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	397	7	389	76		
Volume Left	0	7	0	72		
Volume Right	57	0	0	3		
cSH	1700	1139	1700	554		
Volume to Capacity	0.23	0.01	0.23	0.14		
Queue Length 95th (ft)	0	0	0	12		
Control Delay (s)	0.0	8.2	0.0	12.5		
Lane LOS	A			B		
Approach Delay (s)	0.0	0.1		12.5		
Approach LOS				B		
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 2 (2020) AM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔	↔	↔	↔
Volume (veh/h)	7	10	10	61	51	6
Sign Control		Free	Free	Slop	Slop	
Grade		-1%	0%	0%	-2%	0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	11	11	68	57	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	79				72	45
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79				72	45
IC, single (s)	4.2				6.5	6.3
IC, 2 stage (s)						
IF (s)	2.3				3.6	3.4
p0 queue free %	99				94	99
cM capacity (veh/h)	1452				901	994
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	19	79	63			
Volume Left	8	0	57			
Volume Right	0	68	7			
CSH	1452	1700	910			
Volume to Capacity	0.01	0.05	0.07			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	3.1	0.0	9.3			
Lane LOS	A		A			
Approach Delay (s)	3.1	0.0	9.3			
Approach LOS			A			
Intersection Summary						
Average Delay			4.0			
Intersection Capacity Utilization		16.8%		ICU Level of Service		A
Analysis Period (min)		15				

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

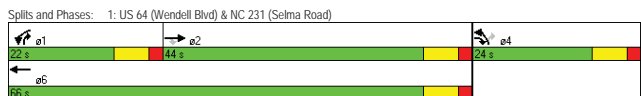
Build Alt 2 (2020) Noon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (vph)	305	133	93	277	103	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	11	10	13
Grade (%)	1%			0%	-2%	
Storage Length (ft)		125	300		125	0
Storage Lanes		1	1		1	0
Taper Length (ft)		100	100		100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Sald. Flow (prot)	1800	1530	1760	1733	1652	1636
Flt Permitted			0.950		0.950	
Sald. Flow (perm)	1800	1530	1760	1733	1652	1636
Right Turn on Red		No				No
Sald. Flow (RTOR)						
Link Speed (mph)	30			35	35	
Link Distance (ft)	216			915	489	
Travel Time (s)	4.9			17.8	9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	3%	3%
Adj. Flow (vph)	339	148	103	308	114	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	339	148	103	308	114	113
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	7.0	7.0	10.0	7.0	7.0
Minimum Split (s)	17.4	14.3	15.3	20.0	14.3	15.3
Total Split (s)	44.0	24.0	22.0	66.0	24.0	22.0
Total Split (%)	48.9%	26.7%	24.4%	73.3%	26.7%	24.4%
Maximum Green (s)	37.0	17.0	15.0	59.0	17.0	15.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag		Lead		Lead	
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	None	None	Min	None	None
Act Effct Green (s)	20.3	39.2	11.5	32.8	12.0	28.9
Actuated g/C Ratio	0.37	0.71	0.21	0.59	0.22	0.52
v/c Ratio	0.51	0.14	0.28	0.30	0.32	0.13
Control Delay	19.2	4.9	24.4	6.3	24.3	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	4.9	24.4	6.3	24.3	9.5
LOS	B	A	C	A	C	A

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 2 (2020) Noon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	14.9			10.8	17.0	
Approach LOS	B			B	B	
Queue Length 50th (ft)	90	17	29	40	32	18
Queue Length 95th (ft)	193	42	83	88	89	55
Internal Link Dist (ft)	136			835	409	
Turn Bay Length (ft)		125	300		125	
Base Capacity (vph)	1316	1220	572	1663	600	1043
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.12	0.18	0.19	0.19	0.11
Intersection Summary						
Area Type:	Other					
Cycle Length:	90					
Actuated Cycle Length:	55.5					
Natural Cycle:	50					
Control Type:	Actuated-Uncoordinated					
Maximum v/c Ratio:	0.51					
Intersection Signal Delay:	13.8					
Intersection Capacity Utilization:	40.2%					
Analysis Period (min):	15					
Intersection LOS:	B					
ICU Level of Service:	A					



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 2 (2020) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	36	429	374	6	9	37
Sign Control		Free	Free	Slop	Slop	
Grade		1%	-1%		1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	477	416	7	10	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	422				976	419
vC1, stage 1 conf vol						
vC2, stage 2 conf vol	338				934	334
vCu, unblocked vol	4.1				6.4	6.2
IC, single (s)						
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	96				96	94
cM capacity (veh/h)	1117				263	656
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	40	477	422	51		
Volume Left	40	0	0	10		
Volume Right	0	0	7	41		
CSH	1117	1700	1700	508		
Volume to Capacity	0.04	0.28	0.25	0.10		
Queue Length 95th (ft)	3	0	0	8		
Control Delay (s)	8.3	0.0	0.0	12.9		
Lane LOS	A			B		
Approach Delay (s)	0.6		0.0	12.9		
Approach LOS				B		
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		36.7%		ICU Level of Service		A
Analysis Period (min)		15				

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	323	84	13	305	65	19
Sign Control	Free			Free	Slop	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	359	93	14	339	72	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	915					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			452		773	406
vC1, stage 1 conf vol					406	
vC2, stage 2 conf vol					368	
vCu, unblocked vol			316		679	263
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	97
cM capacity (veh/h)			1081		549	663
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	452	14	339	93		
Volume Left	0	14	0	72		
Volume Right	93	0	0	21		
cSH	1700	1081	1700	571		
Volume to Capacity	0.27	0.01	0.20	0.16		
Queue Length 95th (ft)	0	1	0	15		
Control Delay (s)	0.0	8.4	0.0	12.5		
Lane LOS		A		B		
Approach Delay (s)	0.0	0.3		12.5		
Approach LOS				B		
Intersection Summary						
Average Delay				1.4		
Intersection Capacity Utilization			33.5%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

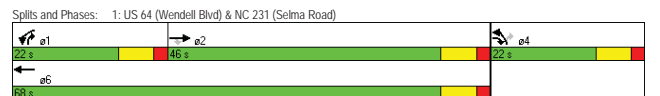
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	8	10	10	76	67	10
Sign Control	Free	Free	Free	Slop		
Grade	-1%			1%	-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	11	11	84	97	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None	None				
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume		96			82	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol		96			82	53
IC, single (s)		4.2			6.5	6.3
IC, 2 stage (s)						
IF (s)		2.3			3.6	3.4
p0 queue free %		99			89	99
cM capacity (veh/h)		1432			888	984
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	20	96	108			
Volume Left	9	0	97			
Volume Right	0	84	11			
cSH	1432	1700	897			
Volume to Capacity	0.01	0.06	0.12			
Queue Length 95th (ft)	0	0	10			
Control Delay (s)	3.4	0.0	9.6			
Lane LOS	A		A			
Approach Delay (s)	3.4	0.0	9.6			
Approach LOS			A			
Intersection Summary						
Average Delay			4.9			
Intersection Capacity Utilization			19.7%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (vph)	371	351	127	273	114	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	11	10	13
Grade (%)	1%			0%	-2%	
Storage Length (ft)		125	300		125	0
Storage Lanes		1	1		1	0
Taper Length (ft)		100	100		100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1800	1530	1760	1733	1652	1636
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1800	1530	1760	1733	1652	1636
Right Turn on Red		No			No	
Satd. Flow (RTOR)						
Link Speed (mph)	30			35	35	
Link Distance (ft)	216			915	489	
Travel Time (s)	4.9			17.8	9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	3%	3%
Adj. Flow (vph)	412	390	141	303	127	138
Shared Lane Traffic (%)						
Lane Group Flow (vph)	412	390	141	303	127	138
Turn Type		pm+ov	Prot		pm+ov	
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	7.0	7.0	10.0	7.0	7.0
Minimum Split (s)	17.4	14.3	15.3	20.0	14.3	15.3
Total Split (s)	46.0	22.0	22.0	68.0	22.0	22.0
Total Split (%)	51.1%	24.4%	24.4%	75.6%	24.4%	24.4%
Maximum Green (s)	39.0	15.0	15.0	61.0	15.0	15.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	None	None	Min	None	None
Act Efect Green (s)	22.2	40.0	12.7	40.1	12.6	30.4
Actuated g/C Ratio	0.35	0.63	0.20	0.64	0.20	0.48
v/c Ratio	0.65	0.40	0.40	0.27	0.39	0.17
Control Delay	23.0	7.1	28.4	5.8	28.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	7.1	28.4	5.8	28.7	11.4
LOS	C	A	C	A	C	B

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	15.3			13.0	19.7	
Approach LOS	B			B	B	
Queue Length 50th (ft)	125	60	46	41	41	27
Queue Length 95th (ft)	249	123	117	87	108	73
Internal Link Dist (ft)	136			835	409	
Turn Bay Length (ft)		125	300		125	
Base Capacity (vph)	1218	1095	494	1610	464	920
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.36	0.29	0.19	0.27	0.15
Intersection Summary						
Area Type:	Other					
Cycle Length:	90					
Actuated Cycle Length:	63.1					
Natural Cycle:	55					
Control Type:	Actuated-Uncoordinated					
Maximum v/c Ratio:	0.65					
Intersection Signal Delay:	15.4					
Intersection Capacity Utilization:	45.4%					
Analysis Period (min):	15					
Intersection LOS:	B					
ICU Level of Service:	A					



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 2 (2020) PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	102	714	373	14	8	63
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%		1%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	793	414	16	9	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		None	None			
Median type						
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.93			0.93	0.93	
vC, conflicting volume	430			1442	422	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	354			1438	346	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue free %	90			93	89	
cM capacity (veh/h)	1109			123	651	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	113	793	430	79		
Volume Left	113	0	0	9		
Volume Right	0	0	16	70		
cSH	1109	1700	1700	439		
Volume to Capacity	0.10	0.47	0.25	0.18		
Queue Length 95th (ft)	9	0	0	16		
Control Delay (s)	8.6	0.0	0.0	15.0		
Lane LOS	A			C		
Approach Delay (s)	1.1		0.0	15.0		
Approach LOS				C		
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 2 (2020) PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	415	80	11	354	46	14
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	89	12	393	51	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	915					
pX, platoon unblocked			0.82		0.82	0.82
vC, conflicting volume			550		923	506
vC1, stage 1 conf vol					506	
vC2, stage 2 conf vol					418	
vCu, unblocked vol			342		797	288
IC, single (s)			4.1		6.4	6.2
IC, 2 stage (s)					5.4	
IF (s)			2.2		3.5	3.3
p0 queue free %			99		90	97
cM capacity (veh/h)			998		510	616
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	550	12	393	67		
Volume Left	0	12	0	51		
Volume Right	89	0	0	16		
cSH	1700	998	1700	531		
Volume to Capacity	0.32	0.01	0.23	0.13		
Queue Length 95th (ft)	0	1	0	11		
Control Delay (s)	0.0	8.7	0.0	12.7		
Lane LOS		A		B		
Approach Delay (s)	0.0	0.3		12.7		
Approach LOS				B		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			36.8%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 2 (2020) PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	5	10	10	55	82	9
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	-1%	1%		-2%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	11	11	61	91	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		None	None			
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked					64	42
vC, conflicting volume	72				64	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72				64	42
IC, single (s)	4.2				6.5	6.3
IC, 2 stage (s)						
IF (s)	2.3				3.6	3.4
p0 queue free %	100				90	99
cM capacity (veh/h)	1461				912	999
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	17	72	101			
Volume Left	6	0	91			
Volume Right	0	61	10			
cSH	1461	1700	920			
Volume to Capacity	0.00	0.04	0.11			
Queue Length 95th (ft)	0	0	9			
Control Delay (s)	2.5	0.0	9.4			
Lane LOS	A		A			
Approach Delay (s)	2.5	0.0	9.4			
Approach LOS			A			
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			16.7%		ICU Level of Service	A
Analysis Period (min)			15			

Build (2020) Alternative 3

AM, Noon, PM Peaks

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 3 (2020) AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	19	211	70	71	337	7	340	1	141	1900	1900	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	125	1%	200	300	0%	0	325	0	100	0%	0	0
Storage Length (ft)	1	1	1	1	0	1	0	1	0	1	0	0
Storage Lanes	100	100	100	100	100	100	100	100	100	100	100	100
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.950	1800	1530	0.950	1788	0	0.950	1586	0	0.950	1596	0
Fit	0.850		0.997				0.851			0.857		
Fit Protected	1761	1800	1530	1703	1788	0	1770	1586	0	1770	1596	0
Satd. Flow (prot)	0.950		0.950		0.950		0.657			0.657		
Fit Permitted	1761	1800	1530	1703	1788	0	1770	1586	0	1224	1596	0
Satd. Flow (perm)			No		No		No			No		No
Right Turn on Red												
Satd. Flow (RTOR)		30			35		25			20		
Link Speed (mph)		731			1021		518			533		
Link Distance (ft)		16.6			19.9		14.1			18.2		
Travel Time (s)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Peak Hour Factor	2%	5%	5%	6%	6%	2%	3%	2%	3%	2%	2%	2%
Heavy Vehicles (%)	21	234	78	79	374	8	378	1	157	6	6	118
Adj. Flow (vph)												
Shared Lane Traffic (%)	21	234	78	79	382	0	378	158	0	6	124	0
Lane Group Flow (vph)	Prot	pm+ov	Prot				Prot			Perm		
Turn Type	5	2	3	1	6		3	8		4	4	
Protected Phases		2										
Permitted Phases	5	2	3	1	6		3	8		4	4	
Detector Phase												
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	14.0	38.0	38.0	15.0	39.0	0.0	38.0	57.0	0.0	19.0	19.0	0.0
Total Split (%)	12.7%	34.5%	34.5%	13.6%	35.5%	0.0%	34.5%	51.8%	0.0%	17.3%	17.3%	0.0%
Maximum Green (s)	7.0	31.0	31.0	8.0	32.0		31.0	50.0		12.0	12.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	7.0	5.0	5.0	4.0	5.0	5.0	2.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	None	None	Min		None	None		None	None	
Act Effct Green (s)	9.6	22.9	51.6	10.4	29.5		25.5	43.9		13.0	13.0	
Actuated g/C Ratio	0.11	0.26	0.58	0.12	0.33		0.29	0.50		0.15	0.15	
v/c Ratio	0.11	0.50	0.09	0.40	0.64		0.74	0.20		0.03	0.53	
Control Delay	46.1	34.4	9.1	50.1	33.3		40.6	15.7		41.4	50.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.1	34.4	9.1	50.1	33.3		40.6	15.7		41.4	50.1	
LOS	D	C	A	D	C		D	B		D	D	
Approach Delay	29.2				36.2		33.3			49.7		

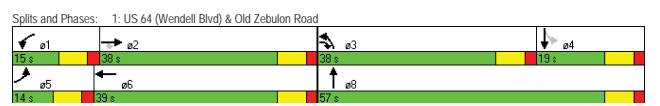
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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 3 (2020) AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			D			C			D		
Queue Length 50th (ft)	11	119	20	42	165		191	46		3	65	
Queue Length 95th (ft)	40	207	39	105	346		348	106		17	150	
Internal Link Dist (ft)		651			941			438			453	
Turn Bay Length (ft)	125		200	300			325			100		
Base Capacity (vph)	191	717	1061	206	735		705	996		207	270	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.33	0.07	0.38	0.52		0.54	0.16		0.03	0.46	

Intersection Summary
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 88.6
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 34.7
Intersection Capacity Utilization 62.0%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (veh/h)	7	10	10	61	51		6					
Sign Control	Free	Free	Free	Slop								
Grade	-1%	0%	0%	-2%								
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90		0.90			0.90		
Hourly flow rate (vph)	8	11	11	68	57		7					
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None	None									
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume				79						72	45	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol				79						72	45	
IC, single (s)				4.2						6.5	6.3	
IC, 2 stage (s)												
IF (s)				2.3						3.6	3.4	
p0 queue free %				99						94	99	
cM capacity (veh/h)				1452						901	994	

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Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson (N)

Build Alt 3 (2020) AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	306	51	6	350	65	3
Sign Control	Free	Free	Free	Slop		
Grade	-1%	1%	1%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	340	57	7	389	72	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	1021					
pX, platoon unblocked			0.92	0.92	0.92	
vC, conflicting volume			397	771	368	
vC1, stage 1 conf vol				368		
vC2, stage 2 conf vol				402		
vCu, unblocked vol			296	704	265	
IC, single (s)			4.2	6.5	6.3	
IC, 2 stage (s)				5.5		
IF (s)			2.3	3.6	3.4	
p0 queue free %			99	87	100	
cM capacity (veh/h)			1139	549	685	

Intersection Summary
Average Delay 1.2
Intersection Capacity Utilization 29.7%
Analysis Period (min) 15
ICU Level of Service A

Wendell Boulevard
4: Old Wilson (E) & Old Wilson (N)

Build Alt 3 (2020) AM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	7	10	10	61	51	6
Sign Control	Free	Free	Free	Slop		
Grade	-1%	0%	0%	-2%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	11	11	68	57	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume				79		72 45
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				79		72 45
IC, single (s						

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 3 (2020) Noon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (veh/h)	36	299	130	93	272	6	103	1	102	6	3	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	12
Grade (%)		1%			0%		-2%			0%		
Storage Length (ft)	125		200	300		0	325		0	100		0
Storage Lanes	1		1			0	1		0	1		0
Taper Length (ft)	100		100	100		0	100		0	100		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit			0.850		0.997		0.851		0.860			
Fit Protected	0.950			0.950			0.950		0.950			
Satd. Flow (prot)	1702	1740	1479	1703	1789	0	1770	1586	0	1770	1602	0
Fit Permitted	0.950			0.950			0.950		0.684			
Satd. Flow (perm)	1702	1740	1479	1703	1789	0	1770	1586	0	1274	1602	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			35		25			20		
Link Distance (ft)		722			1003		488			523		
Travel Time (s)		16.4			19.5		13.3			17.8		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	5%	6%	6%	2%	3%	2%	3%	2%	2%	2%
Adj. Flow (vph)	40	332	144	103	302	7	114	1	113	7	3	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	332	144	103	309	0	114	114	0	7	44	0
Turn Type	Prot		pm+ov	Prot		Prot			Perm			
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases			2							4		
Detector Phase	5	2	3	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	16.0	50.0	22.0	22.0	56.0	0.0	22.0	38.0	0.0	16.0	16.0	0.0
Total Split (%)	14.5%	45.5%	20.0%	20.0%	50.9%	0.0%	20.0%	34.5%	0.0%	14.5%	14.5%	0.0%
Maximum Green (s)	9.0	43.0	15.0	15.0	49.0		15.0	31.0		9.0	9.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	7.0	5.0	5.0	4.0	5.0	5.0	2.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	None	None	Min		None	None		None	None	
Act Effect Green (s)	11.2	23.1	43.4	13.5	28.9		13.7	21.1		11.3	11.3	
Actuated g/C Ratio	0.16	0.33	0.63	0.20	0.42		0.20	0.30		0.16	0.16	
v/c Ratio	0.15	0.57	0.16	0.31	0.41		0.33	0.24		0.03	0.17	
Control Delay	36.5	27.5	11.1	34.3	20.3		34.2	22.0		36.5	36.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	36.5	27.5	11.1	34.3	20.3		34.2	22.0		36.5	36.6	
LOS	D	C	B	C	C		C	C		D	D	

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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 3 (2020) Noon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay												
Approach LOS		C								C		28.1
Queue Length 50th (ft)	17	137	36	44	118					49	37	3
Queue Length 95th (ft)	55	258	77	107	212					117	93	17
Internal Link Dist (ft)		642			923					408		443
Turn Bay Length (ft)	125		200	300						325		100
Base Capacity (vph)	319	1182	988	494	1330					513	875	239
Starvation Cap Reductn	0	0	0	0	0					0	0	0
Spillback Cap Reductn	0	0	0	0	0					0	0	0
Storage Cap Reductn	0	0	0	0	0					0	0	0
Reduced v/c Ratio	0.13	0.28	0.15	0.21	0.23					0.22	0.13	0.03

Intersection Summary

Area Type: Other

Cycle Length: 110

Actuated Cycle Length: 69.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.57

Intersection Signal Delay: 5.1

Intersection Capacity Utilization 46.4%

Analysis Period (min) 15

Intersection LOS: C

ICU Level of Service A



MAB Synchro 7 - Report
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Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson (N)

Build Alt 3 (2020) Noon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	323	84	13	305	65	19
Sign Control	Free		Free	Slop		
Grade	-1%		1%	1%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	359	93	14	339	72	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	1003					
pX, platoon unblocked			0.87		0.87	0.87
vC, conflicting volume			452		773	406
vC1, stage 1 conf vol					406	
vC2, stage 2 conf vol					368	
vCu, unblocked vol			293		663	239
IC, single (s)			4.1		6.4	6.2
IC, 2 stage (s)					5.4	
IF (s)			2.2		3.5	3.3
p0 queue free %			99		87	97
cM capacity (veh/h)			1101		570	694

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	452	14	339	93
Volume Left	0	14	0	72
Volume Right	93	0	0	21
cSH	1700	1101	1700	594
Volume to Capacity	0.27	0.01	0.20	0.16
Queue Length 95th (ft)	0	1	0	14
Control Delay (s)	0.0	8.3	0.0	12.2
Lane LOS		A		B
Approach Delay (s)	0.0	0.3		12.2
Approach LOS				B

Intersection Summary

Average Delay: 1.4

Intersection Capacity Utilization: 33.5%

ICU Level of Service: A

Analysis Period (min): 15

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Wendell Boulevard
4: Old Wilson (E) & Old Wilson (N)

Build Alt 3 (2020) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	8	10	10	76	87	10
Sign Control	Free	Free	Free	Slop		
Grade	-1%		1%	-2%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	11	11	84	97	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None	None				
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked					96	82
vC, conflicting volume					82	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol					96	
IC, single (s)					4.1	82
IC, 2 stage (s)						6.4
IF (s)					2.2	3.5
p0 queue free %					99	89
cM capacity (veh/h)					1498	914

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	96	108
Volume Left	9	0	97
Volume Right	0	84	11
cSH	1498	1700	924
Volume to Capacity	0.01	0.06	0.12
Queue Length 95th (ft)	0	0	10
Control Delay (s)	3.3	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	3.3	0.0	9.4
Approach LOS			A

Intersection Summary

Average Delay: 4.8

Intersection Capacity Utilization: 19.7%

ICU Level of Service: A

Analysis Period (min): 15

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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 3 (2020) PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	2	2	2	2	2	2	2	2	2	2	2	2
Volume (veh/h)	102	366	348	127	264	9	109	5	124	5	3	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	12
Grade (%)		1%			0%			-2%			0%	
Storage Length (ft)	125		200	300		0	325		0	100		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100		100	100		0	100		0	100		0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fit			0.850		0.995		0.856		0.856		0.856	
Fit Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1702	1740	1479	1703	1786	0	1770	1595	0	1770	1595	0
Fit Permitted	0.950			0.950			0.950			0.665		
Satd. Flow (perm)	1702	1740	1479	1703	1786	0	1770	1595	0	1239	1595	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		30			35		25			20		
Link Distance (ft)		724			1009		487			539		
Travel Time (s)		16.5			19.7		13.3			18.4		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	5%	6%	6%	2%	3%	2%	3%	2%	2%	2%
Adj. Flow (vph)	113	407	387	141	293	10	121	6	138	6	3	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	407	387	141	303	0	121	144	0	6	73	0
Turn Type	Prot		pm+ov	Prot		Prot		Perm				
Protected Phases	5	2	3	1	6		3	8			4	
Permitted Phases			2							4		
Detector Phase	5	2	3	1	6		3	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	19.0	50.0	23.0	22.0	53.0	0.0	23.0	38.0	0.0	15.0	15.0	0.0
Total Split (%)	17.3%	45.5%	20.9%	20.0%	48.2%	0.0%	20.9%	34.5%	0.0%	13.6%	13.6%	0.0%
Maximum Green (s)	12.0	43.0	16.0	15.0	46.0		16.0	31.0		8.0	8.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	7.0	5.0	5.0	4.0	5.0	5.0	2.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	None	None	Min		None	None		None	None	
Act Effect Green (s)	12.6	27.1	44.0	14.1	33.4		13.6	24.6		10.4	10.4	
Actuated g/C Ratio	0.15	0.33	0.54	0.17	0.41		0.17	0.30		0.13	0.13	
v/c Ratio	0.43	0.71	0.49	0.48	0.42		0.41	0.30		0.04	0.36	
Control Delay	43.2	32.9	15.3	41.7	23.2		40.4	25.9		41.4	45.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.2	32.9	15.3	41.7	23.2		40.4	25.9		41.4	45.7	
LOS	D	C	B	D	C		D	C		D	D	

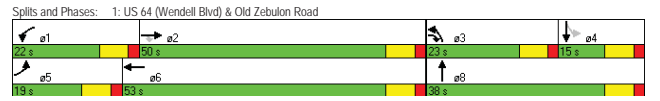
MAB Synchro 7 - Report
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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 3 (2020) PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach Delay		26.7						29.1			32.5	45.4
Approach LOS		C						C			C	D
Queue Length 50th (ft)		56	191	129	69	128		60	56		3	37
Queue Length 95th (ft)		131	321	211	153	216		131	127		17	96
Internal Link Dist (ft)		644				929					407	459
Turn Bay Length (ft)		125		200	300			325			100	
Base Capacity (vph)		313	1030	897	381	1127		419	692		163	210
Starvation Cap Reductn		0	0	0	0	0		0	0		0	0
Spillback Cap Reductn		0	0	0	0	0		0	0		0	0
Storage Cap Reductn		0	0	0	0	0		0	0		0	0
Reduced v/c Ratio		0.36	0.40	0.43	0.37	0.27		0.29	0.21		0.04	0.35

Intersection Summary
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 82
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 29.1
Intersection Capacity Utilization 51.5%
Analysis Period (min) 15
Intersection LOS: C
ICU Level of Service A



MAB Synchro 7 - Report
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Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson (N)

Build Alt 3 (2020) PM

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	2	2	2	2	2	2
Volume (veh/h)	415	80	11	354	46	14
Sign Control	Free		Free	Slop		
Grade	-1%		1%	1%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	89	12	393	51	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage (veh)	2			2		
Upstream signal (ft)	1009					
pX, platoon unblocked			0.81		0.81	0.81
vC, conflicting volume			550		923	506
vC1, stage 1 conf vol					506	
vC2, stage 2 conf vol					418	
vCu, unblocked vol			327		788	272
IC, single (s)			4.1		6.4	6.2
IC, 2 stage (s)					5.4	
IF (s)			2.2		3.5	3.3
p0 queue free %			99		90	97
cM capacity (veh/h)			998		511	621

Direction, Lane # EB 1 WB 1 WB 2 NW 1
Volume Total 550 12 393 67
Volume Left 0 12 0 51
Volume Right 89 0 0 16
cSH 1700 998 1700 533
Volume to Capacity 0.32 0.01 0.23 0.13
Queue Length 95th (ft) 0 1 0 11
Control Delay (s) 0.0 8.7 0.0 12.7
Lane LOS A B
Approach Delay (s) 0.0 0.3 12.7
Approach LOS B

Intersection Summary
Average Delay 0.9
Intersection Capacity Utilization 36.8%
Analysis Period (min) 15
ICU Level of Service A

MAB Synchro 7 - Report
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Wendell Boulevard
4: Old Wilson (E) & Old Wilson (N)

Build Alt 3 (2020) PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	2	2	2	2	2	2
Volume (veh/h)	6	10	10	54	82	9
Sign Control	Free	Free	Free	Slop		
Grade	-1%		1%		-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	11	11	60	91	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume				71	66	41
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol				71	66	41
IC, single (s)				4.1	6.4	6.2
IC, 2 stage (s)						
IF (s)				2.2	3.5	3.3
p0 queue free %				100	90	99
cM capacity (veh/h)				1529	936	1030

Direction, Lane # EB 1 WB 1 SB 1
Volume Total 18 71 101
Volume Left 7 0 91
Volume Right 0 60 10
cSH 1529 1700 944
Volume to Capacity 0.00 0.04 0.11
Queue Length 95th (ft) 0 0 9
Control Delay (s) 2.8 0.0 9.3
Lane LOS A A
Approach Delay (s) 2.8 0.0 9.3
Approach LOS A

Intersection Summary
Average Delay 5.2
Intersection Capacity Utilization 17.6%
Analysis Period (min) 15
ICU Level of Service A

MAB Synchro 7 - Report
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Build (2020) Alternative 4A

AM, Noon, PM Peaks

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 4A (2020) AM

	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (vph)	216	75	71	344	341	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	11	10	13
Grade (%)	1%			0%	-2%	
Storage Length (ft)		125	300		125	0
Storage Lanes		1	1		1	1
Taper Length (ft)		100	100		100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit		0.850			0.850	
Fit Protected			0.950		0.950	
Satd. Flow (prot)	1800	1530	1760	1733	1652	1636
Fit Permitted			0.950		0.950	
Satd. Flow (perm)	1800	1530	1760	1733	1652	1636
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			35	35	
Link Distance (ft)	216			915	489	
Travel Time (s)	4.9			17.8	9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	3%	3%
Adj. Flow (vph)	240	83	79	382	379	157
Shared Lane Traffic (%)						
Lane Group Flow (vph)	240	83	79	382	379	157
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	7.0	7.0	10.0	7.0	7.0
Minimum Split (s)	17.4	14.3	15.3	20.0	14.3	15.3
Total Split (s)	31.0	42.0	17.0	48.0	42.0	17.0
Total Split (%)	34.4%	46.7%	18.9%	53.3%	46.7%	18.9%
Maximum Green (s)	24.0	35.0	10.0	41.0	35.0	10.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead		Lead		Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	None	None	Min	None	None
Act Effct Green (s)	16.7	44.4	10.6	32.6	22.4	38.3
Actuated g/C Ratio	0.26	0.68	0.16	0.50	0.34	0.59
v/c Ratio	0.52	0.08	0.28	0.44	0.67	0.16
Control Delay	27.0	3.5	30.9	13.8	25.2	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	3.5	30.9	13.8	25.2	7.1
LOS	C	A	C	B	C	A

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 4A (2020) AM

	EBT	EBR	WBL	WBT	NBL	NBR
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	21.0			16.7	19.9	
Approach LOS	C			B	B	
Queue Length 50th (ft)	80	9	27	88	121	24
Queue Length 95th (ft)	177	20	81	206	244	61
Internal Link Dist (ft)	136			835	409	
Turn Bay Length (ft)		125	300		125	
Base Capacity (vph)	743	1385	335	1182	970	1003
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.32	0.06	0.24	0.32	0.39	0.16

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 65.4

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

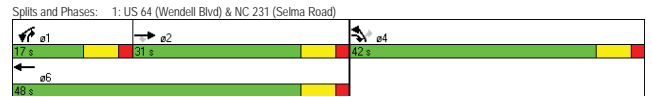
Intersection Signal Delay: 19.1

Intersection Capacity Utilization 48.6%

Analysis Period (min) 15

Intersection LOS: B

ICU Level of Service A



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4A (2020) AM

	EBL	EBT	WBT	WBR	SBL	SBR
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (veh/h)	19	281	677	8	10	106
Sign Control	Free	Free	Free	Slop		
Grade	1%	-1%		1%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	312	752	9	11	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		None	None			
Median type						
Median storage (veh)			216			
Upstream signal (ft)						
pX, platoon unblocked	0.86			0.86	0.86	
vC, conflicting volume	761			1111	757	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643			1049	638	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue free %	97			95	71	
cM capacity (veh/h)	800			211	411	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	21	312	761	129		
Volume Left	21	0	0	11		
Volume Right	0	0	0	9		
cSH	800	1700	1700	380		
Volume to Capacity	0.03	0.18	0.45	0.34		
Queue Length 95th (ft)	2	0	0	37		
Control Delay (s)	9.6	0.0	0.0	19.3		
Lane LOS	A			C		
Approach Delay (s)	0.6		0.0	19.3		
Approach LOS				C		
Intersection Summary						
Average Delay			2.2			
Intersection Capacity Utilization			49.9%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 4A (2020) AM

	EBT	EBR	WBL	WBT	NWL	NWR
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↑	↑	↑	↑	↑	↑
Volume (veh/h)	306	51	6	350	65	3
Sign Control	Free			Free	Slop	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	340	57	7	389	72	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)	915					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			397		771	368
vC1, stage 1 conf vol					368	
vC2, stage 2 conf vol					402	
vCu, unblocked vol			308		712	277
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	100
cM capacity (veh/h)			1139		549	681
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	397	7	389	76		
Volume Left	0	7	0	72		
Volume Right	57	0	0	3		
cSH	1700	1139	1700	554		
Volume to Capacity	0.23	0.01	0.23	0.14		
Queue Length 95th (ft)	0	0	0	12		
Control Delay (s)	0.0	8.2	0.0	12.5		
Lane LOS	A			B		
Approach Delay (s)	0.0	0.1		12.5		
Approach LOS				B		
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 4A (2020) AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	10	10	61	51	6
Volume (veh/h)	7	10	10	61	51	6
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	-1%	0%	0%	0%	-2%	0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	11	11	68	57	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				None	None	
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	150	60	63			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	150	60	63			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	811	975	1472			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	19	79	63			
Volume Left	8	11	0			
Volume Right	11	0	7			
CSH	900	1472	1700			
Volume to Capacity	0.02	0.01	0.04			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.1	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization		20.4%		ICU Level of Service	A	
Analysis Period (min)		15				

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

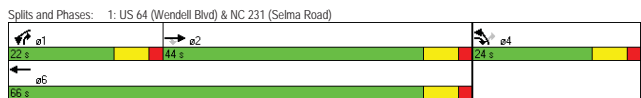
Build Alt 4A (2020) Noon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	305	133	93	277	103	102
Volume (vph)	305	133	93	277	103	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	11	10	13
Grade (%)	1%	1%	300	0%	-2%	0%
Storage Length (ft)		125	300		125	0
Storage Lanes		1	1		1	1
Taper Length (ft)		100	100		100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850				0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1800	1530	1760	1733	1652	1636
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1800	1530	1760	1733	1652	1636
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	30			35	35	
Link Distance (ft)	216			915	489	
Travel Time (s)	4.9			17.8	9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	3%	3%
Adj. Flow (vph)	339	148	103	308	114	113
Shared Lane Traffic (%)						
Lane Group Flow (vph)	339	148	103	308	114	113
Turn Type		pm+ov	Prot			pm+ov
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	7.0	7.0	10.0	7.0	7.0
Minimum Split (s)	17.4	14.3	15.3	20.0	14.3	15.3
Total Split (s)	44.0	24.0	22.0	66.0	24.0	22.0
Total Split (%)	48.9%	26.7%	24.4%	73.3%	26.7%	24.4%
Maximum Green (s)	37.0	17.0	15.0	59.0	17.0	15.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lag	Lead	Lead	Lead	Lead	Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	None	None	Min	None	None
Act Effct Green (s)	20.3	39.2	11.5	32.8	12.0	28.9
Actuated g/C Ratio	0.37	0.71	0.21	0.59	0.22	0.52
v/c Ratio	0.51	0.14	0.28	0.30	0.32	0.13
Control Delay	19.2	4.9	24.4	6.3	24.3	9.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	4.9	24.4	6.3	24.3	9.5
LOS	B	A	C	A	C	A

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 4A (2020) Noon

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	14.9			10.8	17.0	
Approach LOS	B			B	B	
Queue Length 50th (ft)	90	17	29	40	32	18
Queue Length 95th (ft)	193	42	83	88	89	55
Internal Link Dist (ft)	136			835	409	
Turn Bay Length (ft)		125	300		125	
Base Capacity (vph)	1316	1220	572	1663	600	1043
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.12	0.18	0.19	0.19	0.11
Intersection Summary						
Area Type:	Other					
Cycle Length:	90					
Actuated Cycle Length:	55.5					
Natural Cycle:	50					
Control Type:	Actuated-Uncoordinated					
Maximum v/c Ratio:	0.51					
Intersection Signal Delay:	13.8					
Intersection Capacity Utilization:	40.2%					
Analysis Period (min):	15					
Intersection LOS:	B					
ICU Level of Service:	A					



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4A (2020) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	7	7	7	7	7	7
Volume (veh/h)	36	429	374	6	9	37
Sign Control	Free	Free	Free	Slop	Free	Free
Grade	1%	-1%	-1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	477	416	7	10	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	422				976	419
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	338				934	334
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	96				96	94
cM capacity (veh/h)	1117				263	656
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	40	477	422	51		
Volume Left	40	0	0	10		
Volume Right	0	0	7	41		
CSH	1117	1700	1700	508		
Volume to Capacity	0.04	0.28	0.25	0.10		
Queue Length 95th (ft)	3	0	0	8		
Control Delay (s)	8.3	0.0	0.0	12.9		
Lane LOS	A			B		
Approach Delay (s)	0.6		0.0	12.9		
Approach LOS				B		
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			36.7%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 4A (2020) Noon

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	323	84	13	305	65	19
Sign Control	Free			Free	Free	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	359	93	14	339	72	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)	915					
pX, platoon unblocked		0.88		0.88	0.88	
vC, conflicting volume		452		773	406	
vC1, stage 1 conf vol				406		
vC2, stage 2 conf vol				368		
vCu, unblocked vol			316	679	263	
IC, single (s)			4.2	6.5	6.3	
IC, 2 stage (s)				5.5		
IF (s)			2.3	3.6	3.4	
p0 queue free %			99	87	97	
cM capacity (veh/h)			1081	549	663	
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	452	14	339	93		
Volume Left	0	14	0	72		
Volume Right	93	0	0	21		
cSH	1700	1081	1700	571		
Volume to Capacity	0.27	0.01	0.20	0.16		
Queue Length 95th (ft)	0	1	0	15		
Control Delay (s)	0.0	8.4	0.0	12.5		
Lane LOS	A	A		B		
Approach Delay (s)	0.0	0.3		12.5		
Approach LOS				B		
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		33.5%		ICU Level of Service	A	
Analysis Period (min)		15				

Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 4A (2020) Noon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	8	10	10	76	87	10
Sign Control	Stop			Free	Free	
Grade	-1%			0%	-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	11	11	84	97	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	209	102	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209	102	108			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	750	924	1417			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	96	108			
Volume Left	9	11	0			
Volume Right	11	0	11			
cSH	837	1417	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.4	0.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.4	0.9	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.2				
Intersection Capacity Utilization		21.2%	ICU Level of Service	A		
Analysis Period (min)		15				

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

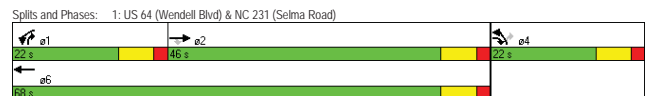
Build Alt 4A (2020) PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (vph)	371	351	127	273	114	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	13	11	10	13
Grade (%)	1%			0%	-2%	
Storage Length (ft)		125	300		125	0
Storage Lanes		1	1		1	1
Taper Length (ft)		100	100		100	100
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.850	
Flt Protected			0.950		0.950	
Satd. Flow (prot)	1800	1530	1760	1733	1652	1636
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1800	1530	1760	1733	1652	1636
Right Turn on Red		No			No	
Satd. Flow (RTOR)						
Link Speed (mph)	30			35	35	
Link Distance (ft)	216			915	489	
Travel Time (s)	4.9			17.8	9.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	6%	6%	3%	3%
Adj. Flow (vph)	412	390	141	303	127	138
Shared Lane Traffic (%)						
Lane Group Flow (vph)	412	390	141	303	127	138
Turn Type		pm+ov	Prot		pm+ov	
Protected Phases	2	4	1	6	4	1
Permitted Phases		2				4
Detector Phase	2	4	1	6	4	1
Switch Phase						
Minimum Initial (s)	10.0	7.0	7.0	10.0	7.0	7.0
Minimum Split (s)	17.4	14.3	15.3	20.0	14.3	15.3
Total Split (s)	46.0	22.0	22.0	68.0	22.0	22.0
Total Split (%)	51.1%	24.4%	24.4%	75.6%	24.4%	24.4%
Maximum Green (s)	39.0	15.0	15.0	61.0	15.0	15.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag			Lead			Lead
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	None	None	Min	None	None
Act Effct Green (s)	22.2	40.0	12.7	40.1	12.6	30.4
Actuated g/C Ratio	0.35	0.63	0.20	0.64	0.20	0.48
v/c Ratio	0.65	0.40	0.40	0.27	0.39	0.17
Control Delay	23.0	7.1	28.4	5.8	28.7	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.0	7.1	28.4	5.8	28.7	11.4
LOS	C	A	C	A	C	B

Wendell Boulevard
1: US 64 (Wendell Blvd) & NC 231 (Selma Road)

Build Alt 4A (2020) PM

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Approach Delay	15.3			13.0	19.7	
Approach LOS	B			B	B	
Queue Length 50th (ft)	125	60	46	41	41	27
Queue Length 95th (ft)	249	123	117	87	108	73
Internal Link Dist (ft)	136			835	409	
Turn Bay Length (ft)		125	300		125	
Base Capacity (vph)	1218	1095	494	1610	464	920
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.34	0.36	0.29	0.19	0.27	0.15
Intersection Summary						
Area Type:	Other					
Cycle Length:	90					
Actuated Cycle Length:	63.1					
Natural Cycle:	55					
Control Type:	Actuated-Uncoordinated					
Maximum v/c Ratio:	0.65					
Intersection Signal Delay:	15.4					
Intersection Capacity Utilization:	45.4%					
Analysis Period (min):	15					
Intersection LOS:	B					
ICU Level of Service:	A					



Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4A (2020) PM

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕
Volume (veh/h)	102	714	373	14	8	63
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%	1%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	793	414	16	9	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		None	None			
Median type						
Median storage (veh)						
Upstream signal (ft)			216			
pX, platoon unblocked	0.93			0.93	0.93	
vC, conflicting volume	430			1442	422	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	354			1438	346	
IC, single (s)	4.1			6.4	6.2	
IC, 2 stage (s)						
IF (s)	2.2			3.5	3.3	
p0 queue free %	90			93	89	
cM capacity (veh/h)	1109			123	651	
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	113	793	430	79		
Volume Left	113	0	0	9		
Volume Right	0	0	16	70		
cSH	1109	1700	1700	439		
Volume to Capacity	0.10	0.47	0.25	0.18		
Queue Length 95th (ft)	9	0	0	16		
Control Delay (s)	8.6	0.0	0.0	15.0		
Lane LOS	A			C		
Approach Delay (s)	1.1		0.0	15.0		
Approach LOS				C		
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 4A (2020) PM

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↔	↔	↔	↕	↕	↕
Volume (veh/h)	415	80	11	354	46	14
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	89	12	393	51	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	915					
pX, platoon unblocked			0.82		0.82	0.82
vC, conflicting volume			550		923	506
vC1, stage 1 conf vol					506	
vC2, stage 2 conf vol					418	
vCu, unblocked vol			342		797	288
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		90	97
cM capacity (veh/h)			980		492	595
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	550	12	393	67		
Volume Left	0	12	0	51		
Volume Right	89	0	0	16		
cSH	1700	980	1700	513		
Volume to Capacity	0.32	0.01	0.23	0.13		
Queue Length 95th (ft)	0	1	0	11		
Control Delay (s)	0.0	8.7	0.0	13.1		
Lane LOS		A		B		
Approach Delay (s)	0.0	0.3		13.1		
Approach LOS				B		
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			36.8%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 4A (2020) PM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Volume (veh/h)	5	10	10	55	62	9
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	-1%			0%	-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	11	11	61	91	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				None	None	
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	179	96	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179	96	101			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	779	931	1425			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	17	72	101			
Volume Left	6	11	0			
Volume Right	11	0	10			
cSH	874	1425	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	1	1	0			
Control Delay (s)	9.2	1.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	1.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			20.1%		ICU Level of Service	A
Analysis Period (min)			15			

Build (2020) Alternative 4B

AM, Noon, PM Peaks

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4B (2020) AM

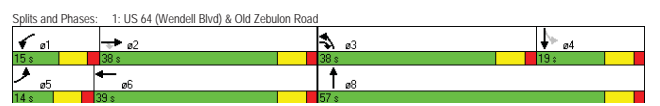
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	19	211	70	71	337	7	340	1	141	1900	1900	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	125	1%	200	300	0%	0	325	0	100	0%	0	0
Storage Length (ft)	1	1	1	1	0	1	0	1	0	1	0	0
Storage Lanes	100	100	100	100	100	100	100	100	100	100	100	100
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.950	1800	1530	0.950	1788	0	0.950	1586	0	0.950	1596	0
Fit	0.850		0.997				0.851			0.857		
Fit Protected	1761	1800	1530	1703	1788	0	1770	1586	0	1770	1596	0
Satd. Flow (prot)	0.950		0.950				0.950			0.657		
Fit Permitted	1761	1800	1530	1703	1788	0	1770	1586	0	1224	1596	0
Satd. Flow (perm)			No			No			No			No
Right Turn on Red												
Satd. Flow (RTOR)		30			35			35			25	
Link Speed (mph)		731			913			510			539	
Link Distance (ft)		16.6			17.8			9.9			14.7	
Travel Time (s)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Peak Hour Factor	2%	5%	5%	6%	6%	2%	3%	2%	3%	2%	2%	2%
Heavy Vehicles (%)	21	234	78	79	374	8	378	1	157	6	6	118
Adj. Flow (vph)												
Shared Lane Traffic (%)	21	234	78	79	382	0	378	158	0	6	124	0
Lane Group Flow (vph)	Prot	pm+ov	Prot	Prot	Prot	Prot	Prot	Perm				
Turn Type	5	2	3	1	6		3	8		4	4	
Protected Phases		2										
Permitted Phases	5	2	3	1	6		3	8		4	4	
Detector Phase												
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	14.0	17.0	14.0	14.0	17.0		14.0	14.0		14.0	14.0	
Total Split (s)	14.0	38.0	38.0	15.0	39.0	0.0	38.0	57.0	0.0	19.0	19.0	0.0
Total Split (%)	12.7%	34.5%	34.5%	13.6%	35.5%	0.0%	34.5%	51.8%	0.0%	17.3%	17.3%	0.0%
Maximum Green (s)	7.0	31.0	31.0	8.0	32.0		31.0	50.0		12.0	12.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	7.0	5.0	5.0	4.0	5.0	5.0	2.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	None	None	Min		None	None		None	None	
Act Effct Green (s)	9.6	22.9	51.6	10.4	29.5		25.5	43.9		13.0	13.0	
Actuated g/C Ratio	0.11	0.26	0.58	0.12	0.33		0.29	0.50		0.15	0.15	
v/c Ratio	0.11	0.50	0.09	0.40	0.64		0.74	0.20		0.03	0.53	
Control Delay	46.1	34.4	9.1	50.1	33.3		40.6	15.7		41.4	50.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	46.1	34.4	9.1	50.1	33.3		40.6	15.7		41.4	50.1	
LOS	D	C	A	D	C		D	B		D	D	
Approach Delay	29.2				36.2			33.3			49.7	

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4B (2020) AM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C						D			D		
Queue Length 50th (ft)	11	119	20	42	165		191	46		3	65	
Queue Length 95th (ft)	40	207	39	105	346		348	106		17	150	
Internal Link Dist (ft)		651			833			430				459
Turn Bay Length (ft)	125		200	300			325			100		
Base Capacity (vph)	191	717	1061	206	735		705	996		207	270	
Starvation Cap Reductn	0	0	0	0	0		0	0		0	0	
Spillback Cap Reductn	0	0	0	0	0		0	0		0	0	
Storage Cap Reductn	0	0	0	0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.33	0.07	0.38	0.52		0.54	0.16		0.03	0.46	

Intersection Summary
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 88.6
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 34.7
Intersection Capacity Utilization 62.0%
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson (N)

Build Alt 4B (2020) AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	306	51	6	350	65	3
Sign Control	Free		Free	Slop		
Grade	-1%		1%	1%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	340	57	7	389	72	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)	913					
pX, platoon unblocked		0.91		0.91	0.91	
vC, conflicting volume		397		771	368	
vC1, stage 1 conf vol				402		
vC2, stage 2 conf vol				699	258	
vCu, unblocked vol		289		6.5	6.3	
IC, single (s)		4.2		5.5		
IC, 2 stage (s)				3.6	3.4	
IF (s)		2.3		3.6	3.4	
p0 queue free %		99		87	100	
cM capacity (veh/h)		1139		550	688	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	397	7	389	76		
Volume Left	0	7	0	72		
Volume Right	57	0	0	3		
cSH	1700	1139	1700	555		
Volume to Capacity	0.23	0.01	0.23	0.14		
Queue Length 95th (ft)	0	0	0	12		
Control Delay (s)	0.0	8.2	0.0	12.5		
Lane LOS	A	A		B		
Approach Delay (s)	0.0	0.1		12.5		
Approach LOS				B		
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization		29.7%		ICU Level of Service	A	
Analysis Period (min)		15				

Wendell Boulevard
4: Old Wilson (E) & Old Wilson (N)

Build Alt 4B (2020) AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	7	10	10	61	51	6
Sign Control	Stop		Free	Free		
Grade	-1%		0%	-2%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	11	11	68	57	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked			150	60	63	
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol			150	60	63	
vCu, unblocked vol			6.5	6.3	4.2	
IC, single (s)			3.6	3.4	2.3	
IC, 2 stage (s)			3.6	3.4	2.3	
IF (s)			99	99	99	
p0 queue free %			811	975	1472	
cM capacity (veh/h)						
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	19	79	63			
Volume Left	8	11	0			
Volume Right	11	0	7			
cSH	900	1472	1700			
Volume to Capacity	0.02	0.01	0.04			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.1	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.6			
Intersection Capacity Utilization		20.4%		ICU Level of Service	A	
Analysis Period (min)		15				

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4B (2020) Noon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔	↔
Volume (vph)	36	299	130	93	272	6	103	1	102	6	3	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	125	1%	200	300	0%	0	325	0	100	0%	0	0
Storage Length (ft)	1	1	1	1	0	1	0	1	0	1	0	0
Storage Lanes	100	100	100	100	100	100	100	100	100	100	100	100
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.850	0.850	0.997	0.997	0.851	0.851	0.851	0.851	0.851	0.851	0.851	0.851
Fit Protected	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (prot)	1761	1800	1530	1703	1789	0	1770	1586	0	1770	1602	0
Fit Permitted	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950	0.950
Satd. Flow (perm)	1761	1800	1530	1703	1789	0	1770	1586	0	1274	1602	0
Right Turn on Red	No	No	No	No	No	No	No	No	No	No	No	No
Satd. Flow (RTOR)	30	30	35	35	35	35	35	35	35	35	35	35
Link Speed (mph)	731	731	913	913	913	913	913	913	913	913	913	913
Travel Time (s)	16.6	16.6	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	5%	5%	6%	6%	2%	3%	2%	3%	2%	2%	2%
Adj. Flow (vph)	40	332	144	103	302	7	114	1	113	7	3	41
Shared Lane Traffic (%)	40	332	144	103	309	0	114	114	0	7	44	0
Lane Group Flow (vph)	Prot	pm-ov	Prot	Prot	Prot	Prot	Perm	Perm	Perm	Perm	Perm	Perm
Turn Type	5	2	3	1	6	3	8	4	4	4	4	4
Protected Phases	2	2	2	2	2	2	2	2	2	2	2	2
Permitted Phases	5	2	3	1	6	3	8	4	4	4	4	4
Detector Phase	5	2	3	1	6	3	8	4	4	4	4	4
Switch Phase	7.0	10.0	7.0	7.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Initial (s)	14.0	17.0	14.0	14.0	17.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Minimum Split (s)	16.0	50.0	22.0	22.0	56.0	0.0	22.0	38.0	0.0	16.0	16.0	0.0
Total Split (%)	14.5%	45.5%	20.0%	20.0%	50.9%	0.0%	20.0%	34.5%	0.0%	14.5%	14.5%	0.0%
Maximum Green (s)	9.0	43.0	15.0	15.0	49.0	15.0	31.0	9.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	7.0	5.0	5.0	4.0	5.0	2.0	5.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	None	Min	None	None	Min	None	None	None	None	None	None	None
Recall Mode	11.1	22.5	42.8	13.5	28.4	13.6	21.1	11.3	11.3	11.3	11.3	11.3
Act Effc Green (s)	0.16	0.33	0.62	0.20	0.41	0.20	0.31	0.16	0.16	0.16	0.16	0.16
Actuated g/C Ratio	0.14	0.56	0.15	0.31	0.42	0.32	0.23	0.03	0.17	0.03	0.17	0.03
v/c Ratio	35.9	27.2	11.2	33.8	20.4	33.8	21.6	35.8	36.1	35.8	36.1	35.8
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	35.9	27.2	11.2	33.8	20.4	33.8	21.6	35.8	36.1	35.8	36.1	35.8
Total Delay	D	C	B	C	C	C	C	D	D	D	D	D
LOS	23.4	23.4	23.8	23.8	23.8	27.7	27.7	36.1	36.1	36.1	36.1	36.1
Approach Delay												

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4B (2020) Noon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			C			C			D		
Queue Length 50th (ft)	17	136	36	44	117	49	36	3	19	18	59	3
Queue Length 95th (ft)	54	256	76	106	213	115	91	18	59	18	59	3
Internal Link Dist (ft)	125	651	200	300	833	325	430	100	100	100	100	100
Turn Bay Length (ft)	333	1232	1018	497	1340	517	880	241	303	241	303	241
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.27	0.14	0.21	0.23	0.22	0.13	0.03	0.15	0.03	0.15	0.03

Intersection Summary

Area Type: Other
 Cycle Length: 110
 Actuated Cycle Length: 68.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.56
 Intersection Signal Delay: 24.9
 Intersection Capacity Utilization 46.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service A



Splits and Phases	e1	e2	e3	e4	e5	e6	e7	e8
Duration (s)	22	60	22	16	16	56	22	38

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson (N)

Build Alt 4B (2020) Noon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	323	84	13	305	65	19
Sign Control	Free	Free	Free	Slop	Slop	Slop
Grade (%)	-1%	0.90	0.90	0.90	0.90	0.90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	359	93	14	339	72	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)	913			913		
pX, platoon unblocked		0.86		0.86	0.86	
vC, conflicting volume		452		773	406	
vC1, stage 1 conf vol				406	368	
vC2, stage 2 conf vol				368	658	
vCu, unblocked vol			286	658	232	
IC, single (s)			4.2	6.5	6.3	
IC, 2 stage (s)				5.5		
IF (s)			2.3	3.6	3.4	
p0 queue free %			99	87	97	
cM capacity (veh/h)			1082	551	674	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	452	14	339	93		
Volume Left	0	14	0	72		
Volume Right	93	0	0	21		
cSH	1700	1082	1700	574		
Volume to Capacity	0.27	0.01	0.20	0.16		
Queue Length 95th (ft)	0	1	0	14		
Control Delay (s)	0.0	8.4	0.0	12.5		
Lane LOS	A	A	A	B		
Approach Delay (s)	0.0	0.3		12.5		
Approach LOS				B		
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			33.5%		ICU Level of Service	A
Analysis Period (min)			15			

Wendell Boulevard
4: Old Wilson (E) & Old Wilson (N)

Build Alt 4B (2020) Noon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	8	10	10	76	87	10
Sign Control	Stop	Free	Free	Free	Free	Free
Grade (%)	-1%	0.90	0.90	0%	-2%	0.90
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	11	11	84	97	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked			209	102	108	
vC, conflicting volume			209	102	108	
vC1, stage 1 conf vol			209	102	108	
vC2, stage 2 conf vol			6.5	6.3	4.2	
vCu, unblocked vol			6.5	6.3	4.2	
IC, single (s)			3.6	3.4	2.3	
IC, 2 stage (s)						
IF (s)			99	99	99	
p0 queue free %			750	924	1417	
cM capacity (veh/h)			750	924	1417	
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	96	108			
Volume Left	9	11	0			
Volume Right	11	0	11			
cSH	837	1417	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.4	0.9	0.0			

Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4B (2020) PM

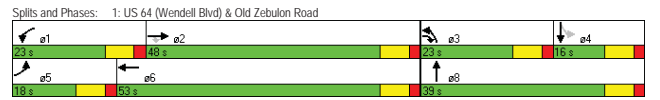
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	2	2	2	2	2	2	2	2	2	2	2	2
Volume (vph)	102	366	348	127	264	9	109	5	124	5	3	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	125	1%	200	300	0%	0	325	0	100	0%	0	0
Storage Length (ft)	1	1	1	1	0	1	1	0	1	0	1	0
Storage Lanes	100	100	100	100	100	100	100	100	100	100	100	100
Taper Length (ft)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lane Util. Factor	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850	0.850
Fit	0.950	1800	1530	0.950	1786	0	1770	1595	0	1770	1595	0
Fit Protected	1761	1800	1530	1703	1786	0	1770	1595	0	1770	1595	0
Satd. Flow (prot)	0.950	1800	1530	0.950	1786	0	1770	1595	0	1770	1595	0
Fit Permitted	1761	1800	1530	1703	1786	0	1770	1595	0	1770	1595	0
Satd. Flow (perm)	No	No	No	No	No	No	No	No	No	No	No	No
Right Turn on Red	30	30	30	35	35	35	35	35	35	35	35	25
Satd. Flow (RTOR)	731	731	731	913	913	913	913	913	913	913	913	539
Link Speed (mph)	16.6	16.6	16.6	17.8	17.8	17.8	17.8	17.8	17.8	17.8	17.8	14.7
Link Distance (ft)	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Travel Time (s)	2%	5%	5%	6%	6%	2%	3%	2%	3%	2%	2%	2%
Peak Hour Factor	113	407	387	141	293	10	121	6	138	6	3	70
Heavy Vehicles (%)	Shared Lane Traffic (%)											
Adj. Flow (vph)	113	407	387	141	303	0	121	144	0	6	73	0
Turn Type	Prot	pm-ov	Prot	Prot	Prot	Prot	Prot	Perm	Perm	Perm	Perm	Perm
Protected Phases	5	2	3	1	6	3	8	4	4	4	4	4
Permitted Phases	5	2	3	1	6	3	8	4	4	4	4	4
Detector Phase	5	2	3	1	6	3	8	4	4	4	4	4
Switch Phase	7.0	10.0	7.0	7.0	10.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Initial (s)	14.0	17.0	14.0	14.0	17.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Minimum Split (s)	18.0	48.0	23.0	23.0	53.0	0.0	23.0	39.0	0.0	16.0	16.0	0.0
Total Split (%)	16.4%	43.6%	20.9%	20.9%	48.2%	0.0%	20.9%	35.5%	0.0%	14.5%	14.5%	0.0%
Maximum Green (s)	11.0	41.0	16.0	16.0	46.0	16.0	32.0	0.0	9.0	9.0	9.0	9.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	0.0	-2.0	-2.0	0.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	7.0	5.0	5.0	4.0	5.0	5.0	2.0	5.0	5.0	2.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Vehicle Extension (s)	None	Min	None	None	Min	None	None	None	None	None	None	None
Recall Mode	12.2	26.6	43.6	14.3	33.6	13.7	25.2	10.9	10.9	10.9	10.9	10.9
Act Effct Green (s)	0.15	0.32	0.53	0.17	0.41	0.17	0.31	0.13	0.13	0.13	0.13	0.13
Actuated g/C Ratio	0.43	0.70	0.48	0.48	0.42	0.41	0.30	0.04	0.34	0.04	0.34	0.34
v/c Ratio	44.1	33.1	15.6	41.5	23.2	40.8	25.5	41.0	44.7	41.0	44.7	44.7
Control Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Queue Delay	44.1	33.1	15.6	41.5	23.2	40.8	25.5	41.0	44.7	41.0	44.7	44.7
Total Delay	D	C	B	D	C	D	C	D	D	D	D	D
LOS	27.0	27.0	29.0	29.0	29.0	32.5	32.5	44.4	44.4	44.4	44.4	44.4
Approach Delay	MAB											

Synchro 7 - Report
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Wendell Boulevard
1: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 4B (2020) PM

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS	C			C			C			D		
Queue Length 50th (ft)	56	193	131	70	130	60	55	3	36	17	95	17
Queue Length 95th (ft)	133	326	217	153	215	133	127	430	459	0.03	0.32	0.32
Internal Link Dist (ft)	125	651	200	300	833	325	325	100	100	0.03	0.32	0.32
Turn Bay Length (ft)	300	1016	916	403	1123	418	712	179	231	0.03	0.32	0.32
Base Capacity (vph)	0	0	0	0	0	0	0	0	0	0.03	0.32	0.32
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0.03	0.32	0.32
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0.03	0.32	0.32
Storage Cap Reductn	0.38	0.40	0.42	0.35	0.27	0.29	0.20	0.03	0.32	0.03	0.32	0.32
Reduced v/c Ratio	Intersection Summary											
Area Type:	Other											
Cycle Length:	110											
Actuated Cycle Length:	82.4											
Natural Cycle:	60											
Control Type:	Actuated-Uncoordinated											
Maximum v/c Ratio:	0.70											
Intersection Signal Delay:	29.2						Intersection LOS: C					
Intersection Capacity Utilization:	51.5%						ICU Level of Service A					
Analysis Period (min):	15											



Synchro 7 - Report
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Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson (N)

Build Alt 4B (2020) PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	2	2	2	2	2	2
Volume (veh/h)	415	80	11	354	46	14
Sign Control	Free	Free	Free	Slop	Slop	Slop
Grade	-1%	1%	1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	89	12	393	51	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)	913			913		
pX, platoon unblocked		0.81		0.81	0.81	
vC, conflicting volume		550		923	506	
vC1, stage 1 conf vol				418	506	
vC2, stage 2 conf vol				188	271	
vCu, unblocked vol		326		6.5	6.3	
IC, single (s)		4.2		5.5	6.3	
IC, 2 stage (s)				5.5		
IF (s)		2.3		3.6	3.4	
p0 queue free %		99		90	97	
cM capacity (veh/h)		980		493	600	
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	550	12	393	67		
Volume Left	0	12	0	51		
Volume Right	89	0	0	16		
cSH	1700	980	1700	514		
Volume to Capacity	0.32	0.01	0.23	0.13		
Queue Length 95th (ft)	0	1	0	11		
Control Delay (s)	0.0	8.7	0.0	13.0		
Lane LOS	A	A	A	B		
Approach Delay (s)	0.0	0.3		13.0		
Approach LOS	A	A	A	B		
Intersection Summary	Average Delay					
Average Delay	1.0			1.0		
Intersection Capacity Utilization	36.8%			ICU Level of Service A		
Analysis Period (min)	15					

Synchro 7 - Report
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Wendell Boulevard
4: Old Wilson (E) & Old Wilson (N)

Build Alt 4B (2020) PM

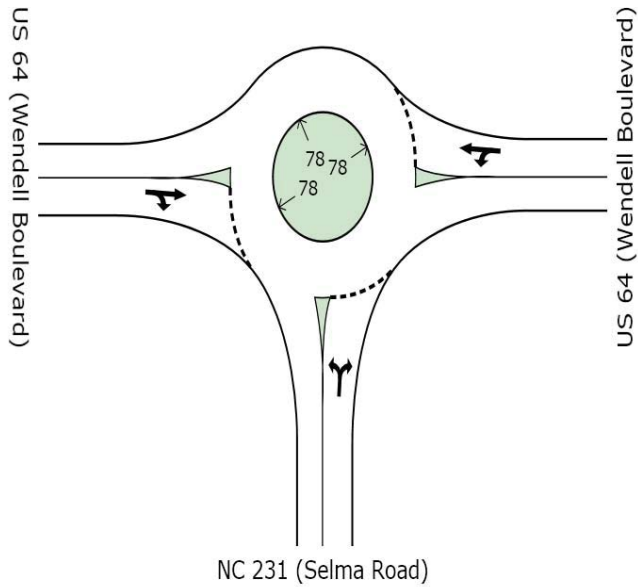
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	2	2	2	2	2	2
Volume (veh/h)	6	10	10	54	62	9
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	-1%	0%	0%	-2%	-2%	-2%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	11	11	60	91	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume		178	96	101		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol		178	96	101		
vCu, unblocked vol		6.5	6.3	4.2		
IC, single (s)		6.5	6.3	4.2		
IC, 2 stage (s)						
IF (s)		3.6	3.4	2.3		
p0 queue free %		99	99	99		
cM capacity (veh/h)		781	931	1425		
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	18	71	101			
Volume Left	7	11	0			
Volume Right	11	0	10			
cSH	868	1425	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.2	1.2	0.0			
Lane LOS	A	A	A			
Approach Delay (s)	9.2	1.2	0.0			
Approach LOS	A	A	A			
Intersection Summary	Average Delay					
Average Delay	1.3			1.3		
Intersection Capacity Utilization						

Build (2020) Alternative 5A

AM, Noon, PM Peaks

INTERSECTION SUMMARY

Site: Wendell Blvd and Old Zebulon Road - Alt 5A - AM Peak



Build (2020) Alternative 5A - AM Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1320 veh/h	1584 pers/h
Percent Heavy Vehicles	4.5 %	
Degree of Saturation	0.610	
Practical Spare Capacity	39.0 %	
Effective Intersection Capacity	2158 veh/h	
Control Delay (Total)	3.33 veh-h/h	3.99 pers-h/h
Control Delay (Average)	9.1 sec	9.1 sec
Control Delay (Worst Lane)	11.4 sec	
Control Delay (Worst Movement)	15.5 sec	15.5 sec
Geometric Delay (Average)	6.2 sec	
Stop-Line Delay (Average)	2.8 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	6.0 veh	
95% Back of Queue - Distance (Worst Lane)	157.1 ft	
Total Effective Stops	920 veh/h	1104 pers/h
Effective Stop Rate	0.70 per veh	0.70 per pers
Proportion Queued	0.56	0.56
Performance Index	27.0	27.0
Travel Distance (Total)	483.5 veh-mi/h	580.2 pers-mi/h
Travel Distance (Average)	1934 ft	1934 ft
Travel Time (Total)	17.8 veh-h/h	21.3 pers-h/h
Travel Time (Average)	48.5 sec	48.5 sec
Travel Speed	27.2 mph	27.2 mph
Cost (Total)	281.46 \$/h	281.46 \$/h
Fuel Consumption (Total)	23.4 gal/h	
Carbon Dioxide (Total)	221.8 kg/h	
Hydrocarbons (Total)	0.358 kg/h	
Carbon Monoxide (Total)	16.55 kg/h	
NOx (Total)	0.496 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
 LOS Method for individual vehicle movements and lanes: Delay (HCM).
 Roundabout LOS Method: Same as Signalised Intersections.
 Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	633,600 veh/yr	760,320 pers/yr
Delay	1,597 veh-h/yr	1,916 pers-h/yr
Effective Stops	441,617 veh/yr	529,941 pers/yr
Travel Distance	232,077 veh-mi/yr	278,493 pers-mi/yr
Travel Time	8,537 veh-h/yr	10,244 pers-h/yr
Cost	135,099 \$/yr	135,099 \$/yr
Fuel Consumption	11,229 gal/yr	
Carbon Dioxide	106,487 kg/yr	
Hydrocarbons	172 kg/yr	
Carbon Monoxide	7,944 kg/yr	
NOx	238 kg/yr	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Zebulon Road - Alt 5A - AM Peak

Build (2020) Alternative 5A - AM Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NC 231 (Selma Road)											
3L	L	379	3.0	0.567	12.8	LOS B	4.8	123.2	0.58	0.78	26.6
8R	R	157	3.0	0.568	7.9	LOS A	4.8	123.2	0.58	0.66	28.1
Approach		536	3.0	0.567	11.4	LOS B	4.8	123.2	0.58	0.74	27.0
East: US 64 (Wendell Boulevard)											
1L	L	79	6.0	0.612	15.5	LOS B	6.0	157.1	0.74	0.99	25.9
6T	T	382	6.0	0.610	9.3	LOS A	6.0	157.1	0.74	0.84	27.9
Approach		461	6.0	0.610	10.4	LOS B	6.0	157.1	0.74	0.87	27.5
West: US 64 (Wendell Boulevard)											
2T	T	240	5.0	0.293	3.1	LOS A	2.0	53.2	0.28	0.34	27.2
2R	R	83	5.0	0.293	4.5	LOS A	2.0	53.2	0.28	0.48	26.7
Approach		323	5.0	0.293	3.4	LOS A	2.0	53.2	0.28	0.38	27.0
All Vehicles		1320	4.5	0.610	9.1	LOS A	6.0	157.1	0.56	0.70	27.2

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
 Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
 Approach LOS values are based on the worst delay for any vehicle movement.
 Roundabout LOS Method: Same as Signalised Intersections.
 Roundabout Capacity Model: SIDRA Standard.

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 8000556, MARTINVALEXOU/BRYSON, SINGLE



Wendell Boulevard

Build Alt 5A (2020) AM

2: US 64 (Wendell Blvd) & Old Zebulon Road

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↔	↔
Volume (veh/h)	19	281	677	8	10	106
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%	-1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	312	752	9	11	118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	761				1111	757
vC1, stage 1 conf vol						
vC2, stage 2 conf vol	761				1111	757
vCu, unblocked vol	4.1				6.4	6.2
IC, single (s)						
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	97				95	71
cM capacity (veh/h)	838				225	408
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	21	312	761	129		
Volume Left	21	0	0	11		
Volume Right	0	0	9	118		
cSH	838	1700	1700	381		
Volume to Capacity	0.03	0.18	0.45	0.34		
Queue Length 95th (ft)	2	0	0	37		
Control Delay (s)	9.4	0.0	0.0	19.2		
Lane LOS	A			C		
Approach Delay (s)	0.6		0.0	19.2		
Approach LOS				C		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 5A (2020) AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	306	51	6	350	65	3
Sign Control	Free			Free	Stop	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	340	57	7	389	72	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			397		771	368
vC1, stage 1 conf vol					368	
vC2, stage 2 conf vol					402	
vCu, unblocked vol			397		771	368
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	99
cM capacity (veh/h)			1141		545	653
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	397	7	389	76		
Volume Left	0	7	0	72		
Volume Right	57	0	0	3		
cSH	1700	1141	1700	549		
Volume to Capacity	0.23	0.01	0.23	0.14		
Queue Length 95th (ft)	0	0	0	12		
Control Delay (s)	0.0	8.2	0.0	12.6		
Lane LOS	A	A		B		
Approach Delay (s)	0.0	0.1		12.6		
Approach LOS				B		
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization		29.7%		ICU Level of Service	A	
Analysis Period (min)		15				

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Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 5A (2020) AM

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	7	10	10	61	51	6
Sign Control	Free			Free	Free	
Grade	-1%			0%	-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	11	11	68	57	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	150	60	63			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	150	60	63			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	811	975	1472			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	19	79	63			
Volume Left	8	11	0			
Volume Right	11	0	7			
cSH	900	1472	1700			
Volume to Capacity	0.02	0.01	0.04			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.1	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	1.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		1.6				
Intersection Capacity Utilization		20.4%	ICU Level of Service	A		
Analysis Period (min)		15				

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INTERSECTION SUMMARY

Site: Wendell Blvd and Old Zebulon Road - Alt 5A - NOON Peak

Build (2020) Alternative 5A - NOON Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1126 veh/h	1351 pers/h
Percent Heavy Vehicles	5.0 %	
Degree of Saturation	0.443	
Practical Spare Capacity	91.9 %	
Effective Intersection Capacity	2541 veh/h	
Control Delay (Total)	1.92 veh-h/h	2.31 pers-h/h
Control Delay (Average)	6.1 sec	6.1 sec
Control Delay (Worst Lane)	10.2 sec	
Control Delay (Worst Movement)	12.7 sec	12.7 sec
Geometric Delay (Average)	5.1 sec	
Stop-Lane Delay (Average)	1.1 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	3.3 veh	
95% Back of Queue - Distance (Worst Lane)	86.9 ft	
Total Effective Stops	588 veh/h	706 pers/h
Effective Stop Rate	0.52 per veh	0.52 per pers
Proportion Queued	0.38	0.38
Performance Index	20.1	20.1
Travel Distance (Total)	405.4 veh-mi/h	486.5 pers-mi/h
Travel Distance (Average)	1902 ft	1902 ft
Travel Time (Total)	14.6 veh-h/h	17.5 pers-h/h
Travel Time (Average)	46.7 sec	46.7 sec
Travel Speed	27.8 mph	27.8 mph
Cost (Total)	232.99 \$/h	232.99 \$/h
Fuel Consumption (Total)	19.6 gal/h	
Carbon Dioxide (Total)	185.9 kg/h	
Hydrocarbons (Total)	0.280 kg/h	
Carbon Monoxide (Total)	12.97 kg/h	
NOx (Total)	0.415 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
LOS Method for individual vehicle movements and lanes: Delay (HCM).
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	540,267 veh-ly	648,320 pers-ly
Delay	222 veh-h/ly	1,107 pers-h/ly
Effective Stops	282,478 veh-ly	338,974 pers-ly
Travel Distance	194,609 veh-mi-ly	233,530 pers-mi-ly
Travel Time	7,008 veh-h/ly	8,410 pers-h/ly
Cost	111,835 \$/y	111,835 \$/y
Fuel Consumption	9,409 gal/y	
Carbon Dioxide	89,224 kg/y	
Hydrocarbons	134 kg/y	
Carbon Monoxide	6,227 kg/y	
NOx	199 kg/y	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Zebulon Road - Alt 5A - NOON Peak

Build (2020) Alternative 5A - NOON Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow	HV %	Deg. Satn	Average Delay	Level of Service	95% Back of Queue	Prop. Queued	Effective Stop Rate	Average Speed		
South: NC 231 (Selma Road)												
3L	L	114	3.0	0.278	12.7	LOS B	1.7	43.5	0.52	0.80	26.7	
8R	R	113	3.0	0.278	7.8	LOS A	1.7	43.5	0.52	0.66	28.5	
Approach		228	3.0	0.277	10.2	LOS B	1.7	43.5	0.52	0.73	27.5	
East: US 64 (Wendell Boulevard)												
1L	L	103	6.0	0.390	11.3	LOS B	2.8	74.3	0.35	0.80	27.6	
6T	T	308	6.0	0.390	5.1	LOS A	2.8	74.3	0.35	0.45	29.7	
Approach		411	6.0	0.390	6.7	LOS B	2.8	74.3	0.35	0.54	29.1	
West: US 64 (Wendell Boulevard)												
2T	T	339	5.0	0.443	3.4	LOS A	3.3	86.9	0.35	0.38	26.9	
2R	R	148	5.0	0.442	4.8	LOS A	3.3	86.9	0.35	0.50	26.5	
Approach		487	5.0	0.443	3.8	LOS A	3.3	86.9	0.35	0.41	26.8	
All Vehicles		1126	5.0	0.443	6.1	LOS A	3.3	86.9	0.38	0.52	27.8	

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

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Wendell Boulevard
2: US 64 (Wendell Blvd) & Old Zebulon Road

Build Alt 5A (2020) Noon

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↕	↔	↕	↔
Volume (veh/h)	36	429	374	6	9	37
Sign Control	Free	Free	Free	Stop	Stop	Free
Grade	1%	-1%	1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	40	477	416	7	10	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		None	None			
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	422				976	419
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422				976	419
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	96				96	94
cM capacity (veh/h)	1121				269	634
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	40	477	422	51		
Volume Left	40	0	0	10		
Volume Right	0	0	7	41		
cSH	1121	1700	1700	501		
Volume to Capacity	0.04	0.28	0.25	0.10		
Queue Length 95th (ft)	3	0	0	8		
Control Delay (s)	8.3	0.0	0.0	13.0		
Lane LOS	A			B		
Approach Delay (s)	0.6		0.0	13.0		
Approach LOS				B		
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization		36.7%		ICU Level of Service	A	
Analysis Period (min)		15				

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Wendell Boulevard
3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Build Alt 5A (2020) Noon

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Volume (veh/h)	323	84	13	305	65	19
Sign Control	Free	Free	Free	Free	Stop	Free
Grade	-1%	1%	1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	359	93	14	339	72	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			452		773	406
vC1, stage 1 conf vol					406	
vC2, stage 2 conf vol					368	
vCu, unblocked vol			452		773	406
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	97
cM capacity (veh/h)			1088		541	622
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	452	14	339	93		
Volume Left	0	14	0	72		
Volume Right	93	0	0	21		
cSH	1700	1088	1700	558		
Volume to Capacity	0.27	0.01	0.20	0.17		
Queue Length 95th (ft)	0	1	0	15		
Control Delay (s)	0.0	8.4	0.0	12.7		
Lane LOS		A		B		
Approach Delay (s)	0.0	0.3		12.7		
Approach LOS				B		
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization		33.5%		ICU Level of Service	A	
Analysis Period (min)		15				

MAB Synchro 7 - Report
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Wendell Boulevard
4: Old Wilson Road (E) & Old Wilson Rd (N)

Build Alt 5A (2020) Noon

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Volume (veh/h)	8	10	10	76	67	10
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	-1%	0%	0%	-2%	0%	0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	11	11	84	97	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				None	None	
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	209	102	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209	102	108			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	750	924	1417			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	96	108			
Volume Left	9	11	0			
Volume Right	11	0	11			
cSH	837	1417	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.4	0.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.4	0.9	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization		21.2%		ICU Level of Service	A	
Analysis Period (min)		15				

MAB Synchro 7 - Report
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INTERSECTION SUMMARY

Site: Wendell Blvd and Old Zebulon Road - Alt 5A - PM Peak

Build (2020) Alternative 5A - PM Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1511 veh/h	1813 pers/h
Percent Heavy Vehicles	4.9 %	
Degree of Saturation	0.746	
Practical Spare Capacity	14.0 %	
Effective Intersection Capacity	2026 veh/h	
Control Delay (Total)	2.89 veh-h/h	3.47 pers-h/h
Control Delay (Average)	6.9 sec	6.9 sec
Control Delay (Worst Lane)	10.8 sec	
Control Delay (Worst Movement)	13.4 sec	13.4 sec
Geometric Delay (Average)	5.0 sec	
Stop-Line Delay (Average)	1.9 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	9.4 veh	
95% Back of Queue - Distance (Worst Lane)	244.4 ft	
Total Effective Stops	625 veh/h	1109 pers/h
Effective Stop Rate	0.61 per veh	0.61 per pers
Proportion Queued	0.58	0.58
Performance Index	29.9	29.9
Travel Distance (Total)	541.4 veh-mi/h	649.7 pers-mi/h
Travel Distance (Average)	1892 ft	1892 ft
Travel Time (Total)	20.2 veh-h/h	24.2 pers-h/h
Travel Time (Average)	48.1 sec	48.1 sec
Travel Speed	26.8 mph	26.8 mph
Cost (Total)	322.67 \$/h	322.67 \$/h
Fuel Consumption (Total)	27.2 gal/h	
Carbon Dioxide (Total)	258.0 kg/h	
Hydrocarbons (Total)	0.389 kg/h	
Carbon Monoxide (Total)	18.47 kg/h	
NOx (Total)	0.587 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
LOS Method for individual vehicle movements and lanes: Delay (HCM).
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	725,333 veh/y	870,400 pers/y
Delay	1,388 veh-h/y	1,665 pers-h/y
Effective Stops	443,766 veh/y	532,522 pers/y
Travel Distance	259,884 veh-mi/y	311,861 pers-mi/y
Travel Time	9,689 veh-h/y	11,627 pers-h/y
Cost	154,882 \$/y	154,882 \$/y
Fuel Consumption	13,058 gal/y	
Carbon Dioxide	123,522 kg/y	
Hydrocarbons	187 kg/y	
Carbon Monoxide	8,864 kg/y	
NOx	282 kg/y	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Zebulon Road - Alt 5A - PM Peak

Build (2020) Alternative 5A - PM Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NC 231 (Selma Road)											
3L	L	127	3.0	0.355	13.4	LOS B	2.4	62.6	0.63	0.84	26.4
8R	R	138	3.0	0.355	8.5	LOS A	2.4	62.6	0.63	0.74	28.1
Approach											
		264	3.0	0.355	10.8	LOS B	2.4	62.6	0.63	0.79	27.2
East: US 64 (Wendell Boulevard)											
1L	L	141	6.0	0.429	11.4	LOS B	3.3	87.0	0.40	0.78	27.5
6T	T	303	6.0	0.428	5.2	LOS A	3.3	87.0	0.40	0.47	29.5
Approach											
		444	6.0	0.429	7.2	LOS B	3.3	87.0	0.40	0.57	28.8
West: US 64 (Wendell Boulevard)											
2T	T	412	5.0	0.745	4.7	LOS A	9.4	244.4	0.66	0.55	25.7
2R	R	390	5.0	0.746	6.1	LOS A	9.4	244.4	0.66	0.61	25.7
Approach											
		802	5.0	0.746	5.4	LOS A	9.4	244.4	0.66	0.58	25.7
All Vehicles											
		1511	4.9	0.746	6.9	LOS A	9.4	244.4	0.58	0.61	26.8

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
 Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
 Approach LOS values are based on the worst delay for any vehicle movement.
 Roundabout LOS Method: Same as Signalised Intersections.
 Roundabout Capacity Model: SIDRA Standard.

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 8000656, MARTINVALEXIOU/BRYSON, SINGLE



Wendell Boulevard

Build Alt 5B (2020) PM

2: US 64 (Wendell Blvd) & Old Zebulon Road

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↕	↔	↔	↕	↕
Volume (veh/h)	102	714	373	14	8	63
Sign Control	Free	Free	Free	Stop	Stop	Stop
Grade	1%	-1%	1%	1%	1%	1%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	793	414	16	9	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	430				1442	422
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	430				1442	422
IC, single (s)	4.1				6.4	6.2
IC, 2 stage (s)						
IF (s)	2.2				3.5	3.3
p0 queue free %	90				93	89
cM capacity (veh/h)	1114				131	631
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	113	793	430	79		
Volume Left	113	0	0	9		
Volume Right	0	0	16	70		
cSH	1114	1700	1700	441		
Volume to Capacity	0.10	0.47	0.25	0.18		
Queue Length 95th (ft)	8	0	0	16		
Control Delay (s)	8.6	0.0	0.0	14.9		
Lane LOS	A			B		
Approach Delay (s)	1.1		0.0	14.9		
Approach LOS				B		
Intersection Summary						
Average Delay			1.5			
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			

MAB

Synchro 7 - Report
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Wendell Boulevard

Build Alt 5B (2020) PM

3: US 64 (Wendell Blvd) & Old Wilson Rd (N)

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Volume (veh/h)	415	80	11	354	46	14
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	-1%	0%	0%	1%	1%	0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	89	12	393	51	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			550		923	506
vC1, stage 1 conf vol					506	
vC2, stage 2 conf vol					418	
vCu, unblocked vol			550		923	506
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		89	97
cM capacity (veh/h)			1000		486	545
Direction, Lane #	EB 1	WB 1	WB 2	NB 1		
Volume Total	550	12	393	67		
Volume Left	0	12	0	51		
Volume Right	89	0	0	16		
cSH	1700	1000	1700	499		
Volume to Capacity	0.32	0.01	0.23	0.13		
Queue Length 95th (ft)	0	1	0	11		
Control Delay (s)	0.0	8.6	0.0	13.3		
Lane LOS	A			B		
Approach Delay (s)	0.0	0.3		13.3		
Approach LOS				B		
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			36.8%		ICU Level of Service	A
Analysis Period (min)			15			

MAB

Synchro 7 - Report
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Wendell Boulevard

Build Alt 5B (2020) PM

4: Old Wilson Road (E) & Old Wilson Rd (N)

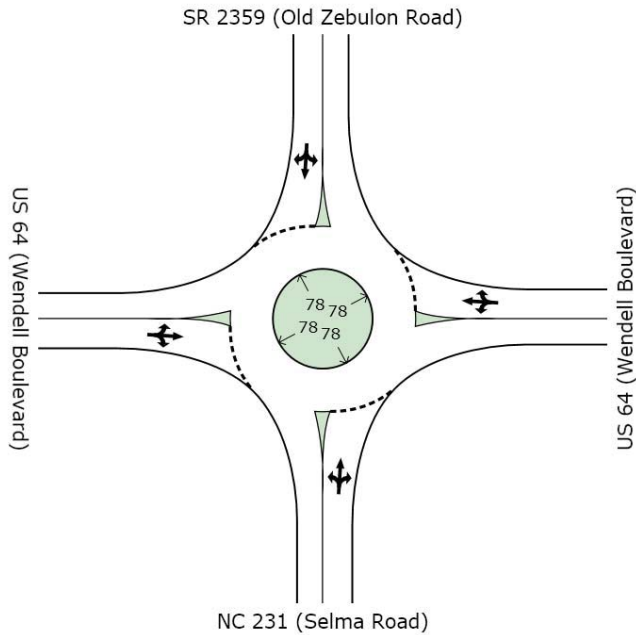
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↕	↕	↕	↕	↕	↕
Volume (veh/h)	5	10	10	55	82	9
Sign Control	Stop	Free	Free	Free	Free	Free
Grade	-1%	0%	0%	-2%	0%	0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	11	11	61	91	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None	None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	179	96	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179	96	101			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	779	931	1425			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	17	72	101			
Volume Left	6	11	0			
Volume Right	11	0	10			
cSH	874	1425	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	1	1	0			
Control Delay (s)	9.2	1.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	1.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			20.1%		ICU Level of Service	A
Analysis Period (min)			15			

MAB

Synchro 7 - Report
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Build (2020) Alternative 5B

AM, Noon, PM Peaks



INTERSECTION SUMMARY

Site: Wendell Blvd and Old Zebulon Road AM Peak

Build (2020) Alternative 5B - AM Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1256 veh/h	1507 pers/h
Percent Heavy Vehicles	4.2 %	
Degree of Saturation	0.589	
Practical Spare Capacity	42.1 %	
Effective Intersection Capacity	2099 veh/h	
Control Delay (Total)	3.16 veh-h/h	3.79 pers-h/h
Control Delay (Average)	9.1 sec	9.1 sec
Control Delay (Worst Lane)	10.2 sec	
Control Delay (Worst Movement)	15.3 sec	15.3 sec
Geometric Delay (Average)	6.4 sec	
Stop-Line Delay (Average)	2.6 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	5.4 veh	
95% Back of Queue - Distance (Worst Lane)	141.2 ft	
Total Effective Stops	873 veh/h	1047 pers/h
Effective Stop Rate	0.70 per veh	0.70 per pers
Proportion Queued	0.45	0.45
Performance Index	25.5	25.5
Travel Distance (Total)	459.4 veh-mi/h	551.3 pers-mi/h
Travel Distance (Average)	1932 ft	1932 ft
Travel Time (Total)	17.1 veh-h/h	20.5 pers-h/h
Travel Time (Average)	49.0 sec	49.0 sec
Travel Speed	26.9 mph	26.9 mph
Cost (Total)	267.18 \$/h	267.18 \$/h
Fuel Consumption (Total)	21.8 gal/h	
Carbon Dioxide (Total)	207.1 kg/h	
Hydrocarbons (Total)	0.339 kg/h	
Carbon Monoxide (Total)	15.38 kg/h	
NOx (Total)	0.456 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).

LOS Method for individual vehicle movements and lanes: Delay (HCM).

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	602,667 veh/ly	723,200 pers/ly
Delay	1,517 veh-h/ly	1,821 pers-h/ly
Effective Stops	418,975 veh/ly	502,770 pers/ly
Travel Distance	220,536 veh-mi/ly	264,643 pers-mi/ly
Travel Time	8,206 veh-h/ly	9,847 pers-h/ly
Cost	128,245 \$/y	128,245 \$/y
Fuel Consumption	10,484 gal/y	
Carbon Dioxide	99,386 kg/y	
Hydrocarbons	163 kg/y	
Carbon Monoxide	7,382 kg/y	
NOx	219 kg/y	

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MOVEMENT SUMMARY

Site: Wendell Blvd and Old Zebulon Road AM Peak

Build (2020) Alternative 5B - AM Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NC 231 (Selma Road)											
3L	L	378	3.0	0.427	10.8	LOS B	3.2	80.9	0.22	0.67	27.3
8T	T	1	2.0	0.370	4.5	LOS A	3.2	80.9	0.22	0.36	30.2
8R	R	157	3.0	0.427	5.9	LOS A	3.2	80.9	0.22	0.46	29.6
Approach		536	3.0	0.427	9.3	LOS B	3.2	80.9	0.22	0.61	27.9
East: US 64 (Wendell Boulevard)											
1L	L	79	6.0	0.589	15.3	LOS B	5.4	141.2	0.69	0.98	25.9
6T	T	374	6.0	0.589	9.1	LOS A	5.4	141.2	0.69	0.81	28.0
6R	R	8	2.0	0.588	10.3	LOS B	5.4	141.2	0.69	0.85	27.7
Approach		461	5.9	0.589	10.2	LOS B	5.4	141.2	0.69	0.84	27.6
North: SR 2359 (Old Zebulon Road)											
7L	L	6	2.0	0.253	13.0	LOS B	1.7	43.2	0.77	0.94	20.3
4T	T	6	2.0	0.253	7.5	LOS A	1.7	43.2	0.77	0.78	21.2
4R	R	118	2.0	0.251	8.9	LOS A	1.7	43.2	0.77	0.83	21.1
Approach		129	2.0	0.251	9.1	LOS B	1.7	43.2	0.77	0.83	21.1
West: US 64 (Wendell Boulevard)											
5L	L	1	2.0	0.123	9.0	LOS A	0.7	19.1	0.25	0.78	25.1
2T	T	46	5.0	0.129	3.1	LOS A	0.7	19.1	0.25	0.32	27.2
2R	R	83	5.0	0.129	4.5	LOS A	0.7	19.1	0.25	0.45	26.7
Approach		130	5.0	0.129	4.1	LOS A	0.7	19.1	0.25	0.41	26.8
All Vehicles		1256	4.2	0.589	9.1	LOS A	5.4	141.2	0.45	0.70	26.9

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

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600655, MARTINVALEJO@BERRYSON, SINGLE



Wendell Boulevard

Build Alt 5B (2020) AM

3: US 64 (Wendell Blvd) & Old Wilson (N)

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	↔	↔	↔	↔	↔	↔
Volume (veh/h)	306	51	6	350	65	3
Sign Control	Free	Free	Free	Free	Stop	Stop
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	340	57	7	389	72	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			397		771	368
vC1, stage 1 conf vol					368	
vC2, stage 2 conf vol					402	
vCu, unblocked vol			397		771	368
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	99
cM capacity (veh/h)			1141		545	653
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	397	7	389	76		
Volume Left	0	7	0	72		
Volume Right	57	0	0	3		
cSH	1700	1141	1700	549		
Volume to Capacity	0.23	0.01	0.23	0.14		
Queue Length 95th (ft)	0	0	0	12		
Control Delay (s)	0.0	8.2	0.0	12.6		
Lane LOS		A		B		
Approach Delay (s)	0.0	0.1		12.6		
Approach LOS				B		
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			29.7%		ICU Level of Service	A
Analysis Period (min)			15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	7	10	10	61	51	6
Volume (veh/h)	Stop			Free	Free	
Sign Control	-1%			0%	-2%	
Grade	0.90	0.90	0.90	0.90	0.90	0.90
Peak Hour Factor	8	11	11	68	57	7
Hourly flow rate (vph)						
Pedestrians				None	None	
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked	150	60	63			
vC, conflicting volume						
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	150	60	63			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	811	975	1472			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	19	79	63			
Volume Left	8	11	0			
Volume Right	11	0	7			
cSH	900	1472	1700			
Volume to Capacity	0.02	0.01	0.04			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.1	1.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	1.1	0.0			
Approach LOS	A					

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

INTERSECTION SUMMARY

Build (2020) Alternative 5B - NOON
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1208 veh/h	1448 pers/h
Percent Heavy Vehicles	4.7 %	
Degree of Saturation	0.475	
Practical Spare Capacity	78.5 %	
Effective Intersection Capacity	2536 veh/h	
Control Delay (Total)	2.17 veh-h/h	2.61 pers-h/h
Control Delay (Average)	6.5 sec	6.5 sec
Control Delay (Worst Lane)	10.5 sec	
Control Delay (Worst Movement)	13.0 sec	13.0 sec
Geometric Delay (Average)	5.1 sec	
Stop-Line Delay (Average)	1.4 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	3.7 veh	
95% Back of Queue - Distance (Worst Lane)	97.0 ft	
Total Effective Stops	673 veh/h	807 pers/h
Effective Stop Rate	0.56 per veh	0.56 per pers
Proportion Queued	0.43	0.43
Performance Index	22.3	22.3
Travel Distance (Total)	434.4 veh-mi/h	521.3 pers-mi/h
Travel Distance (Average)	1899 ft	1899 ft
Travel Time (Total)	15.9 veh-h/h	19.1 pers-h/h
Travel Time (Average)	47.5 sec	47.5 sec
Travel Speed	27.3 mph	27.3 mph
Cost (Total)	252.69 \$/h	252.69 \$/h
Fuel Consumption (Total)	21.1 gal/h	
Carbon Dioxide (Total)	200.0 kg/h	
Hydrocarbons (Total)	0.302 kg/h	
Carbon Monoxide (Total)	13.98 kg/h	
NOx (Total)	0.447 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
LOS Method for individual vehicle movements and lanes: Delay (HCM).
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	579,733 veh/y	695,680 pers/y
Delay	1,043 veh-h/y	1,251 pers-h/y
Effective Stops	322,813 veh/y	387,376 pers/y
Travel Distance	208,509 veh-mi/y	250,211 pers-mi/y
Travel Time	7,649 veh-h/y	9,178 pers-h/y
Cost	121,291 \$/y	121,291 \$/y
Fuel Consumption	10,124 gal/y	
Carbon Dioxide	95,987 kg/y	
Hydrocarbons	1.45 kg/y	
Carbon Monoxide	6,709 kg/y	
NOx	214 kg/y	



MOVEMENT SUMMARY

Build (2020) Alternative 5B - NOON
Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow v/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph	
South: NC 231 (Selma Road)												
3L	L	114	3.0	0.289	13.0	LOS B	1.8	46.1	0.55	0.81	26.5	
8T	T	1	2.0	0.278	6.7	LOS A	1.8	46.1	0.55	0.62	28.5	
8R	R	113	3.0	0.289	8.1	LOS A	1.8	46.1	0.55	0.68	28.3	
Approach		229	3.0	0.289	10.5	LOS B	1.8	46.1	0.55	0.75	27.4	
East: US 64 (Wendell Boulevard)												
1L	L	103	6.0	0.413	11.6	LOS B	3.0	77.5	0.41	0.81	27.5	
6T	T	302	6.0	0.413	5.4	LOS A	3.0	77.5	0.41	0.49	29.5	
6R	R	6	2.0	0.427	6.7	LOS A	3.0	77.5	0.41	0.58	29.2	
Approach		411	5.9	0.413	7.0	LOS B	3.0	77.5	0.41	0.58	28.9	
North: SR 2359 (Old Zebulon Road)												
7L	L	7	2.0	0.072	9.3	LOS A	0.4	10.2	0.55	0.78	21.4	
4T	T	3	2.0	0.071	3.8	LOS A	0.4	10.2	0.55	0.48	22.6	
4R	R	41	2.0	0.072	5.3	LOS A	0.4	10.2	0.55	0.57	22.5	
Approach		51	2.0	0.072	5.7	LOS A	0.4	10.2	0.55	0.59	22.4	
West: US 64 (Wendell Boulevard)												
5L	L	40	2.0	0.476	9.4	LOS A	3.7	97.0	0.38	0.80	25.1	
2T	T	332	5.0	0.475	3.5	LOS A	3.7	97.0	0.38	0.39	26.7	
2R	R	144	5.0	0.475	4.9	LOS A	3.7	97.0	0.38	0.51	26.4	
Approach		517	4.8	0.475	4.3	LOS A	3.7	97.0	0.38	0.45	26.5	
All Vehicles		1208	4.7	0.475	6.5	LOS A	3.7	97.0	0.43	0.56	27.3	

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.



Wendell Boulevard

3: US 64 (Wendell Blvd) & Old Wilson (N)

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	7	10	10	61	51	6
Volume (veh/h)	323	84	13	305	65	19
Sign Control	Free			Free	Stop	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	359	93	14	339	72	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWTL			TWTL		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			452		773	406
vC1, stage 1 conf vol					406	
vC2, stage 2 conf vol					368	
vCu, unblocked vol			452		773	406
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		87	97
cM capacity (veh/h)			1088		541	622
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	452	14	339	93		
Volume Left	0	14	0	72		
Volume Right	93	0	0	21		
cSH	1700	1088	1700	558		
Volume to Capacity	0.27	0.01	0.20	0.17		
Queue Length 95th (ft)	0	1	0	15		
Control Delay (s)	0.0	8.4	0.0	12.7		
Lane LOS	A	A	B	B		
Approach Delay (s)	0.0	0.3		12.7		
Approach LOS				B		

Intersection Summary			
Average Delay		1.5	
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	8	10	10	76	87	10
Volume (veh/h)	8	10	10	76	87	10
Sign Control	Stop			Free	Free	
Grade	-1%			0%	-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	11	11	84	97	11
Pedestrians						
Lane Width (ft)				None	None	
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	209	102	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	209	102	108			
IC, single (s)	6.5	6.3	4.2			
IC, 2 stage (s)						
IF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	750	924	1417			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	96	108			
Volume Left	9	11	0			
Volume Right	11	0	11			
cSH	837	1417	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.4	0.9	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.4	0.9	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization		21.2%		ICU Level of Service		A
Analysis Period (min)		15				

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Build (2020) Alternative 5B - PM
Roundabout

Intersection Performance - Hourly Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	1694 veh/h	2033 pers/h
Percent Heavy Vehicles	4.6 %	
Degree of Saturation	0.846	
Practical Spare Capacity	0.5 %	
Effective Intersection Capacity	2003 veh/h	
Control Delay (Total)	4.10 veh-h/h	4.92 pers-h/h
Control Delay (Average)	8.7 sec	8.7 sec
Control Delay (Worst Lane)	11.9 sec	
Control Delay (Worst Movement)	14.6 sec	14.6 sec
Geometric Delay (Average)	5.1 sec	
Stop-Line Delay (Average)	3.6 sec	
Level of Service (Aver. Int. Delay)	LOS A	
Level of Service (Worst Movement)	LOS B	
Level of Service (Worst Lane)	LOS B	
95% Back of Queue - Vehicles (Worst Lane)	15.5 veh	
95% Back of Queue - Distance (Worst Lane)	402.2 ft	
Total Effective Stops	1231 veh-h/h	1477 pers/h
Effective Stop Rate	0.73 per veh	0.73 per pers
Proportion Queued	0.75	0.75
Performance Index	38.0	38.0
Travel Distance (Total)	606.6 veh-mi/h	728.0 pers-mi/h
Travel Distance (Average)	1890 ft	1890 ft
Travel Time (Total)	23.5 veh-h/h	28.2 pers-h/h
Travel Time (Average)	49.3 sec	49.3 sec
Travel Speed	25.8 mph	25.8 mph
Cost (Total)	372.83 \$/h	372.83 \$/h
Fuel Consumption (Total)	31.1 gal/h	
Carbon Dioxide (Total)	285.0 kg/h	
Hydrocarbons (Total)	0.449 kg/h	
Carbon Monoxide (Total)	21.47 kg/h	
NOx (Total)	0.676 kg/h	

LOS (Aver. Int. Delay) for Vehicles is based on average delay for all vehicle movements. LOS Method: Delay (HCM).
LOS Method for individual vehicle movements and lanes: Delay (HCM).
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

Intersection Performance - Annual Values		
Performance Measure	Vehicles	Persons
Demand Flows (Total)	813,333 veh/yr	976,000 pers/yr
Delay	1,370 veh-h/yr	2,364 pers-h/yr
Effective Stops	590,927 veh/yr	709,113 pers/yr
Travel Distance	291,187 veh-mi/yr	349,425 pers-mi/yr
Travel Time	11,280 veh-h/yr	13,536 pers-h/yr
Cost	178,960 \$/yr	178,960 \$/yr
Fuel Consumption	14,935 gal/yr	
Carbon Dioxide	141,596 kg/yr	
Hydrocarbons	216 kg/yr	
Carbon Monoxide	10,305 kg/yr	
NOx	324 kg/yr	

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MOVEMENT SUMMARY

Build (2020) Alternative 5B - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow v/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: NC 231 (Selma Road)											
3L	L	121	3.0	0.411	14.6	LOS B	3.1	80.2	0.74	0.92	25.8
8T	T	6	2.0	0.397	8.4	LOS A	3.1	80.2	0.74	0.80	27.6
8R	R	138	3.0	0.411	9.7	LOS A	3.1	80.2	0.74	0.84	27.6
Approach		264	3.0	0.411	11.9	LOS B	3.1	80.2	0.74	0.88	26.7
East: US 64 (Wendell Boulevard)											
1L	L	141	6.0	0.495	12.5	LOS B	3.8	98.3	0.55	0.83	27.1
6T	T	293	6.0	0.495	6.3	LOS A	3.8	98.3	0.55	0.59	28.8
6R	R	10	2.0	0.500	7.5	LOS A	3.8	98.3	0.55	0.66	28.7
Approach		444	5.9	0.494	8.3	LOS B	3.8	98.3	0.55	0.67	28.2
North: SR 2359 (Old Zebulun Road)											
7L	L	6	2.0	0.116	9.7	LOS A	0.7	17.6	0.60	0.82	21.3
4T	T	3	2.0	0.115	4.2	LOS A	0.7	17.6	0.60	0.55	22.4
4R	R	70	2.0	0.116	5.7	LOS A	0.7	17.6	0.60	0.63	22.4
Approach		79	2.0	0.116	5.9	LOS A	0.7	17.6	0.60	0.64	22.3
West: US 64 (Wendell Boulevard)											
5L	L	113	2.0	0.846	12.8	LOS B	15.5	402.2	0.86	0.78	23.9
2T	T	407	5.0	0.845	6.9	LOS A	15.5	402.2	0.86	0.70	24.8
2R	R	387	5.0	0.846	8.3	LOS A	15.5	402.2	0.86	0.72	25.0
Approach		907	4.6	0.846	8.2	LOS B	15.5	402.2	0.86	0.72	24.8
All Vehicles		1694	4.6	0.846	8.7	LOS A	15.5	402.2	0.75	0.73	25.8

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).
Approach LOS values are based on the worst delay for any vehicle movement.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

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Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations	8	10	10	76	87	10
Volume (veh/h)	415	80	11	354	46	14
Sign Control	Free			Free	Stop	
Grade	-1%			1%	1%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	89	12	393	51	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLT			TWLT		
Median storage (veh)	2			2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			550		923	506
vC1, stage 1 conf vol					506	
vC2, stage 2 conf vol					418	
vCu, unblocked vol			550		923	506
IC, single (s)			4.2		6.5	6.3
IC, 2 stage (s)					5.5	
IF (s)			2.3		3.6	3.4
p0 queue free %			99		89	97
cM capacity (veh/h)			1000		486	545
Direction, Lane #	EB 1	WB 1	WB 2	NW 1		
Volume Total	550	12	393	67		
Volume Left	0	12	0	51		
Volume Right	89	0	0	16		
cSH	1700	1000	1700	499		
Volume to Capacity	0.32	0.01	0.23	0.13		
Queue Length 95th (ft)	0	1	0	11		
Control Delay (s)	0.0	8.6	0.0	13.3		
Lane LOS	A			B		
Approach Delay (s)	0.0	0.3		13.3		
Approach LOS				B		
Intersection Summary						
Average Delay				1.0		
Intersection Capacity Utilization		36.8%			ICU Level of Service	A
Analysis Period (min)		15				

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4: Old Wilson (E) & Old Wilson (N)

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	6	10	10	54	82	9
Volume (veh/h)	6	10	10	54	82	9
Sign Control	Stop			Free	Free	
Grade	-1%			0%	-2%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	11	11	60	91	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)				None	None	
Median type						
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	178	96	101			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	178	96	101			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	99	99	99			
cM capacity (veh/h)	781	931	1425			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	18	71	101			
Volume Left	7	11	0			
Volume Right	11	0	10			
cSH	868	1425	1700			
Volume to Capacity	0.02	0.01	0.06			
Queue Length 95th (ft)	2	1	0			
Control Delay (s)	9.2	1.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	1.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization		20.1%		ICU Level of Service		A
Analysis Period (min)		15				

APPENDIX D:

Acronyms and Definitions

Acronyms and Definitions

AADT – Annual Average Daily Traffic; the volume for all lanes in both directions passing a point on the highway system. It represents the average of all days during the year with typical traffic conditions. An AADT estimate is generated using procedures that comply with the standards specified in the Traffic Monitoring Guide published by the Federal Highway Administration.

CAMPO – Capital Area Metropolitan Planning Organization; regional planning organization that incorporates Franklin, Granville, Harnett, Johnston and Wake Counties.

DCHC MPO – Durham-Chapel Hill-Carrboro Metropolitan Planning Organization; regional planning organization that incorporates Durham, Orange and Chatham Counties.

LOS – Level of Service; standard measure used to determine the effectiveness of elements of transportation infrastructure

LRTP – Long Range Transportation Plan; plan developed by the regional metropolitan planning organization that identifies and prioritizes transportation infrastructure improvement projects on a long term scale, typically 20-25 years into the future.

mph – miles per hour; measure of speed for vehicles along a roadway.

MPO – Metropolitan Planning Organization; the designated local decision-making body that is responsible for carrying out the metropolitan transportation planning process, which includes transportation planning for the designated planning area.

NCDOT – North Carolina Department of Transportation; agency responsible for building, repairing, and operating highways, bridges, and other modes of transportation in the state of North Carolina.

ROW – Right-of-Way; land that is granted, through an easement or other mechanism, for transportation purposes, such as for a roadway realignment, improvement, or new facility. A right-of-way is reserved for the purposes of maintenance or expansion of existing services.

SR – Secondary Road; smaller neighborhood and rural roads that are owned and maintained by NCDOT.

TRM – Triangle Regional Model; travel demand model used to project future year traffic volumes in the urban planning areas for the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) and Capital Area Metropolitan Planning Organization (CAMPO). The current version is Version 4.

UST – Underground Storage Tank; any one or combination of tanks that is used to contain an accumulation of regulated substances, and the volume of which is 10 percent or more beneath the surface of the ground.