Town of Mansfield
Agenda Item Summary

To: Town Council
From: Ryan J. Aylesworth, Town Manager
CC: John Carrington, Director of Public Works; Jennifer Kaufman, Director of Planning and Development; Amanda Backhaus, Director of Finance
Date: February 23, 2026
Re: BUILD Grant Program – Planning Assistance for Four Corners Transportation Infrastructure Improvements, Authorization to Apply for Project Funding

Subject Matter/Background

The Town of Mansfield seeks funding through the U.S. Department of Transportation (USDOT) Better Utilizing Investments to Leverage Development (BUILD) grant program to design and permit two roundabouts at the intersections of Route 44 & Route 195 and Route 195 & Route 320, a new sidewalk along Route 44 between Route 195 and Discovery Drive (northern side of the road), and new crosswalks and ramps at both intersections. The proposed project would create a new gateway from the north toward Four Corners, the University, and Downtown Storrs. This project will tie into the proposed 0.8-mile 10-ft wide multi-use trail from the Route 195 & Route 44 intersection that extends Tower Loop Road, which recently received additional federal funding with support from Congressman Courtney. It will also address the roughly 750-section of sidewalk that the Town of Mansfield and UConn have been activating for to connect the existing sidewalk on The Standard at Four Corners property to the intersection of Route 195 & Route 44.

If awarded, the project will proceed through 30%, 60%, and 100% design submittals. At each milestone, the Town will hold public informational sessions to present the status of the project and receive feedback to inform the design. Additional funding would be required for construction in a future phase.

The proposed improvements are critical to enhancing traffic flow and reducing congestion at these key intersections, which currently experience high volumes of vehicular traffic and frequent backups during peak periods. Roundabouts are expected to improve intersection efficiency, reduce collision points, and calm vehicle speeds. The addition of a continuous sidewalk, crosswalks, and accessible ramps will provide safer, more direct routes for pedestrians and bicyclists, particularly students and University visitors, improving connectivity to Downtown Storrs and promoting active transportation throughout the community.

Financial Impact
Town staff estimates that the first phase of this project – which includes preliminary and final design, permitting, and bidding – will cost approximately $1,200,000. The BUILD Grant program requires a local match of up to 20%.

If the Town is awarded the grant and the Council approves acceptance of the funds, the required cash match could be provided through one of several options, depending on the timing of the award. These options can and would be reviewed with the Finance Committee in a future meeting so that a preferred approach for the required appropriation can be settled prior to the Town receiving a possible grant award.

Recommendations
If the Town Council supports the submission of a BUILD grant application to US DOT, the following motion would be in order.

Move, effective February 23, 2026, to authorize the Town Manager to submit a grant application to USDOT Better Utilizing Investments to Leverage Development (BUILD) grant *for the planning and design of intersection and pedestrian safety improvements in Four Corners.*

Attachments
1) VHB Conceptual Design Memorandum to CRCOG on Mansfield Roundabout Study
2) Project Budget File

Memorandum

To: Roger Krahn, PE, RSP1, CRCOG

Date: October 29, 2024
Revised 10/14/25
Revised 12/8/25

Project #: 42852.00

From: Nick Campbell, AICP
Joe Balskus, PE, PTOE, RSP1

Re: Mansfield Roundabout Study – Analysis and Recommendations

Introduction

The Town of Mansfield and CTDOT have developed initial concept plans and analyses supporting potential conversion of the project intersections into one or two modern roundabouts. Mansfield is proposing a multiuse path on the south leg of the Route 44 intersection to connect to the proposed multiuse path to run along the west side of Route 195. The Town and CRCOG and desire improvements to the intersections to facilitate improved operations with pending developments to the north. CTDOT's initial investigation indicates further, and more detailed analysis is necessary to affirm the conversion to roundabouts.

These intersections have been reviewed for improvements under two prior studies. Under the CRCOG Roundabout Screening Study (published in 2024), the intersection of Route 44 at Route 195 was recommended for a single lane roundabout.

Prior to CRCOG Roundabout Screening Study, the Town of Mansfield Master Plan included a roundabout concept for the same intersection, with the intention to be the gateway to the Town along Route 195.

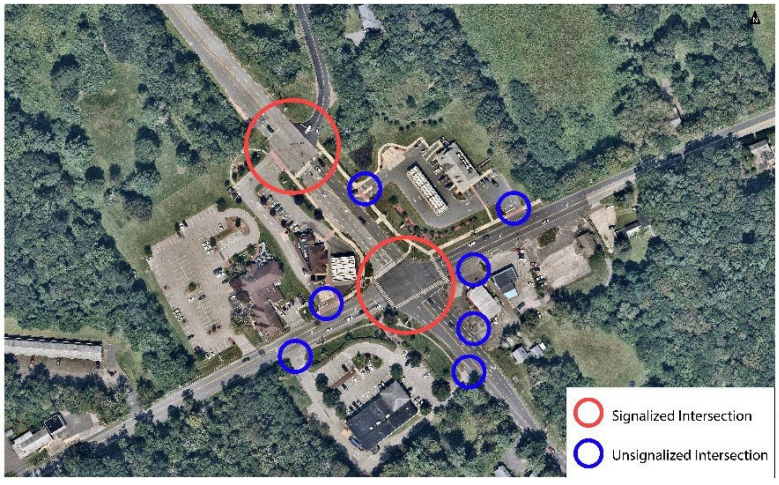
This roundabout study is focused on the Route 44 at Route 195 intersection being converted to a modern roundabout with the adjacent Route 320 intersection to either remain signalized or also be converted to a modern roundabout.

Existing Conditions

Traffic Volumes

Traffic volumes were collected on Tuesday, January 30th and Wednesday, January 31st, 2024, during the morning peak (7am-9am), afternoon peak (3pm-6pm), evening peak hour (6pm-9pm), and late evening peak hour (10pm-12am) that included a UCONN men's basketball game,. Volumes were collected at the signalized intersections of Route 195 & Route 44 and Route 195 and Route 320. Additional counts were conducted at seven unsignalized intersections in the area to document driveway activity. These intersections are depicted in Figure 1 and turning movement traffic count data is included in Appendix A.

Figure 1: Traffic Count Locations



Field Observations

Observations were conducted on Wednesday, September 4th in the morning and afternoon peak hours to verify signal timings to be utilized in the capacity analyses and as shown on the signal plans as well as to document queueing on the intersection approaches. The observations confirmed the signal plan timings and informed the analyses. The intersections of Route 44 & 195, and Route 195 & 320, operate as a parent-child pair, with the timings at Route 195 & 320 (the child) dependent on the operation of the Route 44 & Route 195 intersection (the parent). There is an approximate six second offset between the two intersections, which means the child intersection follows the parent six seconds after a phase change. Overall, the intersection pair operates satisfactorily with current traffic demands during both time periods.

Morning Peak

During the morning peak, both intersections operate on a variable cycle length between 60 – 80 seconds based on the queues and extension calls of various approaches. This is in line with the expected operations during a morning peak hour, as drivers are arriving in Storrs for the day's classes. The southbound thru movement at both intersections experienced the longest queues and on occasion the thru queue for Route 44 and Route 195 would back up through Route 195 and Route 320. Queues on other approaches were modest in comparison, with max queues ranging from 5 to 11 vehicles. The relatively short cycle lengths at both intersections were able to clear the queues on the minor street approaches by providing green times between 15 and 20 seconds.

Afternoon Peak

The afternoon peak hour operates substantially different than the morning, as the side street queues at both Route 44 & Route 195, and Route 195 & Route 320 are significantly lower. The primary movement for both intersections is the northbound thru movement, which prevails as the controlling movement for the cycle length. Route 44 and Route 195 had consistent side street queues during observations of three to seven vehicles, resulting from the consistent 80 second cycle length for the intersection. Route 195 and Route 320, however, did not have consistent queues on the side streets, and as the child in the pair, the cycle length would increase to 140 seconds if no cars were present on the side street approaches. When called, the green time allocated for Route 320 was between 10 and 25 seconds.

Late Evening Peak (UCONN basketball game night)

Traffic counts were collected during a late evening peak hour, from 10pm to midnight, to capture the traffic exiting the UCONN campus after a night basketball game (versus Villanova). This traffic volume was significantly higher than the afternoon peak hours for the Route 44 Eastbound left and the Route 195 Northbound through movements. The resulting capacity analyses show these approaches as congested during that peak time of exiting traffic from the campus.

Capacity Analysis

The intersection counts were compiled into summary tables and were used to build an existing Synchro model of the intersections. This analysis yielded level of service (LOS), delay, and volume to capacity (v/c) shown in Table 1. For both the morning and afternoon periods, the intersections of Route 195 at 320 and Route 195 at Route 44 operate at similar levels of operation. Route 195 at Route 44 operates at a C level of service with moderate delays.

Table 1: Synchro Results Overall Delay (Existing Conditions)

Intersection	Time Period	LOS	Delay (s)	v/c
Route 44 & Route 195	AM	C	25	0.55
Route 44 & Route 195	PM	C	33	0.66
Route 195 & Route 320	AM	C	20	0.44
Route 195 & Route 320	PM	B	13	0.46

A VISSIM model was created for the afternoon peak hour condition and to set up the roundabout analysis. VISSIM is simulation based, so volume to capacity ratios are not provided as an output. Similar to the Synchro analysis, LOS, vehicle delay, and average queues are generated by VISSIM. For this study, 10 simulations of the existing PM peak were run by VISSIM. The results across all 10 simulations were averaged together, and the cumulative average for each metric are presented in Table 2.

Table 2: VISSIM Results (Existing Conditions)

Intersection	Time Period	LOS	Delay (s)	Avg. Queue (ft)
Route 44 & Route 195	PM	D	35	50
Route 195 & Route 320	PM	A	7	12

The VISSIM results show a LOS D in the afternoon peak period, versus the LOS C for the same period using Synchro.

The late evening capacity analyses reveal the higher traffic volume exiting the UCONN campus after the night basketball game significantly impacting the traffic operation at the Route 44 intersection, especially for the eastbound left movement (LOS F) and the northbound Route 195 through (LOS D). Overall, the intersection operates at LOS F for this late evening peak hour.

Crash Analysis

The last three years of crash data was reviewed and is presented in Table 3 below. From 2021 – 2023, there were no fatal crashes or severe injury crashes reported at the two signalized intersections or any of the unsignalized driveways in the study area. Route 195 & Route 320 and Route 195 & Route 44 have numerous angle and rear end collisions, indicating that there are potentially conflicting movements being performed in the intersection and that stopped or delayed traffic may be a problem.

The afternoon peak hour incurred the highest number of crashes at the intersections reviewed. Of note, the Route 320 intersection had the highest percentage of angle crashes, with 7 out of the 12 reported. This indicates a conflict between turning vehicles on the approaches.

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Table 3 Crash Summary

	Route 195 & Route 320	Route 195 & CVS Drive	Route 44 & Route 195	Route 44 & Cumberland Farms Drive	Route 44 & CVS Drive	Total
Signalized/Unsignalized	Signalized	Unsignalized	Signalized	Unsignalized	Unsignalized	
Year						
2021	3	2	6	1	1	13
2022	2	1	7	4	4	18
2023	7	1	10	0	4	22
Total	**12**	**4**	**23**	**5**	**9**	**53**
Collision Type						
Angle	7	1	5	1	5	19
Front to front	0	0	2	0	0	2
Front to rear	1	3	8	2	3	17
Sideswipe, opposite direction	0	0	1	0	1	2
Sideswipe, same direction	3	0	0	0	0	3
Rear to side	1	0	1	0	0	2
Not Applicable	0	0	3	1	0	4
Other	0	0	3	1	0	4
Total	**12**	**4**	**23**	**5**	**9**	**53**
Severity						
Fatal Injury	0	0	0	0	0	0
Injury - Serious	0	0	0	0	0	0
Injury - Minor	3	1	5	0	3	12
Injury - Possible	0	0	0	0	0	0
Property Damage Only	9	3	18	5	6	41
Not Reported/Unknown	0	0	0	0	0	0
Total	**12**	**4**	**23**	**5**	**9**	**53**
Time of day						
Weekday, 7:00 AM - 9:00 AM	2	0	4	1	0	7
Weekday, 4:00 – 6:00 PM	5	3	5	1	3	17
Saturday, 11:00 AM – 1:00 PM	0	0	0	0	1	1
Other time	5	1	14	3	5	28
Total	**12**	**4**	**23**	**5**	**9**	**53**
Season						
Dec – Feb	3	0	3	1	4	11
Mar – May	3	1	7	2	2	15
June – Aug	2	0	4	1	0	7
Sept – Nov	4	3	9	1	3	20
Total	**12**	**4**	**23**	**5**	**9**	**53**
Pavement Conditions						
Dry	11	4	22	4	9	50
Wet	1	0	1	1	0	3
Ice/Frost	0	0	0	0	0	0
Other/Unknown	0	0	0	0	0	0
Snow	0	0	0	0	0	0
Total	**12**	**4**	**23**	**5**	**9**	**53**
Light Conditions						
Daylight	9	3	16	4	8	40
Dawn/Dusk	0	1	1	1	0	3
Dark, Not Lighted	0	0	1	0	1	2
Dark, Lighted	3	0	5	0	0	8
Unknown	0	0	0	0	0	0
Total	**12**	**4**	**23**	**5**	**9**	**53**
Non-Motorist (Bike, Pedestrian)	0	0	0	0	0	0

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Future Conditions – No Build

Future condition data was provided by CRCOG through their Travel Demand Model and is included in Appendix B. CRCOG provided the future volumes with updated source data from Mansfield's approved Traffic Impact Reports for the four proposed residential developments in the project area. These four developments will add the following number of dwelling units to the study area:

- Standard at Four Corners – 392 units
- 497 Middle Turnpike – 261 units
- Villages at Four Corners – 116 units
- The Hub at Mansfield – 450 Units

Utilizing the CRCOG Traffic Model, the existing intersection counts were projected for 10 years and 20 years, which created two No-Build conditions for analysis using Synchro. The results for this projection are shown in Table 4 for the 2034 planning year and Table 5 for the 2044 planning year. Detailed LOS, delay, and queue results are provided in Appendix C.

Table 4: Synchro Results Overall Delay - No Build 2034 Planning Year

2034 Planning Year				
	Time Period	**LOS**	**Delay**	**v/c**
Route 44 & Route 195	AM	C	28	0.66
Route 44 & Route 195	PM	D	40	0.86
Route 195 & Route 320	AM	C	25	0.58
Route 195 & Route 320	PM	B	14	0.60

Table 5: Synchro Results Overall Delay – No Build 2044 Planning Year

2044 Planning Year				
	Time Period	**LOS**	**Delay**	**v/c**
Route 44 & Route 195	AM	C	32	0.78
Route 44 & Route 195	PM	D	53	1.00
Route 195 & Route 320	AM	C	34	0.70
Route 195 & Route 320	PM	B	17	0.69

Overall, the operations in the study area steadily worsen under both planning scenarios. Delay and volume to capacity ratios both increase in successive planning years, most prominently during the afternoon period. However, only the afternoon peak hour for the Route 44 at Route 195 intersection operates at LOS in these conditions. This is the result of the projected afternoon volumes for Route 195 and Route 44, causing the volume to capacity ratio of 1.00, signifying that multiple movements are nearing saturation flow.

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Future Conditions - Build

The Future Condition – Build involves the consideration of roundabouts at both intersections with VISSIM modeling for the future conditions and a signalization alternative. The results of these analyses indicate roundabouts as shown on the concepts can accommodate the 2034 and 2044 design years with excellent LOS A operations as shown in Table 6 below. The roundabout concepts are attached as 2034 and 2044 Roundabout Concept plans. The 2034 Concept includes a roundabout at both Route 195 & Route 44 and Route 195 and Route 320 intersections with multilane approaches at the Route 44 intersection. A single northbound through lane extends from Route 44 to the Route 320 intersection with a wide splitter island.

The 2044 Roundabout Concept incorporates additional volumes projected for the 2044 year, requiring an additional northbound through lane between the intersections by narrowing the splitter island without widening the roadway.

Both roundabout concepts provide for a transformative intersection corridor that accommodates future traffic volumes with minimal impacts to Right of Way while provider safety intersection operations for all users. The roundabout concept accommodates all design vehicles and a multiuse path along the west side of roadway, connecting to the crosswalks on the west approaches.

Both roundabouts must be considered in tandem and not independent of each other. Signalization of one intersection does not allow for a roundabout at the other due to the queueing of the signalized approaches that could back into the roundabout.

Table 6: VISSIM Results (2044 Build Conditions)

Intersection	Time Period	LOS	Delay (s)	Avg. Queue (ft)
Route 44 & Route 195	PM	A	6.33	10
Route 195 & Route 320	PM	A	2.68	5

In addition to the roundabouts, continued signalization of the intersections for the Build condition was reviewed. This traffic signal concept provides a traditional traffic signal-controlled layout for both intersections. Significant widening for the additional lanes will be required with 5-6 lane cross section required throughout the project approach limits. Based upon this layout shown on the attached concept, crosswalks may be upwards of 90-100 feet, with the multiuse trail crossway over 75 feet in length. The

The signalization alternative for the Build condition years provides for LOS D operations or better for each intersection and peak hour as shown in Table 7 below.

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Table 7: Synchro Results Overall Delay – Build 2034 and 2044 Planning Year

2034 Planning Year				
	Time Period	**LOS**	**Delay**	**v/c**
Route 44 & Route 195	AM	C	27.4	0.85
Route 44 & Route 195	PM	D	39.8	0.91
Route 195 & Route 320	AM	C	25.4	0.92
Route 195 & Route 320	PM	B	16.3	0.88
2044 Planning Year				
Route 44 & Route 195	AM	B	19.1	0.79
Route 44 & Route 195	PM	C	32.5	0.96
Route 195 & Route 320	AM	C	28.2	1.02
Route 195 & Route 320	PM	B	13.2	0.56

Recommendations

The following recommendations for the intersection alternatives are provided after completion of the noted efforts:

1. The Traffic Signal Concept for both intersections is not recommended based on the following:
    a. The proposed widening for the additional lanes required to accommodate the future traffic significantly increases the width of the roadway approaches, extending pedestrian crossing distances, and potentially increasing the number of conflict points.
    b. The proposed through lane alignments at the intersections are not desirable.
    c. The Intersection LOS is worse than the roundabout concept.
2. The 2034 Roundabout Concept provides for improved efficiency of intersection operations and safety of both intersections.
    a. The roundabout layout in 2034 should be constructed where an additional through lane could be added in 2044 to accommodate increased vehicular volumes without additional widening through narrowing of the splitter island.
    b. RRFBs should be provided to enhance the safety and visibility of pedestrians on the multi-lane approaches of the roundabout.
    c. The roundabouts must be constructed together as signalizing one intersection is not compatible with a roundabout at the adjacent intersection.
3. Interim improvements, before the above recommendations are implemented, should be considered to enhance safety of pedestrians. The following should be provided:
    a. Traffic timing and coordination should be reviewed and revised to improve efficiency.
    b. Bump outs should be considered to reduce pedestrian crossing distances at crosswalks.
    c. Improved street overhead lighting and traffic signal backplates with retroreflective yellow strips can improve visibility.
    d. Installation of ADA compliant ramps and crosswalks with Accessible Pedestrian Buttons on all corners.
    e. Review exclusive pedestrian phasing versus CTDOT concurrent pedestrian phasing.

Memorandum

Summary

The foregoing analysis provides the results of the Synchro software for all conditions and peak hours while the VISSIM was developed for the weekday afternoon peak hour. The VISSIM efforts are intended to provide CRCOG and CTDOT the opportunity to review the VISSIM inputs and results before developing the remaining peak hours.

For a detailed summary of the Synchro analyses for all approaches, see attached tables in the attached Appendix C.

With acceptance of the recommended 2034 Roundabout Concept by CRCOG, the Town of Mansfield and CTDOT, a public information meeting will be held to solicit public input on the concept with area stakeholders.

With assumed acceptance of a concept, CRCOG and the Town can pursue funding.

Memorandum

Appendix

A) Turning Movement Count Data

B) CRCOG Travel Demand Model 2034 & 2044

C) Synchro Analysis

D) Concept Plans

Memorandum

A. Turning Movement Count Data

Appendix A - Turning Movement Count Data

AM Peak Data used for Synchro Analysis

PM Peak Data used for Synchro Analysis

Synchro Node Intersection			Route 195 Southbound						Route 320 Westbound						Route 195 Northbound						Plaza Dr Eastbound					
Route 195 @ Route 320/Plaza Drive																										
Sheet #	DOW	Peak Hour	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW
3 Sheet 25181	Tuesday	7:30 - 8:30am	32	590	3	0	0	0	8	13	159	0	0	0	55	178	38	0	0	0	9	4	5	0	0	0
3 Sheet 25182	Tuesday	4:30pm - 5:30pm	9	342	18	1	0	0	4	5	98	0	0	0	193	733	11	0	0	0	7	6	9	1	0	0
3 Sheet 25183	Wednesday	7:45am - 8:45am	31	623	1	0	0	0	7	17	150	0	0	0	44	169	30	0	0	0	6	0	8	0	0	0
3 Sheet 25184	Wednesday	4:30pm - 5:30pm	7	418	13	0	0	0	9	3	105	0	0	0	176	687	15	0	0	0	12	1	9	0	0	0
3 Sheet 25185	Wednesday	6pm - 7pm	17	461	5	0	0	0	5	7	87	0	0	0	149	388	9	0	0	0	10	1	6	0	0	0
3 Sheet 25186	Wednesday	11pm - 12am	0	42	2	0	0	0	2	0	26	0	0	0	169	642	1	0	0	0	3	1	3	0	0	0
3 24-410011-001 (NDS)	Saturday	6:00pm-7:00pm	13	610	11				12	6	127				113	300	11				8	8	3			
3 24-410011-001 (NDS)	Saturday	10:00pm - 11:00p	3	145	10				0	2	45				163	826	4				6	3	4			

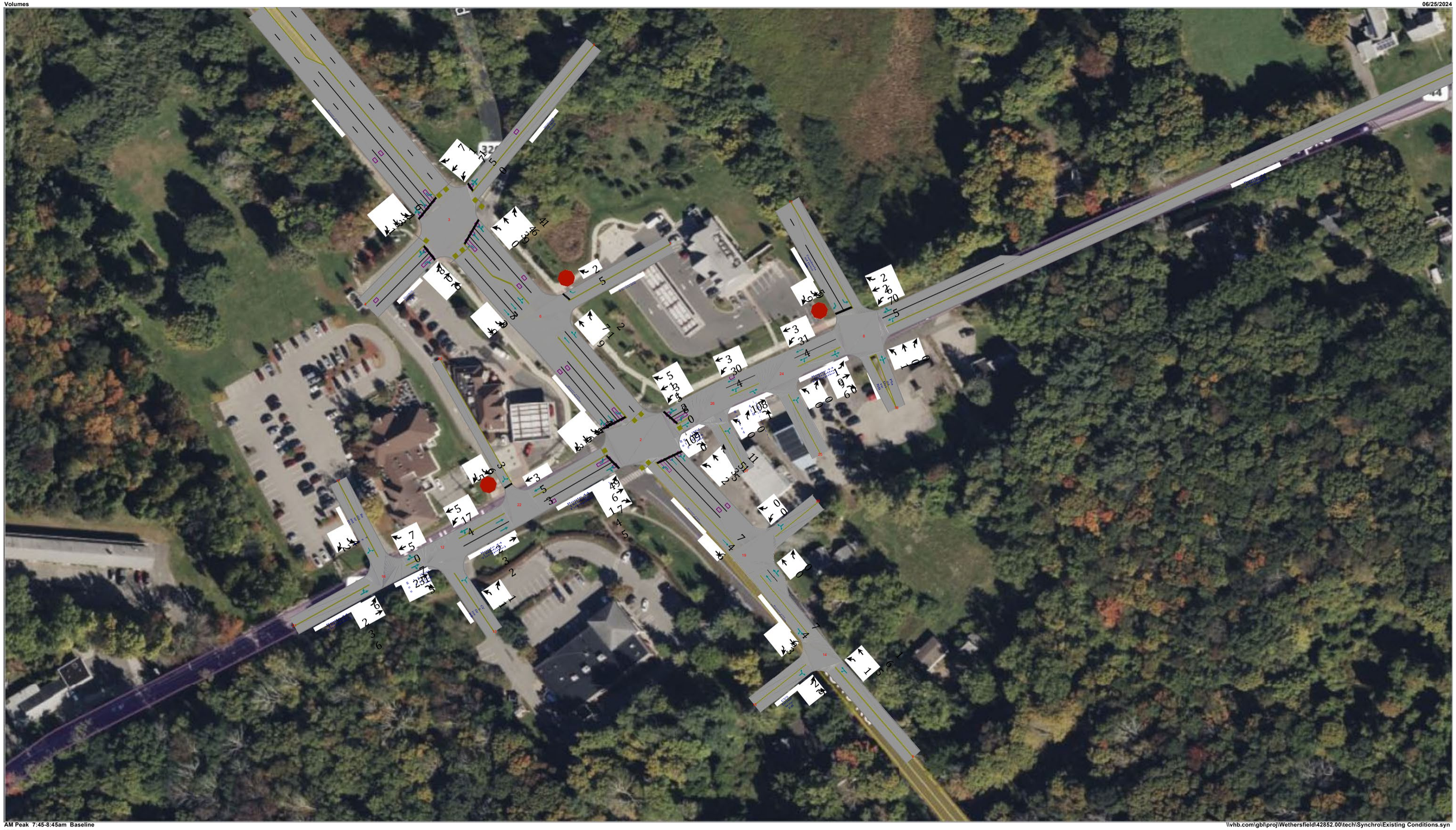
			Route 195 Southbound						Cumberland Dr Westbound						Route 195 Northbound					
			Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	U-Turn	Peds CW	Peds CCW			
6 Sheet 25187	Thursday	7:30am - 8:30am	678	37	0	0	0	35	0	0	0	0	14	237	0	0	0			
6 Sheet 25188	Tuesday	4:30pm-5:30PM	409	11	0	0	0	40	1	0	0	0	23	911	0	0	0			
6 Sheet 25189	Wednesday	8am-9pm	739	30	0	0	0	25	0	0	0	0	7	219	0	0	0			
6 Sheet 25190	Wednesday	4:30pm-5:30PM	508	29	0	0	0	47	3	0	0	0	28	853	0	0	0			
6 Sheet 25191	Wednesday	6pm-7pm	545	15	0	0	0	30	1	0	0	0	23	511	0	0	0			
6 Sheet 25192	Wednesday	11pm-12am	65	9	0	0	0	48	2	0	0	0	41	760	0	0	0			

			Route 195 Southbound						Route 44 Westbound						Route 195 Northbound						Route 44 Eastbound					
			Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW
2 Sheet 25193	Thursday	7:30am-8:30am	140	435	35	0	0	0	51	154	99	0	0	0	15	121	33	0	0	0	127	58	53	0	0	0
2 Sheet 25194	Tuesday	6pm-7pm	72	190	51	0	0	0	36	74	47	0	0	0	36	288	72	0	0	0	44	111	191	0	0	0
2 Sheet 25195	Wednesday	7:30am-8:30am	163	481	27	0	0	0	53	158	120	0	0	0	15	115	32	0	0	0	145	67	49	0	0	0
2 Sheet 25196	Wednesday	4pm-5pm	122	261	69	0	0	0	67	146	81	0	0	0	57	460	130	0	0	0	68	184	292	0	0	0
2 Sheet 25197	Wednesday	6pm-7pm	210	272	52	0	0	0	37	106	67	0	0	0	47	260	83	0	0	0	53	104	188	0	0	0
2 Sheet 25198	Wednesday	11pm-12am	16	40	8	0	0	0	14	25	18	0	0	0	61	412	42	0	0	0	16	130	410	0	0	0
6 24-410011-002 (NDS)	Saturday	6:00PM - 7:00PM	294	395	42				31	82	47				26	258	65				65	72	116			
6 24-410011-002 (NDS)	Saturday	10:00pm - 11:00p	61	108	18				16	41	11				36	550	61				38	98	411			

			Route 195 Southbound						Plaza Dr Westbound						Route 195 Northbound						CVS Dr Eastbound					
			Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW
14 Sheet 25199	Thursday	7:30am-8:30am	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
14 Sheet 25200	Tuesday	4:30pm-5:30pm	14	320	2	0	0	0	2	0	3	0	0	0	11	700	19	0	0	0	9	1	11	0	0	0
14 Sheet 25201	Wednesday	7:45am-8:45am	3	746	0	0	0	0	1	0	1	0	0	0	0	165	1	0	0	0	9	0	2	0	0	0
14 Sheet 25202	Wednesday	4pm-5pm	12	398	0	0	0	0	0	0	1	0	0	0	12	648	18	0	0	0	21	0	18	0	0	0
14 Sheet 25203	Wednesday	6pm-7pm	5	400	3	0	0	0	3	0	1	0	0	0	7	434	7	0	0	0	15	5	13	0	0	0
14 Sheet 25204	Wednesday	11pm-12am	1	71	0	0	0	0	2	0	1	0	0	0	1	536	2	0	0	0	1	0	0	0	0	0

			Cumberland Drive Southbound						Route 44 Westbound						Plaza Drive Northbound						Route 44 Eastbound					
			Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW	Right	Thru	Left	U-Turn	Peds CW	Peds CCW
8 Sheet 25205	Thursday	7am-8am	51	0	8	0	0	0	24	273	0	0	0	0	0	1	0	0	0	0	1	84	30	0	0	0
8 Sheet 25206	Tuesday	3:45pm-4:45pm	52	1	18	0	0	0	9	178	0	0	0	0	0	0	1	0	0	0	2	248	51	0	0	0
8 Sheet 25207	Wednesday	7am-8am	59	0	9	0	0	0	26	275	0	0	0	0	0	0	1	0	0	0	1	96	19	0	0	0
8 Sheet 25208	Wednesday	4pm-5pm	53	0	17	0	0	0	7	234	1	0	0	0	1	0	0	0	0	0	0	259	50	0	0	0
8 Sheet 25209	Wednesday	6pm-7pm	34	0	14	0	0	0	13	173	0	0	0	0	0	0	0	0	0	0	1	192	34	0	0	0
8 Sheet 25210	Wednesday	11pm-12am	21	0	10	0	0	0	3	29	0	0	0	0	0	0	1	0	0	0	0	144	49	0	0	

				Restaurant Dr Southbound							Route 44 Westbound							CVS Drive Northbound							Route 44 Eastbound						
				Right	Thru	Left	U-Turn	Peds CW	Peds CCW		Right	Thru	Left	U-Turn	Peds CW	Peds CCW		Right	Thru	Left	U-Turn	Peds CW	Peds CCW		Right	Thru	Left	U-Turn	Peds CW	Peds CCW	
12 and 16	Sheet 25211	Thursday	8am-9am	6	0	12	0	0	0		12	459	5	0	0	0		5	0	4	0	0	0		5	221	13	0	0	0	
12 and 16	Sheet 25212	Tuesday	4:15pm-5:15pm	1	1	0	0	0	0		2	371	14	0	0	0		29	0	20	0	0	0		33	547	0	0	0	0	
12 and 16	Sheet 25213	Wednesday	8am-9am	2	0	4	0	0	0		7	507	7	0	0	0		1	0	1	0	0	0		5	231	6	0	0	0	
12 and 16	Sheet 25214	Wednesday	4pm-5pm	3	0	5	0	0	0		20	424	25	0	0	0		35	1	20	0	0	0		27	521	13	0	0	0	
12 and 16	Sheet 25215	Wednesday	6pm-7pm	30	0	22	0	0	0		56	352	21	1	0	0		11	3	13	0	0	0		16	334	37	0	0	0	
12 and 16	Sheet 25216	Wednesday	11pm-12am	9	0	28	0	0	0		5	91	0	0	0	0		3	0	1	0	0	0		3	510	15	0	0	0	



Memorandum

B. CRCOG Travel Demand Model 2034 & 2044

Appendix B

CRCOG Travel Demand Model - Projected Years 2034 & 2044 (8-26-2024)

Mansfield, CT - Rte 195 Storrs Road - 2 Intersection Locations

Route 195 @ Route 320/Plaza Drive

CT Route 195 — CT Route 320 — CT Route 195 — Plaza Driveway

AM	Southbound			Westbound			Northbound			Eastbound			Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Volume
Peak Hour	32	607	2	8	15	155	50	174	34	8	2	7	1,094
Report Counts (June 2022)	30	690	15	20	5	180	70	250	40	5	5	10	1,320
Model 2034 est.	26	676	14	16	5	208	103	262	55	7	7	9	1,389
Model 2035	26	675	14	16	5	211	106	263	56	7	7	9	1,395
Model 2044 est.	39	771	29	31	9	267	118	258	49	7	11	13	1,602
Model 2050	48	836	39	41	11	304	125	255	44	7	14	16	1,740

PM	Southbound			Westbound			Northbound			Eastbound			Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Volume
Peak Hour	13	402	12	5	6	93	171	561	10	9	4	8	1,294
Report Counts (June 2022)	5	445	15	15	5	105	190	795	25	15	5	20	1,640
Model 2034 est.	5	525	16	17	7	167	245	818	31	24	7	22	1,883
Model 2035	5	533	16	17	7	173	250	820	31	25	7	23	1,905
Model 2044 est.	6	516	23	26	10	190	290	872	32	22	9	27	2,024
Model 2050	7	505	27	32	12	202	318	907	33	20	11	29	2,104

Route 44 and Route 195

CT Route 195 — U.S. Route 44 — CT Route 195 — U.S. Route 44

AM	Southbound			Westbound			Northbound			Eastbound			Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Volume
Peak Hour	152	458	31	52	156	110	15	118	33	136	63	51	1,375
Report Counts (June 2022)	270	545	45	70	145	115	20	170	35	115	70	95	1,695
Model 2034 est.	409	552	43	66	217	115	19	162	53	161	94	125	2,017
Model 2035	422	552	43	65	224	115	19	162	55	165	96	127	2,046
Model 2044 est.	449	607	49	72	260	139	23	173	62	179	106	127	2,247
Model 2050	468	644	52	76	285	154	26	180	67	188	113	126	2,380

PM	Southbound			Westbound			Northbound			Eastbound			Total
	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Volume
Peak Hour	141	231	52	37	90	57	42	274	78	49	108	190	1,349
Report Counts (June 2022)	145	315	85	80	120	85	70	590	115	60	150	315	2,130
Model 2034 est.	191	329	81	72	144	81	70	609	159	76	172	376	2,358
Model 2035	195	331	80	71	146	80	70	611	163	77	174	381	2,379
Model 2044 est.	217	363	97	77	146	80	77	690	168	71	173	385	2,544
Model 2050	231	385	107	82	145	79	83	743	172	67	173	387	2,654

C. Synchro Analysis

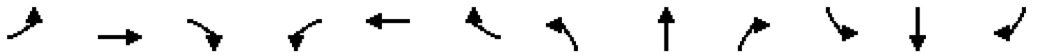
Appendix C - Synchro Analysis

Location	Peak Hour	Mov't	Existing Conditions v/c[1]	Del[2]	LOS[3]	Q50[4]	Q95[5]	No-Build 2034 v/c	Del	LOS	Q50	Q95	No-Build 2044 v/c	Del	LOS	Q50	Q95
Route 195 (Storrs Road) & Route 44 (Middle Turnpike)	AM	EBL	0.20	30	C	28	50	0.64	40.7	D	51	86	0.70	38	D	59	#115
		EBT	0.81	49	D	148	221	0.76	45	D	165	241	0.72	39	D	176	265
		WBL	0.45	27	C	61	93	0.55	35	C	58	96	0.60	36	D	66	109
		WBT	0.56	35	D	124	186	0.85	52.7	D	200	286	0.88	55	E	226	#356
		NBL	0.33	48	D	22	52	0.54	54.2	D	36	78	0.66	84	F	43	#107
		NBT	0.09	15	B	23	49	0.15	14.5	B	43	74	0.14	17	B	39	66
		SBL	0.25	52	D	19	m41	0.39	52.1	D	26	m53	0.45	55	E	34	m52
		SBT	0.48	13	B	185	114	0.6	14	B	108	m213	0.74	19	B	123	m265
		Overall	**0.55**	**25**	**C**			**0.66**	**28**	**C**			**0.78**	**32**	**C**		
	PM	EBL	0.88	47	D	156	#213	0.89	45	D	208	#382	1.04	84	F	~295	#498
		EBT	0.63	36	D	161	235	0.58	28	C	179	270	0.67	30	C	219	327
		WBL	0.30	32	C	38	65	0.39	32	C	39	72	0.45	33	C	47	84
		WBT	0.73	47	D	130	198	0.95	77	E	177	#340	1.09	>120	F	~239	#417
		NBL	0.75	58	E	87	#168	0.79	58	E	111	#198	0.89	71	E	132	#258
		NBT	0.39	22	C	125	200	0.69	33	C	226	295	0.82	39	D	275	#357
		SBL	0.49	46	D	39	87	0.68	54	D	62	m#126	0.70	53	D	53	m#135
		SBT	0.29	17	B	88	50	0.62	27	C	153	56	0.73	29	C	185	70
		Overall	**0.66**	**33**	**C**			**0.86**	**40**	**D**			1.00	53	D		
	Early Evening (6-7pm)	EBL	0.58	29.9	C	101	150										
		EBT	0.5	36.4	D	100	160										
		WBL	0.27	34.3	C	33	61										
		WBT	0.6	44	D	86	144										
		NBL	0.65	52.9	D	56	104										
		NBT	0.2	15.9	B	59	104										
		SBL	0.41	46.3	D	29	78										
		SBT	0.28	11.9	B	77	24										
		Overall	**0.43**	**25.3**	**C**												
	Late Night (11pm-12am)	EBL	>1.20	>120	F	~270	#452										
		EBT	0.50	38	D	80	156										
		WBL	0.17	43	D	9	27										
		WBT	0.28	46	D	16	49										
		NBL	0.55	51	D	29	64										
		NBT	0.27	12	B	89	128										
		SBL	0.09	47	D	5	23										
		SBT	0.03	10	A	6	17										
		Overall	**0.60**	**91**	**F**												

Appendix C - Synchro Analysis

Location	Peak Hour	Mov't	Existing Conditions v/c[1]	Del[2]	LOS[3]	Q50[4]	Q95[5]	No-Build 2034 v/c	Del	LOS	Q50	Q95	No-Build 2044 v/c	Del	LOS	Q50	Q95
Dunkin Donuts EB/Willington Hill Road & Route 195 (Storrs Road)	AM	EBT	0.04	35	C	5	19	0.05	30	C	9	27	0.06	28	C	12	34
		EBR	0.02	35	C	0	0	0.02	29.7	C	0	0	0.02	27	C	0	0
		WBT	0.87	67	E	117	#229	0.92	68.6	E	168	#315	1.02	91	F	~230	#415
		NBL	0.07	8	A	5	m27	0.16	11.7	B	12	m32	0.18	17	B	15	m33
		NBT	0.11	9	A	20	59	0.2	14.6	B	55	150	0.22	19	B	64	m147
		SBL	0.00	9	A	0	3	0.02	11.3	B	3	18	0.05	13	B	6	30
		SBT	0.35	12	B	107	258	0.48	17.5	B	165	#360	0.58	22	C	207	#490
		Overall	**0.44**	**20**	**C**			**0.58**	**25.4**	**C**			**0.7**	**34**	**C**		
	PM	EBT	0.06	38	D	6	22	0.06	37	D	8	25	0.06	35	D	8	26
		EBR	0.01	38	D	0	0	0.05	36	D	0	0	0.06	35	D	0	0
		WBT	0.72	53	D	76	131	0.82	63	E	98	#187	0.85	65	E	111	#216
		NBL	0.03	7	A	3	m10	0.05	6	A	3	m11	0.07	7	A	5	m11
		NBT	0.44	10	B	110	m372	0.56	10	A	137	m#511	0.66	13	B	175	m#594
		SBL	0.04	7	A	1	15	0.06	8	A	2	17	0.09	10	B	3	19
		SBT	0.22	8	A	35	153	0.27	10	B	76	196	0.32	11	B	98	236
		Overall	**0.46**	**13**	**B**			**0.60**	**14**	**B**			0.69	17	B		
	Early Evening (6-7pm)	EBT	0.04	39	D	5	17										
		EBR	0.01	38.8	D	0	0										
		WBT	0.66	49.9	D	66	116										
		NBL	0.02	6.9	A	1	m10										
		NBT	0.27	9	A	54	204										
		SBL	0.01	5.9	A	1	7										
		SBT	0.23	7.6	A	37	168										
		Overall	**0.31**	**12.4**	**B**												
	Late Night (11pm-12am)	EBT	0.06	46	D	2	14										
		EBR	0.00	46	D	0	0										
		WBT	0.02	46	D	0	0										
		NBL	0.00	5	A	0	m1										
		NBT	0.36	8	A	87	m236										
		SBL	0.00	4	A	0	3										
		SBT	0.02	4	A	2	17										
		Overall	**0.32**	**9**	**A**												

1 Volume to capacity ratio
2 Delay, in seconds
3 Level of Service
4 50th Percentile (Average) Queue Length
5 95th Percentile Queue Length



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	94	161	115	247	66	53	211	19	40	552	400
Future Volume (vph)	102	94	161	115	247	66	53	211	19	40	552	400
Satd. Flow (prot)	1770	1686	0	1770	1803	0	1770	3493	0	1711	3206	0
Flt Permitted	0.235			0.359			0.950			0.950		
Satd. Flow (perm)	438	1686	0	669	1803	0	1770	3493	0	1711	3206	0
Satd. Flow (RTOR)					13			12			226	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	277	0	125	340	0	58	250	0	43	1035	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8								
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	9.0		4.0	9.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	14.8		8.0	14.8		8.0	20.8		9.8	20.8	
Total Split (s)	8.0	33.0		8.0	33.0		11.0	48.0		11.0	48.0	
Total Split (%)	8.0%	33.0%		8.0%	33.0%		11.0%	48.0%		11.0%	48.0%	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.0	4.8		3.0	4.8	
All-Red Time (s)	1.0	1.6		1.0	1.6		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.8		4.0	5.8		4.0	5.8		4.0	5.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		Min	C-Min	
Act Effct Green (s)	27.4	21.6		27.4	21.6		6.2	48.4		6.4	50.2	
Actuated g/C Ratio	0.27	0.22		0.27	0.22		0.06	0.48		0.06	0.50	
v/c Ratio	0.64	0.76		0.55	0.85		0.54	0.15		0.39	0.60	
Control Delay (s/veh)	43.4	50.1		35.6	55.6		63.3	15.1		65.6	8.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.1	
Total Delay (s/veh)	43.4	50.1		35.6	55.6		63.3	15.1		65.6	8.7	
LOS	D	D		D	E		E	B		E	A	
Approach Delay (s/veh)		48.2			50.2			24.2			11.0	
Approach LOS		D			D			C			B	
Queue Length 50th (ft)	51	165		58	200		36	43		29	178	
Queue Length 95th (ft)	86	241		96	286		78	74		m52	m80	
Internal Link Dist (ft)		103			26			125			131	
Turn Bay Length (ft)												
Base Capacity (vph)	173	458		227	499		123	1695		119	1723	
Starvation Cap Reductn	0	0		0	0		0	0		0	110	
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	0.64	0.60		0.55	0.68		0.47	0.15		0.36	0.64	

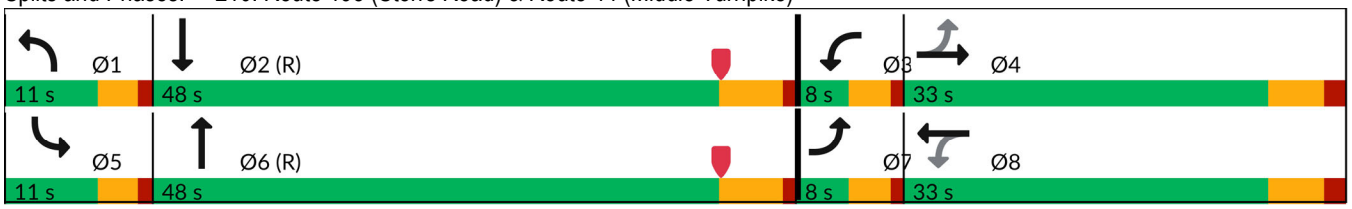
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 16 (16%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 60

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 27.4	Intersection LOS: C
Intersection Capacity Utilization 70.4%	ICU Level of Service C
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Route 195 (Storrs Road) & Route 44 (Middle Turnpike)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	7	7	232	5	20	50	260	100	14	790	26
Future Volume (vph)	9	7	7	232	5	20	50	260	100	14	790	26
Satd. Flow (prot)	0	1752	1531	0	1704	0	1711	3278	0	1711	3404	0
Flt Permitted		0.869			0.734		0.244			0.520		
Satd. Flow (perm)	0	1565	1531	0	1307	0	439	3278	0	936	3404	0
Satd. Flow (RTOR)			118		4			59			3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	18	8	0	279	0	54	392	0	15	887	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.2	11.2	11.2	11.2	11.2		8.1	24.7		8.1	24.7	
Total Split (s)	29.0	29.0	29.0	29.0	29.0		8.4	37.8		8.2	37.6	
Total Split (%)	29.0%	29.0%	29.0%	29.0%	29.0%		8.4%	37.8%		8.2%	37.6%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.7		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		0.1	2.0		0.1	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.2	4.2		4.2		3.1	6.7		3.1	6.7	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		23.0	23.0		23.0		63.6	57.9		62.2	54.5	
Actuated g/C Ratio		0.23	0.23		0.23		0.64	0.58		0.62	0.55	
v/c Ratio		0.05	0.02		0.92		0.16	0.20		0.02	0.48	
Control Delay (s/veh)		29.3	0.1		72.9		10.2	10.5		11.1	18.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		29.3	0.1		72.9		10.2	10.5		11.1	18.3	
LOS		C	A		E		B	B		B	B	
Approach Delay (s/veh)		20.3			72.9			10.5			18.2	
Approach LOS		C			E			B			B	
Queue Length 50th (ft)		9	0		168		12	48		3	165	
Queue Length 95th (ft)		27	0		#315		m37	94		18	#360	
Internal Link Dist (ft)		78			221			96			296	
Turn Bay Length (ft)							50			225		
Base Capacity (vph)		388	468		327		346	1922		621	1857	
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		0.05	0.02		0.85		0.16	0.20		0.02	0.48	

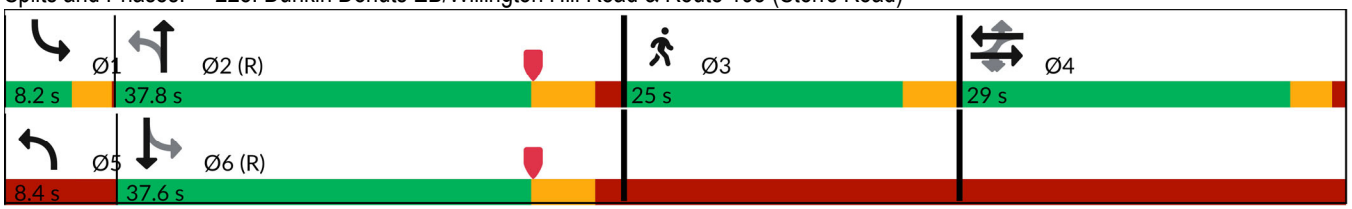
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

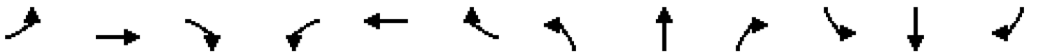
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Peak Hour Factor	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	25%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay (s/veh): 25.4 Intersection LOS: C
Intersection Capacity Utilization 60.2% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 228: Dunkin Donuts EB/Willington Hill Road & Route 195 (Storrs Road)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	403	236	87	104	187	88	166	636	73	90	342	219
Future Volume (vph)	403	236	87	104	187	88	166	636	73	90	342	219
Satd. Flow (prot)	1770	1788	0	1770	1773	0	1770	3486	0	1711	3219	0
Flt Permitted	0.200			0.550			0.950			0.950		
Satd. Flow (perm)	373	1788	0	1025	1773	0	1770	3486	0	1711	3219	0
Satd. Flow (RTOR)					21			12			134	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	438	352	0	113	299	0	180	770	0	98	610	0
Turn Type	pm+pt	NA		pm+pt	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8								
Detector Phase	7	4		3	8		1	6		5	2	
Switch Phase												
Minimum Initial (s)	4.0	9.0		4.0	9.0		4.0	15.0		4.0	15.0	
Minimum Split (s)	8.0	14.8		8.0	14.8		8.0	20.8		9.8	20.8	
Total Split (s)	27.0	43.0		10.0	26.0		18.0	34.0		13.0	29.0	
Total Split (%)	27.0%	43.0%		10.0%	26.0%		18.0%	34.0%		13.0%	29.0%	
Yellow Time (s)	3.0	4.2		3.0	4.2		3.0	4.8		3.0	4.8	
All-Red Time (s)	1.0	1.6		1.0	1.6		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.8		4.0	5.8		4.0	5.8		4.0	5.8	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	C-Min		Min	C-Min	
Act Effct Green (s)	46.2	34.6		25.8	18.2		12.6	31.5		8.5	27.4	
Actuated g/C Ratio	0.46	0.35		0.26	0.18		0.13	0.32		0.09	0.27	
v/c Ratio	0.91	0.57		0.37	0.88		0.81	0.70		0.68	0.62	
Control Delay (s/veh)	47.3	30.2		20.8	63.8		69.4	34.6		67.4	24.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.4		0.0	0.1	
Total Delay (s/veh)	47.3	30.2		20.8	63.8		69.4	35.0		67.4	24.5	
LOS	D	C		C	E		E	C		E	C	
Approach Delay (s/veh)		39.7			52.0			41.5			30.4	
Approach LOS		D			D			D			C	
Queue Length 50th (ft)	198	173		38	170		111	233		62	156	
Queue Length 95th (ft)	#374	261		69	#304		#210	305		m#123	m60	
Internal Link Dist (ft)		103			26			125			131	
Turn Bay Length (ft)												
Base Capacity (vph)	493	665		311	374		247	1106		153	979	
Starvation Cap Reductn	0	0		0	0		0	0		0	34	
Spillback Cap Reductn	0	0		0	0		0	70		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.89	0.53		0.36	0.80		0.73	0.74		0.64	0.65	

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 39.8	Intersection LOS: D
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 210: Route 195 (Storrs Road) & Route 44 (Middle Turnpike)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	15	134	4	12	26	896	230	17	538	9
Future Volume (vph)	12	1	15	134	4	12	26	896	230	17	538	9
Satd. Flow (prot)	0	1721	1531	0	1704	0	1711	3315	0	1711	3411	0
Flt Permitted		0.843			0.738		0.409			0.178		
Satd. Flow (perm)	0	1518	1531	0	1314	0	736	3315	0	321	3411	0
Satd. Flow (RTOR)			118		4			38			2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	14	16	0	163	0	28	1224	0	18	595	0
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4		4	4			2			6		
Detector Phase	4	4	4	4	4		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		5.0	15.0		5.0	15.0	
Minimum Split (s)	11.2	11.2	11.2	11.2	11.2		8.1	24.7		8.1	24.7	
Total Split (s)	19.0	19.0	19.0	19.0	19.0		9.0	47.0		9.0	47.0	
Total Split (%)	19.0%	19.0%	19.0%	19.0%	19.0%		9.0%	47.0%		9.0%	47.0%	
Yellow Time (s)	3.2	3.2	3.2	3.2	3.2		3.0	4.7		3.0	4.7	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		0.1	2.0		0.1	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.2	4.2		4.2		3.1	6.7		3.1	6.7	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None	None	None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		13.9	13.9		13.9		72.7	66.9		71.9	65.2	
Actuated g/C Ratio		0.14	0.14		0.14		0.73	0.67		0.72	0.65	
v/c Ratio		0.07	0.05		0.88		0.05	0.55		0.06	0.27	
Control Delay (s/veh)		37.7	0.3		83.2		6.2	9.8		7.2	10.4	
Queue Delay		0.0	0.0		0.0		0.0	0.8		0.0	0.0	
Total Delay (s/veh)		37.7	0.3		83.2		6.2	10.5		7.2	10.4	
LOS		D	A		F		A	B		A	B	
Approach Delay (s/veh)		17.8			83.2			10.5			10.3	
Approach LOS		B			F			B			B	
Queue Length 50th (ft)		8	0		100		2	140		2	73	
Queue Length 95th (ft)		26	0		#214		m10	m#271		16	188	
Internal Link Dist (ft)		78			221			96			296	
Turn Bay Length (ft)							50			225		
Base Capacity (vph)		224	327		197		593	2230		314	2223	
Starvation Cap Reductn		0	0		0		0	631		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		0.06	0.05		0.83		0.05	0.77		0.06	0.27	

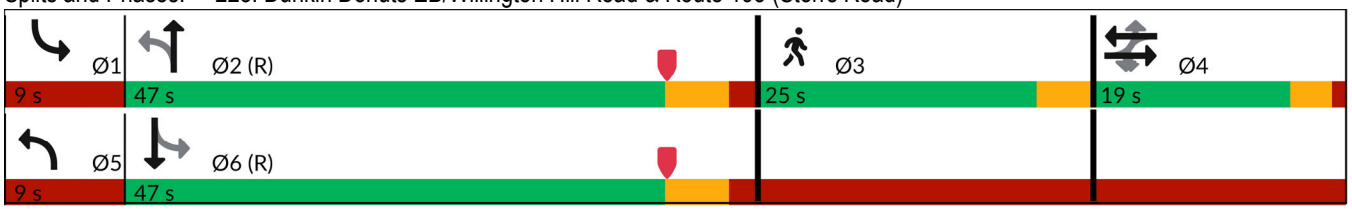
Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 8 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

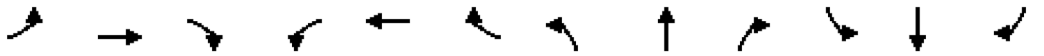
Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Peak Hour Factor	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	25%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

Intersection Summary

Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay (s/veh): 16.3 Intersection LOS: B
Intersection Capacity Utilization 56.2% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 228: Dunkin Donuts EB/Willington Hill Road & Route 195 (Storrs Road)



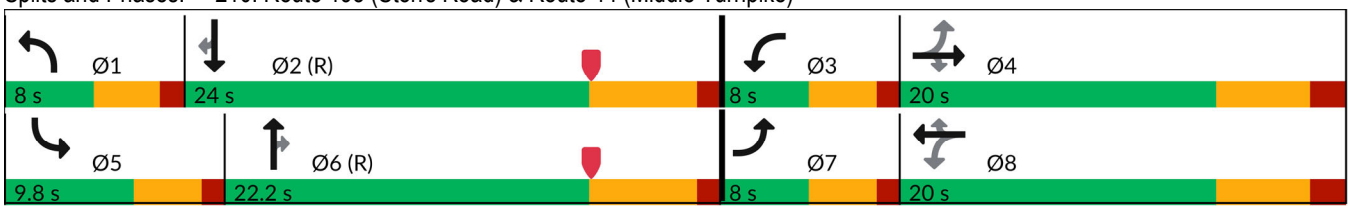


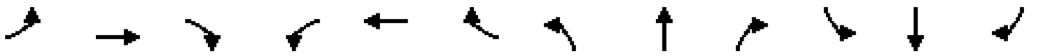
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	106	179	139	283	72	62	173	23	49	648	449
Future Volume (vph)	127	106	179	139	283	72	62	173	23	49	648	449
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1711	3421	1531
Flt Permitted	0.392			0.683			0.950			0.950		
Satd. Flow (perm)	1417	1863	1583	1272	1863	1583	1770	3539	1583	1711	3421	1531
Satd. Flow (RTOR)						196			196			376
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	138	115	195	151	308	78	67	188	25	53	704	488
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4		4	8		8			6			2
Detector Phase	7	4	4	3	8	8	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	4.0	9.0	9.0	4.0	9.0	9.0	4.0	15.0	15.0	4.0	15.0	15.0
Minimum Split (s)	8.0	14.8	14.8	8.0	14.8	14.8	8.0	20.8	20.8	9.8	20.8	20.8
Total Split (s)	8.0	20.0	20.0	8.0	20.0	20.0	8.0	22.2	22.2	9.8	24.0	24.0
Total Split (%)	13.3%	33.3%	33.3%	13.3%	33.3%	33.3%	13.3%	37.0%	37.0%	16.3%	40.0%	40.0%
Yellow Time (s)	3.0	4.2	4.2	3.0	4.2	4.2	3.0	4.8	4.8	3.0	4.8	4.8
All-Red Time (s)	1.0	1.6	1.6	1.0	1.6	1.6	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.8	5.8	4.0	5.8	5.8	4.0	5.8	5.8	4.0	5.8	5.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	Min	C-Min	C-Min
Act Effct Green (s)	17.6	12.6	12.6	17.6	12.6	12.6	4.0	19.7	19.7	5.6	24.6	24.6
Actuated g/C Ratio	0.29	0.21	0.21	0.29	0.21	0.21	0.07	0.33	0.33	0.09	0.41	0.41
v/c Ratio	0.25	0.29	0.59	0.37	0.79	0.16	0.57	0.16	0.04	0.33	0.50	0.58
Control Delay (s/veh)	13.1	21.4	28.6	16.1	37.9	0.7	48.7	16.5	0.1	31.3	17.1	7.9
Queue 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
Total Delay (s/veh)	13.1	21.4	28.6	16.1	37.9	0.7	48.7	16.5	0.1	31.3	17.1	7.9
LOS	B	C	C	B	D	A	D	B	A	C	B	A
Approach Delay (s/veh)		22.0			26.4			22.7			14.1	
Approach LOS		C			C			C			B	
Queue Length 50th (ft)	15	34	62	35	103	0	24	27	0	18	115	30
Queue Length 95th (ft)	29	72	118	68	#201	0	#74	49	0	47	168	115
Internal Link Dist (ft)		103			26			125			131	
Turn Bay Length (ft)									220			
Base Capacity (vph)	551	440	374	407	440	524	118	1164	652	165	1400	848
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	0.25	0.26	0.52	0.37	0.70	0.15	0.57	0.16	0.04	0.32	0.50	0.58

Intersection Summary
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay (s/veh): 19.1 Intersection LOS: B
Intersection Capacity Utilization 59.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 210: Route 195 (Storrs Road) & Route 44 (Middle Turnpike)





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	11	7	283	9	31	45	244	110	29	900	39
Future Volume (vph)	13	11	7	283	9	31	45	244	110	29	900	39
Satd. Flow (prot)	1711	1693	0	1711	1592	0	1711	3421	1531	1711	3421	1531
Flt Permitted	0.728			0.744			0.217			0.588		
Satd. Flow (perm)	1311	1693	0	1340	1592	0	391	3421	1531	1059	3421	1531
Satd. Flow (RTOR)		8			34				120			101
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	20	0	308	44	0	49	265	120	32	978	42
Turn Type	Perm	NA		Perm	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			4		5	2		1	6	
Permitted Phases	4			4			2		2	6		6
Detector Phase	4	4		4	4		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.2	11.2		11.2	11.2		8.1	24.7	24.7	8.1	24.7	24.7
Total Split (s)	24.6	24.6		24.6	24.6		8.1	32.3	32.3	8.1	32.3	32.3
Total Split (%)	27.3%	27.3%		27.3%	27.3%		9.0%	35.9%	35.9%	9.0%	35.9%	35.9%
Yellow Time (s)	3.2	3.2		3.2	3.2		3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	1.0	1.0		1.0	1.0		0.1	2.0	2.0	0.1	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.2	4.2		4.2	4.2		3.1	6.7	6.7	3.1	6.7	6.7
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	20.4	20.4		20.4	20.4		55.4	48.8	48.8	55.4	48.8	48.8
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.62	0.54	0.54	0.62	0.54	0.54
v/c Ratio	0.05	0.05		1.02	0.11		0.16	0.14	0.14	0.05	0.53	0.05
Control Delay (s/veh)	27.9	20.9		92.9	13.4		10.6	13.6	4.5	9.8	18.2	0.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	27.9	20.9		92.9	13.4		10.6	13.6	4.5	9.8	18.2	0.1
LOS	C	C		F	B		B	B	A	A	B	A
Approach Delay (s/veh)		23.8			83.0			10.7			17.2	
Approach LOS		C			F			B			B	
Queue Length 50th (ft)	6	5		~180	4		8	35	0	5	167	0
Queue Length 95th (ft)	22	24		#347	31		38	94	39	28	#431	0
Internal Link Dist (ft)		78			221			96			296	
Turn Bay Length (ft)							50			225		
Base Capacity (vph)	297	389		303	387		313	1856	885	688	1856	876
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.05		1.02	0.11		0.16	0.14	0.14	0.05	0.53	0.05

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Satd. Flow (RTOR)	
Peak Hour Factor	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	1.0
Minimum Split (s)	25.0
Total Split (s)	25.0
Total Split (%)	28%
Yellow Time (s)	4.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay (s/veh)	
Queue Delay	
Total Delay (s/veh)	
LOS	
Approach Delay (s/veh)	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	

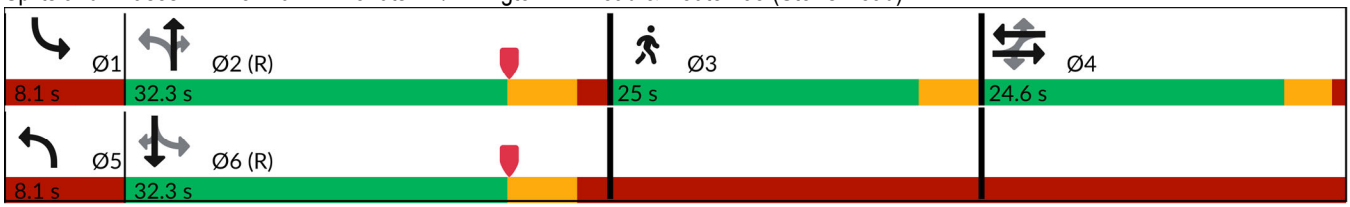
Intersection Summary

Natural Cycle: 90

Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 28.2	Intersection LOS: C
Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 228: Dunkin Donuts EB/Willington Hill Road & Route 195 (Storrs Road)



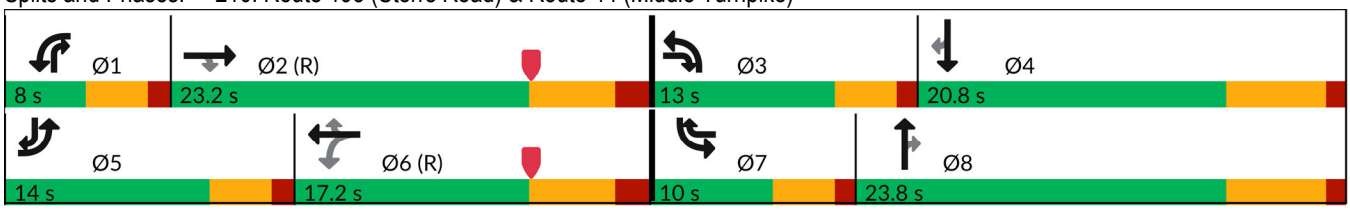
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	466	272	101	120	216	102	192	736	84	104	395	253
Future Volume (vph)	466	272	101	120	216	102	192	736	84	104	395	253
Satd. Flow (prot)	3433	1863	1583	1770	1863	1583	1770	3539	1583	1711	3421	1531
Flt Permitted	0.950			0.579			0.950			0.950		
Satd. Flow (perm)	3433	1863	1583	1079	1863	1583	1770	3539	1583	1711	3421	1531
Satd. Flow (RTOR)						181			181			175
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	507	296	110	130	235	111	209	800	91	113	429	275
Turn Type	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8	1	7	4	5
Permitted Phases			2	6		6			8			4
Detector Phase	5	2	3	1	6	7	3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	4.0	9.0	4.0	4.0	9.0	4.0	4.0	15.0	4.0	4.0	15.0	4.0
Minimum Split (s)	8.0	14.8	8.0	8.0	14.8	9.8	8.0	20.8	8.0	9.8	20.8	8.0
Total Split (s)	14.0	23.2	13.0	8.0	17.2	10.0	13.0	23.8	8.0	10.0	20.8	14.0
Total Split (%)	21.5%	35.7%	20.0%	12.3%	26.5%	15.4%	20.0%	36.6%	12.3%	15.4%	32.0%	21.5%
Yellow Time (s)	3.0	4.2	3.0	3.0	4.2	3.0	3.0	4.8	3.0	3.0	4.8	3.0
All-Red Time (s)	1.0	1.6	1.0	1.0	1.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	5.8	4.0	4.0	5.8	4.0	4.0	5.8	4.0	4.0	5.8	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	None	None	C-Max	Min	None	Min	None	Min	Min	None
Act Effct Green (s)	10.0	19.2	33.8	17.4	11.6	23.4	8.8	17.8	27.6	6.0	15.0	30.8
Actuated g/C Ratio	0.15	0.30	0.52	0.27	0.18	0.36	0.14	0.27	0.42	0.09	0.23	0.47
v/c Ratio	0.96	0.54	0.13	0.39	0.71	0.16	0.87	0.82	0.12	0.72	0.54	0.34
Control Delay (s/veh)	60.8	24.6	9.4	17.6	39.3	1.3	63.6	31.0	0.3	56.8	25.0	5.4
Queue 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
Total Delay (s/veh)	60.8	24.6	9.4	17.6	39.3	1.3	63.6	31.0	0.3	56.8	25.0	5.4
LOS	E	C	A	B	D	A	E	C	A	E	C	A
Approach Delay (s/veh)		42.9			24.5			34.7			22.8	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	104	102	22	31	89	0	82	155	0	45	78	21
Queue Length 95th (ft)	#192	175	46	62	#185	9	#190	#241	1	#119	120	60
Internal Link Dist (ft)		103			26			125			131	
Turn Bay Length (ft)									220			
Base Capacity (vph)	528	549	827	331	331	685	245	980	776	157	789	817
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	0.96	0.54	0.13	0.39	0.71	0.16	0.85	0.82	0.12	0.72	0.54	0.34

Intersection Summary
Cycle Length: 65
Actuated Cycle Length: 65
Offset: 30 (46%), Referenced to phase 2:EBT and 6:WBTL, Start of Yellow

Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 32.5	Intersection LOS: C
Intersection Capacity Utilization 67.1%	ICU Level of Service C
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 210: Route 195 (Storrs Road) & Route 44 (Middle Turnpike)



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	1	18	155	4	13	30	1036	266	19	622	10
Future Volume (vph)	13	1	18	155	4	13	30	1036	266	19	622	10
Satd. Flow (prot)	0	1720	1531	1711	1590	0	1711	3421	1531	1711	3421	1531
Flt Permitted				0.548			0.376			0.187		
Satd. Flow (perm)	0	1801	1531	987	1590	0	677	3421	1531	337	3421	1531
Satd. Flow (RTOR)			164		14				289			128
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	20	168	18	0	33	1126	289	21	676	11
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases		4		10	8		5	2		1	6	
Permitted Phases	4		4	8			2		2	6		6
Detector Phase	4	4	4	10	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	5.0	7.0		5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	11.2	11.2	11.2	22.5	11.2		8.1	24.7	24.7	8.1	24.7	24.7
Total Split (s)	11.2	11.2	11.2	22.5	33.7		8.1	33.2	33.2	8.1	33.2	33.2
Total Split (%)	14.9%	14.9%	14.9%	30.0%	44.9%		10.8%	44.3%	44.3%	10.8%	44.3%	44.3%
Yellow Time (s)	3.2	3.2	3.2	3.5	3.2		3.0	4.7	4.7	3.0	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		0.1	2.0	2.0	0.1	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		4.2	4.2	4.5	4.2		3.1	6.7	6.7	3.1	6.7	6.7
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None		None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)		7.0	7.0	16.1	16.4		50.0	44.4	44.4	50.0	44.4	44.4
Actuated g/C Ratio		0.09	0.09	0.21	0.22		0.67	0.59	0.59	0.67	0.59	0.59
v/c Ratio		0.09	0.07	0.52	0.05		0.06	0.56	0.28	0.07	0.33	0.01
Control Delay (s/veh)		32.5	0.4	29.3	10.3		6.7	14.2	2.9	7.1	11.1	0.0
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.9	0.0	0.0	0.0	0.0
Total Delay (s/veh)		32.5	0.4	29.3	10.3		6.7	15.1	2.9	7.1	11.1	0.0
LOS		C	A	C	B		A	B	A	A	B	A
Approach Delay (s/veh)		14.2			27.5			12.5			10.8	
Approach LOS		B			C			B			B	
Queue Length 50th (ft)		7	0	73	2		3	108	0	2	54	0
Queue Length 95th (ft)		24	0	101	14		18	#335	44	13	171	0
Internal Link Dist (ft)		78			221			96			296	
Turn Bay Length (ft)							50			225		
Base Capacity (vph)		168	291	448	633		520	2026	1024	316	2026	959
Starvation Cap Reductn		0	0	0	0		0	565	0	0	0	0
Spillback Cap Reductn		0	0	0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0	0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.09	0.07	0.38	0.03		0.06	0.77	0.28	0.07	0.33	0.01

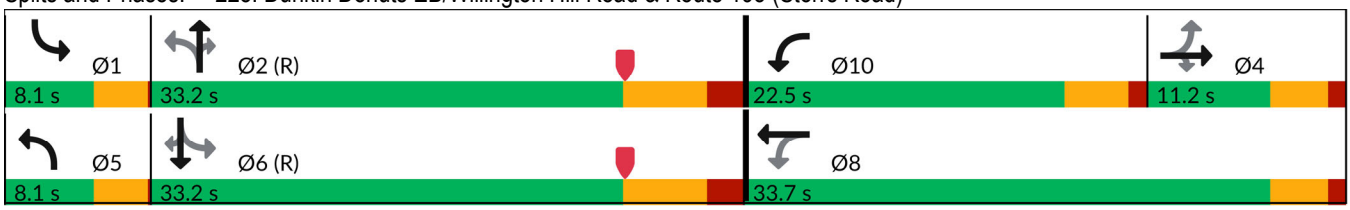
Intersection Summary
Cycle Length: 75
Actuated Cycle Length: 75
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow

Natural Cycle: 75

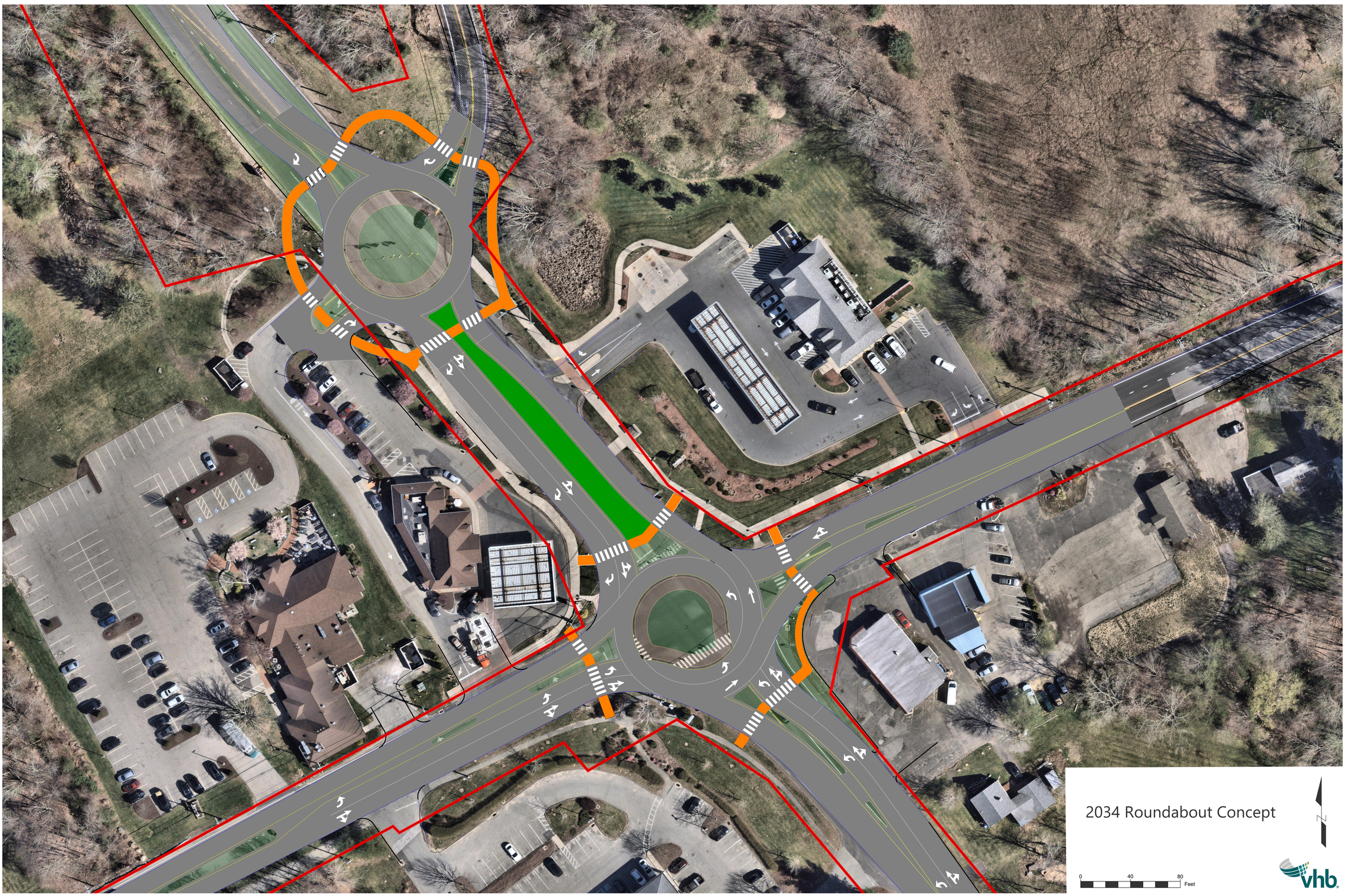
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 13.2	Intersection LOS: B
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

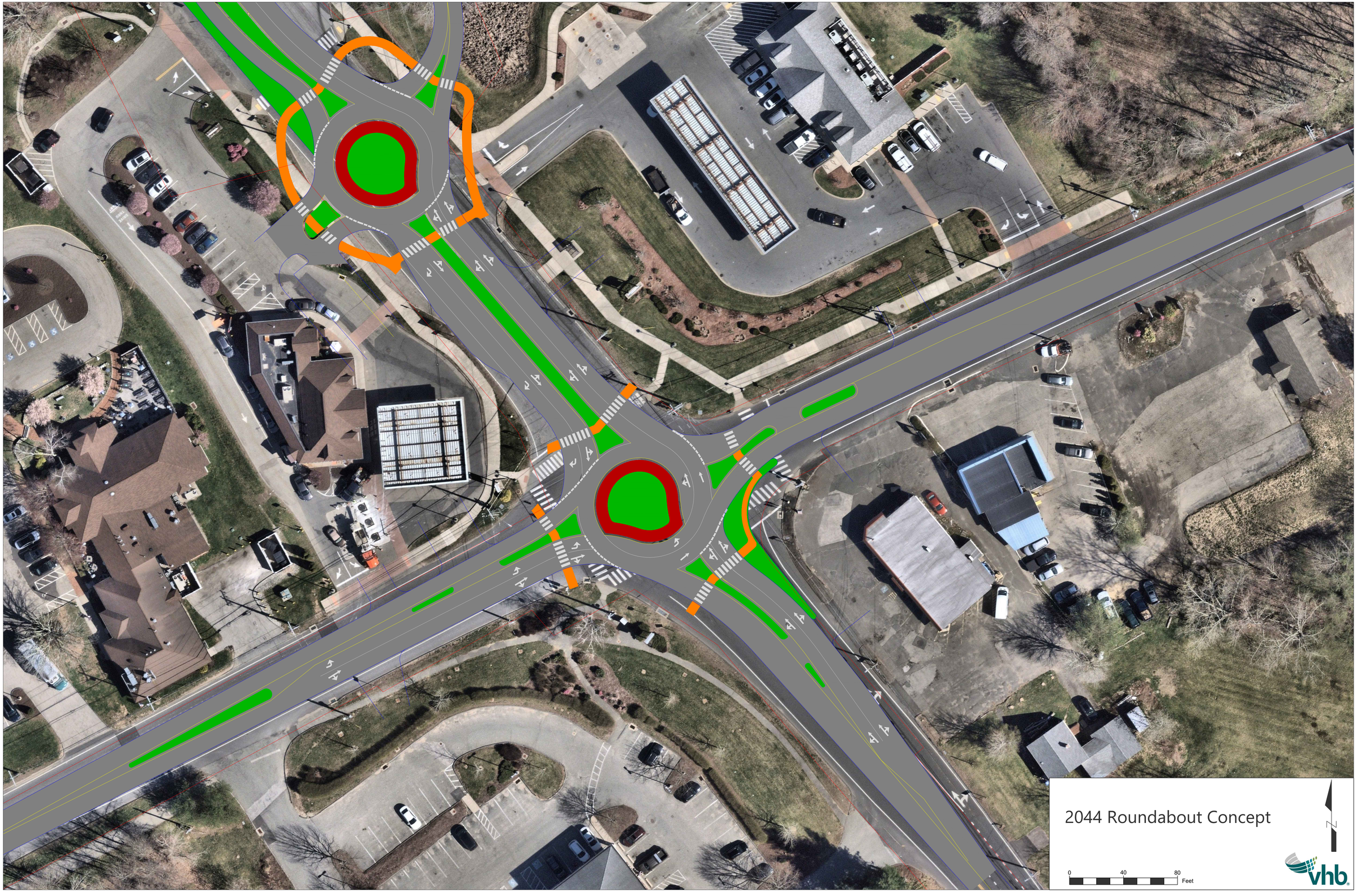
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

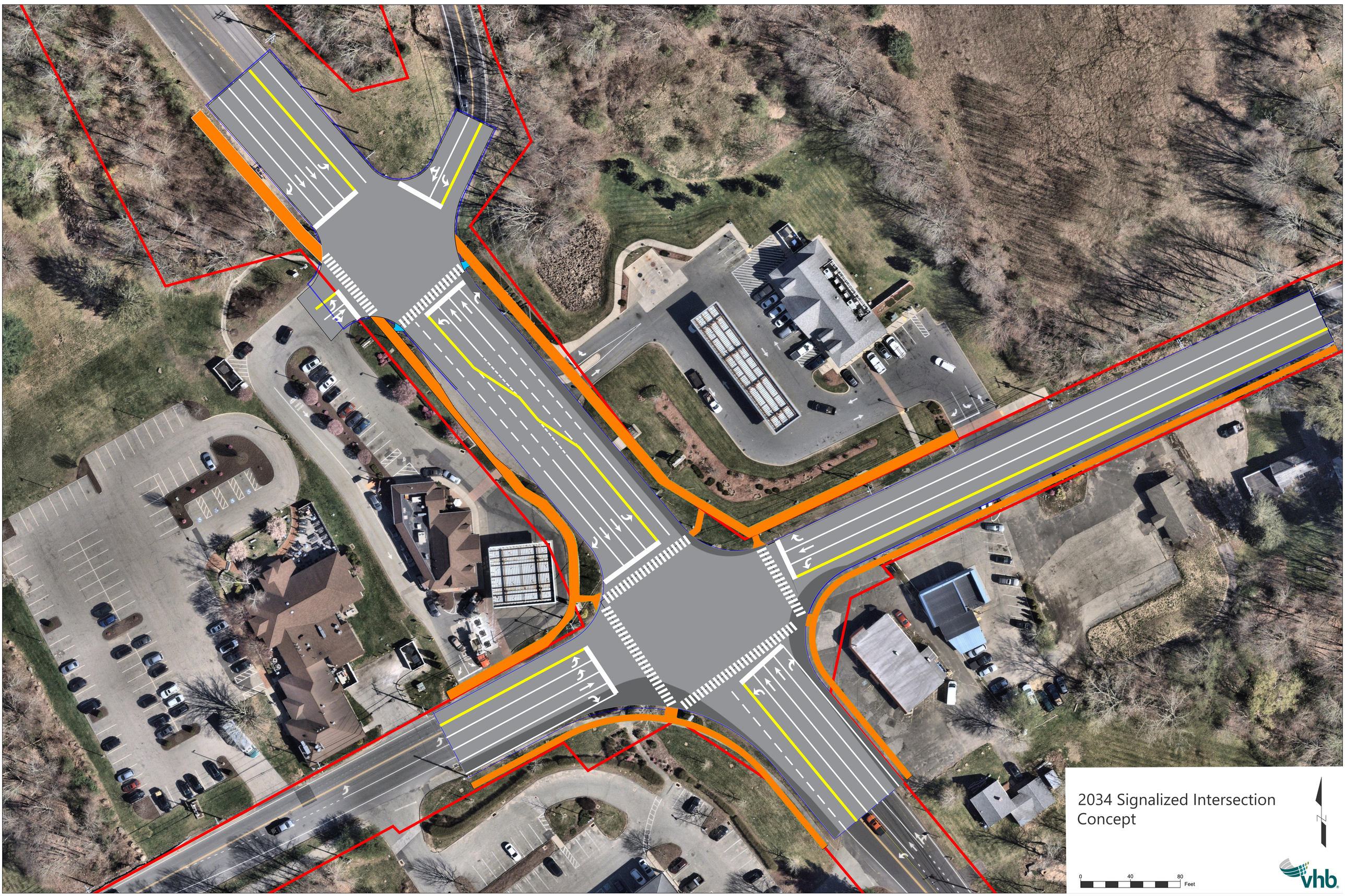
Splits and Phases: 228: Dunkin Donuts EB/Willington Hill Road & Route 195 (Storrs Road)



D. Concept Plans


2034 Roundabout Concept
0
40
80
Feet


2044 Roundabout Concept
N
0
40
80
Feet
vhb


2034 Signalized Intersection
Concept
N
0
40
80
Feet
vhb

Project Budget File

Funding Source	Four Corners Traffic and Pedestrian Safety Improvement Project Design ($1000s)	Total Funding ($1000s)
BUILD Funds	960	**960**
Local Match Funds	240	**240**
Total Project Funds	**1,200**	**1,200**

Cost Classification	BUILD Funds ($1000s)	Local Match Funds ($1000s)	Total Project Cost ($1000s)
Preliminary Engineering	160	40	200
Design	600	150	750
Environmental	120	30	150
Construction	TBD	TBD	TBD
Contingency	80	20	100
Total	**960**	**240**	**1,200**

The project request is for planning, design and permitting of the Four Corners Traffic and Pedestrian Safety Improvement Project. The project includes development of construction documents to build modern roundabouts, raised medians, ADA compliant crosswalks, rapid rectangular flashing beacons, and sidewalk extension. The project is proposed with utilizing the BUILD Grant. It is recognized that the project may be eligible for 100% Federal funding as the project area is principally in an area of Persistent Poverty as defined by Federal Highway however, this project is principally important to the Town. The Town is proposing the use of $240,000 in Capital Project funding from the Town's yearly budget to be allocated over XXX Years. The Town would thus secure the $240,000 by Year XXXX.