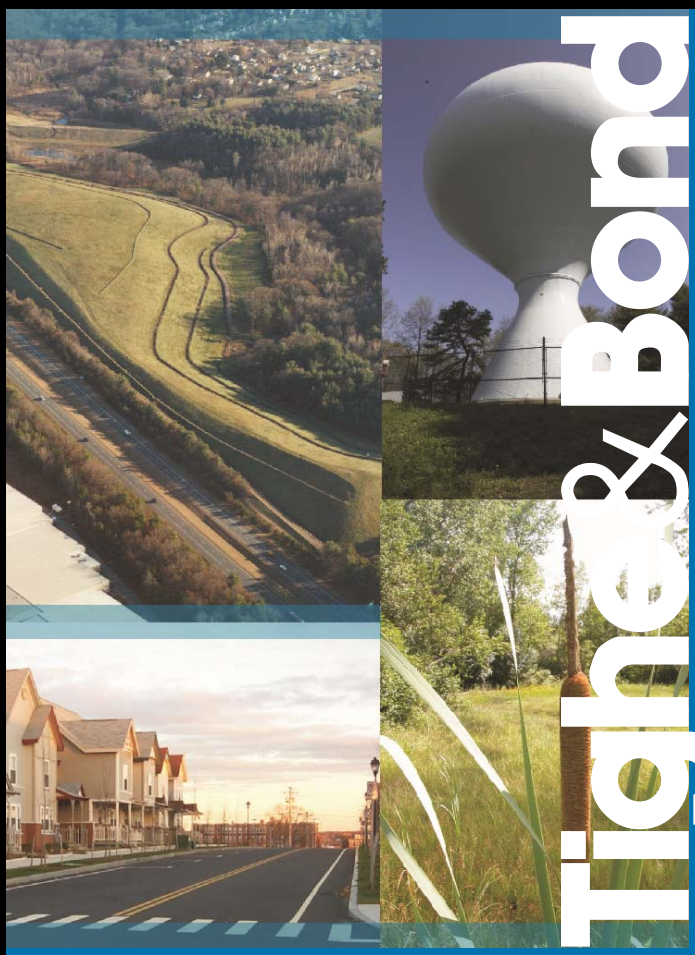

Trumbull Community Center
77, 85, & 93 Church Hill Road and 2 South Edgewood Avenue, Trumbull, CT

Traffic Impact Study

Prepared For:

Town of Trumbull
5866 Main Street, Trumbull, CT 06611

March 20, 2017

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Section 1
Introduction

This Traffic Study evaluates the potential traffic impact of the proposed Trumbull Community Center (development) to be located on Old Church Hill Road in Trumbull. The development site (the Site) consists of four parcels, 77, 85, and 93 Church Hill Road and 2 South Edgewood Avenue, which will be combined to form a 3.8 acre parcel for the Site. The Site is bordered by Old Church Hill Road to the west, residential properties located to the north and south, and by the Pequonnock River and Pequonnock River Trail to the east. Figure 1 shows the Site location relative to the surrounding roadway network.

The development will encompass 45,000 square feet of mixed community recreation and senior center use. Major facilities will include a gymnasium, 12 classroom/programming spaces, a multi-purpose space, a recreational pool with locker rooms, and trail head access to the Pequonnock River Trail. The Site will be accessed by a loop driveway along Old Church Hill Road in the center of the segment between South Edgewood Avenue and the south junction with Church Hill Road. Approximately 186 parking spaces, including 6 handicap accessible spaces, will be provided on the Site. The proposed development is expected to be completed in 2020.

This study concludes that based on the results of the analysis, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed facility, following implementation of the off-site roadway improvements, is not expected to have a significant impact to traffic operations within the study area. Sections 5 and 6 provides a summary of the analyses performed, the results, and the recommendations for off-site improvements that are the basis of this conclusion.

Section 2
Existing Conditions

The approximately 3.8 acre Site is located along Old Church Hill Road between South Edgewood Avenue and the south junction with Church Hill Road (State Route 127). The site consists of four parcels, 77, 85, and 93 Old Church Hill Road and 2 South Edgewood avenue, each of which currently contain single family residences. The Site is bordered by Old Church Hill Road to the west, residential properties to the north and south, and a wooded area containing the Pequonnock River and Pequonnock River Trail to the east.

2.1 Study Area Intersections

The study area intersections were selected based upon the proposed land use and size of the development and potential access points to the development. The following intersections make up the study-area intersections:

- Church Hill Road (State Route 127) at Quality Street & Old Church Hill Road
- Old Church Hill Road at South Edgewood Avenue
- Church Hill Road (State Route 127) at Old Church Hill Road

The study area intersections are all currently unsignalized with stop control on the Old Church Hill Road approaches to Church Hill Road (State Route 127) and on the South Edgewood Avenue approach to Old Church Hill Road.

2.2 Roadways

The following sections detail the roadways in the study area.

2.2.1 Church Hill Road (State Route 127)

Church Hill Road (State Route 127) runs north to south from State Route 111 (Main Street) in Trumbull south to State Route 130 (Stratford Avenue) in Bridgeport. The roadway provides regional access between Trumbull and Bridgeport, as well as local access to the Site via the two intersections with Old Church Hill Road north and south of the Site. The Connecticut Department of Transportation (CTDOT) classifies Church Hill Road as an urban minor arterial roadway. Within the study area, the road is approximately 35 feet wide, providing one 11 to 12 foot travel lane in each direction with wide shoulders ranging from 3 to 8 feet in width. A sidewalk is provided on the western side of the roadway starting north of the Trumbull Library and continues to the south away from the study area. The posted speed limit on Church Hill Road within the study area is 40 miles per hour.

2.2.2 Old Church Hill Road

Old Church Hill Road is classified as an urban local roadway by CTDOT. The roadway runs alongside Church Hill Road for approximately 0.15 mile, intersecting Church Hill Road on both the northern and southern ends. The intersections with Church Hill Road are unsignalized with stop control on the Old Church Hill Road approach and each intersection has acute, skewed geometry, limiting smooth flowing ingress and egress turning movements. Old Church Hill Road is approximately 16 to 20 feet wide along its length and allows for two-way travel with no pavement markings. The road fronts the Site on the west side and will contain the driveway curb cuts for the Site. Old Church Hill Road does not have a posted speed limit.

2.2.3 Quality Street

Quality Street is a 0.2 mile roadway running east to west, connecting State Route 111 (Main Street) to State Route 127 (Church Hill Road). The roadway provides access from Main Street and Church Hill Road to the Trumbull Town Hall Complex, the Trumbull Library and Town Hall Shopping Plaza. CTDOT classifies the roadway as an urban local road. Within the study area, Quality Road is approximately 40 feet wide with a single lane in each direction and no delineated shoulders. At the intersection with Church Hill Road, the roadway widens to provide a left and right turn lane as well as a 25 foot vegetated median. The intersection is across from and approximately 50 feet offset to the south of the south junction of Old Church Hill Road. Quality Street has a continuous sidewalk on the south side of the roadway from Main Street to Church Hill Road. On the north side, the roadway has sidewalks within the library property that provide access to the library and Town Hall Complex and one access to Church Hill Road at the north junction with Old Church Hill Road. There is no posted speed limit on Quality Street.

2.2.4 South Edgewood Avenue

South Edgewood Avenue is a dead end roadway that runs north from Old Church Hill Road for approximately 0.15 miles before terminating in a cul-de-sac. CTDOT classifies it as an urban local road. The roadway is approximately 21 to 25 feet wide and allows travel in both directions with no pavement markings. South Edgewood Avenue provides local access single family residences. There is no posted speed limit on Edgewood Avenue.

2.3 Traffic Volumes

The study analysis focuses on the weekday morning, weekday afternoon, and Saturday midday peak periods when traffic volumes within the study area are at their highest levels. In order to determine the traffic impact of the proposed development on adjacent study area roadways, weekday morning (7:00 AM to 9:00 AM), weekday afternoon (4:00 PM to 6:00 PM), and Saturday midday (11:00 AM to 1:00 PM) manual intersection turning movement counts (TMC) were collected at the study area intersections. The traffic count data indicates that the weekday morning peak hour occurred from 7:45 AM to 8:45 AM, the weekday afternoon peak hour occurred from 4:15 PM to 5:15 PM, and the Saturday midday peak hour occurred from 11:00 AM to 12:00 PM. These 2017 Existing Condition traffic volumes for the three peak hours are shown in Figures 2, 3, and 4 respectively. The raw TMC data is provided in Appendix A.

Automatic Traffic Recorder (ATR) counts were conducted on Church Hill Road (State Route 127) to the north of Quality Street to record hourly directional traffic volumes and vehicular speeds. The ATR data showed that the weekday average daily traffic (ADT) volume on Church Hill Road was 6,850 vehicles with a nearly equal directional distribution of 3,425 vehicles northbound and southbound. The ATR data also showed that the 85th percentile speed, also known as the operating speed of the roadway, was 48 mph and 40 mph in the northbound and southbound directions, respectively. The raw ATR data is provided in Appendix A.

2.4 Capacity and Queue Analyses - Existing Condition

Capacity and queue analyses were performed for the study intersections for the 2017 Existing Condition traffic volumes during the weekday morning, weekday afternoon, and Saturday midday peak hours using Trafficware Synchro Studio 9 – Traffic Analysis Software. The software conducts the analyses based upon the methodology provided in the *Highway Capacity Manual (HCM), 2010*. The analysis results are categorized in terms of Level of Service (LOS) and queue. LOS describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. The queue analysis results are summarized based upon the length of vehicle queues on an intersection approach. For unsignalized intersections, queues are quantified for 95th percentile (design queues). For signalized intersections, queues are quantified by 95th percentile (design) and 50th percentile (average) queues. For summary purposes, queues will be detailed in terms of car lengths, which are approximately 25 feet per vehicle. A summary of the HCM capacity analysis methodology and a detailed definition of LOS is provided in Appendix B.

Tables 1 and 2 summarize the capacity and queue analyses results for the 2017 Existing Conditions. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix C.

As shown in Table 1, overall operations are efficient with LOS A or B on most approaches across all peak periods. The eastbound shared left-through lane on Quality Street experiences LOS C operation during all three peaks and the westbound approach from Old Church Hill Road operates at LOS C and LOS D during the morning and Saturday midday peaks, respectively. Queue lengths are consistently short, with approximately one vehicle length or less exhibited on all approaches during all peaks.

2.5 Collision History

Vehicle collision history between 2014 and 2016 was collected from the Connecticut Crash Data Repository and the Trumbull Police Department for the study area roadways. Table 3 provides a summary of the collisions within the study area including type, severity, and location. Appendix D includes detailed collision summaries for each of the intersections.

As shown in Table 3, there were 15 reported motor vehicle collisions reported in the study area within the 3 year period analyzed. All but one collision occurred at the intersection of Church Hill Road (State Route 127) at Quality Street and Old Church Hill Road. There was one collision at the north intersection of Old Church Hill Road with Church Hill Road and no collisions reported at the South Edgewood Avenue intersection with Old Church Hill Road.

The most frequent type of collision was rear end, which accounted for over 50% of the collisions within the study area. The second and third most frequent collision types were angle and other non-fixed object, accounting for 20% and 13% of the collisions, respectively. Fixed object and backing type collisions accounted for one incident each.

Throughout the period analyzed, there was one fatality and one collision reporting personal injuries. The fatality was the result of a collision between a vehicle traveling northbound on Church Hill Road attempting to turn left into Quality Street and a motorcycle traveling southbound on Church Hill Road. A full police report of the incident was unavailable as it is still under investigation.

The collision analysis results do not identify a significant or notable pattern of collisions in the study area. The addition of the proposed development's site generated traffic is not anticipated to negatively impact existing collision patterns or overall roadway safety in the study area with the proposed roadway improvements further detailed in Section 4.4.

Section 3
Background Conditions

The Background Condition represents the analysis of traffic volumes and operating conditions for the completion year of the proposed development, assuming that the development is not constructed. The Background Condition considers the general background growth of traffic and site generated traffic associated with other planned and/or recently approved developments in proximity to the Site, which are expected to open prior to the opening of the Site. This proposed development is scheduled to be completed in 2020, and therefore, 2020 was selected as the Background Condition year.

3.1 Planned/Recently Approved Developments and Planned Roadway Improvements

The Town of Trumbull and the CTDOT Office of the State Traffic Administration (OSTA) were contacted to determine if there were any pending or recently approved developments that would generate traffic in the study area or any planned roadway improvements in the area. No developments or proposed improvements were identified.

3.2 Background Traffic Volumes

To develop the 2020 Background Condition traffic volumes, the 2017 Existing Condition traffic volumes were grown by 0.9% per year for three years to represent the general growth of traffic volume on the public roadways. The projected 2020 Background Condition traffic volumes for the weekday morning, weekday afternoon, and Saturday midday peak hours are illustrated in Figures 5, 6 and 7, respectively.

3.3 Capacity and Queue Analyses

Capacity and queue analyses were conducted for the 2020 Background Condition traffic volumes for the weekday morning, afternoon, and Saturday peak hours using the methodology described in Section 2.4. Tables 1 and 2 summarize the capacity and queue results. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix C.

The background traffic growth results in marginal increases in delays and queues when compared to the Existing Conditions. The Quality Street eastbound shared left through lane is the only approach that experiences a decrease in LOS, operating at LOS D in the weekday afternoon peak hour due to an additional 1 second of delay per vehicle. Queues lengths remain stable with minimal increase on all approaches.

Section 4
Development Plan - Proposed Conditions

The Town of Trumbull is proposing to construct an approximately 45,000 square foot shared community recreation and senior center in a single building centrally located on four existing parcels that will be combined to form the Site. Major facilities will include a gymnasium, 12 classroom/programming spaces, a multi-purpose space, a recreational pool with locker rooms, and trail head access to the Pequonnock River Trail. Approximately 186 surface parking spaces, including 6 handicap accessible spaces, will be provided. The proposed development is expected to be completed in 2020.

4.1 Site Access

Site access will be provided on the western side of the property located along Old Church Hill Road approximately 130 feet south of South Edgewood Avenue. The driveway will be a loop driveway with an entrance and an exit access separated by a median, mirroring the drop off loop in front of the building. The driveway intersection will be unsignalized with stop control on the driveway approach only.

Intersection sight distances were observed at the proposed site driveway in accordance with criteria set forth in the 2003 CTDOT Highway Design Manual (including Revisions to 2013). Based on an assumed operating speed of 30 mph on Old Church Hill Road, the CTDOT minimum required sight distance for passenger cars on a stop controlled approach for a two lane roadway is 335 feet. Based on this criterion, the Site driveway will provide adequate sight lines in excess of the required intersection sight distance for the developed conditions. The driveway allows 485 feet of sight distance looking south (left) and 395 feet looking north (right).

4.2 Trip Generation

Site generated traffic volumes for the proposed development were estimated using the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, 2012. Land Use 495 – Recreational Community Center was used to estimate traffic for the Site. Based on the published data, the proposed 45,000 square foot development is expected to generate the following traffic volumes during the peak hours:

- Weekday Morning: 92 trips (61 entering, 31 exiting)
- Weekday Afternoon: 123 trips (60 entering, 63 exiting)
- Saturday Midday: 48 trips (26 entering, 22 exiting)

Table 4 provides a summary of the trip generation in tabular format.

4.3 Arrival and Departure Distribution

The distribution of new traffic entering and exiting the Site was applied to the road network based on existing traffic patterns, the roadway layout, and the location of the facility in relation to expected users. Due to the fact that the community center is centrally located within the Town, an even traffic distribution from all directions is expected:

- 50% to/from Church Hill Road (State Route 127) south of the Site
- 25% to/from Church Hill Road (State Route 127) north of the Site
- 25% to/from Quality Street west of the Site

Figure 8 shows the site trip distribution on a percentage basis distributed to the study area intersections. Figures 9, 10 and 11 show the site generated traffic volumes distributed to the study area intersections for the weekday morning, weekday afternoon, and Saturday midday peak hours respectively.

4.4 Proposed Off-Site Roadway Improvements

As part of the proposed development, off-site roadway improvements were investigated to provide access to the facility for all users. Due to the proximity of the Site to the Trumbull Town Hall Complex and Trumbull Library on Quality Street, and the connection to the Pequonnock River Trail on the Site, it is expected that increased pedestrian traffic will be crossing Church Hill Road between these facilities. In addition, as detailed Section 2, the existing alignment of Old Church Hill Road offset from Quality Street and the skewed geometry of Old Church Hill at both intersections with Church Hill Road limit smooth turning movements into and out of Old Church Hill Road.

To address these existing deficiencies and facilitate access to the facility by all users, the following improvements are recommended:

- Realign the Quality Street approach to the north, removing the median to create a perpendicular intersection with Church Hill Road.
- Realign the Church Hill Road northbound and Old Church Hill Road approach to remove excess pavement east of the intersection and calm traffic flow into and out of Old Church Hill Road. With the realignment, a northbound left turn lane onto Quality Street will be provided for the Church Hill Road northbound approach and the existing right turn lane on Quality Street will be extended to accommodate expected queues.
- Installation of a traffic signal at the realigned Church Hill Road at Quality Street and Old Church Hill Road intersection.
- Provide a pedestrian connection from the existing Library property paths across Church Hill Road and Old Church Hill Road to the site, with crossing of Church Hill Road controlled by an exclusive pedestrian phase in the traffic signal.

- Close the north end of Old Church Hill Road at Church Hill Road with a cul-de-sac. The two properties on the south end of this Old Church Hill Road segment, 49 and 59 Church Hill Road, are proposed to have access remaining on Old Church Hill Road. The two properties on the north end, 37 and 43 Church Hill Road, are proposed to have access to Church Hill Road with extended private driveways. A stop sign is proposed for Old Church Hill Road eastbound at South Edgewood Avenue due to the limited sight distance through the northwest corner of the intersection.

These improvements are shown in the Off-Site Roadway Improvement Plan (C1.01) included in Appendix E. Traffic signal warrant analyses for the Church Hill Road at Quality Street and Old Church Hill Road intersection are provided in Appendix F showing that the signal is warranted based upon the Manual for Uniform Traffic Control Devices (MUTCD) for Street and Highways, 2009 Edition, for the 8-hour, 4-hour and peak hour warrants.

Section 5
Combined Conditions

The anticipated site generated traffic volumes associated with the Site were added to the 2020 Background Condition traffic volumes to develop the 2020 Combined Condition traffic volumes. Figures 12, 13 and 14 present the 2020 Combined Condition traffic volumes for the weekday morning, weekday afternoon, and Saturday peak hours, respectively.

5.1 Capacity and Queue Analyses - Combined Condition

Capacity and queue analyses were conducted for the 2020 Combined Condition for the weekday morning, weekday afternoon, and Saturday midday peak hours using the methodology described in Section 2.4. These Combined Condition analyses include the improvements outlined in Section 4.4. Tables 1 and 2 summarize the capacity and queue results. Capacity analysis worksheets with full inputs, settings, and results are provided in Appendix C.

Operating under traffic signalization, the Church Hill Road intersection with Quality Street and Old Church Hill Road experiences an efficient overall LOS of B during the peak hours. Intersection approaches/movements also operate efficiently at LOS A or B, with the exception of the Quality Street eastbound right turns, which operate acceptably at LOS C during the three peak periods. Queue lengths do increase appreciably between the background and combined conditions due to the installation of the traffic signal, however all queues are accommodated within available storage.

The Site driveway operates efficiently with LOS A during the peaks with minimal queues. The new configuration of the Old Church Hill Road intersection with South Edgewood Avenue does not allow for capacity analysis, but due to low volumes and the lack of an outlet, negligible delays and queues are expected.

Section 6
Conclusions & Recommendations

1. The project proposes to construct a 45,000 square foot mixed community recreation and senior center facility. Approximately 186 parking spaces, including 6 handicap accessible spaces, will be provided on the Site. The proposed development is expected to be complete in 2020.

2. The Site will be served by a loop driveway to be located on the east side of Old Church Hill Road between South Edgewood Avenue and the southern junction with Church Hill Road.

3. The proposed development is expected to generate 92 trips (61 entering, 31 exiting) during the weekday morning peak, 123 trips (60 entering, 63 exiting) during the weekday afternoon peak, and 48 trips (26 entering, 22 exiting) during the Saturday midday peak.

4. Vehicle collision history does not indicate a significant or notable pattern of collisions in the study area. The addition of the proposed development site generated traffic is not anticipated to impact existing collision patterns within the study area with the proposed off-site improvements.

5. Analysis of intersection sight distances at the proposed Site driveway on Old Church Hill Road observed that the provided sight distances will exceed the required distances in the developed conditions.

6. The project proposes significant off-site improvements in the area including realignment and signalization of the Church Hill Road at Quality Street and Old Church Hill Road intersection and closure of the north end of Old Church Hill Road with a cul-de-sac. The improvements are shown in the concept provided in Appendix E and further detailed in Section 4.4. The purpose of these improvements is to address existing geometric deficiencies within the study area and facilitate access to the proposed facility by all users. The off-site improvements will be coordinated with both the Town of Trumbull and CTDOT during and following the approval process.

7. The capacity analyses show that the study area, with the proposed improvements, will operate acceptably with the additional traffic generated by the proposed facility. The new traffic signal operates at overall LOS B during the peak periods with all approaches operating acceptably at LOS C or better with queues within available storage. The Site driveway will operate efficiently at LOS A during all peaks.

8. Based on the results of the analysis, it is the professional opinion of Tighe & Bond that the additional traffic expected to be generated by the proposed Trumbull Community Center, following implementation of the off-site roadway improvements, is not expected to have a significant impact to traffic operations within the study area.

Section 7
Tables

TABLE 1
Intersection Operation Summary - Vehicular Levels of Service / Average Delay (sec/veh)

		Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Saturday Midday Peak Hour		
	Lane Use	2017 Existing	2020 Background	2020 Combined	2017 Existing	2020 Background	2020 Combined	2017 Existing	2020 Background	2020 Combined
Unsignalized TWSC / Signalized - Route 127 (Church Hill Road) at Quality Street & Old Church Hill Road (See Note 1)										
Overall		**-- / --**	**-- / --**	**B / 12.4**	**-- / --**	**-- / --**	**B / 17.4**	**-- / --**	**-- / --**	**B / 17.6**
Church Hill Road	NBL	A / 8.3	A / 8.4	B / 11.4	A / 8.4	A / 8.4	B / 17.2	A / 8.3	A / 8.4	B / 18.3
	NBTR	-- / --	-- / --	A / 9.9	-- / --	-- / --	B / 16.0	-- / --	-- / --	B / 14.9
Quality Street	EBTL	C / 17.1	C / 17.6	B / 19.4	C / 24.1	D / 25.1	B / 18.9	C / 22.9	C / 23.8	B / 17.6
	EBR	B / 11.1	B / 11.2	C / 20.0	B / 11.5	B / 11.6	C / 23.7	B / 11.5	B / 11.7	C / 24.1
Old Church Hill Road	WB	C / 18.2	C / 18.7	B / 16.4	A / 0.0	A / 0.0	B / 15.8	D / 29.9	D / 31.5	B / 15.0
Church Hill Road	SB	A / 0.0	A / 0.0	B / 11.7	A / 0.0	A / 0.0	B / 15.4	A / 7.8	A / 7.8	B / 15.3
Unsignalized TWSC - Old Church Hill Road at South Edgewood Avenue (See Note 2)										
Old Church Hill Road	EBL	A / 0.0	A / 0.0	-- / --	A / 7.2	A / 7.2	-- / --	A / 7.2	A / 7.2	-- / --
South Edgewood Avenue	SB	A / 8.6	A / 8.6	-- / --	A / 8.3	A / 8.3	-- / --	A / 8.5	A / 8.5	-- / --
Unsignalized TWSC - Route 127 (Church Hill Road) at Old Church Hill Road (See Note 3)										
Old Church Hill Road	WB	B / 11.1	B / 11.2	-- / --	B / 10.1	B / 10.2	-- / --	B / 11.3	B / 11.4	-- / --
Church Hill Road	SBL	A / 7.7	A / 7.7	-- / --	A / 7.9	A / 8.0	-- / --	A / 7.8	A / 7.8	-- / --
Unsignalized TWSC - Old Church Hill Road at Site Driveway										
Site Driveway	WB	-- / --	-- / --	A / 8.9	-- / --	-- / --	A / 9.0	-- / --	-- / --	A / 8.8
Old Church Hill Road	SBL	-- / --	-- / --	A / 0.0	-- / --	-- / --	A / 0.0	-- / --	-- / --	A / 0.0

[1] Intersection is signalized in Combined Conditions. LOS for SB is for left turn movement in Existing and Background Conditions and all movements in Combined Conditions. Capacity analyses for unsignalized intersections are reported for approaches only.

[2] Stop control added to Old Church Hill Road eastbound in Combined Conditions. Intersection configuration does not allow for capacity analyses.

TABLE 2

Intersection Operation Summary - Vehicular 50th / 95th Percentile Queue (In Feet)

	Lane Use	Available Storage (Feet)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour			Saturday Midday Peak Hour		
			2017 Existing	2020 Background	2020 Combined	2017 Existing	2020 Background	2020 Combined	2017 Existing	2020 Background	2020 Combined
Unsignalized TWSC / Signalized - Route 127 (Church Hill Road) at Quality Street & Old Church Hill Road (See Note 1)											
Church Hill Road	NBL	150	8	8	11 / 65	13	13	28 / 146	13	13	34 / 151
	NBTR	500+	--	--	27 / 129	--	--	57 / 255	--	--	44 / 178
Quality Street	EBTL	500+	3	3	3 / 29	3	3	3 / 27	3	3	2 / 18
	EBR	195	10	10	12 / 72	25	28	34 / 170	25	28	39 / 192
Old Church Hill Road	WB	265	0	0	5 / 41	0	0	8 / 58	0	0	4 / 30
Church Hill Road	SB	500+	0	0	59 / 252	0	0	49 / 222	0	0	46 / 185
Unsignalized TWSC - Old Church Hill Road at South Edgewood Avenue (See Note 2)											
Old Church Hill Road	EBL	410	0	0	--	0	0	--	0	0	--
South Edgewood Avenue	SB	500+	0	0	--	0	0	--	0	0	--
Unsignalized TWSC - Route 127 (Church Hill Road) at Old Church Hill Road (See Note 3)											
Old Church Hill Road	WB	410	0	0	--	0	0	--	0	0	--
Church Hill Road	SBL	410	0	0	--	0	0	--	0	0	--
Unsignalized TWSC - Old Church Hill Road at Site Driveway											
Site Driveway	WB	50	--	--	3	--	--	5	--	--	3
Old Church Hill Road	SBL	100	--	--	0	--	--	0	--	--	0

General Note: Unsignalized queues quantified for 95th percentile (design) queues only; Signalized queues are 50th / 95th percentiles.

[1] Intersection is signalized in Combined Conditions. LOS for SB is for left turn movement in Existing and Background Conditions and all movements in Combined Conditions.

[2] Stop control added to Old Church Hill Road eastbound in Combined Conditions. Intersection configuration does not allow for capacity analyses.

[3] Intersection removed and replace with private driveways in Combined Conditions

TABLE 3
Study Area Collision History Summary

COLLISION TYPE

	2014	2015	2016	Total	Percent
Rear-End	4	1	3	**8**	**53.3%**
Angle	2	0	1	**3**	**20.0%**
Other Non-Fixed Object	2	0	0	**2**	**13.3%**
Fixed Object	0	1	0	**1**	**6.7%**
Backing	0	0	1	**1**	**6.7%**
TOTAL	**8**	**2**	**5**	**15**	**100%**

SEVERITY

	2014	2015	2016	Total	Percent
Fatal	1	0	0	**1**	**6.7%**
Injury	0	0	1	**1**	**6.7%**
Property Damage Only (PDO)	7	2	4	**13**	**86.7%**
TOTAL	**8**	**2**	**5**	**15**	**100%**

BY STUDY AREA INTERSECTION

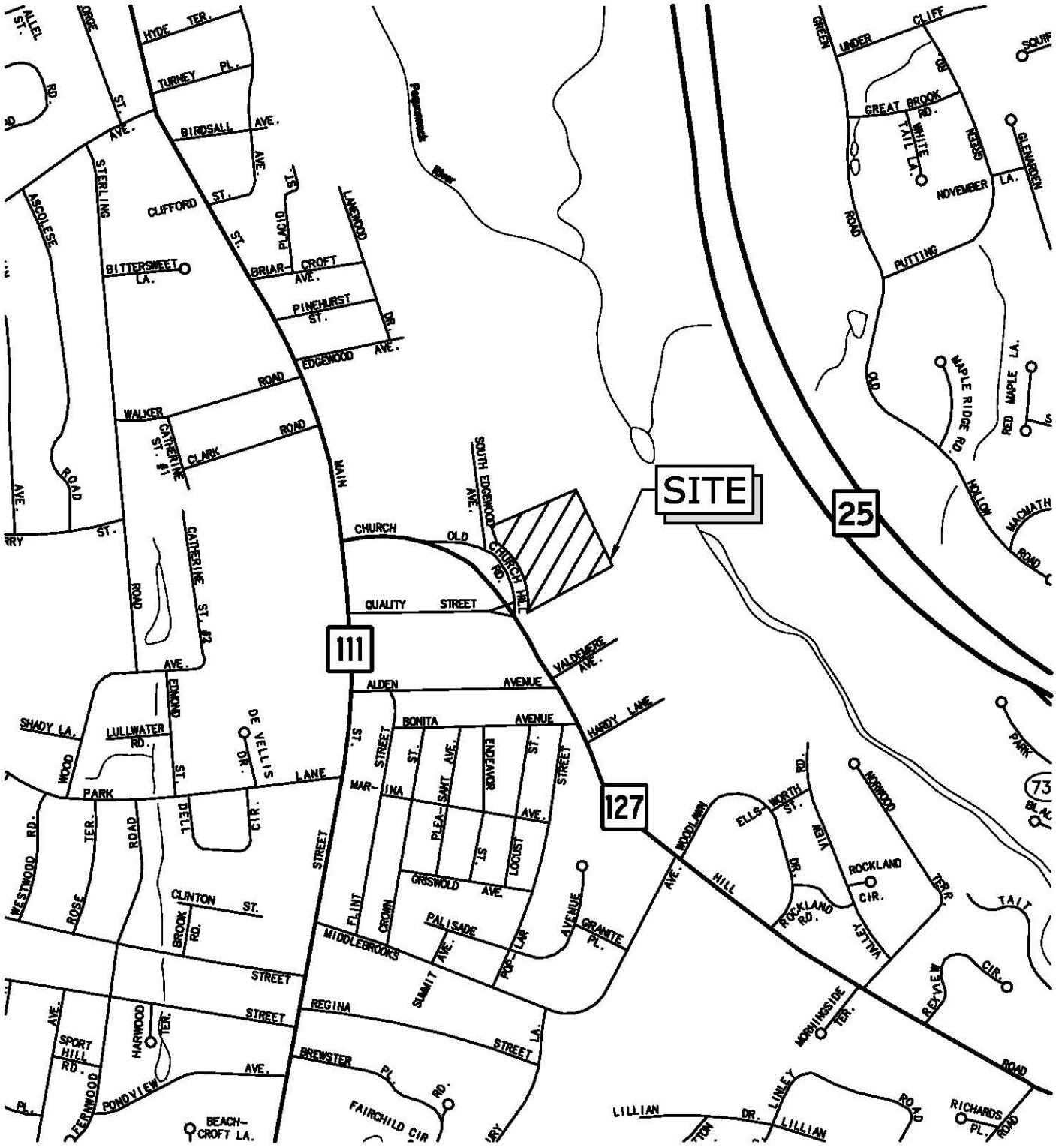
	2014	2015	2016	Total	Percent
Church Hill Road at Quality Street/Old Church Hill Road	8	1	5	**14**	**93.3%**
Church Hill Road at Old Church Hill Road	0	1	0	**1**	**6.7%**
Old Church Hill Road at S Edgewood Avenue	0	0	0	**0**	**0.0%**
TOTAL	**8**	**2**	**5**	**15**	**100%**

TABLE 4
Site Generated Traffic Summary

Proposed - 45,000 SF Recreational Community / Senior Citizen Center			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	61	31	92
Weekday Afternoon	60	63	123
Saturday Midday	26	22	48
Daily	761	761	1,522

Source: Institute of Transportation Engineering, Trip Generation, 9th Edition, 2012.
Land Use - 495 Recreational Community Center

Section 8
Figures



OLD CHURCH HILL ROAD
PROPOSED COMMUNITY CENTER
TRUMBULL, CONNECTICUT

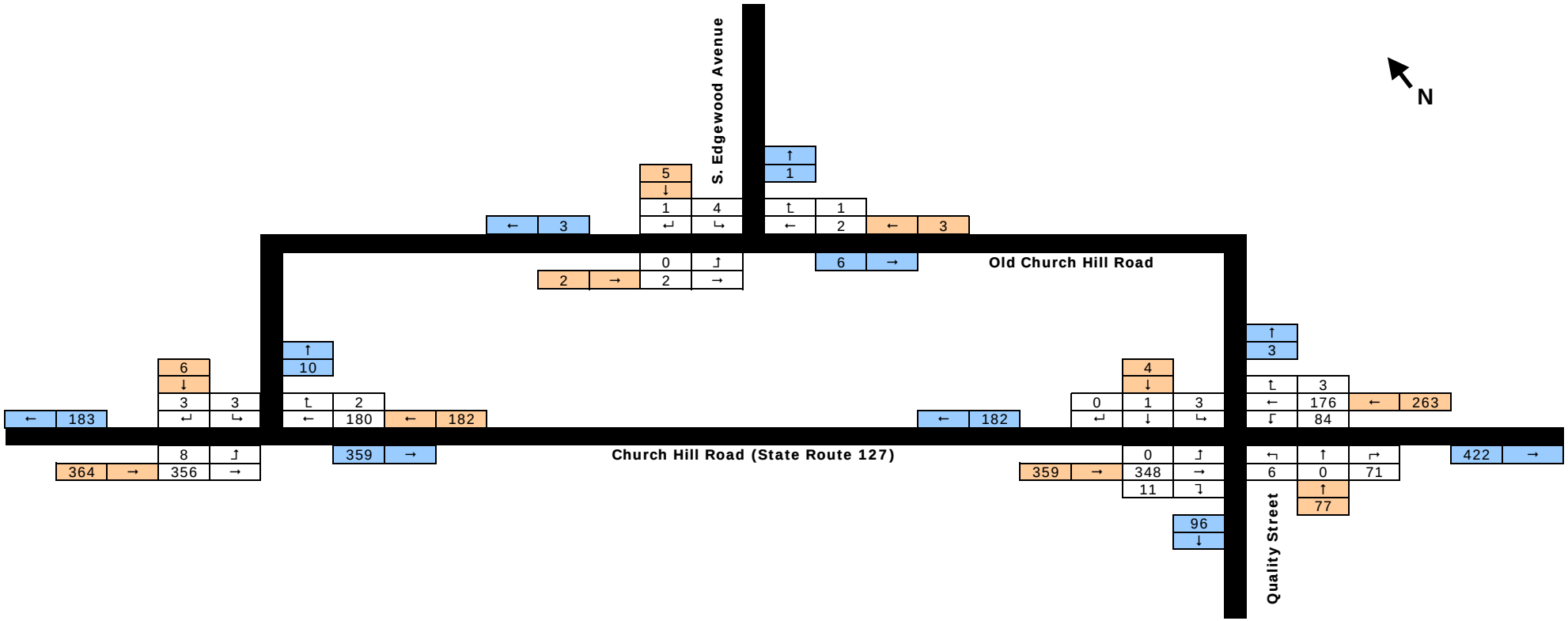
SITE LOCATION MAP

NORTH

1" = 1000'

FIGURE 1

Tighe&Bond
www.tighebond.com

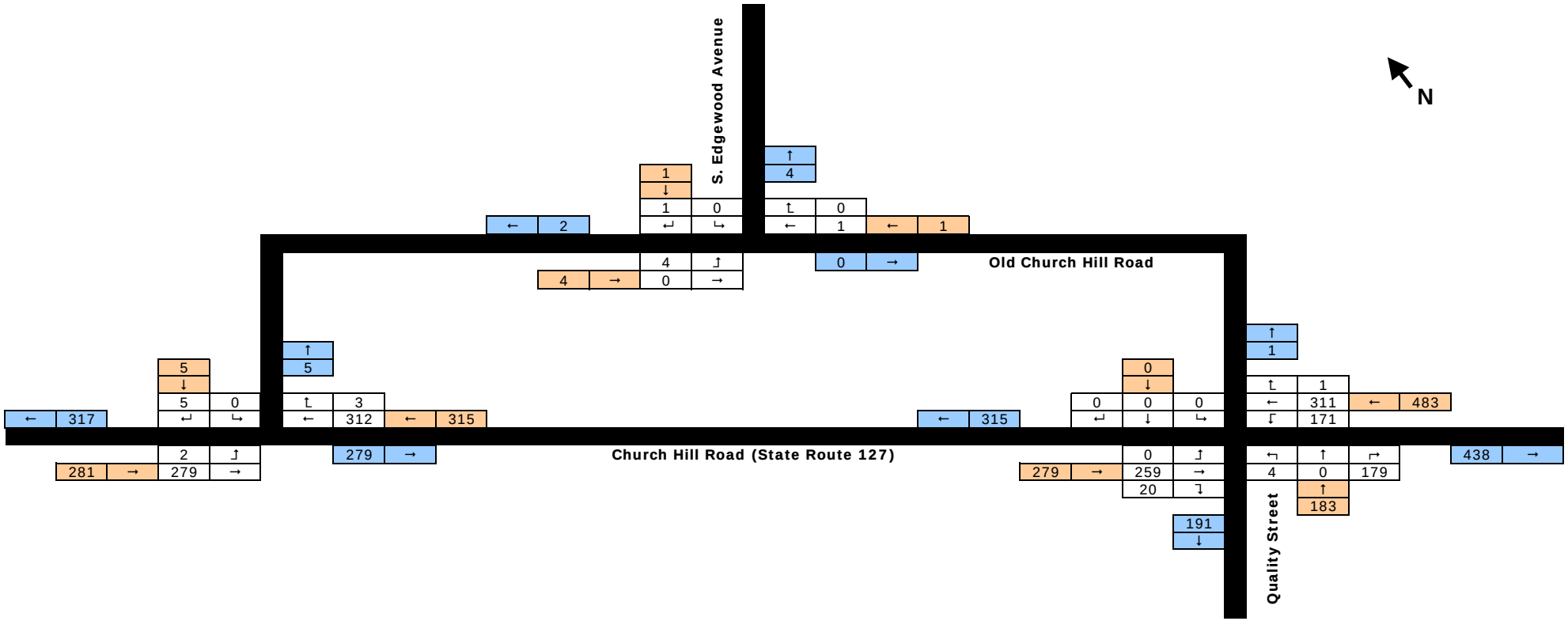


2017 Existing Traffic Volumes
Weekday Morning Peak Hour
(7:45 to 8:45 AM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 2

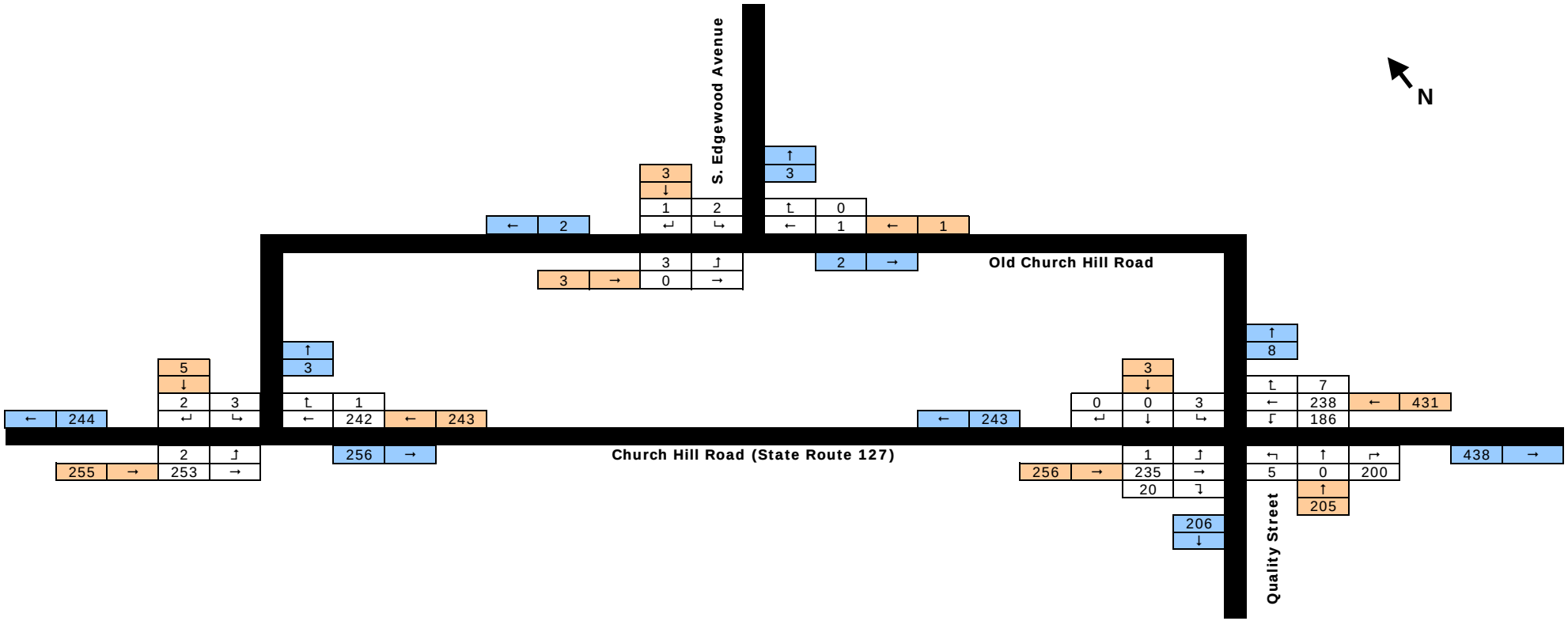


2017 Existing Traffic Volumes
Weekday Afternoon Peak Hour
(4:15 to 5:15 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 3

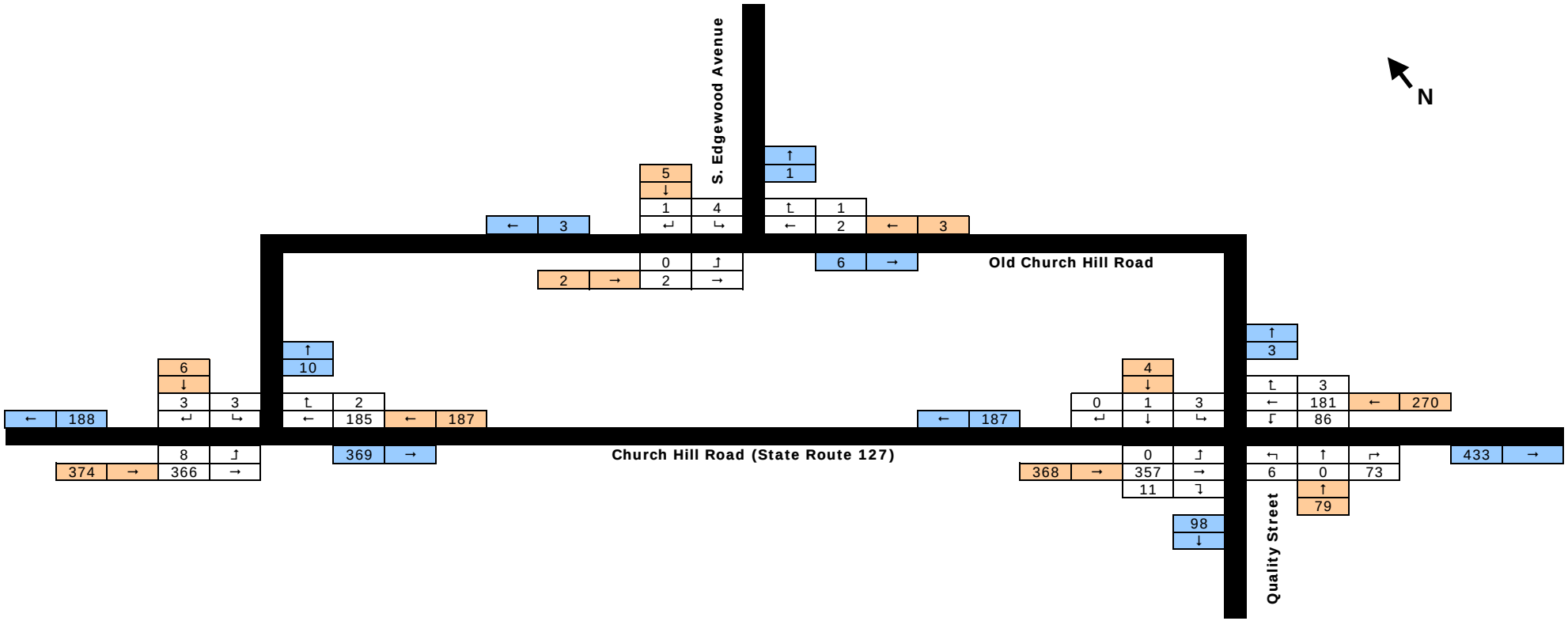


2017 Existing Traffic Volumes
Saturday Midday Peak Hour
(11:00 AM to 12:00 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 4

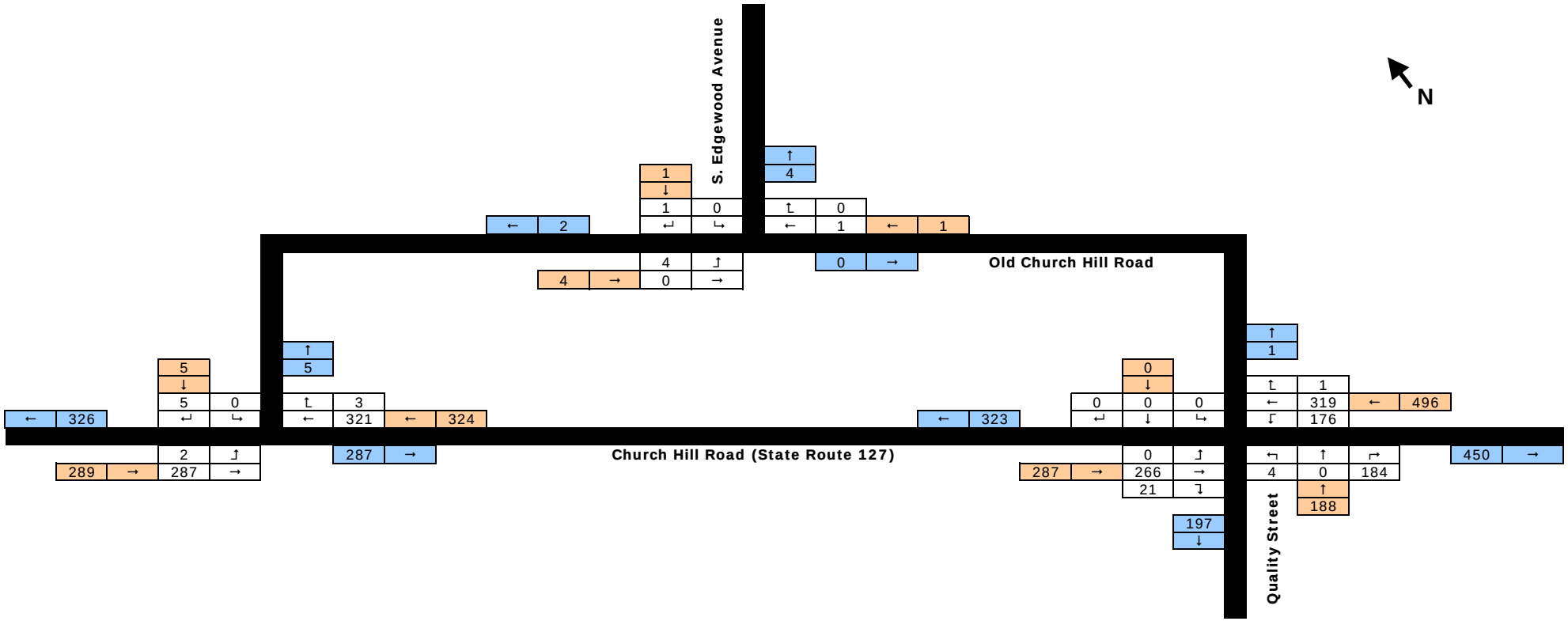


2020 Background Traffic Volumes
Weekday Morning Peak Hour
(7:45 to 8:45 AM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 5

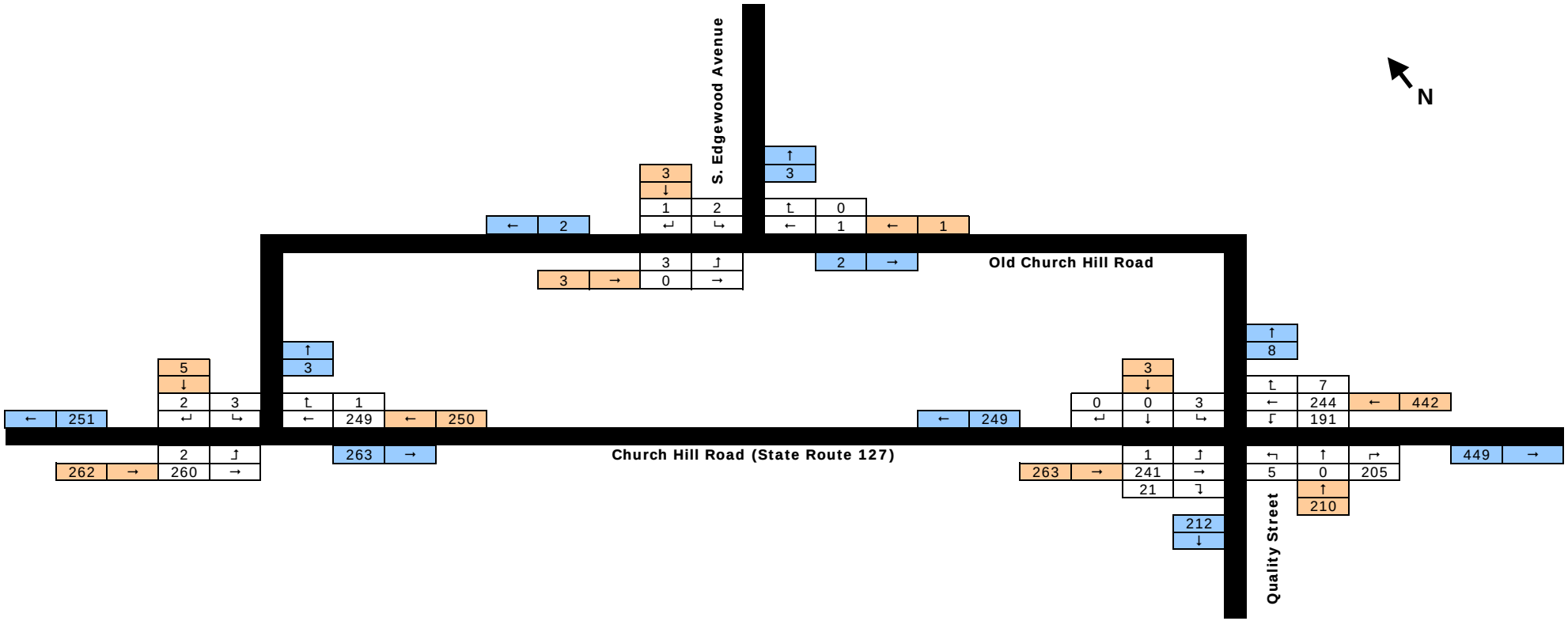


2020 Background Traffic Volumes
Weekday Afternoon Peak Hour
(4:15 to 5:15 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 6

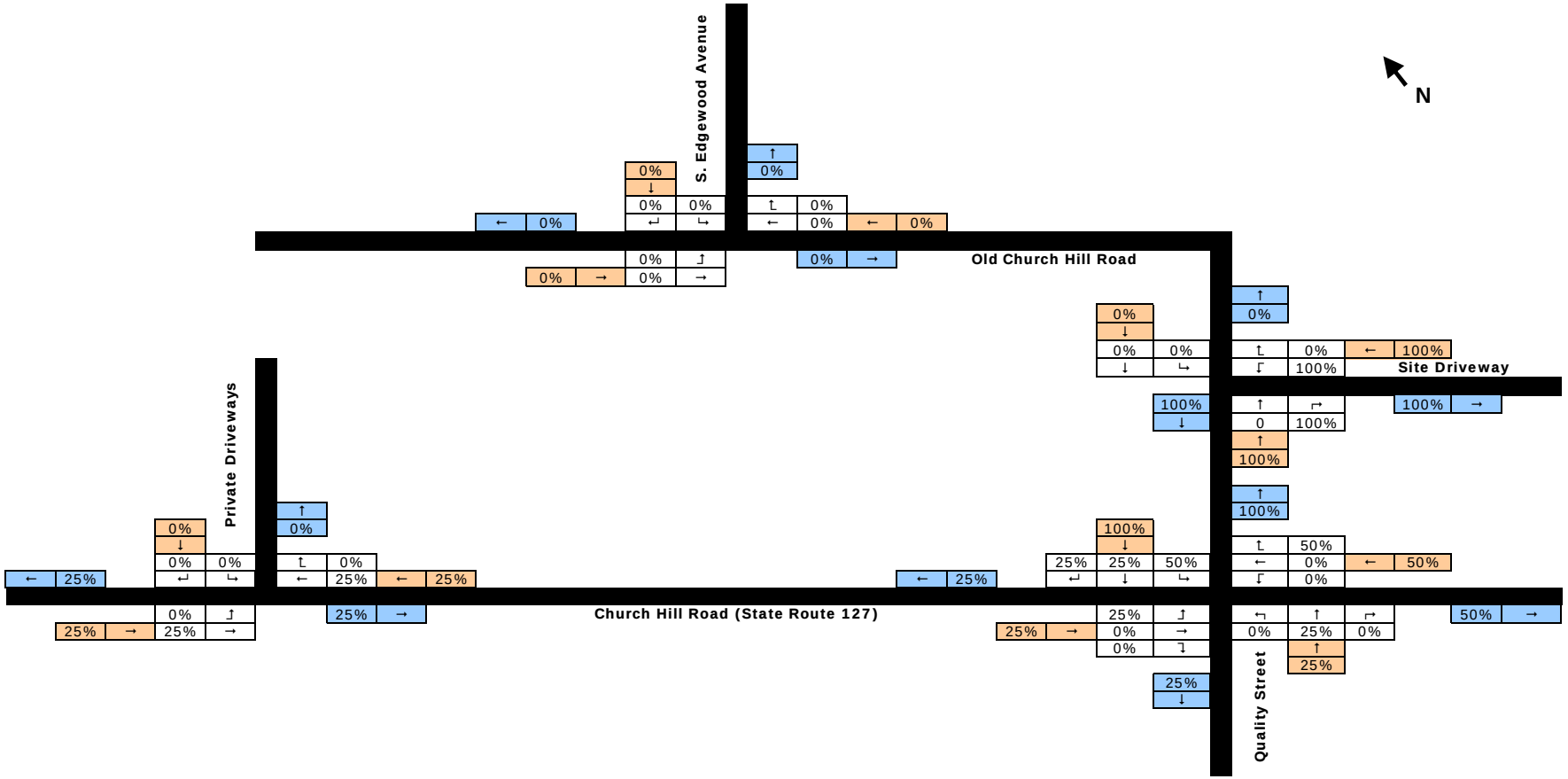


2020 Background Traffic Volumes
Saturday Midday Peak Hour
(11:00 AM to 12:00 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 7

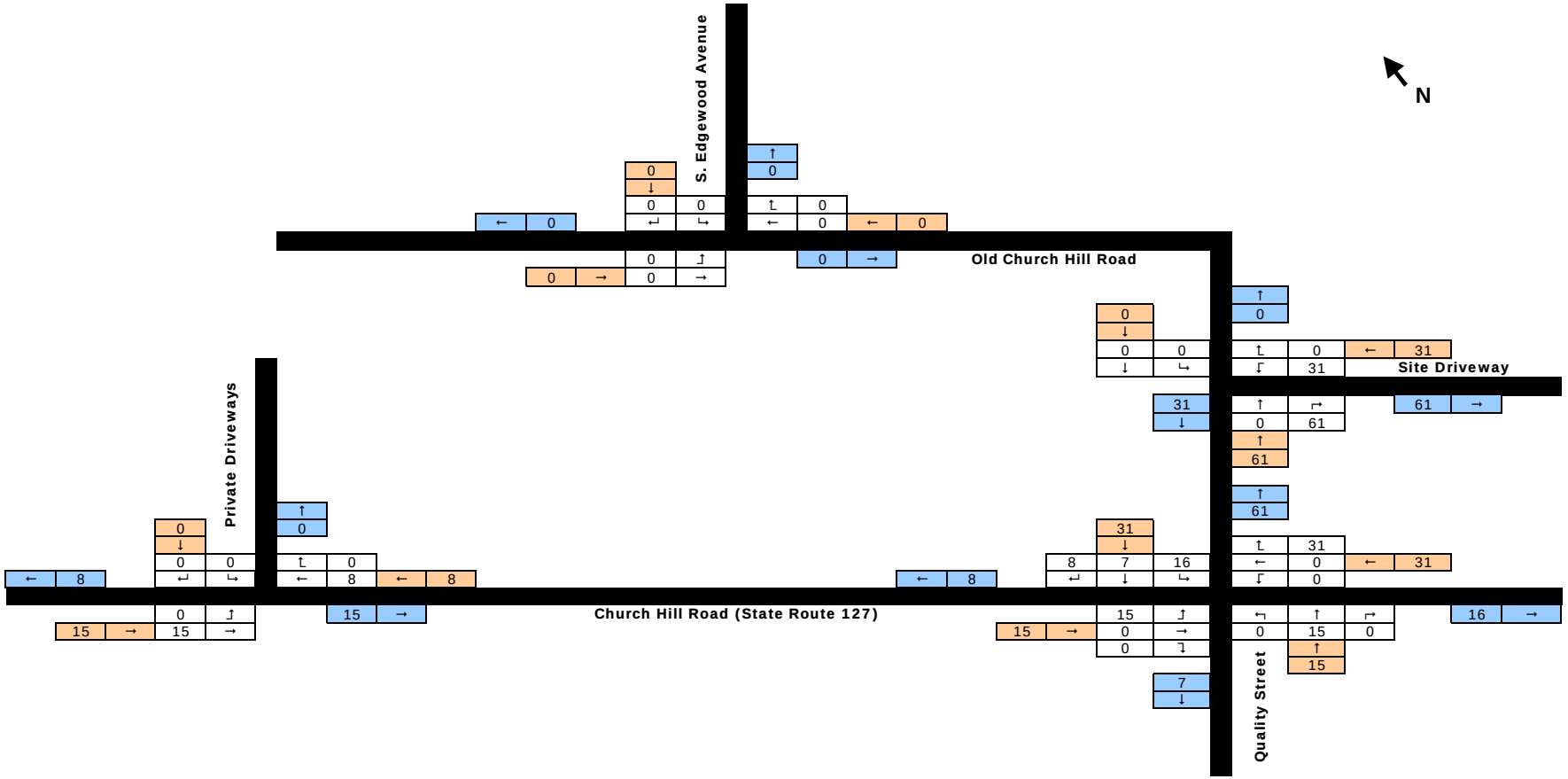


Arrival and Departure Distribution

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 8

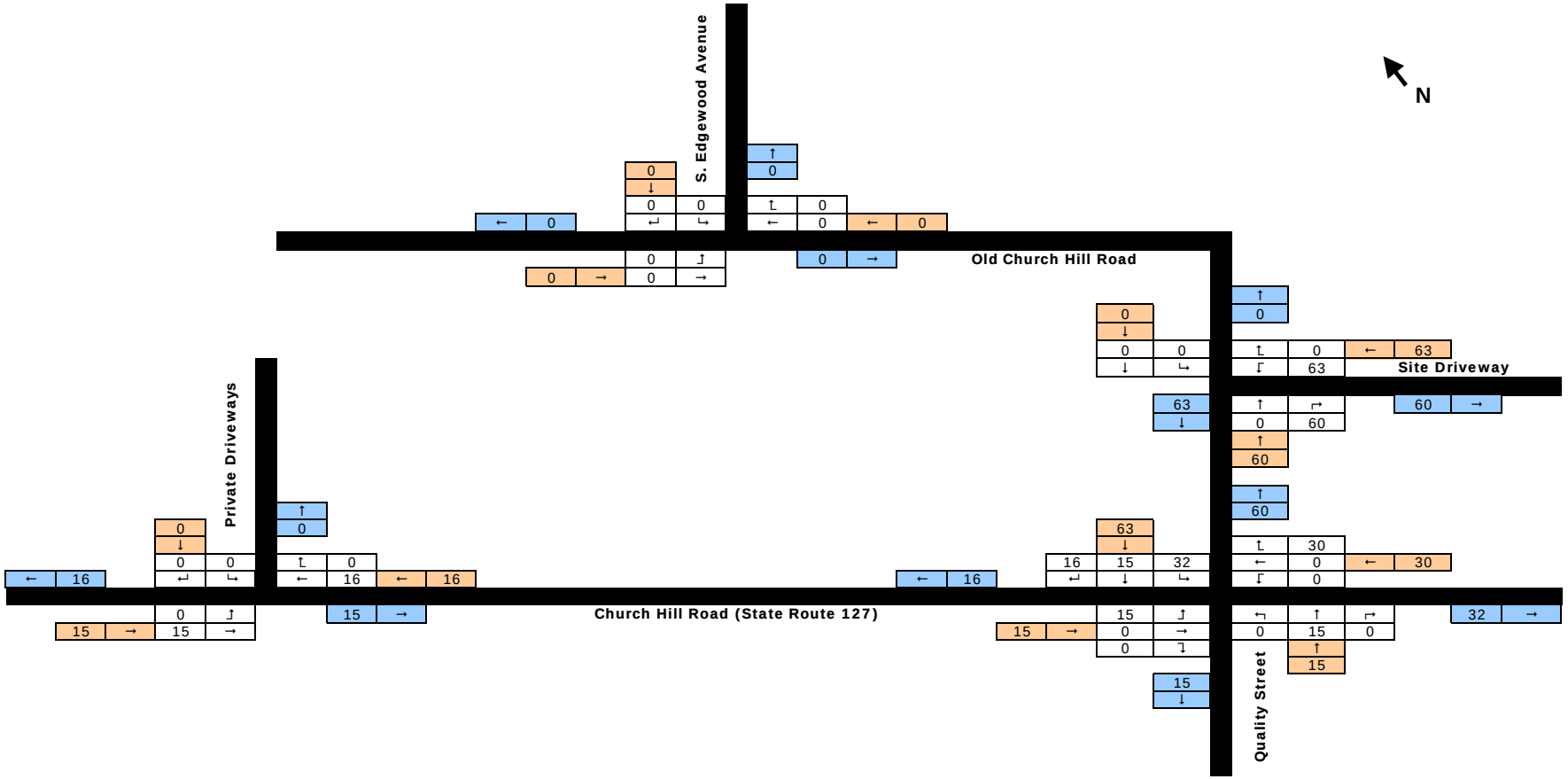


2020 Site Generated Traffic Volumes
Weekday Morning Peak Hour
(7:45 to 8:45 AM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 9

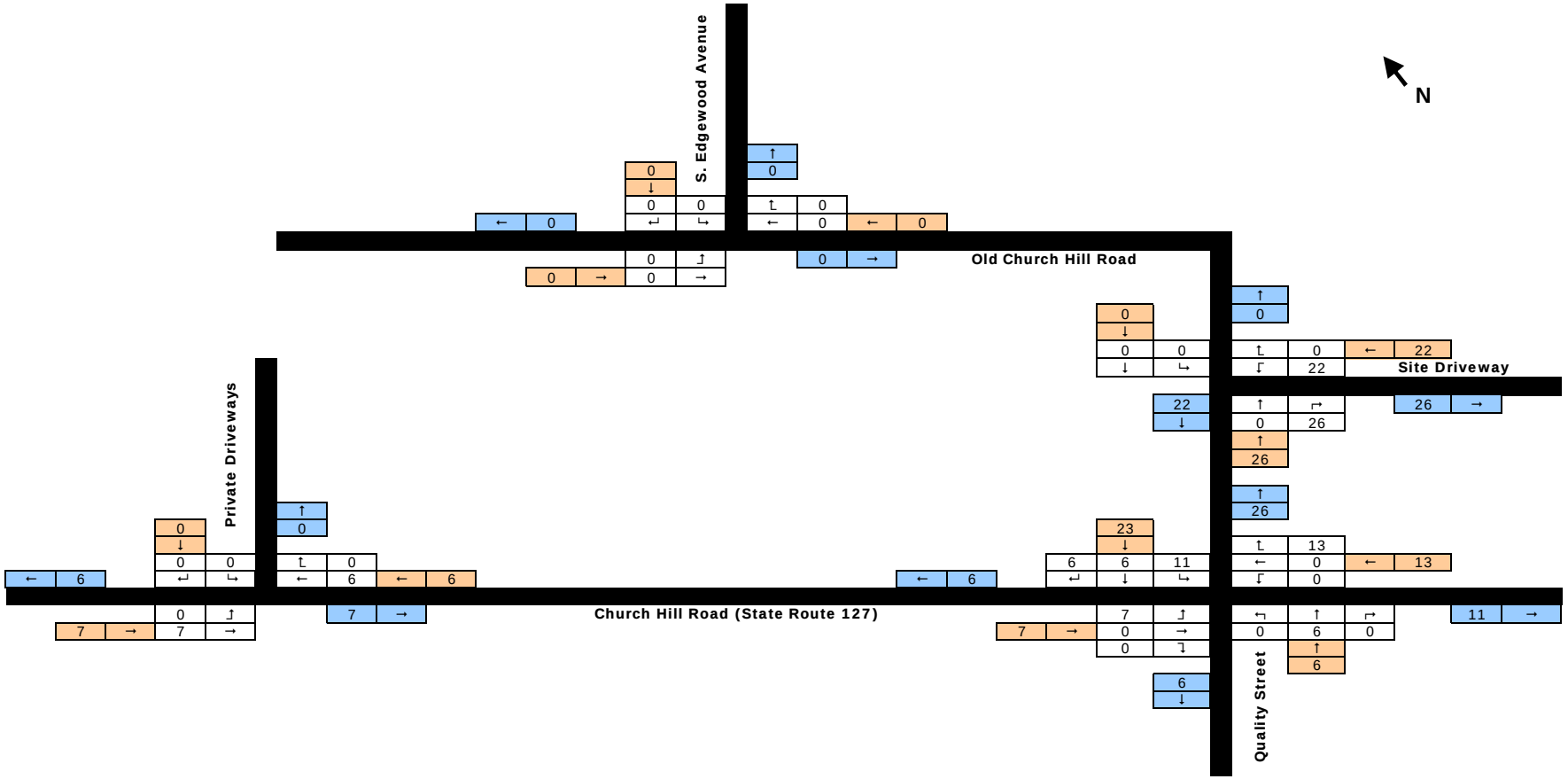


2020 Site Generated Traffic Volumes
Weekday Afternoon Peak Hour
(4:15 to 5:15 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 10

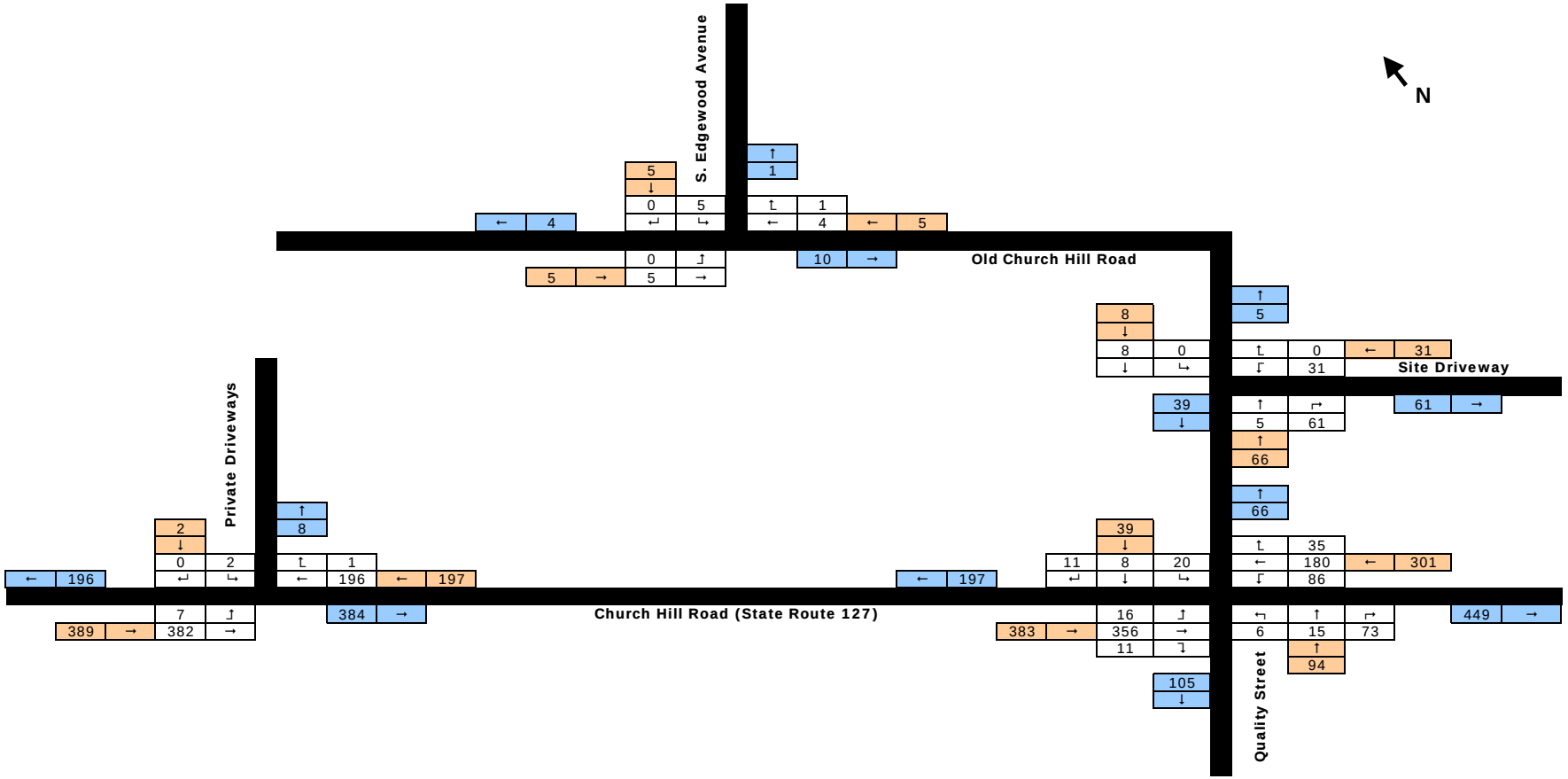


2020 Site Generated Traffic Volumes
Saturday Midday Peak Hour
(11:00 AM to 12:00 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 11

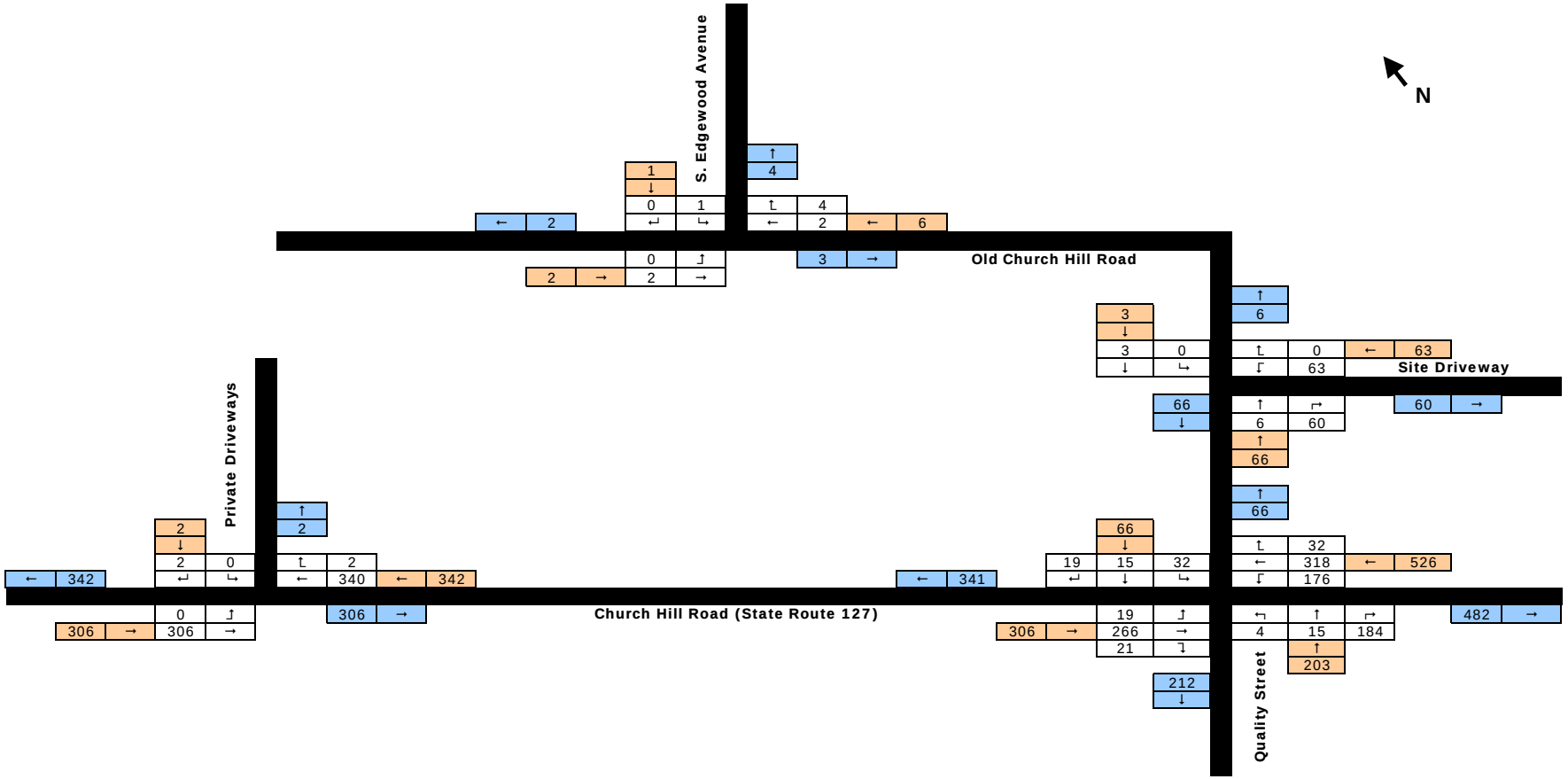


2020 Combined Traffic Volumes
Weekday Morning Peak Hour
(7:45 to 8:45 AM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 12

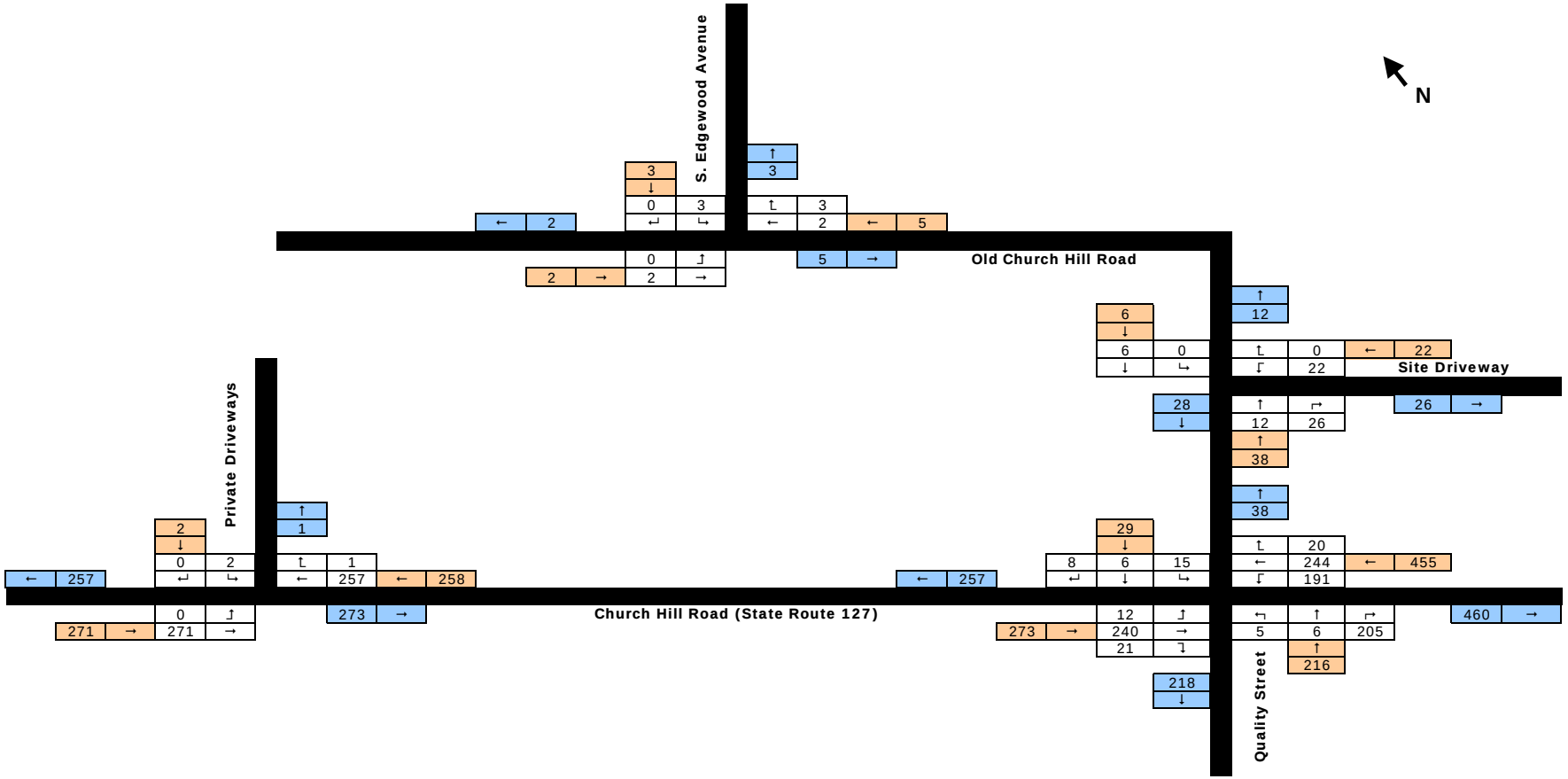


2020 Combined Traffic Volumes
Weekday Afternoon Peak Hour
(4:15 to 5:15 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 13



2020 Combined Traffic Volumes
Saturday Midday Peak Hour
(11:00 AM to 12:00 PM)

Trumbull Community Center
Church Hill Road, Trumbull, CT

March 2017

Figure 14

APPENDIX A
RAW TRAFFIC VOLUME DATA

Tighe&Bond

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Start	20-Feb-17		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Northboun	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo	Northbou	Southbo
12:00 AM	*	*	*	*	*	*	22	6	22	9	**41**	**24**	*	*	28	13
01:00	*	*	*	*	*	*	13	5	11	3	26	9	*	*	17	6
02:00	*	*	*	*	*	*	7	1	4	1	18	3	*	*	10	2
03:00	*	*	*	*	*	*	5	2	2	3	7	4	*	*	5	3
04:00	*	*	*	*	*	*	3	10	4	10	5	2	*	*	4	7
05:00	*	*	*	*	*	*	12	31	15	35	7	14	*	*	11	27
06:00	*	*	*	*	*	*	47	129	56	122	36	11	*	*	46	87
07:00	*	*	*	*	*	*	156	317	142	308	*	*	*	*	149	312
08:00	*	*	*	*	*	*	**181**	**343**	153	**312**	*	*	*	*	167	**328**
09:00	*	*	*	*	*	*	139	220	172	234	*	*	*	*	156	227
10:00	*	*	*	*	*	*	131	152	166	200	*	*	*	*	148	176
11:00	*	*	*	*	**171**	**176**	166	183	**190**	191	*	*	*	*	**176**	183
12:00 PM	*	*	*	*	181	174	148	215	248	213	*	*	*	*	192	201
01:00	*	*	*	*	163	154	189	161	183	211	*	*	*	*	178	175
02:00	*	*	*	*	229	202	228	213	247	224	*	*	*	*	235	213
03:00	*	*	*	*	268	**232**	316	229	**327**	232	*	*	*	*	304	231
04:00	*	*	*	*	310	214	286	**254**	302	**240**	*	*	*	*	299	**236**
05:00	*	*	*	*	**354**	226	**338**	239	326	219	*	*	*	*	**339**	228
06:00	*	*	*	*	277	205	273	213	274	236	*	*	*	*	275	218
07:00	*	*	*	*	187	137	243	177	221	172	*	*	*	*	217	162
08:00	*	*	*	*	151	90	164	92	151	120	*	*	*	*	155	101
09:00	*	*	*	*	113	66	121	69	152	82	*	*	*	*	129	72
10:00	*	*	*	*	61	25	76	46	114	64	*	*	*	*	84	45
11:00	*	*	*	*	44	16	34	30	75	69	*	*	*	*	51	38
Lane	0	0	0	0	2509	1917	3298	3337	3557	3510	140	67	0	0	3375	3291
Day	0		0		4426		6635		7067		207		0		6666	
AM Peak	-	-	-	-	11:00	11:00	08:00	08:00	11:00	08:00	00:00	00:00	-	-	11:00	08:00
Vol.	-	-	-	-	171	176	181	343	190	312	41	24	-	-	176	328
PM Peak	-	-	-	-	17:00	15:00	17:00	16:00	15:00	16:00	-	-	-	-	17:00	16:00
Vol.	-	-	-	-	354	232	338	254	327	240	-	-	-	-	339	236

REMAINDER OF SATURDAY NOT COUNTED DUE TO DAMAGE TO TUBE

Comb. Total	0	0	4426	6635	7067	207	0	6666

ADT ADT 6,851 AADT 6,851

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/22/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	0	0	**1**	**2**	**9**	**41**	**81**	**31**	**6**	0	0	0	0	0	**171**	36-45	122
12 PM	0	0	0	5	**14**	47	67	40	8	0	0	0	0	0	181	36-45	114
13:00	0	0	0	2	4	49	71	31	5	1	0	0	0	0	163	36-45	120
14:00	0	0	0	1	6	56	103	46	14	3	0	0	0	0	229	36-45	159
15:00	0	**1**	**3**	**8**	12	**68**	101	57	16	2	0	0	0	0	268	36-45	169
16:00	0	0	0	1	10	68	118	87	**22**	4	0	0	0	0	310	41-50	205
17:00	0	0	0	0	5	62	**150**	**114**	20	2	1	0	0	0	**354**	41-50	264
18:00	0	0	1	0	9	66	129	51	16	**5**	0	0	0	0	277	36-45	195
19:00	0	1	0	1	1	19	88	67	8	2	0	0	0	0	187	41-50	155
20:00	0	1	2	2	8	28	58	42	6	4	0	0	0	0	151	41-50	100
21:00	0	1	2	0	0	14	51	35	7	2	1	0	0	0	113	41-50	86
22:00	0	0	0	0	3	10	22	20	5	1	0	0	0	0	61	41-50	42
23:00	0	0	0	1	0	5	11	17	8	0	**2**	0	0	0	44	41-50	28
Total	0	4	9	23	81	533	1050	638	141	26	4	0	0	0	2509		
Percent	0.0%	0.2%	0.4%	0.9%	3.2%	21.2%	41.8%	25.4%	5.6%	1.0%	0.2%	0.0%	0.0%	0.0%			
AM Peak			11:00	11:00	11:00	11:00	11:00	11:00	11:00						11:00		
Vol.			1	2	9	41	81	31	6						171		
PM Peak		15:00	15:00	15:00	12:00	15:00	17:00	17:00	16:00	18:00	23:00				17:00		
Vol.		1	3	8	14	68	150	114	22	5	2				354		

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/23/17	0	0	0	0	0	3	3	8	5	2	1	0	0	0	22	45-54	13
01:00	0	0	0	0	0	5	2	4	0	2	0	0	0	0	13	36-45	7
02:00	0	0	0	1	0	0	4	2	0	0	0	0	0	0	7	40-49	6
03:00	0	0	0	0	0	1	0	3	0	1	0	0	0	0	5	46-55	3
04:00	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3	35-44	2
05:00	0	0	0	0	0	3	4	2	2	0	1	0	0	0	12	36-45	7
06:00	0	0	1	0	1	6	12	21	4	1	1	0	0	0	47	41-50	33
07:00	0	0	**2**	7	13	29	46	**42**	**14**	1	**2**	0	0	0	156	41-50	88
08:00	0	0	1	2	**19**	**42**	63	42	10	2	0	0	0	0	**181**	41-50	105
09:00	0	0	1	1	5	29	59	34	9	1	0	0	0	0	139	41-50	93
10:00	0	0	0	**9**	16	31	49	19	6	1	0	0	0	0	131	36-45	80
11:00	0	0	0	4	7	32	**75**	36	9	**3**	0	0	0	0	166	41-50	111
12 PM	0	0	0	1	5	25	72	35	9	1	0	0	0	0	148	41-50	107
13:00	0	0	1	1	6	30	86	45	20	0	0	0	0	0	189	41-50	131
14:00	0	0	0	2	5	55	103	49	11	2	**1**	0	0	0	228	36-45	158
15:00	0	0	1	**4**	**22**	**84**	131	58	14	2	0	0	0	0	316	36-45	215
16:00	0	0	0	0	15	65	119	71	14	2	0	0	0	0	286	41-50	190
17:00	0	0	0	2	5	53	**162**	**90**	**24**	2	0	0	0	0	**338**	41-50	252
18:00	0	0	0	1	11	49	125	72	12	2	1	0	0	0	273	41-50	197
19:00	0	**1**	**2**	3	14	47	112	50	13	1	0	0	0	0	243	41-50	162
20:00	0	0	2	1	4	27	64	53	10	3	0	0	0	0	164	41-50	117
21:00	0	0	0	0	3	22	43	42	7	**4**	0	0	0	0	121	41-50	85
22:00	0	0	1	1	1	14	32	17	7	2	0	**1**	0	0	76	41-50	49
23:00	0	0	0	0	0	1	11	16	5	1	0	0	0	0	34	41-50	27
Total	0	1	12	40	152	653	1379	811	206	36	7	1	0	0	3298		
Percent	0.0%	0.0%	0.4%	1.2%	4.6%	19.8%	41.8%	24.6%	6.2%	1.1%	0.2%	0.0%	0.0%	0.0%			
AM Peak			07:00	10:00	08:00	08:00	11:00	07:00	07:00	11:00	07:00				08:00		
Vol.			2	9	19	42	75	42	14	3	2				181		
PM Peak		19:00	19:00	15:00	15:00	15:00	17:00	17:00	17:00	21:00	14:00	22:00			17:00		
Vol.		1	2	4	22	84	162	90	24	4	1	1			338		

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/24/17	0	0	0	0	1	4	5	8	2	2	0	0	0	0	22	41-50	13
01:00	0	0	0	0	1	0	6	3	1	0	0	0	0	0	11	41-50	9
02:00	0	0	0	0	0	0	2	2	0	0	0	0	0	0	4	40-49	4
03:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	34-43	1
04:00	0	0	0	0	0	0	1	2	0	1	0	0	0	0	4	40-49	3
05:00	0	0	0	1	1	2	7	2	1	0	**1**	0	0	0	15	41-50	9
06:00	0	**1**	0	0	0	4	15	23	9	3	1	0	0	0	56	41-50	38
07:00	0	1	0	1	9	34	52	35	9	0	0	**1**	0	0	142	39-48	87
08:00	0	0	0	0	**11**	21	54	39	**23**	**4**	1	0	0	0	153	41-50	93
09:00	0	1	0	0	7	30	74	**47**	12	1	0	0	0	0	172	41-50	121
10:00	0	0	0	1	9	42	64	40	7	2	1	0	0	0	166	36-45	106
11:00	0	0	**1**	**2**	5	**45**	**86**	42	7	2	0	0	0	0	**190**	36-45	131
12 PM	0	0	1	16	23	60	82	50	14	2	0	0	0	0	248	36-45	142
13:00	0	0	0	0	11	33	93	39	6	0	**1**	0	0	0	183	41-50	132
14:00	0	0	1	5	16	46	115	48	**16**	0	0	0	0	0	247	41-50	163
15:00	0	0	**4**	**18**	**33**	**84**	129	48	9	2	0	0	0	0	**327**	36-45	213
16:00	0	0	0	1	6	75	130	74	16	0	0	0	0	0	302	36-45	205
17:00	0	0	1	1	11	64	**150**	**78**	16	**4**	0	**1**	0	0	326	41-50	228
18:00	0	0	0	0	11	64	130	56	12	1	0	0	0	0	274	36-45	194
19:00	0	0	0	0	6	46	110	52	7	0	0	0	0	0	221	41-50	162
20:00	0	0	0	0	3	40	69	33	6	0	0	0	0	0	151	36-45	109
21:00	**1**	**2**	0	0	5	24	73	39	8	0	0	0	0	0	152	41-50	112
22:00	0	0	0	1	6	18	45	31	9	3	1	0	0	0	114	41-50	76
23:00	0	0	0	1	0	10	26	26	9	2	1	0	0	0	75	41-50	52
Total	1	5	8	48	175	746	1519	817	200	29	7	2	0	0	3557		
Percent	0.0%	0.1%	0.2%	1.3%	4.9%	21.0%	42.7%	23.0%	5.6%	0.8%	0.2%	0.1%	0.0%	0.0%			
AM Peak		06:00	11:00	11:00	08:00	11:00	11:00	09:00	08:00	08:00	05:00	07:00			11:00		
Vol.		1	1	2	11	45	86	47	23	4	1	1			190		
PM Peak	21:00	21:00	15:00	15:00	15:00	15:00	17:00	17:00	14:00	17:00	13:00	17:00			15:00		
Vol.	1	2	4	18	33	84	150	78	16	4	1	1			327		

Connecticut Counts LLC

Kensington, Connecticut 06037

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Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Northbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/25/17	0	**1**	0	0	0	4	**14**	**18**	**2**	**2**	0	0	0	0	**41**	41-50	32
01:00	0	0	0	**1**	2	7	8	5	1	2	0	0	0	0	26	36-45	15
02:00	0	0	0	0	1	3	6	5	2	1	0	0	0	0	18	40-49	11
03:00	0	0	0	1	0	4	1	1	0	0	0	0	0	0	7	34-43	5
04:00	0	0	0	0	0	0	2	1	1	1	0	0	0	0	5	41-50	3
05:00	0	0	0	0	**4**	2	0	1	0	0	0	0	0	0	7	31-40	6
06:00	0	0	0	0	4	**20**	7	4	1	0	0	0	0	0	36	36-45	27
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	0	1	0	2	11	40	38	35	7	6	0	0	0	0	140		
Percent	0.0%	0.7%	0.0%	1.4%	7.9%	28.6%	27.1%	25.0%	5.0%	4.3%	0.0%	0.0%	0.0%	0.0%			
AM Peak		00:00		01:00	05:00	06:00	00:00	00:00	00:00	00:00					00:00		
Vol.		1		1	4	20	14	18	2	2					41		
PM Peak Vol.																	
Total	1	11	29	113	419	1972	3986	2301	554	97	18	3	0	0	9504		
Percent	0.0%	0.1%	0.3%	1.2%	4.4%	20.7%	41.9%	24.2%	5.8%	1.0%	0.2%	0.0%	0.0%	0.0%			

15th Percentile : 37 MPH
50th Percentile : 42 MPH
85th Percentile : 48 MPH
95th Percentile : 51 MPH

Stats

10 MPH Pace Speed : 41-50 MPH
Number in Pace : 6287
Percent in Pace : 66.2%
Number of Vehicles > 40 MPH : 6959
Percent of Vehicles > 40 MPH : 73.2%
Mean Speed(Average) : 43 MPH

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/22/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	0	0	**1**	**10**	**48**	**88**	**27**	**2**	0	0	0	0	0	0	**176**	31-40	136
12 PM	0	0	2	22	48	67	31	4	0	0	0	0	0	0	174	31-40	115
13:00	0	**1**	1	9	44	64	32	3	0	0	0	0	0	0	154	31-40	108
14:00	0	0	1	20	54	93	32	2	0	0	0	0	0	0	202	31-40	147
15:00	**2**	1	**3**	**27**	**80**	95	21	3	0	0	0	0	0	0	**232**	31-40	175
16:00	0	0	3	18	46	**109**	32	5	**1**	0	0	0	0	0	214	31-40	155
17:00	0	0	2	17	53	103	**45**	**6**	0	0	0	0	0	0	226	31-40	156
18:00	0	0	1	12	59	108	22	3	0	0	0	0	0	0	205	31-40	167
19:00	0	0	2	5	37	70	23	0	0	0	0	0	0	0	137	31-40	107
20:00	0	0	0	4	21	43	20	2	0	0	0	0	0	0	90	31-40	64
21:00	0	1	0	1	18	32	12	2	0	0	0	0	0	0	66	31-40	50
22:00	0	0	0	0	6	11	7	1	0	0	0	0	0	0	25	34-43	18
23:00	0	0	0	1	5	2	6	1	1	0	0	0	0	0	16	36-45	8
Total	2	3	16	146	519	885	310	34	2	0	0	0	0	0	1917		
Percent	0.1%	0.2%	0.8%	7.6%	27.1%	46.2%	16.2%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak			11:00	11:00	11:00	11:00	11:00	11:00							11:00		
Vol.			1	10	48	88	27	2							176		
PM Peak	15:00	13:00	15:00	15:00	15:00	16:00	17:00	17:00	16:00						15:00		
Vol.	2	1	3	27	80	109	45	6	1						232		

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/23/17	0	0	0	0	2	2	2	0	0	0	0	0	0	0	6	30-39	4
01:00	0	0	0	0	1	3	1	0	0	0	0	0	0	0	5	36-45	4
02:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	29-38	1
03:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	19-28	1
04:00	0	0	0	0	1	3	5	1	0	0	0	0	0	0	10	36-45	8
05:00	0	0	0	0	4	13	12	1	**1**	0	0	0	0	0	31	36-45	25
06:00	0	0	1	12	30	58	26	1	1	0	0	0	0	0	129	31-40	88
07:00	0	0	1	13	94	155	52	2	0	0	0	0	0	0	317	31-40	249
08:00	0	0	**7**	14	**106**	**157**	**56**	**3**	0	0	0	0	0	0	**343**	31-40	263
09:00	0	0	0	8	71	103	36	2	0	0	0	0	0	0	220	31-40	174
10:00	0	0	0	14	59	63	16	0	0	0	0	0	0	0	152	31-40	122
11:00	0	0	3	**16**	54	91	18	1	0	0	0	0	0	0	183	31-40	145
12 PM	0	0	1	14	78	88	33	1	0	0	0	0	0	0	215	31-40	166
13:00	0	0	1	5	53	84	17	1	0	0	0	0	0	0	161	31-40	137
14:00	0	0	3	12	52	110	34	2	0	0	0	0	0	0	213	31-40	162
15:00	0	**1**	**6**	**23**	59	104	33	3	0	0	0	0	0	0	229	31-40	163
16:00	0	0	2	22	**90**	100	**37**	3	0	0	0	0	0	0	**254**	31-40	190
17:00	0	0	1	12	65	**125**	31	**5**	0	0	0	0	0	0	239	31-40	190
18:00	0	0	2	15	79	92	25	0	0	0	0	0	0	0	213	31-40	171
19:00	0	0	0	4	52	92	28	1	0	0	0	0	0	0	177	31-40	144
20:00	0	1	2	1	29	40	19	0	0	0	0	0	0	0	92	31-40	69
21:00	0	1	0	5	11	39	13	0	0	0	0	0	0	0	69	35-44	52
22:00	0	0	2	3	12	16	12	1	0	0	0	0	0	0	46	31-40	28
23:00	0	0	0	0	6	17	7	0	0	0	0	0	0	0	30	36-45	24
Total	0	3	32	194	1008	1557	513	28	2	0	0	0	0	0	3337		
Percent	0.0%	0.1%	1.0%	5.8%	30.2%	46.7%	15.4%	0.8%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak			08:00	11:00	08:00	08:00	08:00	08:00	05:00						08:00		
Vol.			7	16	106	157	56	3	1						343		
PM Peak		15:00	15:00	15:00	16:00	17:00	16:00	17:00							16:00		
Vol.		1	6	23	90	125	37	5							254		

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/24/17	0	0	0	0	2	6	1	0	0	0	0	0	0	0	9	31-40	8
01:00	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	26-35	3
02:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	34-43	1
03:00	0	0	0	1	0	2	0	0	0	0	0	0	0	0	3	29-38	2
04:00	0	0	0	0	0	8	2	0	0	0	0	0	0	0	10	35-44	10
05:00	0	0	0	1	5	17	11	1	0	0	0	0	0	0	35	36-45	28
06:00	**1**	0	1	1	27	64	25	2	**1**	0	0	0	0	0	122	31-40	91
07:00	0	**1**	0	11	59	**181**	55	1	0	0	0	0	0	0	308	31-40	240
08:00	0	0	1	6	**80**	164	**56**	**5**	0	0	0	0	0	0	**312**	31-40	244
09:00	0	0	2	**26**	71	102	32	1	0	0	0	0	0	0	234	31-40	173
10:00	0	0	**6**	15	48	103	27	1	0	0	0	0	0	0	200	31-40	151
11:00	0	0	0	15	46	94	34	2	0	0	0	0	0	0	191	31-40	140
12 PM	0	0	0	**18**	73	98	19	**5**	0	0	0	0	0	0	213	31-40	171
13:00	0	0	3	17	50	100	**38**	3	0	0	0	0	0	0	211	31-40	150
14:00	0	0	2	18	67	104	32	1	0	0	0	0	0	0	224	31-40	171
15:00	0	**1**	2	15	71	111	31	1	0	0	0	0	0	0	232	31-40	182
16:00	0	0	1	9	75	119	31	4	1	0	0	0	0	0	**240**	31-40	194
17:00	0	0	1	8	**76**	97	36	1	0	0	0	0	0	0	219	31-40	173
18:00	0	0	0	13	75	**121**	23	4	0	0	0	0	0	0	236	31-40	196
19:00	0	0	0	1	36	109	23	2	1	0	0	0	0	0	172	31-40	145
20:00	0	0	0	2	36	55	23	3	1	0	0	0	0	0	120	31-40	91
21:00	0	1	**6**	5	21	37	12	0	0	0	0	0	0	0	82	31-40	58
22:00	0	0	1	5	19	22	16	1	0	0	0	0	0	0	64	31-40	41
23:00	0	1	0	1	25	27	13	0	**2**	0	0	0	0	0	69	31-40	52
Total	1	4	26	188	965	1741	541	38	6	0	0	0	0	0	3510		
Percent	0.0%	0.1%	0.7%	5.4%	27.5%	49.6%	15.4%	1.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	06:00	07:00	10:00	09:00	08:00	07:00	08:00	08:00	06:00						08:00		
Vol.	1	1	6	26	80	181	56	5	1						312		
PM Peak		15:00	21:00	12:00	17:00	18:00	13:00	12:00	23:00						16:00		
Vol.		1	6	18	76	121	38	5	2						240		

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Church Hill Road North of Quality Street
Trumbull, Connecticut

Site Code: 4227
Station ID:

Latitude: 0' 0.0000 Undefined

Southbound

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
02/25/17	0	0	0	0	**10**	**10**	**4**	0	0	0	0	0	0	0	**24**	31-40	20
01:00	0	**1**	0	1	2	5	0	0	0	0	0	0	0	0	9	31-40	7
02:00	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3	29-38	3
03:00	0	0	0	0	0	4	0	0	0	0	0	0	0	0	4	31-40	4
04:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	30-39	2
05:00	0	0	0	**2**	5	5	2	0	0	0	0	0	0	0	14	31-40	10
06:00	0	0	0	1	5	5	0	0	0	0	0	0	0	0	11	31-40	10
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	0	1	0	4	24	32	6	0	0	0	0	0	0	0	67		
Percent	0.0%	1.5%	0.0%	6.0%	35.8%	47.8%	9.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak		01:00		05:00	00:00	00:00	00:00								00:00		
Vol.		1		2	10	10	4								24		
PM Peak Vol.																	
Total	3	11	74	532	2516	4215	1370	100	10	0	0	0	0	0	8831		
Percent	0.0%	0.1%	0.8%	6.0%	28.5%	47.7%	15.5%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	31 MPH
50th Percentile :	36 MPH
85th Percentile :	40 MPH
95th Percentile :	43 MPH

Stats

10 MPH Pace Speed :	31-40 MPH
Number in Pace :	6731
Percent in Pace :	76.2%
Number of Vehicles > 40 MPH :	1480
Percent of Vehicles > 40 MPH :	16.8%
Mean Speed(Average) :	37 MPH

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Church Hill Rd at Old Church/Quality St
Trumbull, Connecticut

File Name : 15295
Site Code : 15295
Start Date : 2/23/2017
Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:00 AM	0	1	0	0	1	0	0	1	0	1	0	7	1	0	8	2	0	0	0	2	12
12:15 AM	0	2	0	0	2	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	8
12:30 AM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	6
Total	0	4	0	0	4	0	0	1	0	1	0	22	1	0	23	2	0	0	0	2	30
01:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
01:15 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
01:30 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
01:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	13
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	3
02:15 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
02:30 AM	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	1	0	0	1	5
02:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	7	2	0	9	0	1	0	0	1	11
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
03:30 AM	0	1	0	0	1	0	0	0	0	0	0	3	2	0	5	1	0	0	0	1	7
03:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	5	2	0	7	1	0	0	0	1	10
04:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15 AM	0	3	0	0	3	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	5
04:30 AM	0	4	0	0	4	0	0	1	0	1	0	2	1	0	3	0	0	0	0	0	8
04:45 AM	0	3	0	0	3	0	0	0	0	0	0	1	2	0	3	1	0	0	0	1	7
Total	0	12	0	0	12	0	0	1	0	1	0	4	4	0	8	1	0	0	0	1	22
05:00 AM	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	10
05:15 AM	0	8	0	0	8	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	14
05:30 AM	0	12	0	0	12	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	17
05:45 AM	0	14	0	0	14	0	0	0	0	0	0	5	3	0	8	3	0	0	0	3	25
Total	0	42	0	0	42	0	0	0	0	0	0	16	3	0	19	5	0	0	0	5	66
06:00 AM	0	17	0	0	17	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	21
06:15 AM	0	30	0	0	30	0	0	1	0	1	0	13	0	0	13	1	0	0	0	1	45
06:30 AM	0	59	0	0	59	0	0	0	0	0	0	22	5	0	27	5	0	1	0	6	92
06:45 AM	0	71	0	0	71	0	0	0	0	0	0	32	10	0	42	8	0	0	0	8	121
Total	0	177	0	0	177	0	0	1	0	1	0	70	15	0	85	15	0	1	0	16	279
07:00 AM	0	65	0	0	65	0	0	1	0	1	1	35	10	0	46	6	0	0	0	6	118
07:15 AM	1	75	0	0	76	0	0	0	0	0	0	48	17	0	65	12	0	1	0	13	154
07:30 AM	2	96	0	0	98	0	0	0	0	0	0	38	12	0	50	14	0	0	0	14	162
07:45 AM	1	80	0	0	81	0	0	0	0	0	1	39	24	0	64	14	0	0	0	14	159
Total	4	316	0	0	320	0	0	1	0	1	2	160	63	0	225	46	0	1	0	47	593
08:00 AM	3	76	0	0	79	0	1	2	0	3	1	43	15	0	59	18	0	2	0	20	161
08:15 AM	4	100	0	0	104	0	0	0	0	0	1	36	24	0	61	18	0	2	0	20	185
08:30 AM	3	84	0	0	87	0	0	1	0	1	0	55	21	0	76	21	0	2	0	23	187
08:45 AM	2	48	0	0	50	0	0	0	0	0	0	35	42	0	77	19	0	2	0	21	148
Total	12	308	0	0	320	0	1	3	0	4	2	169	102	0	273	76	0	8	0	84	681
09:00 AM	5	55	0	0	60	0	0	0	0	0	0	37	26	0	63	30	0	1	0	31	154
09:15 AM	1	43	0	0	44	0	0	1	0	1	0	35	40	0	75	27	0	0	0	27	147

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Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
09:30 AM	4	58	0	0	62	0	1	2	0	3	0	36	26	1	63	33	0	1	0	34	162
09:45 AM	1	50	0	0	51	0	0	0	0	0	1	24	28	0	53	26	0	1	0	27	131
Total	11	206	0	0	217	0	1	3	0	4	1	132	120	1	254	116	0	3	0	119	594
10:00 AM	2	33	0	1	36	0	0	0	1	1	0	26	26	0	52	31	0	2	0	33	122
10:15 AM	1	32	0	1	34	0	0	0	0	0	1	33	18	0	52	31	0	0	0	31	117
10:30 AM	3	35	0	0	38	0	0	1	0	1	3	43	38	0	84	18	0	1	3	22	145
10:45 AM	5	40	0	0	45	0	0	0	0	0	0	24	28	0	52	33	0	0	1	34	131
Total	11	140	0	2	153	0	0	1	1	2	4	126	110	0	240	113	0	3	4	120	515
11:00 AM	6	45	0	0	51	0	0	0	0	0	1	40	35	0	76	34	0	2	0	36	163
11:15 AM	3	34	1	0	38	0	0	1	0	1	0	42	34	0	76	34	0	0	0	34	149
11:30 AM	2	44	0	0	46	0	0	0	0	0	1	51	21	0	73	37	0	0	0	37	156
11:45 AM	2	46	0	0	48	0	0	0	0	0	0	57	26	0	83	34	0	0	0	34	165
Total	13	169	1	0	183	0	0	1	0	1	2	190	116	0	308	139	0	2	0	141	633
12:00 PM	3	54	0	0	57	0	0	0	0	0	2	32	42	0	76	41	0	1	0	42	175
12:15 PM	2	51	0	0	53	0	0	1	0	1	1	32	46	0	79	31	0	0	0	31	164
12:30 PM	2	60	0	0	62	0	0	0	0	0	2	31	39	0	72	44	0	0	0	44	178
12:45 PM	3	47	0	0	50	0	0	0	0	0	0	46	30	0	76	52	0	1	0	53	179
Total	10	212	0	0	222	0	0	1	0	1	5	141	157	0	303	168	0	2	0	170	696
01:00 PM	3	40	0	0	43	0	0	0	0	0	0	51	37	0	88	39	0	0	0	39	170
01:15 PM	5	35	0	0	40	0	0	0	0	0	1	37	23	0	61	41	0	2	0	43	144
01:30 PM	3	27	0	0	30	0	0	0	0	0	0	51	31	0	82	49	0	1	0	50	162
01:45 PM	2	39	0	0	41	0	0	0	0	0	0	47	32	0	79	25	0	2	0	27	147
Total	13	141	0	0	154	0	0	0	0	0	1	186	123	0	310	154	0	5	0	159	623
02:00 PM	2	37	0	0	39	0	0	0	0	0	2	49	39	0	90	42	1	0	0	43	172
02:15 PM	4	60	0	0	64	0	0	1	0	1	0	66	30	0	96	43	0	1	0	44	205
02:30 PM	1	57	0	0	58	0	0	0	0	0	0	59	31	0	90	31	0	0	0	31	179
02:45 PM	2	52	0	0	54	0	0	1	0	1	1	81	49	0	131	38	0	2	0	40	226
Total	9	206	0	0	215	0	0	2	0	2	3	255	149	0	407	154	1	3	0	158	782
03:00 PM	5	57	0	0	62	0	0	0	0	0	3	76	38	0	117	32	1	2	0	35	214
03:15 PM	5	57	0	0	62	0	0	4	0	4	2	84	44	0	130	48	0	3	0	51	247
03:30 PM	2	52	0	0	54	0	0	0	0	0	2	70	36	0	108	48	0	1	0	49	211
03:45 PM	3	55	0	0	58	0	0	1	0	1	0	69	59	0	128	42	0	1	1	44	231
Total	15	221	0	0	236	0	0	5	0	5	7	299	177	0	483	170	1	7	1	179	903
04:00 PM	1	48	0	0	49	0	0	0	0	0	1	75	40	0	116	39	0	0	0	39	204
04:15 PM	8	78	0	0	86	0	0	0	0	0	0	76	45	0	121	38	0	1	9	48	255
04:30 PM	2	59	0	0	61	0	0	0	0	0	0	69	37	0	106	41	0	0	0	41	208
04:45 PM	7	57	0	0	64	0	0	0	0	0	1	84	37	0	122	44	0	2	1	47	233
Total	18	242	0	0	260	0	0	0	0	0	2	304	159	0	465	162	0	3	10	175	900
05:00 PM	3	65	0	0	68	0	0	0	0	0	0	77	52	0	129	56	0	1	0	57	254
05:15 PM	5	56	1	0	62	0	0	0	0	0	0	84	54	0	138	45	0	1	0	46	246
05:30 PM	0	48	0	0	48	0	0	1	0	1	3	87	44	0	134	37	0	1	0	38	221
05:45 PM	3	55	0	0	58	0	0	1	0	1	0	87	50	0	137	41	0	2	0	43	239
Total	11	224	1	0	236	0	0	2	0	2	3	335	200	0	538	179	0	5	0	184	960
06:00 PM	0	51	0	0	51	0	0	0	0	0	1	69	35	0	105	44	0	0	0	44	200
06:15 PM	1	54	0	0	55	0	0	0	0	0	2	61	43	0	106	40	0	1	0	41	202
06:30 PM	5	50	0	0	55	0	0	0	0	0	0	57	35	0	92	38	1	0	0	39	186
06:45 PM	6	52	0	0	58	0	0	0	0	0	0	64	29	0	93	24	0	0	0	24	175
Total	12	207	0	0	219	0	0	0	0	0	3	251	142	0	396	146	1	1	0	148	763

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Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 PM	1	53	0	0	54	0	0	0	0	0	0	57	25	0	82	28	1	4	0	33	169
07:15 PM	1	39	0	0	40	0	0	0	0	0	1	83	29	0	113	28	0	0	0	28	181
07:30 PM	0	28	0	0	28	0	0	0	0	0	1	41	15	0	57	27	0	1	0	28	113
07:45 PM	2	19	0	0	21	0	0	0	0	0	0	38	13	0	51	30	0	1	0	31	103
Total	4	139	0	0	143	0	0	0	0	0	2	219	82	0	303	113	1	6	0	120	566
08:00 PM	1	22	0	0	23	0	0	0	0	0	0	51	20	0	71	28	0	1	0	29	123
08:15 PM	0	34	0	0	34	0	0	0	0	0	0	44	8	0	52	20	0	1	0	21	107
08:30 PM	1	14	0	0	15	0	0	0	0	0	0	26	15	0	41	21	0	1	0	22	78
08:45 PM	1	25	0	0	26	0	0	0	0	0	0	29	15	0	44	12	0	0	0	12	82
Total	3	95	0	0	98	0	0	0	0	0	0	150	58	0	208	81	0	3	0	84	390
09:00 PM	1	23	0	0	24	0	0	1	0	1	1	27	8	0	36	19	0	0	0	19	80
09:15 PM	0	18	0	0	18	0	0	0	0	0	1	33	8	0	42	16	0	0	0	16	76
09:30 PM	0	5	0	0	5	0	0	0	0	0	0	34	4	0	38	9	0	0	0	9	52
09:45 PM	0	7	0	0	7	0	0	1	0	1	0	21	4	0	25	7	0	1	0	8	41
Total	1	53	0	0	54	0	0	2	0	2	2	115	24	0	141	51	0	1	0	52	249
10:00 PM	0	14	0	0	14	0	0	0	0	0	1	18	4	0	23	8	0	0	0	8	45
10:15 PM	2	15	0	0	17	0	0	1	0	1	0	22	0	0	22	5	0	0	0	5	45
10:30 PM	0	5	0	0	5	0	0	0	0	0	0	13	2	0	15	2	0	0	0	2	22
10:45 PM	0	12	0	0	12	0	0	0	0	0	0	14	2	0	16	1	0	0	0	1	29
Total	2	46	0	0	48	0	0	1	0	1	1	67	8	0	76	16	0	0	0	16	141
11:00 PM	0	11	0	0	11	0	0	0	0	0	1	9	3	0	13	0	0	0	0	0	24
11:15 PM	0	6	0	0	6	0	0	0	0	0	0	9	0	0	9	2	0	0	0	2	17
11:30 PM	0	3	0	0	3	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	11
11:45 PM	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	9
Total	0	22	0	0	22	0	0	1	0	1	1	32	3	0	36	2	0	0	0	2	61
Grand Total	149	3190	2	2	3343	0	2	26	1	29	41	3263	1820	1	5125	1910	5	54	15	1984	10481
Apprch %	4.5	95.4	0.1	0.1		0	6.9	89.7	3.4		0.8	63.7	35.5	0		96.3	0.3	2.7	0.8		
Total %	1.4	30.4	0	0	31.9	0	0	0.2	0	0.3	0.4	31.1	17.4	0	48.9	18.2	0	0.5	0.1	18.9	
Lights	136	3103										3159	1793			1866					10173
% Lights	91.3	97.3	50	0	96.9	0	100	100	0	96.6	90.2	96.8	98.5	0	97.3	97.7	100	83.3	0	96.6	97.1
Buses	11	32	0	0	43	0	0	0	0	0	3	41	10	0	54	20	0	8	0	28	125
% Buses	7.4	1	0	0	1.3	0	0	0	0	0	7.3	1.3	0.5	0	1.1	1	0	14.8	0	1.4	1.2
Trucks	2	55	1	0	58	0	0	0	0	0	1	63	17	0	81	24	0	1	0	25	164
% Trucks	1.3	1.7	50	0	1.7	0	0	0	0	0	2.4	1.9	0.9	0	1.6	1.3	0	1.9	0	1.3	1.6
Bicycles on Crosswalk																					
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66.7	0.5	0.1
Pedestrians																					
% Pedestrians	0	0	0	100	0.1	0	0	0	100	3.4	0	0	0	100	0	0	0	0	33.3	0.3	0.1

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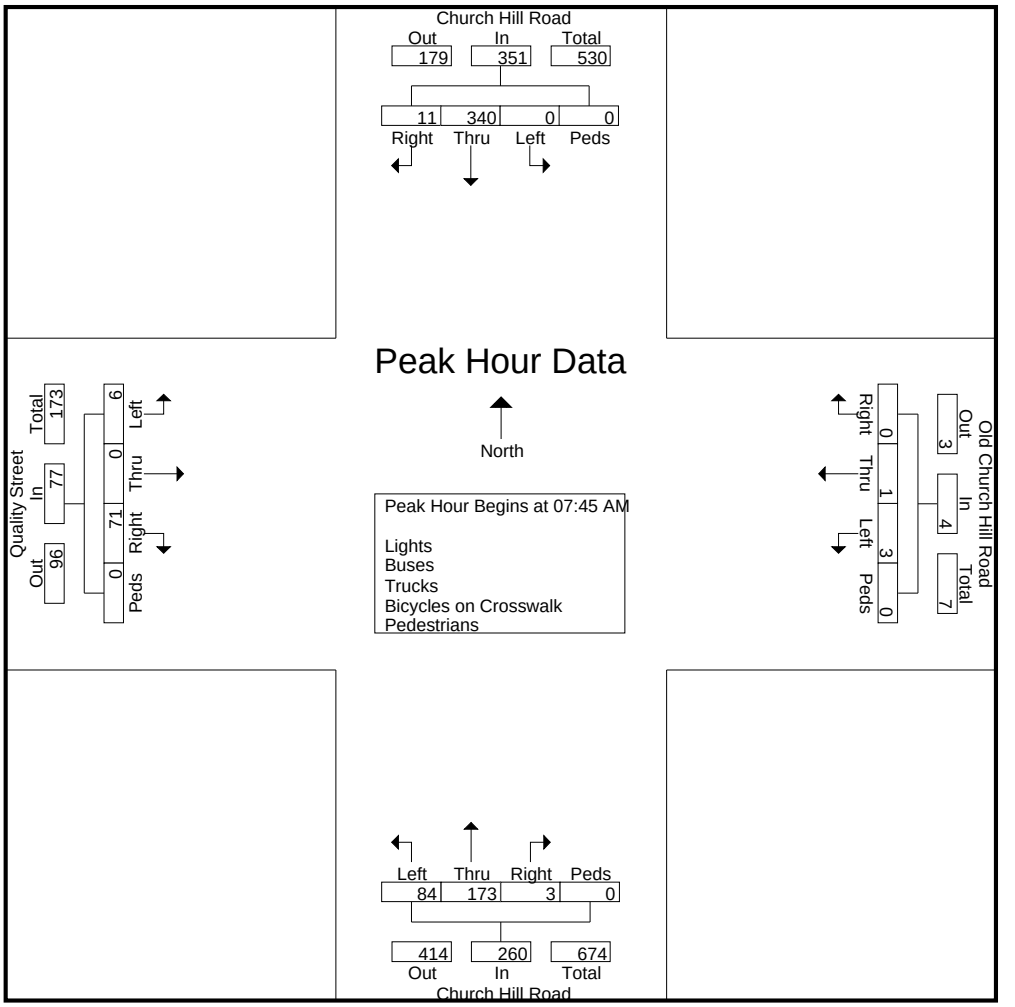
	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	1	80	0	0	81	0	0	0	0	0	**1**	39	**24**	0	64	14	0	0	0	14	159
08:00 AM	3	76	0	0	79	0	**1**	**2**	0	**3**	1	43	15	0	59	18	0	**2**	0	20	161
08:15 AM	**4**	**100**	0	0	**104**	0	0	0	0	0	1	36	24	0	61	18	0	2	0	20	185
08:30 AM	3	84	0	0	87	0	0	1	0	1	0	**55**	21	0	**76**	**21**	0	2	0	**23**	**187**
Total Volume	11	340	0	0	351	0	1	3	0	4	3	173	84	0	260	71	0	6	0	77	692
% App. Total	3.1	96.9	0	0		0	25	75	0		1.2	66.5	32.3	0		92.2	0	7.8	0		
PHF	.688	.850	.000	.000	.844	.000	.250	.375	.000	.333	.750	.786	.875	.000	.855	.845	.000	.750	.000	.837	.925



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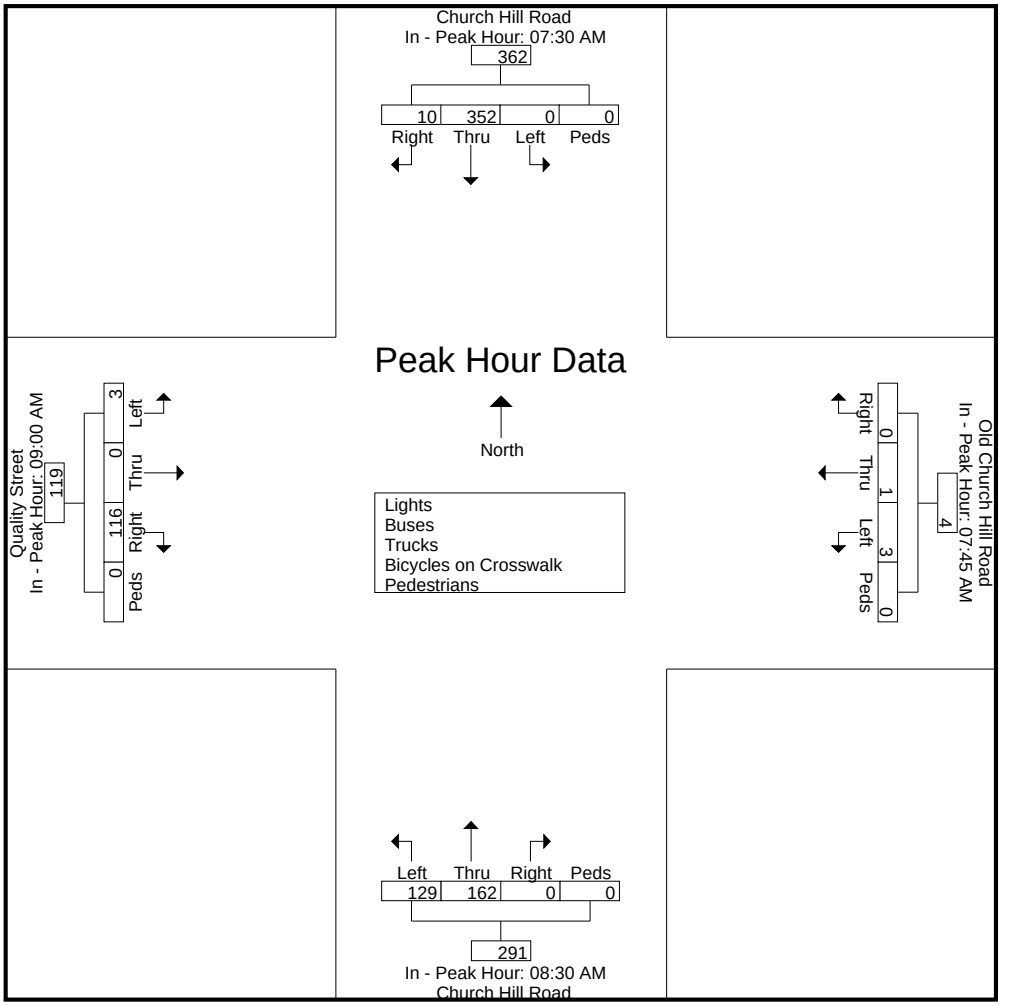
Start Time	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 12:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:30 AM					07:45 AM					08:30 AM					09:00 AM					
+0 mins.	2	96	0	0	98	0	0	0	0	0	0	**55**	21	0	76	30	0	**1**	0	31	
+15 mins.	1	80	0	0	81	0	**1**	**2**	0	**3**	0	35	**42**	0	**77**	27	0	0	0	27	
+30 mins.	3	76	0	0	79	0	0	0	0	0	0	37	26	0	63	**33**	0	1	0	**34**	
+45 mins.	**4**	**100**	0	0	**104**	0	0	1	0	1	0	35	40	0	75	26	0	1	0	27	
Total Volume	10	352	0	0	362	0	1	3	0	4	0	162	129	0	291	116	0	3	0	119	
% App. Total	2.8	97.2	0	0		0	25	75	0		0	55.7	44.3	0		97.5	0	2.5	0		
PHF	.625	.880	.000	.000	.870	.000	.250	.375	.000	.333	.000	.736	.768	.000	.945	.879	.000	.750	.000	.875	



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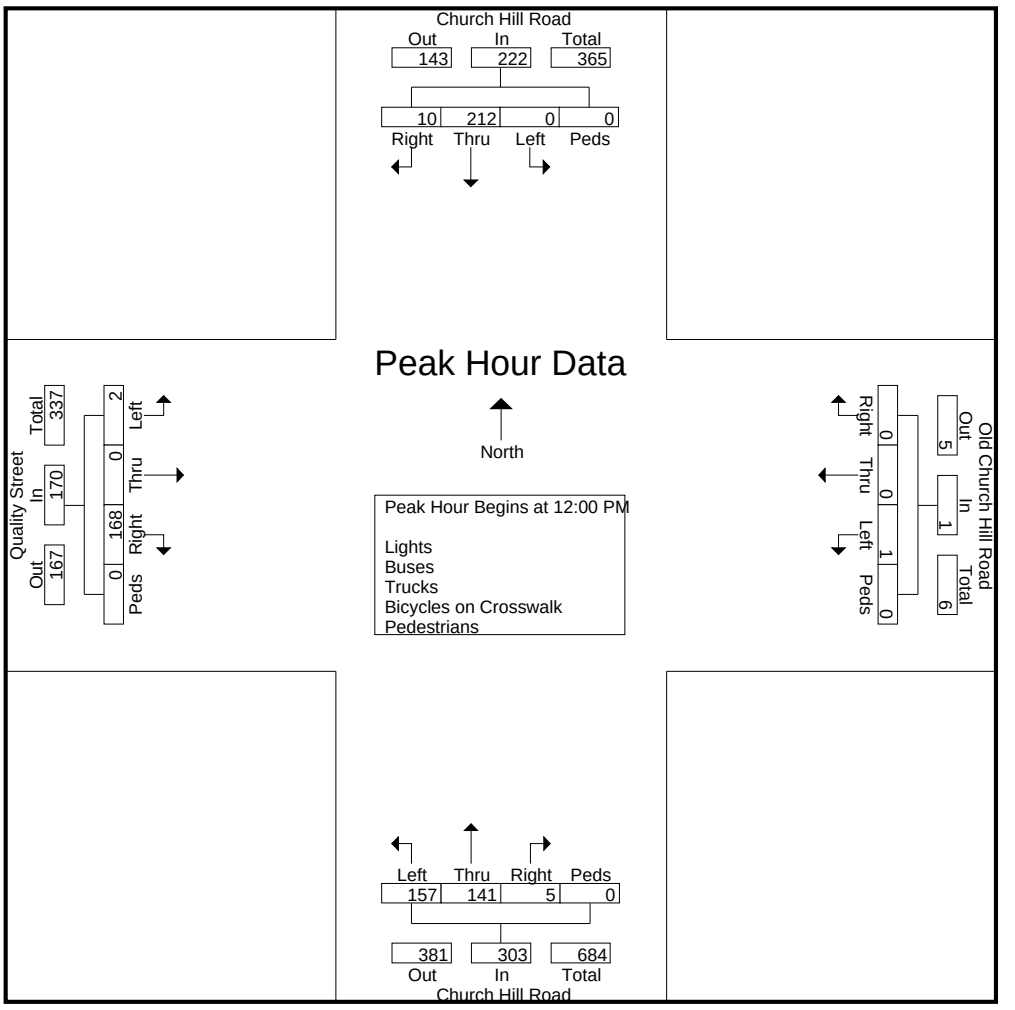
	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 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**	54	0	0	57	0	0	0	0	0	**2**	32	42	0	76	41	0	**1**	0	42	175
12:15 PM	2	51	0	0	53	0	0	**1**	0	**1**	1	32	**46**	0	**79**	31	0	0	0	31	164
12:30 PM	2	**60**	0	0	**62**	0	0	0	0	0	2	31	39	0	72	44	0	0	0	44	178
12:45 PM	3	47	0	0	50	0	0	0	0	0	0	**46**	30	0	76	**52**	0	1	0	**53**	**179**
Total Volume	10	212	0	0	222	0	0	1	0	1	5	141	157	0	303	168	0	2	0	170	696
% App. Total	4.5	95.5	0	0		0	0	100	0		1.7	46.5	51.8	0		98.8	0	1.2	0		
PHF	.833	.883	.000	.000	.895	.000	.000	.250	.000	.250	.625	.766	.853	.000	.959	.808	.000	.500	.000	.802	.972



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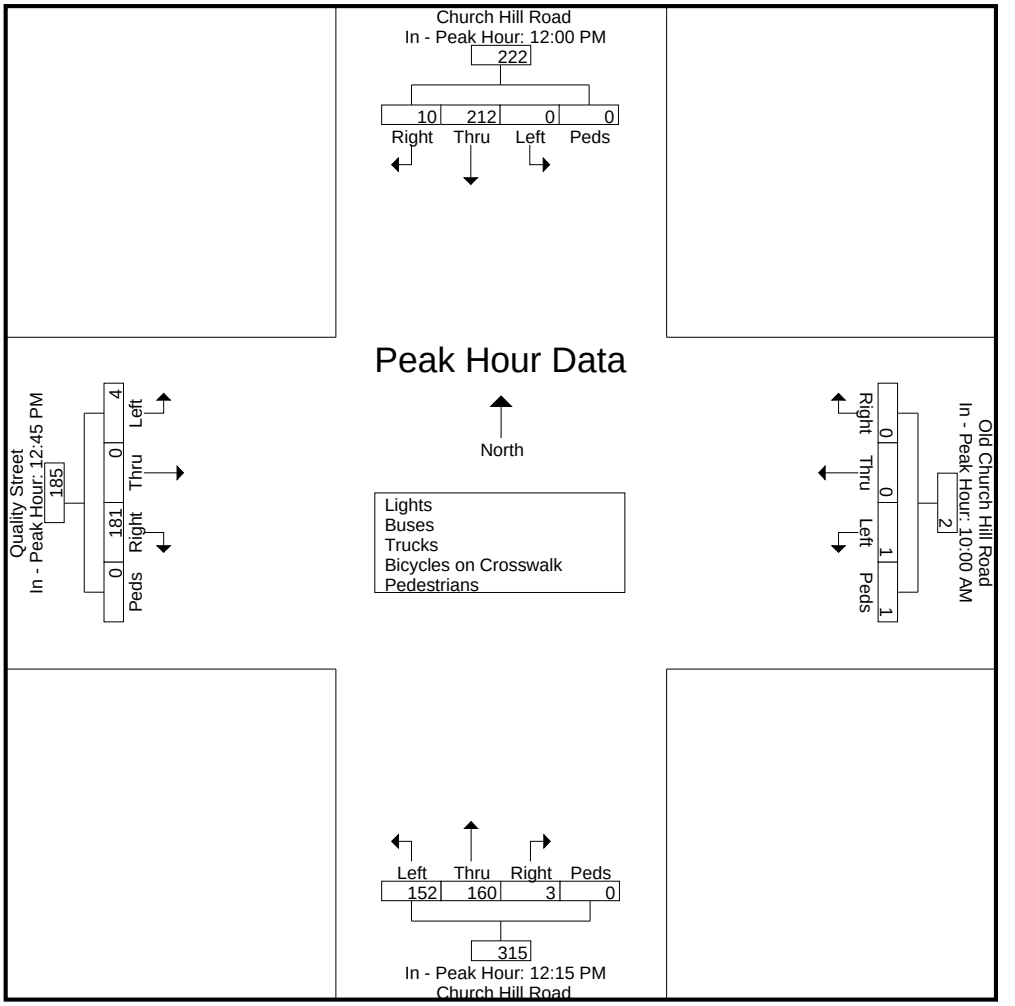
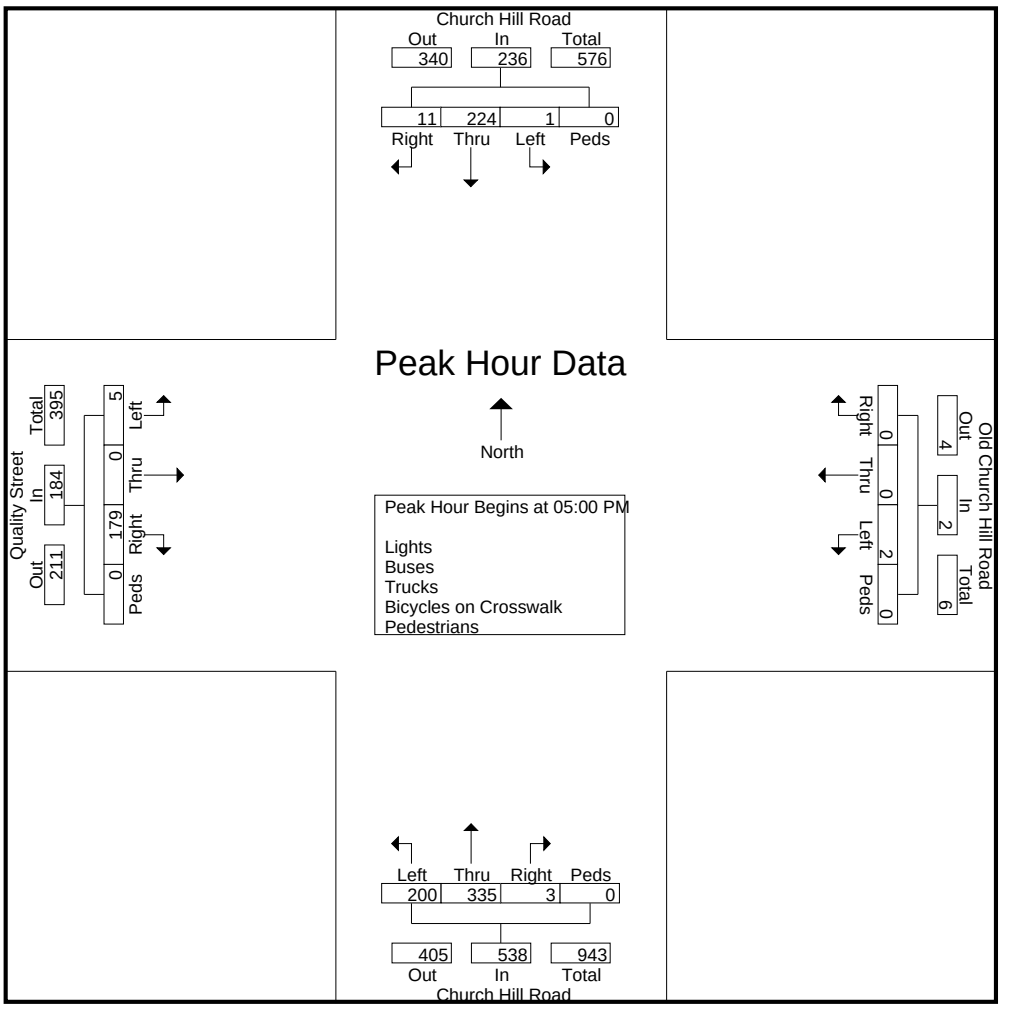
Start Time	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	12:00 PM					10:00 AM					12:15 PM					12:45 PM					
+0 mins.	**3**	54	0	0	57	0	0	0	**1**	**1**	1	32	**46**	0	79	**52**	0	1	0	**53**	
+15 mins.	2	51	0	0	53	0	0	0	0	0	**2**	31	39	0	72	39	0	0	0	39	
+30 mins.	2	**60**	0	0	**62**	0	0	**1**	0	1	0	46	30	0	76	41	0	**2**	0	43	
+45 mins.	3	47	0	0	50	0	0	0	0	0	0	**51**	37	0	**88**	49	0	1	0	50	
Total Volume	10	212	0	0	222	0	0	1	1	2	3	160	152	0	315	181	0	4	0	185	
% App. Total	4.5	95.5	0	0		0	0	50	50		1	50.8	48.3	0		97.8	0	2.2	0		
PHF	.833	.883	.000	.000	.895	.000	.000	.250	.250	.500	.375	.784	.826	.000	.895	.870	.000	.500	.000	.873	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 15295
Site Code : 15295
Start Date : 2/23/2017
Page No : 8

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	**65**	0	0	**68**	0	0	0	0	0	0	77	52	0	129	**56**	0	1	0	**57**	**254**
05:15 PM	**5**	56	**1**	0	62	0	0	0	0	0	0	84	**54**	0	**138**	45	0	1	0	46	246
05:30 PM	0	48	0	0	48	0	0	**1**	0	**1**	**3**	**87**	44	0	134	37	0	1	0	38	221
05:45 PM	3	55	0	0	58	0	0	1	0	1	0	87	50	0	137	41	0	**2**	0	43	239
Total Volume	11	224	1	0	236	0	0	2	0	2	3	335	200	0	538	179	0	5	0	184	960
% App. Total	4.7	94.9	0.4	0		0	0	100	0		0.6	62.3	37.2	0		97.3	0	2.7	0		
PHF	.550	.862	.250	.000	.868	.000	.000	.500	.000	.500	.250	.963	.926	.000	.975	.799	.000	.625	.000	.807	.945



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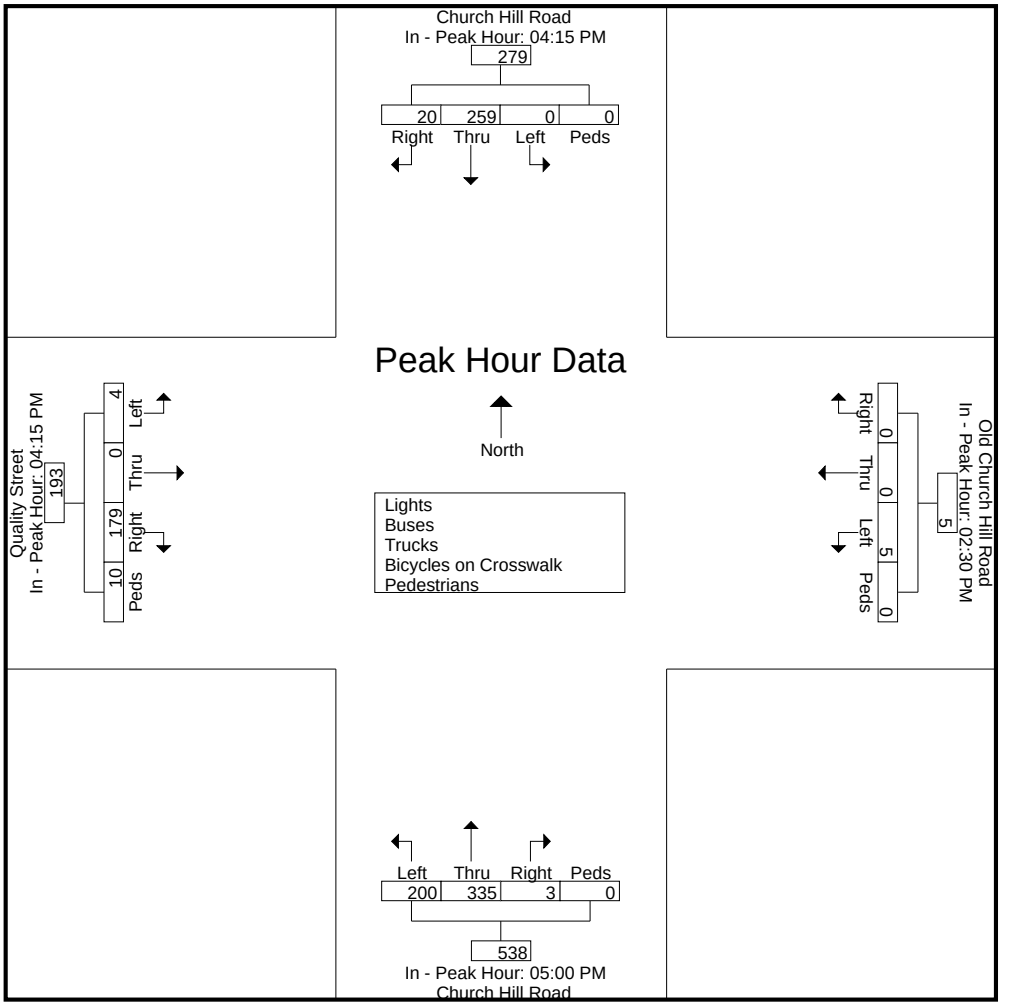
File Name : 15295
Site Code : 15295
Start Date : 2/23/2017
Page No : 9

Start Time	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 02:00 PM to 11:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:15 PM					02:30 PM					05:00 PM					04:15 PM					
+0 mins.	**8**	**78**	0	0	**86**	0	0	0	0	0	0	77	52	0	129	38	0	1	**9**	48	
+15 mins.	2	59	0	0	61	0	0	1	0	1	0	84	**54**	0	**138**	41	0	0	0	41	
+30 mins.	7	57	0	0	64	0	0	0	0	0	**3**	**87**	44	0	134	44	0	**2**	1	47	
+45 mins.	3	65	0	0	68	0	0	**4**	0	**4**	0	87	50	0	137	**56**	0	1	0	**57**	
Total Volume	20	259	0	0	279	0	0	5	0	5	3	335	200	0	538	179	0	4	10	193	
% App. Total	7.2	92.8	0	0		0	0	100	0		0.6	62.3	37.2	0		92.7	0	2.1	5.2		
PHF	.625	.830	.000	.000	.811	.000	.000	.313	.000	.313	.250	.963	.926	.000	.975	.799	.000	.500	.278	.846	



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Church Hill Road at Quality Street
Trumbull, Connecticut1

File Name : 15339
Site Code : 15339
Start Date : 3/4/2017
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	2	63	0	0	65	0	0	1	0	1	0	60	45	0	105	45	0	1	0	46	217
11:15 AM	9	61	1	0	71	0	0	1	0	1	1	57	38	0	96	43	0	1	0	44	212
11:30 AM	4	61	0	0	65	0	0	0	0	0	3	64	56	0	123	57	0	1	0	58	246
11:45 AM	5	50	0	0	55	0	0	1	0	1	3	57	47	0	107	55	0	2	1	58	221
Total	20	235	1	0	256	0	0	3	0	3	7	238	186	0	431	200	0	5	1	206	896
12:00 PM	4	47	0	0	51	0	0	0	0	0	0	55	50	0	105	53	1	1	0	55	211
12:15 PM	4	46	0	0	50	0	0	1	0	1	1	66	57	0	124	38	0	2	0	40	215
12:30 PM	7	53	0	0	60	0	1	0	0	1	0	71	45	0	116	65	0	0	0	65	242
12:45 PM	5	37	0	0	42	0	0	0	0	0	1	65	40	0	106	53	0	3	0	56	204
Total	20	183	0	0	203	0	1	1	0	2	2	257	192	0	451	209	1	6	0	216	872
Grand Total	40	418	1	0	459	0	1	4	0	5	9	495	378	0	882	409	1	11	1	422	1768
Apprch %	8.7	91.1	0.2	0		0	20	80	0		1	56.1	42.9	0		96.9	0.2	2.6	0.2		
Total %	2.3	23.6	0.1	0	26	0	0.1	0.2	0	0.3	0.5	28	21.4	0	49.9	23.1	0.1	0.6	0.1	23.9	
Unshifted	40	414	1	0	455	0	1	4	0	5	9	493	375	0	877	409	1	11	1	422	1759
% Unshifted	100	99	100	0	99.1	0	100	100	0	100	100	99.6	99.2	0	99.4	100	100	100	100	100	99.5
Bank 1	0	3	0	0	3	0	0	0	0	0	0	2	3	0	5	0	0	0	0	0	8
% Bank 1	0	0.7	0	0	0.7	0	0	0	0	0	0	0.4	0.8	0	0.6	0	0	0	0	0	0.5
Bank 2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bank 2	0	0.2	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1

Connecticut Counts LLC
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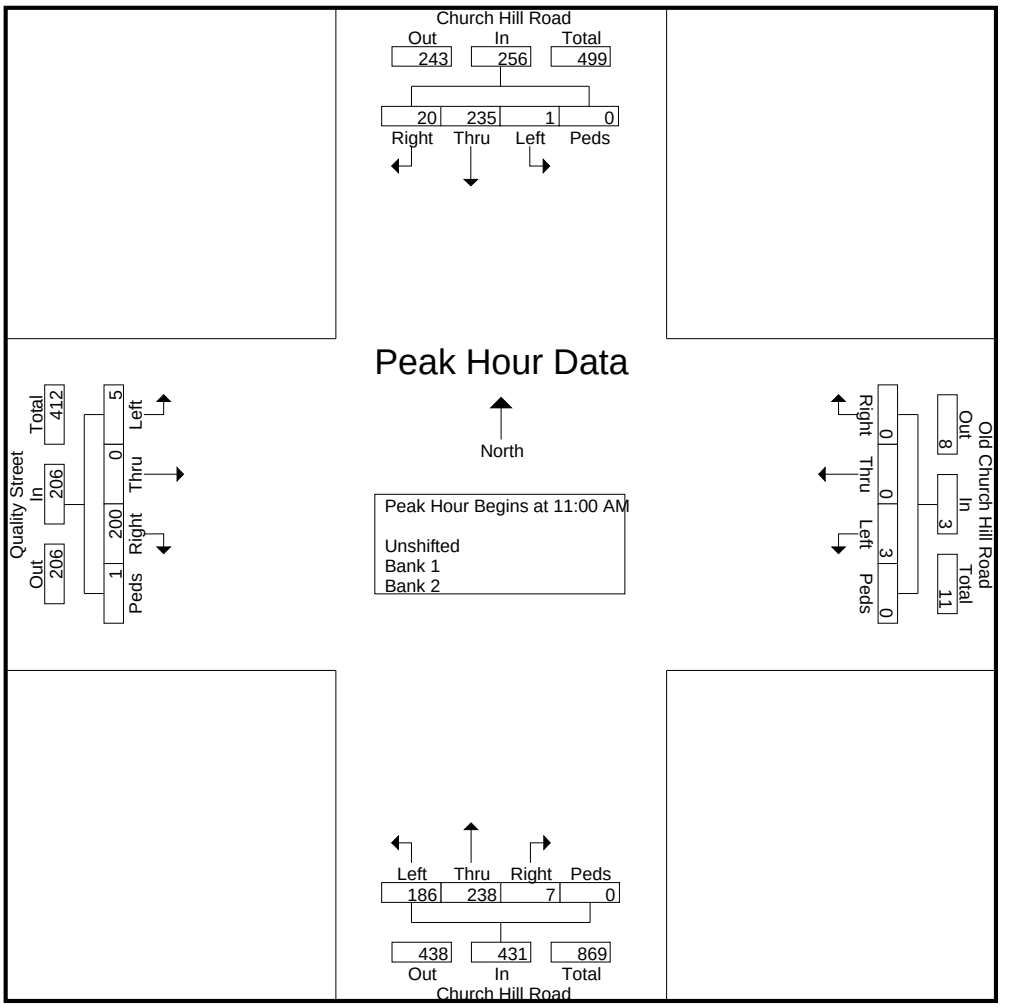
Church Hill Road at Quality Street
Trumbull, Connecticut1

File Name : 15339
Site Code : 15339
Start Date : 3/4/2017
Page No : 2

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	2	**63**	0	0	65	0	0	**1**	0	**1**	0	60	45	0	105	45	0	1	0	46	217
11:15 AM	**9**	61	**1**	0	**71**	0	0	1	0	1	1	57	38	0	96	43	0	1	0	44	212
11:30 AM	4	61	0	0	65	0	0	0	0	0	**3**	**64**	**56**	0	**123**	**57**	0	1	0	**58**	**246**
11:45 AM	5	50	0	0	55	0	0	1	0	1	3	57	47	0	107	55	0	**2**	**1**	58	221
Total Volume	20	235	1	0	256	0	0	3	0	3	7	238	186	0	431	200	0	5	1	206	896
% App. Total	7.8	91.8	0.4	0		0	0	100	0		1.6	55.2	43.2	0		97.1	0	2.4	0.5		
PHF	.556	.933	.250	.000	.901	.000	.000	.750	.000	.750	.583	.930	.830	.000	.876	.877	.000	.625	.250	.888	.911



Connecticut Counts LLC
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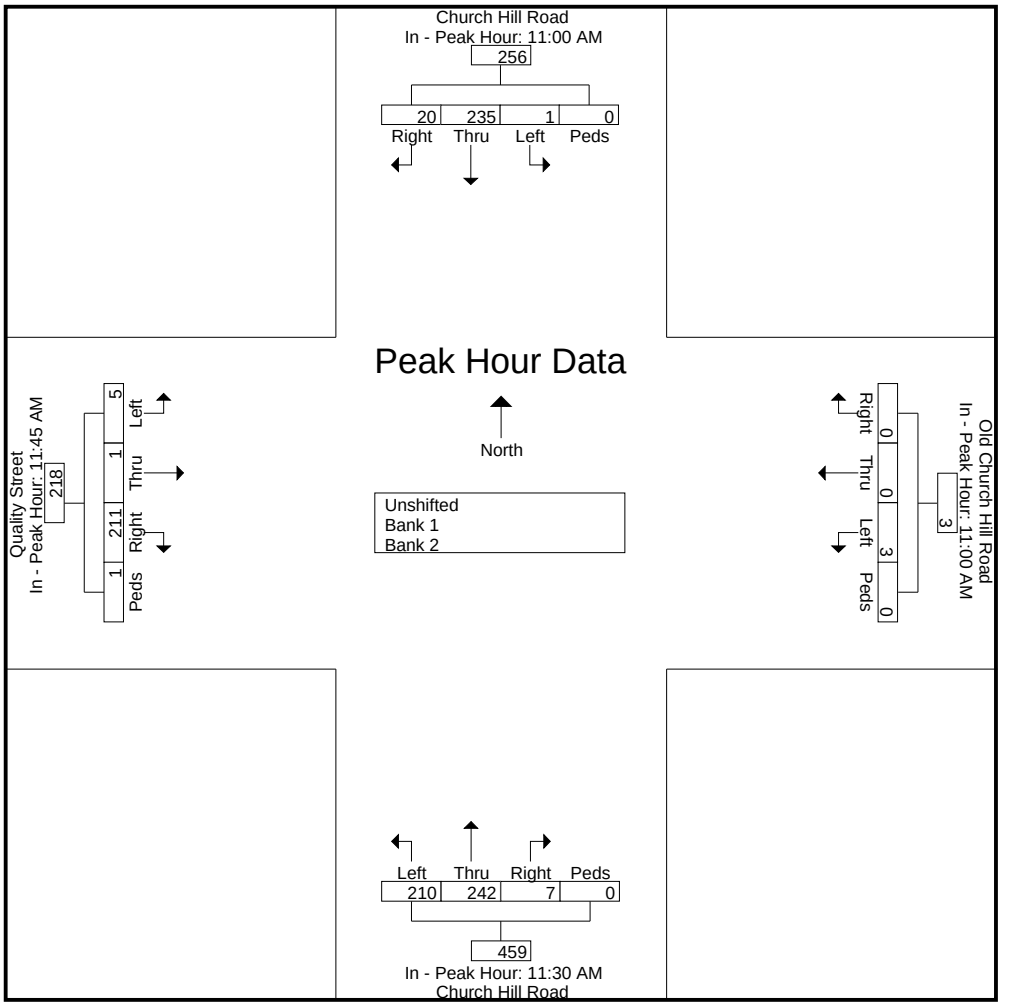
(860) 828-1693

Church Hill Road at Quality Street
Trumbull, Connecticut1

File Name : 15339
Site Code : 15339
Start Date : 3/4/2017
Page No : 3

	Church Hill Road From North					Old Church Hill Road From East					Church Hill Road From South					Quality Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	11:00 AM					11:00 AM					11:30 AM					11:45 AM					
+0 mins.	2	**63**	0	0	65	0	0	**1**	0	**1**	**3**	64	56	0	123	55	0	**2**	**1**	58	
+15 mins.	**9**	61	**1**	0	**71**	0	0	1	0	1	3	57	47	0	107	53	**1**	1	0	55	
+30 mins.	4	61	0	0	65	0	0	0	0	0	0	55	50	0	105	38	0	2	0	40	
+45 mins.	5	50	0	0	55	0	0	1	0	1	1	**66**	**57**	0	**124**	**65**	0	0	0	**65**	
Total Volume	20	235	1	0	256	0	0	3	0	3	7	242	210	0	459	211	1	5	1	218	
% App. Total	7.8	91.8	0.4	0		0	0	100	0		1.5	52.7	45.8	0		96.8	0.5	2.3	0.5		
PHF	.556	.933	.250	.000	.901	.000	.000	.750	.000	.750	.583	.917	.921	.000	.925	.812	.250	.625	.250	.838	



Connecticut Counts LLC
Kensington, Connecticut 06037
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Old Church Hill Rd at S. Edgewood Ave
Trumbull, Connecticut

File Name : 15296
Site Code : 15296
Start Date : 2/23/2017
Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	1	0	2	0	1	2	3	0	0	0	0	5
07:15 AM	1	1	0	2	0	0	0	0	0	1	0	1	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	2	2	0	4	0	2	2	4	0	1	0	1	9
08:00 AM	0	3	0	3	1	0	0	1	0	1	0	1	5
08:15 AM	1	0	0	1	0	1	0	1	0	0	0	0	2
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	4	0	5	1	1	0	2	0	2	0	2	9
Grand Total	3	6	0	9	1	3	2	6	0	3	0	3	18
Apprch %	33.3	66.7	0		16.7	50	33.3		0	100	0		
Total %	16.7	33.3	0	50	5.6	16.7	11.1	33.3	0	16.7	0	16.7	
Lights	3	6	0	9	1	1	0	2	0	3	0	3	14
% Lights	100	100	0	100	100	33.3	0	33.3	0	100	0	100	77.8
Buses	0	0	0	0	0	2	0	2	0	0	0	0	2
% Buses	0	0	0	0	0	66.7	0	33.3	0	0	0	0	11.1
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	2	2	0	0	0	0	2
% Pedestrians	0	0	0	0	0	0	100	33.3	0	0	0	0	11.1

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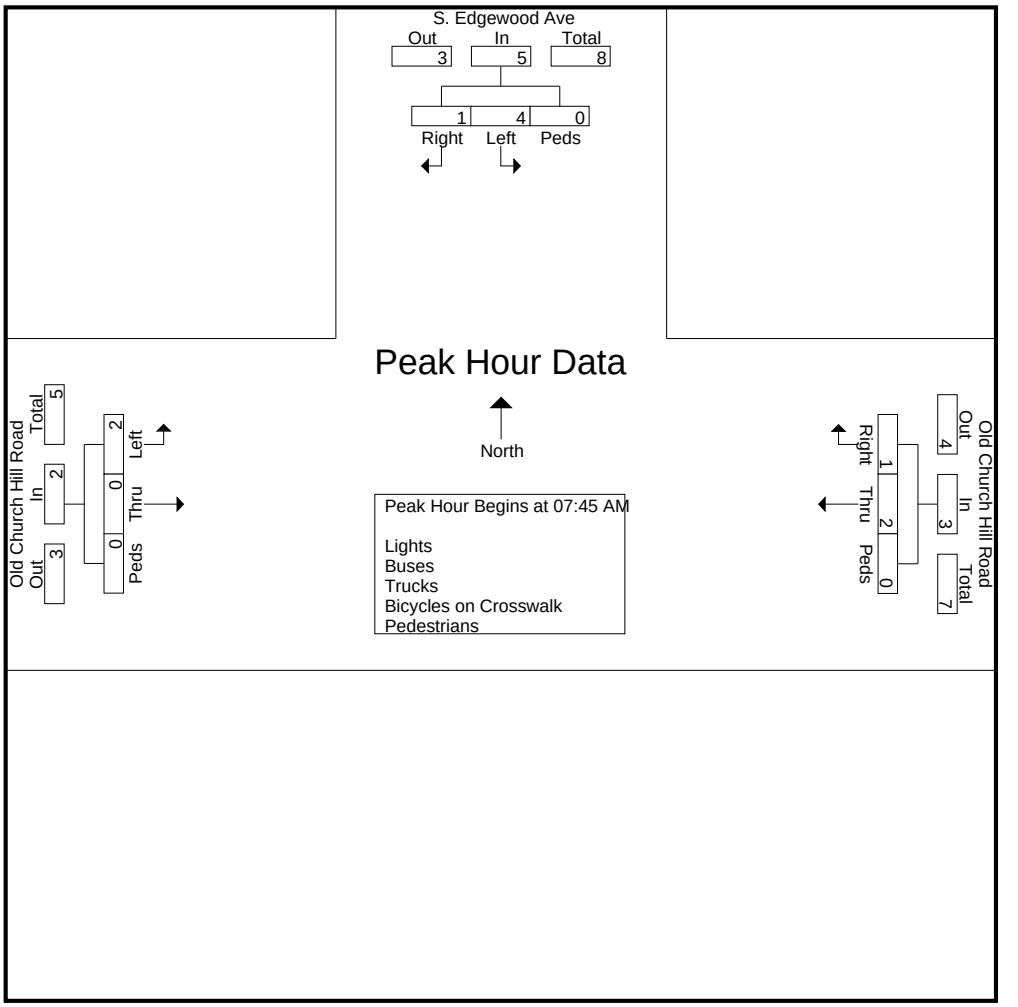
File Name : 15296
Site Code : 15296
Start Date : 2/23/2017
Page No : 2

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:45 AM													
07:45 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
08:00 AM	0	**3**	0	**3**	**1**	0	0	1	0	**1**	0	**1**	**5**
08:15 AM	**1**	0	0	1	0	1	0	1	0	0	0	0	2
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	2
Total Volume	1	4	0	5	1	2	0	3	0	2	0	2	10
% App. Total	20	80	0		33.3	66.7	0		0	100	0		
PHF	.250	.333	.000	.417	.250	.500	.000	.750	.000	.500	.000	.500	.500



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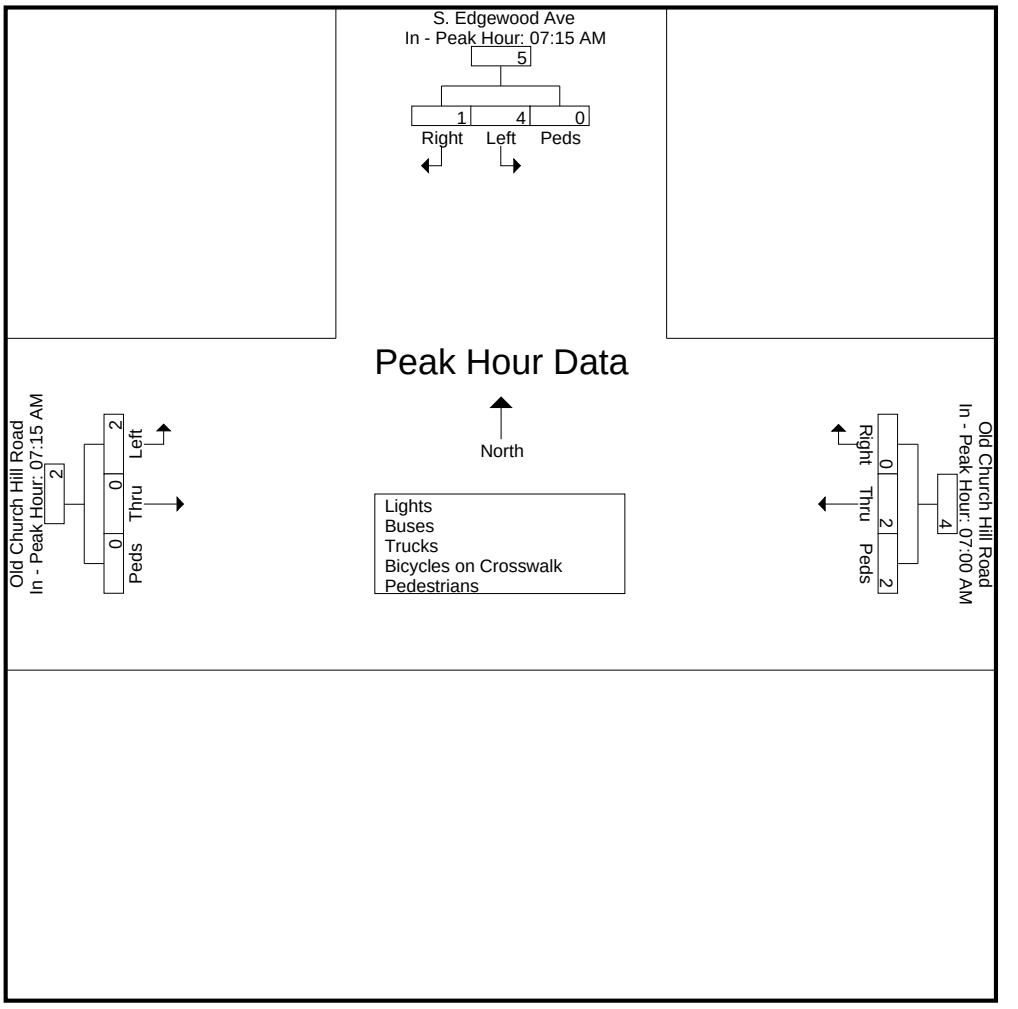
File Name : 15296
Site Code : 15296
Start Date : 2/23/2017
Page No : 3

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	07:15 AM				07:00 AM				07:15 AM				
+0 mins.	**1**	1	0	2	0	**1**	**2**	**3**	0	**1**	0	**1**	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	**3**	0	**3**	0	1	0	1	0	1	0	1	
Total Volume	1	4	0	5	0	2	2	4	0	2	0	2	
% App. Total	20	80	0		0	50	50		0	100	0		
PHF	.250	.333	.000	.417	.000	.500	.250	.333	.000	.500	.000	.500	



Connecticut Counts LLC
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Old Chuch Hill Rd at S. Edgewood Ave
Trumbull, Connecticut

File Name : 15297
Site Code : 15297
Start Date : 2/23/2017
Page No : 1

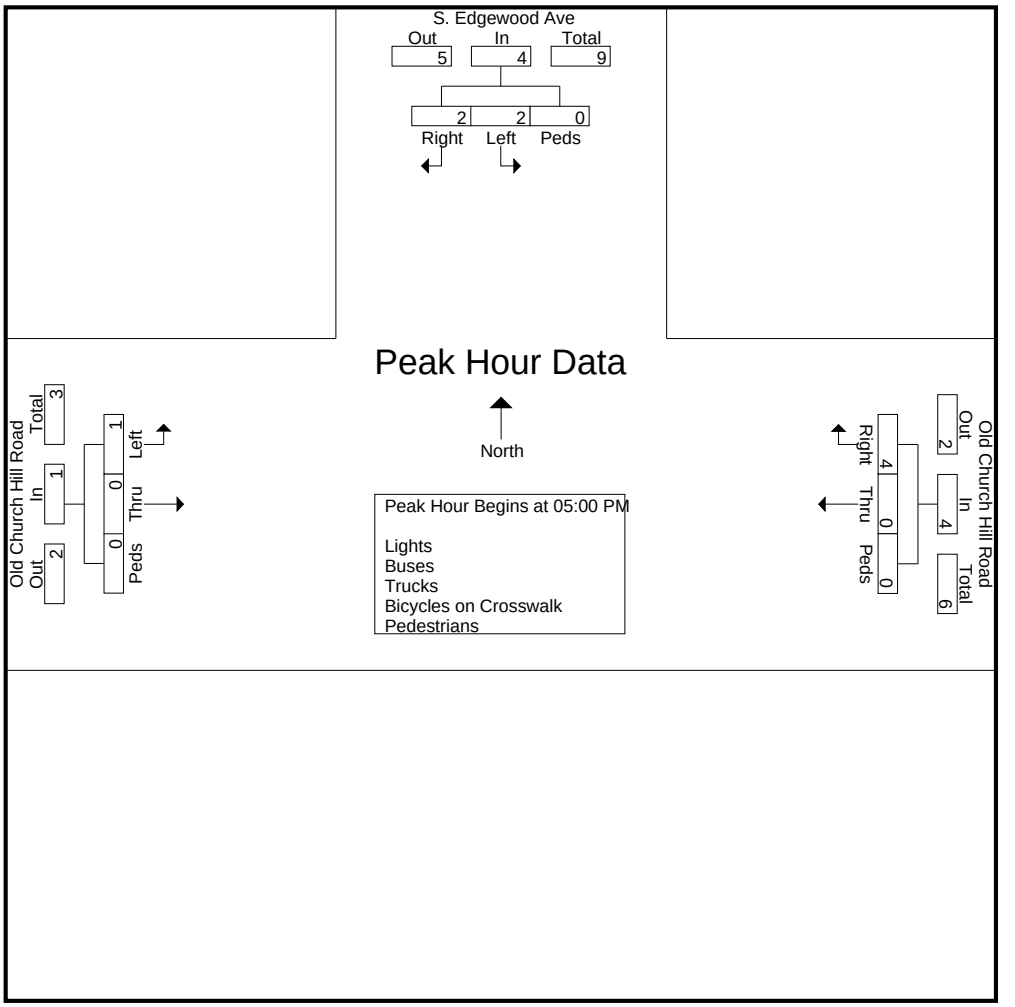
Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	1	0	0	1	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	1	0	0	1	1	1	0	2	0	3	0	3	6
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
05:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
05:30 PM	1	1	0	2	3	0	0	3	0	0	0	0	5
05:45 PM	1	1	0	2	0	0	0	0	0	0	0	0	2
Total	2	2	0	4	4	0	0	4	0	1	0	1	9
Grand Total	3	2	0	5	5	1	0	6	0	4	0	4	15
Apprch %	60	40	0		83.3	16.7	0		0	100	0		
Total %	20	13.3	0	33.3	33.3	6.7	0	40	0	26.7	0	26.7	
Lights	3	2	0	5	5	1	0	6	0	4	0	4	15
% Lights	100	100	0	100	100	100	0	100	0	100	0	100	100
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 15297
Site Code : 15297
Start Date : 2/23/2017
Page No : 2

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	1
05:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	1
05:30 PM	**1**	**1**	0	**2**	**3**	0	0	**3**	0	0	0	0	**5**
05:45 PM	1	1	0	2	0	0	0	0	0	0	0	0	2
Total Volume	2	2	0	4	4	0	0	4	0	1	0	1	9
% App. Total	50	50	0		100	0	0		0	100	0		
PHF	.500	.500	.000	.500	.333	.000	.000	.333	.000	.250	.000	.250	.450



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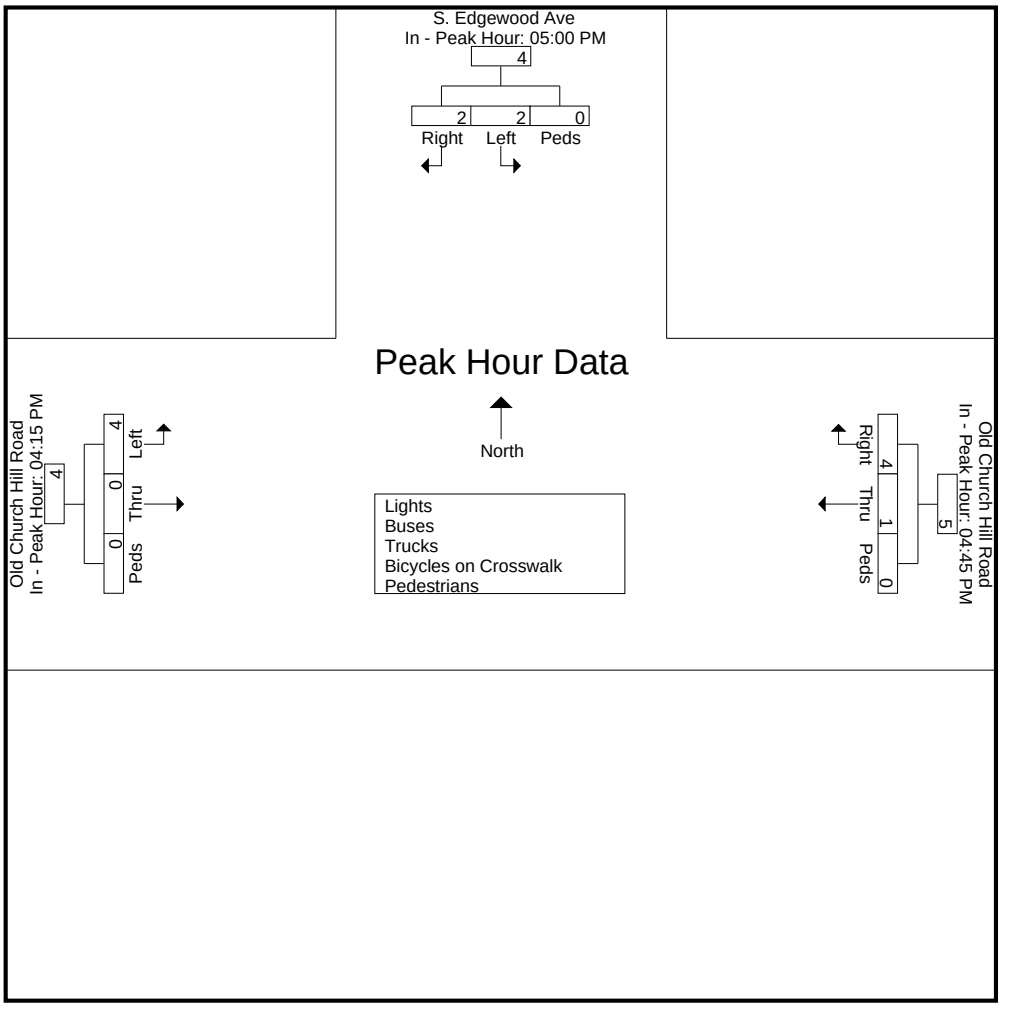
(860) 828-1693

File Name : 15297
Site Code : 15297
Start Date : 2/23/2017
Page No : 3

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	05:00 PM				04:45 PM				04:15 PM				
+0 mins.	0	0	0	0	0	**1**	0	1	0	1	0	1	
+15 mins.	0	0	0	0	0	0	0	0	0	**2**	0	**2**	
+30 mins.	**1**	**1**	0	**2**	1	0	0	1	0	0	0	0	
+45 mins.	1	1	0	2	**3**	0	0	**3**	0	1	0	1	
Total Volume	2	2	0	4	4	1	0	5	0	4	0	4	
% App. Total	50	50	0		80	20	0		0	100	0		
PHF	.500	.500	.000	.500	.333	.250	.000	.417	.000	.500	.000	.500	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Old Church Hill Road at S. Edgewood Ave
Trumbull, Connecticut

File Name : 15298
Site Code : 15298
Start Date : 2/25/2017
Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	0	1	0	1	0	0	0	0	0	0	0	0	1
11:15 AM	0	1	0	1	0	1	0	1	0	1	0	1	3
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	1	0	0	1	0	0	0	0	0	2	0	2	3
Total	1	2	0	3	0	1	0	1	0	3	0	3	7
12:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	1	2	0	3	2	0	0	2	0	1	0	1	6
12:30 PM	2	0	0	2	1	0	0	1	0	1	0	1	4
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	3	0	6	3	0	0	3	0	2	0	2	11
Grand Total	4	5	0	9	3	1	0	4	0	5	0	5	18
Apprch %	44.4	55.6	0		75	25	0		0	100	0		
Total %	22.2	27.8	0	50	16.7	5.6	0	22.2	0	27.8	0	27.8	
Lights	4	5	0	9	3	1	0	4	0	5	0	5	18
% Lights	100	100	0	100	100	100	0	100	0	100	0	100	100
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Connecticut Counts LLC
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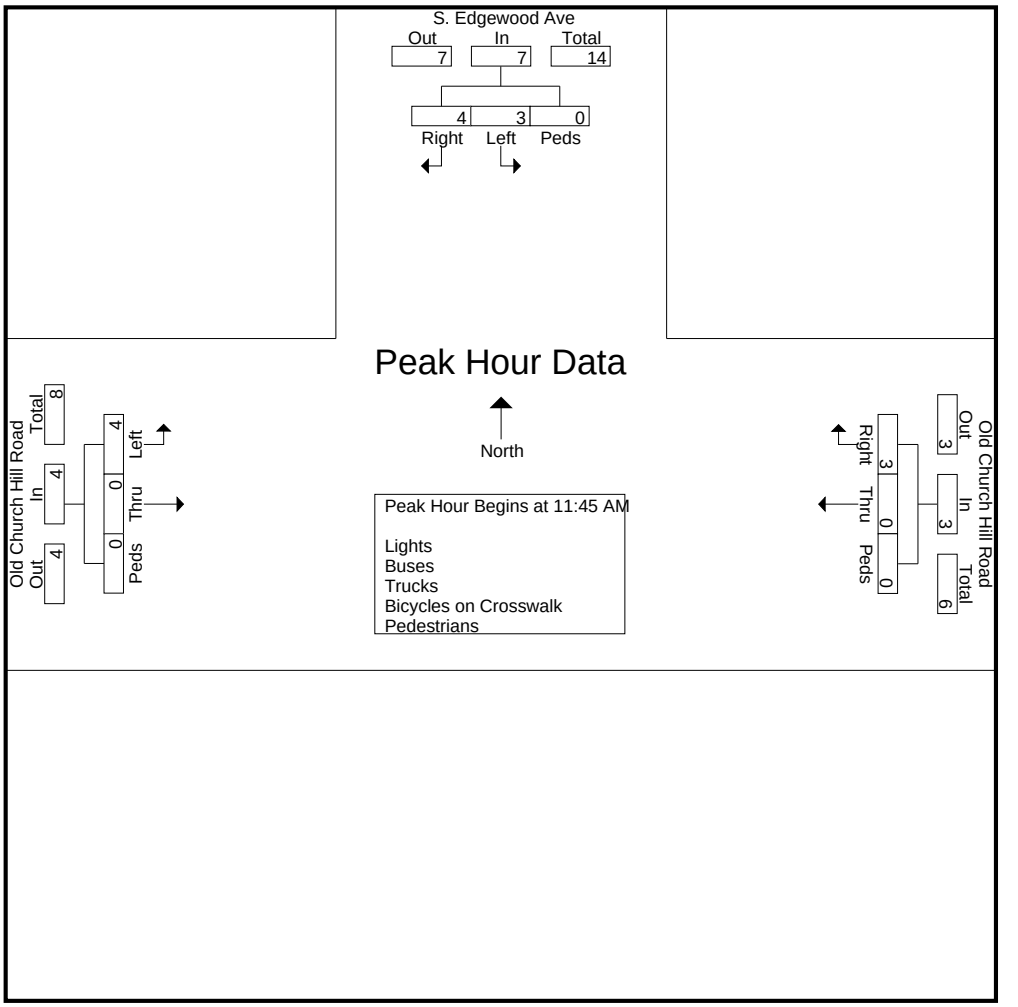
(860) 828-1693

File Name : 15298
Site Code : 15298
Start Date : 2/25/2017
Page No : 2

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:45 AM													
11:45 AM	1	0	0	1	0	0	0	0	0	**2**	0	**2**	3
12:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
12:15 PM	1	**2**	0	**3**	**2**	0	0	**2**	0	1	0	1	**6**
12:30 PM	**2**	0	0	2	1	0	0	1	0	1	0	1	4
Total Volume	4	3	0	7	3	0	0	3	0	4	0	4	14
% App. Total	57.1	42.9	0		100	0	0		0	100	0		
PHF	.500	.375	.000	.583	.375	.000	.000	.375	.000	.500	.000	.500	.583



Connecticut Counts LLC
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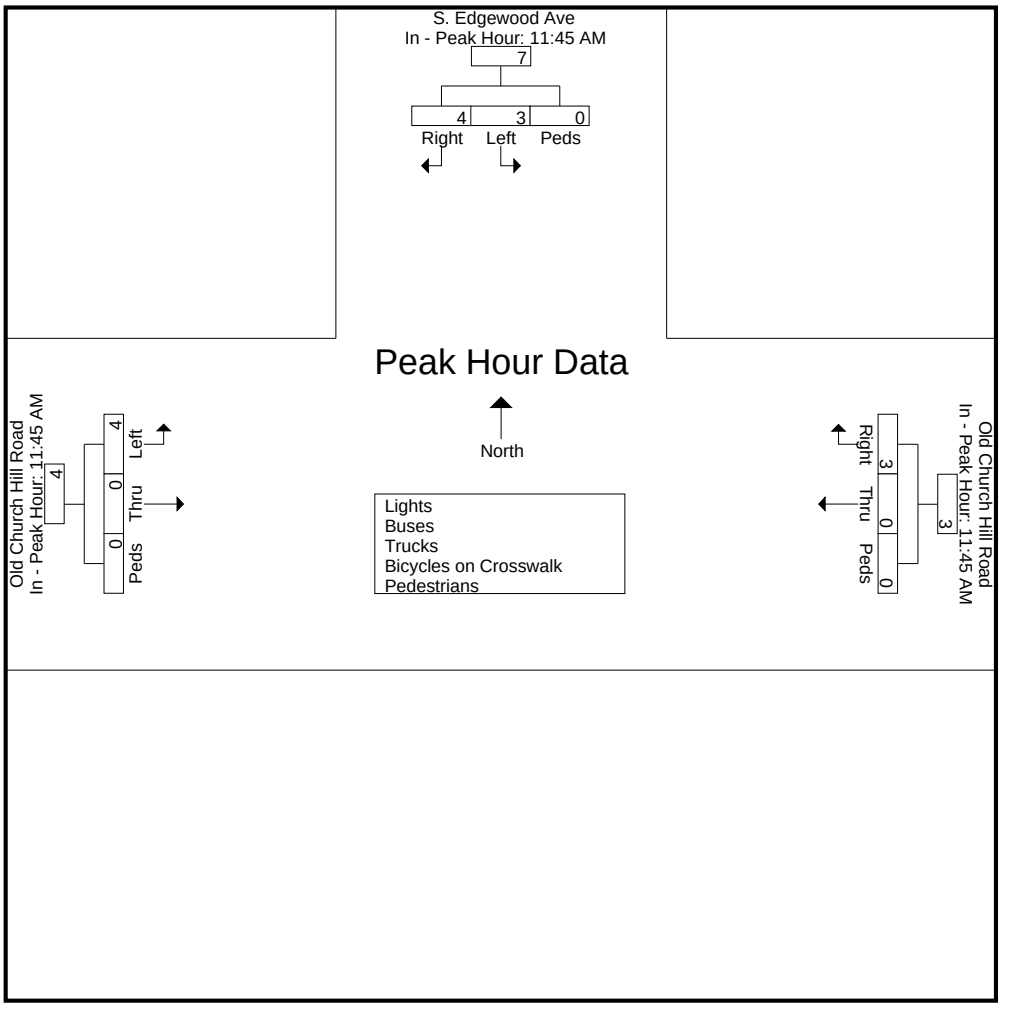
(860) 828-1693

File Name : 15298
Site Code : 15298
Start Date : 2/25/2017
Page No : 3

	S. Edgewood Ave From North				Old Church Hill Road From East				Old Church Hill Road From West				
Start Time	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1													
Peak Hour for Each Approach Begins at:													
	11:45 AM				11:45 AM				11:45 AM				
+0 mins.	1	0	0	1	0	0	0	0	0	**2**	0	**2**	
+15 mins.	0	1	0	1	0	0	0	0	0	0	0	0	
+30 mins.	1	**2**	0	**3**	**2**	0	0	**2**	0	1	0	1	
+45 mins.	**2**	0	0	2	1	0	0	1	0	1	0	1	
Total Volume	4	3	0	7	3	0	0	3	0	4	0	4	
% App. Total	57.1	42.9	0		100	0	0		0	100	0		
PHF	.500	.375	.000	.583	.375	.000	.000	.375	.000	.500	.000	.500	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Church Hill Road at Old Church Hill Road
Trumbull, Connecticut

File Name : 15299
Site Code : 15299
Start Date : 2/23/2017
Page No : 1

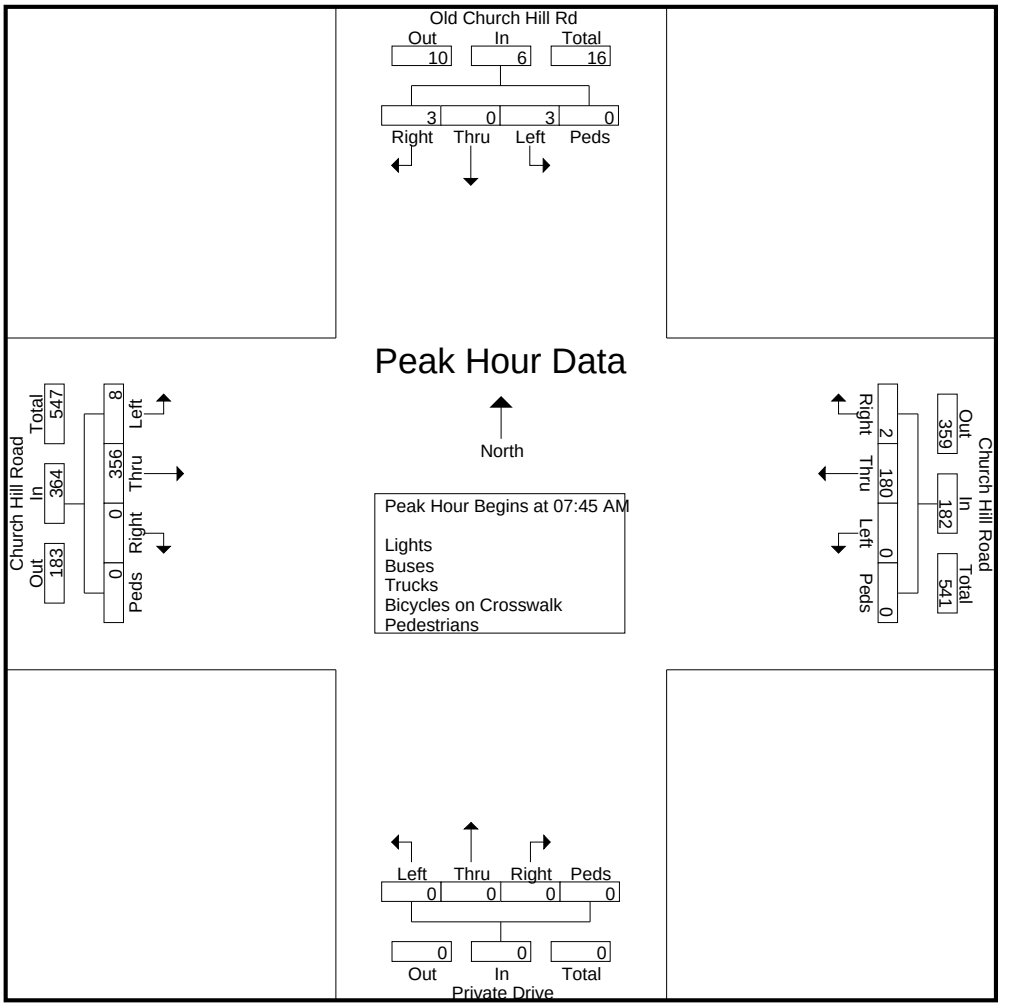
Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	Old Church Hill Rd From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	0	0	2	0	38	0	0	38	0	0	0	0	0	0	73	0	0	73	113
07:15 AM	1	0	0	0	1	1	47	0	0	48	0	0	0	0	0	0	71	1	0	72	121
07:30 AM	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	0	97	0	0	97	133
07:45 AM	1	0	0	0	1	1	43	0	0	44	0	0	0	0	0	0	77	2	0	79	124
Total	4	0	0	0	4	2	164	0	0	166	0	0	0	0	0	0	318	3	0	321	491
08:00 AM	1	0	2	0	3	1	40	0	0	41	0	0	0	0	0	0	91	3	0	94	138
08:15 AM	1	0	0	0	1	0	38	0	0	38	0	0	0	0	0	0	102	2	0	104	143
08:30 AM	0	0	1	0	1	0	59	0	0	59	0	0	0	0	0	0	86	1	0	87	147
08:45 AM	1	0	0	0	1	1	35	0	0	36	0	0	0	0	0	0	47	0	0	47	84
Total	3	0	3	0	6	2	172	0	0	174	0	0	0	0	0	0	326	6	0	332	512
Grand Total	7	0	3	0	10	4	336	0	0	340	0	0	0	0	0	0	644	9	0	653	1003
Apprch %	70	0	30	0		1.2	98.8	0	0		0	0	0	0		0	98.6	1.4	0		
Total %	0.7	0	0.3	0	1	0.4	33.5	0	0	33.9	0	0	0	0	0	0	64.2	0.9	0	65.1	
Lights	5	0	3	0	8	4	302	0	0	306	0	0	0	0	0	0	624	9	0	633	947
% Lights	71.4	0	100	0	80	100	89.9	0	0	90	0	0	0	0	0	0	96.9	100	0	96.9	94.4
Buses	2	0	0	0	2	0	20	0	0	20	0	0	0	0	0	0	11	0	0	11	33
% Buses	28.6	0	0	0	20	0	6	0	0	5.9	0	0	0	0	0	0	1.7	0	0	1.7	3.3
Trucks	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	9	0	0	9	23
% Trucks	0	0	0	0	0	0	4.2	0	0	4.1	0	0	0	0	0	0	1.4	0	0	1.4	2.3
Bicycles on Crosswalk % Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 15299
Site Code : 15299
Start Date : 2/23/2017
Page No : 2

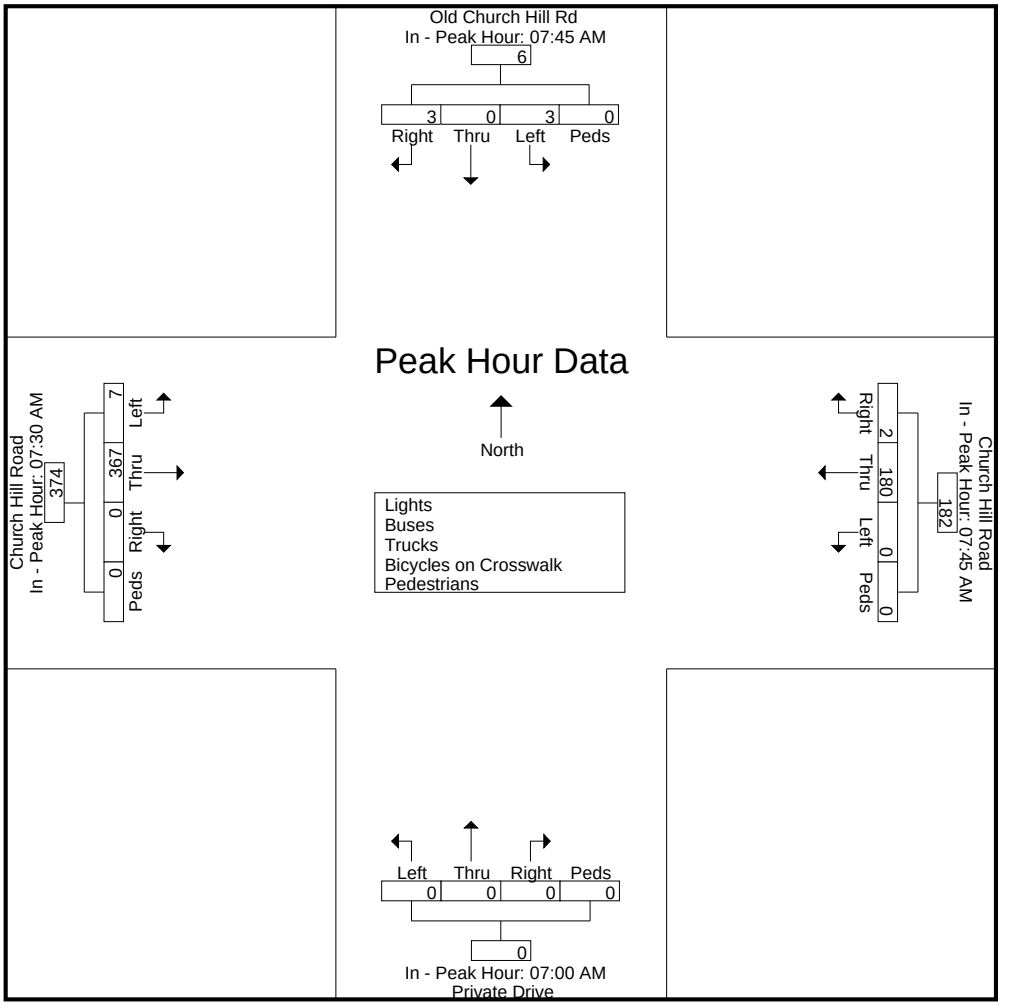
	Old Church Hill Rd From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**1**	0	0	0	1	**1**	43	0	0	44	0	0	0	0	0	0	77	2	0	79	124
08:00 AM	1	0	**2**	0	**3**	1	40	0	0	41	0	0	0	0	0	0	91	**3**	0	94	138
08:15 AM	1	0	0	0	1	0	38	0	0	38	0	0	0	0	0	0	**102**	2	0	**104**	143
08:30 AM	0	0	1	0	1	0	**59**	0	0	**59**	0	0	0	0	0	0	86	1	0	87	**147**
Total Volume	3	0	3	0	6	2	180	0	0	182	0	0	0	0	0	0	356	8	0	364	552
% App. Total	50	0	50	0		1.1	98.9	0	0		0	0	0	0		0	97.8	2.2	0		
PHF	.750	.000	.375	.000	.500	.500	.763	.000	.000	.771	.000	.000	.000	.000	.000	.000	.873	.667	.000	.875	.939



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 15299
Site Code : 15299
Start Date : 2/23/2017
Page No : 3

	Old Church Hill Rd From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:45 AM					07:45 AM					07:00 AM					07:30 AM					
+0 mins.	**1**	0	0	0	1	**1**	43	0	0	44	0	0	0	0	0	0	97	0	0	97	
+15 mins.	1	0	**2**	0	**3**	1	40	0	0	41	0	0	0	0	0	0	77	2	0	79	
+30 mins.	1	0	0	0	1	0	38	0	0	38	0	0	0	0	0	0	91	**3**	0	94	
+45 mins.	0	0	1	0	1	0	**59**	0	0	**59**	0	0	0	0	0	0	**102**	2	0	**104**	
Total Volume	3	0	3	0	6	2	180	0	0	182	0	0	0	0	0	0	367	7	0	374	
% App. Total	50	0	50	0		1.1	98.9	0	0		0	0	0	0		0	98.1	1.9	0		
PHF	.750	.000	.375	.000	.500	.500	.763	.000	.000	.771	.000	.000	.000	.000	.000	.000	.900	.583	.000	.899	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Church Hill Road at Old Church Hill Road
Trumbull, Connecticut

File Name : 15300
Site Code : 15300
Start Date : 2/23/2017
Page No : 1

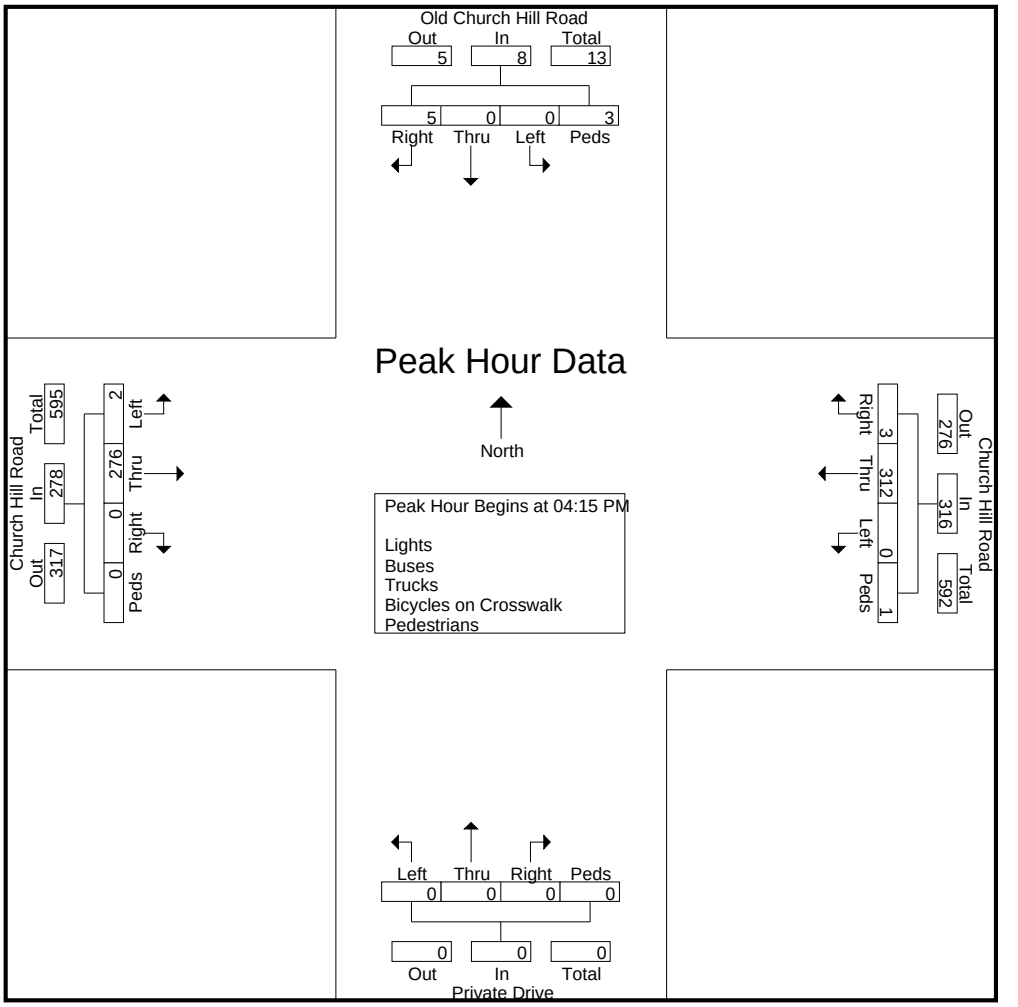
Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	Old Church Hill Road From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	2	0	2	0	70	0	0	70	0	0	0	0	0	0	52	0	0	52	124
04:15 PM	0	0	0	0	0	0	78	0	0	78	0	0	0	0	0	0	79	0	0	79	157
04:30 PM	1	0	0	1	2	1	74	0	0	75	0	0	0	0	0	0	64	1	0	65	142
04:45 PM	1	0	0	2	3	2	86	0	1	89	0	0	0	0	0	0	66	1	0	67	159
Total	2	0	2	3	7	3	308	0	1	312	0	0	0	0	0	0	261	2	0	263	582
05:00 PM	3	0	0	0	3	0	74	0	0	74	0	0	0	0	0	0	67	0	0	67	144
05:15 PM	1	0	0	0	1	0	88	0	0	88	0	0	0	0	0	0	60	1	0	61	150
05:30 PM	2	0	2	0	4	0	87	0	0	87	0	0	0	0	0	0	47	0	0	47	138
05:45 PM	0	0	0	0	0	0	91	0	0	91	0	0	0	0	0	0	53	0	0	53	144
Total	6	0	2	0	8	0	340	0	0	340	0	0	0	0	0	0	227	1	0	228	576
Grand Total	8	0	4	3	15	3	648	0	1	652	0	0	0	0	0	0	488	3	0	491	1158
Apprch %	53.3	0	26.7	20		0.5	99.4	0	0.2		0	0	0	0		0	99.4	0.6	0		
Total %	0.7	0	0.3	0.3	1.3	0.3	56	0	0.1	56.3	0	0	0	0	0	0	42.1	0.3	0	42.4	
Lights	8	0	4	0	12	3	640	0	0	643	0	0	0	0	0	0	478	3	0	481	1136
% Lights	100	0	100	0	80	100	98.8	0	0	98.6	0	0	0	0	0	0	98	100	0	98	98.1
Buses	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
% Buses	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.4	0	0	0.4	0.3
Trucks	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	8	0	0	8	14
% Trucks	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	1.6	0	0	1.6	1.2
Bicycles on Crosswalk % Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	3	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4
% Pedestrians	0	0	0	100	20	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0.3

Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 15300
Site Code : 15300
Start Date : 2/23/2017
Page No : 2

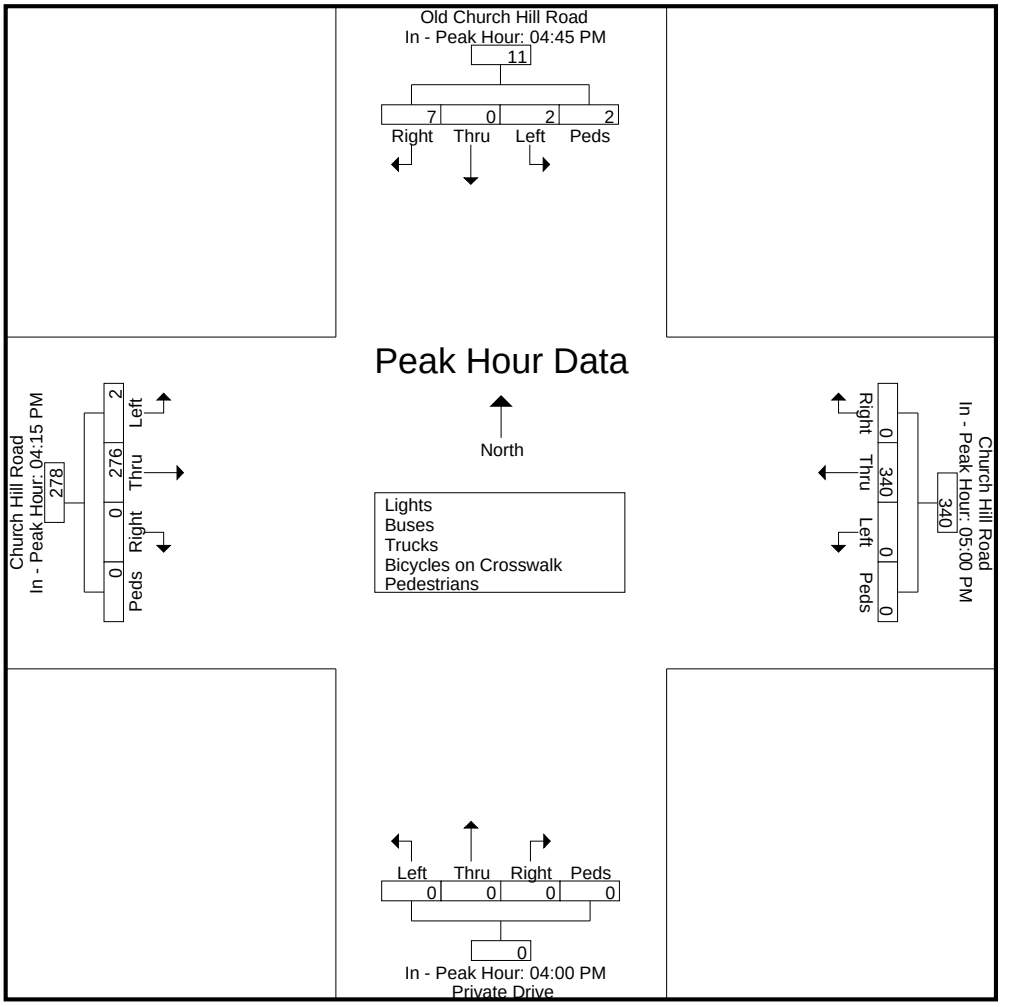
	Old Church Hill Road From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	0	0	0	78	0	0	78	0	0	0	0	0	0	**79**	0	0	**79**	157
04:30 PM	1	0	0	1	2	1	74	0	0	75	0	0	0	0	0	0	64	**1**	0	65	142
04:45 PM	1	0	0	**2**	**3**	**2**	**86**	0	**1**	**89**	0	0	0	0	0	0	66	1	0	67	**159**
05:00 PM	**3**	0	0	0	3	0	74	0	0	74	0	0	0	0	0	0	67	0	0	67	144
Total Volume	5	0	0	3	8	3	312	0	1	316	0	0	0	0	0	0	276	2	0	278	602
% App. Total	62.5	0	0	37.5		0.9	98.7	0	0.3		0	0	0	0		0	99.3	0.7	0		
PHF	.417	.000	.000	.375	.667	.375	.907	.000	.250	.888	.000	.000	.000	.000	.000	.000	.873	.500	.000	.880	.947



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

File Name : 15300
Site Code : 15300
Start Date : 2/23/2017
Page No : 3

	Old Church Hill Road From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:45 PM					05:00 PM					04:00 PM					04:15 PM					
+0 mins.	1	0	0	**2**	3	0	74	0	0	74	0	0	0	0	0	0	**79**	0	0	**79**	
+15 mins.	**3**	0	0	0	3	0	88	0	0	88	0	0	0	0	0	0	64	**1**	0	65	
+30 mins.	1	0	0	0	1	0	87	0	0	87	0	0	0	0	0	0	66	1	0	67	
+45 mins.	2	0	**2**	0	**4**	0	**91**	0	0	**91**	0	0	0	0	0	0	67	0	0	67	
Total Volume	7	0	2	2	11	0	340	0	0	340	0	0	0	0	0	0	276	2	0	278	
% App. Total	63.6	0	18.2	18.2		0	100	0	0		0	0	0	0		0	99.3	0.7	0		
PHF	.583	.000	.250	.250	.688	.000	.934	.000	.000	.934	.000	.000	.000	.000	.000	.000	.873	.500	.000	.880	



Connecticut Counts LLC
Kensington, Connecticut 06037
(860) 828-1693

Church Hill Rd at Old Church Hill Road
Trumbull, Connecticut

File Name : 15301
Site Code : 15301
Start Date : 2/25/2017
Page No : 1

Groups Printed- Lights - Buses - Trucks - Bicycles on Crosswalk - Pedestrians

	Old Church Hill Road From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
11:00 AM	1	0	1	0	2	0	55	0	0	55	0	0	0	0	0	0	50	0	0	50	107
11:15 AM	0	0	1	0	1	1	63	0	0	64	0	0	0	0	0	0	54	0	0	54	119
11:30 AM	0	0	1	0	1	0	55	0	1	56	0	0	0	0	0	0	54	0	0	54	111
11:45 AM	1	0	0	0	1	0	62	0	0	62	0	0	0	0	0	0	64	2	0	66	129
Total	2	0	3	0	5	1	235	0	1	237	0	0	0	0	0	0	222	2	0	224	466
12:00 PM	2	0	0	0	2	0	53	0	0	53	0	0	0	0	0	0	54	0	0	54	109
12:15 PM	1	0	0	0	1	0	59	0	0	59	0	0	0	0	0	0	52	1	0	53	113
12:30 PM	1	0	0	0	1	0	47	0	0	47	0	0	0	0	0	0	42	1	0	43	91
12:45 PM	2	0	0	0	2	0	57	0	0	57	0	0	0	0	0	0	71	0	0	71	130
Total	6	0	0	0	6	0	216	0	0	216	0	0	0	0	0	0	219	2	0	221	443
Grand Total	8	0	3	0	11	1	451	0	1	453	0	0	0	0	0	0	441	4	0	445	909
Apprch %	72.7	0	27.3	0		0.2	99.6	0	0.2		0	0	0	0		0	99.1	0.9	0		
Total %	0.9	0	0.3	0	1.2	0.1	49.6	0	0.1	49.8	0	0	0	0	0	0	48.5	0.4	0	49	
Lights	8	0	3	0	11	1	446	0	0	447	0	0	0	0	0	0	439	4	0	443	901
% Lights	100	0	100	0	100	100	98.9	0	0	98.7	0	0	0	0	0	0	99.5	100	0	99.6	99.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	0	2	7
% Trucks	0	0	0	0	0	0	1.1	0	0	1.1	0	0	0	0	0	0	0.5	0	0	0.4	0.8
Bicycles on Crosswalk % Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1
% Pedestrians	0	0	0	0	0	0	0	0	100	0.2	0	0	0	0	0	0	0	0	0	0	0.1

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Site Code : 15301
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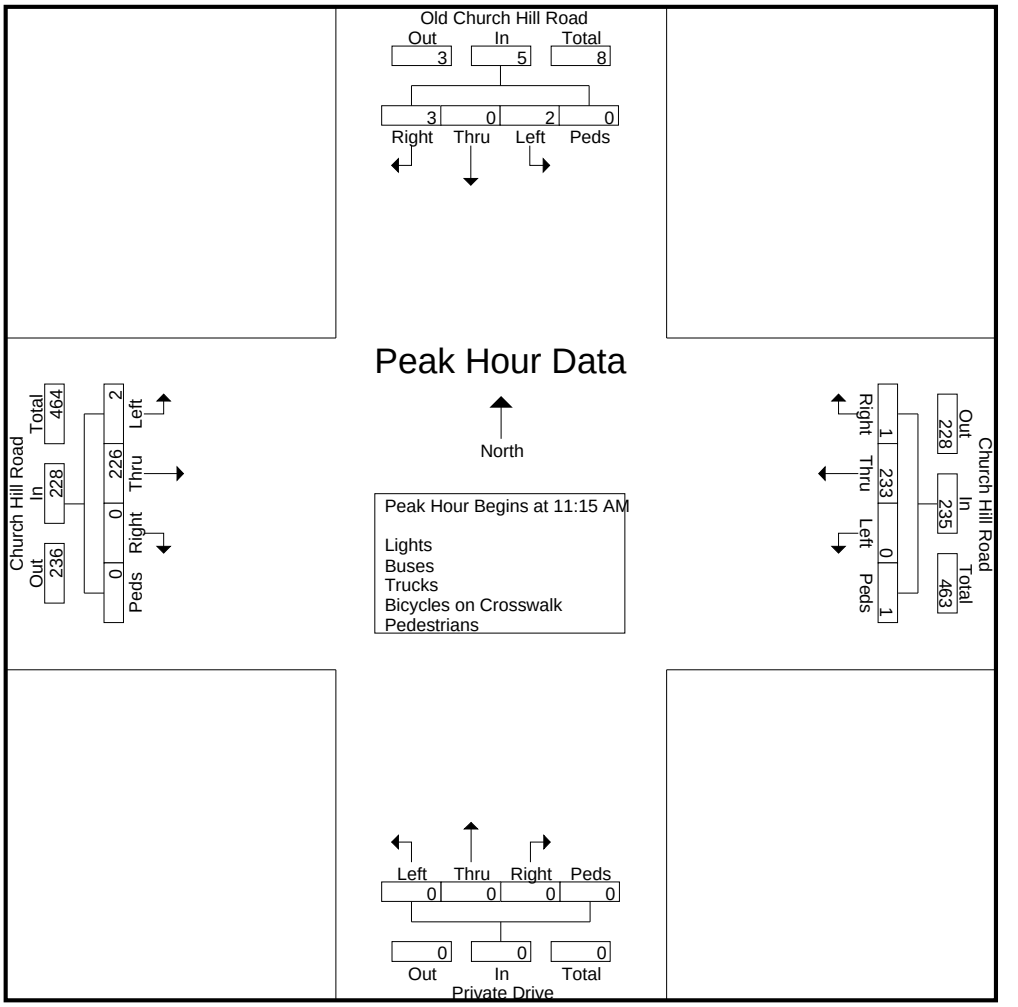
	Old Church Hill Road From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	0	**1**	0	1	**1**	**63**	0	0	**64**	0	0	0	0	0	0	54	0	0	54	119
11:30 AM	0	0	1	0	1	0	55	0	**1**	56	0	0	0	0	0	0	54	0	0	54	111
11:45 AM	1	0	0	0	1	0	62	0	0	62	0	0	0	0	0	0	**64**	**2**	0	**66**	**129**
12:00 PM	**2**	0	0	0	**2**	0	53	0	0	53	0	0	0	0	0	0	54	0	0	54	109
Total Volume	3	0	2	0	5	1	233	0	1	235	0	0	0	0	0	0	226	2	0	228	468
% App. Total	60	0	40	0		0.4	99.1	0	0.4		0	0	0	0		0	99.1	0.9	0		
PHF	.375	.000	.500	.000	.625	.250	.925	.000	.250	.918	.000	.000	.000	.000	.000	.000	.883	.250	.000	.864	.907



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Kensington, Connecticut 06037
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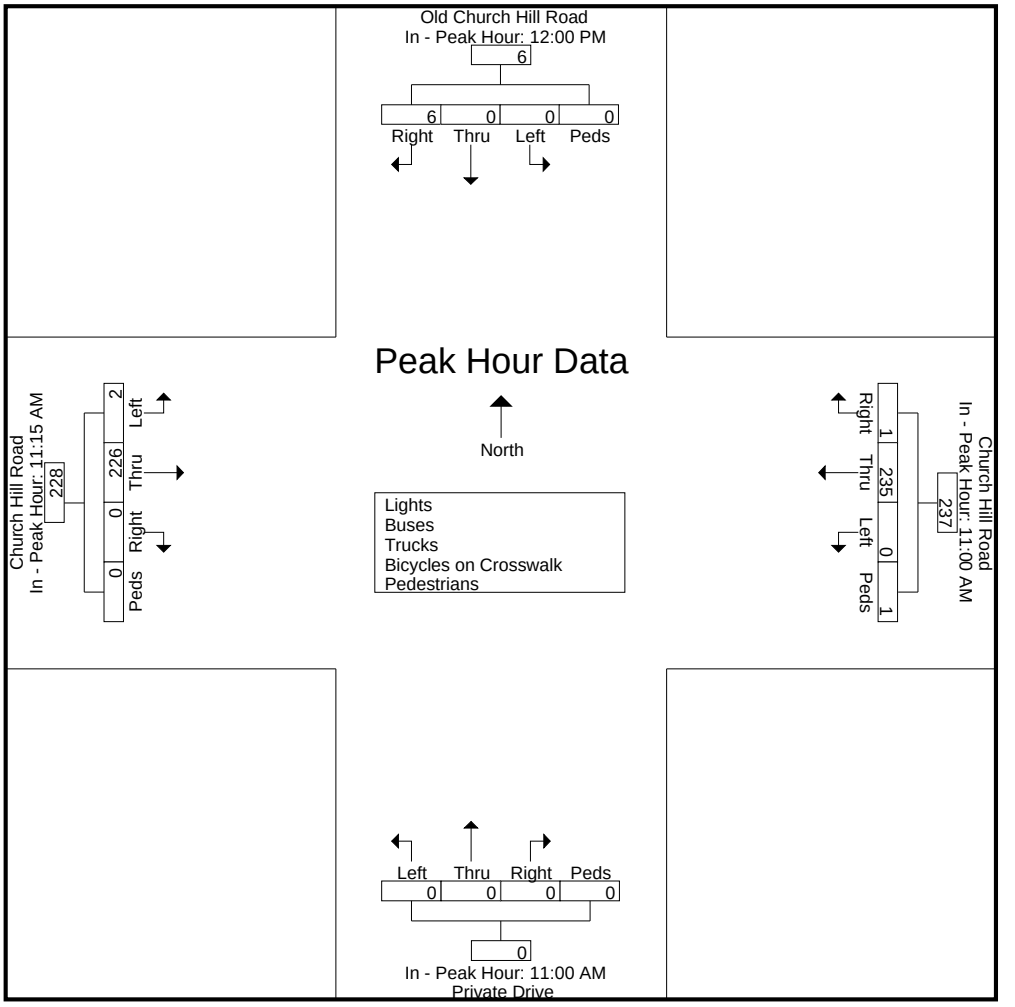
File Name : 15301
Site Code : 15301
Start Date : 2/25/2017
Page No : 3

	Old Church Hill Road From North					Church Hill Road From East					Private Drive From South					Church Hill Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 12:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	12:00 PM					11:00 AM					11:00 AM					11:15 AM					
+0 mins.	**2**	0	0	0	**2**	0	55	0	0	55	0	0	0	0	0	0	54	0	0	54	
+15 mins.	1	0	0	0	1	**1**	**63**	0	0	**64**	0	0	0	0	0	0	54	0	0	54	
+30 mins.	1	0	0	0	1	0	55	0	**1**	56	0	0	0	0	0	0	**64**	**2**	0	**66**	
+45 mins.	2	0	0	0	2	0	62	0	0	62	0	0	0	0	0	0	54	0	0	54	
Total Volume	6	0	0	0	6	1	235	0	1	237	0	0	0	0	0	0	226	2	0	228	
% App. Total	100	0	0	0		0.4	99.2	0	0.4		0	0	0	0		0	99.1	0.9	0		
PHF	.750	.000	.000	.000	.750	.250	.933	.000	.250	.926	.000	.000	.000	.000	.000	.000	.883	.250	.000	.864	



APPENDIX B
CAPACITY ANALYSIS METHODOLOGY

Tighe&Bond

CAPACITY ANALYSIS METHODOLOGY

A primary result of capacity analysis is the assignment of levels of service to traffic facilities under various traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures in the *Highway Capacity Manual* (HCM).[1] The concept of level of service (LOS) is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with LOS A representing the best operating conditions and LOS F the worst. Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year. A description of the operating condition under each level of service is provided below:

- *LOS A* describes conditions with little to no delay to motorists.
- *LOS B* represents a desirable level with relatively low delay to motorists.
- *LOS C* describes conditions with average delays to motorists.
- *LOS D* describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.
- *LOS E* represents operating conditions with high delay values. This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* is considered to be unacceptable to most drivers with high delay values that often occur, when arrival flow rates exceed the capacity of the intersection.

Signalized Intersections

Levels of service for signalized intersections are also calculated using the operational analysis methodology of the HCM. The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay is used to establish the operating characteristics for an intersection or an approach to an intersection. Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a lane group's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the traffic signal cycle capacity is fully utilized and indicates a capacity failure. The level-of-service criteria for signalized intersections are shown in Table A-1.

[1] *HCM2010: Highway Capacity Manual.* Washington, D.C.: Transportation Research Board, 2010.

Unsignalized Intersections

Levels of service for unsignalized intersections are calculated using the operational analysis methodology of the HCM. The procedure accounts for lane configuration on both the minor and major street approaches, conflicting traffic stream volumes, and the type of intersection control (STOP, YIELD, or all-way STOP control). The definition of level of service for unsignalized intersections is a function of average *control* delay. Control delay at an unsignalized intersection is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue position to the first-in-queue position.

Volume-to-capacity (v/c) ratios are also used to help signify the utilization of a movement's capacity at an intersection. A v/c ratio of ≥1.00 represents conditions when the movement is fully utilized and indicates a capacity failure. The capacity of the movements is based on the distribution of gaps in the major street traffic stream, the selection of gaps to complete the desired movement, and the follow-up headways for each driver in the queue. When an unsignalized intersection is located within 0.25 miles of a signalized intersection, traffic flows may not be random and some platoon structure may exist, thereby affecting the minor street operations. The level-of-service criteria for unsignalized intersections are shown in Table A-1.

TABLE A-1
Level-of-Service Criteria for Intersections

Level of Service	**Signalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**Unsignalized Intersection Criteria** Average Control Delay (Seconds per Vehicle)	**V/C Ratio >1.00[a]**
A	≤10	≤10	F
B	>10 and ≤20	>10 and ≤15	F
C	>20 and ≤35	>15 and ≤25	F
D	>35 and ≤55	>25 and ≤35	F
E	>55 and ≤80	>35 and ≤50	F
F	>80	>50	F

Note: [a]For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Source: *HCM2010: Highway Capacity Manual.* Washington, D.C.: Transportation Research Board, 2010. Pages 18-6 and 19-2.

For signalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to the entire intersection. For unsignalized intersections, this delay criterion may be applied in assigning level-of-service designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches.

APPENDIX C
CAPACITY ANALYSES
2017 Existing Conditions

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Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	71	3	1	0	84	176	3	0	348	11
Future Vol, veh/h	6	0	71	3	1	0	84	176	3	0	348	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	0	76	3	1	0	90	189	3	0	374	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	752	753	380	752	758	191	386	0	0	192	0	0
Stage 1	380	380	-	372	372	-	-	-	-	-	-	-
Stage 2	372	373	-	380	386	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	325	338	665	325	335	848	1167	-	-	1375	-	-
Stage 1	640	612	-	646	617	-	-	-	-	-	-	-
Stage 2	646	617	-	640	608	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	303	309	665	269	306	848	1167	-	-	1375	-	-
Mov Cap-2 Maneuver	303	309	-	269	306	-	-	-	-	-	-	-
Stage 1	585	612	-	590	564	-	-	-	-	-	-	-
Stage 2	589	564	-	567	608	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	18.2	2.7	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1167	-	-	303	665	277	1375	-	-
HCM Lane V/C Ratio	0.077	-	-	0.021	0.115	0.016	-	-	-
HCM Control Delay (s)	8.3	0	-	17.1	11.1	18.2	0	-	-
HCM Lane LOS	A	A	-	C	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	1	4	1
Future Vol, veh/h	0	2	2	1	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	0	4	4	2	8	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	6	0	-	0	9	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.21	-	-	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	2.299	-	-	-	3.599	3.399
Pot Cap-1 Maneuver	1558	-	-	-	989	1052
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	989	1052
Mov Cap-2 Maneuver	-	-	-	-	989	-
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	996	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1558	-	-	-	1001
HCM Lane V/C Ratio	-	-	-	-	0.01
HCM Control Delay (s)	0	-	-	-	8.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	180	2	8	356
Future Vol, veh/h	3	3	180	2	8	356
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	3	3	191	2	9	379

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	589	193	0	0	194	0
Stage 1	193	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.16	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.254	-
Pot Cap-1 Maneuver	464	838	-	-	1355	-
Stage 1	830	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	460	838	-	-	1355	-
Mov Cap-2 Maneuver	460	-	-	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.1	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	594	1355	-
HCM Lane V/C Ratio	-	-	0.011	0.006	-
HCM Control Delay (s)	-	-	11.1	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	179	0	0	0	171	311	1	0	259	20
Future Vol, veh/h	4	0	179	0	0	0	171	311	1	0	259	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	4	0	192	0	0	0	184	334	1	0	278	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	992	992	289	992	1003	335	300	0	0	335	0	0
Stage 1	289	289	-	703	703	-	-	-	-	-	-	-
Stage 2	703	703	-	289	300	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	224	245	748	224	241	705	1255	-	-	1219	-	-
Stage 1	716	671	-	427	438	-	-	-	-	-	-	-
Stage 2	427	438	-	716	664	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	193	201	748	143	198	705	1255	-	-	1219	-	-
Mov Cap-2 Maneuver	193	201	-	143	198	-	-	-	-	-	-	-
Stage 1	587	671	-	350	359	-	-	-	-	-	-	-
Stage 2	350	359	-	532	664	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	0	3	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1255	-	-	193	748	-	1219	-	-
HCM Lane V/C Ratio	0.147	-	-	0.022	0.257	-	-	-	-
HCM Control Delay (s)	8.4	0	-	24.1	11.5	0	0	-	-
HCM Lane LOS	A	A	-	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	1	-	0	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	0	1	0	0	1
Future Vol, veh/h	4	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	2	0	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2	0	-	0	18	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1620	-	-	-	1000	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1620	-	-	-	995	1082
Mov Cap-2 Maneuver	-	-	-	-	995	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1002	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1620	-	-	-	1082
HCM Lane V/C Ratio	0.005	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	312	3	2	279
Future Vol, veh/h	0	5	312	3	2	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	328	3	2	294

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	628	330	0	0	332	0
Stage 1	330	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	447	712	-	-	1227	-
Stage 1	728	-	-	-	-	-
Stage 2	753	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	446	712	-	-	1227	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	728	-	-	-	-	-
Stage 2	751	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	712	1227	-
HCM Lane V/C Ratio	-	-	0.007	0.002	-
HCM Control Delay (s)	-	-	10.1	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	200	3	0	0	186	238	7	1	235	20
Future Vol, veh/h	5	0	200	3	0	0	186	238	7	1	235	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	220	3	0	0	204	262	8	1	258	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	945	949	269	945	956	265	280	0	0	269	0	0
Stage 1	271	271	-	674	674	-	-	-	-	-	-	-
Stage 2	674	678	-	271	282	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	242	260	770	242	258	774	1283	-	-	1295	-	-
Stage 1	735	685	-	444	454	-	-	-	-	-	-	-
Stage 2	444	452	-	735	678	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	211	770	148	210	774	1283	-	-	1295	-	-
Mov Cap-2 Maneuver	207	211	-	148	210	-	-	-	-	-	-	-
Stage 1	598	684	-	361	369	-	-	-	-	-	-	-
Stage 2	361	367	-	525	677	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	29.9	3.6	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1283	-	-	207	770	148	1295	-	-
HCM Lane V/C Ratio	0.159	-	-	0.027	0.285	0.022	0.001	-	-
HCM Control Delay (s)	8.3	0	-	22.9	11.5	29.9	7.8	0	-
HCM Lane LOS	A	A	-	C	B	D	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	1.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	1	0	2	1
Future Vol, veh/h	3	0	1	0	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	0	2	0	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2	0	-	0	12	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1620	-	-	-	1008	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1620	-	-	-	1005	1082
Mov Cap-2 Maneuver	-	-	-	-	1005	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1620	-	-	-	1029
HCM Lane V/C Ratio	0.003	-	-	-	0.005
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	242	1	2	253
Future Vol, veh/h	3	2	242	1	2	253
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	269	1	2	281

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	555	269	0	0	270	0
Stage 1	269	-	-	-	-	-
Stage 2	286	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	493	770	-	-	1293	-
Stage 1	776	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	492	770	-	-	1293	-
Mov Cap-2 Maneuver	492	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	575	1293	-
HCM Lane V/C Ratio	-	-	0.01	0.002	-
HCM Control Delay (s)	-	-	11.3	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

APPENDIX C
CAPACITY ANALYSES
2020 Background Conditions

Tighe&Bond

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	0	73	3	1	0	86	181	3	0	357	11
Future Vol, veh/h	6	0	73	3	1	0	86	181	3	0	357	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	6	0	78	3	1	0	92	195	3	0	384	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	772	773	390	771	777	196	396	0	0	198	0	0
Stage 1	390	390	-	381	381	-	-	-	-	-	-	-
Stage 2	382	383	-	390	396	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	315	329	656	316	327	843	1157	-	-	1369	-	-
Stage 1	632	606	-	639	612	-	-	-	-	-	-	-
Stage 2	638	610	-	632	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	293	300	656	259	298	843	1157	-	-	1369	-	-
Mov Cap-2 Maneuver	293	300	-	259	298	-	-	-	-	-	-	-
Stage 1	576	606	-	582	558	-	-	-	-	-	-	-
Stage 2	580	556	-	556	602	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.7	18.7	2.7	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1157	-	-	293	656	268	1369	-	-
HCM Lane V/C Ratio	0.08	-	-	0.022	0.12	0.016	-	-	-
HCM Control Delay (s)	8.4	0	-	17.6	11.2	18.7	0	-	-
HCM Lane LOS	A	A	-	C	B	C	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	0.4	0	0	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	1	4	1
Future Vol, veh/h	0	2	2	1	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	0	4	4	2	8	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	6	0	-	0	9	5
Stage 1	-	-	-	-	5	-
Stage 2	-	-	-	-	4	-
Critical Hdwy	4.21	-	-	-	6.51	6.31
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	2.299	-	-	-	3.599	3.399
Pot Cap-1 Maneuver	1558	-	-	-	989	1052
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	996	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1558	-	-	-	989	1052
Mov Cap-2 Maneuver	-	-	-	-	989	-
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	996	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1558	-	-	-	1001
HCM Lane V/C Ratio	-	-	-	-	0.01
HCM Control Delay (s)	0	-	-	-	8.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	3	185	2	8	366
Future Vol, veh/h	3	3	185	2	8	366
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	6	6	6	6	6
Mvmt Flow	3	3	197	2	9	389

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	604	198	0	0	199	0
Stage 1	198	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Critical Hdwy	6.46	6.26	-	-	4.16	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.354	-	-	2.254	-
Pot Cap-1 Maneuver	455	833	-	-	1350	-
Stage 1	826	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	451	833	-	-	1350	-
Mov Cap-2 Maneuver	451	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	585	1350	-
HCM Lane V/C Ratio	-	-	0.011	0.006	-
HCM Control Delay (s)	-	-	11.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	184	0	0	0	176	319	1	0	266	21
Future Vol, veh/h	4	0	184	0	0	0	176	319	1	0	266	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3
Mvmt Flow	4	0	198	0	0	0	189	343	1	0	286	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1019	1020	297	1019	1031	344	309	0	0	344	0	0
Stage 1	297	297	-	722	722	-	-	-	-	-	-	-
Stage 2	722	723	-	297	309	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.53	6.23	7.13	6.53	6.23	4.13	-	-	4.13	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.53	-	6.13	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.027	3.327	3.527	4.027	3.327	2.227	-	-	2.227	-	-
Pot Cap-1 Maneuver	214	236	740	214	232	696	1246	-	-	1209	-	-
Stage 1	709	666	-	416	430	-	-	-	-	-	-	-
Stage 2	416	429	-	709	658	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	192	740	134	188	696	1246	-	-	1209	-	-
Mov Cap-2 Maneuver	183	192	-	134	188	-	-	-	-	-	-	-
Stage 1	576	666	-	338	349	-	-	-	-	-	-	-
Stage 2	338	348	-	519	658	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.9	0	3	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1246	-	-	183	740	-	1209	-	-
HCM Lane V/C Ratio	0.152	-	-	0.024	0.267	-	-	-	-
HCM Control Delay (s)	8.4	0	-	25.1	11.6	0	0	-	-
HCM Lane LOS	A	A	-	D	B	A	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	1.1	-	0	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	0	1	0	0	1
Future Vol, veh/h	4	0	1	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	0	2	0	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2	0	-	0	18	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	16	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1620	-	-	-	1000	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1007	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1620	-	-	-	995	1082
Mov Cap-2 Maneuver	-	-	-	-	995	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1002	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1620	-	-	-	1082
HCM Lane V/C Ratio	0.005	-	-	-	0.002
HCM Control Delay (s)	7.2	0	-	-	8.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	321	3	2	287
Future Vol, veh/h	0	5	321	3	2	287
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	338	3	2	302

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	645	339	0	0	341	0
Stage 1	339	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	437	703	-	-	1218	-
Stage 1	722	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	436	703	-	-	1218	-
Mov Cap-2 Maneuver	436	-	-	-	-	-
Stage 1	722	-	-	-	-	-
Stage 2	746	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	703	1218	-
HCM Lane V/C Ratio	-	-	0.007	0.002	-
HCM Control Delay (s)	-	-	10.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	0	205	3	0	0	191	244	7	1	241	21
Future Vol, veh/h	5	0	205	3	0	0	191	244	7	1	241	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	110	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	0	225	3	0	0	210	268	8	1	265	23

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	971	975	276	971	982	272	288	0	0	276	0	0
Stage 1	279	279	-	692	692	-	-	-	-	-	-	-
Stage 2	692	696	-	279	290	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	232	251	763	232	249	767	1274	-	-	1287	-	-
Stage 1	728	680	-	434	445	-	-	-	-	-	-	-
Stage 2	434	443	-	728	672	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	197	202	763	139	200	767	1274	-	-	1287	-	-
Mov Cap-2 Maneuver	197	202	-	139	200	-	-	-	-	-	-	-
Stage 1	586	679	-	349	358	-	-	-	-	-	-	-
Stage 2	349	357	-	513	671	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	31.5	3.6	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1274	-	-	197	763	139	1287	-	-
HCM Lane V/C Ratio	0.165	-	-	0.028	0.295	0.024	0.001	-	-
HCM Control Delay (s)	8.4	0	-	23.8	11.7	31.5	7.8	0	-
HCM Lane LOS	A	A	-	C	B	D	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	1.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	0	1	0	2	1
Future Vol, veh/h	3	0	1	0	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	0	2	0	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	2	0	-	0	12	2
Stage 1	-	-	-	-	2	-
Stage 2	-	-	-	-	10	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1620	-	-	-	1008	1082
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1013	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1620	-	-	-	1005	1082
Mov Cap-2 Maneuver	-	-	-	-	1005	-
Stage 1	-	-	-	-	1021	-
Stage 2	-	-	-	-	1010	-

Approach	EB	WB	SB
HCM Control Delay, s	7.2	0	8.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1620	-	-	-	1029
HCM Lane V/C Ratio	0.003	-	-	-	0.005
HCM Control Delay (s)	7.2	0	-	-	8.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	249	1	2	260
Future Vol, veh/h	3	2	249	1	2	260
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	277	1	2	289

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	570	277	0	0	278	0
Stage 1	277	-	-	-	-	-
Stage 2	293	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	483	762	-	-	1285	-
Stage 1	770	-	-	-	-	-
Stage 2	757	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	482	762	-	-	1285	-
Mov Cap-2 Maneuver	482	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	565	1285	-
HCM Lane V/C Ratio	-	-	0.01	0.002	-
HCM Control Delay (s)	-	-	11.4	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

APPENDIX C
CAPACITY ANALYSES
2020 Combined Conditions

Tighe&Bond

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	4	1	5	0
Future Vol, veh/h	0	5	4	1	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	0	10	8	2	10	0

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	9	9
Stage 1	-	-	9	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	7.21	6.31
Critical Hdwy Stg 1	-	-	6.21	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	987	1047
Stage 1	-	-	989	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	987	1047
Mov Cap-2 Maneuver	-	-	987	-
Stage 1	-	-	989	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.7
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	987
HCM Lane V/C Ratio	-	-	0.01
HCM Control Delay (s)	-	-	8.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	0	5	61	0	8
Future Vol, veh/h	31	0	5	61	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	0	5	66	0	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	48	39	0	0	72	0
Stage 1	39	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1033	-	-	1528	-
Stage 1	976	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	953	1033	-	-	1528	-
Mov Cap-2 Maneuver	953	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	953	1528	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

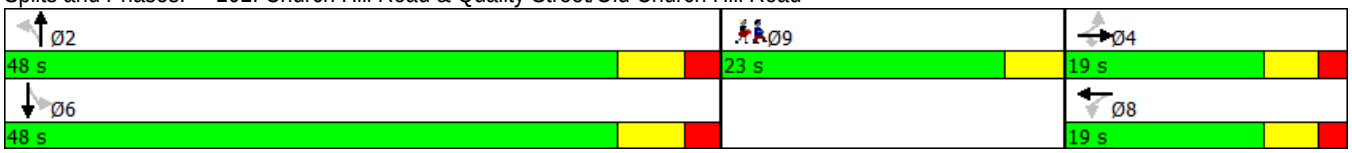
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	15	73	20	8	11	86	180	35	16	356	11
Future Volume (vph)	6	15	73	20	8	11	86	180	35	16	356	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	11	11	12	12	11	12
Storage Length (ft)	0		110	0		0	150		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			150			25		
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		0.962			0.975			0.996	
Flt Protected		0.987			0.975		0.950				0.998	
Satd. Flow (prot)	0	1821	1568	0	1615	0	1694	1739	0	0	1772	0
Flt Permitted		0.893			0.827		0.561				0.983	
Satd. Flow (perm)	0	1647	1568	0	1370	0	1000	1739	0	0	1746	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					12			14			2	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		652			249			432			1183	
Travel Time (s)		14.8			5.7			7.4			20.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	6	16	78	22	9	12	92	194	38	17	383	12
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	78	0	43	0	92	232	0	0	412	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	14.7	14.7	14.7	14.7	14.7		22.0	22.0		22.0	22.0	
Total Split (s)	19.0	19.0	19.0	19.0	19.0		48.0	48.0		48.0	48.0	
Total Split (%)	21.1%	21.1%	21.1%	21.1%	21.1%		53.3%	53.3%		53.3%	53.3%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.7	5.7		5.7		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Act Effct Green (s)		10.2	10.2		10.2		28.7	28.7			28.7	
Actuated g/C Ratio		0.23	0.23		0.23		0.64	0.64			0.64	
v/c Ratio		0.06	0.22		0.13		0.14	0.21			0.37	
Control Delay		19.4	20.0		16.4		11.4	9.9			11.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		19.4	20.0		16.4		11.4	9.9			11.7	
LOS		B	C		B		B	A			B	
Approach Delay		19.9			16.4			10.3			11.7	
Approach LOS		B			B			B			B	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
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	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		3	12		5		11	27			59	
Queue Length 95th (ft)		29	72		41		65	129			252	
Internal Link Dist (ft)		572			169			352			1103	
Turn Bay Length (ft)			110				150					
Base Capacity (vph)		532	506		451		906	1577			1582	
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		0.04	0.15		0.10		0.10	0.15			0.26	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 44.9			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay: 12.4		Intersection LOS: B	
Intersection Capacity Utilization 58.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 101: Church Hill Road & Quality Street/Old Church Hill Road



Lane Group	Ø9
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

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	5	4	1	5	0
Future Vol, veh/h	0	5	4	1	5	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	11	11	11	11	11	11
Mvmt Flow	0	10	8	2	10	0

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	9	9
Stage 1	-	-	9	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	7.21	6.31
Critical Hdwy Stg 1	-	-	6.21	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.599	3.399
Pot Cap-1 Maneuver	-	-	987	1047
Stage 1	-	-	989	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	987	1047
Mov Cap-2 Maneuver	-	-	987	-
Stage 1	-	-	989	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.7
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	987
HCM Lane V/C Ratio	-	-	0.01
HCM Control Delay (s)	-	-	8.7
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	0	5	61	0	8
Future Vol, veh/h	31	0	5	61	0	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	34	0	5	66	0	9

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	48	39	0	0	72	0
Stage 1	39	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	953	1033	-	-	1528	-
Stage 1	976	-	-	-	-	-
Stage 2	1012	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	953	1033	-	-	1528	-
Mov Cap-2 Maneuver	953	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	1012	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	953	1528	-
HCM Lane V/C Ratio	-	-	0.035	-	-
HCM Control Delay (s)	-	-	8.9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	4	1	0
Future Vol, veh/h	0	2	2	4	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	4	8	2	0

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	8	8
Stage 1	-	-	8	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1011	1074
Stage 1	-	-	1013	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	1011	1074
Mov Cap-2 Maneuver	-	-	1011	-
Stage 1	-	-	1013	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1011
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	0	6	60	0	3
Future Vol, veh/h	63	0	6	60	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	0	7	65	0	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	42	39	0	0	72	0
Stage 1	39	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	969	1033	-	-	1528	-
Stage 1	983	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	969	1033	-	-	1528	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	969	1528	-
HCM Lane V/C Ratio	-	-	0.071	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

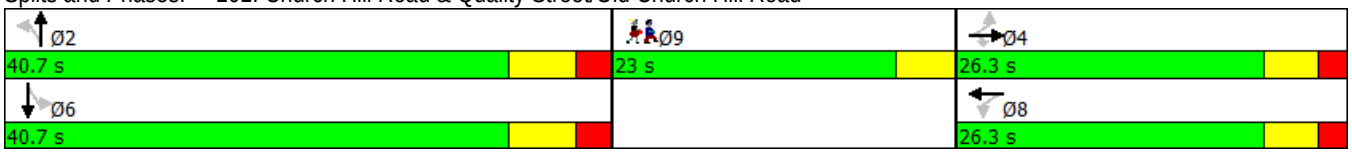
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	15	184	32	15	19	176	318	32	19	266	21
Future Volume (vph)	4	15	184	32	15	19	176	318	32	19	266	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	11	11	12	12	11	12
Storage Length (ft)	0		110	0		0	150		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			150			25		
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		0.961			0.986			0.991	
Flt Protected		0.990			0.976		0.950				0.997	
Satd. Flow (prot)	0	1826	1568	0	1615	0	1694	1758	0	0	1762	0
Flt Permitted		0.949			0.857		0.590				0.961	
Satd. Flow (perm)	0	1751	1568	0	1418	0	1052	1758	0	0	1698	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					20			6			5	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		652			249			432			1183	
Travel Time (s)		14.8			5.7			7.4			20.2	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Adj. Flow (vph)	4	16	198	34	16	20	189	342	34	20	286	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	20	198	0	70	0	189	376	0	0	329	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	14.7	14.7	14.7	14.7	14.7		22.0	22.0		22.0	22.0	
Total Split (s)	26.3	26.3	26.3	26.3	26.3		40.7	40.7		40.7	40.7	
Total Split (%)	29.2%	29.2%	29.2%	29.2%	29.2%		45.2%	45.2%		45.2%	45.2%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.7	5.7		5.7		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Act Effct Green (s)		12.8	12.8		12.8		21.2	21.2			21.2	
Actuated g/C Ratio		0.25	0.25		0.25		0.42	0.42			0.42	
v/c Ratio		0.05	0.50		0.19		0.43	0.51			0.46	
Control Delay		18.9	23.7		15.8		17.2	16.0			15.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		18.9	23.7		15.8		17.2	16.0			15.4	
LOS		B	C		B		B	B			B	
Approach Delay		23.3			15.8			16.4			15.4	
Approach LOS		C			B			B			B	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
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	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		3	34		8		28	57			49	
Queue Length 95th (ft)		27	170		58		146	255			222	
Internal Link Dist (ft)		572			169			352			1103	
Turn Bay Length (ft)			110				150					
Base Capacity (vph)		790	708		651		777	1300			1255	
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		0.03	0.28		0.11		0.24	0.29			0.26	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 50.7			
Natural Cycle: 65			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 17.4		Intersection LOS: B	
Intersection Capacity Utilization 61.8%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 101: Church Hill Road & Quality Street/Old Church Hill Road



Lane Group	Ø9
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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	4	1	0
Future Vol, veh/h	0	2	2	4	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	50	50	50	50	50	50
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	4	8	2	0

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	8	8
Stage 1	-	-	8	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1011	1074
Stage 1	-	-	1013	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	1011	1074
Mov Cap-2 Maneuver	-	-	1011	-
Stage 1	-	-	1013	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1011
HCM Lane V/C Ratio	-	-	0.002
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	0	6	60	0	3
Future Vol, veh/h	63	0	6	60	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	68	0	7	65	0	3

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	42	39	0	0	72	0
Stage 1	39	-	-	-	-	-
Stage 2	3	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	969	1033	-	-	1528	-
Stage 1	983	-	-	-	-	-
Stage 2	1020	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	969	1033	-	-	1528	-
Mov Cap-2 Maneuver	969	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	1020	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	969	1528	-
HCM Lane V/C Ratio	-	-	0.071	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	3	3	0
Future Vol, veh/h	0	2	2	3	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	3	5	5	0

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	6	6
Stage 1	-	-	6	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1014	1077
Stage 1	-	-	1016	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	1014	1077
Mov Cap-2 Maneuver	-	-	1014	-
Stage 1	-	-	1016	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1014
HCM Lane V/C Ratio	-	-	0.005
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	0	12	26	0	6
Future Vol, veh/h	22	0	12	26	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	13	28	0	7

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	34	27	0	0	41	0
Stage 1	27	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	979	1048	-	-	1568	-
Stage 1	996	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	979	1048	-	-	1568	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	979	1568	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	6	205	15	6	8	191	244	20	12	240	21
Future Volume (vph)	5	6	205	15	6	8	191	244	20	12	240	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	10	12	11	11	12	12	11	12
Storage Length (ft)	0		110	0		0	150		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			150			25		
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		0.962			0.989			0.990	
Flt Protected		0.980			0.976		0.950				0.998	
Satd. Flow (prot)	0	1825	1583	0	1632	0	1711	1781	0	0	1779	0
Flt Permitted		0.909			0.878		0.622				0.978	
Satd. Flow (perm)	0	1693	1583	0	1468	0	1120	1781	0	0	1743	0
Right Turn on Red			No			Yes			Yes			Yes
Satd. Flow (RTOR)					9			6			6	
Link Speed (mph)		30			30			40			40	
Link Distance (ft)		652			249			432			1183	
Travel Time (s)		14.8			5.7			7.4			20.2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	5	7	225	16	7	9	210	268	22	13	264	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	225	0	32	0	210	290	0	0	300	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	9.0	9.0	9.0	9.0	9.0		15.0	15.0		15.0	15.0	
Minimum Split (s)	14.7	14.7	14.7	14.7	14.7		22.0	22.0		22.0	22.0	
Total Split (s)	21.0	21.0	21.0	21.0	21.0		31.0	31.0		31.0	31.0	
Total Split (%)	28.0%	28.0%	28.0%	28.0%	28.0%		41.3%	41.3%		41.3%	41.3%	
Yellow Time (s)	3.7	3.7	3.7	3.7	3.7		4.5	4.5		4.5	4.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.5	2.5		2.5	2.5	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.7	5.7		5.7		7.0	7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None		Min	Min		Min	Min	
Act Effct Green (s)		12.5	12.5		12.5		19.0	19.0			19.0	
Actuated g/C Ratio		0.26	0.26		0.26		0.40	0.40			0.40	
v/c Ratio		0.03	0.55		0.08		0.47	0.41			0.43	
Control Delay		17.6	24.1		15.0		18.3	14.9			15.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		17.6	24.1		15.0		18.3	14.9			15.3	
LOS		B	C		B		B	B			B	
Approach Delay		23.7			15.0			16.3			15.3	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		2	39		4		34	44			46	

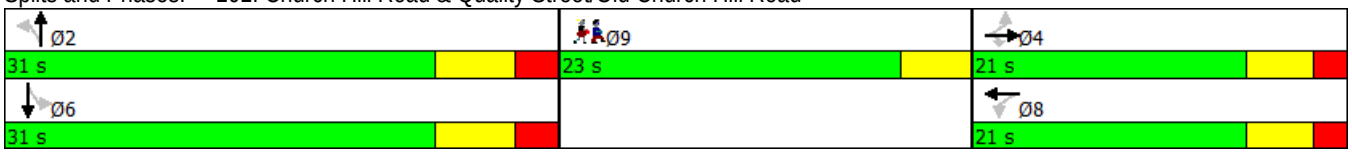
Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	31%
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	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 95th (ft)		18	#192		30		151	178			185	
Internal Link Dist (ft)		572			169			352			1103	
Turn Bay Length (ft)			110				150					
Base Capacity (vph)		574	537		504		596	951			930	
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		0.02	0.42		0.06		0.35	0.30			0.32	

Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 48			
Natural Cycle: 70			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.55			
Intersection Signal Delay: 17.6		Intersection LOS: B	
Intersection Capacity Utilization 53.3%		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: 101: Church Hill Road & Quality Street/Old Church Hill Road



Lane Group	Ø9
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

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	2	2	3	3	0
Future Vol, veh/h	0	2	2	3	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	-	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	58	58	58	58	58	58
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	3	5	5	0

Major/Minor	Major2		Minor2	
Conflicting Flow All	-	0	6	6
Stage 1	-	-	6	-
Stage 2	-	-	0	-
Critical Hdwy	-	-	7.12	6.22
Critical Hdwy Stg 1	-	-	6.12	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1014	1077
Stage 1	-	-	1016	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-		
Mov Cap-1 Maneuver	-	-	1014	1077
Mov Cap-2 Maneuver	-	-	1014	-
Stage 1	-	-	1016	-
Stage 2	-	-	-	-

Approach	WB	SB
HCM Control Delay, s	0	8.6
HCM LOS		A

Minor Lane/Major Mvmt	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	1014
HCM Lane V/C Ratio	-	-	0.005
HCM Control Delay (s)	-	-	8.6
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	0	12	26	0	6
Future Vol, veh/h	22	0	12	26	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	13	28	0	7

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	34	27	0	0	41	0
Stage 1	27	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	979	1048	-	-	1568	-
Stage 1	996	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	979	1048	-	-	1568	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	1016	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	979	1568	-
HCM Lane V/C Ratio	-	-	0.024	-	-
HCM Control Delay (s)	-	-	8.8	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

APPENDIX D
COLLISION HISTORY SUMMARY

Tighe&Bond

Intersection Collision History Summary
Intersection: Church Hill Road @ Quality Street / Old Church Hill Road

COLLISION TYPE

	2014	2015	2016	Total	Percent
Rear-End	4	1	3	**8**	**57.1%**
Angle	2	0	1	**3**	**21.4%**
Other Non-Fixed Object	2	0	0	**2**	**14.3%**
Backing	0	0	1	**1**	**7.1%**
TOTAL	**8**	**1**	**5**	**14**	**100%**

SEVERITY

	2014	2015	2016	Total	Percent
Fatal	1	0	0	**1**	**7.1%**
Injury	0	0	1	**1**	**7.1%**
Property Damage Only (PDO)	7	1	4	**12**	**85.7%**
TOTAL	**8**	**1**	**5**	**14**	**100%**

Intersection Collision History Summary
Intersection: Church Hill Road @ Old Church Hill Road

COLLISION TYPE

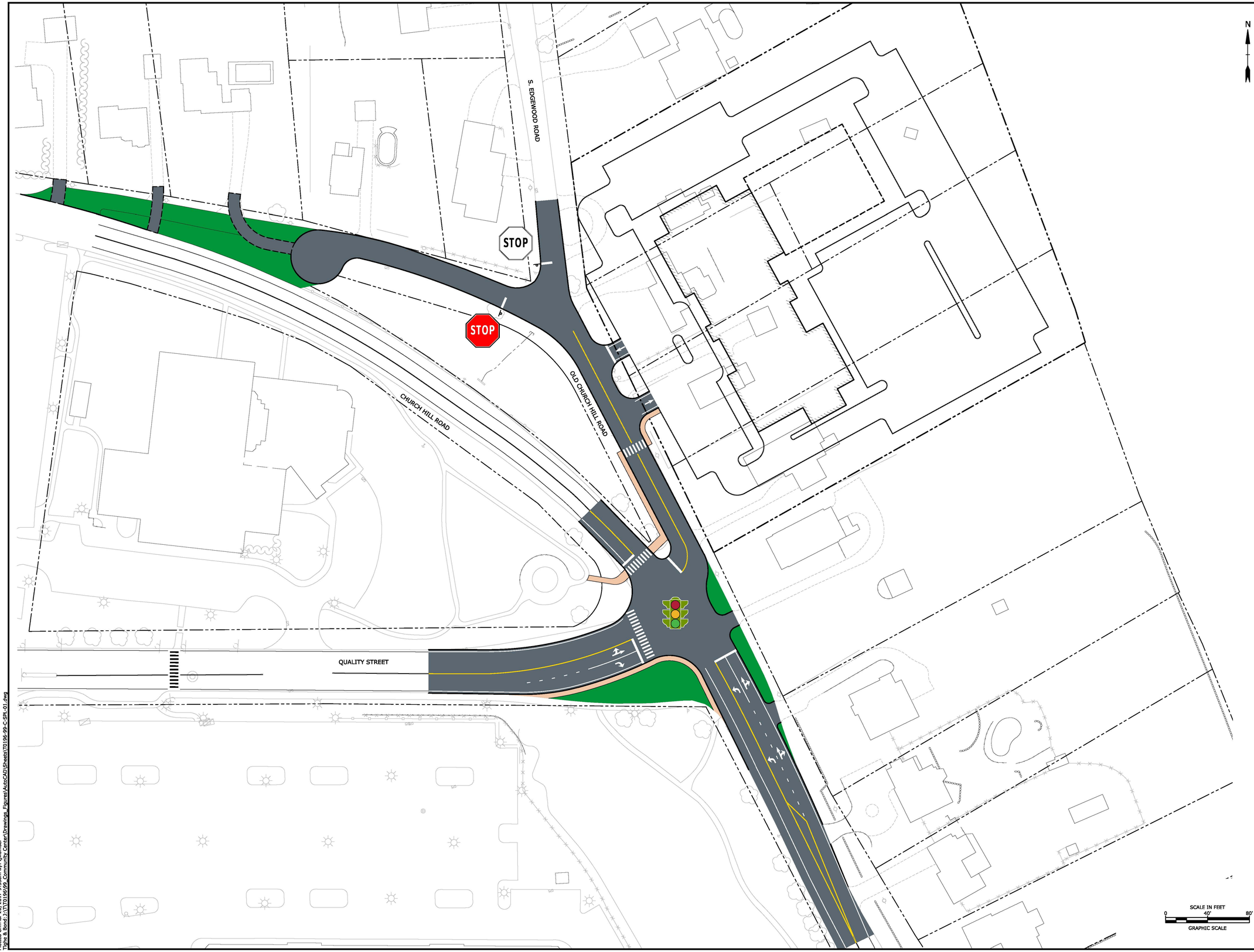
	2014	2015	2016	Total	Percent
Fixed Object	0	1	0	**1**	**100.0%**
TOTAL	**0**	**1**	**0**	**1**	**100%**

SEVERITY

	2014	2015	2016	Total	Percent
Fatal	0	0	0	**0**	**0.0%**
Injury	0	0	0	**0**	**0.0%**
Property Damage Only (PDO)	0	1	0	**1**	**100.0%**
TOTAL	**0**	**1**	**0**	**1**	**100%**

APPENDIX E
CONCEPT OFF-SITE IMPROVEMENT PLAN

Tighe&Bond



Tighe&Bond
www.tighebond.com
1000 Bridgeport Avenue
Suite 320
Shelton, CT 06484
(203) 712-1100

Old Church Hill Road

Proposed Community Center

Trumbull, CT

VERIFY SCALE
BAR IS 1 INCH ON ORIGINAL DRAWING
0 1 INCH
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

MARK	DATE	DESCRIPTION

PROJECT NO:	T0196-99
DATE:	03/4/2017
FILE:	T0196-99-C-SPL-01.dwg
DRAWN BY:	MDS
CHECKED:	CDY
APPROVED:	COG

CONCEPT OFF-SITE IMPROVEMENT PLAN

SCALE: 1" = 40'

C1.01

Last Saved: 3/30/2017
Plotted: 03/30/2017 7:17:53am By: thwarner
Tighe & Bond: J:\T0196\99_Community Center\Drawings_Figures\AutoCAD\Sheets\T0196-99-C-SPL-01.dwg

APPENDIX F
TRAFFIC SIGNAL WARRANT ANALYSES

Tighe&Bond

MUTCD WARRANT #1 - EIGHT-HOUR VEHICULAR VOLUME SIGNAL WARRANT

Location: Church Hill Road (State Route 127) at Quality Street & Old Church Hill Road
City: Trumbull, CT Reference: FHWA, Manual on Uniform Traffic Control Devices, 2009 Edition

Time	Major Approach Direction NB	Major Approach Direction SB	Major Approach Total	Minor Approach Direction EB	Minor Approach Direction WB	Minor Approach Max.
12:00 AM - 1:00 AM	23	4	27	2	2	2
1:00 AM - 2:00 AM	8	5	13	0	0	0
2:00 AM - 3:00 AM	10	1	11	1	0	1
3:00 AM - 4:00 AM	8	2	10	1	0	1
4:00 AM - 5:00 AM	9	13	22	1	1	1
5:00 AM - 6:00 AM	20	42	62	5	2	5
6:00 AM - 7:00 AM	87	179	266	18	7	18
7:00 AM - 8:00 AM	237	327	564	54	19	54
8:00 AM - 9:00 AM	295	331	626	95	36	95
9:00 AM - 10:00 AM	268	230	498	132	50	132
10:00 AM - 11:00 AM	263	163	426	128	46	128
11:00 AM - 12:00 PM	332	196	528	154	56	154
12:00 PM - 1:00 PM	336	238	574	186	67	186
1:00 PM - 2:00 PM	337	167	504	172	61	172
2:00 PM - 3:00 PM	438	230	668	173	63	173
3:00 PM - 4:00 PM	519	255	774	197	74	197
4:00 PM - 5:00 PM	499	277	776	182	64	182
5:00 PM - 6:00 PM	578	257	835	205	73	205
6:00 PM - 7:00 PM	426	234	660	163	57	163
7:00 PM - 8:00 pm	320	151	471	128	46	128
8:00 PM - 9:00 PM	220	104	324	90	32	90
9:00 PM - 10:00 PM	145	57	202	55	22	55
10:00 PM - 11:00 PM	78	49	127	17	7	17
11:00 PM - 12:00 AM	37	22	59	2	2	2

Hours Examined		
Rank	Major	Minor
1.	835	205
2.	776	182
3.	774	197
4.	668	173
5.	660	163
6.	626	95
7.	574	186
8.	564	54

Number of Lanes on Major Approach: 1
Number of Lanes on Minor Approach: 1
Major St. Speed Limit or 85th %-tile Speed: 40 MPH
Is community population > 10,000? (Y or N): Yes

Condition A - Minimum Vehicular Volume

		100% Vol		Hour	100% Volume Major	100% Volume Minor	Criteria (a) 100%	(b) 80%	(c) 70%	(d) 56%
Major Street	Minimum number of vehicles per hour for each of any 8 hours of an average day on the major street (total of both approaches).	One Lane 500 veh	X	1.	835	205	Yes	Yes	Yes	Yes
				2.	776	182	Yes	Yes	Yes	Yes
				3.	774	197	Yes	Yes	Yes	Yes
		Two Lanes 600 veh		4.	668	173	Yes	Yes	Yes	Yes
Minor Street	Minimum number of vehicles per hour for each of the same 8 hours on the higher volume minor street approach.	One Lane 150 veh	X	5.	660	163	Yes	Yes	Yes	Yes
				6.	626	95	No	Yes	Yes	Yes
		Two Lanes 200 veh		7.	574	186	Yes	No	Yes	Yes
				8.	564	54	No	No	Yes	Yes
				No. of Hours Meeting Warrant 1 - Condition A			6	6	8	8
				8-Hour Volume meet Warrant 1 - Condition A			NO	NO	YES	YES

Condition B - Interruption of Continuous Traffic

		100% Vol		Hour	100% Volume Major	100% Volume Minor	Criteria (a) 100%	(b) 80%	(c) 70%	(d) 56%
Major Street	Minimum number of vehicles per hour for each of any 8 hours of an average day on the major street (total of both approaches).	One Lane 750 veh	X	1.	835	205	Yes	Yes	Yes	Yes
				2.	776	182	Yes	Yes	Yes	Yes
				3.	774	197	Yes	Yes	Yes	Yes
		Two Lanes 900 veh		4.	668	173	No	Yes	Yes	Yes
Minor Street	Minimum number of vehicles per hour for each of the same 8 hours on the higher volume minor street approach.	One Lane 75 veh	X	5.	660	163	No	Yes	Yes	Yes
				6.	626	95	No	Yes	Yes	Yes
		Two Lanes 100 veh		7.	574	186	No	No	Yes	Yes
				8.	564	54	No	No	Yes	Yes
				No. of Hours Meeting Warrant 1 - Condition B			3	6	8	8
				8-Hour Volume meet Warrant 1 - Condition B			NO	NO	YES	YES

Determination of Warrant

The warrant is satisfied if one of the following are true for the major and minor street approaches:
a) Eight hours satisfied in the 100% column under the Minimum Vehicular Volume warrant OR eight hours satisfied in the 100% column under the Interruption of Continuous Traffic warrant.

b) Eight hours satisfied in the 80% column under the Minimum Vehicular Volume warrant AND eight hours satisfied in the 80% column for under the Interruption of Continuous Traffic warrant.

c) Eight hours satisfied in the 70% column under the Minimum Vehicular Volume warrant OR eight hours satisfied in the 70% column under the Interruption of Continuous Traffic warrant, if the major-street speed exceeds 40mph or in an isolated community with a population less than 10,000.

d) Eight hours satisfied in the 56% column under the Minimum Vehicular Volume warrant AND eight hours satisfied in the 56% column for under the Interruption of Continuous Traffic warrant, if the major-street speed exceeds 40mph or in an isolated community with a population less than 10,000.

Warrant Satisfied? YES
Warrant Met: Condition A or B - Criteria "c" - 70%, Conditions A and B - Criteria "d" - 56%

MUTCD SIGNAL WARRANT #2 - FOUR-HOUR VEHICULAR VOLUME (70%)

Location: Church Hill Road (State Route 127) at Quality Street & Old Church Hill Road
City: Trumbull, CT Reference: FHWA, Manual on Uniform Traffic Control Devices, 2009 Edition

Hour	Major Approach			Minor Approach			Meet warrant?
	Dir NB	Dir SB	Total	Dir EB	Dir WB	Max	
12:00 AM	23	4	27	2	2	2	No
1:00 AM	8	5	13	0	0	0	No
2:00 AM	10	1	11	1	0	1	No
3:00 AM	8	2	10	1	0	1	No
4:00 AM	9	13	22	1	1	1	No
5:00 AM	20	42	62	5	2	5	No
6:00 AM	87	179	266	18	7	18	No
7:00 AM	237	327	564	54	19	54	No
8:00 AM	295	331	626	95	36	95	Check plot below.
9:00 AM	268	230	498	132	50	132	Check plot below.
10:00 AM	263	163	426	128	46	128	Check plot below.
11:00 AM	332	196	528	154	56	154	Check plot below.
12:00 PM	336	238	574	186	67	186	Check plot below.
1:00 PM	337	167	504	172	61	172	Check plot below.
2:00 PM	438	230	668	173	63	173	Check plot below.
3:00 PM	519	255	774	197	74	197	Check plot below.
4:00 PM	499	277	776	182	64	182	Check plot below.
5:00 PM	578	257	835	205	73	205	Check plot below.
6:00 PM	426	234	660	163	57	163	Check plot below.
7:00 PM	320	151	471	128	46	128	Check plot below.
8:00 PM	220	104	324	90	32	90	Check plot below.
9:00 PM	145	57	202	55	22	55	No
10:00 PM	78	49	127	17	7	17	No
11:00 PM	37	22	59	2	2	2	No

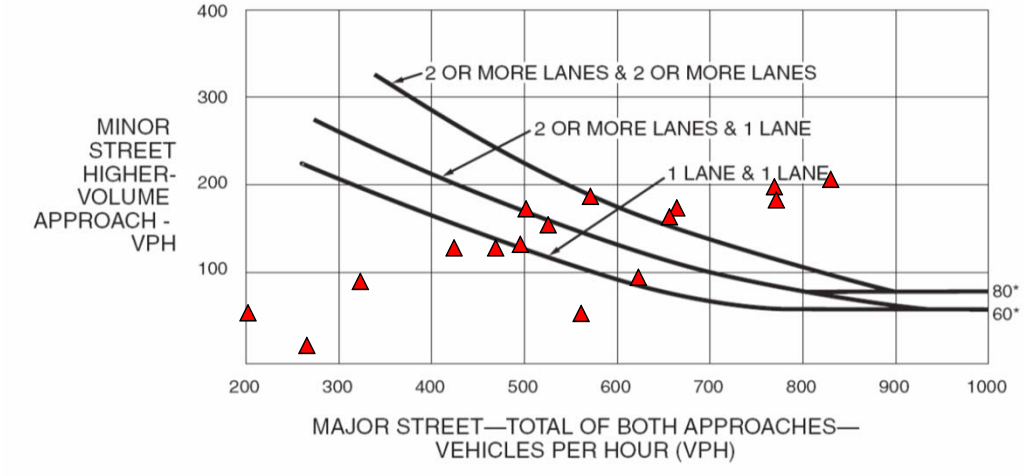
Number of Lanes on Major Approach	1	Major St. Speed Limit or 85th %-tile Speed	40 MPH
Number of Lanes on Minor Approach	1	Is community population > 10,000? (Y or N)	Y

For each of any 4 hours, the plotted points representing the vehicles per hour on the major street and the corresponding vehicles per hour on the higher-volume minor-steet approach fall above the curve in the figure below.

Number of points lays above the corresponding graph: 9

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Number of hour(s) that meet the signal warrant: 9 ≥ 4 Hours
Warrant Satisfied? Yes

MUTCD SIGNAL WARRANT #3 - PEAK-HOUR VEHICULAR VOLUME (70%)

Location: Church Hill Road (State Route 127) at Quality Street & Old Church Hill Road
City: Trumbull, CT Reference: FHWA, Manual on Uniform Traffic Control Devices, 2009 Edition

Hour	Major Approach			Minor Approach			
	Dir NB	Dir SB	Total	Dir EB	Dir WB	Max	Meet warrant?
12:00 AM	23	4	27	2	2	2	No
1:00 AM	8	5	13	0	0	0	No
2:00 AM	10	1	11	1	0	1	No
3:00 AM	8	2	10	1	0	1	No
4:00 AM	9	13	22	1	1	1	No
5:00 AM	20	42	62	5	2	5	No
6:00 AM	87	179	266	18	7	18	No
7:00 AM	237	327	564	54	19	54	No
8:00 AM	295	331	626	95	36	95	Check plot below.
9:00 AM	268	230	498	132	50	132	Check plot below.
10:00 AM	263	163	426	128	46	128	Check plot below.
11:00 AM	332	196	528	154	56	154	Check plot below.
12:00 PM	336	238	574	186	67	186	Check plot below.
1:00 PM	337	167	504	172	61	172	Check plot below.
2:00 PM	438	230	668	173	63	173	Check plot below.
3:00 PM	519	255	774	197	74	197	Check plot below.
4:00 PM	499	277	776	182	64	182	Check plot below.
5:00 PM	578	257	835	205	73	205	Check plot below.
6:00 PM	426	234	660	163	57	163	Check plot below.
7:00 PM	320	151	471	128	46	128	Check plot below.
8:00 PM	220	104	324	90	32	90	Check plot below.
9:00 PM	145	57	202	55	22	55	No
10:00 PM	78	49	127	17	7	17	No
11:00 PM	37	22	59	2	2	2	No

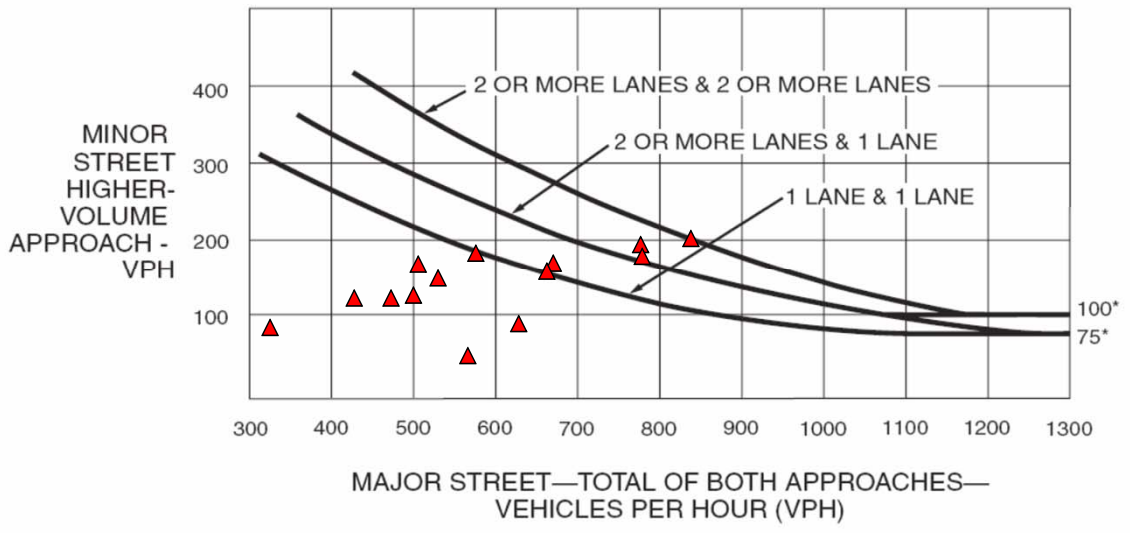
Number of Lanes on Major Approach	1	Major St. Speed Limit or 85th %-tile Speed	40 MPH
Number of Lanes on Minor Approach	1	Is community population > 10,000? (Y or N)	Y

For each of any 4 hours, the plotted points representing the vehicles per hour on the major street and the corresponding vehicles per hour on the higher-volume minor-steet approach fall above the curve in the figure below.

Number of points lays above the corresponding graph: 5

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Number of hour(s) that meet the signal warrant: 5 ≥ 1 Hour

Warrant Satisfied? Yes