Tighe&Bond
www.tighebond.com

17-1526-1-01
May 30, 2014

Ms. Shenae Draughn
Executive Project Manager
Housing Authority of New Haven
360 Orange Street
New Haven, Connecticut 06511

Re: Traffic Statement
Ribicoff Cottages
New Haven, Connecticut

Dear Ms. Draughn:

Tighe & Bond prepared this Traffic Statement for the proposed redevelopment of Ribicoff Cottages. This Traffic Statement reviews the potential traffic issues associated with the redevelopment of the Ribicoff Cottages, including the proposed connection of the Ribicoff Cottages site to Woodin Street at the intersection with Belden Road and the proposed connection of Wilmont Street to Woodin Street adjacent to Elliot Drive in Hamden.

The Ribicoff Cottages development (Site) is part of the larger Housing Authority of New Haven's West Rock development. The overall development is located in the northwest portion of New Haven along the Hamden town line. The existing Ribicoff Cottages consists of 100-units of primarily senior and disabled public housing with on-site parking. The proposed Ribicoff Cottages will completely replace the existing complex with 114 total units, 106 rental units and 8 home ownership units. The 106 rental units include 56 senior citizen units and 50 single-family apartments. The eight home ownership units will front along Woodin Street with individual driveways to Woodin Street. There will be approximately 54 parking spaces in designated parking areas and 76 on-street parking spaces within the Ribicoff Cottages development. Construction is expected to begin in Summer 2014 with construction and leasing completed in 2015.

Existing Condition

The Site is located in the northwest corner of New Haven, along the Hamden town line and Woodin Street. The Site is approximately 2 miles northwest of Southern Connecticut State University (SCSU). The Site is bounded by Brookside Drive to the south and the Brookside housing development, Woodin Street to the north, Thorpe Drive, and residential development to the east, and undeveloped open space to the west. The two existing site driveways are along Brookside Avenue. No existing vehicular or pedestrian access to Woodin Street is provided from the Ribicoff Cottages site.

Area Roadways

Fitch Street (Route 10) is classified by the Connecticut Department of Transportation (CTDOT) and City of New Haven as an urban minor arterial. It runs north-south from Whalley Avenue (Route 10) and running into the Town of Hamden to the intersection with Dixwell Avenue (Route 10). At its intersection with Wintergreen Avenue, Fitch Street has two through lanes and dedicated turn lanes along each approach.

Woodin Street is classified by the CTDOT as an urban minor arterial. It runs east-west in southwestern Hamden, near the New Haven city line, connecting Wintergreen Avenue and

Dixwell Avenue (Route 10). The speed limit along Woodin Street is 25 miles per hour, with one travel lane in each direction. Along the proposed site frontage, Woodin Street carries 2,170 vehicles per day (1,068 eastbound and 1,102 westbound) and exhibits an 85th percentile speed of 40 miles per hour.

Pine Rock Avenue is classified as an urban collector by CTDOT. It runs north-south extending north from Fitch Street in New Haven into Hamden to the intersection with Gilbert Avenue. Pine Rock Avenue has a speed limit of 25 miles per hour near the intersection with Woodin Street. Pine Rock Avenue has two travel lanes, one in each direction, and sidewalks along both sides of the street near the intersection with Woodin Street.

Wintergreen Avenue, Wilmot Street, Brookside Avenue, and Belden Road are classified by the CTDOT and City of New Haven as local roadways. Wintergreen Avenue runs east-west in the northwest portion of New Haven connecting Fitch Street with the Hamden town line, and intersects with Woodin Street west of the Site. Wilmot Street intersects with Wintergreen Avenue and continues north towards Hamden where it dead-ends south of Woodin Street, after its intersection with Brookside Avenue. Brookside Avenue runs east-west and then curves north to where it ends at Ribicoff Cottages. Brookside Avenue is one lane in each direction with on-street parking permitted along some sections. Belden Road is a 1-mile residential loop road in Hamden, just over the City of New Haven line. Belden Road is one lane in each direction with a sidewalk along each side. The posted speed limit is 25 miles per hour.

Study Intersections

The study area was determined based on the proposed development size, the roadway network and previous traffic studies for the area. The study area includes the following intersections:

- Fitch Street (Route 10) at Wintergreen Avenue
- Brookside Avenue at Wilmot Road
- Woodin Street at Pine Rock Avenue
- Woodin Street at Belden Road / Ribicoff Roadway Connection (Combined only)
- Woodin Street at Wilmot Street (Background and Combined Conditions only)

The Fitch Street at Wintergreen Avenue intersection is traffic signal controlled. It is an actuated coordinated traffic signal, which is part of Zone 21 in the City of New Haven Traffic Control System. The intersection operates with a northbound left turn advance, through and permitted left turn phase for Fitch Street, and a side street phase for Wintergreen Avenue, along with an exclusive pedestrian walk interval.

The Woodin Street and Pine Rock Avenue intersection is traffic signal controlled. The Pine Rock Avenue approaches are offset from each other; therefore, the signal operates under a split-phase where each approach has an exclusive protected phase. Overall, the intersection operates with an eastbound/westbound Woodin Street phase, northbound Pine Rock Avenue phase, southbound Pine Rock Avenue phase, and an exclusive pedestrian walk interval when the pedestrian button is pushed. Field observations during the weekday afternoon peak hour indicate that the green time for all approaches was adequate to clear the queued vehicles

The Brookside Avenue at Wilmot Road intersection is all-way stop controlled.

Woodin Street at Belden Road is a three legged, two-way stop controlled intersection. Woodin Street is free from traffic control while Belden Road operates under stop-sign control. Under the proposed condition, the Ribicoff Cottages local roadway connection will also operate under stop control at this intersection.

The Woodin Street at Wilmot Street intersection will be constructed as part of the Rockview development prior to the completion of Ribicoff Cottages. Wilmot Street will be extended from where it currently terminates to form a three-legged intersection with Woodin Street. Woodin Street will be free from traffic control and Wilmot Street will operate under stop sign control under the proposed condition.

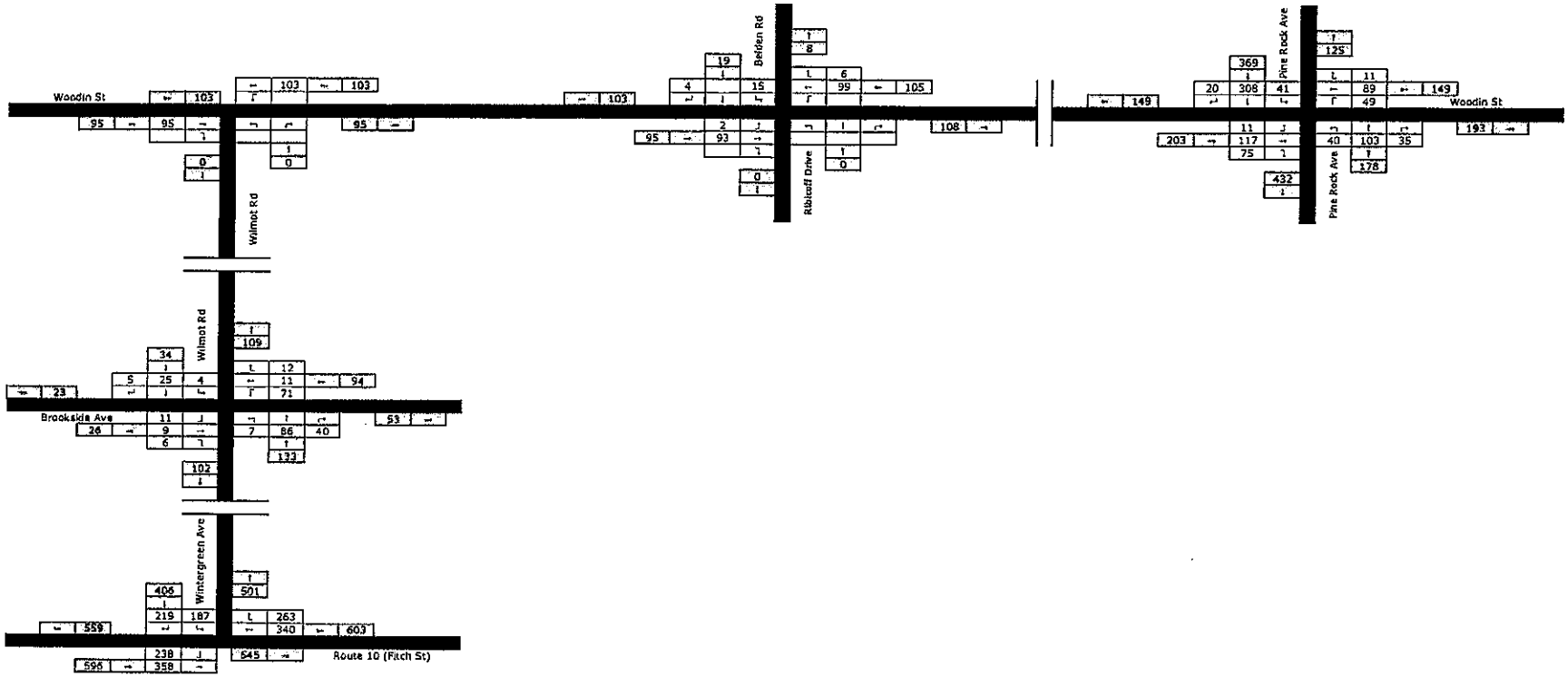
Traffic Data Collection

Manual turning movement counts were collected on September 12th and November 21st 2013 during the weekday morning (7:00 am to 9:00 am) and afternoon (4:00 pm to 6:00 pm) peak hours. Supplemental manual intersection turning movement traffic counts were collected on May 28, 2014 during the weekday morning and weekday afternoon peak hours at the Woodin Street at Belden Road intersection in Hamden. The peak hour traffic volumes for all study area intersections are illustrated in Figures 1 and 2.

Automatic traffic recorders (ATRs) were placed along Wintergreen Avenue between the intersections of Fitch Street at Wintergreen Avenue and Brookside Avenue at Wilmot Road in September 2013, and along Woodin Street between West Side Drive and Belden Street in November 2013. The ATR collected hourly and daily traffic volumes and speed data for a minimum 24-hours during the week. The ATR data indicates that Wintergreen Avenue carries approximately 4,044 vehicles per day on weekdays, 4,148 vehicles per day on Saturday and 2,704 vehicles per day on Sunday. During the weekday morning peak hour, Wintergreen Avenue carries approximately 500 northbound and 400 southbound vehicles, and 400 northbound vehicles and 460 southbound vehicles during the afternoon peak hour. Woodin Street carries approximately 2,170 vehicles per day on weekdays. During the weekday morning peak hour, Woodin Street carries approximately 200 eastbound and 150 westbound vehicles and 110 eastbound and 160 westbound vehicles during the afternoon peak hour.

Public Transportation

Ribicoff Cottages is currently served by Connecticut Transit Route B1 Brookside - Southern Connecticut State University and provides a mass transit connection to Downtown New Haven. The proposed roadway connection to Woodin Street facilitates access to Connecticut Transit Route G Shelton Avenue – East Chapel Street, which connects directly with Dixwell Avenue (Route 10) where Putnam Plaza and other commercial/retail land use exist.

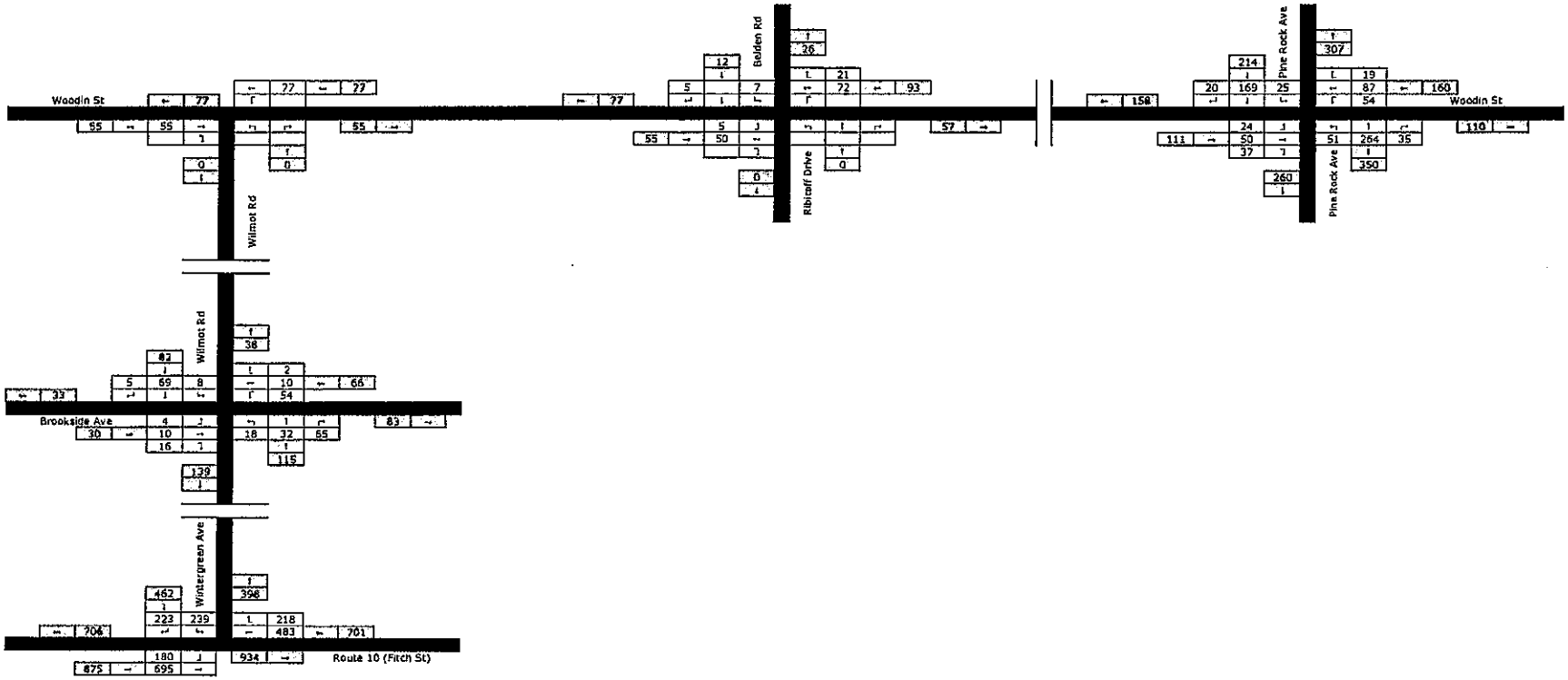


2013 Existing Traffic Volume
Weekday Morning Peak Hour

Ribicoff Cottages
New Haven, Connecticut

Figure 1

May 30, 2014



2013 Existing Traffic Volume
Weekday Afternoon Peak Hour

Ribicoff Cottages
New Haven, Connecticut

Figure 2

May 30, 2014

Background Condition

The Background Condition describes the traffic conditions for the expected project completion year, just prior to the Site opening. The Background Condition considers the general background growth of traffic, planned roadway improvements, and site generated traffic associated with other area developments, which are expected to open prior to the opening of the Site. The Site is scheduled to be completed in 2015. Therefore, 2015 was chosen as the design year for the Background Condition analysis.

To forecast the 2015 background traffic volumes, the 2013 existing traffic volumes were increased by one percent per year for two years to represent the general growth of traffic volume on the public roadways. Generally, traffic volumes in Connecticut have declined from their peak in 2008. Therefore, one percent annual growth rate represents a very conservative estimate of potential traffic volume growth over the next two years in the study area.

Added to the background traffic volumes were the site traffic volumes associated with the development of additional housing units in the Rockview and Brookside development areas, and the mixed use / senior housing development located at 122 Wilmot Street. The 122 Wilmot Street senior units were was partially occupied when traffic data was collected. This study includes in the background traffic volumes the vacant commercial and residential space. The total new development in West Rock includes 77 rental and 6 homeownership units in Rockview, 8 homeownership units in Brookside, 16 attached senior housing units in 122 Wilmot and 9,186 square feet of commercial space. These units and development will be completed and opened prior to the opening of Ribicoff Cottages.

The *Institute of Transportation Engineering (ITE), Trip Generation, 9th Edition, 2012* was used to calculate trip generation rates for the additional residential and commercial development in the West Rock area. Land Use Code – 210 Single Family Detached Housing, 221 Low-Rise Apartments, 252 Senior Adult Housing Attached and 820 Shopping Center established the additional traffic generation. The planned additional units in the Rockview and Brookside developments generate 55 vehicle trips in the morning peak hour and 68 vehicle trips in the afternoon peak hour. The proposed additional units and commercial space at 122 Wilmot Street generate an additional 39 trips the morning peak hour and 38 trips in the afternoon peak hour. Table 1 summarizes the trip generation for the additional units in West Rock.

TABLE 1

Site Generated Traffic Summary – West Rock

Proposed Rockview Rental - 77 Units			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	9	35	44
Weekday Afternoon	35	19	54

Proposed Rockview Ownership - 6 Units			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	1	4	5
Weekday Afternoon	4	2	6

Rockview Total			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	10	39	49
Weekday Afternoon	39	21	60

Proposed Brookside Ownership - 8 Units			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	2	4	6
Weekday Afternoon	5	3	8

Proposed 122 Wilmot Rental - 16 Units Senior			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	1	2	3
Weekday Afternoon	2	2	4

Proposed 122 Wilmot - 9,186 Shopping Center SF			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	22	14	36
Weekday Afternoon	16	18	34

122 Wilmot Total			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	23	16	39
Weekday Afternoon	18	20	38

Source: Institute of Transportation Engineering, Trip Generation, 9th Edition, 2012.
Land Use - 210 Single Family Detached Housing
Land Use - 221 Low-Rise Apartments
Land Use - 252 Senior Adult Housing Attached
Land Use - 820 Shopping Center

Along with the additional housing units, the West Rock development plan includes connecting Wilmot Street with Woodin Street. This connection allows West Rock residents vehicular and pedestrian access to points north and east of West Rock in the Town of Hamden. With the connection to Woodin Street, traffic patterns in the West Rock area will likely change. This connection will redistribute some traffic from Wintergreen Avenue directly to Woodin Street via Wilmont Street for Hamden destinations.

Figures 3 through 7 illustrate the traffic distribution and site generated traffic along the roadway network from the West Rock development. The projected 2015 Background Condition traffic volumes for the weekday morning and afternoon peak hours are illustrated in Figures 8 and 9 for the study area intersections.

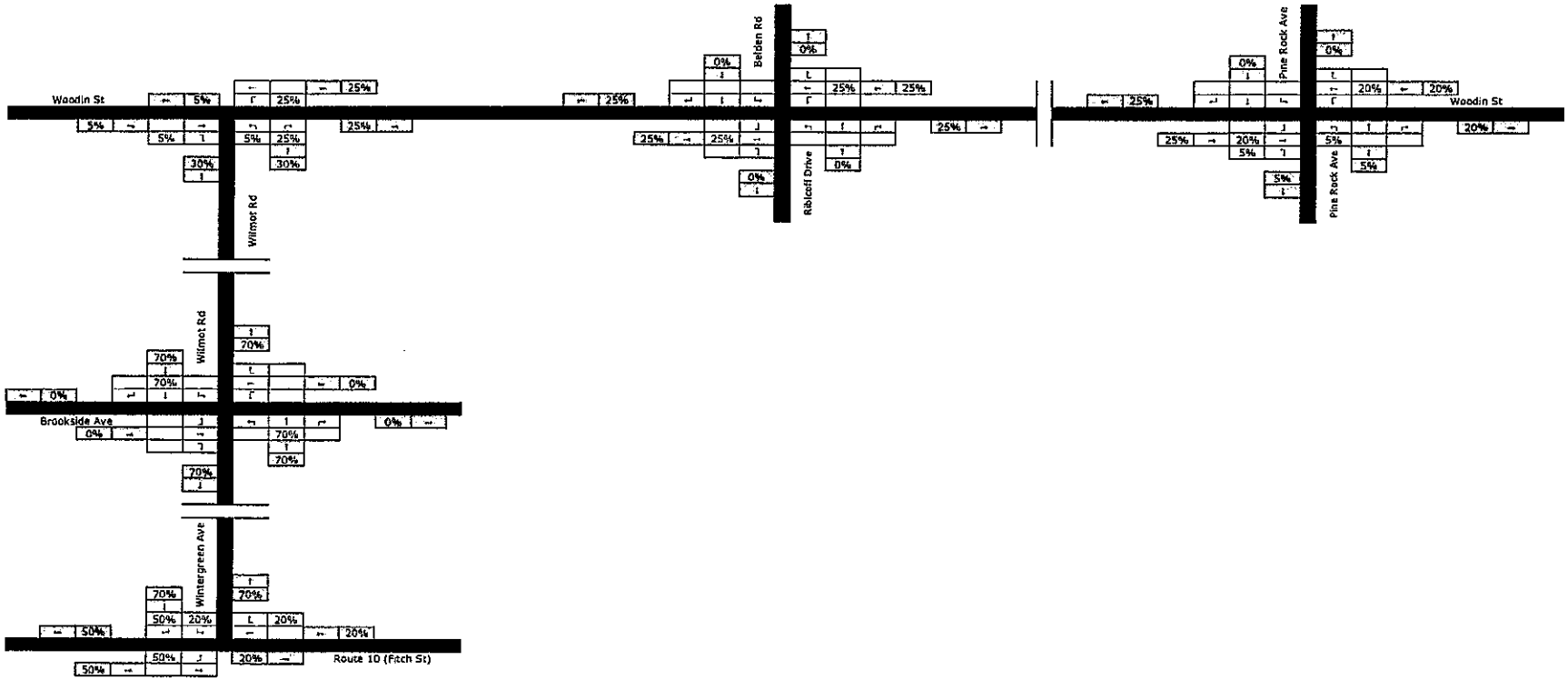
Development Plan

The proposed Ribicoff Cottages development will replace the existing complex with 114 new residential units, 106 rental units and 8 home ownership units. Site access will be from the City of New Haven via the existing roadway network and the Town of Hamden via a proposed roadway connection to Woodin Street from the Ribicoff Cottages site in addition to the 8 home ownership units with driveway curb cuts along Woodin Street. There will be approximately 54 parking spaces in designated lots and 76 on-street parking spaces within the Ribicoff Cottages development. Construction is expected to begin in 2014 with completion in 2015.

Trip Generation

The proposed Ribicoff Cottages will be comprised of 114 total residential units, including 8 stand-alone home ownership units and 106 rental units. The *Institute of Transportation Engineering (ITE), Trip Generation, 9th Edition, 2012* provides trip generation rates for *Land Use Code – 210 Single Family Detached Housing*, *221 Low-Rise Apartments,* and *252 Senior Adult Housing - Attached*. The anticipated trip generation for the 8 home ownership units was estimated utilizing Land Use Code 210. It is anticipated that the home ownership units will generate 6 vehicle trips (2 entering and 4 exiting) during the weekday morning peak hour and 8 vehicle trips (5 entering and 3 exiting) during the weekday afternoon peak hour. These trips will all occur at the private driveways along Woodin Street.

In order to account for the Site traffic that existed on the roadway network when traffic counts were conducted, traffic counts at the existing Ribicoff Cottage driveways are estimated using ITE Trip Generation rates. The trip generation for the existing 100-unit Ribicoff Cottages is based upon *Land Use Code 252 Senior Adult Housing – Attached* and is anticipated to be 19 vehicle trips (7 entering and 12 exiting) during the weekday morning peak hour and 23 vehicle trips (14 entering and 9 exiting) during the weekday afternoon peak hour. Accounting for the traffic generated by the existing 100 units, and subtracting that traffic from the proposed 106 rental units, it is anticipated that the proposed rental units will generate approximately 23 new vehicle trips (4 entering and 19 exiting) during the weekday morning peak hour and 27 new vehicle trips (18 entering and 9 exiting) during the weekday afternoon peak hour. It is also worth noting that no transit credit was taken in developing the site traffic generations, providing a conservative assessment of the site traffic generation.

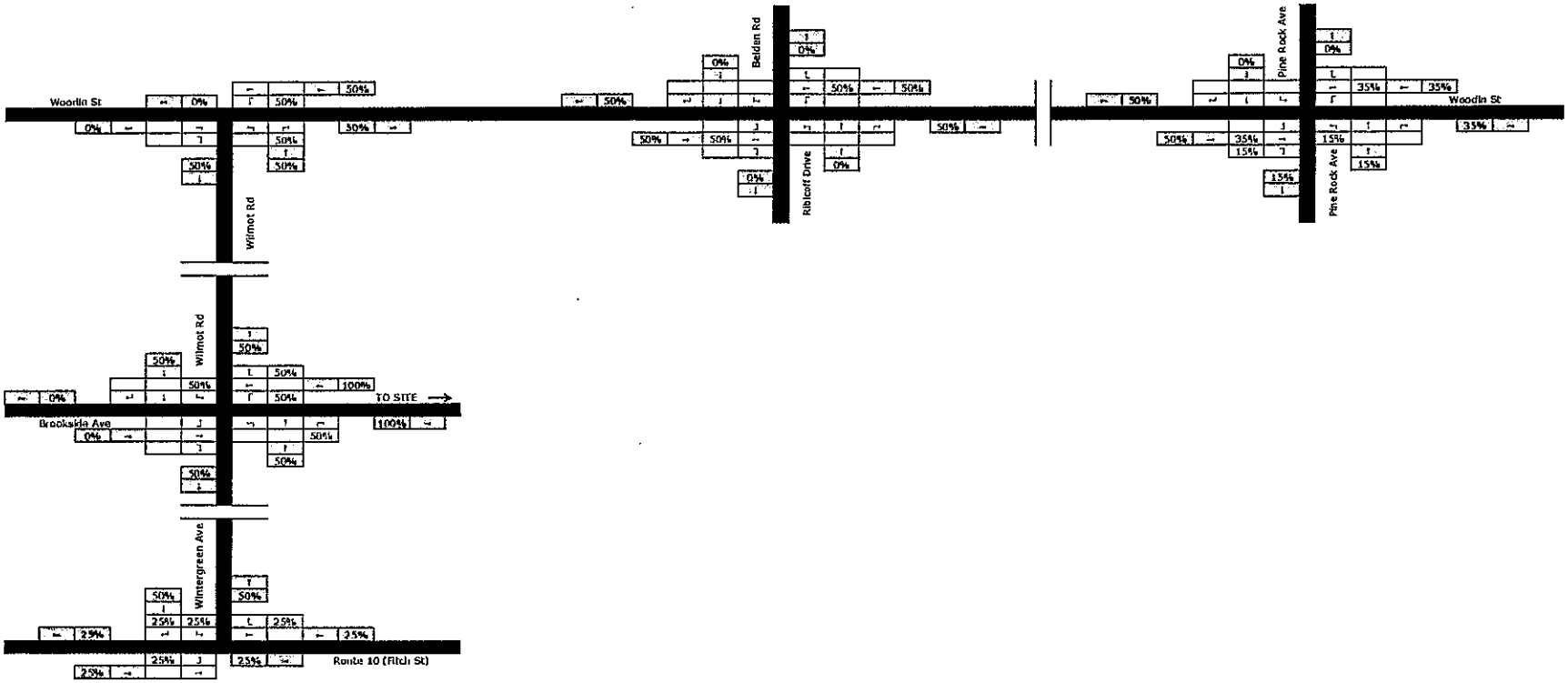


Arrival & Departure Distribution
West Rock Development - Rockview

Ribicoff Cottages
New Haven, Connecticut

Figure 3

May 30, 2014

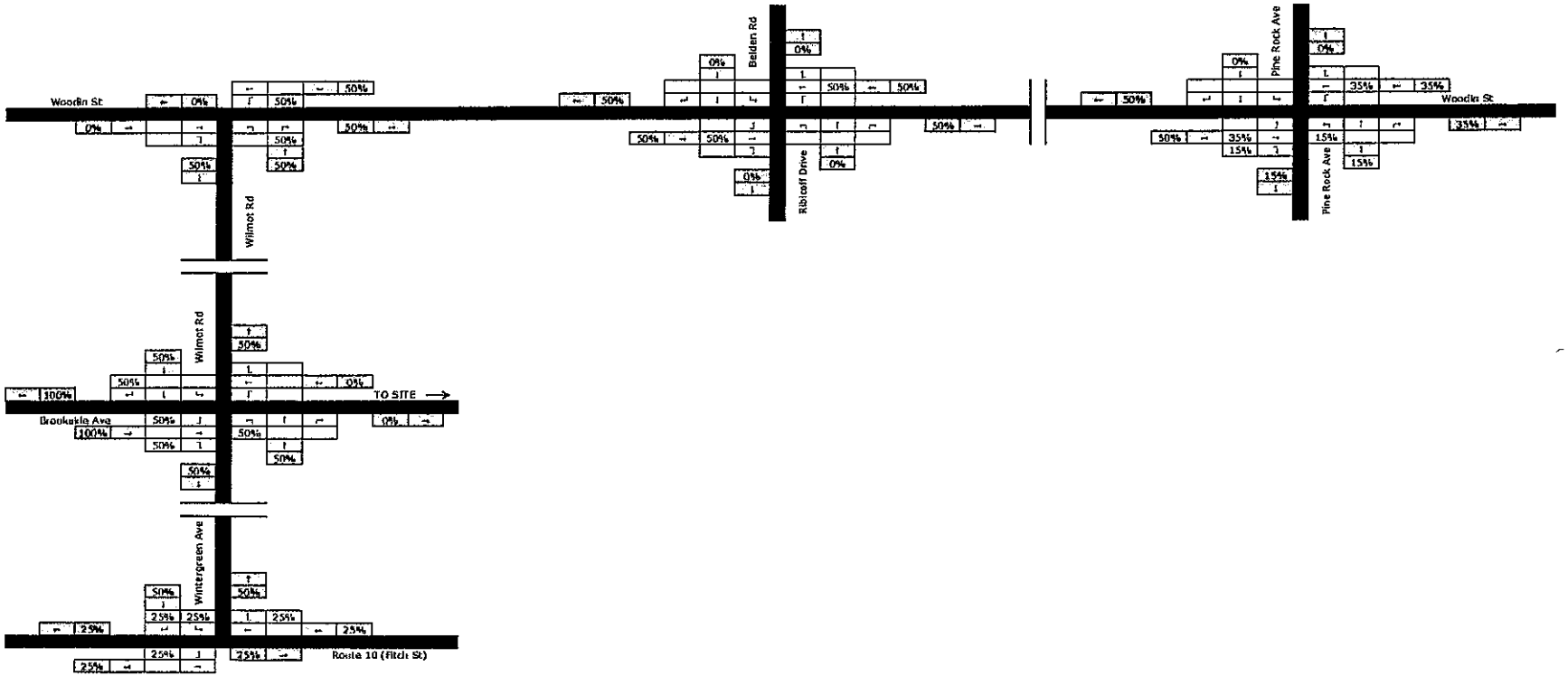


Arrival & Departure Distribution
West Rock Development - Brookside

Ribicoff Cottages
New Haven, Connecticut

Figure 4

May 30, 2014

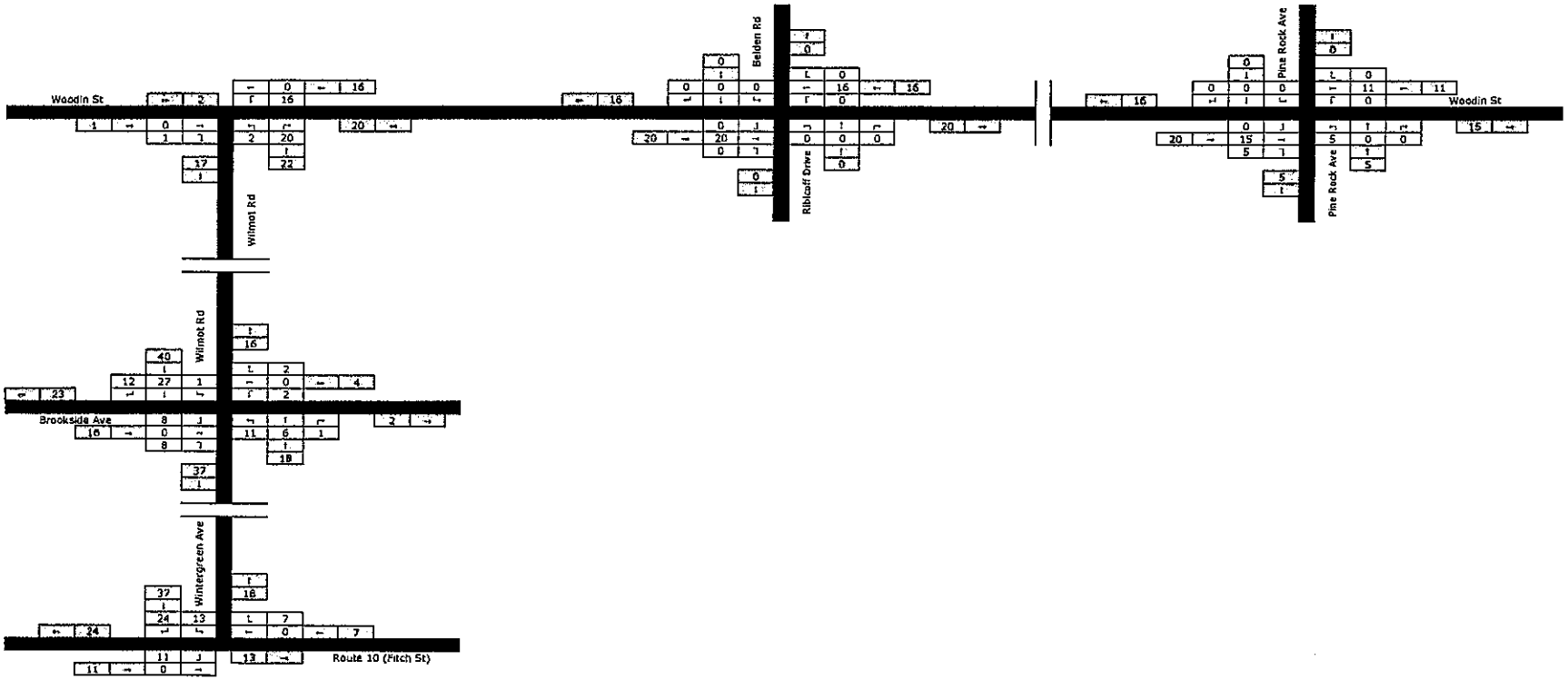


Arrival & Departure Distribution
West Rock Development - 122 Wilmot Street

Ribicoff Cottages
New Haven, Connecticut

Figure 5

May 30, 2014

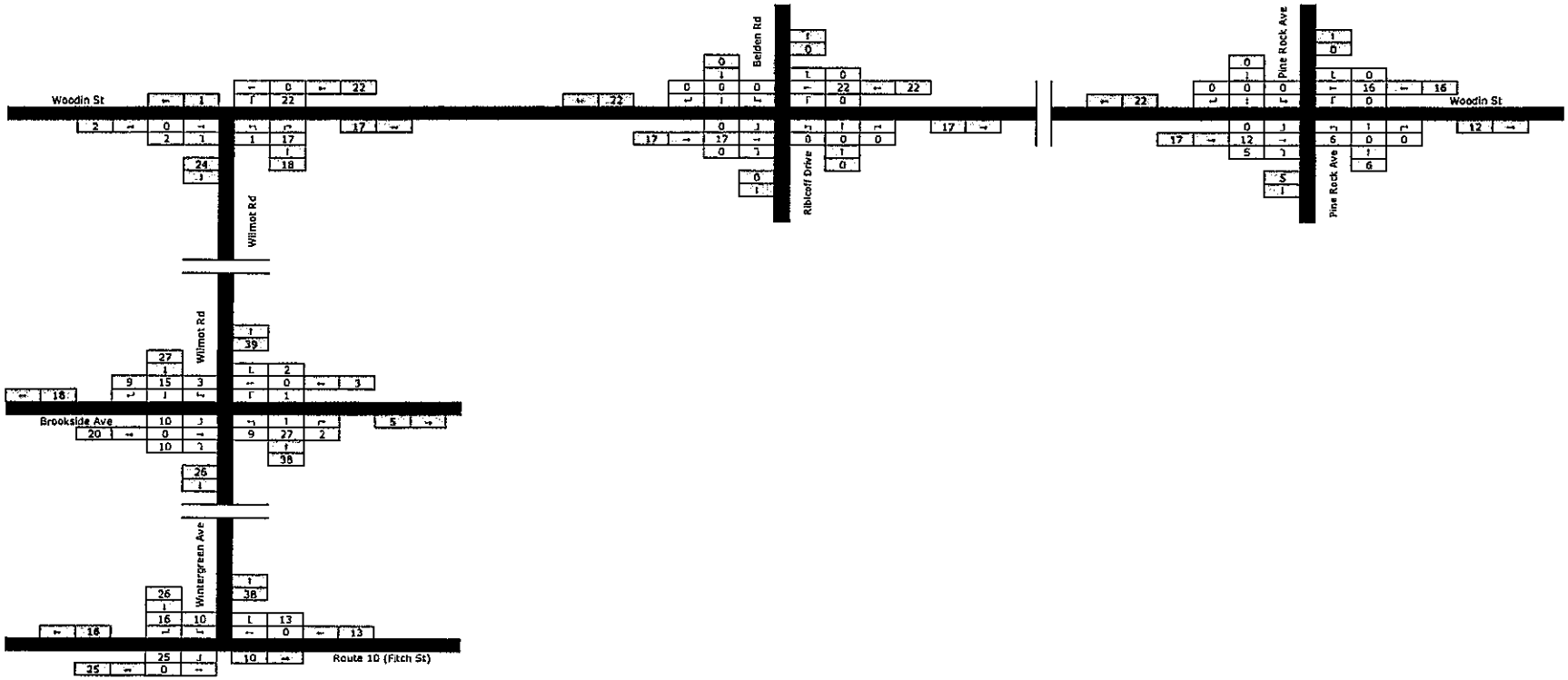


Site Generated Traffic Volume
Weekday Morning Peak Hour
West Rock Development

Ribicoff Cottages
New Haven, Connecticut

Figure 6

May 30, 2014

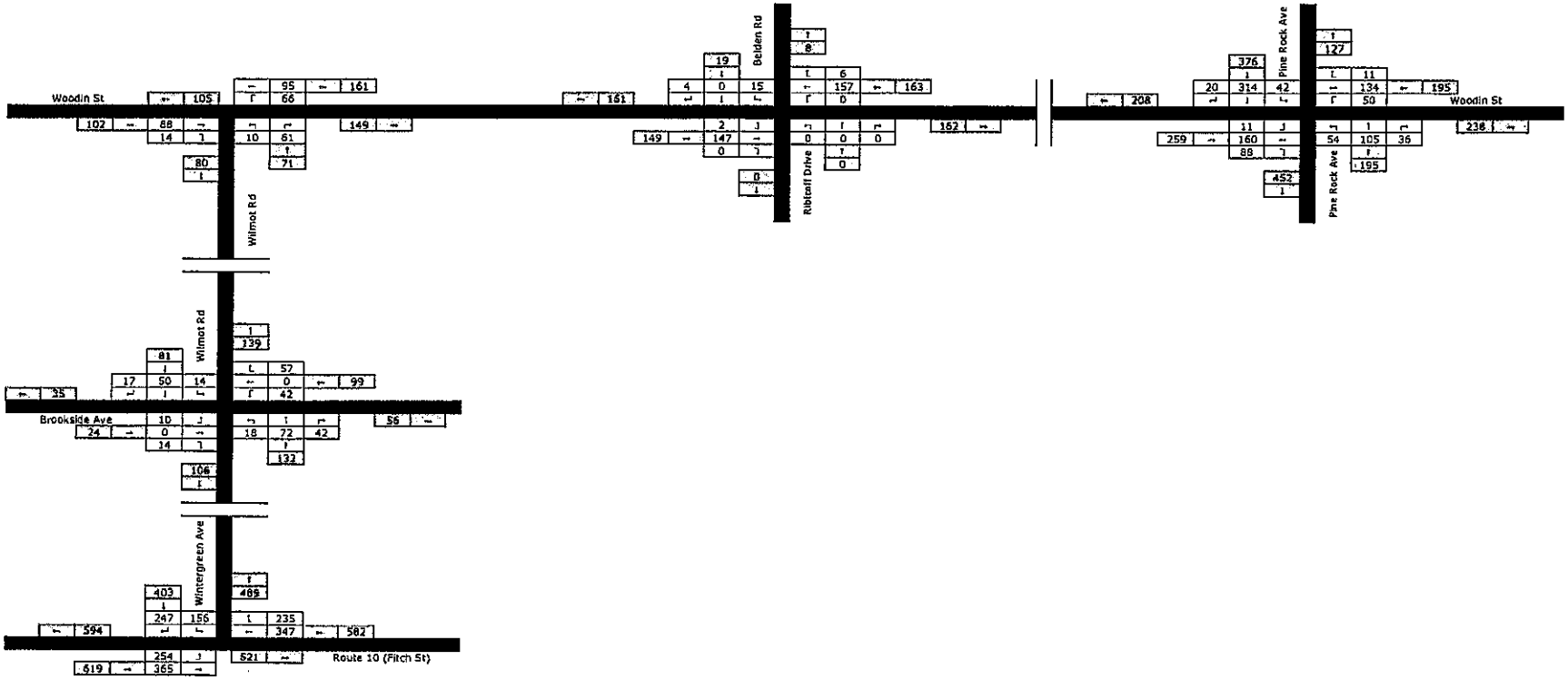


Site Generated Traffic Volume
Weekday Afternoon Peak Hour
West Rock Development

Ribicoff Cottages
New Haven, Connecticut

Figure 7

May 30, 2014

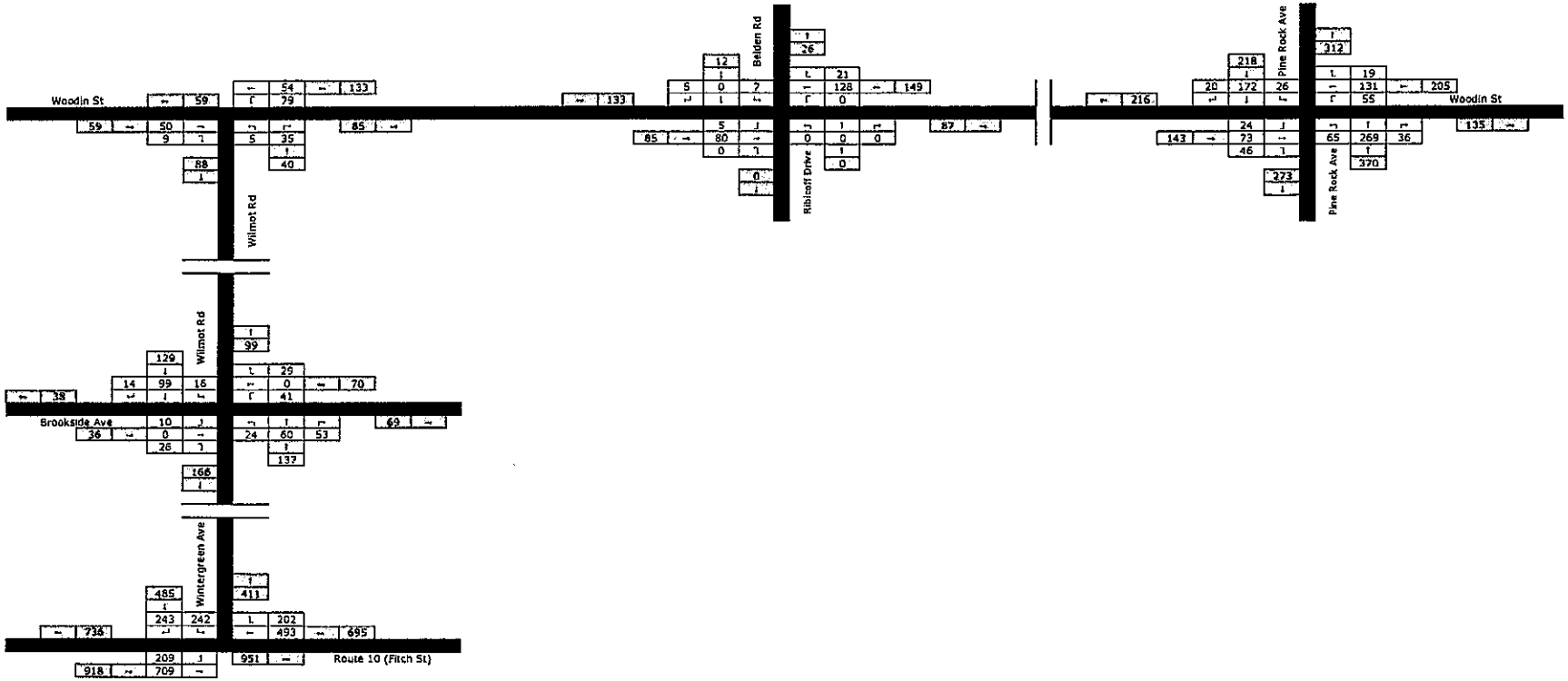


2015 Background Traffic Volume
Weekday Morning Peak Hour

Ribicoff Cottages
New Haven, Connecticut

Figure 8

May 30, 2014



2015 Background Traffic Volume
Weekday Afternoon Peak Hour

Ribicoff Cottages
New Haven, Connecticut

Figure 9

May 30, 2014

TABLE 2

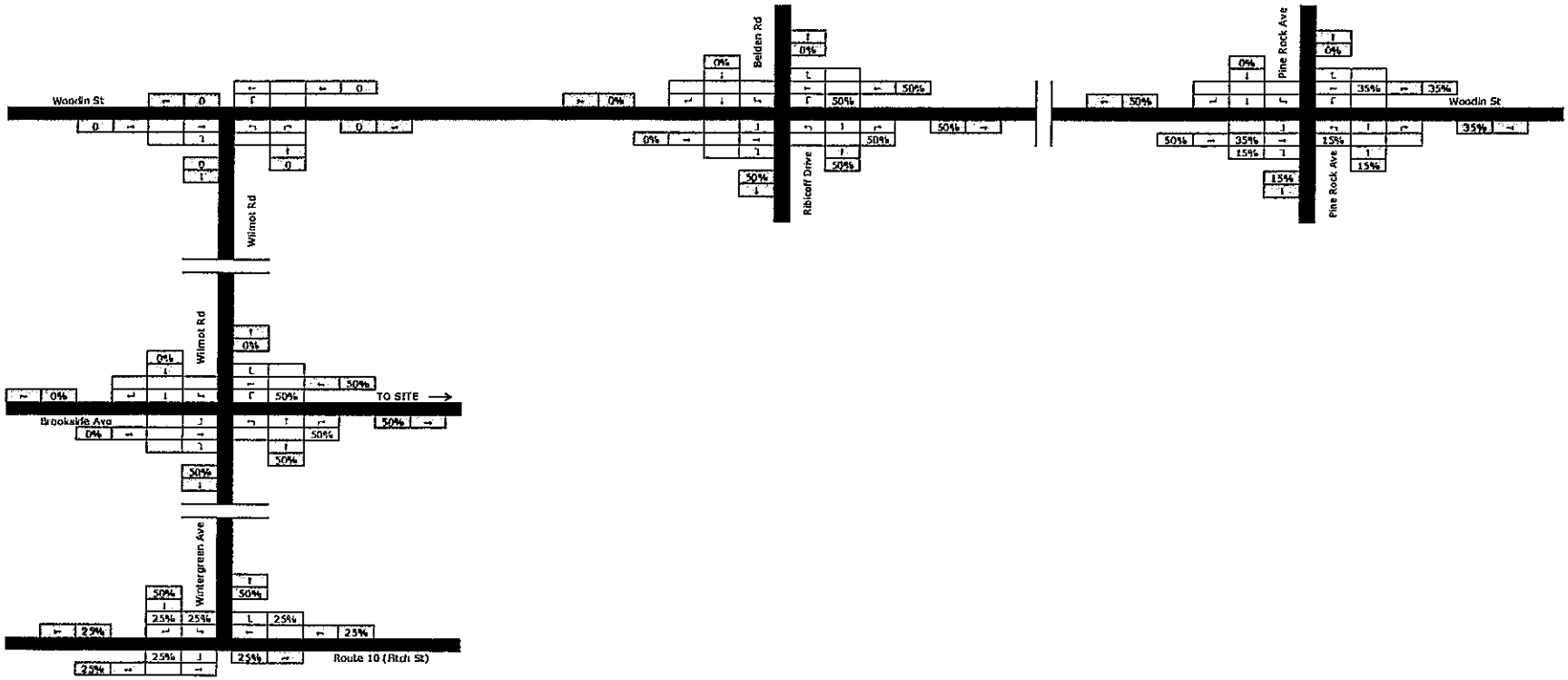
Site Generated Traffic Summary – Ribicoff Cottages

Existing Ribbicoff Cottage Rental - 100 Units Senior			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	7	12	19
Weekday Afternoon	14	9	23
Proposed Rental - 56 Units Senior			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	4	7	11
Weekday Afternoon	8	5	13
Proposed Rental - 50 Units			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	7	24	31
Weekday Afternoon	24	13	37
Net Vehicular Trips for Rental Units (Proposed - Existing)			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	4	19	23
Weekday Afternoon	18	9	27
Proposed Ownership - 8 Units			
Peak Hour Period	**Enter**	**Exit**	**Total**
Weekday Morning	2	4	6
Weekday Afternoon	5	3	8

Source: Institute of Transportation Engineering, Trip Generation, 9th Edition, 2012.
Land Use - 210 Single Family Detached Housing
Land Use - 221 Low-Rise Apartments
Land Use - 252 Senior Adult Housing Attached

Arrival and Departure Distributions

Arrival and departure distribution for the proposed development traffic, as shown on Figures 10 and 11 was developed based upon the proposed geometry of the roadway network with the connection to Woodin Street and anticipated destinations of the site generated traffic. The connection of Ribicoff Cottages to Woodin Street allows vehicles and pedestrians access to points north of the site as well as an alternative route into Hamden via Woodin Street. It is anticipated that the site generated traffic from the 106 rental units will arrive and depart with 50% of traffic using Woodin Street and 50% of traffic using Brookside Avenue and Wintergreen Avenue.

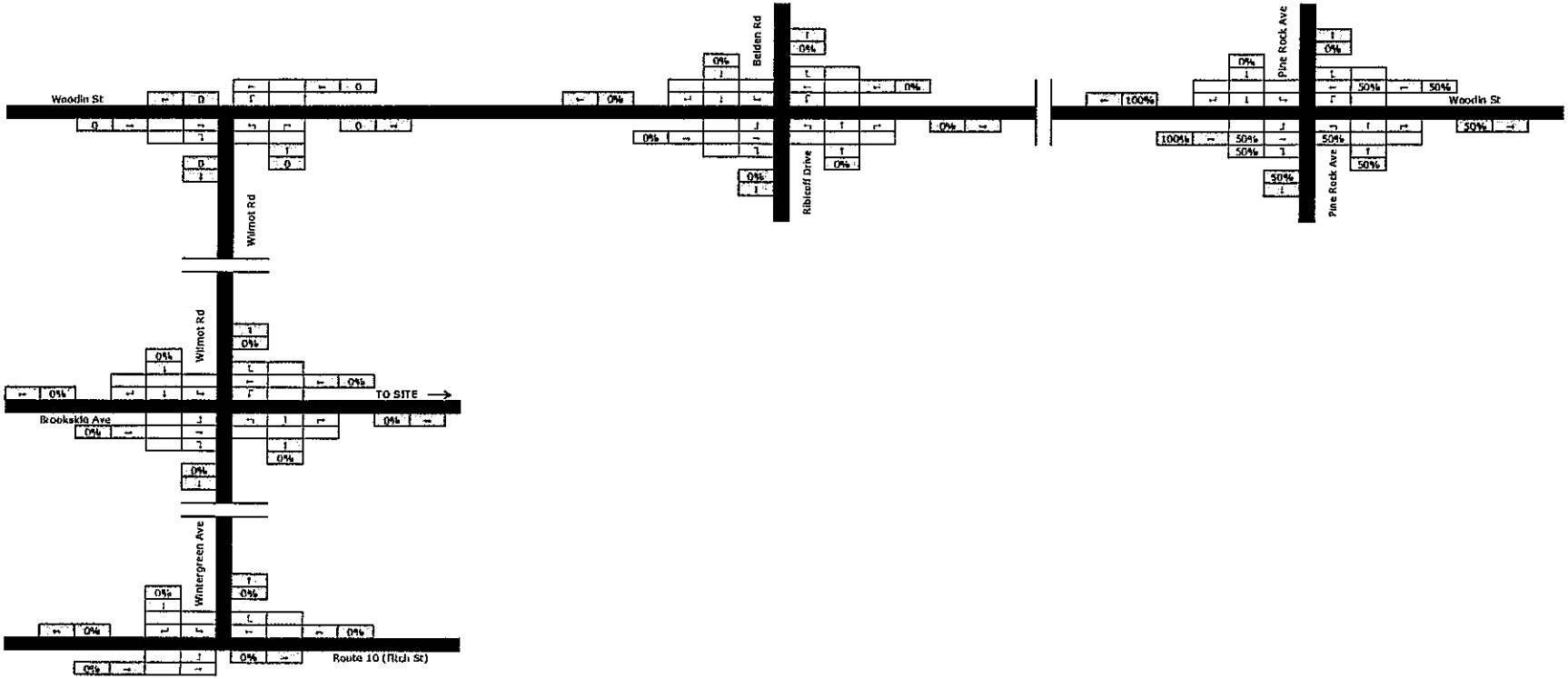


Arrival & Departure Distribution
Ribicoff Cottages (Rentals)

Ribicoff Cottages
New Haven, Connecticut

Figure 10

May 30, 2014



Arrival & Departure Distribution
Ribicoff Cottages (Ownership)

Ribicoff Cottages
New Haven, Connecticut

Figure 11

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With the connection to Woodin Street, traffic patterns in the West Rock development areas will change slightly with some traffic utilizing the Ribicoff Cottages access as opposed to the Wilmot Road connection to reach their destination in Hamden or New Haven.

The arrival and departure distribution for the eight home ownership units will be from their proposed individual driveways along Woodin Street in Hamden. Figures 12 and 13 illustrate the site generated traffic from the proposed rental units and home ownership units along the roadway network.

Combined Conditions

The anticipated site generated traffic volumes were added to the 2015 Background Condition traffic volumes to develop 2015 Combined Condition traffic volumes. Figures 14 and 15 present the 2015 combined traffic volume for the weekday morning and afternoon peak hours.

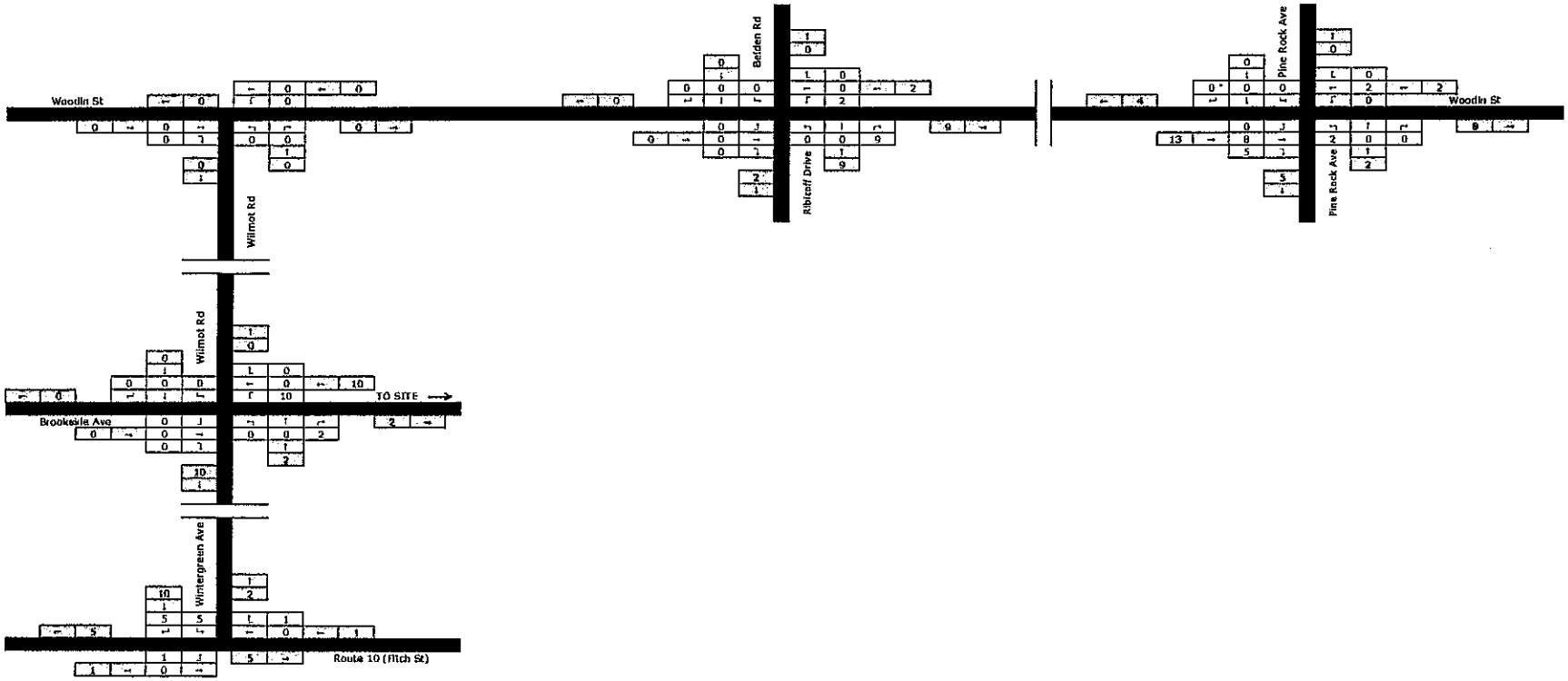
Capacity and Queue Analysis

Capacity and queue analyses were performed for the study area intersection with the Existing, Background, and Combined Condition volumes during the weekday morning and afternoon peak hours using *Trafficware Synchro plus SimTraffic 8 – Traffic Signal Coordination Software*. The analysis results are categorized in terms of Level of Service (LOS), which describes the qualitative intersection operational conditions based on the calculated average delay per vehicle. A definition of LOS is enclosed in the Appendix. The queue analysis results are summarized in terms of the 95th percentile queue length. The 95th percentile queue length represents the design queue length under peak traffic conditions.

The signalized Fitch Street at Wintergreen Avenue intersection operates at an overall LOS A during the existing, background and combined weekday morning peak hour and LOS B during the existing, background and combined weekday afternoon peak hour. The maximum increase in queue length over existing conditions, of eight feet occurs during the weekday afternoon peak hour along the northbound left turn approach.

The signalized Woodin Street and Pine Rock Avenue intersection operates at an overall LOS D during the existing, background and combined weekday morning peak hour and LOS C during the existing, background and combined weekday afternoon peak hour. As shown on Table 4, the maximum queue increase from the Background to Combined Condition occurs along the eastbound Woodin Street approach during the weekday afternoon peak hour and is less than two vehicles.

All approaches at the Brookside Avenue at Wilmot Road and Woodin Street at Wilmot Street intersections will operate LOS A during the Combined Condition during both peak hours. At the Woodin Street at Belden Street intersection all approaches operate at LOS B or better during the existing, background and combined weekday peak hours. The maximum queue length at these intersections is anticipated to be less than one vehicle in length during the weekday morning and afternoon peak hours.

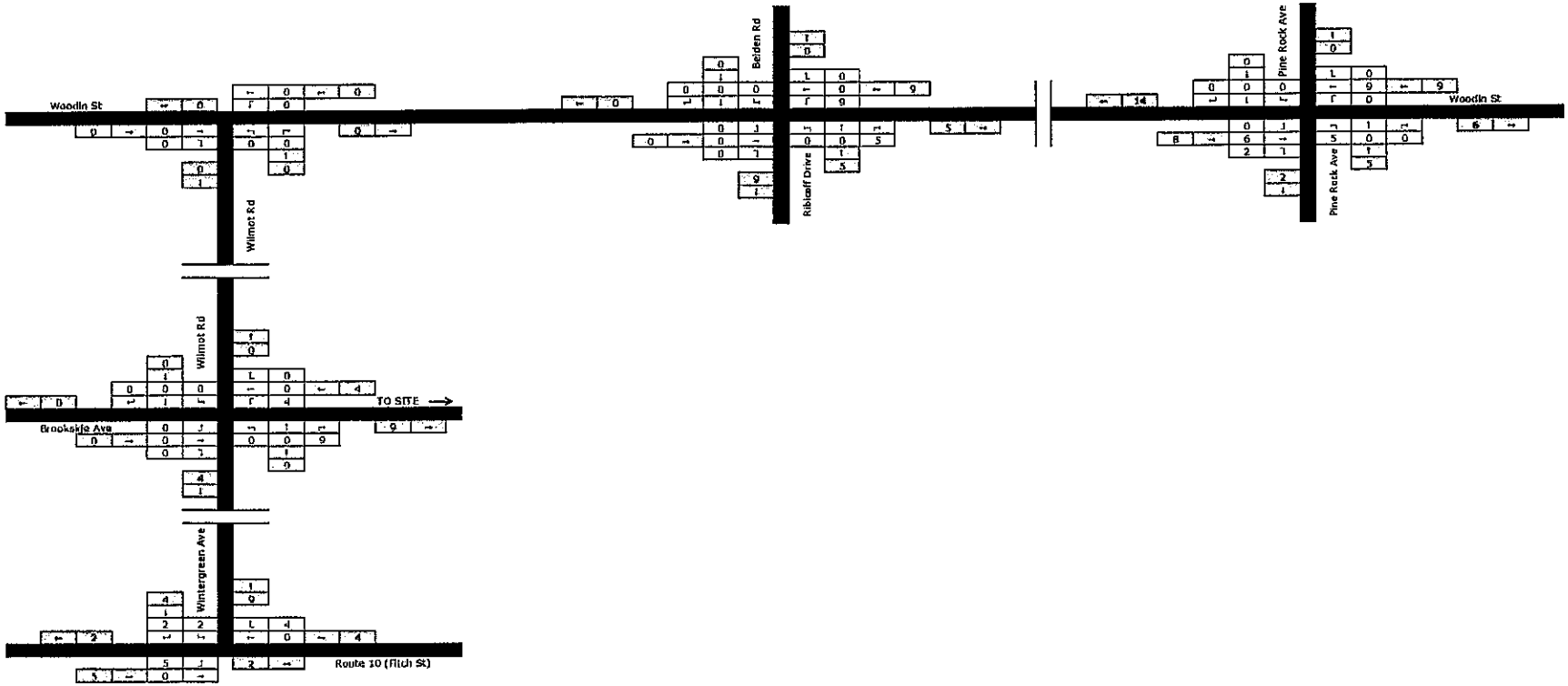


Site Generated Traffic Volume
Weekday Morning Peak Hour
Ribicoff Cottages

Ribicoff Cottages
New Haven, Connecticut

Figure 12

May 30, 2014

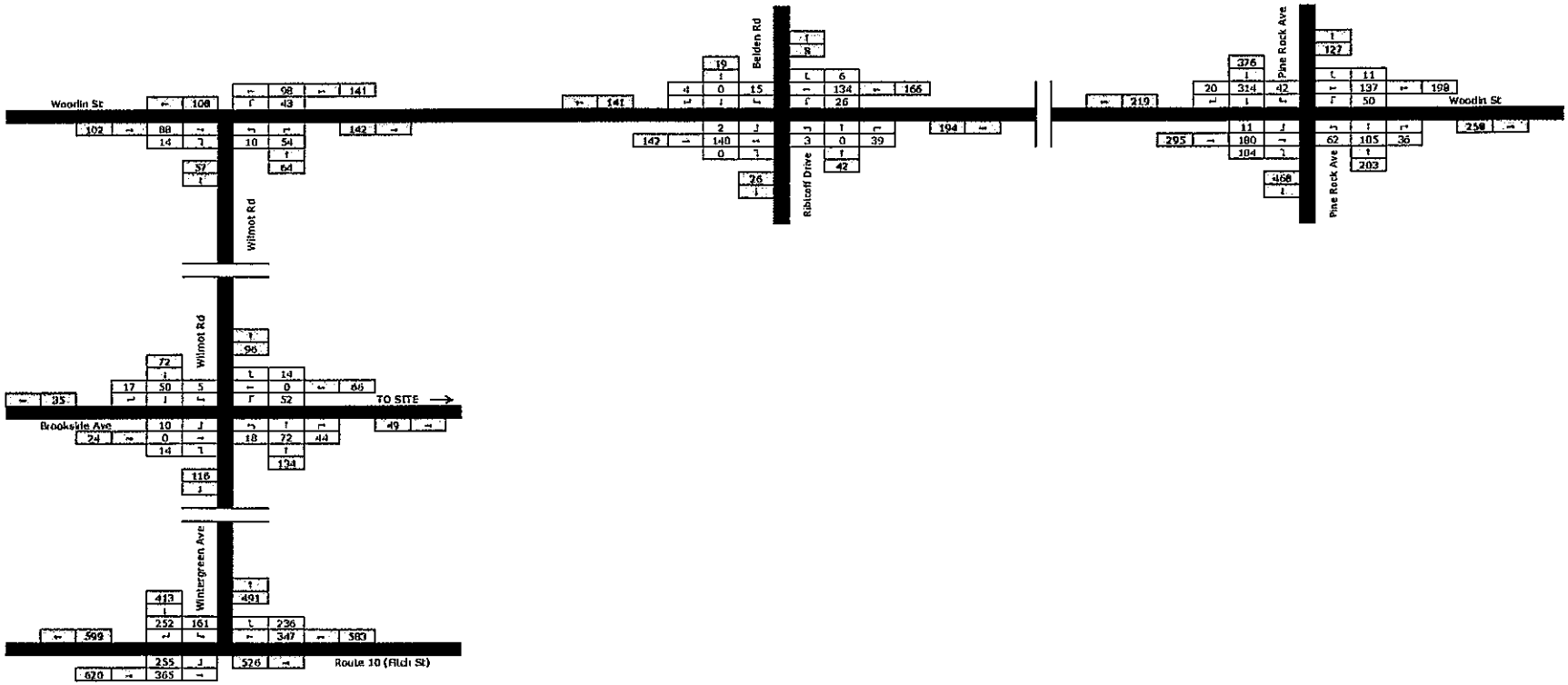


Site Generated Traffic Volume
Weekday Afternoon Peak Hour
Ribicoff Cottages

Ribicoff Cottages
New Haven, Connecticut

Figure 13

May 30, 2014

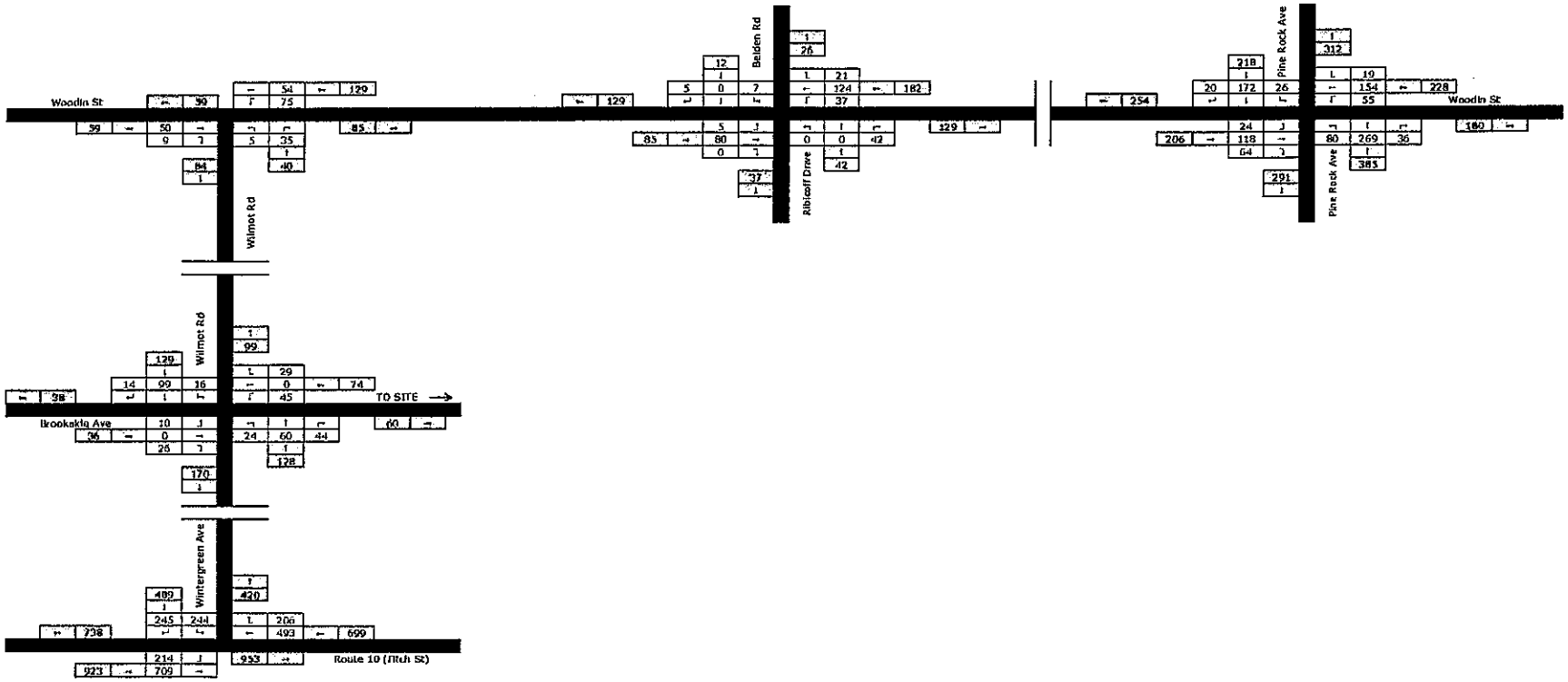


2015 Combined Traffic Volume
Weekday Morning Peak Hour

Ribicoff Cottages
New Haven, Connecticut

Figure 14

May 30, 2014



2015 Combined Traffic Volume
Weekday Afternoon Peak Hour

Ribicoff Cottages
New Haven, Connecticut

Figure 15

May 30, 2014

TABLE 3

Intersection Operation Summary – Vehicular Levels of Service / Average Delay (sec/veh)

	Lane Use	Weekday Morning Peak Hour 2013 Existing	2015 Background	2015 Combined	Weekday Afternoon Peak Hour 2013 Existing	2015 Background	2015 Combined
Traffic Signal - Route 10 (Fitch Street) at Wintergreen Avenue							
Overall		**A / 9.7**	**A / 9.1**	**A / 9.2**	**B / 11.3**	**B / 11.5**	**B / 11.6**
Route 10 (Fitch Street)	NBL	A / 6.0	A / 6.1	A / 6.1	A / 5.9	A / 6.4	A / 6.5
Route 10 (Fitch Street)	NBT	A / 4.9	A / 4.7	A / 4.8	A / 6.4	A / 6.4	A / 6.4
Route 10 (Fitch Street)	SBT	B / 13.1	B / 12.9	B / 13.0	B / 14.3	B / 14.9	B / 15.0
Route 10 (Fitch Street)	SBR	A / 3.5	A / 3.5	A / 3.5	A / 3.5	A / 3.7	A / 3.7
Wintergreen Avenue	EBL	C / 30.4	C / 28.0	C / 28.4	C / 34.1	C / 34.4	C / 34.8
Wintergreen Avenue	EBR	A / 6.6	A / 7.0	A / 7.0	A / 5.9	A / 6.0	A / 6.0
Unsignalized AWSC - Wilmot Road at Brookside Avenue							
Wilmot Road	<NBT>	A / 8.0	A / 8.1	A / 8.0	A / 7.6	A / 8.0	A / 8.0
Wilmot Road	<SBT>	A / 7.7	A / 8.1	A / 7.9	A / 7.8	A / 8.2	A / 8.2
Brookside Avenue	<EBT>	A / 7.7	A / 7.6	A / 7.5	A / 7.4	A / 7.5	A / 7.5
Brookside Avenue	<WBT>	A / 8.3	A / 8.1	A / 8.1	A / 8.0	A / 8.0	A / 8.0
Traffic Signal - Woodin Street at Pine Rock Avenue							
Overall		**D / 42.9**	**D / 45.0**	**D / 45.6**	**C / 33.7**	**C / 33.9**	**C / 34.1**
Pine Rock Avenue	<NBT>	D / 39.6	D / 42.7	D / 44.4	D / 38.4	D / 39.9	D / 41.2
Pine Rock Avenue	<SBT>	E / 63.8	E / 70.2	E / 71.0	D / 45.5	D / 46.8	D / 47.4
Woodin Street	<EBT>	C / 22.6	C / 25.2	C / 27.5	B / 19.4	C / 20.5	C / 22.7
Woodin Street	<WBT>	C / 21.5	C / 23.8	C / 24.7	C / 20.0	C / 21.4	C / 22.3
Unsignalized TWSC - Woodin Street at Belden Road							
Ribicoff Cottages	NBL	-- / --	-- / --	A / 9.4	-- / --	-- / --	A / 8.9
Belden Road	SBL	A / 9.6	B / 10.4	B / 11.3	A / 9.1	A / 9.6	B / 11.5
Woodin Street	EBL	A / 7.4	A / 7.6	A / 7.5	A / 7.4	A / 7.5	A / 7.5
Woodin Street	WBL	-- / --	-- / --	A / 7.6	-- / --	-- / --	A / 7.5
Unsignalized TWSC - Woodin Street at Wilmot Street							
Wilmot Road	NBL	-- / --	A / 9.5	A / 9.4	-- / --	A / 9.0	A / 9.0
Woodin Street	WBL	-- / --	A / 7.6	A / 7.5	-- / --	A / 7.5	A / 7.5

TABLE 4

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

	Lane Use	Weekday Morning Peak Hour 2013 Existing	2015 Background	2015 Combined	Weekday Afternoon Peak Hour 2013 Existing	2015 Background	2015 Combined
Traffic Signal - Route 10 (Fitch Street) at Wintergreen Avenue							
Overall							
Route 10 (Fitch Street)	NBL	36 / 52	36 / 56	37 / 56	25 / 44	29 / 51	30 / 52
Route 10 (Fitch Street)	NBT	31/ 40	30 / 41	30 / 41	65 / 88	66 / 90	66 / 90
Route 10 (Fitch Street)	SBT	48 / 76	48 / 77	48 / 77	71 / 110	74 / 116	75 / 116
Route 10 (Fitch Street)	SBR	0 / 35	0 / 34	0 / 34	0 / 34	0 / 34	0 / 35
Wintergreen Avenue	EBL	72 / 115	60 / 97	62 / 100	94 / 142	95 / 144	96 / 145
Wintergreen Avenue	EBR	0 / 34	0 / 36	0 / 36	0 / 34	0 / 35	0 / 35
Unsignalized AWSC - Wilmot Road at Brookside Avenue							
Wilmot Road	<NBT>	-- / 15	-- / 15	-- / 15	-- / 13	-- / 13	-- / 13
Wilmot Road	<SBT>	-- / 5	-- / 13	-- / 10	-- / 8	-- / 13	-- / 13
Brookside Avenue	<EBT>	-- / 3	-- / 0	-- / 3	-- / 3	-- / 3	-- / 3
Brookside Avenue	<WBT>	-- / 13	-- / 13	-- / 8	-- / 8	-- / 8	-- / 8
Traffic Signal - Woodin Street at Pine Rock Avenue							
Overall							
Pine Rock Avenue	<NBT>	93 / 145	104 / 159	110 / 166	160 / 253	171 / 275	180 / 308
Pine Rock Avenue	<SBT>	243 / 309	260 / 320	260 / 320	110 / 201	115 / 207	117 / 207
Woodin Street	<EBT>	99 / 135	136 / 174	159 / 200	49 / 79	67 / 99	103 / 139
Woodin Street	<WBT>	75 / 101	104 / 130	107 / 134	64 / 112	88 / 141	102 / 158
Unsignalized TWSC - Woodin Street at Belden Road							
Ribicoff Cottages	NBL	-- / --	-- / --	-- / 5	-- / --	-- / --	-- / 5
Belden Road	SBL	-- / 3	-- / 3	-- / 3	-- / 0	-- / 3	-- / 0
Woodin Street	EBL	-- / 0	-- / 0	-- / 0	-- / 0	-- / 0	-- / 0
Woodin Street	WBL	-- / --	-- / --	-- / 3	-- / --	-- / --	-- / 3
Unsignalized TWSC - Woodin Street at Wilmot Street							
Wilmot Road	NBL	-- / --	-- / 8	-- / 8	-- / --	-- / 3	-- / 3
Woodin Street	WBL	-- / --	-- / 5	-- / 3	-- / --	-- / 5	-- / 5

Conclusion

The additional traffic volume generated by the Ribicoff Cottages redevelopment is low and will not significantly impact the study area roadway network. The new traffic generated by the proposed rental units and homeownership units represents an approximate increase of one vehicle every two minutes during the peak hours. As shown by the capacity and queue analysis, Woodin Street can accept this additional traffic volume with minimal impact to the overall operations. At the Woodin Street at Pine Rock intersection, the maximum increase in delay is less than seven seconds during the weekday morning peak hour, which does not impact the overall LOS of the intersection.

The proposed local roadway connections from the West Rock development include connections to Woodin Street at Wilmot Road and a future connection to Woodin Street from the Ribicoff Cottages site. The proposed connection to Woodin Street will result in a redistribution of traffic flow resulting in a small increase in traffic on Woodin Street, but significantly improves access for the Ribicoff Cottages site to commercial development along Dixwell Avenue and to the transit system that provides service along Woodin Street. This study reviewed traffic operations at the two proposed Woodin Street intersections and confirmed that they will operate with at an excellent Level of Service under the Combined Conditions.

Respectfully Submitted,

TIGHE & BOND, INC.

Christopher O. Granatini, P.E.
Project Manager

Enclosure – Appendix

\\SRV\Projects\T\T0300 Trinity Ribcoff Cottages\REPORT\2014_05-28 Traffic Statement\2014_5-28 Traffic Statement.Doc

APPENDIX

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LEVELS OF SERVICE

Definitions

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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.

Signalized Intersections

Definition

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.

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

Average Control Delay (Seconds per Vehicle)	Level of Services	
	V/C Ratio ≤1.00	V/C Ratio >1.00
≤10	A	F
>10 to 20	B	F
>20 to 35	C	F
>35 to 55	D	F
>55 to 80	E	F
>80	F	F

Source: *HCM2010: Highway Capacity Manual.* Washington, D.C.: Transportation Research Board, 2010. Page 18-6.

For signalized intersections, this delay criterion may be applied in assigning LOS designations to individual lane groups, intersection approaches, or entire intersection.

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

Descriptions

A description of the operating condition for signalized intersections under each level of service is provided below:

- *LOS A* describes conditions when the v/c ratio is low and the progression is exceptionally favorable. Most vehicles arrive during the green indication and travel through the intersection without stopping.

- *LOS B* describes conditions when the v/c ratio is low, progression is highly favorable, and there is relatively low control delay.

- *LOS C* describes conditions when the v/c ratio is no greater than 1.00 and progression is favorable, with a significant number of vehicles stopping but many vehicles still proceed through the intersection without stopping. Individual cycle failures may occasionally appear (i.e., one or more vehicles queued are not able to proceed through the intersection due to insufficient capacity during one cycle).

- *LOS D* describes conditions when the v/c ratio is no greater than 1.00 and progression is ineffective. Many vehicles stop and individual cycle failures are noticeable.

- *LOS E* describes conditions when the v/c ratio is no greater than 1.00 and progression is unfavorable (i.e., high control delay values). Individual cycle failures are frequent. This level is considered by many agencies to be the limit of acceptable delay.

- *LOS F* describes operations with the v/c ratio greater than 1.00 or when progression is very poor. Most cycles fail to clear the queue which makes the operations unacceptable to most drivers. This event occurs when the arrival flow rates exceed the capacity of the intersection.

Unsignalized Intersections

Definition

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-2.

TABLE A-2
Level-of-Service Criteria for Unsignalized Intersections

Average Control Delay (Seconds per Vehicle)	Level of Services	
	V/C Ratio ≤1.00	V/C Ratio >1.00
≤10	A	F
>10 to 15	B	F
>15 to 25	C	F
>25 to 35	D	F
>35 to 50	E	F
>50	F	F

Source: *HCM2010: Highway Capacity Manual.* Washington, D.C.: Transportation Research Board, 2010. Page 19-2.

For unsignalized intersections, this delay criterion may be applied in assigning LOS designations to individual lane groups on the minor street approaches or to the left turns from the major street approaches. These designations are not assigned to the overall intersection or to the major street approaches as the mainline through vehicles are assumed not to experience delay, the weighted average of all movements would be skewed due to the potential disproportionate volume of mainline through vehicles, and the distorted delays could conceal minor street deficiencies.

Descriptions

A description of the operating condition for unsignalized intersections under each level of service is provided below:

- *LOS A* describes conditions when the v/c ratio is low and motorists experience little to no delay.
- *LOS B* describes conditions when the v/c ratio is low and motorists experience relatively low control delays.
- *LOS C* describes conditions when the v/c ratio is no greater than 1.00 and motorists experience average delays.
- *LOS D* describes conditions when the v/c ratio is no greater than 1.00 and the influence of congestion becomes more noticeable.
- *LOS E* describes conditions when the v/c ratio is no greater than 1.00 and operating conditions are at or near capacity (i.e., high control delay values). This level is considered by many agencies to be the limit of acceptable delay.
- *LOS F* describes operations with the v/c ratio greater than 1.00 or when progression is constrained (i.e., unstable traffic flow). This level is considered to be unacceptable to most drivers with high delay values that often occur.

TURNING MOVEMENT COUNTS

Tighe&Bond

Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Wilmot Road at Brookside Avenue
New Haven, Connecticut

File Name : 12302
Site Code : 12302
Start Date : 9/12/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

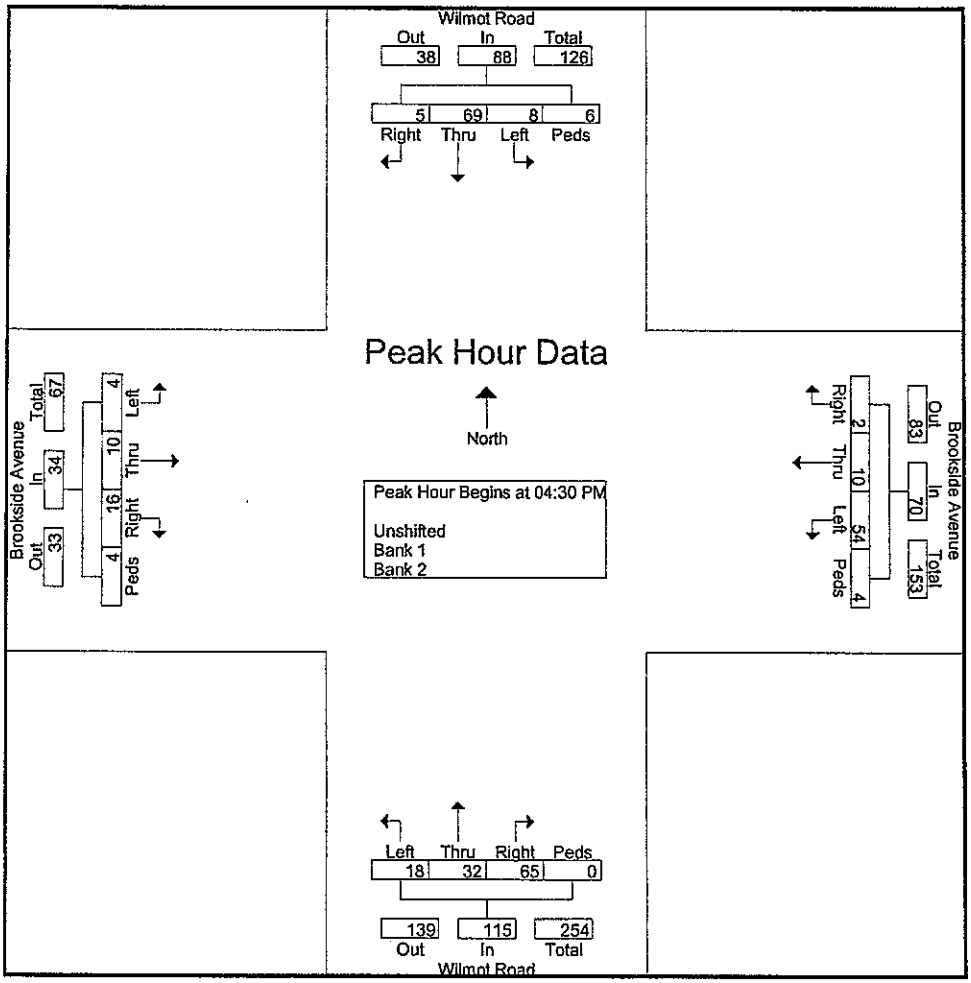
	Wilmot Road From North					Brookside Avenue From East					Wilmot Road From South					Brookside Avenue From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int. Total
04:00 PM	0	23	4	0	27	0	1	12	0	13	14	4	2	0	20	2	2	1	0	5	65
04:15 PM	2	9	2	0	13	0	0	13	0	13	12	3	1	0	16	3	1	1	0	5	47
04:30 PM	2	18	4	5	29	0	3	17	0	20	9	7	5	0	21	5	3	2	0	10	80
04:45 PM	0	12	2	0	14	0	3	16	0	19	12	8	8	0	28	4	2	1	4	11	72
Total	4	62	12	5	83	0	7	58	0	65	47	22	16	0	85	14	8	5	4	31	264
05:00 PM	0	18	2	1	21	2	0	8	4	14	21	12	1	0	34	3	1	1	0	5	74
05:15 PM	3	21	0	0	24	0	4	13	0	17	23	5	4	0	32	4	4	0	0	8	81
05:30 PM	0	12	0	2	14	2	2	13	0	17	10	4	3	0	17	2	1	1	0	4	52
05:45 PM	0	8	0	1	9	0	1	14	0	15	16	2	0	0	18	3	0	0	0	3	45
Total	3	59	2	4	68	4	7	48	4	63	70	23	8	0	101	12	6	2	0	20	252
Grand Total	7	121	14	9	151	4	14	106	4	128	117	45	24	0	186	26	14	7	4	51	516
Apprch %	4.6	80.1	9.3	6		3.1	10.9	82.8	3.1		62.9	24.2	12.9	0		51	27.5	13.7	7.8		
Total %	1.4	23.4	2.7	1.7	29.3	0.8	2.7	20.5	0.8	24.8	22.7	8.7	4.7	0	36	5	2.7	1.4	0.8	9.9	
Unshifted	7	116	7	9	139	4	7	91	4	106	113	42	23	0	178	24	8	7	4	43	466
% Unshifted																					
Bank 1	0	4	7	0	11	0	7	15	0	22	4	3	1	0	8	2	6	0	0	8	49
% Bank 1	0	3.3	50	0	7.3	0	50	14.2	0	17.2	3.4	6.7	4.2	0	4.3	7.7	42.9	0	0	15.7	9.5
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	0.8	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 12302
Site Code : 12302
Start Date : 9/12/2013
Page No : 2

	Wilmot Road From North					Brookside Avenue From East					Wilmot Road From South					Brookside Avenue 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 04:30 PM																					
04:30 PM	2	18	4	5	29	0	3	17	0	20	9	7	5	0	21	5	3	2	0	10	80
04:45 PM	0	12	2	0	14	0	3	16	0	19	12	8	8	0	28	4	2	1	4	11	72
05:00 PM	0	18	2	1	21	2	0	8	4	14	21	12	1	0	34	3	1	1	0	5	74
05:15 PM	3	21	0	0	24	0	4	13	0	17	23	5	4	0	32	4	4	0	0	8	81
Total Volume	5	69	8	6	88	2	10	54	4	70	65	32	18	0	115	16	10	4	4	34	307
% App. Total	5.7	78.4	9.1	6.8		2.9	14.3	77.1	5.7		56.5	27.8	15.7	0		47.1	29.4	11.8	11.8		
PHF	.417	.821	.500	.300	.759	.250	.625	.794	.250	.875	.707	.667	.563	.000	.846	.800	.625	.500	.250	.773	.948



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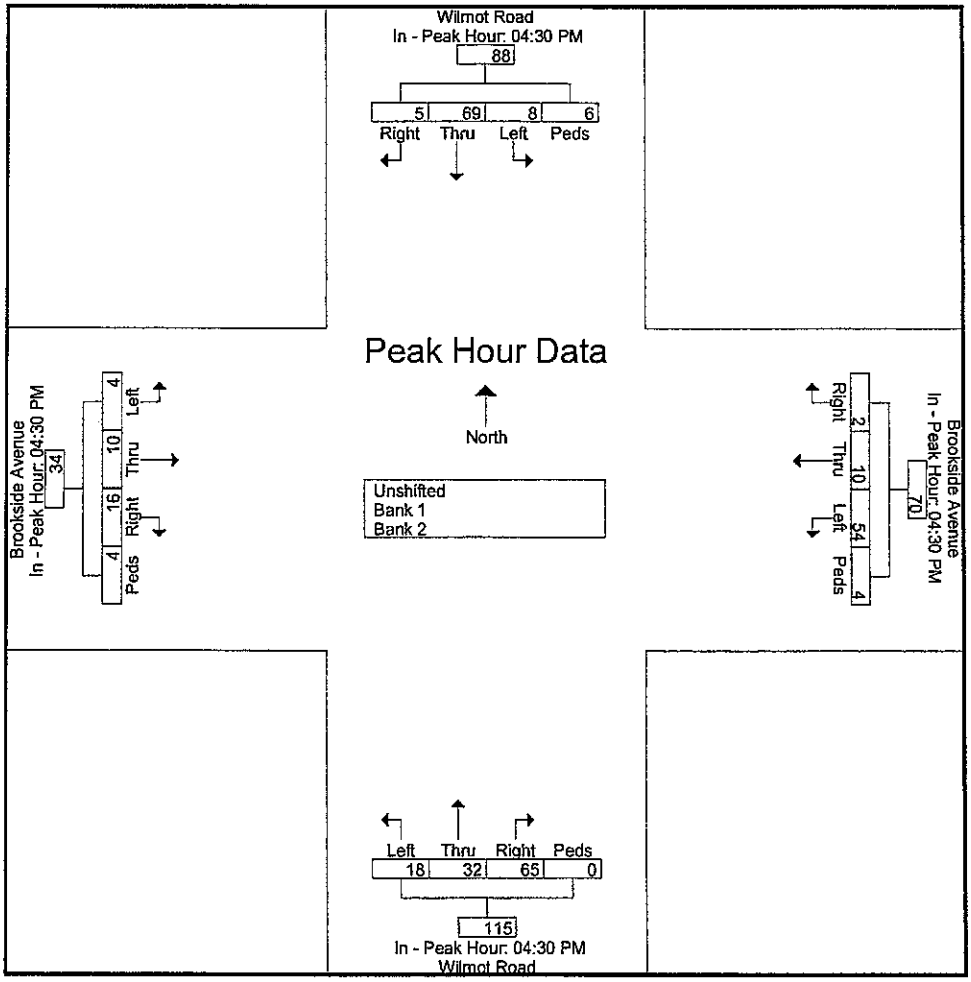
(860) 828-1693

File Name : 12302
Site Code : 12302
Start Date : 9/12/2013
Page No : 3

	Wilmot Road From North					Brookside Avenue From East					Wilmot Road From South					Brookside Avenue 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:																					
	04:30 PM					04:30 PM					04:30 PM					04:30 PM					
+0 mins.	2	18	4	5	29	0	3	17	0	20	9	7	5	0	21	5	3	2	0	10	
+15 mins.	0	12	2	0	14	0	3	16	0	19	12	8	8	0	28	4	2	1	4	11	
+30 mins.	0	18	2	1	21	2	0	8	4	14	21	12	1	0	34	3	1	1	0	5	
+45 mins.	3	21	0	0	24	0	4	13	0	17	23	5	4	0	32	4	4	0	0	8	
Total Volume	5	69	8	6	88	2	10	54	4	70	65	32	18	0	115	16	10	4	4	34	
% App. Total	5.7	78.4	9.1	6.8		2.9	14.3	77.1	5.7		56.5	27.8	15.7	0		47.1	29.4	11.8	11.8		
PHF	.417	.821	.500	.300	.759	.250	.625	.794	.250	.875	.707	.667	.563	.000	.846	.800	.625	.500	.250	.773	



Connecticut Counts LLC

Kensington, Connecticut 06037
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Wilmot Road at Brookside Avnue
New Haven, Connecticut

File Name : 12301
Site Code : 12301
Start Date : 9/12/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	Wilmot Road From North					Brookside Avenue From East					Wilmot Road From South					Brookside Avenue 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	0	3	0	2	5	0	2	13	0	15	4	12	2	0	18	0	2	0	1	3	41
07:15 AM	2	4	0	0	6	4	2	23	0	29	16	12	4	0	32	1	2	1	0	4	71
07:30 AM	2	5	1	0	8	3	3	9	0	15	10	27	0	0	37	3	2	3	0	8	68
07:45 AM	1	10	2	0	13	4	4	16	0	24	3	27	1	0	31	1	3	3	0	7	75
Total	5	22	3	2	32	11	11	61	0	83	33	78	7	0	118	5	9	7	1	22	255
08:00 AM	0	6	1	0	7	1	2	23	0	26	11	20	2	0	33	1	2	4	0	7	73
08:15 AM	3	10	0	0	13	0	1	13	0	14	12	8	2	0	22	0	1	1	1	3	52
08:30 AM	1	9	5	0	15	4	2	19	0	25	9	13	1	0	23	1	1	5	0	7	70
08:45 AM	0	5	0	5	10	1	2	17	0	20	15	21	3	0	39	0	2	2	0	4	73
Total	4	30	6	5	45	6	7	72	0	85	47	62	8	0	117	2	6	12	1	21	268
Grand Total	9	52	9	7	77	17	18	133	0	168	80	140	15	0	235	7	15	19	2	43	523
Apprch %	11.7	67.5	11.7	9.1		10.1	10.7	79.2	0		34	59.6	6.4	0		16.3	34.9	44.2	4.7		
Total %	1.7	9.9	1.7	1.3	14.7	3.3	3.4	25.4	0	32.1	15.3	26.8	2.9	0	44.9	1.3	2.9	3.6	0.4	8.2	
Unshifted	9	43	3	7	62	6	3	115	0	124	58	111	11	0	180	5	5	19	2	31	397
% Unshifted																					
Bank 1	0	2	6	0	8	11	15	18	0	44	22	14	3	0	39	1	10	0	0	11	102
% Bank 1	0	3.8	66.7	0	10.4	64.7	83.3	13.5	0	26.2	27.5	10	20	0	16.6	14.3	66.7	0	0	25.6	19.5
Bank 2	0	7	0	0	7	0	0	0	0	0	0	15	1	0	16	1	0	0	0	1	24
% Bank 2	0	13.5	0	0	9.1	0	0	0	0	0	0	10.7	6.7	0	6.8	14.3	0	0	0	2.3	4.6

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Kensington, Connecticut 06037
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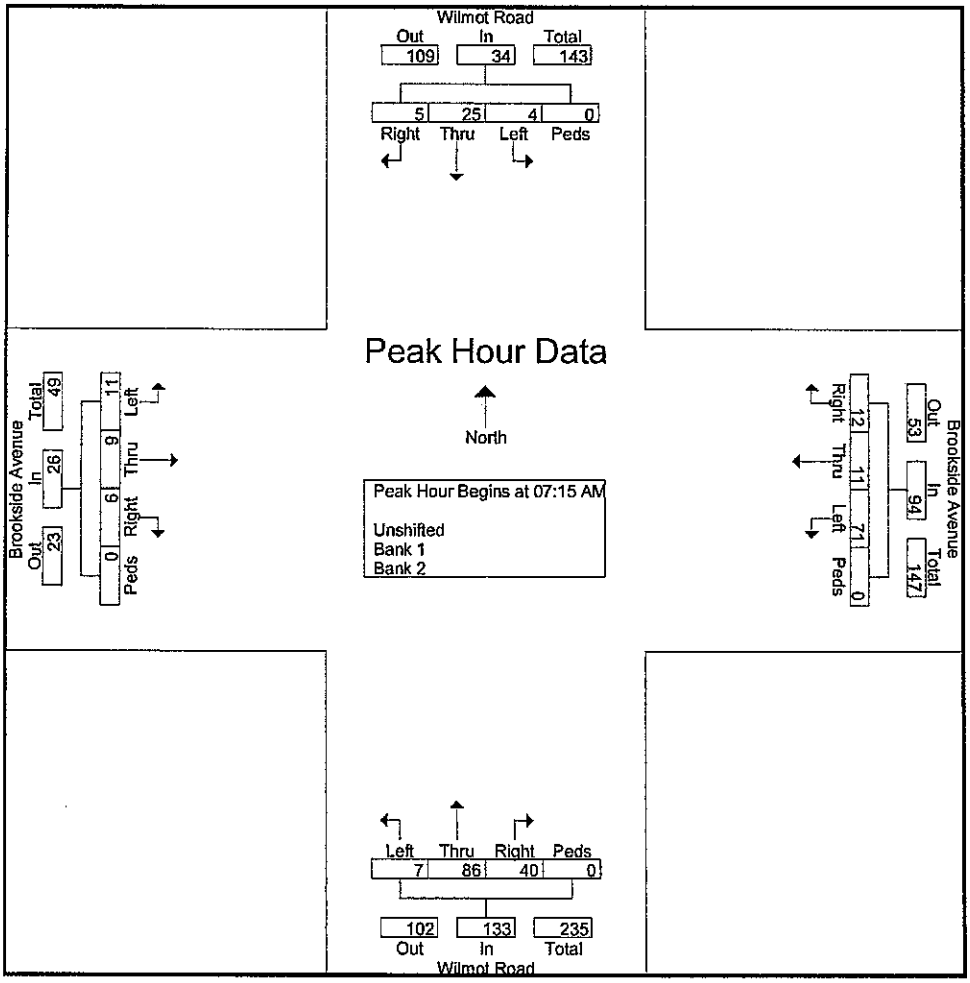
File Name : 12301
Site Code : 12301
Start Date : 9/12/2013
Page No : 2

	Wilmot Road From North					Brookside Avenue From East					Wilmot Road From South					Brookside Avenue 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 07:15 AM																					
07:15 AM	2	4	0	0	6	4	2	23	0	29	16	12	4	0	32	1	2	1	0	4	71
07:30 AM	2	5	1	0	8	3	3	9	0	15	10	27	0	0	37	3	2	3	0	8	68
07:45 AM	1	10	2	0	13	4	4	16	0	24	3	27	1	0	31	1	3	3	0	7	75
08:00 AM	0	6	1	0	7	1	2	23	0	26	11	20	2	0	33	1	2	4	0	7	73
Total Volume	5	25	4	0	34	12	11	71	0	94	40	86	7	0	133	6	9	11	0	26	287
% App. Total	14.7	73.5	11.8	0		12.8	11.7	75.5	0		30.1	64.7	5.3	0		23.1	34.6	42.3	0		
PHF	.625	.625	.500	.000	.654	.750	.688	.772	.000	.810	.625	.796	.438	.000	.899	.500	.750	.688	.000	.813	.957



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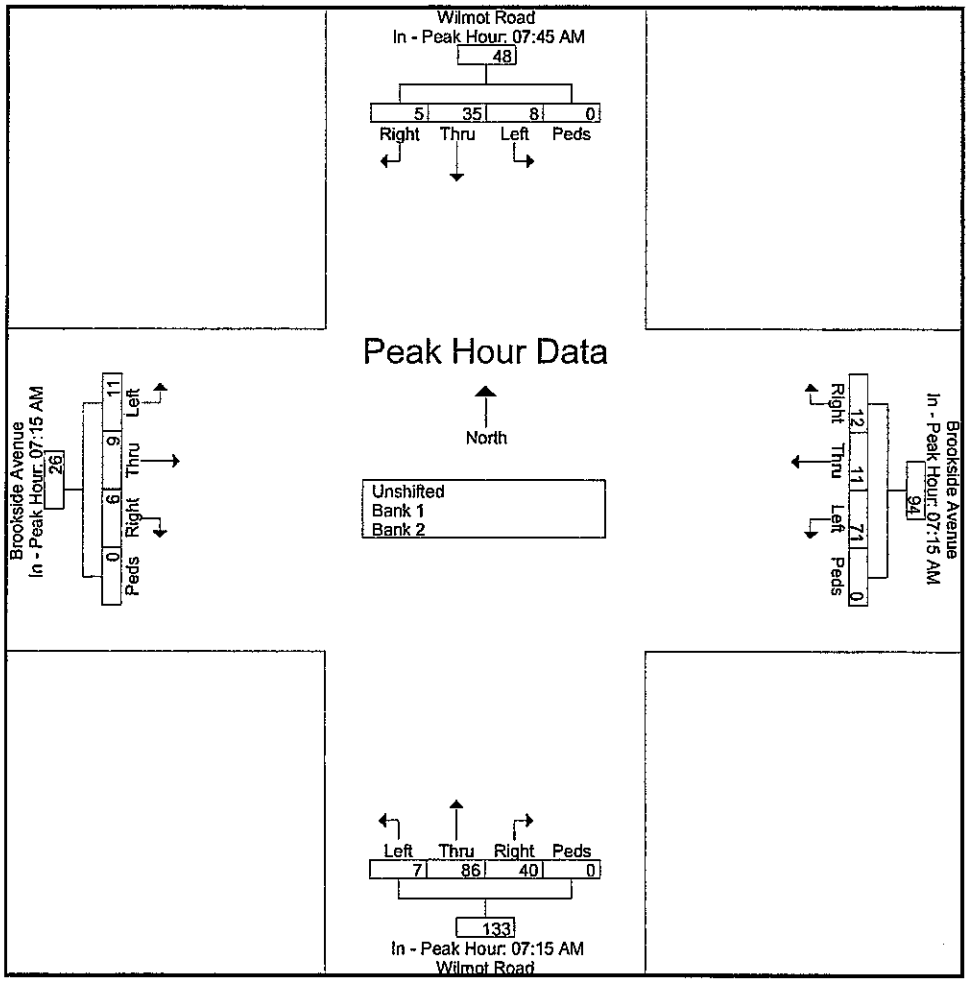
Kensington, Connecticut 06037
(860) 828-1693

File Name : 12301
Site Code : 12301
Start Date : 9/12/2013
Page No : 3

	Wilmot Road From North					Brookside Avenue From East					Wilmot Road From South					Brookside Avenue 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					07:15 AM					07:15 AM					07:15 AM					
+0 mins.	1	10	2	0	13	4	2	23	0	29	16	12	4	0	32	1	2	1	0	4	
+15 mins.	0	6	1	0	7	3	3	9	0	15	10	27	0	0	37	3	2	3	0	8	
+30 mins.	3	10	0	0	13	4	4	16	0	24	3	27	1	0	31	1	3	3	0	7	
+45 mins.	1	9	5	0	15	1	2	23	0	26	11	20	2	0	33	1	2	4	0	7	
Total Volume	5	35	8	0	48	12	11	71	0	94	40	86	7	0	133	6	9	11	0	26	
% App. Total	10.4	72.9	16.7	0		12.8	11.7	75.5	0		30.1	64.7	5.3	0		23.1	34.6	42.3	0		
PHF	.417	.875	.400	.000	.800	.750	.688	.772	.000	.810	.625	.796	.438	.000	.899	.500	.750	.688	.000	.813	



Connecticut Counts LLC

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(860) 828-1693

Route 10 at Wintergreen Avenue
New Haven, Connecticut

File Name : 12300
Site Code : 12300
Start Date : 9/12/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

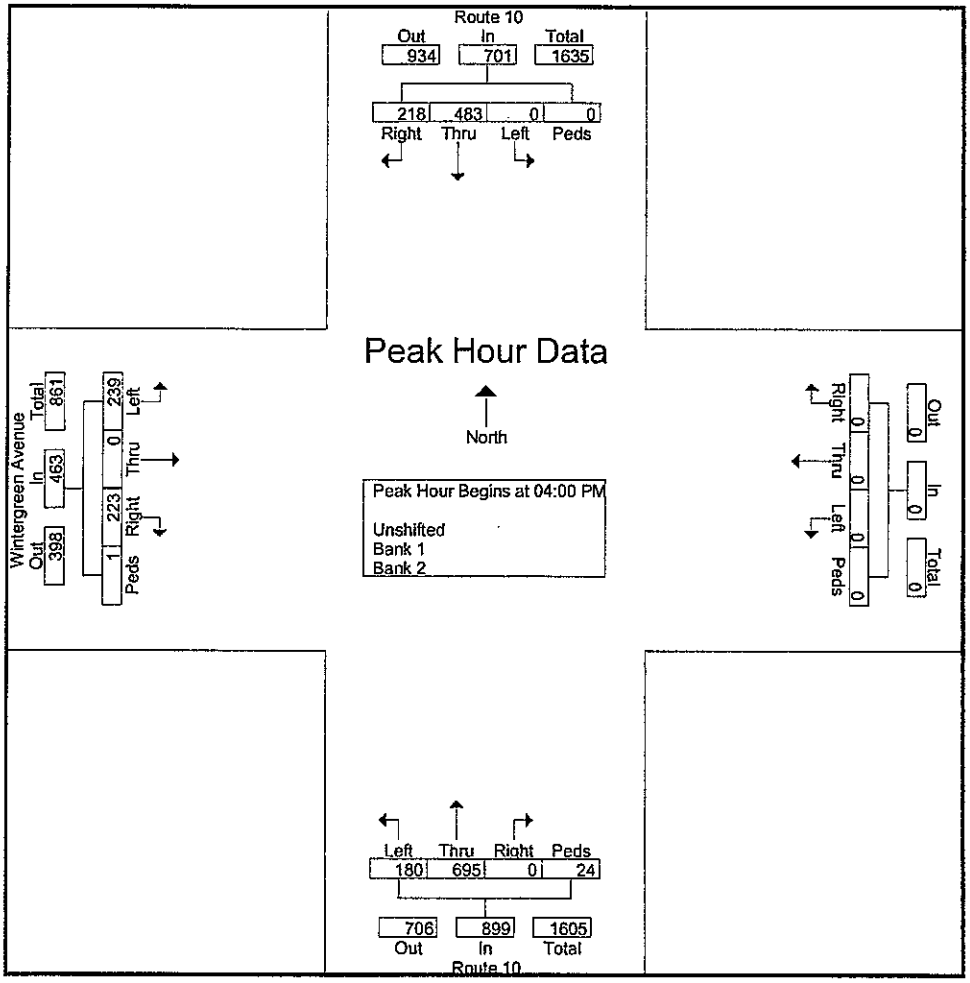
	Route 10 From North					From East					Route 10 From South					Wintergreen Avenue From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	44	108	0	0	152	0	0	0	0	0	0	148	45	4	197	58	0	54	0	112	461
04:15 PM	52	95	0	0	147	0	0	0	0	0	0	176	43	0	219	52	0	56	0	108	474
04:30 PM	63	135	0	0	198	0	0	0	0	0	0	173	43	4	220	46	0	53	0	99	517
04:45 PM	59	145	0	0	204	0	0	0	0	0	0	198	49	16	263	67	0	76	1	144	611
Total	218	483	0	0	701	0	0	0	0	0	0	695	180	24	899	223	0	239	1	463	2063
05:00 PM	71	153	0	0	224	0	0	0	0	0	0	186	51	3	240	87	0	96	0	183	647
05:15 PM	45	127	0	1	173	0	0	0	0	0	0	194	52	3	249	43	2	66	1	112	534
05:30 PM	55	100	0	0	155	0	0	0	0	0	0	160	45	16	221	33	0	48	1	82	458
05:45 PM	54	100	0	0	154	0	0	0	0	0	0	178	41	1	220	42	0	57	1	100	474
Total	225	480	0	1	706	0	0	0	0	0	0	718	189	23	930	205	2	267	3	477	2113
Grand Total	443	963	0	1	1407	0	0	0	0	0	0	1413	369	47	1829	428	2	506	4	940	4176
Apprch %	31.5	68.4	0	0.1		0	0	0	0		0	77.3	20.2	2.6		45.5	0.2	53.8	0.4		
Total %	10.6	23.1	0	0	33.7	0	0	0	0	0	0	33.8	8.8	1.1	43.8	10.2	0	12.1	0.1	22.5	
Unshifted	427	952	0	1	1380	0	0	0	0	0	0	1381									
% Unshifted	96.4	98.9	0	100	98.1	0	0	0	0	0	0	97.7	96.5	100	97.5	90.9	100	96.2	100	93.8	96.9
Bank 1	16	3	0	0	19	0	0	0	0	0	0	21	13	0	34	38	0	18	0	56	109
% Bank 1	3.6	0.3	0	0	1.4	0	0	0	0	0	0	1.5	3.5	0	1.9	8.9	0	3.6	0	6	2.6
Bank 2	0	8	0	0	8	0	0	0	0	0	0	11	0	0	11	1	0	1	0	2	21
% Bank 2	0	0.8	0	0	0.6	0	0	0	0	0	0	0.8	0	0	0.6	0.2	0	0.2	0	0.2	0.5

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 12300
Site Code : 12300
Start Date : 9/12/2013
Page No : 2

	Route 10 From North					From East					Route 10 From South					Wintergreen Avenue 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 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	44	108	0	0	152	0	0	0	0	0	0	148	45	4	197	58	0	54	0	112	461
04:15 PM	52	95	0	0	147	0	0	0	0	0	0	176	43	0	219	52	0	56	0	108	474
04:30 PM	63	135	0	0	198	0	0	0	0	0	0	173	43	4	220	46	0	53	0	99	517
04:45 PM	59	145	0	0	204	0	0	0	0	0	0	198	49	16	263	67	0	76	1	144	611
Total Volume	218	483	0	0	701	0	0	0	0	0	0	695	180	24	899	223	0	239	1	463	2063
% App. Total	31.1	68.9	0	0		0	0	0	0		0	77.3	20	2.7		48.2	0	51.6	0.2		
PHF	.865	.833	.000	.000	.859	.000	.000	.000	.000	.000	.000	.878	.918	.375	.855	.832	.000	.786	.250	.804	.844

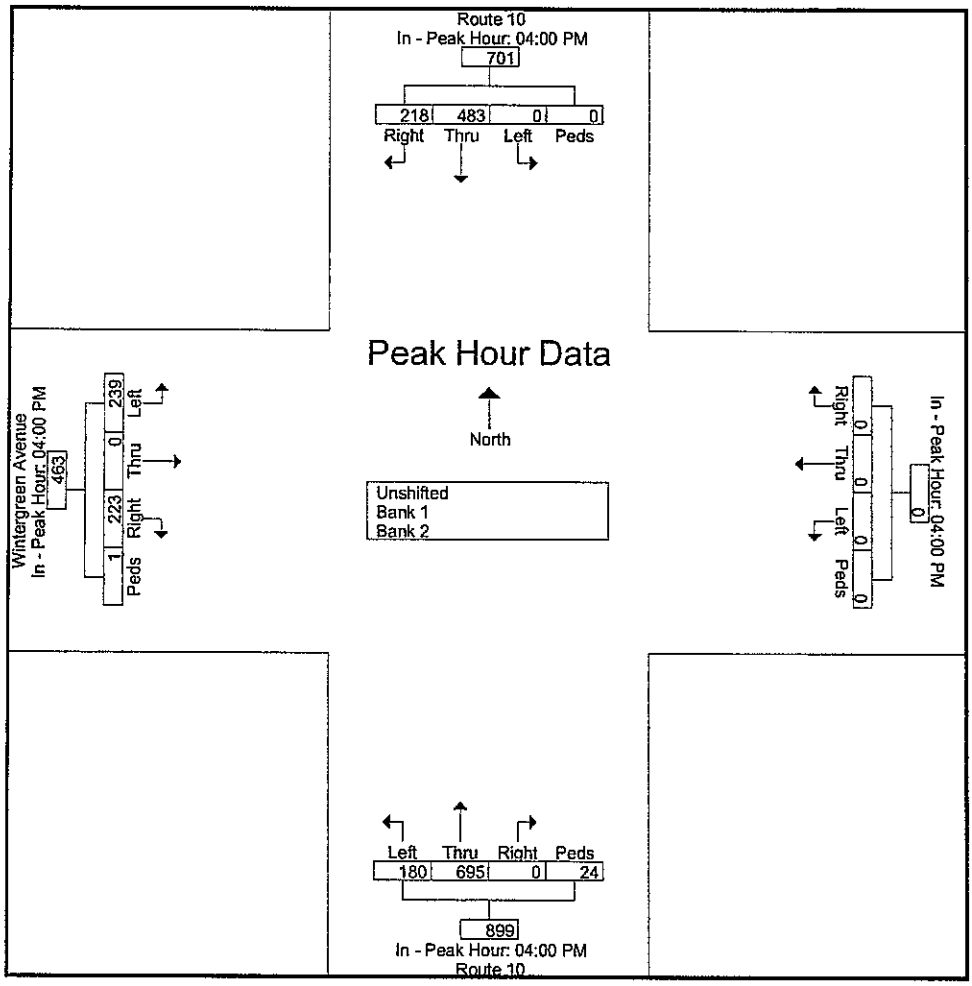


Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 12300
Site Code : 12300
Start Date : 9/12/2013
Page No : 3

	Route 10 From North					From East					Route 10 From South					Wintergreen Avenue 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 04:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:00 PM					04:00 PM					04:00 PM					04:00 PM					
+0 mins.	44	108	0	0	152	0	0	0	0	0	0	148	45	4	197	58	0	54	0	112	
+15 mins.	52	95	0	0	147	0	0	0	0	0	0	176	43	0	219	52	0	56	0	108	
+30 mins.	63	135	0	0	198	0	0	0	0	0	0	173	43	4	220	46	0	53	0	99	
+45 mins.	59	145	0	0	204	0	0	0	0	0	0	198	49	16	263	67	0	76	1	144	
Total Volume	218	483	0	0	701	0	0	0	0	0	0	695	180	24	899	223	0	239	1	463	
% App. Total	31.1	68.9	0	0		0	0	0	0		0	77.3	20	2.7		48.2	0	51.6	0.2		
PHF	.865	.833	.000	.000	.859	.000	.000	.000	.000	.000	.000	.878	.918	.375	.855	.832	.000	.786	.250	.804	



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Route 10 at Wintergreen Avenue
New Haven, Connecticut

File Name : 12299
Site Code : 12299
Start Date : 9/12/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

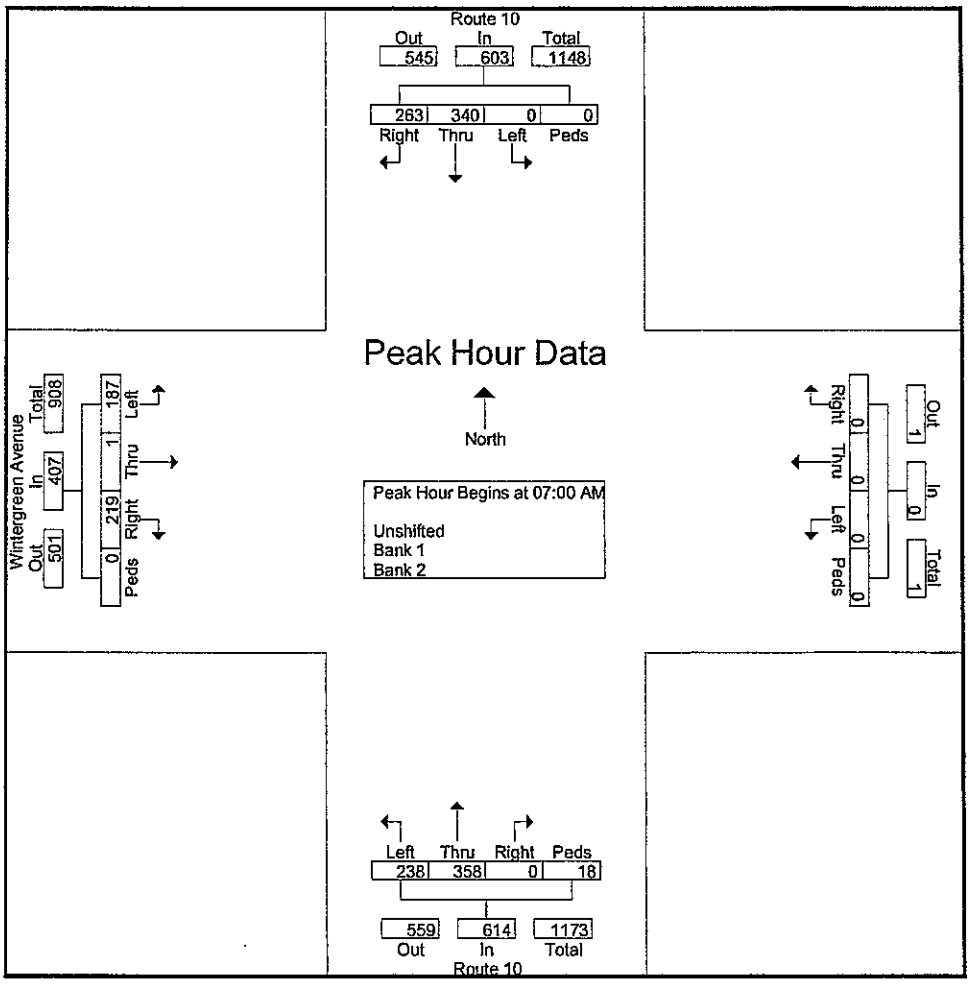
	Route 10 From North					From East					Route 10 From South					Wintergreen Avenue From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
07:00 AM	93	84	0	0	177	0	0	0	0	0	0	84	80	7	171	52	0	20	0	72	420
07:15 AM	69	107	0	0	176	0	0	0	0	0	0	121	69	10	200	66	0	61	0	127	503
07:30 AM	51	85	0	0	136	0	0	0	0	0	0	79	47	0	126	52	1	56	0	109	371
07:45 AM	50	64	0	0	114	0	0	0	0	0	0	74	42	1	117	49	0	50	0	99	330
Total	263	340	0	0	603	0	0	0	0	0	0	358	238	18	614	219	1	187	0	407	1624
08:00 AM	55	60	0	0	115	0	0	0	0	0	0	59	40	0	99	37	3	36	0	76	290
08:15 AM	103	84	0	0	187	0	0	0	0	0	0	94	53	9	156	36	0	41	0	77	420
08:30 AM	84	95	0	0	179	0	0	0	0	0	0	79	81	2	162	41	0	39	0	80	421
08:45 AM	53	113	0	0	166	0	0	0	0	0	0	74	41	4	119	48	0	79	0	127	412
Total	295	352	0	0	647	0	0	0	0	0	0	306	215	15	536	162	3	195	0	360	1543
Grand Total	558	692	0	0	1250	0	0	0	0	0	0	664	453	33	1150	381	4	382	0	767	3167
Apprch %	44.6	55.4	0	0		0	0	0	0		0	57.7	39.4	2.9		49.7	0.5	49.8	0		
Total %	17.6	21.9	0	0	39.5	0	0	0	0	0	0	21	14.3	1	36.3	12	0.1	12.1	0	24.2	
Unshifted	545	649	0	0	1194	0	0	0	0	0	0	627	433	33	1093	342	4	350	0	696	2983
% Unshifted																					
Bank 1	8	8	0	0	16	0	0	0	0	0	0	9	5	0	14	28	0	26	0	54	84
% Bank 1	1.4	1.2	0	0	1.3	0	0	0	0	0	0	1.4	1.1	0	1.2	7.3	0	6.8	0	7	2.7
Bank 2	5	35	0	0	40	0	0	0	0	0	0	28	15	0	43	11	0	6	0	17	100
% Bank 2	0.9	5.1	0	0	3.2	0	0	0	0	0	0	4.2	3.3	0	3.7	2.9	0	1.6	0	2.2	3.2

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 12299
Site Code : 12299
Start Date : 9/12/2013
Page No : 2

	Route 10 From North					From East					Route 10 From South					Wintergreen Avenue 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 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	93	84	0	0	177	0	0	0	0	0	0	84	80	7	171	52	0	20	0	72	420
07:15 AM	69	107	0	0	176	0	0	0	0	0	0	121	69	10	200	66	0	61	0	127	503
07:30 AM	51	85	0	0	136	0	0	0	0	0	0	79	47	0	126	52	1	56	0	109	371
07:45 AM	50	64	0	0	114	0	0	0	0	0	0	74	42	1	117	49	0	50	0	99	330
Total Volume	263	340	0	0	603	0	0	0	0	0	0	358	238	18	614	219	1	187	0	407	1624
% App. Total	43.6	56.4	0	0		0	0	0	0		0	58.3	38.8	2.9		53.8	0.2	45.9	0		
PHF	.707	.794	.000	.000	.852	.000	.000	.000	.000	.000	.000	.740	.744	.450	.768	.830	.250	.766	.000	.801	.807

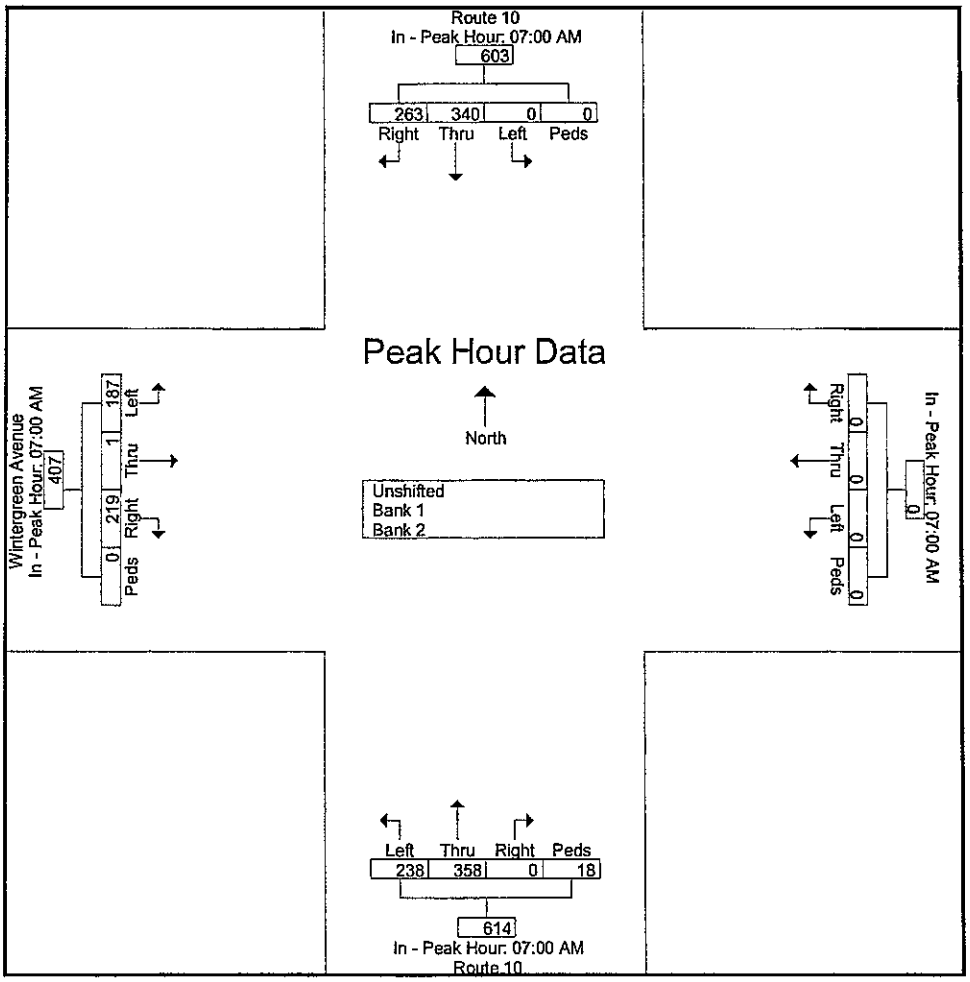


Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 12299
Site Code : 12299
Start Date : 9/12/2013
Page No : 3

	Route 10 From North					From East					Route 10 From South					Wintergreen Avenue 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 07:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:00 AM					07:00 AM					07:00 AM					07:00 AM					
+0 mins.	93	84	0	0	177	0	0	0	0	0	0	84	80	7	171	52	0	20	0	72	
+15 mins.	69	107	0	0	176	0	0	0	0	0	0	121	69	10	200	66	0	61	0	127	
+30 mins.	51	85	0	0	136	0	0	0	0	0	0	79	47	0	126	52	1	56	0	109	
+45 mins.	50	64	0	0	114	0	0	0	0	0	0	74	42	1	117	49	0	50	0	99	
Total Volume	263	340	0	0	603	0	0	0	0	0	0	358	238	18	614	219	1	187	0	407	
% App. Total	43.6	56.4	0	0		0	0	0	0		0	58.3	38.8	2.9		53.8	0.2	45.9	0		
PHF	.707	.794	.000	.000	.852	.000	.000	.000	.000	.000	.000	.740	.744	.450	.768	.830	.250	.766	.000	.801	



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Woodin Street at Pine Rock Avenue
Hamden, Connecticut

File Name : 12481
Site Code : 12481
Start Date : 11/20/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

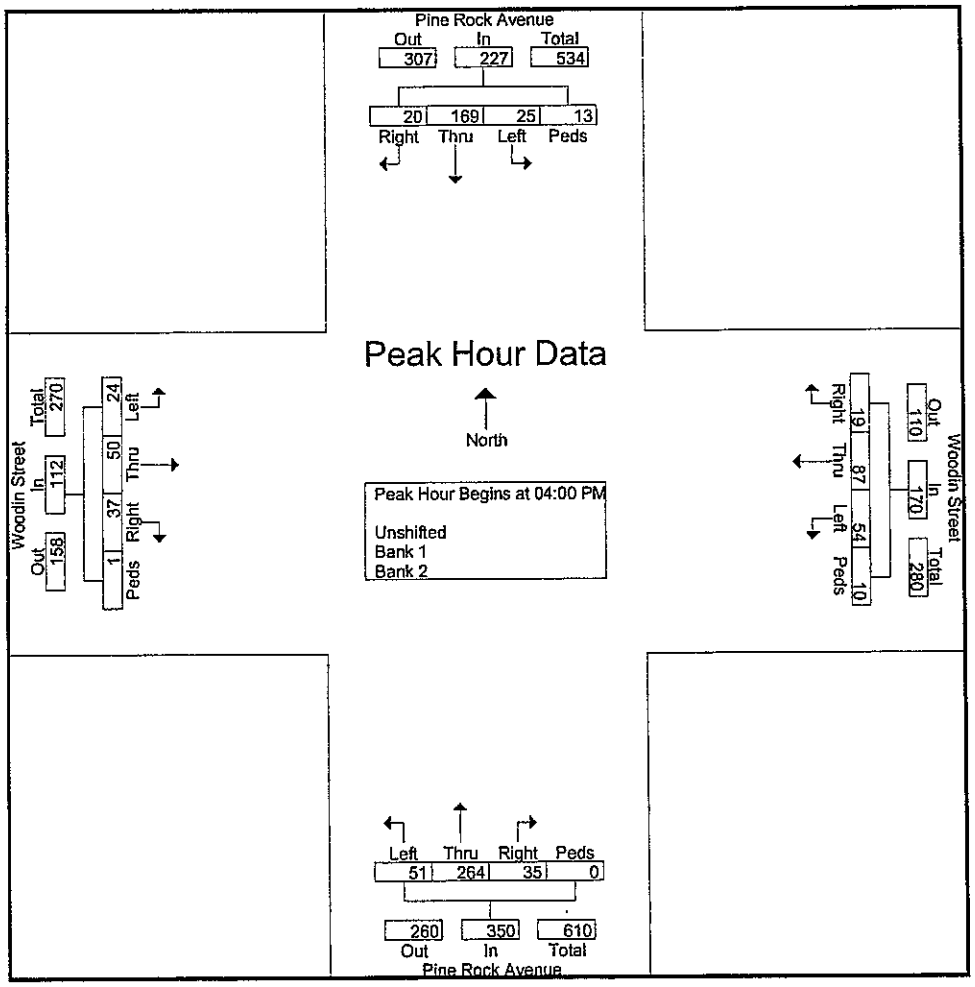
	Pine Rock Avenue From North					Woodin Street From East					Pine Rock Avenue From South					Woodin Street From West					
Start Time	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Right	Thru	Left	Peds	App Total	Int Total
04:00 PM	4	45	7	3	59	3	29	16	2	50	7	62	17	0	86	9	16	12	0	37	232
04:15 PM	3	46	9	5	63	7	15	10	4	36	9	69	11	0	89	8	17	4	0	29	217
04:30 PM	7	53	3	3	66	6	20	11	0	37	7	67	9	0	83	9	4	3	1	17	203
04:45 PM	6	25	6	2	39	3	23	17	4	47	12	66	14	0	92	11	13	5	0	29	207
Total	20	169	25	13	227	19	87	54	10	170	35	264	51	0	350	37	50	24	1	112	859
05:00 PM	5	27	3	0	35	8	20	7	0	35	9	73	13	0	95	10	10	7	0	27	192
05:15 PM	15	23	6	1	45	6	22	8	0	36	9	46	10	0	65	6	16	3	0	25	171
05:30 PM	5	34	4	2	45	4	18	12	1	35	17	43	9	0	69	7	15	4	0	26	175
05:45 PM	2	43	3	2	50	2	16	15	0	33	12	41	12	0	65	6	8	3	0	17	165
Total	27	127	16	5	175	20	76	42	1	139	47	203	44	0	294	29	49	17	0	95	703
Grand Total	47	296	41	18	402	39	163	96	11	309	82	467	95	0	644	66	99	41	1	207	1562
Apprch %	11.7	73.6	10.2	4.5		12.6	52.8	31.1	3.6		12.7	72.5	14.8	0		31.9	47.8	19.8	0.5		
Total %	3	19	2.6	1.2	25.7	2.5	10.4	6.1	0.7	19.8	5.2	29.9	6.1	0	41.2	4.2	6.3	2.6	0.1	13.3	
Unshifted	47	296	41	18	402	39	163	96	11	309	82	467	95	0	644	66	99	41	1	207	1562
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	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 : 12481
Site Code : 12481
Start Date : 11/20/2013
Page No : 2

	Pine Rock Avenue From North					Woodin Street From East					Pine Rock Avenue From South					Woodin 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	4	45	7	3	59	3	29	16	2	50	7	62	17	0	86	9	16	12	0	37	232
04:15 PM	3	46	9	5	63	7	15	10	4	36	9	69	11	0	89	8	17	4	0	29	217
04:30 PM	7	53	3	3	66	6	20	11	0	37	7	67	9	0	83	9	4	3	1	17	203
04:45 PM	6	25	6	2	39	3	23	17	4	47	12	66	14	0	92	11	13	5	0	29	207
Total Volume	20	169	25	13	227	19	87	54	10	170	35	264	51	0	350	37	50	24	1	112	859
% App. Total	8.8	74.4	11	5.7		11.2	51.2	31.8	5.9		10	75.4	14.6	0		33	44.6	21.4	0.9		
PHF	.714	.797	.694	.650	.860	.679	.750	.794	.625	.850	.729	.957	.750	.000	.951	.841	.735	.500	.250	.757	.926

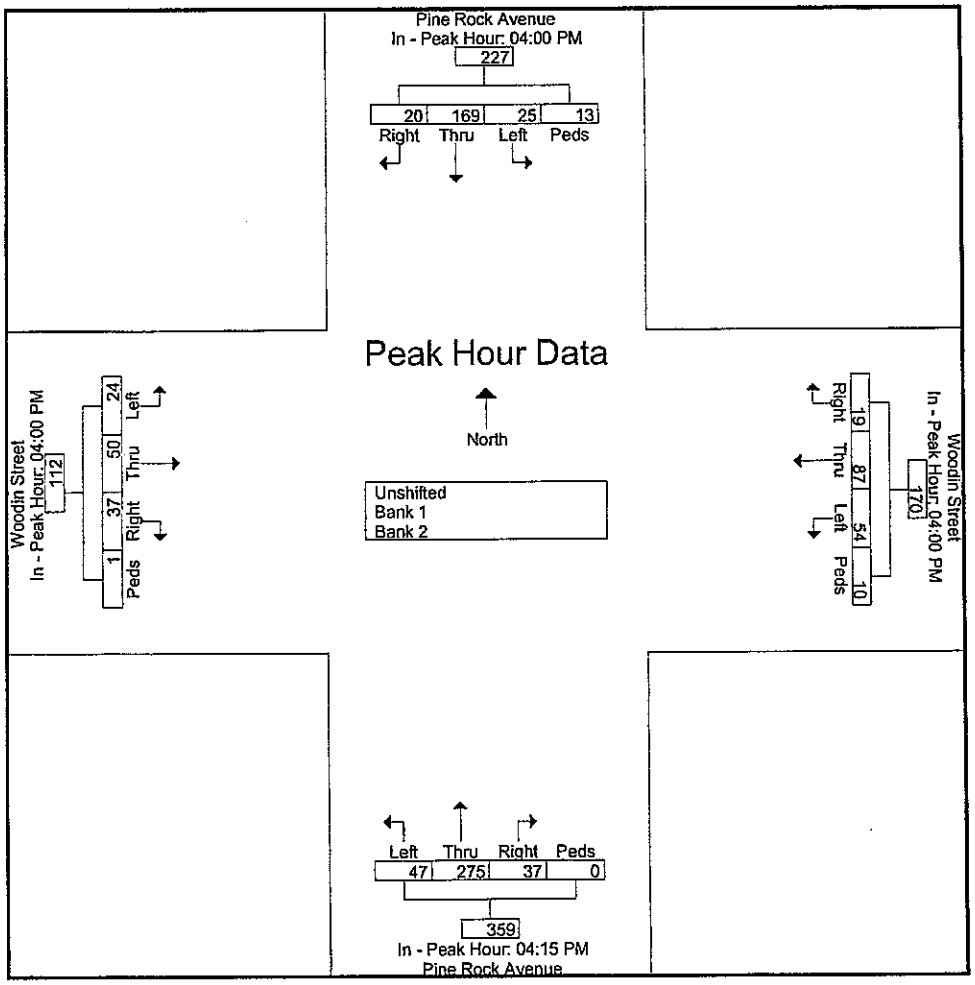


Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 12481
Site Code : 12481
Start Date : 11/20/2013
Page No : 3

	Pine Rock Avenue From North					Woodin Street From East					Pine Rock Avenue From South					Woodin 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	04:00 PM					04:00 PM					04:15 PM					04:00 PM					
+0 mins.	4	45	7	3	59	3	29	16	2	50	9	69	11	0	89	9	16	12	0	37	
+15 mins.	3	46	9	5	63	7	15	10	4	36	7	67	9	0	83	8	17	4	0	29	
+30 mins.	7	53	3	3	66	6	20	11	0	37	12	66	14	0	92	9	4	3	1	17	
+45 mins.	6	25	6	2	39	3	23	17	4	47	9	73	13	0	95	11	13	5	0	29	
Total Volume	20	169	25	13	227	19	87	54	10	170	37	275	47	0	359	37	50	24	1	112	
% App. Total	8.8	74.4	11	5.7		11.2	51.2	31.8	5.9		10.3	76.6	13.1	0		33	44.6	21.4	0.9		
PHF	.714	.797	.694	.650	.860	.679	.750	.794	.625	.850	.771	.942	.839	.000	.945	.841	.735	.500	.250	.757	



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Woodin Street at Pine Rock Avenue
Hamden, Connecticut

File Name : 12480
Site Code : 12480
Start Date : 11/21/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

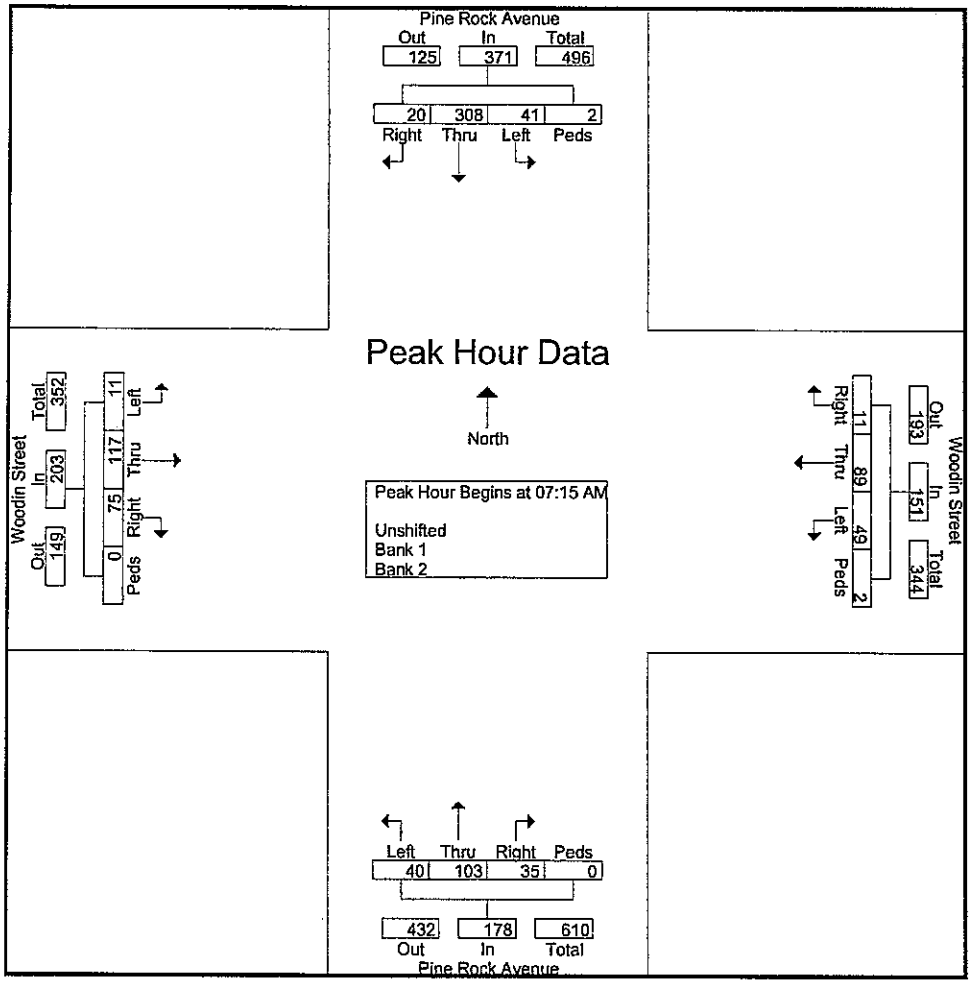
	Pine Rock Avenue From North					Woodin Street From East					Pine Rock Avenue From South					Woodin Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	47	1	1	56	1	9	10	0	20	11	26	2	0	39	16	12	3	0	31	146
07:15 AM	1	71	4	2	78	4	7	12	0	23	8	17	8	0	33	15	19	4	0	38	172
07:30 AM	3	80	8	0	91	2	30	16	0	48	7	33	14	0	54	16	23	2	0	41	234
07:45 AM	13	93	22	0	128	3	33	12	2	50	10	27	12	0	49	20	47	4	0	71	298
Total	24	291	35	3	353	10	79	50	2	141	36	103	36	0	175	67	101	13	0	181	850
08:00 AM	3	64	7	0	74	2	19	9	0	30	10	26	6	0	42	24	28	1	0	53	199
08:15 AM	0	60	8	0	68	2	10	6	1	19	6	23	2	0	31	13	13	6	0	32	150
08:30 AM	2	44	6	0	52	3	10	6	1	20	4	14	2	0	20	8	15	1	0	24	116
08:45 AM	2	58	7	2	69	1	12	8	0	21	1	22	5	0	28	8	9	1	0	18	136
Total	7	226	28	2	263	8	51	29	2	90	21	85	15	0	121	53	65	9	0	127	601
Grand Total	31	517	63	5	616	18	130	79	4	231	57	188	51	0	296	120	166	22	0	308	1451
Apprch %	5	83.9	10.2	0.8		7.8	56.3	34.2	1.7		19.3	63.5	17.2	0		39	53.9	7.1	0		
Total %	2.1	35.6	4.3	0.3	42.5	1.2	9	5.4	0.3	15.9	3.9	13	3.5	0	20.4	8.3	11.4	1.5	0	21.2	
Unshifted	31	517	63	5	616	18	130	79	4	231	57	188	51	0	296	120	166	22	0	308	1451
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bank 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 2	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 : 12480
Site Code : 12480
Start Date : 11/21/2013
Page No : 2

	Pine Rock Avenue From North					Woodin Street From East					Pine Rock Avenue From South					Woodin 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 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	71	4	2	78	4	7	12	0	23	8	17	8	0	33	15	19	4	0	38	172
07:30 AM	3	80	8	0	91	2	30	16	0	48	7	33	14	0	54	16	23	2	0	41	234
07:45 AM	13	93	22	0	128	3	33	12	2	50	10	27	12	0	49	20	47	4	0	71	298
08:00 AM	3	64	7	0	74	2	19	9	0	30	10	26	6	0	42	24	28	1	0	53	199
Total Volume	20	308	41	2	371	11	89	49	2	151	35	103	40	0	178	75	117	11	0	203	903
% App. Total	5.4	83	11.1	0.5		7.3	58.9	32.5	1.3		19.7	57.9	22.5	0		36.9	57.6	5.4	0		
PHF	.385	.828	.466	.250	.725	.688	.674	.766	.250	.755	.875	.780	.714	.000	.824	.781	.622	.688	.000	.715	.758

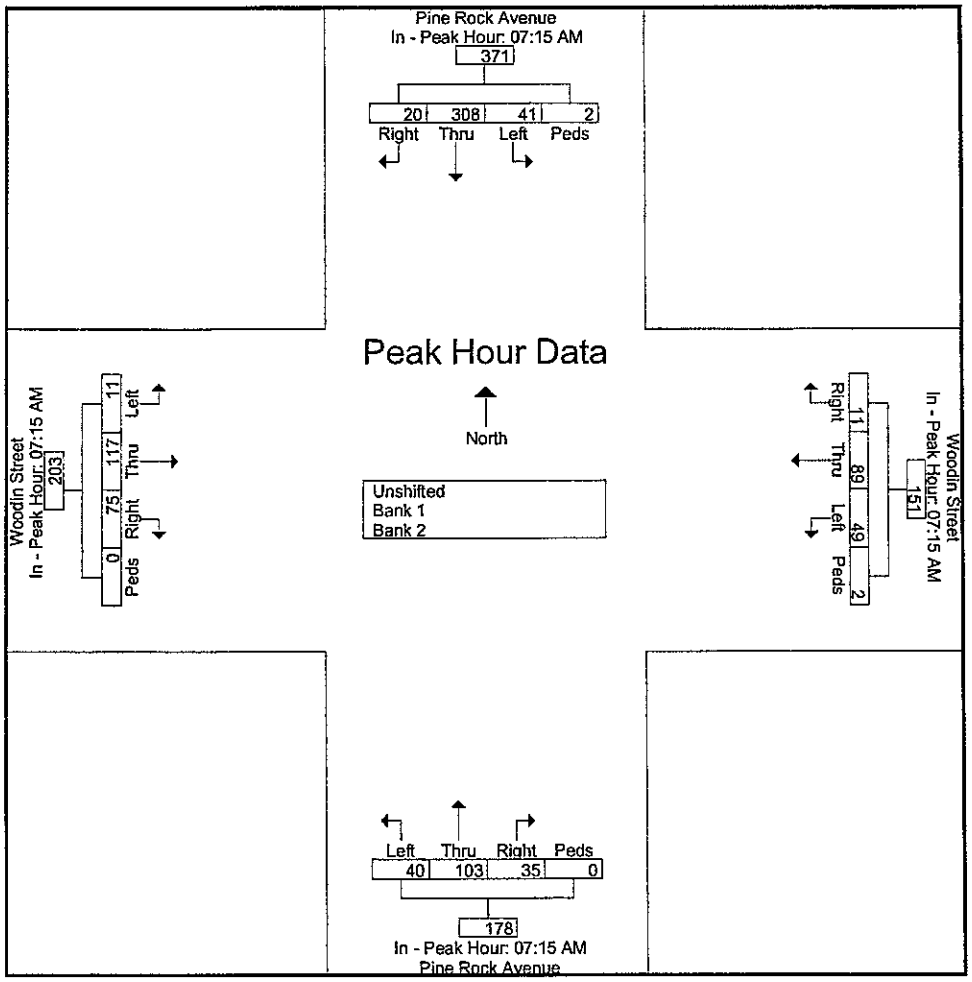


Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

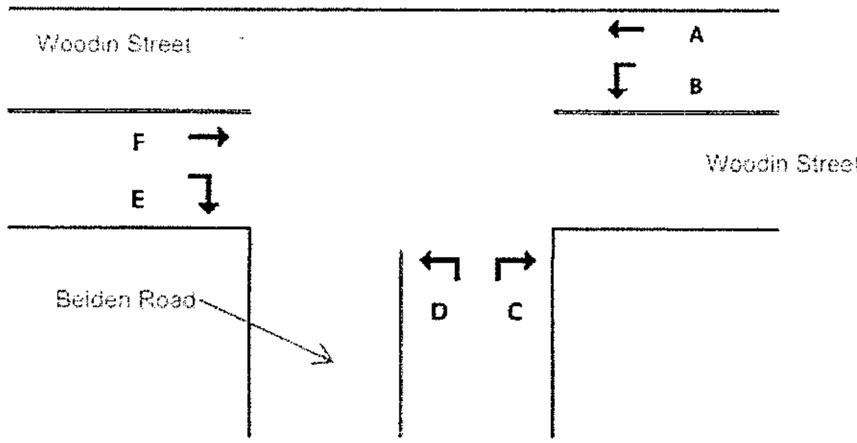
File Name : 12480
Site Code : 12480
Start Date : 11/21/2013
Page No : 3

	Pine Rock Avenue From North					Woodin Street From East					Pine Rock Avenue From South					Woodin 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 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Each Approach Begins at:																					
	07:15 AM					07:15 AM					07:15 AM					07:15 AM					
+0 mins.	1	71	4	2	78	4	7	12	0	23	8	17	8	0	33	15	19	4	0	38	
+15 mins.	3	80	8	0	91	2	30	16	0	48	7	33	14	0	54	16	23	2	0	41	
+30 mins.	13	93	22	0	128	3	33	12	2	50	10	27	12	0	49	20	47	4	0	71	
+45 mins.	3	64	7	0	74	2	19	9	0	30	10	26	6	0	42	24	28	1	0	53	
Total Volume	20	308	41	2	371	11	89	49	2	151	35	103	40	0	178	75	117	11	0	203	
% App. Total	5.4	83	11.1	0.5		7.3	58.9	32.5	1.3		19.7	57.9	22.5	0		36.9	57.6	5.4	0		
PHF	.385	.828	.466	.250	.725	.688	.674	.766	.250	.755	.875	.780	.714	.000	.824	.781	.622	.688	.000	.715	



TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 4:00 - 5:00
OBSERVER: Jon Bossi



A: 49 CARS, 0 TRUCKS, 1 BUS

B: 5 CARS, 0 TRUCKS, 0 BUSES

C: 4 CARS, 1 TRUCK, 0 BUSES

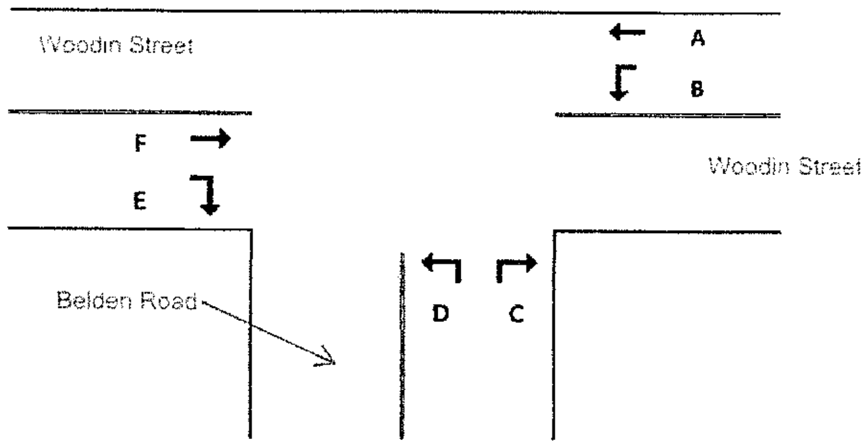
D: 7 CARS, 0 TRUCKS, 0 BUSES

E: 21 CARS, 0 TRUCKS, 0 BUSES

F: 72 CARS, 0 TRUCKS, 0 BUSES

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 4:00 - 4:15 PM
OBSERVER: Jon Bossi

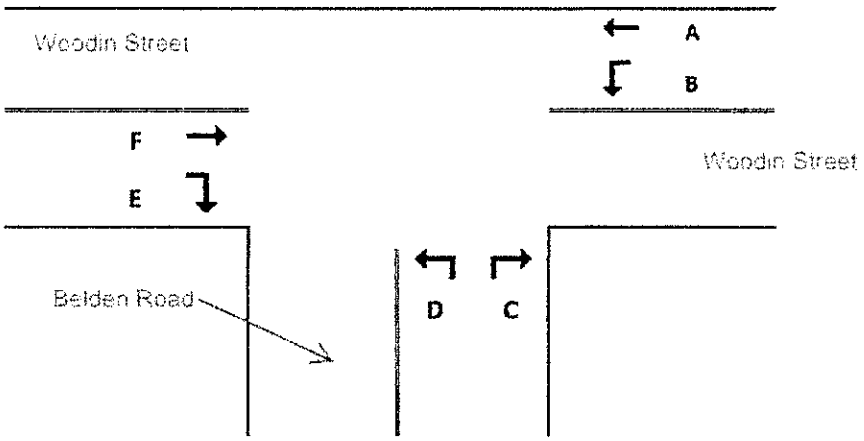


Movement	Cars	Trucks	Buses
A	11	0	0
B	1	0	0
C	1	0	0
D	0	0	0
E	2	0	1
F	17	0	0

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 4:15 - 4:30 pm
OBSERVER: Jon Bossi

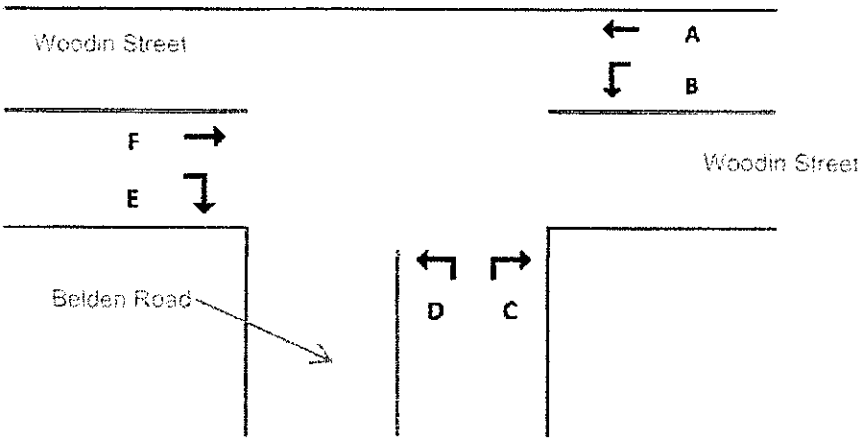


A:	𝍸 |||	8 CARS
		0 TRUCKS
	|	1 BUSES
B:		0 CARS
		0 TRUCKS
		0 BUSES
C:	|||	3 CARS
		1 TRUCKS
	|	0 BUSES
D:	||||	4 CARS
		0 TRUCKS
		0 BUSES
E:	𝍸 |||	8 CARS
		0 TRUCKS
		0 BUSES
F:	𝍸 𝍸 𝍸 𝍸 |	16 CARS
		0 TRUCKS
		0 BUSES

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 4:30 - 4:45
OBSERVER: JON BOSSI

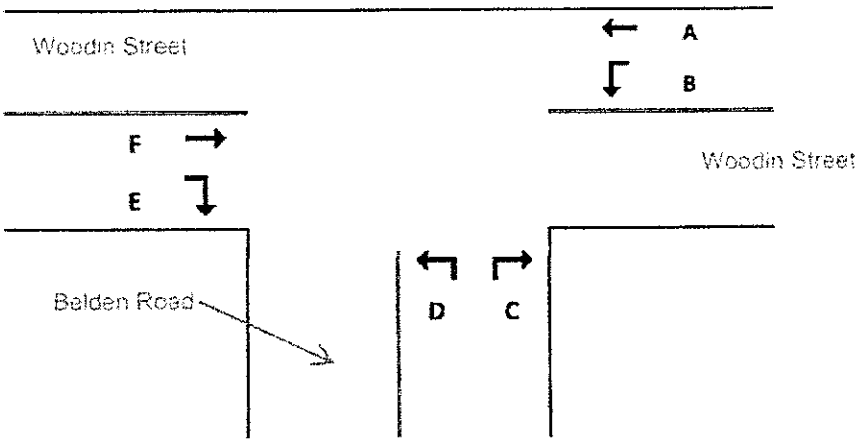


A: 卌 卌 |	11	CARS
	0	TRUCKS
	0	BUSES
B: |	1	CARS
	0	TRUCKS
	0	BUSES
C:	0	CARS
	0	TRUCKS
	0	BUSES
D: |	1	CARS
	0	TRUCKS
	0	BUSES
E: 卌	5	CARS
	0	TRUCKS
|	1	BUSES
F: 卌 卌 卌 ||||	19	CARS
	0	TRUCKS
~~EI~~	0	BUSES

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 4:45-5:00
OBSERVER: JON BOSSI

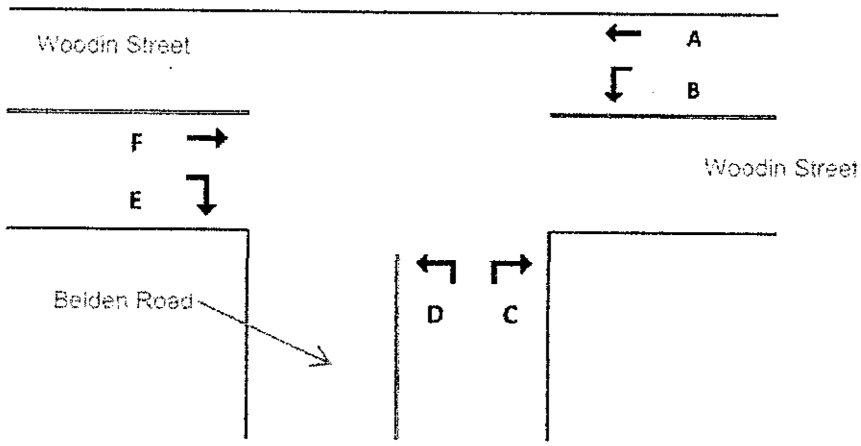


A: 𝍸 𝍸 𝍸 ||||	19 CARS	
	0 TRUCKS	
	0 BUSES	
B: |||	3 CARS	
	0 TRUCKS	
	0 BUSES	
C:	0 CARS	
	0 TRUCKS	
	0 BUSES	
D: ||	2 CARS	
	0 TRUCKS	
	0 BUSES	
E: 𝍸 |	6 CARS	
	0 TRUCKS	
	0 BUSES	
F: 𝍸 𝍸 𝍸 𝍸	20 CARS	
	0 TRUCKS	
	0 BUSES	

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 7:15 - 8:15
OBSERVER:

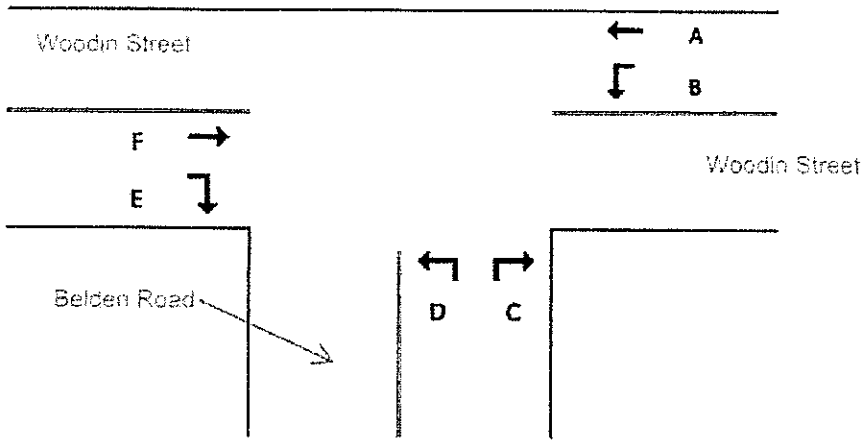


Movement	Tally	Total
A:	(tally marks)	80 CARS
		0 TRUCKS
	(tally marks)	13 BUSES
B:	/	1 CAR
		0 TRUCKS
	/	1 BUS
C:	///	3 CARS
		0 TRUCKS
	/	1 BUS
D:	(tally marks)	13 CARS
	/	1 TRUCK
	/	1 BUS
E:	(tally marks)	5 CARS
		0 TRUCKS
	/	1 BUS
F:	(tally marks)	88 CARS
	//	2 TRUCKS
	(tally marks)	9 BUSES

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 7:15 - 7:30AM
OBSERVER: JON BOSSI

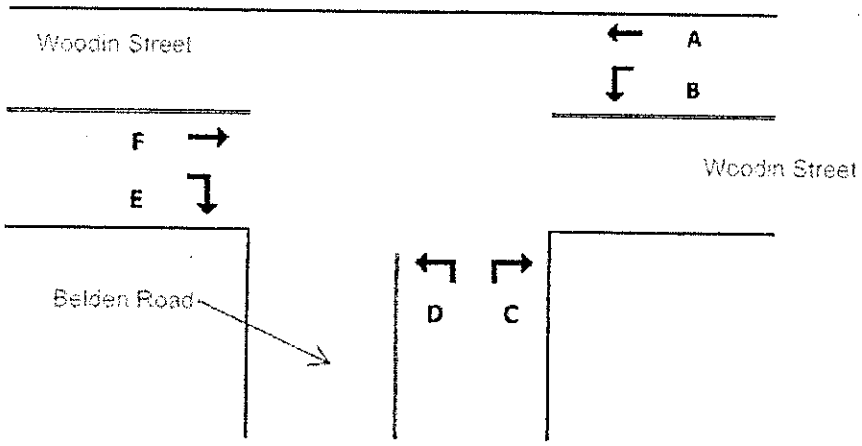


C	A: 卌 |||	8 CARS
T		0 TRUCKS
B	|||	3 BUSES
	B:	0 CARS
		0 TRUCKS
		0 BUSES
	C: |	1 CAR
		0 TRUCKS
		0 BUSES
	D: ||	2 CARS
	|	1 TRUCK
		0 BUSES
	E: |	1 CAR
		0 TRUCKS
		0 BUSES
	F: ||||	4 CARS
	|	1 TRUCK
	||	2 BUSES

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 7:30 - 7:45AM
OBSERVER: JON BOSSI

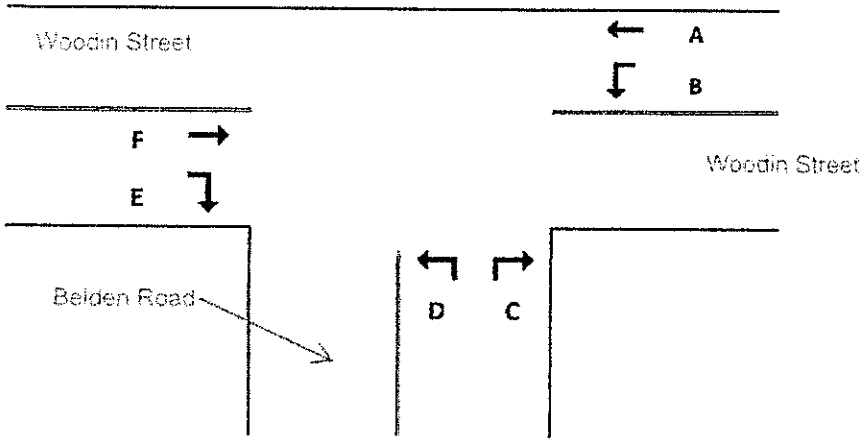


C	A: 𝍸 𝍸 𝍸	10 CARS
T		0 TRUCKS
B	III	3 BUSES
	B:	0 CARS
		0 TRUCKS
	I	1 BUS
	C:	0 CARS
		0 TRUCKS
		0 BUSES
	D: 𝍸 I	6 CARS
		0 TRUCKS
		0 BUSES
	E:	0 CARS
		0 TRUCKS
		0 BUSES
	F: 𝍸 𝍸 𝍸 𝍸	20 CARS
		0 TRUCKS
	I	1 BUS

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden
STATE: CT
DATE: May 28, 2014
TIME: 7:45 - 8:00 AM
OBSERVER: JON BOSSI

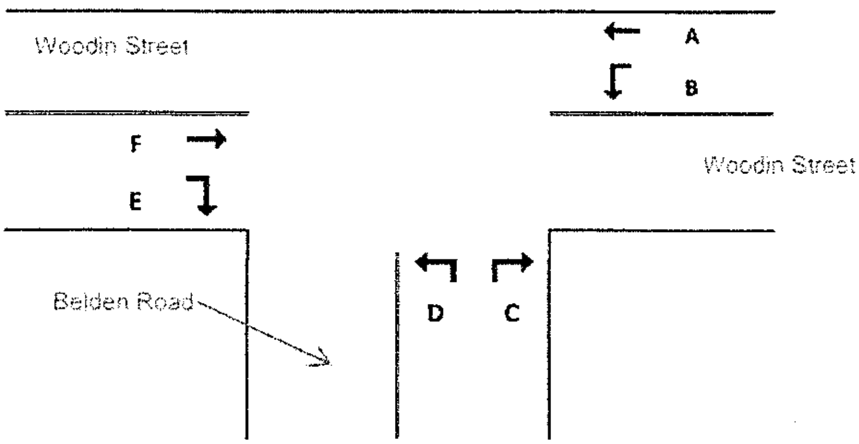


C	A: 𝍸 𝍸 𝍸 𝍸 𝍸 ||||	19 CARS
T		0 TRUCKS
B	|||	3 BUSES
	B:	0 CARS
		0 TRUCKS
		0 BUSES
	C: |	1 CAR
		0 TRUCKS
	|	1 BUS
	D: ||||	4 CARS
		0 TRUCKS
	|	1 BUS
	E: ||	2 CARS
		0 TRUCKS
	|	1 BUS
	F: 𝍸 𝍸 𝍸 𝍸 𝍸 𝍸 |	26 CARS
		0 TRUCKS
	||||	4 BUSES

Tighe&Bond

TURNING MOVEMENT COUNT

INTERSECTION: Belden Road at Woodin Street
CITY: Hamden DATE: May 28, 2014 OBSERVER:
STATE: CT TIME: 8:00 - 8:15 AM JON BOSSI



C	A: 𝍸𝍸𝍸𝍸𝍸𝍸𝍸𝍸 III	43 CARS
T		0 TRUCKS
B	IIII	4 BUSES

B: I	1 CAR
	0 TRUCKS
	0 BUSES

C: I	1 CAR
	0 TRUCKS
	0 BUSES

D: I	1 CAR
	0 TRUCKS
	0 BUSES

E: II	2 CARS
	0 TRUCKS
	0 BUSES

F: 𝍸𝍸𝍸𝍸𝍸𝍸𝍸 III	38 CARS
I	1 TRUCK
II	2 BUSES

AUTOMATIC TRAFFIC COUNTS

Tighe&Bond

Wintergreen Ave South of Wilmot Road
New Haven, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3088
Station ID:

Latitude: 0' 0.000 Undefined

Start	09-Sep-13		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Northbound	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo
12:00 AM	*	*	*	*	*	*	*	*	27	24	26	32	22	24	25	27
01:00	*	*	*	*	*	*	*	*	18	24	31	22	20	16	23	21
02:00	*	*	*	*	*	*	*	*	10	14	21	17	28	30	20	20
03:00	*	*	*	*	*	*	*	*	3	5	26	17	23	10	17	11
04:00	*	*	*	*	*	*	*	*	2	3	5	8	7	9	5	7
05:00	*	*	*	*	*	*	*	*	9	13	6	5	5	3	7	7
06:00	*	*	*	*	*	*	*	*	38	33	19	22	6	12	21	22
07:00	*	*	*	*	*	*	*	*	128	96	58	42	20	17	69	52
08:00	*	*	*	*	*	*	*	*	160	148	83	82	36	45	93	92
09:00	*	*	*	*	*	*	*	*	144	151	78	69	54	54	92	91
10:00	*	*	*	*	*	*	113	120	88	120	117	92	115	74	108	102
11:00	*	*	*	*	*	*	107	117	80	95	112	159	88	94	97	116
12:00 PM	*	*	*	*	*	*	118	134	93	121	136	104	80	119	107	120
01:00	*	*	*	*	*	*	104	139	105	113	148	159	83	136	110	137
02:00	*	*	*	*	*	*	113	130	95	114	139	127	95	95	110	116
03:00	*	*	*	*	*	*	207	190	168	149	148	153	85	111	152	151
04:00	*	*	*	*	*	*	145	189	164	205	107	137	89	88	126	155
05:00	*	*	*	*	*	*	160	143	123	140	164	134	70	101	129	130
06:00	*	*	*	*	*	*	124	113	113	124	117	155	78	87	108	120
07:00	*	*	*	*	*	*	132	107	109	112	137	180	84	76	116	119
08:00	*	*	*	*	*	*	111	87	96	91	102	142	82	82	98	100
09:00	*	*	*	*	*	*	72	86	83	68	97	147	55	45	77	86
10:00	*	*	*	*	*	*	53	50	60	75	65	92	49	46	57	66
11:00	*	*	*	*	*	*	40	33	50	38	53	56	28	28	43	39
Lane	0	0	0	0	0	0	1599	1638	1966	2076	1995	2153	1302	1402	1810	1907
Day	0		0		0		3237		4042		4148		2704		3717	
AM Peak							10:00	10:00	08:00	09:00	10:00	11:00	10:00	11:00	10:00	11:00
Vol.							113	120	160	151	117	159	115	94	108	116
PM Peak							15:00	15:00	15:00	16:00	17:00	19:00	14:00	13:00	15:00	16:00
Vol.							207	190	168	205	164	180	95	136	152	155

Wintergreen Ave South of Wilmot Road
New Haven, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
_(860) 828-1693_

Site Code: 3088
Station ID:

Latitude: 0' 0.000 Undefined

Start	16-Sep-13		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Northbound	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo	Northbo	Southbo
12:00 AM	22	17	22	24	23	26	*	*	*	*	*	*	*	*	22	22
01:00	13	13	20	17	12	12	*	*	*	*	*	*	*	*	15	14
02:00	2	3	6	2	6	6	*	*	*	*	*	*	*	*	5	4
03:00	4	1	2	4	2	2	*	*	*	*	*	*	*	*	3	2
04:00	3	7	3	7	1	9	*	*	*	*	*	*	*	*	2	8
05:00	6	15	6	13	4	11	*	*	*	*	*	*	*	*	5	13
06:00	42	32	43	35	37	36	*	*	*	*	*	*	*	*	41	34
07:00	123	96	131	115	133	88	*	*	*	*	*	*	*	*	129	100
08:00	**161**	143	157	160	144	166	*	*	*	*	*	*	*	*	154	156
09:00	160	**166**	**176**	**169**	**186**	**169**	*	*	*	*	*	*	*	*	**174**	**168**
10:00	87	131	89	105	59	91	*	*	*	*	*	*	*	*	78	109
11:00	88	91	73	92	*	*	*	*	*	*	*	*	*	*	80	92
12:00 PM	96	129	104	121	*	*	*	*	*	*	*	*	*	*	100	125
01:00	104	97	122	135	*	*	*	*	*	*	*	*	*	*	113	116
02:00	99	114	126	109	*	*	*	*	*	*	*	*	*	*	112	112
03:00	**165**	152	**196**	179	*	*	*	*	*	*	*	*	*	*	**180**	166
04:00	140	**218**	167	**214**	*	*	*	*	*	*	*	*	*	*	154	**216**
05:00	145	148	191	171	*	*	*	*	*	*	*	*	*	*	168	160
06:00	116	110	126	121	*	*	*	*	*	*	*	*	*	*	121	116
07:00	77	86	91	82	*	*	*	*	*	*	*	*	*	*	84	84
08:00	98	76	94	83	*	*	*	*	*	*	*	*	*	*	96	80
09:00	64	62	72	68	*	*	*	*	*	*	*	*	*	*	68	65
10:00	54	40	50	42	*	*	*	*	*	*	*	*	*	*	52	41
11:00	48	43	27	22	*	*	*	*	*	*	*	*	*	*	38	32
Lane	1917	1990	2094	2090	607	616	0	0	0	0	0	0	0	0	1994	2035
Day	3907		4184		1223		0		0		0		0		4029	
AM Peak	08:00	09:00	09:00	09:00	09:00	09:00									09:00	09:00
Vol.	161	166	176	169	186	169									174	168
PM Peak	15:00	16:00	15:00	16:00											15:00	16:00
Vol.	165	218	196	214											180	216

Comb. Total	3907	4184	1223	3237	4042	4148	2704	7746

ADT ADT 4,044 AADT 4,044

Wintergreen Ave South of Wilmot Road
New Haven, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3088
Station ID:

Latitude: 0' 0.000 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	85th Percent	95th Percent
09/12/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	1	2	0	9	32	37	26	6	0	0	0	0	0	0	113	42	45
11:00	0	0	3	2	31	46	19	6	0	0	0	0	0	0	107	42	45
12 PM	0	1	3	13	25	39	24	9	2	2	0	0	0	0	118	43	47
13:00	0	3	1	3	19	42	33	3	0	0	0	0	0	0	104	42	45
14:00	0	1	0	5	25	48	26	7	1	0	0	0	0	0	113	43	46
15:00	0	1	2	11	58	88	36	11	0	0	0	0	0	0	207	42	45
16:00	0	0	0	10	18	59	49	9	0	0	0	0	0	0	145	43	46
17:00	0	1	0	4	40	69	37	8	1	0	0	0	0	0	160	42	46
18:00	0	0	0	2	31	51	30	4	2	2	2	0	0	0	124	43	46
19:00	0	1	0	5	34	66	20	5	1	0	0	0	0	0	132	41	45
20:00	0	2	2	13	45	34	11	3	1	0	0	0	0	0	111	40	44
21:00	0	1	1	12	26	25	4	3	0	0	0	0	0	0	72	39	44
22:00	0	0	2	6	22	13	6	3	1	0	0	0	0	0	53	41	46
23:00	1	0	1	4	9	17	5	3	0	0	0	0	0	0	40	42	46
Total	2	13	15	99	415	634	326	80	9	4	2	0	0	0	1599		
Percent	0.1%	0.8%	0.9%	6.2%	26.0%	39.6%	20.4%	5.0%	0.6%	0.3%	0.1%	0.0%	0.0%	0.0%			
AM Peak	10:00	10:00	11:00	10:00	10:00	11:00	10:00	10:00							10:00		
Vol.	1	2	3	9	32	46	26	6							113		
PM Peak	23:00	13:00	12:00	12:00	15:00	15:00	16:00	15:00	12:00	12:00	18:00				15:00		
Vol.	1	3	3	13	58	88	49	11	2	2	2				207		

Wintergreen Ave South of Wilmot Road
New Haven, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3088
Station ID:

Latitude: 0' 0.000 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	85th Percent	95th Percent
09/13/13	0	0	1	4	9	7	3	1	2	0	0	0	0	0	27	40	42
01:00	0	0	0	2	8	3	4	1	0	0	0	0	0	0	18	42	44
02:00	0	0	1	1	4	0	2	2	0	0	0	0	0	0	10	33	33
03:00	0	0	0	1	0	1	0	1	0	0	0	0	0	0	3	*	*
04:00	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	*	*
05:00	0	0	0	1	1	3	2	2	0	0	0	0	0	0	9	39	39
06:00	0	0	0	11	8	10	6	3	0	0	0	0	0	0	38	42	46
07:00	0	0	1	11	47	44	18	6	1	0	0	0	0	0	128	41	45
08:00	1	1	0	8	37	71	29	10	2	1	0	0	0	0	160	42	46
09:00	0	1	1	6	35	60	35	6	0	0	0	0	0	0	144	42	45
10:00	0	1	1	4	25	36	9	9	3	0	0	0	0	0	88	44	48
11:00	0	1	2	6	11	31	24	5	0	0	0	0	0	0	80	43	46
12 PM	0	1	0	4	24	40	19	5	0	0	0	0	0	0	93	42	46
13:00	0	1	2	6	25	45	21	4	0	1	0	0	0	0	105	42	44
14:00	0	1	5	6	18	28	29	7	1	0	0	0	0	0	95	43	46
15:00	0	2	2	15	32	69	36	11	1	0	0	0	0	0	168	43	46
16:00	0	0	0	4	23	94	37	5	1	0	0	0	0	0	164	42	45
17:00	0	1	1	7	24	55	29	5	1	0	0	0	0	0	123	42	45
18:00	0	1	2	4	25	59	17	5	0	0	0	0	0	0	113	41	45
19:00	1	0	1	13	34	36	16	7	1	0	0	0	0	0	109	42	46
20:00	0	0	1	6	37	41	7	3	0	1	0	0	0	0	96	39	43
21:00	0	0	0	5	21	34	18	4	0	1	0	0	0	0	83	42	45
22:00	0	0	0	3	22	19	11	4	1	0	0	0	0	0	60	43	47
23:00	0	0	1	5	12	22	9	1	0	0	0	0	0	0	50	41	44
Total	2	11	22	133	482	809	382	107	14	4	0	0	0	0	1966		
Percent	0.1%	0.6%	1.1%	6.8%	24.5%	41.1%	19.4%	5.4%	0.7%	0.2%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	11:00	06:00	07:00	08:00	09:00	08:00	10:00	08:00					08:00		
Vol.	1	1	2	11	47	71	35	10	3	1					160		
PM Peak	19:00	15:00	14:00	15:00	20:00	16:00	16:00	15:00	14:00	13:00					15:00		
Vol.	1	2	5	15	37	94	37	11	1	1					168		

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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	85th Percent	95th Percent
09/14/13	0	0	0	4	9	8	4	1	0	0	0	0	0	0	26	41	43
01:00	0	0	0	1	9	9	8	2	1	0	1	0	0	0	31	42	45
02:00	0	0	0	0	3	9	8	0	1	0	0	0	0	0	21	42	44
03:00	0	1	0	1	10	8	4	2	0	0	0	0	0	0	26	42	44
04:00	0	0	0	0	0	2	2	0	1	0	0	0	0	0	5	*	*
05:00	0	0	0	0	4	1	0	0	1	0	0	0	0	0	6	34	34
06:00	0	0	1	1	0	9	6	2	0	0	0	0	0	0	19	44	46
07:00	0	0	0	1	12	23	15	4	2	1	0	0	0	0	58	44	48
08:00	0	1	0	0	12	25	31	8	4	0	2	0	0	0	83	45	50
09:00	0	0	1	0	14	28	26	8	1	0	0	0	0	0	78	44	47
10:00	1	0	0	3	18	38	38	16	2	1	0	0	0	0	117	45	48
11:00	0	0	2	5	18	38	32	15	2	0	0	0	0	0	112	45	48
12 PM	3	0	1	7	25	51	39	7	2	1	0	0	0	0	136	43	46
13:00	1	0	2	2	18	49	51	24	1	0	0	0	0	0	148	45	48
14:00	0	0	0	4	24	53	43	12	3	0	0	0	0	0	139	44	48
15:00	0	1	1	3	24	53	50	11	5	0	0	0	0	0	148	44	48
16:00	0	0	0	4	20	38	34	10	1	0	0	0	0	0	107	44	47
17:00	1	1	0	2	24	80	43	11	2	0	0	0	0	0	164	43	46
18:00	0	0	0	7	22	45	34	6	2	1	0	0	0	0	117	43	46
19:00	0	0	0	3	34	54	37	7	2	0	0	0	0	0	137	43	46
20:00	0	0	0	5	36	29	21	6	4	1	0	0	0	0	102	43	49
21:00	0	0	0	5	24	47	14	6	1	0	0	0	0	0	97	42	46
22:00	0	0	0	6	17	24	12	3	2	1	0	0	0	0	65	42	46
23:00	0	0	0	4	19	17	9	3	1	0	0	0	0	0	53	42	46
Total	6	4	8	68	396	738	561	164	41	6	3	0	0	0	1995		
Percent	0.3%	0.2%	0.4%	3.4%	19.8%	37.0%	28.1%	8.2%	2.1%	0.3%	0.2%	0.0%	0.0%	0.0%			
AM Peak	10:00	03:00	11:00	11:00	10:00	10:00	10:00	10:00	08:00	07:00	08:00				10:00		
Vol.	1	1	2	5	18	38	38	16	4	1	2				117		
PM Peak	12:00	15:00	13:00	12:00	20:00	17:00	13:00	13:00	15:00	12:00					17:00		
Vol.	3	1	2	7	36	80	51	24	5	1					164		

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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	85th Percent	95th Percent
09/15/13	0	0	0	3	8	4	6	0	1	0	0	0	0	0	22	42	44
01:00	0	0	0	1	3	9	6	1	0	0	0	0	0	0	20	43	45
02:00	0	0	0	1	7	9	8	2	1	0	0	0	0	0	28	42	45
03:00	0	0	0	0	0	8	13	1	1	0	0	0	0	0	23	44	45
04:00	0	0	0	0	2	2	1	1	1	0	0	0	0	0	7	*	*
05:00	0	0	0	0	1	1	2	1	0	0	0	0	0	0	5	*	*
06:00	0	0	0	2	2	1	0	1	0	0	0	0	0	0	6	*	*
07:00	0	0	0	1	2	8	5	4	0	0	0	0	0	0	20	46	48
08:00	0	0	0	0	4	12	8	8	2	2	0	0	0	0	36	47	50
09:00	1	0	0	3	6	13	14	13	4	0	0	0	0	0	54	47	51
10:00	0	0	0	1	14	30	55	14	1	0	0	0	0	0	115	45	48
11:00	1	0	0	1	13	32	24	12	3	2	0	0	0	0	88	46	50
12 PM	0	0	3	2	14	27	26	6	2	0	0	0	0	0	80	44	48
13:00	0	1	0	0	13	37	27	5	0	0	0	0	0	0	83	43	46
14:00	0	1	0	2	13	37	31	9	2	0	0	0	0	0	95	45	48
15:00	0	1	1	2	11	41	21	8	0	0	0	0	0	0	85	44	47
16:00	2	0	1	2	13	40	20	10	1	0	0	0	0	0	89	44	48
17:00	2	0	2	2	5	23	28	7	0	0	1	0	0	0	70	44	47
18:00	0	0	3	3	19	28	17	5	3	0	0	0	0	0	78	43	49
19:00	0	0	0	4	16	43	12	4	4	1	0	0	0	0	84	43	50
20:00	0	0	0	6	23	38	13	1	1	0	0	0	0	0	82	41	43
21:00	0	0	1	2	17	21	13	0	1	0	0	0	0	0	55	42	44
22:00	0	0	0	0	16	20	11	2	0	0	0	0	0	0	49	41	44
23:00	0	0	0	0	10	11	4	3	0	0	0	0	0	0	28	43	46
Total	6	3	11	38	232	495	365	118	28	5	1	0	0	0	1302		
Percent	0.5%	0.2%	0.8%	2.9%	17.8%	38.0%	28.0%	9.1%	2.2%	0.4%	0.1%	0.0%	0.0%	0.0%			
AM Peak	09:00			00:00	10:00	11:00	10:00	10:00	09:00	08:00					10:00		
Vol.	1			3	14	32	55	14	4	2					115		
PM Peak	16:00	13:00	12:00	20:00	20:00	19:00	14:00	16:00	19:00	19:00	17:00				14:00		
Vol.	2	1	3	6	23	43	31	10	4	1	1				95		

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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	85th Percent	95th Percent
09/16/13	1	0	0	3	2	6	6	3	1	0	0	0	0	0	22	46	48
01:00	0	0	0	0	5	3	4	0	1	0	0	0	0	0	13	41	43
02:00	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	*	*
03:00	0	0	0	0	1	1	2	0	0	0	0	0	0	0	4	*	*
04:00	0	0	0	0	0	1	1	1	0	0	0	0	0	0	3	*	*
05:00	0	0	0	0	3	2	1	0	0	0	0	0	0	0	6	34	34
06:00	0	0	0	4	14	17	7	0	0	0	0	0	0	0	42	40	43
07:00	0	0	1	7	41	41	25	6	2	0	0	0	0	0	123	42	46
08:00	0	0	4	16	46	69	24	1	1	0	0	0	0	0	161	40	43
09:00	0	1	7	11	29	64	40	7	1	0	0	0	0	0	160	42	45
10:00	0	1	2	7	18	39	16	4	0	0	0	0	0	0	87	42	45
11:00	0	1	1	12	30	25	18	0	1	0	0	0	0	0	88	41	43
12 PM	0	0	0	9	19	38	21	9	0	0	0	0	0	0	96	43	47
13:00	0	1	2	6	20	42	18	13	1	1	0	0	0	0	104	45	48
14:00	0	0	1	7	27	37	18	9	0	0	0	0	0	0	99	43	47
15:00	0	0	0	9	42	65	37	11	1	0	0	0	0	0	165	43	46
16:00	0	0	0	6	34	68	25	6	1	0	0	0	0	0	140	42	45
17:00	0	0	1	4	21	79	37	3	0	0	0	0	0	0	145	42	44
18:00	0	0	0	1	28	50	26	5	4	1	1	0	0	0	116	44	49
19:00	1	0	1	4	25	25	15	5	1	0	0	0	0	0	77	43	47
20:00	1	0	0	3	21	46	24	3	0	0	0	0	0	0	98	42	44
21:00	0	0	1	1	22	21	18	1	0	0	0	0	0	0	64	42	44
22:00	0	0	1	1	20	19	7	4	1	1	0	0	0	0	54	42	47
23:00	0	0	0	4	14	13	13	4	0	0	0	0	0	0	48	43	46
Total	3	4	22	115	482	772	403	95	17	3	1	0	0	0	1917		
Percent	0.2%	0.2%	1.1%	6.0%	25.1%	40.3%	21.0%	5.0%	0.9%	0.2%	0.1%	0.0%	0.0%	0.0%			
AM Peak	00:00	09:00	09:00	08:00	08:00	08:00	09:00	09:00	07:00						08:00		
Vol.	1	1	7	16	46	69	40	7	2						161		
PM Peak	19:00	13:00	13:00	12:00	15:00	17:00	15:00	13:00	18:00	13:00	18:00				15:00		
Vol.	1	1	2	9	42	79	37	13	4	1	1				165		

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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	85th Percent	95th Percent
09/17/13	0	0	1	1	5	9	4	2	0	0	0	0	0	0	22	43	45
01:00	0	0	0	2	3	10	2	2	1	0	0	0	0	0	20	39	41
02:00	0	0	0	1	2	2	1	0	0	0	0	0	0	0	6	*	*
03:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	*	*
04:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	*	*
05:00	0	0	1	0	2	1	1	1	0	0	0	0	0	0	6	*	*
06:00	0	0	0	12	15	9	5	2	0	0	0	0	0	0	43	40	44
07:00	0	0	0	9	34	52	34	1	1	0	0	0	0	0	131	42	44
08:00	0	1	5	13	34	55	34	9	6	0	0	0	0	0	157	43	48
09:00	2	0	2	10	38	66	40	16	2	0	0	0	0	0	176	44	47
10:00	1	0	2	6	17	40	17	4	2	0	0	0	0	0	89	42	46
11:00	0	1	2	4	15	31	17	2	1	0	0	0	0	0	73	42	44
12 PM	0	0	1	4	19	47	27	4	2	0	0	0	0	0	104	43	46
13:00	0	1	2	6	19	47	30	14	2	1	0	0	0	0	122	44	48
14:00	0	1	2	8	38	42	29	3	2	1	0	0	0	0	126	42	45
15:00	0	2	2	14	61	65	41	9	1	1	0	0	0	0	196	42	45
16:00	1	0	0	4	37	64	48	13	0	0	0	0	0	0	167	44	47
17:00	2	1	0	4	33	87	55	6	3	0	0	0	0	0	191	43	45
18:00	0	0	0	1	24	55	40	4	0	0	2	0	0	0	126	43	45
19:00	1	0	0	1	23	40	22	4	0	0	0	0	0	0	91	42	45
20:00	0	0	2	6	21	43	17	4	0	1	0	0	0	0	94	41	45
21:00	0	0	0	3	18	24	19	6	1	1	0	0	0	0	72	44	47
22:00	0	0	0	3	20	20	4	3	0	0	0	0	0	0	50	40	45
23:00	0	0	0	2	8	8	6	2	1	0	0	0	0	0	27	43	45
Total	7	7	22	114	488	820	493	111	25	5	2	0	0	0	2094		
Percent	0.3%	0.3%	1.1%	5.4%	23.3%	39.2%	23.5%	5.3%	1.2%	0.2%	0.1%	0.0%	0.0%	0.0%			
AM Peak	09:00	08:00	08:00	08:00	09:00	09:00	09:00	09:00	08:00						09:00		
Vol.	2	1	5	13	38	66	40	16	6						176		
PM Peak	17:00	15:00	13:00	15:00	15:00	17:00	17:00	13:00	17:00	13:00	18:00				15:00		
Vol.	2	2	2	14	61	87	55	14	3	1	2				196		

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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	85th Percent	95th Percent
09/18/13	0	0	0	3	4	8	5	3	0	0	0	0	0	0	23	44	46
01:00	0	0	0	2	3	2	5	0	0	0	0	0	0	0	12	43	44
02:00	0	0	0	0	1	3	1	1	0	0	0	0	0	0	6	38	38
03:00	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	*	*
04:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	*	*
05:00	0	0	0	0	3	0	0	1	0	0	0	0	0	0	4	32	32
06:00	0	0	1	6	12	11	4	2	1	0	0	0	0	0	37	41	44
07:00	0	0	1	3	28	56	32	8	3	1	1	0	0	0	133	43	47
08:00	0	0	1	11	27	61	33	8	2	0	1	0	0	0	144	43	46
09:00	0	1	2	6	36	74	52	9	6	0	0	0	0	0	186	43	47
10:00	0	0	0	2	19	21	14	2	1	0	0	0	0	0	59	42	44
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	5	33	134	236	148	34	13	1	2	0	0	0	607		
Percent	0.0%	0.2%	0.8%	5.4%	22.1%	38.9%	24.4%	5.6%	2.1%	0.2%	0.3%	0.0%	0.0%	0.0%			
AM Peak		09:00	09:00	08:00	09:00	09:00	09:00	09:00	09:00	07:00	07:00				09:00		
Vol.		1	2	11	36	74	52	9	6	1	1				186		
PM Peak Vol.																	
Total	26	43	105	600	2629	4504	2678	709	147	28	11	0	0	0	11480		
Percent	0.2%	0.4%	0.9%	5.2%	22.9%	39.2%	23.3%	6.2%	1.3%	0.2%	0.1%	0.0%	0.0%	0.0%			

15th Percentile :	31 MPH
50th Percentile :	37 MPH
85th Percentile :	43 MPH
95th Percentile :	47 MPH

Stats

10 MPH Pace Speed :	34-43 MPH
Number in Pace :	7136
Percent in Pace :	62.2%
Number of Vehicles > 30 MPH :	10424
Percent of Vehicles > 30 MPH :	90.8%
Mean Speed(Average) :	38 MPH

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Wintergreen Ave South of Wilmot Road
New Haven, Connecticut

Site Code: 3088
Station ID:

Latitude: 0' 0.000 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	85th Percent	95th Percent
09/12/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	1	1	5	14	30	36	24	5	3	1	0	0	0	0	120	43	48
11:00	0	5	4	14	30	32	26	3	3	0	0	0	0	0	117	42	47
12 PM	0	4	4	16	48	37	16	4	5	0	0	0	0	0	134	41	48
13:00	0	1	6	26	42	42	19	2	1	0	0	0	0	0	139	40	43
14:00	0	3	9	12	41	44	16	5	0	0	0	0	0	0	130	40	44
15:00	0	1	9	26	72	46	28	5	3	0	0	0	0	0	190	41	45
16:00	1	0	5	21	64	65	26	7	0	0	0	0	0	0	189	41	44
17:00	0	0	1	27	35	56	16	5	2	0	1	0	0	0	143	41	45
18:00	0	1	0	17	47	32	12	2	2	0	0	0	0	0	113	39	43
19:00	0	0	2	8	35	42	14	6	0	0	0	0	0	0	107	41	45
20:00	4	0	11	22	29	19	1	1	0	0	0	0	0	0	87	36	39
21:00	0	2	10	18	33	18	5	0	0	0	0	0	0	0	86	38	41
22:00	0	0	5	13	16	9	4	2	1	0	0	0	0	0	50	38	43
23:00	0	0	2	13	8	7	2	0	1	0	0	0	0	0	33	37	40
Total	6	18	73	247	530	485	209	47	21	1	1	0	0	0	1638		
Percent	0.4%	1.1%	4.5%	15.1%	32.4%	29.6%	12.8%	2.9%	1.3%	0.1%	0.1%	0.0%	0.0%	0.0%			
AM Peak	10:00	11:00	10:00	10:00	10:00	10:00	11:00	10:00	10:00	10:00					10:00		
Vol.	1	5	5	14	30	36	26	5	3	1					120		
PM Peak	20:00	12:00	20:00	17:00	15:00	16:00	15:00	16:00	12:00		17:00				15:00		
Vol.	4	4	11	27	72	65	28	7	5		1				190		

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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	85th Percent	95th Percent
09/13/13	0	0	1	7	7	7	1	1	0	0	0	0	0	0	24	38	40
01:00	0	0	0	3	6	7	7	1	0	0	0	0	0	0	24	43	45
02:00	0	0	0	1	5	3	3	2	0	0	0	0	0	0	14	42	44
03:00	0	0	1	2	0	2	0	0	0	0	0	0	0	0	5	*	*
04:00	0	0	0	0	2	0	0	0	1	0	0	0	0	0	3	*	*
05:00	0	0	0	1	2	3	5	2	0	0	0	0	0	0	13	45	46
06:00	0	0	0	2	9	10	8	2	2	0	0	0	0	0	33	42	45
07:00	0	0	1	9	26	35	19	5	1	0	0	0	0	0	96	42	46
08:00	0	0	2	8	32	58	41	6	1	0	0	0	0	0	148	43	45
09:00	0	0	1	10	44	59	25	6	5	1	0	0	0	0	151	42	48
10:00	0	0	3	12	32	38	27	6	1	1	0	0	0	0	120	43	46
11:00	0	0	3	16	24	33	16	3	0	0	0	0	0	0	95	41	44
12 PM	0	1	0	11	33	44	23	7	1	0	0	1	0	0	121	42	46
13:00	0	1	1	9	43	40	12	5	2	0	0	0	0	0	113	41	46
14:00	0	1	5	13	27	37	23	5	3	0	0	0	0	0	114	42	47
15:00	0	0	2	18	42	53	24	8	1	1	0	0	0	0	149	42	45
16:00	3	0	4	22	55	79	35	6	1	0	0	0	0	0	205	41	44
17:00	0	1	2	10	34	56	29	8	0	0	0	0	0	0	140	42	46
18:00	2	0	3	19	33	37	22	7	1	0	0	0	0	0	124	42	46
19:00	0	0	4	10	27	44	17	8	1	0	0	0	0	1	112	42	46
20:00	0	0	6	13	37	24	7	3	1	0	0	0	0	0	91	39	44
21:00	0	0	2	3	26	24	10	3	0	0	0	0	0	0	68	41	44
22:00	0	0	1	4	25	27	17	0	1	0	0	0	0	0	75	41	44
23:00	0	0	1	0	12	16	7	1	1	0	0	0	0	0	38	41	44
Total	5	4	43	203	583	736	378	95	24	3	0	1	0	1	2076		
Percent	0.2%	0.2%	2.1%	9.8%	28.1%	35.5%	18.2%	4.6%	1.2%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak			10:00	11:00	09:00	09:00	08:00	08:00	09:00	09:00					09:00		
Vol.			3	16	44	59	41	6	5	1					151		
PM Peak	16:00	12:00	20:00	16:00	16:00	16:00	16:00	15:00	14:00	15:00		12:00		19:00	16:00		
Vol.	3	1	6	22	55	79	35	8	3	1		1		1	205		

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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	85th Percent	95th Percent
09/14/13	0	0	0	2	14	8	4	4	0	0	0	0	0	0	32	44	47
01:00	0	0	0	4	4	10	0	3	0	0	1	0	0	0	22	39	47
02:00	0	0	2	2	4	5	3	1	0	0	0	0	0	0	17	41	43
03:00	0	1	1	0	6	4	3	1	1	0	0	0	0	0	17	41	43
04:00	0	0	1	0	2	4	1	0	0	0	0	0	0	0	8	39	39
05:00	0	0	0	1	1	2	1	0	0	0	0	0	0	0	5	*	*
06:00	0	0	0	3	4	10	3	2	0	0	0	0	0	0	22	41	43
07:00	0	0	0	1	12	20	2	6	1	0	0	0	0	0	42	44	48
08:00	0	0	0	4	9	37	21	7	3	1	0	0	0	0	82	45	50
09:00	0	0	0	7	11	25	23	3	0	0	0	0	0	0	69	43	45
10:00	0	0	1	3	23	30	21	8	4	1	1	0	0	0	92	45	50
11:00	5	1	2	8	27	59	40	11	6	0	0	0	0	0	159	44	49
12 PM	0	1	1	5	24	35	29	5	3	1	0	0	0	0	104	44	48
13:00	0	2	2	10	54	53	28	6	4	0	0	0	0	0	159	42	46
14:00	0	0	2	10	27	52	28	7	0	1	0	0	0	0	127	42	45
15:00	0	0	0	8	46	53	37	8	1	0	0	0	0	0	153	43	46
16:00	0	0	1	9	36	50	28	11	2	0	0	0	0	0	137	43	47
17:00	0	0	2	12	22	46	40	10	1	1	0	0	0	0	134	44	47
18:00	0	0	3	11	33	57	35	14	1	1	0	0	0	0	155	43	47
19:00	0	0	1	12	62	75	24	5	1	0	0	0	0	0	180	41	45
20:00	0	0	1	14	59	37	27	2	1	0	1	0	0	0	142	41	43
21:00	0	0	3	13	47	58	13	11	1	1	0	0	0	0	147	41	46
22:00	0	0	0	11	29	38	11	3	0	0	0	0	0	0	92	40	44
23:00	0	0	1	4	18	19	8	3	2	0	0	0	1	0	56	42	47
Total	5	5	24	154	574	787	430	131	32	7	3	0	1	0	2153		
Percent	0.2%	0.2%	1.1%	7.2%	26.7%	36.6%	20.0%	6.1%	1.5%	0.3%	0.1%	0.0%	0.0%	0.0%			
AM Peak	11:00	03:00	02:00	11:00	11:00	11:00	11:00	11:00	11:00	08:00	01:00				11:00		
Vol.	5	1	2	8	27	59	40	11	6	1	1				159		
PM Peak		13:00	18:00	20:00	19:00	19:00	17:00	18:00	13:00	12:00	20:00		23:00		19:00		
Vol.		2	3	14	62	75	40	14	4	1	1		1		180		

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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	85th Percent	95th Percent
09/15/13	0	0	1	1	11	7	3	1	0	0	0	0	0	0	24	40	42
01:00	0	0	0	1	4	8	2	1	0	0	0	0	0	0	16	40	41
02:00	0	0	1	7	8	9	4	0	1	0	0	0	0	0	30	39	42
03:00	0	0	0	1	1	2	2	1	3	0	0	0	0	0	10	52	52
04:00	0	0	2	0	3	2	2	0	0	0	0	0	0	0	9	34	34
05:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	*	*
06:00	0	0	0	1	0	4	2	4	1	0	0	0	0	0	12	48	49
07:00	0	0	0	1	2	4	3	6	1	0	0	0	0	0	17	48	50
08:00	0	0	1	4	11	14	11	3	1	0	0	0	0	0	45	43	46
09:00	0	0	0	2	6	24	16	5	1	0	0	0	0	0	54	44	48
10:00	0	0	1	1	14	28	22	7	1	0	0	0	0	0	74	44	47
11:00	0	0	0	4	23	39	21	3	4	0	0	0	0	0	94	43	49
12 PM	0	0	1	5	23	45	30	13	1	0	1	0	0	0	119	44	48
13:00	0	0	0	7	44	44	34	5	1	1	0	0	0	0	136	42	45
14:00	0	0	1	4	30	24	26	7	1	2	0	0	0	0	95	43	46
15:00	1	0	1	6	24	49	23	6	1	0	0	0	0	0	111	42	46
16:00	0	0	1	2	17	45	15	5	3	0	0	0	0	0	88	43	48
17:00	0	1	1	5	21	35	27	8	3	0	0	0	0	0	101	44	48
18:00	0	0	3	9	20	36	17	1	1	0	0	0	0	0	87	41	43
19:00	0	0	1	9	25	24	11	6	0	0	0	0	0	0	76	42	46
20:00	0	0	0	6	28	25	20	3	0	0	0	0	0	0	82	42	45
21:00	0	2	2	5	13	15	5	1	2	0	0	0	0	0	45	40	43
22:00	0	0	0	6	16	11	9	3	0	1	0	0	0	0	46	42	45
23:00	0	0	0	5	10	7	4	0	2	0	0	0	0	0	28	40	42
Total	1	3	17	93	355	502	309	89	28	4	1	0	0	0	1402		
Percent	0.1%	0.2%	1.2%	6.6%	25.3%	35.8%	22.0%	6.3%	2.0%	0.3%	0.1%	0.0%	0.0%	0.0%			
AM Peak			04:00	02:00	11:00	11:00	10:00	10:00	11:00						11:00		
Vol.			2	7	23	39	22	7	4						94		
PM Peak	15:00	21:00	18:00	18:00	13:00	15:00	13:00	12:00	16:00	14:00	12:00				13:00		
Vol.	1	2	3	9	44	49	34	13	3	2	1				136		

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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	85th Percent	95th Percent
09/16/13	0	0	0	0	9	6	2	0	0	0	0	0	0	0	17	39	41
01:00	0	0	0	3	4	2	2	1	1	0	0	0	0	0	13	34	35
02:00	0	0	0	0	1	1	0	0	1	0	0	0	0	0	3	*	*
03:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	*	*
04:00	0	0	1	0	2	1	3	0	0	0	0	0	0	0	7	42	42
05:00	0	0	2	0	4	1	3	4	1	0	0	0	0	0	15	48	49
06:00	0	0	0	2	7	6	8	7	2	0	0	0	0	0	32	47	50
07:00	0	0	2	7	30	36	13	7	1	0	0	0	0	0	96	42	46
08:00	0	0	2	12	41	49	31	8	0	0	0	0	0	0	143	42	46
09:00	0	1	4	17	45	63	29	3	3	1	0	0	0	0	166	42	46
10:00	0	1	2	14	42	40	28	4	0	0	0	0	0	0	131	42	45
11:00	0	1	2	9	40	25	9	3	2	0	0	0	0	0	91	40	45
12 PM	0	0	1	17	33	44	28	6	0	0	0	0	0	0	129	42	45
13:00	0	1	4	8	26	34	16	5	3	0	0	0	0	0	97	42	48
14:00	0	1	5	10	29	34	22	10	3	0	0	0	0	0	114	43	48
15:00	0	1	2	20	39	53	25	10	1	1	0	0	0	0	152	42	46
16:00	0	0	0	23	71	67	42	12	3	0	0	0	0	0	218	42	46
17:00	0	0	0	10	39	58	28	12	0	1	0	0	0	0	148	43	46
18:00	0	0	0	7	31	35	26	8	1	0	1	1	0	0	110	43	46
19:00	0	1	3	2	27	37	14	0	2	0	0	0	0	0	86	41	43
20:00	0	0	0	5	22	28	15	2	4	0	0	0	0	0	76	42	50
21:00	0	1	0	3	19	23	11	3	1	1	0	0	0	0	62	42	46
22:00	0	0	2	4	9	17	4	2	1	1	0	0	0	0	40	40	44
23:00	0	0	0	4	12	15	8	4	0	0	0	0	0	0	43	42	46
Total	0	8	32	177	582	676	367	111	30	5	1	1	0	0	1990		
Percent	0.0%	0.4%	1.6%	8.9%	29.2%	34.0%	18.4%	5.6%	1.5%	0.3%	0.1%	0.1%	0.0%	0.0%			
AM Peak		09:00	09:00	09:00	09:00	09:00	08:00	08:00	09:00	09:00					09:00		
Vol.		1	4	17	45	63	31	8	3	1					166		
PM Peak		13:00	14:00	16:00	16:00	16:00	16:00	16:00	20:00	15:00	18:00	18:00			16:00		
Vol.		1	5	23	71	67	42	12	4	1	1	1			218		

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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	85th Percent	95th Percent
09/17/13	0	0	0	4	9	8	2	1	0	0	0	0	0	0	24	38	40
01:00	0	0	0	3	5	5	3	1	0	0	0	0	0	0	17	41	43
02:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	*	*
03:00	0	0	0	0	1	0	0	0	2	1	0	0	0	0	4	*	*
04:00	0	0	1	2	1	1	2	0	0	0	0	0	0	0	7	*	*
05:00	0	0	0	0	1	6	2	4	0	0	0	0	0	0	13	47	48
06:00	0	0	1	1	7	13	3	9	0	1	0	0	0	0	35	47	49
07:00	0	0	2	13	32	34	21	10	3	0	0	0	0	0	115	43	48
08:00	0	0	0	11	33	57	42	14	2	1	0	0	0	0	160	44	47
09:00	0	0	5	11	40	63	38	12	0	0	0	0	0	0	169	43	46
10:00	0	0	0	7	23	41	27	7	0	0	0	0	0	0	105	43	46
11:00	1	0	2	11	27	27	21	3	0	0	0	0	0	0	92	42	44
12 PM	0	0	0	13	40	34	27	7	0	0	0	0	0	0	121	42	45
13:00	0	1	1	21	39	45	20	7	1	0	0	0	0	0	135	41	45
14:00	0	1	5	7	38	34	16	8	0	0	0	0	0	0	109	42	46
15:00	0	1	3	15	54	59	30	13	4	0	0	0	0	0	179	43	48
16:00	1	0	3	14	61	85	37	12	1	0	0	0	0	0	214	42	46
17:00	0	1	3	20	42	57	34	11	3	0	0	0	0	0	171	43	47
18:00	0	0	1	6	32	49	24	8	1	0	0	0	0	0	121	43	46
19:00	0	0	1	8	18	29	19	6	1	0	0	0	0	0	82	43	47
20:00	0	0	1	13	29	23	13	4	0	0	0	0	0	0	83	41	45
21:00	0	0	3	7	18	27	9	2	2	0	0	0	0	0	68	41	43
22:00	0	0	1	6	13	18	3	0	0	0	1	0	0	0	42	39	41
23:00	0	0	0	1	9	7	5	0	0	0	0	0	0	0	22	41	43
Total	2	4	33	194	573	723	398	139	20	3	1	0	0	0	2090		
Percent	0.1%	0.2%	1.6%	9.3%	27.4%	34.6%	19.0%	6.7%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00		09:00	07:00	09:00	09:00	08:00	08:00	07:00	03:00					09:00		
Vol.	1		5	13	40	63	42	14	3	1					169		
PM Peak	16:00	13:00	14:00	13:00	16:00	16:00	16:00	15:00	15:00		22:00				16:00		
Vol.	1	1	5	21	61	85	37	13	4		1				214		

Wintergreen Ave South of Wilmot Road
New Haven, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3088
Station ID:

Latitude: 0' 0.000 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	85th Percent	95th Percent
09/18/13	0	0	0	1	8	9	6	1	1	0	0	0	0	0	26	42	44
01:00	0	0	0	2	4	2	2	1	0	1	0	0	0	0	12	34	35
02:00	0	0	0	0	2	1	1	1	1	0	0	0	0	0	6	*	*
03:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	*	*
04:00	0	0	0	2	2	4	1	0	0	0	0	0	0	0	9	39	39
05:00	0	0	0	2	3	3	2	0	1	0	0	0	0	0	11	38	39
06:00	0	0	0	1	13	4	12	4	1	1	0	0	0	0	36	44	48
07:00	0	2	1	5	23	36	13	5	3	0	0	0	0	0	88	43	48
08:00	1	0	1	8	28	67	37	18	6	0	0	0	0	0	166	45	49
09:00	0	2	1	15	40	68	32	8	3	0	0	0	0	0	169	42	46
10:00	0	0	2	11	28	30	14	5	1	0	0	0	0	0	91	42	46
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	1	4	5	47	151	224	121	43	18	2	0	0	0	0	616		
Percent	0.2%	0.6%	0.8%	7.6%	24.5%	36.4%	19.6%	7.0%	2.9%	0.3%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	07:00	10:00	09:00	09:00	09:00	08:00	08:00	08:00	01:00					09:00		
Vol.	1	2	2	15	40	68	37	18	6	1					169		
PM Peak Vol.																	
Total	20	46	227	1115	3348	4133	2212	655	173	25	7	2	1	1	11965		
Percent	0.2%	0.4%	1.9%	9.3%	28.0%	34.5%	18.5%	5.5%	1.4%	0.2%	0.1%	0.0%	0.0%	0.0%			

15th Percentile :	30 MPH
50th Percentile :	36 MPH
85th Percentile :	42 MPH
95th Percentile :	46 MPH

Stats

10 MPH Pace Speed :	32-41 MPH
Number in Pace :	7065
Percent in Pace :	59.1%
Number of Vehicles > 30 MPH :	10255
Percent of Vehicles > 30 MPH :	85.7%
Mean Speed(Average) :	37 MPH

Woodin Street West of West Side Drive
Hamden, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Start	18-Nov-13		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Eastbound	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou	Eastbou	Westbou
12:00 AM	*	*	*	*	*	*	14	16	16	27	*	*	*	*	15	22
01:00	*	*	*	*	*	*	10	15	8	19	*	*	*	*	9	17
02:00	*	*	*	*	*	*	3	8	4	8	*	*	*	*	4	8
03:00	*	*	*	*	*	*	2	2	5	7	*	*	*	*	4	4
04:00	*	*	*	*	*	*	4	3	2	0	*	*	*	*	3	2
05:00	*	*	*	*	*	*	3	1	3	2	*	*	*	*	3	2
06:00	*	*	*	*	*	*	10	0	14	3	*	*	*	*	12	2
07:00	*	*	*	*	*	*	31	13	39	15	*	*	*	*	35	14
08:00	*	*	*	*	*	*	71	38	70	35	*	*	*	*	70	36
09:00	*	*	*	*	*	*	**135**	**118**	**110**	**101**	*	*	*	*	**122**	**110**
10:00	*	*	*	*	*	*	55	44	*	*	*	*	*	*	55	44
11:00	*	*	*	*	*	*	53	32	*	*	*	*	*	*	53	32
12:00 PM	*	*	*	*	*	*	50	34	*	*	*	*	*	*	50	34
01:00	*	*	*	*	35	44	39	38	*	*	*	*	*	*	37	41
02:00	*	*	*	*	47	36	45	45	*	*	*	*	*	*	46	40
03:00	*	*	*	*	51	49	50	64	*	*	*	*	*	*	50	56
04:00	*	*	*	*	73	100	74	108	*	*	*	*	*	*	74	**104**
05:00	*	*	*	*	**92**	92	81	95	*	*	*	*	*	*	**86**	94
06:00	*	*	*	*	69	97	100	106	*	*	*	*	*	*	84	102
07:00	*	*	*	*	63	77	66	76	*	*	*	*	*	*	64	76
08:00	*	*	*	*	46	47	46	106	*	*	*	*	*	*	46	76
09:00	*	*	*	*	35	48	33	51	*	*	*	*	*	*	34	50
10:00	*	*	*	*	24	42	63	51	*	*	*	*	*	*	44	46
11:00	*	*	*	*	12	29	30	38	*	*	*	*	*	*	21	34
Lane	0	0	0	0	547	661	1068	1102	271	217	0	0	0	0	1021	1046
Day	0		0		1208		2170		488		0		0		2067	
AM Peak							09:00	09:00	09:00	09:00					09:00	09:00
Vol.							135	118	110	101					122	110
PM Peak					17:00	16:00	18:00	16:00							17:00	16:00
Vol.					92	100	100	108							86	104

Comb. Total	0	0	1208	2170	488	0	0	2067

ADT ADT 2,170 AADT 2,170

Woodin Street West of West Side Drive
Hamden, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Eastbound

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	85th Percent	95th Percent
11/20/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	0	0	2	4	14	6	5	3	0	1	0	0	0	0	35	43	46
14:00	0	0	2	7	13	13	12	0	0	0	0	0	0	0	47	41	43
15:00	0	1	2	13	19	8	6	2	0	0	0	0	0	0	51	39	44
16:00	0	0	3	10	21	22	13	1	0	3	0	0	0	0	73	41	44
17:00	0	0	1	9	27	46	6	3	0	0	0	0	0	0	92	39	43
18:00	0	0	5	13	15	23	9	4	0	0	0	0	0	0	69	41	45
19:00	0	1	6	10	17	25	4	0	0	0	0	0	0	0	63	38	41
20:00	0	1	1	6	12	17	9	0	0	0	0	0	0	0	46	41	43
21:00	0	0	0	8	14	10	3	0	0	0	0	0	0	0	35	38	41
22:00	0	1	0	3	9	6	4	1	0	0	0	0	0	0	24	41	43
23:00	1	1	0	1	1	5	3	0	0	0	0	0	0	0	12	41	42
Total	1	5	22	84	162	181	74	14	0	4	0	0	0	0	547		
Percent	0.2%	0.9%	4.0%	15.4%	29.6%	33.1%	13.5%	2.6%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	23:00 1	15:00 1	19:00 6	15:00 13	17:00 27	17:00 46	16:00 13	18:00 4		16:00 3					17:00 92		

Woodin Street West of West Side Drive
Hamden, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Eastbound 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	85th Percent	95th Percent
11/21/13	0	0	1	2	4	3	3	1	0	0	0	0	0	0	14	41	43
01:00	0	0	0	3	4	2	1	0	0	0	0	0	0	0	10	34	35
02:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	*	*
03:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	*	*
04:00	0	0	0	2	0	2	0	0	0	0	0	0	0	0	4	*	*
05:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	*	*
06:00	0	0	1	1	4	1	2	1	0	0	0	0	0	0	10	34	34
07:00	0	0	1	5	14	6	3	1	1	0	0	0	0	0	31	39	42
08:00	2	3	4	13	27	13	6	3	0	0	0	0	0	0	71	39	44
09:00	0	2	2	15	44	37	29	6	0	0	0	0	0	0	135	42	45
10:00	0	0	1	7	19	18	8	2	0	0	0	0	0	0	55	40	44
11:00	0	0	3	4	27	9	9	1	0	0	0	0	0	0	53	40	44
12 PM	1	0	3	6	13	16	7	4	0	0	0	0	0	0	50	41	46
13:00	0	1	0	8	9	10	10	1	0	0	0	0	0	0	39	42	45
14:00	0	2	3	2	15	14	8	1	0	0	0	0	0	0	45	41	43
15:00	0	1	2	12	15	13	6	1	0	0	0	0	0	0	50	39	43
16:00	0	0	6	13	28	15	9	1	2	0	0	0	0	0	74	39	43
17:00	0	0	4	8	22	30	14	3	0	0	0	0	0	0	81	41	44
18:00	0	0	5	13	34	36	10	2	0	0	0	0	0	0	100	39	43
19:00	0	0	1	10	28	16	10	1	0	0	0	0	0	0	66	40	43
20:00	1	1	4	10	13	10	6	0	0	0	0	0	1	0	46	39	43
21:00	0	1	3	6	10	10	3	0	0	0	0	0	0	0	33	38	41
22:00	0	0	1	13	28	16	5	0	0	0	0	0	0	0	63	38	41
23:00	0	0	0	5	16	7	2	0	0	0	0	0	0	0	30	37	40
Total	4	11	45	159	376	289	151	29	3	0	0	0	1	0	1068		
Percent	0.4%	1.0%	4.2%	14.9%	35.2%	27.1%	14.1%	2.7%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%			
AM Peak	08:00	08:00	08:00	09:00	09:00	09:00	09:00	09:00	07:00						09:00		
Vol.	2	3	4	15	44	37	29	6	1						135		
PM Peak	12:00	14:00	16:00	16:00	18:00	18:00	17:00	12:00	16:00				20:00		18:00		
Vol.	1	2	6	13	34	36	14	4	2				1		100		

Woodin Street West of West Side Drive
Hamden, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Eastbound

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	85th Percent	95th Percent
11/22/13	0	0	0	1	3	10	1	0	1	0	0	0	0	0	16	39	41
01:00	0	0	0	0	4	2	0	0	0	0	0	2	0	0	8	35	35
02:00	0	1	0	0	3	0	0	0	0	0	0	0	0	0	4	32	32
03:00	2	0	2	1	0	0	0	0	0	0	0	0	0	0	5	*	*
04:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	*	*
05:00	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	32	32
06:00	0	0	2	1	2	5	3	1	0	0	0	0	0	0	14	42	43
07:00	0	0	4	8	18	7	2	0	0	0	0	0	0	0	39	36	40
08:00	0	0	2	17	28	15	6	2	0	0	0	0	0	0	70	39	43
09:00	0	1	4	7	35	36	21	4	2	0	0	0	0	0	110	42	45
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	2	2	14	36	97	75	33	7	3	0	0	2	0	0	271		
Percent	0.7%	0.7%	5.2%	13.3%	35.8%	27.7%	12.2%	2.6%	1.1%	0.0%	0.0%	0.7%	0.0%	0.0%			
AM Peak	03:00	02:00	07:00	08:00	09:00	09:00	09:00	09:00	09:00			01:00			09:00		
Vol.	2	1	4	17	35	36	21	4	2			2			110		
PM Peak Vol.																	
Total	7	18	81	279	635	545	258	50	6	4	0	2	1	0	1886		
Percent	0.4%	1.0%	4.3%	14.8%	33.7%	28.9%	13.7%	2.7%	0.3%	0.2%	0.0%	0.1%	0.1%	0.0%			

15th Percentile :	27 MPH
50th Percentile :	34 MPH
85th Percentile :	40 MPH
95th Percentile :	44 MPH

Stats

10 MPH Pace Speed :	31-40 MPH
Number in Pace :	1095
Percent in Pace :	58.1%
Number of Vehicles > 30 MPH :	1447
Percent of Vehicles > 30 MPH :	76.7%
Mean Speed(Average) :	35 MPH

Woodin Street West of West Side Drive
Hamden, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Westbound

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	85th Percent	95th Percent
11/20/13	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	0	0	2	8	17	11	5	1	0	0	0	0	0	0	44	39	43
14:00	0	0	0	1	13	14	5	3	0	0	0	0	0	0	36	42	46
15:00	3	0	1	5	22	11	5	2	0	0	0	0	0	0	49	39	43
16:00	1	0	5	16	34	31	11	2	0	0	0	0	0	0	100	39	43
17:00	1	1	3	18	31	26	11	1	0	0	0	0	0	0	92	39	43
18:00	1	1	5	24	35	22	8	1	0	0	0	0	0	0	97	38	42
19:00	0	1	4	17	27	21	4	2	1	0	0	0	0	0	77	38	42
20:00	1	0	1	10	23	5	4	2	1	0	0	0	0	0	47	39	43
21:00	0	0	2	13	19	8	6	0	0	0	0	0	0	0	48	38	42
22:00	0	3	3	5	19	9	2	1	0	0	0	0	0	0	42	36	39
23:00	1	1	1	5	11	7	3	0	0	0	0	0	0	0	29	39	41
Total	8	7	27	122	251	165	64	15	2	0	0	0	0	0	661		
Percent	1.2%	1.1%	4.1%	18.5%	38.0%	25.0%	9.7%	2.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak	15:00	22:00	16:00	18:00	18:00	16:00	16:00	14:00	19:00						16:00		
Vol.	3	3	5	24	35	31	11	3	1						100		

Woodin Street West of West Side Drive
Hamden, Connecticut

Connecticut Counts LLC
63 Sugar Maple Lane
Kensington, Connecticut 06037
(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Westbound

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	85th Percent	95th Percent
11/21/13	0	1	0	5	4	3	1	2	0	0	0	0	0	0	16	36	38
01:00	0	0	1	3	6	4	0	1	0	0	0	0	0	0	15	37	38
02:00	0	0	2	0	3	3	0	0	0	0	0	0	0	0	8	37	37
03:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	*	*
04:00	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3	*	*
05:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	*	*
06:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
07:00	0	0	0	2	3	4	2	1	1	0	0	0	0	0	13	39	40
08:00	0	1	2	5	8	11	9	2	0	0	0	0	0	0	38	42	45
09:00	0	0	5	10	30	42	26	5	0	0	0	0	0	0	118	42	45
10:00	0	0	3	5	19	12	5	0	0	0	0	0	0	0	44	39	42
11:00	0	0	0	3	12	13	3	0	1	0	0	0	0	0	32	39	41
12 PM	1	0	1	5	9	11	7	0	0	0	0	0	0	0	34	41	44
13:00	0	0	2	6	9	13	7	1	0	0	0	0	0	0	38	41	44
14:00	0	2	3	5	24	10	1	0	0	0	0	0	0	0	45	37	39
15:00	0	0	2	14	21	20	6	1	0	0	0	0	0	0	64	39	42
16:00	0	0	4	26	29	40	7	2	0	0	0	0	0	0	108	39	41
17:00	1	0	4	15	36	19	15	4	1	0	0	0	0	0	95	42	45
18:00	1	2	5	29	34	25	7	2	1	0	0	0	0	0	106	38	41
19:00	0	1	2	17	38	15	3	0	0	0	0	0	0	0	76	37	40
20:00	1	5	5	22	35	30	7	1	0	0	0	0	0	0	106	38	41
21:00	0	1	2	15	20	11	1	0	0	0	0	1	0	0	51	36	39
22:00	1	0	6	14	21	6	3	0	0	0	0	0	0	0	51	36	40
23:00	0	1	2	12	14	7	1	1	0	0	0	0	0	0	38	36	39
Total	5	14	52	214	379	299	111	23	4	0	0	1	0	0	1102		
Percent	0.5%	1.3%	4.7%	19.4%	34.4%	27.1%	10.1%	2.1%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%			
AM Peak		00:00	09:00	09:00	09:00	09:00	09:00	09:00	07:00						09:00		
Vol.		1	5	10	30	42	26	5	1						118		
PM Peak	12:00	20:00	22:00	18:00	19:00	16:00	17:00	17:00	17:00			21:00			16:00		
Vol.	1	5	6	29	38	40	15	4	1			1			108		

Woodin Street West of West Side Drive
Hamden, Connecticut

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63 Sugar Maple Lane
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(860) 828-1693

Site Code: 3190
Station ID:

Latitude: 0' 0.000 Undefined

Westbound 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	85th Percent	95th Percent
11/22/13	0	1	2	6	5	9	4	0	0	0	0	0	0	0	27	40	42
01:00	0	0	1	2	6	6	2	0	1	0	1	0	0	0	19	39	41
02:00	0	0	1	2	4	1	0	0	0	0	0	0	0	0	8	34	34
03:00	1	2	0	1	1	2	0	0	0	0	0	0	0	0	7	*	*
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2	*	*
06:00	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3	*	*
07:00	0	0	2	6	1	4	1	1	0	0	0	0	0	0	15	38	39
08:00	0	0	1	11	9	11	2	1	0	0	0	0	0	0	35	38	40
09:00	0	0	1	13	45	32	9	1	0	0	0	0	0	0	101	39	42
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	1	3	9	42	73	66	18	3	1	0	1	0	0	0	217		
Percent	0.5%	1.4%	4.1%	19.4%	33.6%	30.4%	8.3%	1.4%	0.5%	0.0%	0.5%	0.0%	0.0%	0.0%			
AM Peak	03:00	03:00	00:00	09:00	09:00	09:00	09:00	07:00	01:00		01:00				09:00		
Vol.	1	2	2	13	45	32	9	1	1		1				101		
PM Peak Vol.																	
Total	14	24	88	378	703	530	193	41	7	0	1	1	0	0	1980		
Percent	0.7%	1.2%	4.4%	19.1%	35.5%	26.8%	9.7%	2.1%	0.4%	0.0%	0.1%	0.1%	0.0%	0.0%			

15th Percentile :	27 MPH
50th Percentile :	33 MPH
85th Percentile :	39 MPH
95th Percentile :	43 MPH

Stats

10 MPH Pace Speed :	30-39 MPH
Number in Pace :	1162
Percent in Pace :	58.7%
Number of Vehicles > 30 MPH :	1420
Percent of Vehicles > 30 MPH :	71.7%
Mean Speed(Average) :	34 MPH

CAPACITY ANALYSES

2013 Existing Traffic Volumes
Weekday Morning Peak Hour

Tighe&Bond

Lanes, Volumes, Timings
101: #10 & Wintergreen Ave

5/29/2014

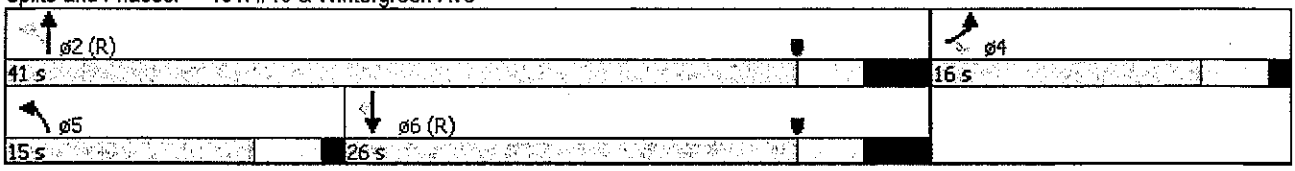
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	187	219	238	358	340	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	15	13	12	11	12
Storage Length (ft)	350	0	130			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1742	1829	3539	3421	1583
Flt Permitted	0.950		0.440			
Satd. Flow (perm)	1888	1742	847	3539	3421	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		274				309
Link Speed (mph)	30			35	35	
Link Distance (ft)	3477			1476	463	
Travel Time (s)	79.0			28.8	9.0	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.85	0.85
Adj. Flow (vph)	234	274	309	465	400	309
Shared Lane Traffic (%)						
Lane Group Flow (vph)	234	274	309	465	400	309
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	10.0	10.0	10.0	16.0	16.0	16.0
Total Split (s)	16.0	16.0	15.0	41.0	26.0	26.0
Total Split (%)	28.1%	28.1%	26.3%	71.9%	45.6%	45.6%
Maximum Green (s)	12.0	12.0	11.0	35.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.8	10.8	38.2	36.2	23.0	23.0
Actuated g/C Ratio	0.19	0.19	0.67	0.64	0.40	0.40
v/c Ratio	0.66	0.50	0.43	0.21	0.29	0.38
Control Delay	30.4	6.6	6.0	4.9	13.1	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	6.6	6.0	4.9	13.1	3.5
LOS	C	A	A	A	B	A
Approach Delay	17.6			5.3	8.9	
Approach LOS	B			A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	72	0	36	31	48	0
Queue Length 95th (ft)	115	34	52	40	76	35
Internal Link Dist (ft)	3397			1396	383	
Turn Bay Length (ft)	350		130			
Base Capacity (vph)	397	583	757	2247	1379	822
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	0.59	0.47	0.41	0.21	0.29	0.38

Intersection Summary

Area Type: Other
Cycle Length: 57
Actuated Cycle Length: 57
Offset: 46 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 9.7 Intersection LOS: A
Intersection Capacity Utilization 44.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 101: #10 & Wintergreen Ave



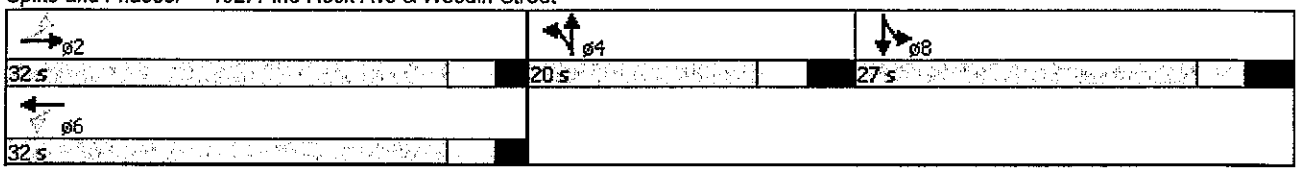
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	117	75	49	89	11	40	103	35	41	308	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	12	15	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.950			0.990			0.973			0.993	
Flt Protected		0.997			0.984			0.989			0.994	
Satd. Flow (prot)	0	1764	0	0	1936	0	0	1972	0	0	1900	0
Flt Permitted		0.981			0.831			0.989			0.994	
Satd. Flow (perm)	0	1736	0	0	1635	0	0	1972	0	0	1900	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								14			4	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		2852			1409			1138			1080	
Travel Time (s)		77.8			38.4			31.0			29.5	
Peak Hour Factor	0.76	0.76	0.76	0.72	0.72	0.72	0.82	0.82	0.82	0.73	0.73	0.73
Adj. Flow (vph)	14	154	99	68	124	15	49	126	43	56	422	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	267	0	0	207	0	0	218	0	0	505	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		9.0	9.0		7.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		15.0	15.0		13.0	13.0	
Total Split (s)	32.0	32.0		32.0	32.0		20.0	20.0		27.0	27.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%		25.3%	25.3%		34.2%	34.2%	
Maximum Green (s)	27.0	27.0		27.0	27.0		14.0	14.0		21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			6.0			6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		27.0			27.0			12.2			21.0	
Actuated g/C Ratio		0.35			0.35			0.16			0.27	
v/c Ratio		0.44			0.36			0.67			0.97	
Control Delay		22.6			21.5			39.6			63.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.6			21.5			39.6			63.8	
LOS		C			C			D			E	
Approach Delay		22.6			21.5			39.6			63.8	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)		99			75			93			243	
Queue Length 95th (ft)		135			101			145			#309	
Internal Link Dist (ft)		2772			1329			1058			1000	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		606			571			368			519	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.44			0.36			0.59			0.97	

Intersection Summary

Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 77.3
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 42.9 Intersection LOS: D
Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Pine Rock Ave & Woodin Street



Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	11	9	6	0	71	11	12	0	7	86	40
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	14	11	7	0	88	14	15	0	8	96	44
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.7	8.3	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	42%	76%	12%
Vol Thru, %	65%	35%	12%	74%
Vol Right, %	30%	23%	13%	15%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	133	26	94	34
LT Vol	86	9	11	25
Through Vol	40	6	12	5
RT Vol	7	11	71	4
Lane Flow Rate	148	32	116	52
Geometry Grp	1	1	1	1
Degree of Util (X)	0.171	0.04	0.145	0.063
Departure Headway (Hd)	4.167	4.455	4.486	4.369
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	863	806	802	822
Service Time	2.18	2.468	2.498	2.385
HCM Lane V/C Ratio	0.171	0.04	0.145	0.063
HCM Control Delay	8	7.7	8.3	7.7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.5	0.2

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	4	25	5
Peak Hour Factor	0.92	0.65	0.65	0.65
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	6	38	8
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.7
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	93	99	6	15	4
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	101	108	7	16	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	114	0	-	0	216	111
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	105	-
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	1475	-	-	-	772	942
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	919	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1475	-	-	-	771	942
Mov Cap-2 Maneuver	-	-	-	-	771	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	918	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1475	-	-	-	802
HCM Lane V/C Ratio	0.001	-	-	-	0.026
HCM Control Delay (s)	7.4	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

CAPACITY ANALYSES

2013 Existing Traffic Volumes
Weekday Afternoon Peak Hour

Tighe&Bond

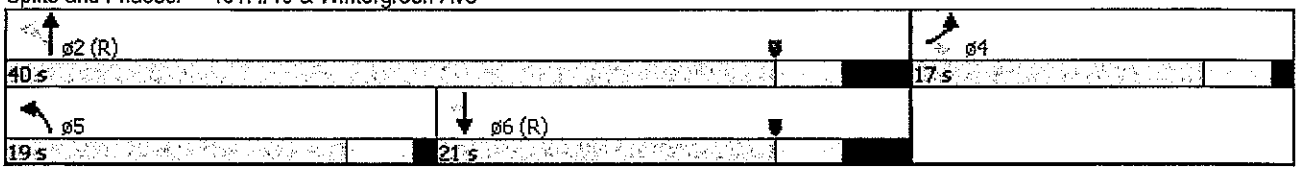
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	239	223	180	695	483	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	15	13	12	11	12
Storage Length (ft)	350	0	130			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1742	1829	3539	3421	1583
Flt Permitted	0.950		0.363			
Satd. Flow (perm)	1888	1742	699	3539	3421	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		279				253
Link Speed (mph)	30			35	35	
Link Distance (ft)	3477			1476	499	
Travel Time (s)	79.0			28.8	9.7	
Peak Hour Factor	0.80	0.80	0.86	0.86	0.86	0.86
Adj. Flow (vph)	299	279	209	808	562	253
Shared Lane Traffic (%)						
Lane Group Flow (vph)	299	279	209	808	562	253
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	10.0	10.0	10.0	16.0	16.0	16.0
Total Split (s)	17.0	17.0	19.0	40.0	21.0	21.0
Total Split (%)	29.8%	29.8%	33.3%	70.2%	36.8%	36.8%
Maximum Green (s)	13.0	13.0	15.0	34.0	15.0	15.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.1	12.1	36.9	34.9	22.6	22.6
Actuated g/C Ratio	0.21	0.21	0.65	0.61	0.40	0.40
v/c Ratio	0.75	0.47	0.34	0.37	0.41	0.32
Control Delay	34.1	5.9	5.9	6.4	14.3	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	5.9	5.9	6.4	14.3	3.5
LOS	C	A	A	A	B	A
Approach Delay	20.5			6.3	11.0	
Approach LOS	C			A	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	94	0	25	65	71	0
Queue Length 95th (ft)	142	34	44	88	110	34
Internal Link Dist (ft)	3397			1396	419	
Turn Bay Length (ft)	350		130			
Base Capacity (vph)	430	612	749	2165	1358	781
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	0.70	0.46	0.28	0.37	0.41	0.32

Intersection Summary

Area Type: Other
Cycle Length: 57
Actuated Cycle Length: 57
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.3 Intersection LOS: B
Intersection Capacity Utilization 48.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 101: #10 & Wintergreen Ave



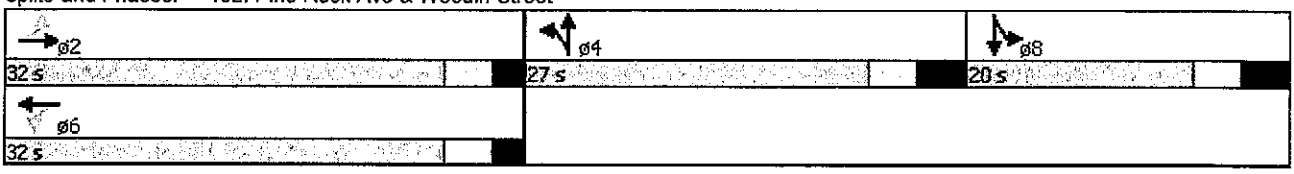
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	50	37	54	87	19	51	264	35	25	169	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	12	15	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.955			0.984			0.986			0.988	
Flt Protected		0.989			0.983			0.993			0.994	
Satd. Flow (prot)	0	1759	0	0	1922	0	0	2006	0	0	1890	0
Flt Permitted		0.914			0.859			0.993			0.994	
Satd. Flow (perm)	0	1626	0	0	1679	0	0	2006	0	0	1890	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								7			6	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1831			1731			1463			1168	
Travel Time (s)		49.9			47.2			39.9			31.9	
Peak Hour Factor	0.76	0.76	0.76	0.85	0.85	0.85	0.95	0.95	0.95	0.86	0.86	0.86
Adj. Flow (vph)	32	66	49	64	102	22	54	278	37	29	197	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	188	0	0	369	0	0	249	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		9.0	9.0		7.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		15.0	15.0		13.0	13.0	
Total Split (s)	32.0	32.0		32.0	32.0		27.0	27.0		20.0	20.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%		34.2%	34.2%		25.3%	25.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		21.0	21.0		14.0	14.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			6.0			6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		27.1			27.1			17.5			12.8	
Actuated g/C Ratio		0.36			0.36			0.23			0.17	
v/c Ratio		0.25			0.31			0.78			0.76	
Control Delay		19.4			20.0			38.4			45.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		19.4			20.0			38.4			45.5	
LOS		B			C			D			D	
Approach Delay		19.4			20.0			38.4			45.5	
Approach LOS		B			C			D			D	
Queue Length 50th (ft)		49			64			160			110	
Queue Length 95th (ft)		79			112			253			#201	
Internal Link Dist (ft)		1751			1651			1383			1088	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		592			611			573			361	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.25			0.31			0.64			0.69	

Intersection Summary

Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 74.5
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 33.7 Intersection LOS: C
Intersection Capacity Utilization 52.7% 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: 102: Pine Rock Ave & Woodin Street



Intersection	
Intersection Delay, s/veh	7.7
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	4	10	16	0	54	10	2	0	18	32	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	4	11	17	0	59	11	2	0	20	35	71
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.4	8	7.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	13%	82%	10%
Vol Thru, %	28%	33%	15%	84%
Vol Right, %	57%	53%	3%	6%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	115	30	66	82
LT Vol	32	10	10	69
Through Vol	65	16	2	5
RT Vol	18	4	54	8
Lane Flow Rate	125	33	72	89
Geometry Grp	1	1	1	1
Degree of Util (X)	0.135	0.038	0.091	0.104
Departure Headway (Hd)	3.876	4.183	4.574	4.195
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	909	861	788	841
Service Time	1.969	2.185	2.575	2.288
HCM Lane V/C Ratio	0.138	0.038	0.091	0.106
HCM Control Delay	7.6	7.4	8	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.3	0.3

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	8	69	5
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	9	75	5
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.8
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	50	72	21	7	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	54	78	23	8	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	101	0	-	0	155	90
Stage 1	-	-	-	-	90	-
Stage 2	-	-	-	-	65	-
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	1491	-	-	-	836	968
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	958	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1491	-	-	-	833	968
Mov Cap-2 Maneuver	-	-	-	-	833	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	955	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1491	-	-	-	884
HCM Lane V/C Ratio	0.004	-	-	-	0.015
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

CAPACITY ANALYSES

2015 Background Traffic Volumes
Weekday Morning Peak Hour

Tighe&Bond

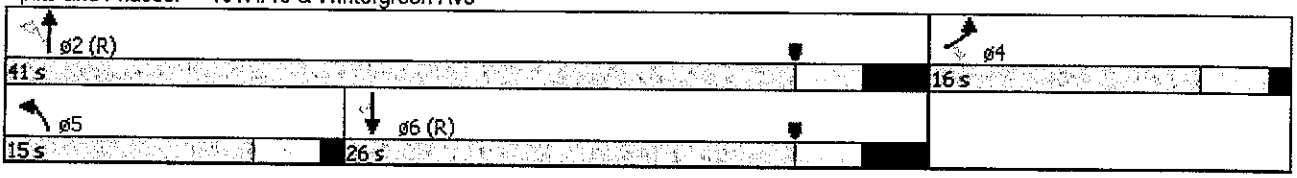
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	156	247	254	365	347	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	15	13	12	11	12
Storage Length (ft)	350	0	130			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1742	1829	3539	3421	1583
Flt Permitted	0.950		0.438			
Satd. Flow (perm)	1888	1742	843	3539	3421	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		309				276
Link Speed (mph)	30			35	35	
Link Distance (ft)	3489			1475	454	
Travel Time (s)	79.3			28.7	8.8	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.85	0.85
Adj. Flow (vph)	195	309	330	474	408	276
Shared Lane Traffic (%)						
Lane Group Flow (vph)	195	309	330	474	408	276
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	10.0	10.0	10.0	16.0	16.0	16.0
Total Split (s)	16.0	16.0	15.0	41.0	26.0	26.0
Total Split (%)	28.1%	28.1%	26.3%	71.9%	45.6%	45.6%
Maximum Green (s)	12.0	12.0	11.0	35.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.3	10.3	38.7	36.7	23.4	23.4
Actuated g/C Ratio	0.18	0.18	0.68	0.64	0.41	0.41
v/c Ratio	0.57	0.54	0.45	0.21	0.29	0.34
Control Delay	28.0	7.0	6.1	4.7	12.9	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.0	7.0	6.1	4.7	12.9	3.5
LOS	C	A	A	A	B	A
Approach Delay	15.1			5.3	9.1	
Approach LOS	B			A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	60	0	36	30	48	0
Queue Length 95th (ft)	97	36	56	41	77	34
Internal Link Dist (ft)	3409			1395	374	
Turn Bay Length (ft)	350		130			
Base Capacity (vph)	397	610	762	2280	1404	812
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	0.49	0.51	0.43	0.21	0.29	0.34

Intersection Summary

Area Type: Other
Cycle Length: 57
Actuated Cycle Length: 57
Offset: 46 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 9.1 Intersection LOS: A
Intersection Capacity Utilization 44.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 101: #10 & Wintergreen Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	160	88	50	134	11	54	105	36	42	314	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	12	15	12	12	13	12
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		0.954			0.992			0.975			0.993	
Flt Protected		0.998			0.987			0.986			0.994	
Satd. Flow (prot)	0	1774	0	0	1945	0	0	1970	0	0	1900	0
Flt Permitted		0.983			0.813			0.986			0.994	
Satd. Flow (perm)	0	1747	0	0	1602	0	0	1970	0	0	1900	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								13			3	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		2870			1412			1138			1113	
Travel Time (s)		65.2			32.1			31.0			30.4	
Peak Hour Factor	0.76	0.76	0.76	0.72	0.72	0.72	0.82	0.82	0.82	0.73	0.73	0.73
Adj. Flow (vph)	14	211	116	69	186	15	66	128	44	58	430	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	0	0	270	0	0	238	0	0	515	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		9.0	9.0		7.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		15.0	15.0		13.0	13.0	
Total Split (s)	32.0	32.0		32.0	32.0		20.0	20.0		27.0	27.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%		25.3%	25.3%		34.2%	34.2%	
Maximum Green (s)	27.0	27.0		27.0	27.0		14.0	14.0		21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			6.0			6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		27.0			27.0			12.6			21.0	
Actuated g/C Ratio		0.35			0.35			0.16			0.27	
v/c Ratio		0.56			0.48			0.72			1.00	
Control Delay		25.2			23.8			42.7			70.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		25.2			23.8			42.7			70.2	
LOS		C			C			D			E	
Approach Delay		25.2			23.8			42.7			70.2	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)		136			104			104			~260	
Queue Length 95th (ft)		174			130			159			#320	
Internal Link Dist (ft)		2790			1332			1058			1033	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		608			557			366			516	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.56			0.48			0.65			1.00	

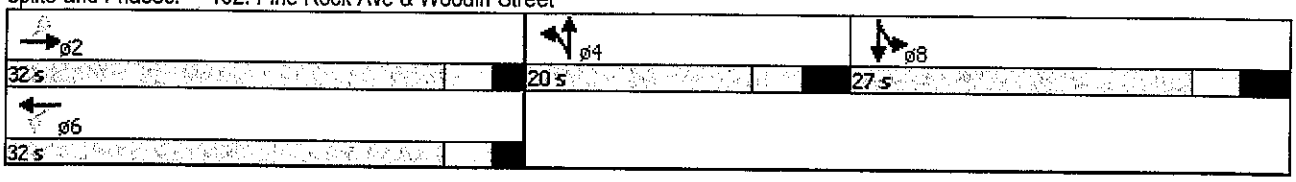
Intersection Summary

Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 77.6
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 45.0 Intersection LOS: D
Intersection Capacity Utilization 60.8% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 102: Pine Rock Ave & Woodin Street



Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	0	14	0	42	0	57	0	18	72	42
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	0	17	0	52	0	70	0	20	80	47
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.6	8.1	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	42%	42%	17%
Vol Thru, %	55%	0%	0%	62%
Vol Right, %	32%	58%	58%	21%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	24	99	81
LT Vol	72	0	0	50
Through Vol	42	14	57	17
RT Vol	18	10	42	14
Lane Flow Rate	147	30	122	125
Geometry Grp	1	1	1	1
Degree of Util (X)	0.173	0.036	0.146	0.15
Departure Headway (Hd)	4.245	4.404	4.305	4.337
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	848	814	835	829
Service Time	2.26	2.427	2.323	2.354
HCM Lane V/C Ratio	0.173	0.037	0.146	0.151
HCM Control Delay	8.1	7.6	8.1	8.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.5	0.5

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	14	50	17
Peak Hour Factor	0.92	0.65	0.65	0.65
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	22	77	26
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.1
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	2	147	157	6	15	4
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	160	171	7	16	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	177	0	-	0	338	174
Stage 1	-	-	-	-	174	-
Stage 2	-	-	-	-	164	-
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	1399	-	-	-	658	869
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	865	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1399	-	-	-	657	869
Mov Cap-2 Maneuver	-	-	-	-	657	-
Stage 1	-	-	-	-	856	-
Stage 2	-	-	-	-	863	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1399	-	-	-	693
HCM Lane V/C Ratio	0.002	-	-	-	0.03
HCM Control Delay (s)	7.6	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	88	14	66	95	10	61
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	15	72	103	11	66

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	111	0	350	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	247	-
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	-	-	1479	-	647	952
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	794	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1479	-	613	952
Mov Cap-2 Maneuver	-	-	-	-	613	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	753	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	883	-	-	1479	-
HCM Lane V/C Ratio	0.087	-	-	0.049	-
HCM Control Delay (s)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

CAPACITY ANALYSES

2015 Background Traffic Volumes
Weekday Afternoon Peak Hour

Tighe&Bond

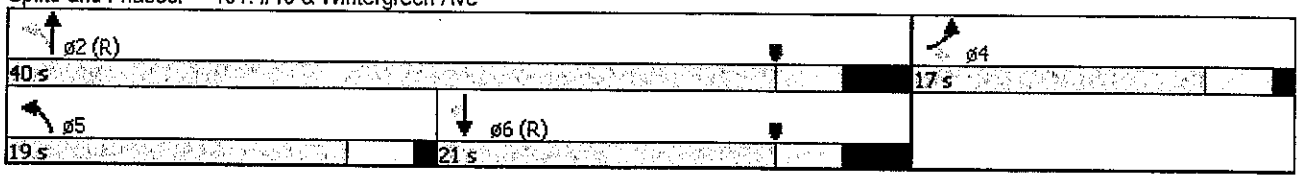
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	242	243	209	709	493	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	15	13	12	11	12
Storage Length (ft)	350	0	130			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1742	1829	3539	3421	1583
Flt Permitted	0.950		0.352			
Satd. Flow (perm)	1888	1742	678	3539	3421	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		304				235
Link Speed (mph)	30			35	35	
Link Distance (ft)	3348			1476	499	
Travel Time (s)	76.1			28.8	9.7	
Peak Hour Factor	0.80	0.80	0.86	0.86	0.86	0.86
Adj. Flow (vph)	302	304	243	824	573	235
Shared Lane Traffic (%)						
Lane Group Flow (vph)	302	304	243	824	573	235
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	10.0	10.0	10.0	16.0	16.0	16.0
Total Split (s)	17.0	17.0	19.0	40.0	21.0	21.0
Total Split (%)	29.8%	29.8%	33.3%	70.2%	36.8%	36.8%
Maximum Green (s)	13.0	13.0	15.0	34.0	15.0	15.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.2	12.2	36.8	34.8	22.1	22.1
Actuated g/C Ratio	0.21	0.21	0.65	0.61	0.39	0.39
v/c Ratio	0.75	0.50	0.40	0.38	0.43	0.31
Control Delay	34.4	6.0	6.4	6.4	14.9	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.4	6.0	6.4	6.4	14.9	3.7
LOS	C	A	A	A	B	A
Approach Delay	20.2			6.4	11.7	
Approach LOS	C			A	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	95	0	29	66	74	0
Queue Length 95th (ft)	144	35	51	90	116	34
Internal Link Dist (ft)	3268			1396	419	
Turn Bay Length (ft)	350		130			
Base Capacity (vph)	430	631	741	2162	1326	757
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	0.70	0.48	0.33	0.38	0.43	0.31

Intersection Summary

Area Type: Other
Cycle Length: 57
Actuated Cycle Length: 57
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 50.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 101: #10 & Wintergreen Ave



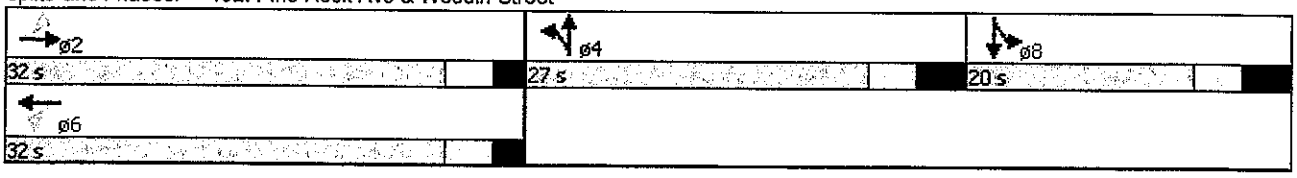
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	73	46	55	131	19	65	269	36	26	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	12	15	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956			0.988			0.987			0.988	
Flt Protected		0.992			0.987			0.991			0.994	
Satd. Flow (prot)	0	1767	0	0	1938	0	0	2004	0	0	1890	0
Flt Permitted		0.922			0.871			0.991			0.994	
Satd. Flow (perm)	0	1642	0	0	1710	0	0	2004	0	0	1890	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								7			6	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1838			1731			1463			1168	
Travel Time (s)		50.1			47.2			39.9			31.9	
Peak Hour Factor	0.76	0.76	0.76	0.85	0.85	0.85	0.95	0.95	0.95	0.86	0.86	0.86
Adj. Flow (vph)	32	96	61	65	154	22	68	283	38	30	200	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	189	0	0	241	0	0	389	0	0	253	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		9.0	9.0		7.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		15.0	15.0		13.0	13.0	
Total Split (s)	32.0	32.0		32.0	32.0		27.0	27.0		20.0	20.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%		34.2%	34.2%		25.3%	25.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		21.0	21.0		14.0	14.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			6.0			6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		27.1			27.1			18.1			12.9	
Actuated g/C Ratio		0.36			0.36			0.24			0.17	
v/c Ratio		0.32			0.39			0.80			0.77	
Control Delay		20.5			21.4			39.9			46.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.5			21.4			39.9			46.8	
LOS		C			C			D			D	
Approach Delay		20.5			21.4			39.9			46.8	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)		67			88			171			115	
Queue Length 95th (ft)		99			141			#275			#207	
Internal Link Dist (ft)		1758			1651			1383			1088	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		592			616			566			358	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.32			0.39			0.69			0.71	

Intersection Summary

Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 75.2
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 33.9 Intersection LOS: C
Intersection Capacity Utilization 57.3% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Pine Rock Ave & Woodin Street



Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	0	26	0	41	0	29	0	24	60	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	0	28	0	45	0	32	0	26	65	58
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	8	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	28%	59%	12%
Vol Thru, %	44%	0%	0%	77%
Vol Right, %	39%	72%	41%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	137	36	70	129
LT Vol	60	0	0	99
Through Vol	53	26	29	14
RT Vol	24	10	41	16
Lane Flow Rate	149	39	76	140
Geometry Grp	1	1	1	1
Degree of Util (X)	0.172	0.046	0.095	0.164
Departure Headway (Hd)	4.147	4.275	4.477	4.321
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	868	840	803	836
Service Time	2.157	2.289	2.487	2.321
HCM Lane V/C Ratio	0.172	0.046	0.095	0.167
HCM Control Delay	8	7.5	8	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.3	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	99	14
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	108	15
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.2
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	5	80	128	21	7	5
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	87	139	23	8	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	162	0	-	0	249	151
Stage 1	-	-	-	-	151	-
Stage 2	-	-	-	-	98	-
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	1417	-	-	-	739	895
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1417	-	-	-	736	895
Mov Cap-2 Maneuver	-	-	-	-	736	-
Stage 1	-	-	-	-	877	-
Stage 2	-	-	-	-	922	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1417	-	-	-	795
HCM Lane V/C Ratio	0.004	-	-	-	0.016
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	50	9	79	54	5	35
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	10	86	59	5	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	289	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	230	-
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	-	-	1538	-	702	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	808	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1538	-	661	1007
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	761	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.4	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	945	-	-	1538	-
HCM Lane V/C Ratio	0.046	-	-	0.056	-
HCM Control Delay (s)	9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-

CAPACITY ANALYSES

2015 Combined Traffic Volumes
Weekday Morning Peak Hour

Tighe&Bond

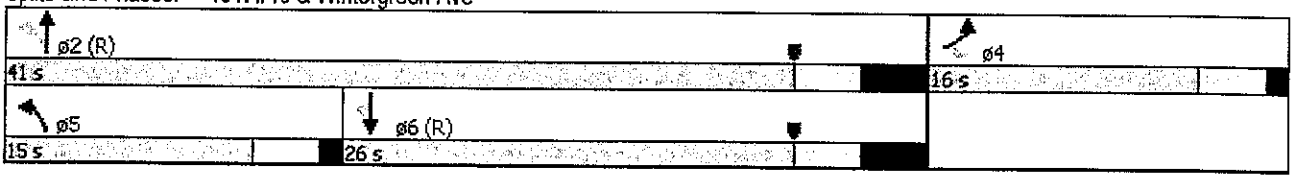
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	161	252	255	365	347	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	15	13	12	11	12
Storage Length (ft)	350	0	130			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1742	1829	3539	3421	1583
Flt Permitted	0.950		0.437			
Satd. Flow (perm)	1888	1742	841	3539	3421	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		315				278
Link Speed (mph)	30			35	35	
Link Distance (ft)	3489			1475	454	
Travel Time (s)	79.3			28.7	8.8	
Peak Hour Factor	0.80	0.80	0.77	0.77	0.85	0.85
Adj. Flow (vph)	201	315	331	474	408	278
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	315	331	474	408	278
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	10.0	10.0	10.0	16.0	16.0	16.0
Total Split (s)	16.0	16.0	15.0	41.0	26.0	26.0
Total Split (%)	28.1%	28.1%	26.3%	71.9%	45.6%	45.6%
Maximum Green (s)	12.0	12.0	11.0	35.0	20.0	20.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	10.4	10.4	38.6	36.6	23.3	23.3
Actuated g/C Ratio	0.18	0.18	0.68	0.64	0.41	0.41
v/c Ratio	0.59	0.55	0.45	0.21	0.29	0.34
Control Delay	28.4	7.0	6.1	4.8	13.0	3.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.4	7.0	6.1	4.8	13.0	3.5
LOS	C	A	A	A	B	A
Approach Delay	15.3			5.3	9.1	
Approach LOS	B			A	A	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	62	0	37	30	48	0
Queue Length 95th (ft)	100	36	56	41	77	34
Internal Link Dist (ft)	3409			1395	374	
Turn Bay Length (ft)	350		130			
Base Capacity (vph)	397	615	760	2275	1397	810
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	0.51	0.51	0.44	0.21	0.29	0.34

Intersection Summary

Area Type: Other
Cycle Length: 57
Actuated Cycle Length: 57
Offset: 46 (81%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 40
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.59
Intersection Signal Delay: 9.2 Intersection LOS: A
Intersection Capacity Utilization 44.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 101: #10 & Wintergreen Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	180	104	50	137	11	62	105	36	42	314	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	12	15	12	12	13	12
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		0.952			0.993			0.976			0.993	
Flt Protected		0.998			0.988			0.985			0.994	
Satd. Flow (prot)	0	1770	0	0	1949	0	0	1970	0	0	1900	0
Flt Permitted		0.985			0.779			0.985			0.994	
Satd. Flow (perm)	0	1747	0	0	1537	0	0	1970	0	0	1900	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								12			3	
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		2870			1412			1138			1113	
Travel Time (s)		65.2			32.1			31.0			30.4	
Peak Hour Factor	0.76	0.76	0.76	0.72	0.72	0.72	0.82	0.82	0.82	0.73	0.73	0.73
Adj. Flow (vph)	14	237	137	69	190	15	76	128	44	58	430	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	388	0	0	274	0	0	248	0	0	515	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		9.0	9.0		7.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		15.0	15.0		13.0	13.0	
Total Split (s)	32.0	32.0		32.0	32.0		20.0	20.0		27.0	27.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%		25.3%	25.3%		34.2%	34.2%	
Maximum Green (s)	27.0	27.0		27.0	27.0		14.0	14.0		21.0	21.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			6.0			6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		27.0			27.0			12.8			21.0	
Actuated g/C Ratio		0.35			0.35			0.16			0.27	
v/c Ratio		0.64			0.51			0.75			1.00	
Control Delay		27.5			24.7			44.4			71.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		27.5			24.7			44.4			71.0	
LOS		C			C			D			E	
Approach Delay		27.5			24.7			44.4			71.0	
Approach LOS		C			C			D			E	
Queue Length 50th (ft)		159			107			110			~260	
Queue Length 95th (ft)		200			134			166			#320	
Internal Link Dist (ft)		2790			1332			1058			1033	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		606			533			364			515	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.64			0.51			0.68			1.00	

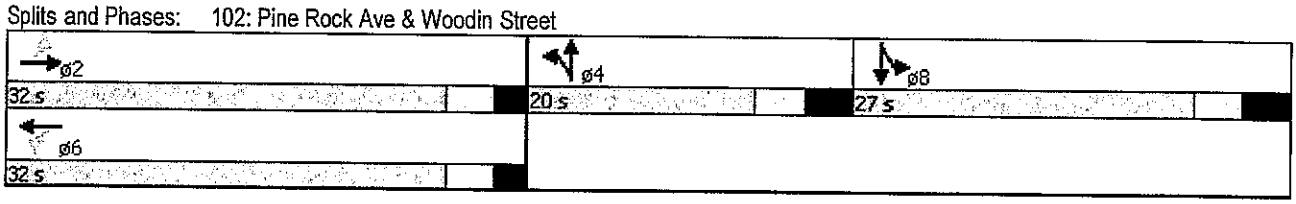
Intersection Summary

Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 77.8
Natural Cycle: 65
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 45.6 Intersection LOS: D
Intersection Capacity Utilization 63.8% ICU Level of Service B
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 102: Pine Rock Ave & Woodin Street



Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	0	14	0	52	0	14	0	18	72	44
Peak Hour Factor	0.92	0.81	0.81	0.81	0.92	0.81	0.81	0.81	0.92	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	0	17	0	64	0	17	0	20	80	49
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	8.1	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	42%	79%	7%
Vol Thru, %	54%	0%	0%	69%
Vol Right, %	33%	58%	21%	24%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	134	24	66	72
LT Vol	72	0	0	50
Through Vol	44	14	14	17
RT Vol	18	10	52	5
Lane Flow Rate	149	30	81	111
Geometry Grp	1	1	1	1
Degree of Util (X)	0.167	0.036	0.103	0.13
Departure Headway (Hd)	4.15	4.326	4.56	4.215
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	870	831	790	854
Service Time	2.15	2.334	2.567	2.225
HCM Lane V/C Ratio	0.171	0.036	0.103	0.13
HCM Control Delay	8	7.5	8.1	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.3	0.4

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	5	50	17
Peak Hour Factor	0.92	0.65	0.65	0.65
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	8	77	26
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	7.9
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	140	0	26	134	6	3	0	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	152	0	28	146	7	3	0	42

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	152	0	0	152	0	0	365	366	152
Stage 1	-	-	-	-	-	-	157	157	-
Stage 2	-	-	-	-	-	-	208	209	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1429	-	-	1429	-	-	591	562	894
Stage 1	-	-	-	-	-	-	845	768	-
Stage 2	-	-	-	-	-	-	794	729	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1429	-	-	1429	-	-	578	549	894
Mov Cap-2 Maneuver	-	-	-	-	-	-	578	549	-
Stage 1	-	-	-	-	-	-	843	766	-
Stage 2	-	-	-	-	-	-	774	714	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	1.2	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	860	1429	-	-	1429	-	-	588
HCM Lane V/C Ratio	0.053	0.002	-	-	0.02	-	-	0.035
HCM Control Delay (s)	9.4	7.5	0	-	7.6	0	-	11.3
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	15	0	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	16	0	4

Major/Minor	Minor2		
Conflicting Flow All	383	362	149
Stage 1	205	205	-
Stage 2	178	157	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	575	565	898
Stage 1	797	732	-
Stage 2	824	768	-
Platoon blocked, %			
Mov Cap-1 Maneuver	538	552	898
Mov Cap-2 Maneuver	538	552	-
Stage 1	795	717	-
Stage 2	783	766	-

Approach	SB
HCM Control Delay, s	11.3
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	88	14	43	98	10	54
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	96	15	47	107	11	59

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	111	0	303	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	200	-
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	-	-	1479	-	689	952
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	834	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1479	-	666	952
Mov Cap-2 Maneuver	-	-	-	-	666	-
Stage 1	-	-	-	-	921	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.3	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	892	-	-	1479	-
HCM Lane V/C Ratio	0.078	-	-	0.032	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

CAPACITY ANALYSES

2015 Combined Traffic Volumes
Weekday Afternoon Peak Hour

Tighe&Bond

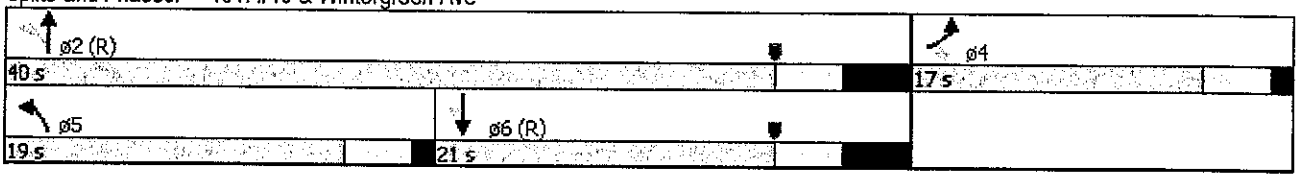
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	244	245	214	709	493	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	15	13	12	11	12
Storage Length (ft)	350	0	130			0
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt		0.850				0.850
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1888	1742	1829	3539	3421	1583
Flt Permitted	0.950		0.352			
Satd. Flow (perm)	1888	1742	678	3539	3421	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		306				240
Link Speed (mph)	30			35	35	
Link Distance (ft)	3348			1476	499	
Travel Time (s)	76.1			28.8	9.7	
Peak Hour Factor	0.80	0.80	0.86	0.86	0.86	0.86
Adj. Flow (vph)	305	306	249	824	573	240
Shared Lane Traffic (%)						
Lane Group Flow (vph)	305	306	249	824	573	240
Turn Type	Prot	Perm	pm+pt	NA	NA	Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Detector Phase	4	4	5	2	6	6
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	10.0	10.0	10.0
Minimum Split (s)	10.0	10.0	10.0	16.0	16.0	16.0
Total Split (s)	17.0	17.0	19.0	40.0	21.0	21.0
Total Split (%)	29.8%	29.8%	33.3%	70.2%	36.8%	36.8%
Maximum Green (s)	13.0	13.0	15.0	34.0	15.0	15.0
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	6.0	6.0	6.0
Lead/Lag			Lead		Lag	Lag
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	C-Max	C-Max	C-Max
Act Effct Green (s)	12.2	12.2	36.8	34.8	22.0	22.0
Actuated g/C Ratio	0.21	0.21	0.65	0.61	0.39	0.39
v/c Ratio	0.75	0.50	0.40	0.38	0.43	0.32
Control Delay	34.8	6.0	6.5	6.4	15.0	3.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	6.0	6.5	6.4	15.0	3.7
LOS	C	A	A	A	B	A
Approach Delay	20.4			6.5	11.7	
Approach LOS	C			A	B	

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Queue Length 50th (ft)	96	0	30	66	75	0
Queue Length 95th (ft)	145	35	52	90	116	35
Internal Link Dist (ft)	3268			1396	419	
Turn Bay Length (ft)	350		130			
Base Capacity (vph)	430	633	740	2160	1319	757
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	0.71	0.48	0.34	0.38	0.43	0.32

Intersection Summary

Area Type: Other
Cycle Length: 57
Actuated Cycle Length: 57
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 11.6 Intersection LOS: B
Intersection Capacity Utilization 50.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 101: #10 & Wintergreen Ave



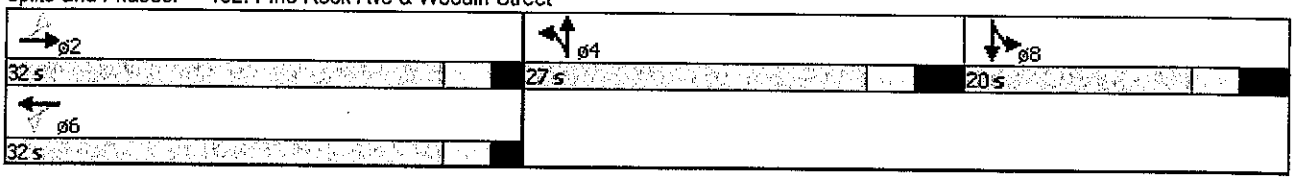
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	24	118	64	55	154	19	80	269	36	26	172	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	14	12	12	15	12	12	13	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958			0.989			0.987			0.988	
Flt Protected		0.994			0.988			0.990			0.994	
Satd. Flow (prot)	0	1774	0	0	1941	0	0	2002	0	0	1890	0
Flt Permitted		0.941			0.873			0.990			0.994	
Satd. Flow (perm)	0	1679	0	0	1716	0	0	2002	0	0	1890	0
Right Turn on Red			No			No			Yes			Yes
Satd. Flow (RTOR)								6			6	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1838			1731			1463			1168	
Travel Time (s)		50.1			47.2			39.9			31.9	
Peak Hour Factor	0.76	0.76	0.76	0.85	0.85	0.85	0.95	0.95	0.95	0.86	0.86	0.86
Adj. Flow (vph)	32	155	84	65	181	22	84	283	38	30	200	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	0	0	268	0	0	405	0	0	253	0
Turn Type	Perm	NA		Perm	NA		Split	NA		Split	NA	
Protected Phases		2			6		4	4		8	8	
Permitted Phases	2			6								
Detector Phase	2	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	20.0	20.0		20.0	20.0		9.0	9.0		7.0	7.0	
Minimum Split (s)	25.0	25.0		25.0	25.0		15.0	15.0		13.0	13.0	
Total Split (s)	32.0	32.0		32.0	32.0		27.0	27.0		20.0	20.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%		34.2%	34.2%		25.3%	25.3%	
Maximum Green (s)	27.0	27.0		27.0	27.0		21.0	21.0		14.0	14.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			6.0			6.0	
Lead/Lag							Lead	Lead		Lag	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Act Effct Green (s)		27.1			27.1			18.7			12.9	
Actuated g/C Ratio		0.36			0.36			0.25			0.17	
v/c Ratio		0.45			0.44			0.81			0.77	
Control Delay		22.7			22.3			41.2			47.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.7			22.3			41.2			47.4	
LOS		C			C			D			D	
Approach Delay		22.7			22.3			41.2			47.4	
Approach LOS		C			C			D			D	
Queue Length 50th (ft)		103			102			180			117	
Queue Length 95th (ft)		139			158			#308			#207	
Internal Link Dist (ft)		1758			1651			1383			1088	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Bay Length (ft)												
Base Capacity (vph)		600			613			561			355	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.44			0.72			0.71	

Intersection Summary

Area Type: Other
Cycle Length: 79
Actuated Cycle Length: 75.8
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 34.1 Intersection LOS: C
Intersection Capacity Utilization 65.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Pine Rock Ave & Woodin Street



Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR
Vol, veh/h	0	10	0	26	0	45	0	29	0	24	60	44
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	11	0	28	0	49	0	32	0	26	65	48
Number of Lanes	0	0	1	0	0	0	1	0	0	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	SB
Opposing Lanes	1	1	1
Conflicting Approach Left	SB	NB	EB
Conflicting Lanes Left	1	1	1
Conflicting Approach Right	NB	SB	WB
Conflicting Lanes Right	1	1	1
HCM Control Delay	7.5	8	8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	19%	28%	61%	12%
Vol Thru, %	47%	0%	0%	77%
Vol Right, %	34%	72%	39%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	36	74	129
LT Vol	60	0	0	99
Through Vol	44	26	29	14
RT Vol	24	10	45	16
Lane Flow Rate	139	39	80	140
Geometry Grp	1	1	1	1
Degree of Util (X)	0.162	0.046	0.1	0.168
Departure Headway (Hd)	4.187	4.264	4.478	4.311
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	860	841	802	834
Service Time	2.199	2.282	2.494	2.323
HCM Lane V/C Ratio	0.162	0.046	0.1	0.168
HCM Control Delay	8	7.5	8	8.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.3	0.6

Intersection	
Intersection Delay, s/veh	
Intersection LOS	

Movement	SBU	SBL	SBT	SBR
Vol, veh/h	0	16	99	14
Peak Hour Factor	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2
Mvmt Flow	0	17	108	15
Number of Lanes	0	0	1	0

Approach	SB
Opposing Approach	NB
Opposing Lanes	1
Conflicting Approach Left	WB
Conflicting Lanes Left	1
Conflicting Approach Right	EB
Conflicting Lanes Right	1
HCM Control Delay	8.2
HCM LOS	A

Lane

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	5	80	0	37	124	21	1	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	87	0	40	135	23	1	0	46

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	158	0	0	87	0	0	327	336	87
Stage 1	-	-	-	-	-	-	98	98	-
Stage 2	-	-	-	-	-	-	229	238	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1422	-	-	1509	-	-	626	585	971
Stage 1	-	-	-	-	-	-	908	814	-
Stage 2	-	-	-	-	-	-	774	708	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1422	-	-	1509	-	-	607	566	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	607	566	-
Stage 1	-	-	-	-	-	-	904	811	-
Stage 2	-	-	-	-	-	-	747	687	-

Approach	EB	WB	NB
HCM Control Delay, s	0.4	1.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	958	1422	-	-	1509	-	-	564	901
HCM Lane V/C Ratio	0.049	0.004	-	-	0.027	-	-	0.013	0.006
HCM Control Delay (s)	9	7.5	0	-	7.5	0	-	11.5	9
HCM Lane LOS	A	A	A	-	A	A	-	B	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0	0

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	7	0	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	0	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	92	92	92
Heavy Vehicles, %	2	2	2
Mvmt Flow	8	0	5

Major/Minor	Minor2		
Conflicting Flow All	348	325	146
Stage 1	227	227	-
Stage 2	121	98	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	607	593	901
Stage 1	776	716	-
Stage 2	883	814	-
Platoon blocked, %			
Mov Cap-1 Maneuver	564	573	901
Mov Cap-2 Maneuver	564	573	-
Stage 1	773	695	-
Stage 2	838	811	-

Approach	SB
HCM Control Delay, s	10.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	50	9	75	54	5	35
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	10	82	59	5	38

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	281	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	222	-
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	-	-	1538	-	709	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1538	-	670	1007
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	770	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.3	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	947	-	-	1538	-
HCM Lane V/C Ratio	0.046	-	-	0.053	-
HCM Control Delay (s)	9	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-