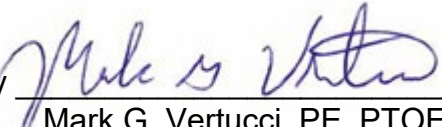


Traffic Impact Study LEARN Early Childhood School Waterford, Connecticut

April 2025

Town of Waterford Planning and Zoning Commission

Office of the State Traffic Administration (OSTA)
Administration Decision Review

Approved by  License No. 23761
Mark G. Vertucci, PE, PTOE

Prepared for:

Ms. Katelyn Chapin
Newman Architects, PC
265 Church Street 15th Floor
New Haven, CT 06510

Table of Contents

Traffic Impact Study LEARN Early Childhood School Waterford, Connecticut

Summary Sheet.....	iii
1 Introduction.....	1
2 Existing Condition.....	1
2.1 Site of Development.....	1
2.2 Adjacent Roadway Network	1
2.3 Study Area Intersections	3
2.4 Traffic Volumes, Speeds and Counts.....	4
3 Background Traffic Conditions.....	5
3.1 Growth Rate	5
3.2 Other Developments	5
3.3 Planned Roadway Improvement Projects.....	5
4 Proposed Conditions	5
4.1 Development.....	5
4.2 Site Access and Circulation	5
4.3 Trip Generation.....	6
4.4 Trip Distribution	7
4.5 Combined Volumes	7
5 Analyses.....	7
5.1 Crash Analysis	7
5.2 Intersection Sight Distance Analysis	8
5.3 Intersection Capacity Analysis	9
5.4 Queue Analysis	12
6 Conclusions & Recommendations	13

Table of Contents

Traffic Impact Study LEARN Early Childhood School Waterford, Connecticut

Appendices

End of Report

Appendix A - Tables

1. Peak Hour Site Generated Traffic Volumes
2. Intersection Crash Data Summary
3. Unsignalized Intersection Level of Service Summary
4. Signalized Intersection Level of Service Summary
5. Weekday Morning Peak Hour Queue Length Summary
6. Weekday Afternoon Peak Hour Queue Length Summary

Appendix B - Figures

1. Site Location Map
2. 2026 Background Traffic Volumes
3. Site Generated Traffic Arrival/Departure Distribution
4. Site Generated Traffic Volumes
5. 2026 Combined Traffic Volumes

Appendix C

Intersection Capacity Analysis Worksheets – Weekday Morning Peak Hour

Appendix D

Intersection Capacity Analysis Worksheets – Weekday Afternoon Peak Hour

Appendix E

Turning Movement Count (TMC) Data

Appendix F

Crash Data Records

Summary Sheet

As an aid to reviewers, this Summary Sheet has been included to outline the various study parameters utilized in this report. Although a full explanation of the study methodologies is included in the text of the report, this summary can serve as a useful reference for reviewers.

Applicant:

LEARN Regional Education Service Center

Site Acreage:

+/-16

Development Size/Type:

526 Student Charter Elementary School

48 Student Day Care Center

Parking:

233 total parking spaces (7 handicap parking spaces)

Applications:

Town of Waterford Planning and Zoning Commission

Office of the State Traffic Administration (OSTA): Administrative Decision Review

Build Year:

2026

Background Traffic Growth Factor:

0.7%

Traffic Counts:

Fuss & O'Neill -- October 12, 2022 (Turning Movement Counts)

Peak Hours Analyzed:

Weekday Morning Peak Hour -- 7:45 A.M. to 8:45 A.M.

Weekday Afternoon Peak Hour -- 3:00 P.M. to 4:00 P.M.

Expected Trip Generation:

Weekday Morning Peak Hour -- 590 trips (307 entering, 283 exiting)

Weekday Afternoon Peak Hour -- 414 trips (202 entering, 212 exiting)

Capacity Analysis:

Technique -- Highway Capacity Manual 6th Edition

Execution -- Synchro and SimTraffic Professional Software, Version 11.0

1 Introduction

LEARN Regional Education Service Center plans to demolish the existing 41,946 square foot school located at 51 Daniels Avenue in Waterford, Connecticut and replace it with a combined magnet elementary school and daycare. The combined magnet elementary school and daycare will consist of 574 students, with 526 students expected to occupy the magnet elementary school and 48 students to occupy the daycare center. The proposed development will consist of 233 total parking spaces, with 7 of those being ADA compliant spaces. The existing development is located on the south side of Daniels Avenue and is accessed via two one-way driveways, one entering and one exiting. Upon construction of the combined magnet elementary school and daycare development, full access to the site will be provided via Daniels Avenue across a single two-way site driveway. Internal connection between the developments will be provided as shown on the site location map, *Figure No. 1 of Appendix B*. The development is expected to be constructed in 2026.

Fuss & O'Neill has been retained to study the impact of the proposed development on traffic conditions throughout the adjacent roadway network. This report has been prepared to document the findings of the study and is being submitted to the Town of Waterford Planning and Zoning Commission in support of local permitting efforts. This report will also be submitted to the Office of the State Traffic Administration (OSTA) in support of an Administrative Decision Review.

2 Existing Condition

2.1 Site of Development

LEARN Regional Education Service Center intends to demolish the existing 41,946 square foot school located at 51 Daniels Avenue in Waterford, Connecticut and replace it with a combined magnet elementary school and daycare with a total of 574 students. It should be noted that the existing 41,946 square foot school located on the site was closed in June 2020. The existing parcel, currently zoned for Residential (R), is +/-19 acres in size of which +/- 16 acres will be transferred to LEARN and developed for school and daycare purposes. The site is bounded by residential land uses across all directions.

2.2 Adjacent Roadway Network

The adjacent roadway network consists of the following roadways:

- Route 1 (Boston Post Road)
- Route 156 (Rope Ferry Road)
- Daniels Avenue
- Niantic River Road
- Spithead Road
- Cross Road
- Sunnycrest Drive
- West Street

All adjacent roadways are classified by the Connecticut Department of Transportation as either arterial or major collector roads except Sunnycrest Drive.

Route 1 (Boston Post Road) is an east to west roadway under state jurisdiction that enters the study area at the western intersection of Sill Lane at Route 1 (Lyne Street) and Route 1 (Boston Post Road) and extends east 13.6 miles to the Waterford and New London town lines. Route 1 (Boston Post Road) provides access to commercial, residential, industrial, and business land uses in the vicinity of the site. In the vicinity of the site, Route 1 (Boston Post Road) is classified by the Connecticut Department of Transportation as a principal arterial that provides one 12-foot lane of travel in each direction at the study area intersections. The speed limit is 40 miles per hour (mph) on Route 1 (Boston Post Road) in the vicinity of the study area intersections. Sidewalks and crosswalks are available along Route 1 (Boston Post Road).

Route 156 (Rope Ferry Road) is an east to west roadway under state jurisdiction that enters the study area from the west at the East Lyme/Waterford town line and extends east 2.9 miles to its intersection with Route 1 (Boston Post Road) and Vivian Street. Route 156 (Rope Ferry Road) provides access to commercial, residential, industrial, and business land uses in the vicinity of the site. In the vicinity of the site, Route 156 (Rope Ferry Road) is classified by the Connecticut Department of Transportation as a minor arterial roadway that provides one 12-foot lane of travel in each direction. The speed limit is 35 miles per hour on Route 156 (Rope Ferry Road). Sidewalks and crosswalks are available along Route 156 (Rope Ferry Road).

Daniels Avenue is a two-lane undivided roadway that runs east to west under town jurisdiction and extends from the western intersection of Daniels Avenue at Niantic River Road east approximately 0.7 miles to the intersection of Daniels Avenue at Spithead Road. Daniels Avenue provides access to residential land uses. Daniels Avenue is classified by the Connecticut Department of Transportation as major collector roadway and has a posted speed limit of 25 miles per hour. Sidewalks and crosswalks are available along Daniels Avenue.

Niantic River Road is a two-lane undivided roadway that runs north to south under town jurisdiction that extends from the southern intersection of Niantic River Road at Rope Ferry Road north approximately 2.4 miles to the intersection of Niantic River Road at Route 1 (Boston Post Road). Niantic River Road provides access to commercial, residential, industrial and business land uses in the vicinity of the site. Niantic River Road is classified by the Connecticut Department of Transportation as a major collector roadway and has a posted speed limit of 30 miles per hour. Sidewalks and crosswalks are available along Niantic River Road.

Spithead Road is a two-lane undivided roadway that runs north to south under town jurisdiction that extends from the southern intersection of Spithead Road at Route 156 (Rope Ferry Road) north approximately 1.75 miles to the intersection of Spithead Road at Route 1 (Boston Post Road) and Cross Road. Spithead Road provides access to mostly residential land uses in the vicinity of the site. Spithead Road is classified by the Connecticut Department of Transportation as a major collector roadway. The speed limit on Spithead Road is 25 miles per hour south of its intersection with Daniels Avenue and 30 miles per hour north of its intersection with Daniels Avenue. Sidewalks and crosswalks are available along Spithead Road.

Cross Road is a two-lane undivided roadway that runs north to south under town jurisdiction that extends from the southern intersection of Cross Road at Spithead Road and Route 1 (Boston Post Road)/Sunniecrest Drive north approximately 2.2 miles to the intersection of Cross Road at Route 85 (Hartford Turnpike). Cross Road provides access to commercial, residential, industrial and business land uses. Cross Road is classified by the Connecticut Department of Transportation as a major collector roadway and has a posted speed limit of 30 miles per hour. Sidewalks are available along Cross Road.

Sunniecrest Drive is a two-lane undivided roadway that runs east to west under town jurisdiction that extends from the western intersection of Cross Road at Spithead Road and Route 1 (Boston Post Road)/Sunniecrest

Drive east approximately 750 feet its terminus at a cul-de-sac. Sunnecrest Drive provides access to residential land uses. Sunnecrest Drive is classified by the Connecticut Department of Transportation as a local roadway. The speed limit is not posted. Sidewalks and crosswalks are not available along Sunnecrest Drive.

West Street is a two-lane undivided connector roadway that runs east to west under town jurisdiction that extends from the western intersection of West Street at Niantic River Road east approximately 450 feet to the intersection of West Street at Route 156 (Rope Ferry Road). West Street provides access to primarily residential land uses and is classified by the Connecticut Department of Transportation as a major collector roadway. The speed limit is not posted. Sidewalks and crosswalks are available along West Street.

2.3 Study Area Intersections

The following study area intersections were reviewed:

- Daniels Avenue at Site Driveway
- Daniels Avenue at Niantic River Road
- Daniels Avenue at Spithead Road
- Route 156 (Rope Ferry Road) at Spithead Road
- Route 156 (Rope Ferry Road) at West Street
- Niantic River Road at West Street
- Route 1 (Boston Post Road) at Niantic River Road
- Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunnecrest Drive

Daniels Avenue at the Site Driveway is an unsignalized t-intersection that provides full movement access to the existing development with stop control along the northbound approach. The eastbound and westbound approaches of Daniels Avenue are uncontrolled. The eastbound approach of Daniels Avenue contains a shared through/right turn lane, and the westbound approach of Daniels Avenue contains a shared left/through lane into the site. The northbound approach of the existing Site Driveway will provide a combined left/right turn lane out of the development.

Daniels Avenue at Niantic River Road is an unsignalized t-intersection with Daniels Avenue providing the westbound approach while Niantic River Road provides the northbound/southbound approaches. Along the northbound approach of the intersection, Niantic River Road contains a shared through/right turn lane while the southbound approach of Niantic River Road contains a shared through/left turn lane. Along the stop-controlled westbound approach of the intersection, Daniels Avenue provides a shared left/right turn lane. A crosswalk is provided across the westbound approach, allowing people to cross Daniels Avenue.

Daniels Avenue at Spithead Road is an unsignalized t-intersection with Daniels Avenue providing the eastbound approach while Spithead Road provides the northbound/southbound approaches. Along the northbound approach of the intersection, Spithead Road contains a shared left/through lane while the southbound approach of Niantic River Road contains a shared through/right turn lane. Along the stop-controlled eastbound approach of the intersection, Daniels Avenue provides a shared left/right turn lane. A crosswalk is provided across the eastbound approach, allowing people to cross Daniels Avenue.

Route 156 (Rope Ferry Road) at Spithead Road is an unsignalized t-intersection with Spithead Road providing the southbound approach while Route 156 (Rope Ferry Road) provides the eastbound/westbound approaches. Along the eastbound approach of the intersection, Route 156 (Rope Ferry Road) provides a shared left/through

lane while the westbound approach of Route 156 (Rope Ferry Road) contains a shared through/right turn lane. Along the stop-controlled southbound approach of the intersection, Spithead Road provides a shared left/right turn lane. A crosswalk is provided across the southbound approach, allowing people to cross Spithead Road.

Route 156 (Rope Ferry Road) at West Street is a signalized t-intersection that is not part of a coordinated signal system along Route 156 (Rope Ferry Road). The intersection provides eastbound/westbound approaches on Route 156 (Rope Ferry Road) and a southbound approach on West Street. The eastbound approach of Route 156 (Rope Ferry Road) provides a dedicated left turn lane and through lane while the westbound approach of Route 156 (Rope Ferry Road) provides a dedicated right turn lane and a through lane. The southbound approach of West Street provides a shared left/right turn lane. A crosswalk is provided across the southbound approach, allowing people to cross West Street.

Niantic River Road at West Street is an unsignalized t-intersection with West Street providing the westbound approach while Niantic River Road provides the northbound/southbound approaches. Along the northbound approach of the intersection, Niantic River Road contains a shared through/right turn lane while the southbound approach of Niantic River Road contains a shared through/left turn lane. Along the stop-controlled westbound approach of the intersection, West Street provides a shared left/right turn lane. A crosswalk is provided across the westbound approach, allowing people to cross West Street.

Route 1 (Boston Post Road) at Niantic River Road is a signalized t-intersection that is not part of a coordinated signal system along Route 1 (Boston Post Road). The intersection provides eastbound/westbound approaches on Route 1 (Boston Post Road) and a northbound approach on Niantic River Road. The eastbound approach of Route 1 (Boston Post Road) provides a shared through/right turn lane while the westbound approach of Route 1 (Boston Post Road) provides a shared through/left turn lane. The northbound approach of Niantic River Road provides a shared left/right turn lane. A crosswalk is provided across the eastbound approach, allowing people to cross Route 1 (Boston Post Road).

Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive is a five-legged signalized intersection that is not part of a coordinated signal system along Route 1 (Boston Post Road). The intersection provides eastbound/westbound approaches on Route 1 (Boston Post Road), a northbound approach on Spithead Road, a southbound approach on Cross Road and a southwestbound approach on Sunniecrest Drive. The northbound approach of Spithead Road provides a shared left/through/right turn lane while the southbound approach of Cross Road provides a shared left/through/right turn lane. The eastbound approach of Route 1 (Boston Post Road) provides a dedicated left turn lane and a separate through/right turn while the westbound approach of Route 1 (Boston Post Road) provides a dedicated through/left turn lane and an exclusive right turn lane. The southwest approach on Sunniecrest Drive provides a shared left/through/right turn lane. A crosswalk is provided across the eastbound approach, allowing people to cross Route 1 (Boston Post Road).

2.4 Traffic Volumes, Speeds and Counts

The greatest potential for traffic impact on the roadway network by the proposed development will occur during the weekday morning and weekday afternoon school peak hours, the periods when commuter and/or school related trips are at their highest levels. In order to determine the traffic impact of the proposed development on adjacent street traffic, representatives of Fuss & O'Neill, Inc. conducted weekday morning and weekday afternoon peak hour manual turning movement counts on Wednesday October 12th, 2022, at the eight intersections in the study area. The traffic count data collected indicates that the weekday morning peak hour of traffic is 7:45 A.M. to 8:45 A.M. and the weekday afternoon peak hour is 3:00 P.M. to 4:00 P.M. These peak hours were subsequently

analyzed for impacts. It is worth noting that should the proposed elementary magnet school hours occur outside of the adjacent roadway peak hours indicated by the traffic count data, the analysis conducted in this report would be considered conservative. Copies of the TMC traffic data have been included in *Appendix F* of this report.

3 Background Traffic Conditions

3.1 Growth Rate

Upon consultation with the Connecticut Department of Transportation (CTDOT) the 2022 existing traffic volumes were projected to the 2026 design year using a 0.7 percent per year peak hour growth factor to account for normal traffic growth in the study area. These grown volumes represent the projected Background traffic volumes as shown in *Figure No. 2 of Appendix B*.

3.2 Other Developments

Fuss & O'Neill contacted the Office of the State Traffic Administration (OSTA) and the Town of Waterford Planning and Zoning respective offices to identify any other pending or approved developments having site related traffic in the study area. Upon consultation, neither OSTA nor the Town of Waterford has knowledge of any plans for developments that would have site related traffic in the vicinity of the study area.

3.3 Planned Roadway Improvement Projects

Fuss & O'Neill contacted the Office of State Traffic Administration (OSTA) and the Town of Waterford Planning Department to identify any planned roadway improvement projects in the study area. Upon consultation, neither OSTA nor the Town of Waterford has knowledge of any roadway improvements within the study area.

4 Proposed Conditions

4.1 Development

LEARN Regional Education Service Center intends to demolish the existing 41,946 square foot school located at 51 Daniels Avenue in Waterford, Connecticut and replace it with a combined magnet elementary school and daycare. The combined magnet elementary school and daycare will consist of 574 students, with 526 students expected to occupy the magnet elementary school and 48 students to occupy the daycare center. The proposed development will consist of 233 total parking spaces, with 7 of those being ADA compliant spaces. The development is depicted on the site location map, *Figure No.1 of Appendix B* and is expected to be constructed in 2026.

4.2 Site Access and Circulation

Access to the combined magnet elementary school and daycare will be provided at the reconstructed stop-controlled driveway located along Daniels Avenue. The site driveway will provide full access and dedicated left turn and right turn lanes along the northbound approach with stop control to access Daniels Avenue. Internal connection between the facilities will be provided as shown on the site location map, *Figure No. 1 of Appendix B*.

4.3 Trip Generation

The expected site generated traffic data was calculated using existing empirical data from the Institute of Transportation Engineers (ITE) publication Trip Generation, 11th edition, 2021. This publication is an industry-accepted resource for determining trip generation. Trip generation for the weekday morning and weekday afternoon peak hour was calculated using the ITE land use codes 536 "Charter Elementary School" and 565 "Day Care Center." As a conservative approach, no credit was taken for families that may have students dropping off or picking up in both the school and the daycare.

As previously noted, LEARN Regional Education Service Center intends to demolish the existing 41,946 square foot school and replace it with a combined magnet elementary school and daycare. The combined magnet elementary school and daycare will consist of 574 students, with 526 students expected to occupy the magnet elementary school and 48 students to occupy the daycare center.

Using the ITE land use code 520 "Elementary School," the previous 41,946 square foot school was estimated to generate a total of 281 vehicle trips (152 entering, 129 exiting) during the weekday morning peak hour and a total of 171 vehicle trips (79 entering, 92 exiting) during the weekday afternoon peak hour. It should be noted that the weekday afternoon peak hour used the generator calculations as published in *Trip Generation*, 11th Edition, 2021.

For a charter elementary school comprised of 526 students, a total of 550 vehicle trips (286 entering, 264 exiting) are anticipated during the weekday morning peak hour and a total of 374 vehicle trips (183 entering, 191 exiting) are anticipated during the weekday afternoon peak hour. As for a daycare center comprised of 48 students, a total of 40 vehicle trips (21 entering, 19 exiting) are anticipated during the weekday morning peak hour and a total of 40 vehicle trips (19 entering, 21 exiting) are anticipated during the weekday afternoon peak hour. Overall, the site will generate 590 total vehicle trips in the weekday morning peak hour (307 entering, 283 exiting) and 414 total vehicle trips in the weekday afternoon peak hour (202 entering, 212 exiting).

The proposed charter elementary school and day care center are therefore expected to result in a net increase of 309 trips during the weekday morning peak hour and 243 trips during the afternoon peak hour in comparison to the previous school use on the site. Thus, a significant portion of the proposed LEARN development site traffic will not be "new" to the study area intersections as these trips were already on the road network in the past when the previous elementary school was in operation.

It is important to note that the site generated traffic for the proposed daycare and school uses will only minimally overlap during the morning and afternoon peak periods. However, for the purposes of this analysis, traffic for the two uses was conservatively estimated to occur during the same school peak hours. It should also be noted that with the proposed charter elementary school year expected to operate from late August to middle of June, a significant reduction in site trips associated with the LEARN development is anticipated for the summer months across the network.

A summary of the ITE peak hour site trip generation for the proposed facility is shown in *Figure No. 4 of Appendix B* and also summarized in *Table 1 of Appendix A*.

4.4 Trip Distribution

The distribution of traffic entering and exiting the proposed site was applied to the road network based on the existing regional traffic distributions and the layout of the adjacent roadway network. During the peak hours, the following arrival distributions of traffic are anticipated:

- 30% from the west on Route 1 (Boston Post Road)
- 20% from the north on Cross Road
- 5% from the east of Route 1 (Boston Post Road)
- 25% from the west of Route 156 (Rope Ferry Road)
- 15% from the east of Route 156 (Rope Ferry Road)
- 5% from the south of Niantic River Road

A regional arrival/departure distribution for the newly anticipated site generated traffic traveling to and from the project site is shown in *Figure No. 3 of Appendix B*.

4.5 Combined Volumes

The site generated traffic was distributed to the roadway system based on the arrival/departure distributions with the results shown in *Figure No. 4 of Appendix B*. These volumes were then added to the background volumes to yield the year 2026 peak hour Combined traffic volumes shown in *Figure No. 5 of Appendix B*.

5 Analyses

5.1 Crash Analysis

Crash data was gathered from CTDOT via the University of Connecticut Crash Data Repository for the following intersections and roadway segments:

- Daniels Avenue at Site Driveway
- Daniels Avenue at Niantic River Road
- Daniels Avenue at Spithead Road
- Route 156 (Rope Ferry Road) at Spithead Road
- Route 156 (Rope Ferry Road) at West Street
- Niantic River Road at West Street
- Route 1 (Boston Post Road) at Niantic River Road
- Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive

The records were gathered for the most recent three years of available data, 2022 through 2024. A summary of the crash data per intersection is provided in *Table 2 of Appendix A*. Copies of the crash data records have been provided in *Appendix F*.

The unsignalized intersection of Daniels Avenue at Site Driveway experienced no record of crash history within the most recent three years of crash data history from 2022 through 2024.

The unsignalized intersection of Daniels Avenue at Niantic River Road experienced an average of just under one crash per year. The intersection experienced one angle crash, and one crash classified as “not applicable” where

the driver drove through guardrail and into the Niantic River. Of the total crashes reported, the two resulted in possible injuries.

The unsignalized intersection of Daniels Avenue at Spithead Road experienced an average of one crash per year. The intersection experienced one crash where the driver drove into the embankment, one curb collision, and one that involved a utility pole collision. Of the total crashes reported, one resulted in minor injury while the remainder were property damage only collisions.

The unsignalized intersection of Route 156 (Rope Ferry Road) at Spithead Road experienced an average of one crash per year. The majority of these crashes (2) were front-to-rear collisions. Additionally, the intersection experienced one angle crash. Of the total crashes reported, all were property damage only collisions.

The signalized intersection of Route 156 (Rope Ferry Road) at West Street experienced no record of crash history within the most recent three years of crash data history from 2022 through 2024.

The unsignalized intersection of Niantic River Road at West Street experienced no record of crash history within the most recent three years of crash data history from 2022 through 2024.

The signalized intersection of Route 1 (Boston Post Road) at Niantic River Road experienced an average of just above three crashes per year. The majority of these crashes (4) were front-to-rear collisions. Additionally, the intersection experienced one angle crash, one rear-to-side collision, two opposite direction sideswipes, one same direction sideswipe and one collision classified as “not applicable” where the driver collided with the signal pole. Of the total crashes reported, two resulted in minor injury and two resulted in possible injury, while the remainder were property damage only collisions.

The signalized intersection of Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive experienced an average of just below seven crashes per year. The majority of these crashes (10) were front-to-rear collisions. Additionally, the intersection experienced five angle crashes, one front-to-rear collision, three same direction sideswipes and one collision classified as “not applicable” where a bus collided with a signal pole. Of the total crashes reported, three resulted in possible injury, while the remainder were property damage only collisions.

The type and frequency of crashes reported at the study area intersections is not considered abnormal for the traffic volumes and geometric characteristics of the study intersections along a signalized arterial corridor.

5.2 Intersection Sight Distance Analysis

Intersection sight distances were measured at the proposed site driveway location in accordance with criteria set forth in the 2023 CTDOT *Highway Design Manual*. The sight distance is measured from a point 15 feet back from the edge of the travel-way at a height of 3.5 feet, the standard height of a driver's eye.

Daniels Avenue has a posted speed limit of 25 miles per hour in both directions in the vicinity of the proposed development. A design speed of 30 miles per hour, five (5) miles per hour above the posted speed limit, was utilized for analysis.

For the design speed of 30 miles per hour on Daniels Avenue, 335 feet of intersection sight distance is required for a passenger car and 420 feet for a single unit box truck turning right or left onto a two-lane facility. Per coordination with the developer, the AASHTO S-BUS 40 was conservatively analyzed as the largest vehicle

movement for access to the site. Therefore, a single unit truck was analyzed for intersection sight distance purposes.

At the site driveway location on Daniels Avenue, the intersection sight distance looking right (east) offers 550 feet and looking left (west) offers 425 feet. Further sight distance is limited by the horizontal curvature in the road looking right (east), and vertical curvature in the road looking left (west). The site driveway location at Daniels Avenue is in substantially the same location as the existing school driveway and will exceed CTDOT sight distance criteria for the roadway design speed and provide safe egress for vehicles turning onto Daniels Avenue.

It should be noted that field observations revealed the intersection sight distances at the existing unsignalized Town maintained intersection of Daniels Avenue at Spithead Road appear to be impacted by the existing vertical and horizontal curvature of Spithead Road. Therefore, on the morning of April 16, 2025, Fuss & O'Neill measured intersection sight distances on the Daniels Avenue approach to Spithead Road in accordance with the same criteria mentioned above set forth in the 2003 CTDOT *Highway Design Manual*.

Spithead Road has a posted speed limit of 30 miles per hour in the southbound direction and a posted speed limit of 25 miles per hour in the northbound direction in the vicinity of the intersection. Therefore, design speeds of 30 and 35 miles per hour, respectively, were utilized for this analysis.

For the design speed of 30 miles per hour southbound on Spithead Road, the following intersection sight distances are required for a vehicle turning right onto Spithead Road:

- 335 feet of intersection sight distance for a passenger car
- 420 feet of intersection sight distance for a single-unity truck

For the design speed of 35 miles per hour northbound on Spithead Road, the following intersection sight distances are required for a vehicle turning left onto Spithead Road:

- 390 feet of intersection sight distance for a passenger car
- 490 feet of intersection sight distance for a single-unity truck

Approximately 230 feet of intersection sight distance is provided looking left from Daniels Avenue (north) which falls short of CTDOT requirements for a 30 mile per hour design speed due to existing vegetation, a berm, and the horizontal curvature of Spithead Road north of the intersection. Upon removal of the vegetation along the roadway, intersection sight distance can be improved slightly but it is still expected to fall below the threshold due to the horizontal curve constraints along the existing roadway. Looking right out of Daniels Avenue, there is approximately 330 feet of intersection sight distance provided looking south along Spithead Road which also falls short of CTDOT requirements for a 35 mile per hour design speed due to existing horizontal and vertical curve constraints.

Given these existing intersection constraints and noted concern for safe egress of the additional passenger cars and single unit trucks/busses being generated onto Spithead Road by the new school, we recommend that the intersection be converted to an all-way stop-controlled intersection by adding stop and stop ahead signs on both Spithead approaches that are in accordance with MUTCD distance guidelines.

5.3 Intersection Capacity Analysis

Capacity analyses for both signalized and unsignalized intersections were conducted using Synchro Professional Software, version 11.0.

In discussing intersection capacity analyses results, two terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio (v/c) and level of service (LOS).

The v/c ratio is a ratio of the volume of traffic using an intersection to the total capacity of the intersection (the maximum number of vehicles that can utilize the intersection during an hour). The v/c ratio can be used to describe the percentage of capacity utilized by a single intersection movement, a combination of movements, an entire intersection approach, or the intersection as a whole.

LOS is a measure of the delay experienced by stopped vehicles at an intersection. LOS is rated on a scale from A to F, with A describing a condition of very low delay (less than 10 seconds per vehicle), and F describing a condition where delays will exceed 50 seconds per vehicle for unsignalized intersections and 80 seconds per vehicle for signalized intersections. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers.

LOS is generally used to describe the operation (based on delay time) of both signalized and unsignalized intersections, while v/c ratio is applied to signalized intersections only. These definitions for v/c ratio and LOS, as well as the methodology for conducting signalized and unsignalized intersection capacity analyses, are taken from the "Highway Capacity Manual 6th Edition" published by the Transportation Research Board.

In discussing two-way stop controlled unsignalized intersection capacity analyses, LOS is used to provide a description of the delay and operational characteristics of the turns from the minor street (stop sign controlled) to the major street, and turns from the major street to the minor street. Through vehicles are not delayed by the minor street and do not experience delay, therefore they are not rated with a level of service.

Using the above referenced methodologies, weekday morning and weekday afternoon peak hour capacity analyses were conducted at the following signalized intersections:

- Route 156 (Rope Ferry Road) at West Street
- Route 1 (Boston Post Road) at Niantic River Road
- Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive

Weekday morning and weekday afternoon peak hour capacity analyses were also conducted at the following unsignalized intersections:

- Daniels Avenue at Site Driveway
- Daniels Avenue at Niantic River Road
- Daniels Avenue at Spithead Road
- Route 156 (Rope Ferry Road) at Spithead Road
- Niantic River Road at West Street

Tables No. 3 and 4 of Appendix A presents a summary of the levels of service at the unsignalized and signalized intersections, for both Background and Combined Conditions traffic volumes. Copies of the analysis worksheets can be found in *Appendices C and D*, for the weekday morning and weekday afternoon peak hours respectively.

The determination of the traffic impact from the proposed development is made through a comparison of the Background Conditions LOS (without the proposed development) versus the Combined Conditions LOS (with the proposed development).

The signalized intersection of Route 156 (Rope Ferry Road) at West Street operates at LOS A during the weekday morning and afternoon peak hours under 2026 background conditions. With the addition of the LEARN Early Childhood School development site traffic and minor signal timing adjustments, the signalized intersection of Route 156 (Rope Ferry Road) at West Street is expected to maintain these same LOS operations with minimal increases in v/c.

The signalized intersection of Route 1 (Boston Post Road) at Niantic River Road operates at LOS B during the weekday morning and afternoon peak hours under 2026 background conditions. With the addition of the LEARN Early Childhood School development site traffic and minor signal timing adjustments, the signalized intersection of Route 1 (Boston Post Road) at Niantic River Road is expected to maintain these same LOS operations with minimal increases in v/c.

The signalized intersection of Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive operates at LOS E during the weekday morning and afternoon peak hours under 2026 background conditions. With the addition of the LEARN Early Childhood School development site traffic and minor signal timing adjustments, the signalized intersection of Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive is expected to operate at LOS E during the weekday morning peak hour and LOS F during the weekday afternoon peak hour. However, under 2026 background conditions, the northbound and southbound approaches already operate at LOS F during both peak hours and the v/c ratio during the weekday afternoon peak hour is only 0.4 away from capacity. It should also be noted that the LEARN Early Childhood School development site traffic is less than 6% of the overall intersection volume during the weekday afternoon peak hour. The majority of the site traffic added to this intersection is on the southbound approach of Cross Street (approximately a 20% increase), however given the existing constraints and single lane arrangement along the southbound approach, it is understandable that any increase in traffic along this approach would degrade the LOS. It is also important to note that the increase in vehicle delays at this intersection during weekday afternoons will be confined to a portion of the afternoon school peak hour before and after dismissal.

At the unsignalized intersection of Daniels Avenue at Site Driveway the northbound approach of the site driveway is expected to operate acceptably at LOS D in during the morning peak hour and LOS B during the afternoon peak hour under 2026 combined conditions. As discussed previously, the site driveway will provide dedicated left turn and right turn lanes along the northbound approach with stop control to access Daniels Avenue. The westbound left turn of Daniels Avenue is expected to operate at LOS A during both peak hours under 2026 background and combined conditions.

At the unsignalized intersection of Daniels Avenue at Niantic River Road, the westbound approach of Daniels Avenue operates efficiently at LOS B or better during the weekday morning and weekday afternoon peak hours under 2026 background conditions and is expected to operate acceptably at LOS C during both peak hours with the addition of the LEARN Early Childhood School development site traffic. The southbound left turn of Niantic River Road operates efficiently at LOS A during all peak hours under 2026 background and 2026 combined conditions. There will be no significant reduction in LOS at this intersection as a result of the proposed development traffic.

At the existing unsignalized intersection of Daniels Avenue at Spithead Road the eastbound stop controlled approach of Daniels Avenue operates efficiently at LOS B or better during all peak hours under 2026 background and 2026 combined conditions. The northbound left turn from Spithead Road operates efficiently at LOS A during all peak hours under 2026 background and 2026 combined conditions. As a result of the sight line evaluation conducted at this intersection, implementation of all-way stop control is recommended as noted above in Section 5.2. Under all-way stop control, all three approaches will operate efficiently at LOS A during both the morning and afternoon peak hours in the combined conditions.

At the unsignalized intersection of Route 156 (Rope Ferry Road) at Spithead Road the southbound approach of Spithead Road operates efficiently at LOS B during the weekday morning peak hour and acceptably at LOS C during the weekday afternoon peak hour under 2026 background conditions. With the addition of the LEARN Early Childhood School development site traffic, the southbound approach of Spithead Road is expected to operate with similar LOS delays during the weekday morning and afternoon peak hours. The eastbound left turn of Route 156 (Rope Ferry Road) operates efficiently at LOS A during all peak hours under 2026 background and 2026 combined conditions. There will be no significant reduction in LOS at this intersection as a result of the proposed development traffic.

At the unsignalized intersection of Niantic River Road at West Street the westbound approach of West Street operates efficiently at LOS B or better during all peak hours under 2026 background and 2026 combined conditions. The southbound left turn of Niantic River Road operates efficiently at LOS A during all peak hours under 2026 background and 2026 combined conditions. There will be no significant reduction in LOS at this intersection as a result of the proposed development traffic.

5.4 Queue Analysis

Background and Combined Condition 95th percentile (design) queue lengths were reviewed at each intersection in the study area. The 95th percentile (design) vehicle queue lengths represent the maximum queue lengths that can be expected at each of the critical approach lanes of the study area intersections. The queue lengths are provided in the Synchro capacity analysis worksheets, which are located in *Appendix C and D. Tables 5 and 6 of Appendix A* provide a summary of the queue lengths for the critical lanes at each intersection.

The majority of the approaches at the study are intersections that experience minimal queue length increases of four vehicle lengths or less upon the addition of the LEARN Early Childhood School site trips with the exception of the eastbound approach of Route 1 (Boston Post Road) at the intersection of Route 1 (Boston Post Road) at Niantic River Road during the weekday morning peak hour. The eastbound approach of Route 1 (Boston Post Road) is expected to experience a queue length increase of just under five vehicles or less. In addition, there are three approaches that experience queue length increases greater than four vehicle lengths at the intersection of Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive. For instance, the westbound through/left turn approach experiences an increase of just under five vehicles during the weekday morning peak hour and just under six vehicles during the weekday afternoon peak hour. However, this approach already exceeds its provided queue storage under background conditions and are not significantly impacted by the traffic generated from the proposed development. It is important to note that these queue increases are brief in nature and confined to a portion of the morning and afternoon school peak hours.

The northbound approach of the unsignalized intersection of Daniels Avenue at Site Driveway is also expected to experience a queue length increase of seven vehicles or less during the weekday morning peak hour upon the addition of the LEARN Early Childhood School site trips. However, this queue is anticipated to occur for

approximately 20 to 30 minutes during drop off and dismissal and can be adequately stored on site. This is common for school land uses as peak pick up and drop off times typically occur over a short time period just before the start of school and immediately after school dismissal.

The southbound approach of Cross Road during the weekday morning and weekday afternoon peak hours experiences an increase of just over four vehicles or less during the weekday morning peak hour and just under seven vehicles or less during the weekday afternoon peak hour. However, as stated previously, the existing single lane arrangement of Cross Road already creates significant queues along this approach. The northbound approach of Spithead Road during the weekday afternoon peak hour also experiences an increase of just over four vehicles or less during the weekday afternoon peak hour.

6 Conclusions & Recommendations

The purpose of preparing a Traffic Impact Study is to identify the impact of the proposed development's site generated traffic. The study efforts have indicated that for a charter elementary school comprised of 526 students, a total of 550 vehicle trips (286 entering, 264 exiting) are anticipated during the weekday morning peak hour and a total of 374 vehicle trips (183 entering, 191 exiting) are anticipated during the weekday afternoon peak hour. As for a daycare center comprised of 48 students, a total of 40 vehicle trips (21 entering, 19 exiting) are anticipated during the weekday morning peak hour and a total of 40 vehicle trips (19 entering, 21 exiting) are anticipated during the weekday afternoon peak hour.

It is important to note that the trip generation projections in this study should be considered conservative as they assumed the daycare and school uses would peak during the same peak hours and they also did not take credit for parents dropping off children at both the school and daycare at the same time. In addition, no trip credit was taken for the previous school use that was in operation on the site and generated substantial traffic volume on the adjacent road network in the past.

The capacity analysis revealed that the majority of the intersections in the study area operate acceptably and will not sustain a significant decrease in LOS after inclusion of the site generated traffic. However, minor signal timings and optimization are recommended at the three signalized intersections within the study area and are located most remotely from the school. The site driveway is expected to operate at acceptable LOS during the school peak hours. Peak hour queueing on the driveway is expected to extend to 175 feet, however this queue is only anticipated to occur for approximately 20 to 30 minutes during drop off and dismissal and can be adequately stored on site. This is common for school land uses as peak pick up and drop off times typically occur over a short time period just before the start of school and immediately after school dismissal.

The addition of vehicular trips generated by the proposed development expansion will also result in temporary and minimal queue increases at several intersection approaches within the study area during a portion of the school peak hours. These queue increases are brief in nature and quickly dissipate following the morning and afternoon school peak hours.

Review of the most recent three years of available crash data provided by the University of Connecticut Crash Data Repository indicated that the number and type of collisions at the study intersection is not abnormal for the traffic volumes experienced. The increase in traffic expected at the study intersections is not anticipated to have detrimental impact to roadway safety.

Sight lines and intersection safety were reviewed at the site driveway location along Daniels Avenue. Field measurements revealed that sufficient intersection sight distance exists for vehicles looking right (east) and left (west) at the proposed site drive to allow for safe egress of vehicles attempting to turn right or left from the proposed driveway onto Daniels Avenue.

Sight lines and intersection safety were also reviewed at the existing, unsignalized Town maintained intersection of Daniels Avenue at Spithead Road given the horizontal and vertical curvature constraints that are present on Spithead Road in the vicinity of this intersection. Under the existing intersection geometry and existing traffic control (stop control on Daniels Avenue approach only), there have been no identifiable crash patterns and no abnormal crash frequencies observed at the intersection of Spithead Road and Daniel Avenue. As noted in the Crash Analysis, the intersection has averaged one crash per year over the latest three years of available data. However, while the intersection has been operating safely, the intersection sight distances from the Daniels Avenue approach to Spithead Road looking left from Daniels Avenue (north) and looking right from Daniels Avenue (south) falls short of CTDOT requirements as a result of the existing vegetation, horizontal and vertical curvature constraints noted above.

Given the existing intersection constraints and noted concern for safe egress of the additional passenger cars and single unit trucks/busses being generated onto Spithead Road by the new school, we recommend that the intersection be converted to an all-way stop-controlled intersection by adding stop and stop ahead signs on both Spithead approaches that are in accordance with MUTCD distance guidelines.

Based on the results of the foregoing analysis, the following off-site improvements are recommended:

1. Signal Timing and cycle length optimizations at the intersections of Route 156 (Rope Ferry Road) at West Street, Route 1 (Boston Post Road) at Niantic River Road, and Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive
2. Implementation of all-way stop control at the intersection of Spithead Road at Daniels Avenue

Upon implementation of these off-site improvements, it is the professional opinion of Fuss & O'Neill, Inc. that the proposed development will not have a significant impact to traffic operations within the study area.

Appendix A

Tables

Table 1

**Peak Hour Site Generated Traffic Volumes
LEARN Early Childhood School
Waterford, Connecticut**

	Quantity (Students)	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		Total Trips	Trips Entering	Trips Exiting	Total Trips	Trips Entering	Trips Exiting
Charter Elementary School	526	550	286	264	374	183	191
Day Care Center	48	40	21	19	40	19	21
Total Vehicle Trips		590	307	283	414	202	212

NOTE: Trip generation based on Fitted Curve Equation per Land Use Code 536 (Charter Elementary School) and Land Use Code 565 (Day Care Center) for the weekday morning peak hour, as published in *Trip Generation*, 11th Edition, 2021 using adjacent street calculations. It should be noted that the weekday afternoon peak hour used the generator calculations as published in *Trip Generation*, 11th Edition, 2021.

Table 2

**Intersection Crash Data Summary
LEARN Early Childhood School
Waterford, Connecticut**

Intersections	Crashes Per Year			
	2022	2023	2024	Average/Year
Daniels Avenue at Site Driveway	0	0	0	0
Daniels Avenue at Niantic River Road	0	1	1	0.67
Daniels Avenue at Spithead Road	2	1	0	1
Route 156 (Rope Ferry Road) at Spithead Road	2	0	1	1
Route 156 (Rope Ferry Road) at West Street	0	0	0	0
Niantic River Road at West Street	0	0	0	0
Route 1 (Boston Post Road) at Niantic River Road	6	4	0	3.33
Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive	11	6	3	6.67

NOTE: Values indicated are number of crashes within 200 feet of each intersection during time period shown.
Data provided by the Connecticut Department of Transportation via UConn Crash Data Repository.

Table 3

**Unsignalized Intersection Level Of Service Summary
LEARN Early Childhood School
Waterford, Connecticut**

Two-Way Stop Controlled Intersections (Critical Movements)	2026 Weekday Morning Peak Hour			2026 Weekday Afternoon Peak Hour		
	Background	Combined	Combined + Improved	Background	Combined	Combined + Improved
Daniels Avenue at Site Driveway						
Northbound Approach	LOS A	LOS D	N/A	LOS A	LOS B	N/A
Northbound Left Turn	N/A	LOS E	N/A	N/A	LOS B	N/A
Northbound Right Turn	N/A	LOS B	N/A	N/A	LOS A	N/A
Westbound Left Turn	LOS A	LOS A	N/A	LOS A	LOS A	N/A
Daniels Avenue at Niantic River Road						
Westbound Approach	LOS A	LOS C	N/A	LOS B	LOS C	N/A
Southbound Left Turn	LOS A	LOS A	N/A	LOS A	LOS A	N/A
Daniels Avenue at Spithead Road						
Northbound Left Turn	LOS A	LOS A	N/A	LOS A	LOS A	N/A
Northbound Approach	N/A	N/A	* LOS A	N/A	N/A	* LOS A
Eastbound Approach	LOS A	LOS B	* LOS A	LOS B	LOS B	* LOS A
Southbound Approach	N/A	N/A	* LOS A	N/A	N/A	* LOS A
Route 156 (Rope Ferry Road) at Spithead Road						
Eastbound Left Turn	LOS A	LOS A	N/A	LOS A	LOS A	N/A

Two-Way Stop Controlled Intersections (Critical Movements)	2026 Weekday Morning Peak Hour			2026 Weekday Afternoon Peak Hour		
	Background	Combined	Combined + Improved	Background	Combined	Combined + Improved
Southbound Approach	LOS B	LOS B	N/A	LOS C	LOS C	N/A
Niantic River Road at West Street						
Westbound Approach	LOS A	LOS B	N/A	LOS B	LOS B	N/A
Southbound Left Turn	LOS A	LOS A	N/A	LOS A	LOS A	N/A

NOTE: Values indicated are critical movement Level of Service (LOS) using HCM 2000 Control Delay

* Values indicated using HCM 6th All-Way Stop-Control (AWSC)

Table 4

**Signalized Intersection Level of Service Summary
LEARN Early Childhood School
Waterford, Connecticut**

Signalized Intersections	2026 Weekday Morning Peak Hour		2026 Weekday Afternoon Peak Hour	
	Background	Combined	Background	Combined
Route 156 (Rope Ferry Road) at West Street*	0.28/LOS A	0.30/LOS A	0.35/LOS A	0.36/LOS A
EB Approach	LOS A	LOS A	LOS A	LOS A
WB Approach	LOS A	LOS A	LOS A	LOS B
SB Approach	LOS C	LOS C	LOS C	LOS C
Route 1 (Boston Post Road) at Niantic River Road*	0.54/LOS B	0.69/LOS B	0.62/LOS B	0.75/LOS B
EB Approach	LOS B	LOS B	LOS B	LOS C
WB Approach	LOS A	LOS A	LOS A	LOS A
NB Approach	LOS B	LOS C	LOS C	LOS C
Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive*	0.86/LOS E	0.96/LOS E	0.96/LOS E	1.06/LOS F
EB Approach	LOS C	LOS C	LOS D	LOS D
WB Approach	LOS D	LOS E	LOS E	LOS F
NB Approach	LOS F	LOS F	LOS F	LOS F
SB Approach	LOS F	LOS F	LOS F	LOS F
SWB Approach	LOS D	LOS D	LOS A	LOS A

NOTE: Values indicated are intersection v/c Ratio/LOS Delay using HCM 2000 Control Delay

*Values indicated include optimized signal timings under an uncoordinated signal system

Table 5

**Weekday Morning Peak Hour Queue Length Summary
LEARN Early Childhood School
Waterford, Connecticut**

Intersection	Approach Lane	2026 Background Queue (ft)	2026 Combined Queue (ft)	2026 Combined + Improved Queue (ft)	Available Storage [Proposed] (ft)
Daniels Avenue at Site Driveway	Site Driveway - Northbound Approach	0	N/A	N/A	200
	Site Driveway - Northbound Left Turn	N/A	175	N/A	200
	Site Driveway - Northbound Right Turn	N/A	30	N/A	200
	Daniels Avenue - Westbound Left Turn	0	15	N/A	>1,000
Daniels Avenue at Niantic River Road	Daniels Avenue - Westbound Approach	5	95	N/A	>1,000
	Niantic River Road - Southbound Left Turn	0	10	N/A	>1,000
Daniels Avenue at Spithead Road	Spithead Road - Northbound Left Turn	0	5	N/A	>1,000
	Spithead Road - Northbound Approach	N/A	N/A	15	>1,000
	Daniels Avenue - Eastbound Approach	10	40	35	>1,000
	Spithead Road - Southbound Approach	N/A	N/A	25	>1,000
Route 156 (Rope Ferry Road) at Spithead Road	Route 156 - Eastbound Left Turn	5	5	N/A	>1,000
	Spithead Road - Southbound Approach	15	35	N/A	>1,000
Route 156 (Rope Ferry Road) at West Street*	Route 156 - Eastbound Left Turn	10	25	N/A	100
	Route 156 - Eastbound Through	45	50	N/A	>1,000
	Route 156 - Westbound Through	90	100	N/A	>1,000
	Route 156 - Westbound Right Turn	10	10	N/A	500
	West Street - Southbound Approach	50	55	N/A	515
Niantic River Road at West Street	West Street - Westbound Approach	10	25	N/A	515
	Niantic River Road - Southbound Left Turn	5	10	N/A	>1,000

Route 1 (Boston Post Road) at Niantic River Road*	Route 1 - Eastbound Approach	205	315	N/A	>1,000
	Route 1 - Westbound Approach	100	120	N/A	>1,000
	Niantic River Road - Northbound Approach	65	125	N/A	>1,000
Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive*	Route 1 - Eastbound Through/Left Turn	55	65	N/A	175
	Route 1 - Eastbound Through/Right Turn	230	275	N/A	>1,000
	Route 1 - Westbound Through/Left Turn	335	440	N/A	300
	Route 1 - Westbound Through/Right Turn	275	280	N/A	>1,000
	Spithead Road - Northbound Approach	195	295	N/A	>1,000
	Cross Road - Southbound Approach	340	445	N/A	>1,000
	Sunniecrest Drive - Southwest Approach	10	15	N/A	675

NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

*Values indicated include optimized signal timings under an uncoordinated signal system

Table 5

**Weekday Afternoon Peak Hour Queue Length Summary
LEARN Early Childhood School
Waterford, Connecticut**

Intersection	Approach Lane	2026 Background Queue (ft)	2026 Combined Queue (ft)	2026 Combined + Improved (ft)	Available Storage [Proposed] (ft)
Daniels Avenue at Site Driveway	Site Driveway - Northbound Approach	0	N/A	N/A	200
	Site Driveway - Northbound Left Turn	N/A	30	N/A	200
	Site Driveway - Northbound Right Turn	N/A	10	N/A	200
	Daniels Avenue - Westbound Left Turn	0	5	N/A	>1,000
Daniels Avenue at Niantic River Road	Daniels Avenue - Westbound Approach	5	50	N/A	>1,000
	Niantic River Road - Southbound Left Turn	0	5	N/A	>1,000
Daniels Avenue at Spithead Road	Spithead Road - Northbound Left Turn	0	5	N/A	>1,000
	Spithead Road - Northbound Approach	N/A	N/A	25	>1,000
	Daniels Avenue - Eastbound Approach	10	30	25	>1,000
	Spithead Road - Southbound Approach	N/A	N/A	25	>1,000
Route 156 (Rope Ferry Road) at Spithead Road	Route 156 - Eastbound Left Turn	10	10	N/A	>1,000
	Spithead Road - Southbound Approach	30	60	N/A	>1,000
Route 156 (Rope Ferry Road) at West Street*	Route 156 - Eastbound Left Turn	15	25	N/A	100
	Route 156 - Eastbound Through	55	60	N/A	>1,000
	Route 156 - Westbound Through	135	135	N/A	>1,000
	Route 156 - Westbound Right Turn	20	20	N/A	500
	West Street - Southbound Approach	45	55	N/A	515
Niantic River Road at West Street	West Street - Westbound Approach	20	35	N/A	515
	Niantic River Road - Southbound Left Turn	5	10	N/A	>1,000

Route 1 (Boston Post Road) at Niantic River Road*	Route 1 - Eastbound Approach	230	320	N/A	>1,000
	Route 1 - Westbound Approach	140	140	N/A	>1,000
	Niantic River Road - Northbound Approach	95	140	N/A	>1,000
Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunniecrest Drive*	Route 1 - Eastbound Through/Left Turn	75	85	N/A	175
	Route 1 - Eastbound Through/Right Turn	370	415	N/A	>1,000
	Route 1 - Westbound Through/Left Turn	610	740	N/A	300
	Route 1 - Westbound Through/Right Turn	355	390	N/A	>1,000
	Spithead Road - Northbound Approach	250	360	N/A	>1,000
	Cross Road - Southbound Approach	575	745	N/A	>1,000
	Sunniecrest Drive - Southwest Approach	0	0	N/A	675

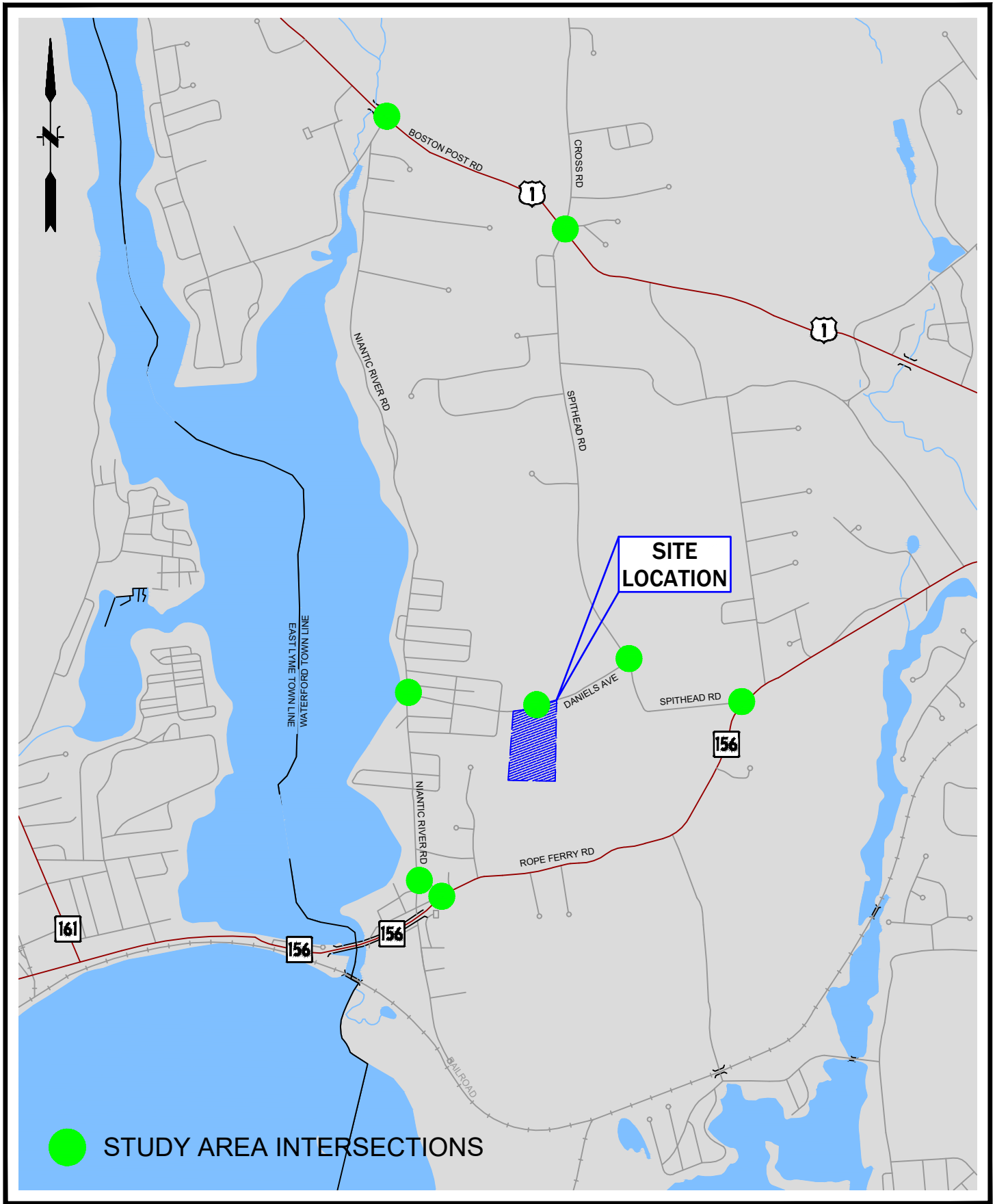
NOTE: Values indicated represent 95th percentile (design) vehicle queue lengths. Values are rounded to the nearest 5 feet.

*Values indicated include optimized signal timings under an uncoordinated signal system

Appendix B

Figures

File: J:\DWG\20220883\A50\CivilTrafficFigures\20220883_A50_LOC01.dwg Layout: FIG 1 Plotted: 2025-03-12 2:58 PM Saved: 2025-03-12 2:57 PM User: Jack Lowe
PC3: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 STB/CTB: FO.STB
LAYER STATE:



SCALE:	
HORZ.:	1" = 2000'
VERT.:	-
DATUM:	
HORZ.:	-
VERT.:	-
GRAPHIC SCALE	
0 1000' 2000'	

FUSS & O'NEILL

ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

NEWMAN ARCHITECTS, PC

SITE LOCATION MAP

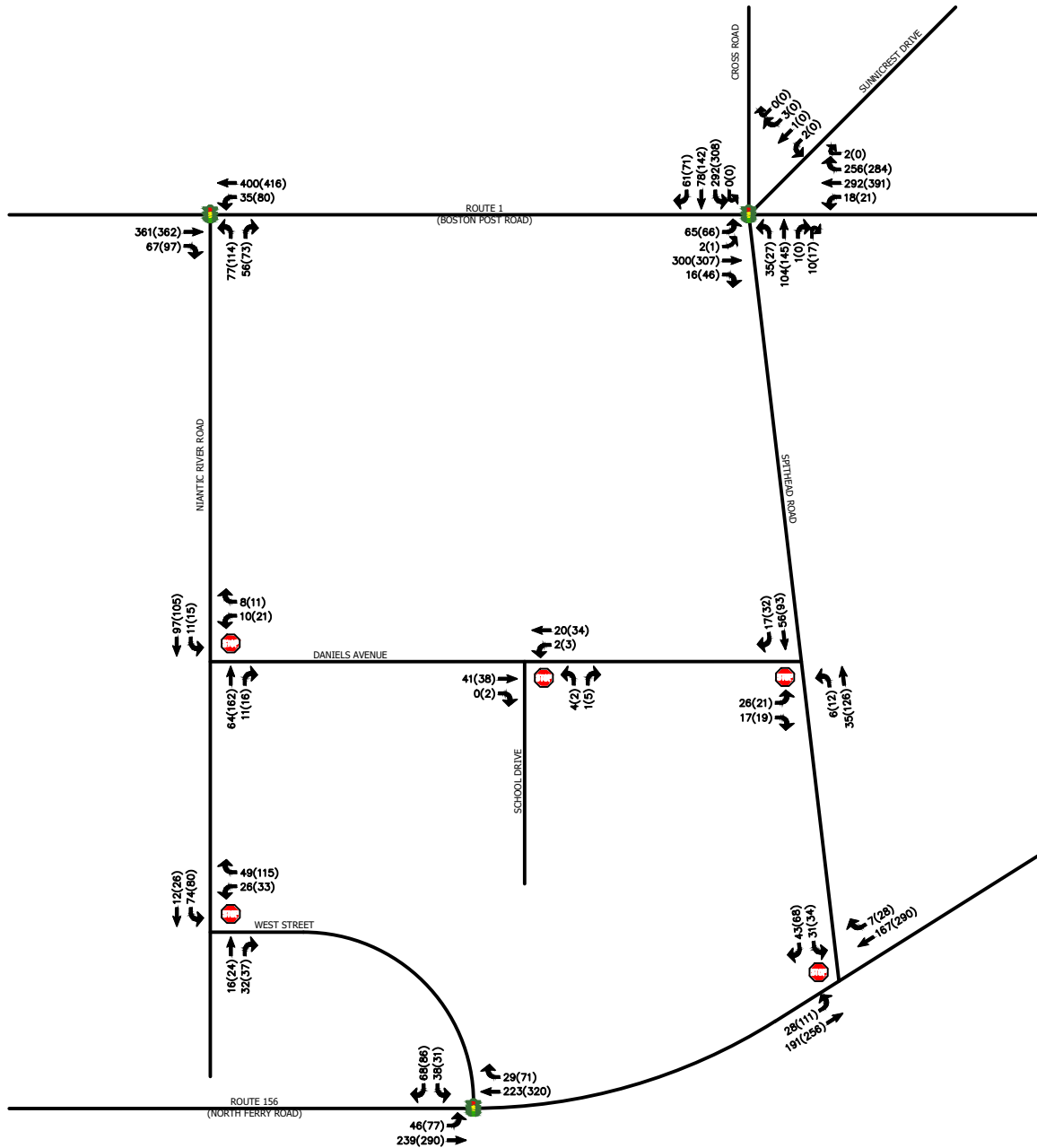
LEARN EARLY CHILDHOOD SCHOOL TIS

WATERFORD

CONNECTICUT

PROJ. No.: 20220883_A50
DATE: 03/20/2025

FIG. 1



XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)

*A 0.7% GROWTH RATE WAS APPLIED TO THE 2022 TRAFFIC COUNTS.

SCALE:	
HORZ.: NOT TO SCALE	
VERT.:	
DATUM:	
HORZ.: -	
VERT.: -	

FUSS & O'NEILL

ONE FINANCIAL PLAZA, 15th FLOOR
 HARTFORD, CT 06103
 860.646.2469
 www.fando.com

WATERFORD

NEWMAN ARCHITECTS, PC

2026 BACKGROUND TRAFFIC VOLUMES

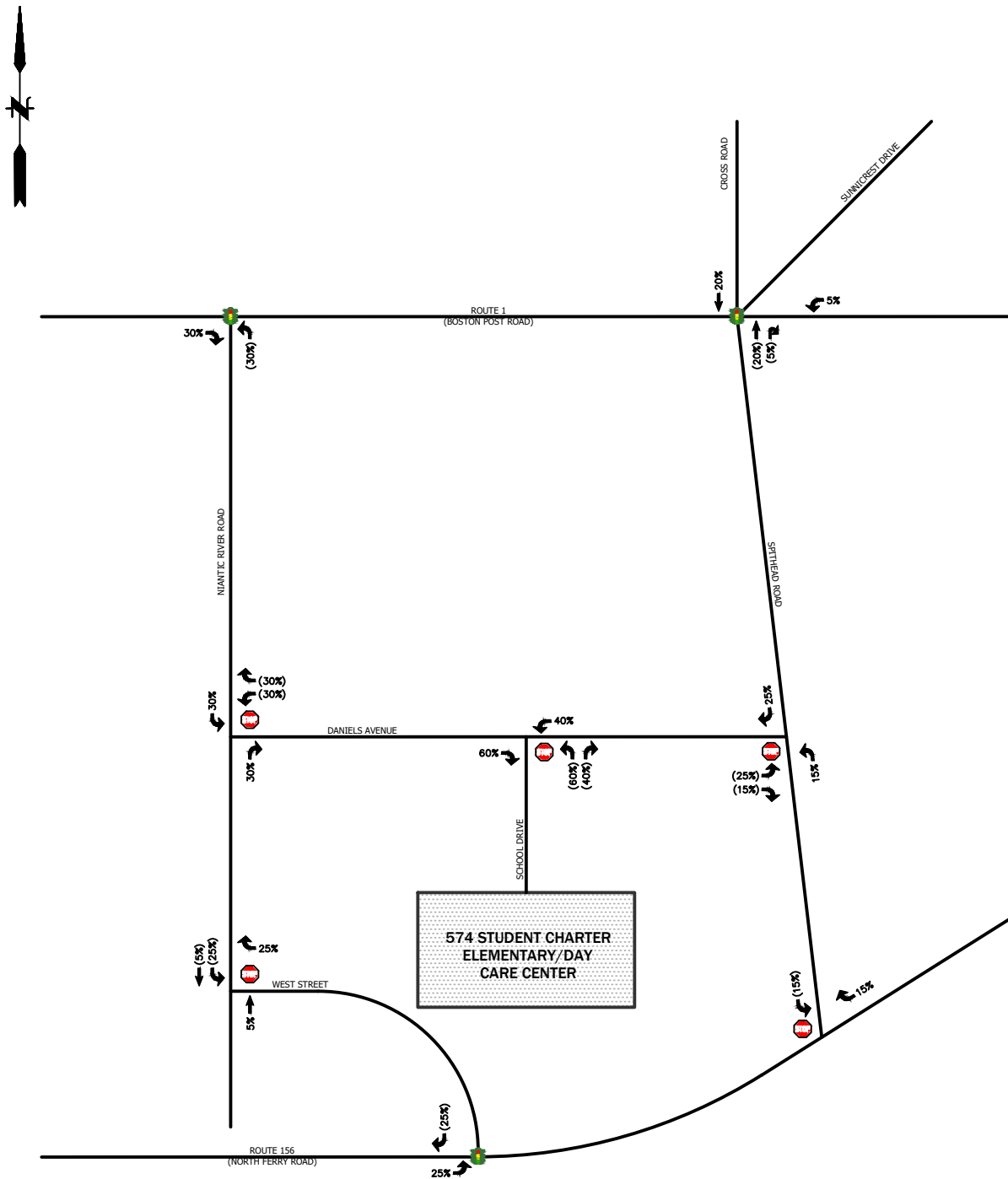
LEARN EARLY CHILDHOOD SCHOOL TIS

CONNECTICUT

PROJ. No.: 20220883_A50
DATE: 04/29/2025

FIG. 2

XX(XX) = ENTERING TRAFFIC (EXITING TRAFFIC)



SCALE:	
HORZ.: NOT TO SCALE	
VERT.:	
DATUM:	
HORZ.: -	
VERT.: -	

FUSS & O'NEILL

ONE FINANCIAL PLAZA, 15th FLOOR
 HARTFORD, CT 06103
 860.646.2469
 www.fando.com

WATERFORD

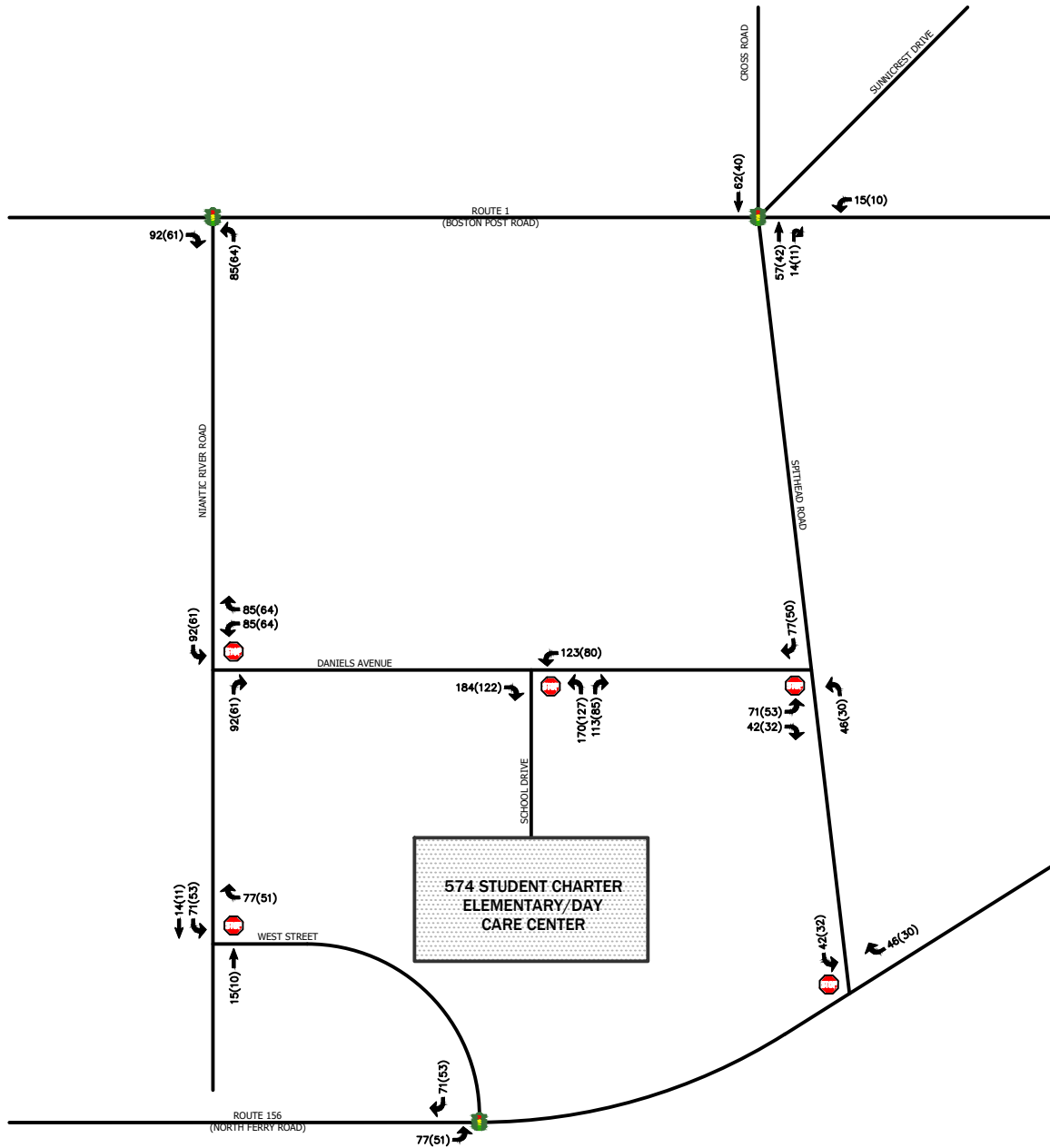
NEWMAN ARCHITECTS, PC
 SITE GENERATED TRAFFIC ARRIVAL/DEPARTURE
 DISTRIBUTION
 LEARN EARLY CHILDHOOD SCHOOL TIS

CONNECTICUT

PROJ. No.: 20220883.A50
 DATE: 04/29/2025

FIG. 3

XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)



SITE GENERATED TRAFFIC VOLUMES							
LAND USE CODE	QUANTITY	AM PEAK HOUR			PM PEAK HOUR		
		ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
LUC 536 - CHARTER ELEMENTARY SCHOOL	526 STUDENTS	286	264	550	183	191	374
LUC 565 - DAY CARE CENTER	48 STUDENTS	21	19	40	19	21	40
SUBTOTAL		307	283	590	202	212	414

SCALE:
HORZ.: NOT TO SCALE
VERT.:
DATUM:
HORZ.: -
VERT.: -

FUSS & O'NEILL

ONE FINANCIAL PLAZA, 15th FLOOR
HARTFORD, CT 06103
860.646.2469
www.fando.com

NEWMAN ARCHITECTS, PC

SITE GENERATED TRAFFIC VOLUMES

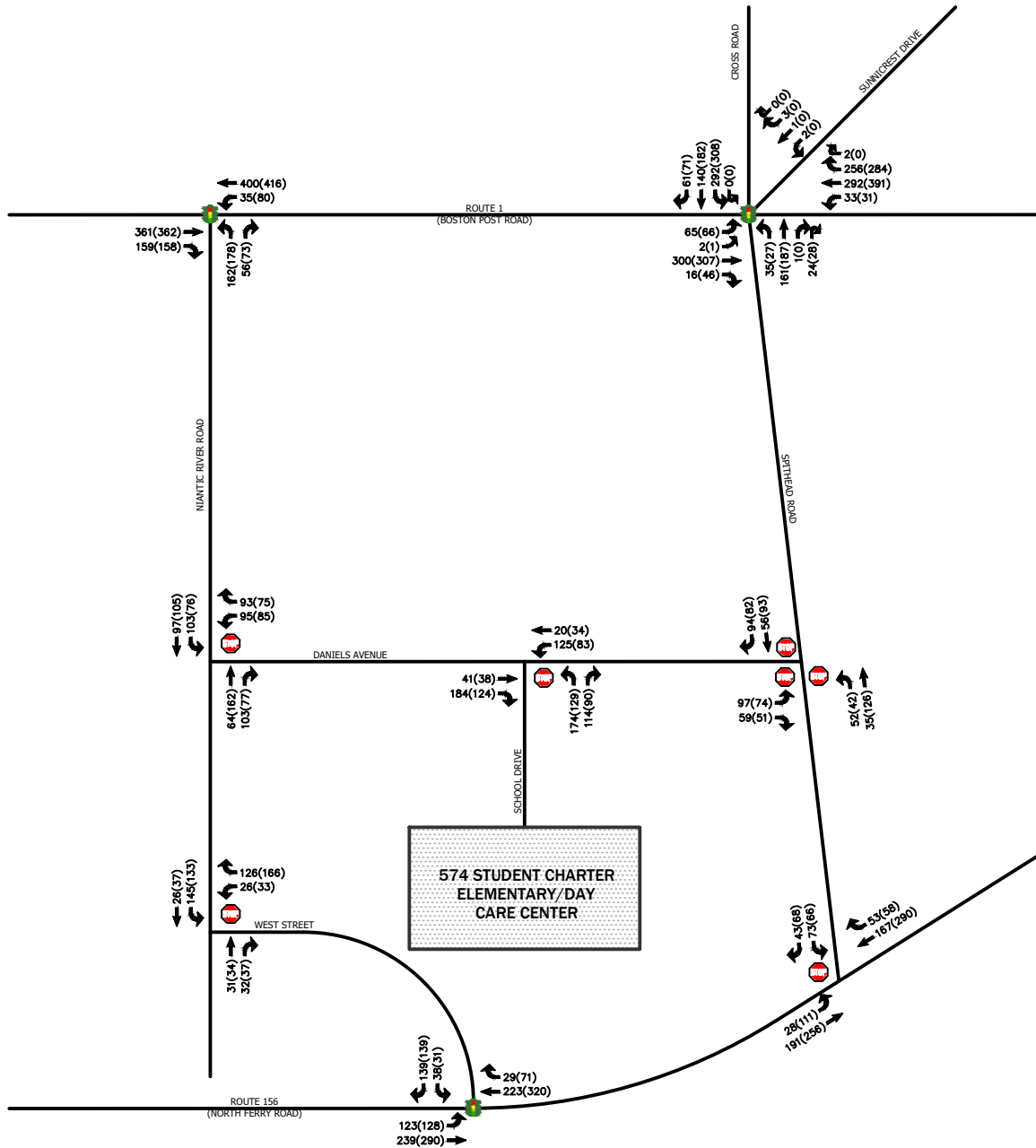
LEARN EARLY CHILDHOOD SCHOOL TIS

WATERFORD

CONNECTICUT

PROJ. No.: 20220883.A50
DATE: 04/29/2025

FIG. 4



XX(XX) = WEEKDAY MORNING PEAK HOUR (WEEKDAY AFTERNOON PEAK HOUR)

*A 0.7% GROWTH RATE WAS APPLIED TO THE 2022 TRAFFIC COUNTS.

SCALE:	
HORIZ.: NOT TO SCALE	
VERT.:	
DATUM:	
HORIZ.: -	
VERT.: -	

FUSS & O'NEILL

ONE FINANCIAL PLAZA, 15th FLOOR
 HARTFORD, CT 06103
 860.646.2469
 www.fando.com

WATERFORD

NEWMAN ARCHITECTS, PC

2026 COMBINED TRAFFIC VOLUMES

LEARN EARLY CHILDHOOD SCHOOL TIS

CONNECTICUT

PROJ. No.: 20220883_A50
 DATE: 04/29/2025

FIG. 5

Appendix C

Intersection Capacity Analysis Worksheets
2026 Background Traffic Volumes
Weekday Morning Peak Hour

Lanes, Volumes, Timings
1: Site Driveway & Daniels Avenue

LEARN Early Childhood School TIS
2026 Background AM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	41	0	2	20	4	1
Future Volume (vph)	41	0	2	20	4	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.970	
Flt Protected				0.995	0.963	
Satd. Flow (prot)	1900	0	0	1754	1654	0
Flt Permitted				0.995	0.963	
Satd. Flow (perm)	1900	0	0	1754	1654	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1860			1746	1444	
Travel Time (s)	42.3			39.7	32.8	
Peak Hour Factor	0.57	0.57	0.69	0.69	0.58	0.58
Heavy Vehicles (%)	0%	0%	25%	6%	0%	33%
Adj. Flow (vph)	72	0	3	29	7	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	0	0	32	9	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	0	2	20	4	1
Future Vol, veh/h	41	0	2	20	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	69	69	58	58
Heavy Vehicles, %	0	0	25	6	0	33
Mvmt Flow	72	0	3	29	7	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	72	0	107	72
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	35	-
Critical Hdwy	-	-	4.35	-	6.4	6.53
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.425	-	3.5	3.597
Pot Cap-1 Maneuver	-	-	1394	-	895	910
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	993	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1394	-	893	910
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	956	-
Stage 2	-	-	-	-	991	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		9.1	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	896		-	-	1394	-
HCM Lane V/C Ratio	0.01		-	-	0.002	-
HCM Control Delay (s)	9.1		-	-	7.6	0
HCM Lane LOS	A		-	-	A	A
HCM 95th %tile Q(veh)	0		-	-	0	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	10	8	64	11	11	97
Future Volume (vph)	10	8	64	11	11	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.940		0.980			
Flt Protected	0.973					0.995
Satd. Flow (prot)	1738	0	1831	0	0	1890
Flt Permitted	0.973					0.995
Satd. Flow (perm)	1738	0	1831	0	0	1890
Link Speed (mph)	30		30			30
Link Distance (ft)	1860		2865			1586
Travel Time (s)	42.3		65.1			36.0
Peak Hour Factor	0.53	0.53	0.73	0.73	0.85	0.85
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	19	15	88	15	13	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	0	103	0	0	127
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	8	64	11	11	97
Future Vol, veh/h	10	8	64	11	11	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	53	53	73	73	85	85
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	19	15	88	15	13	114
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	236	96	0	0	103	0
Stage 1	96	-	-	-	-	-
Stage 2	140	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	757	966	-	-	1502	-
Stage 1	933	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	750	966	-	-	1502	-
Mov Cap-2 Maneuver	750	-	-	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		0.8		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	833	1502	-	
HCM Lane V/C Ratio	-	-	0.041	0.009	-	
HCM Control Delay (s)	-	-	9.5	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Lanes, Volumes, Timings
3: Spithead Road & Daniels Avenue

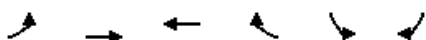
LEARN Early Childhood School TIS
2026 Background AM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	26	17	6	35	56	17
Future Volume (vph)	26	17	6	35	56	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.947				0.969	
Flt Protected	0.971			0.993		
Satd. Flow (prot)	1726	0	0	1860	1810	0
Flt Permitted	0.971			0.993		
Satd. Flow (perm)	1726	0	0	1860	1810	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1746			2377	1139	
Travel Time (s)	39.7			54.0	25.9	
Peak Hour Factor	0.61	0.61	0.73	0.73	0.74	0.74
Heavy Vehicles (%)	2%	0%	10%	0%	1%	4%
Adj. Flow (vph)	43	28	8	48	76	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	0	0	56	99	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	16.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	26	17	6	35	56	17
Future Vol, veh/h	26	17	6	35	56	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	73	73	74	74
Heavy Vehicles, %	2	0	10	0	1	4
Mvmt Flow	43	28	8	48	76	23
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	152	88	99	0	-	0
Stage 1	88	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.42	6.2	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	2.29	-	-	-
Pot Cap-1 Maneuver	840	976	1445	-	-	-
Stage 1	935	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	835	976	1445	-	-	-
Mov Cap-2 Maneuver	835	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.4	1.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1445	-	886	-	-	
HCM Lane V/C Ratio	0.006	-	0.08	-	-	
HCM Control Delay (s)	7.5	0	9.4	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Lanes, Volumes, Timings
4: Route 156 (Rope Ferry Road) & Spithead Road

LEARN Early Childhood School TIS
2026 Background AM

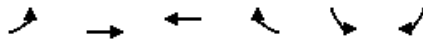


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	191	167	7	31	43
Future Volume (vph)	28	191	167	7	31	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.995		0.922	
Flt Protected		0.994			0.979	
Satd. Flow (prot)	0	1889	1869	0	1691	0
Flt Permitted		0.994			0.979	
Satd. Flow (perm)	0	1889	1869	0	1691	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1560	1746		2377	
Travel Time (s)		35.5	39.7		54.0	
Peak Hour Factor	0.82	0.82	0.84	0.84	0.65	0.65
Heavy Vehicles (%)	0%	0%	1%	5%	2%	1%
Adj. Flow (vph)	34	233	199	8	48	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	207	0	114	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	35.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	191	167	7	31	43
Future Vol, veh/h	28	191	167	7	31	43
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	82	82	84	84	65	65
Heavy Vehicles, %	0	0	1	5	2	1
Mvmt Flow	34	233	199	8	48	66
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	207	0	-	0	504	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	4.1	-	-	-	6.42	6.21
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.309
Pot Cap-1 Maneuver	1376	-	-	-	528	840
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1376	-	-	-	513	840
Mov Cap-2 Maneuver	-	-	-	-	513	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	751	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		11.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1376	-	-	-	663	
HCM Lane V/C Ratio	0.025	-	-	-	0.172	
HCM Control Delay (s)	7.7	0	-	-	11.6	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	

Lanes, Volumes, Timings
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Background AM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	46	239	223	29	38	68
Future Volume (vph)	46	239	223	29	38	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			500	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.913	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	1900	1881	1615	1687	0
Flt Permitted	0.596				0.982	
Satd. Flow (perm)	1132	1900	1881	1615	1687	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				35	70	
Link Speed (mph)		30	30		30	
Link Distance (ft)		1327	1665		516	
Travel Time (s)		30.2	37.8		11.7	
Peak Hour Factor	0.83	0.83	0.84	0.84	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	1%	1%
Adj. Flow (vph)	55	288	265	35	39	70
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	288	265	35	109	0
Turn Type	D.P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Detector Phase	1	1 2	2	2	4	
Switch Phase						
Minimum Initial (s)	5.0		15.0	15.0	7.0	
Minimum Split (s)	9.0		22.5	22.5	11.0	
Total Split (s)	11.0		33.0	33.0	16.0	
Total Split (%)	18.3%		55.0%	55.0%	26.7%	
Maximum Green (s)	7.0		25.5	25.5	12.0	
Yellow Time (s)	3.0		4.8	4.8	3.0	
All-Red Time (s)	1.0		2.7	2.7	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		7.5	7.5	4.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Recall Mode	None		Max	Max	None	
Act Effct Green (s)	35.9	40.9	25.8	25.8	7.5	
Actuated g/C Ratio	0.68	0.77	0.49	0.49	0.14	
v/c Ratio	0.06	0.20	0.29	0.04	0.36	
Control Delay	2.7	2.9	10.4	3.9	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.7	2.9	10.4	3.9	14.2	
LOS	A	A	B	A	B	
Approach Delay		2.9	9.7		14.2	
Approach LOS		A	A		B	
Queue Length 50th (ft)	4	21	50	0	12	
Queue Length 95th (ft)	11	43	92	11	48	
Internal Link Dist (ft)		1247	1585		436	
Turn Bay Length (ft)	100			500		
Base Capacity (vph)	872	1430	920	808	442	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.20	0.29	0.04	0.25	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 52.8
Natural Cycle: 45
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.36	
Intersection Signal Delay: 7.2	Intersection LOS: A
Intersection Capacity Utilization 35.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Route 156 (Rope Ferry Road) & West Street



HCM Signalized Intersection Capacity Analysis
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Background AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	46	239	223	29	38	68
Future Volume (vph)	46	239	223	29	38	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.5	7.5	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.91	
Flt Protected	0.95	1.00	1.00	1.00	0.98	
Satd. Flow (prot)	1805	1900	1881	1615	1688	
Flt Permitted	0.60	1.00	1.00	1.00	0.98	
Satd. Flow (perm)	1132	1900	1881	1615	1688	
Peak-hour factor, PHF	0.83	0.83	0.84	0.84	0.97	0.97
Adj. Flow (vph)	55	288	265	35	39	70
RTOR Reduction (vph)	0	0	0	18	62	0
Lane Group Flow (vph)	55	288	265	17	47	0
Heavy Vehicles (%)	0%	0%	1%	0%	1%	1%
Turn Type	D,P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Actuated Green, G (s)	32.3	36.3	25.8	25.8	5.8	
Effective Green, g (s)	32.3	36.3	25.8	25.8	5.8	
Actuated g/C Ratio	0.60	0.68	0.48	0.48	0.11	
Clearance Time (s)	4.0		7.5	7.5	4.0	
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Lane Grp Cap (vph)	763	1286	905	777	182	
v/s Ratio Prot	0.01	c0.15	c0.14	0.01	c0.03	
v/s Ratio Perm	0.03					
v/c Ratio	0.07	0.22	0.29	0.02	0.26	
Uniform Delay, d1	4.4	3.3	8.4	7.3	21.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0	0.8	0.1	0.3	
Delay (s)	4.4	3.3	9.2	7.3	22.2	
Level of Service	A	A	A	A	C	
Approach Delay (s)		3.5	9.0		22.2	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			8.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.28			
Actuated Cycle Length (s)			53.6		Sum of lost time (s)	15.5
Intersection Capacity Utilization			35.9%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	49	16	32	74	12
Future Volume (vph)	26	49	16	32	74	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.912		0.909			
Flt Protected	0.983					0.959
Satd. Flow (prot)	1692	0	1672	0	0	1804
Flt Permitted	0.983					0.959
Satd. Flow (perm)	1692	0	1672	0	0	1804
Link Speed (mph)	30		30			30
Link Distance (ft)	516		1202			2865
Travel Time (s)	11.7		27.3			65.1
Peak Hour Factor	0.64	0.64	0.83	0.83	0.93	0.93
Heavy Vehicles (%)	2%	0%	6%	2%	0%	7%
Adj. Flow (vph)	41	77	19	39	80	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	0	58	0	0	93
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	49	16	32	74	12
Future Vol, veh/h	26	49	16	32	74	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	83	83	93	93
Heavy Vehicles, %	2	0	6	2	0	7
Mvmt Flow	41	77	19	39	80	13
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	212	39	0	0	58	0
Stage 1	39	-	-	-	-	-
Stage 2	173	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	776	1038	-	-	1559	-
Stage 1	983	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	736	1038	-	-	1559	-
Mov Cap-2 Maneuver	736	-	-	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.5	0		6.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	909	1559	-	
HCM Lane V/C Ratio	-	-	0.129	0.051	-	
HCM Control Delay (s)	-	-	9.5	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.4	0.2	-	

Lanes, Volumes, Timings
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Background AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	361	67	35	400	77	56
Future Volume (vph)	361	67	35	400	77	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.979				0.943	
Flt Protected				0.996	0.972	
Satd. Flow (prot)	1814	0	0	1875	1707	0
Flt Permitted				0.966	0.972	
Satd. Flow (perm)	1814	0	0	1819	1707	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	18				58	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1367			3259	1593	
Travel Time (s)	31.1			74.1	36.2	
Peak Hour Factor	0.91	0.91	0.88	0.88	0.81	0.81
Heavy Vehicles (%)	3%	0%	0%	1%	2%	2%
Adj. Flow (vph)	397	74	40	455	95	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	471	0	0	495	164	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	18.0		5.0		9.0	
Minimum Split (s)	23.9		8.1		18.2	
Total Split (s)	29.0		12.0		19.0	
Total Split (%)	48.3%		20.0%		31.7%	
Maximum Green (s)	23.1		8.9		14.8	
Yellow Time (s)	4.3		3.0		3.2	
All-Red Time (s)	1.6		0.1		1.0	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.9				4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	2.5		2.0		1.5	
Recall Mode	Min		Min		None	
Walk Time (s)					7.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	20.8			31.8	9.9	
Actuated g/C Ratio	0.43			0.66	0.20	
v/c Ratio	0.60			0.41	0.42	
Control Delay	15.8			5.0	17.2	
Queue Delay	0.0			0.0	0.0	
Total Delay	15.8			5.0	17.2	
LOS	B			A	B	
Approach Delay	15.8			5.0	17.2	
Approach LOS	B			A	B	
Queue Length 50th (ft)	106			48	28	
Queue Length 95th (ft)	204			100	65	
Internal Link Dist (ft)	1287			3179	1513	
Turn Bay Length (ft)						
Base Capacity (vph)	909			1339	582	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.52			0.37	0.28	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 48.5
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 64.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 7: Niantic River Road & Route 1 (Boston Post Road)



HCM Signalized Intersection Capacity Analysis
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Background AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	361	67	35	400	77	56
Future Volume (vph)	361	67	35	400	77	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9			3.1	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.98			1.00	0.94	
Flt Protected	1.00			1.00	0.97	
Satd. Flow (prot)	1814			1875	1707	
Flt Permitted	1.00			0.97	0.97	
Satd. Flow (perm)	1814			1818	1707	
Peak-hour factor, PHF	0.91	0.91	0.88	0.88	0.81	0.81
Adj. Flow (vph)	397	74	40	455	95	69
RTOR Reduction (vph)	10	0	0	0	50	0
Lane Group Flow (vph)	461	0	0	495	114	0
Heavy Vehicles (%)	3%	0%	0%	1%	2%	2%
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Actuated Green, G (s)	20.8			28.9	7.1	
Effective Green, g (s)	20.8			28.9	7.1	
Actuated g/C Ratio	0.42			0.59	0.14	
Clearance Time (s)	5.9				4.2	
Vehicle Extension (s)	2.5				1.5	
Lane Grp Cap (vph)	766			1077	246	
v/s Ratio Prot	c0.25			c0.08	c0.07	
v/s Ratio Perm				0.19		
v/c Ratio	0.60			0.46	0.46	
Uniform Delay, d1	11.0			5.7	19.3	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	1.1			0.1	0.5	
Delay (s)	12.1			5.9	19.8	
Level of Service	B			A	B	
Approach Delay (s)	12.1			5.9	19.8	
Approach LOS	B			A	B	
Intersection Summary						
HCM 2000 Control Delay			10.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			49.2		Sum of lost time (s)	13.2
Intersection Capacity Utilization			64.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

														
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL	SBT
Lane Configurations														
Traffic Volume (vph)	65	2	300	16	18	292	256	2	35	104	1	10	292	78
Future Volume (vph)	65	2	300	16	18	292	256	2	35	104	1	10	292	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175		0	0		300		0		0		0	
Storage Lanes		1		0	0		1		0		0		0	
Taper Length (ft)		25			25				25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992				0.850			0.990				0.981
Flt Protected		0.950				0.997				0.989				0.967
Satd. Flow (prot)	0	1788	1885	0	0	1894	1615	0	0	1847	0	0	0	1770
Flt Permitted		0.283				0.952				0.902				0.515
Satd. Flow (perm)	0	533	1885	0	0	1809	1615	0	0	1685	0	0	0	943
Right Turn on Red				No				No				No		
Satd. Flow (RTOR)														10
Link Speed (mph)			30			30				30				30
Link Distance (ft)			3259			1659				1121				1156
Travel Time (s)			74.1			37.7				25.5				26.3
Peak Hour Factor	0.84	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.79	0.79	0.79	0.79	0.82	0.82
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	77	2	357	19	21	336	294	2	44	132	1	13	356	95
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	79	376	0	0	357	296	0	0	190	0	0	0	525
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm		Perm	NA			D.P+P	NA
Protected Phases	1	1	1 2			2				5			4	4 5
Permitted Phases	2	2			2		2		5				5	
Detector Phase	1	1	1 2		2	2	2		5	5			4	4 5
Switch Phase														
Minimum Initial (s)	5.0	5.0			15.0	15.0	15.0		9.0	9.0			5.0	
Minimum Split (s)	9.0	9.0			22.8	22.8	22.8		15.2	15.2			19.1	
Total Split (s)	9.0	9.0			28.0	28.0	28.0		17.0	17.0			23.0	
Total Split (%)	10.0%	10.0%			31.1%	31.1%	31.1%		18.9%	18.9%			25.6%	
Maximum Green (s)	5.0	5.0			20.2	20.2	20.2		10.8	10.8			18.9	
Yellow Time (s)	3.0	3.0			4.4	4.4	4.4		3.5	3.5			3.1	
All-Red Time (s)	1.0	1.0			3.4	3.4	3.4		2.7	2.7			1.0	
Lost Time Adjust (s)		0.0				0.0	0.0			0.0				
Total Lost Time (s)		4.0				7.8	7.8			6.2				
Lead/Lag	Lead	Lead			Lag	Lag	Lag		Lead	Lead				
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes		Yes	Yes				
Vehicle Extension (s)	1.5	1.5			2.5	2.5	2.5		1.5	1.5			1.5	
Recall Mode	Min	Min			Min	Min	Min		None	None			None	
Walk Time (s)													7.0	
Flash Dont Walk (s)													8.0	
Pedestrian Calls (#/hr)													0	
Act Effct Green (s)		28.4	32.4			19.6	19.6			10.8				31.8
Actuated g/C Ratio		0.32	0.36			0.22	0.22			0.12				0.36
v/c Ratio		0.33	0.55			0.90	0.84			0.94				1.02
Control Delay		23.1	26.4			61.4	55.2			90.0				71.9
Queue Delay		0.0	0.0			0.0	0.0			0.0				0.0
Total Delay		23.1	26.4			61.4	55.2			90.0				71.9
LOS		C	C			E	E			F				E
Approach Delay			25.8			58.6				90.0				71.9
Approach LOS			C			E				F				E
Queue Length 50th (ft)		29	166			197	161			109				~222
Queue Length 95th (ft)		56	232			#333	#277			#194				#341
Internal Link Dist (ft)			3179			1579				1041				1076
Turn Bay Length (ft)		175					300							
Base Capacity (vph)		239	696			409	364			203				516
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		0.33	0.54			0.87	0.81			0.94				1.02

Intersection Summary

Area Type: Other

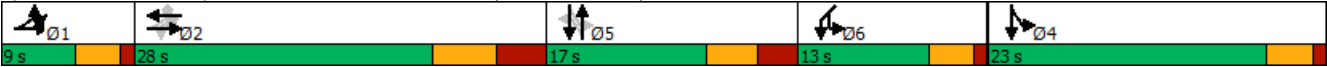
Cycle Length: 90



Lane Group	SBR	SWL2	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	61	2	1	3
Future Volume (vph)	61	2	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900
Storage Length (ft)	0		0	0
Storage Lanes	0		1	0
Taper Length (ft)			25	
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.932	
Flt Protected			0.976	
Satd. Flow (prot)	0	0	1728	0
Flt Permitted			0.976	
Satd. Flow (perm)	0	0	1728	0
Right Turn on Red	Yes			
Satd. Flow (RTOR)				
Link Speed (mph)			30	
Link Distance (ft)			1316	
Travel Time (s)			29.9	
Peak Hour Factor	0.82	0.38	0.38	0.38
Heavy Vehicles (%)	7%	0%	0%	0%
Adj. Flow (vph)	74	5	3	8
Shared Lane Traffic (%)				
Lane Group Flow (vph)	0	0	16	0
Turn Type		Prot	Prot	
Protected Phases		6	6	
Permitted Phases				
Detector Phase		6	6	
Switch Phase				
Minimum Initial (s)		5.0	5.0	
Minimum Split (s)		9.1	9.1	
Total Split (s)		13.0	13.0	
Total Split (%)		14.4%	14.4%	
Maximum Green (s)		8.9	8.9	
Yellow Time (s)		3.1	3.1	
All-Red Time (s)		1.0	1.0	
Lost Time Adjust (s)			0.0	
Total Lost Time (s)			4.1	
Lead/Lag		Lag	Lag	
Lead-Lag Optimize?		Yes	Yes	
Vehicle Extension (s)		1.5	1.5	
Recall Mode		Max	Max	
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Efft Green (s)			8.9	
Actuated g/C Ratio			0.10	
v/c Ratio			0.09	
Control Delay			38.3	
Queue Delay			0.0	
Total Delay			38.3	
LOS			D	
Approach Delay			38.3	
Approach LOS			D	
Queue Length 50th (ft)			8	
Queue Length 95th (ft)			12	
Internal Link Dist (ft)			1236	
Turn Bay Length (ft)				
Base Capacity (vph)			171	
Starvation Cap Reductn			0	
Spillback Cap Reductn			0	
Storage Cap Reductn			0	
Reduced v/c Ratio			0.09	
Intersection Summary				

Actuated Cycle Length: 89.4	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 57.4	Intersection LOS: E
Intersection Capacity Utilization 84.6%	ICU Level of Service E
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: 8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive



HCM Signalized Intersection Capacity Analysis

LEARN Early Childhood School TIS

8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive

2026 Background AM

															
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL	SBT	
Lane Configurations															
Traffic Volume (vph)	65	2	300	16	18	292	256	2	35	104	1	10	292	78	
Future Volume (vph)	65	2	300	16	18	292	256	2	35	104	1	10	292	78	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			7.8	7.8			6.2				4.1	
Lane Util. Factor		1.00	1.00			1.00	1.00			1.00				1.00	
Frt		1.00	0.99			1.00	0.85			0.99				0.98	
Flt Protected		0.95	1.00			1.00	1.00			0.99				0.97	
Satd. Flow (prot)		1788	1886			1894	1615			1847				1770	
Flt Permitted		0.28	1.00			0.95	1.00			0.90				0.52	
Satd. Flow (perm)		533	1886			1809	1615			1684				943	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.79	0.79	0.79	0.79	0.82	0.82	
Adj. Flow (vph)	77	2	357	19	21	336	294	2	44	132	1	13	356	95	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	0	7	
Lane Group Flow (vph)	0	79	376	0	0	357	296	0	0	190	0	0	0	518	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%	
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm		Perm	NA			D.P+P	NA	
Protected Phases	1	1	1 2			2				5			4	4 5	
Permitted Phases	2	2			2		2		5				5		
Actuated Green, G (s)		24.6	28.6			19.6	19.6			10.8				29.7	
Effective Green, g (s)		24.6	28.6			19.6	19.6			10.8				29.7	
Actuated g/C Ratio		0.28	0.32			0.22	0.22			0.12				0.33	
Clearance Time (s)		4.0				7.8	7.8			6.2					
Vehicle Extension (s)		1.5				2.5	2.5			1.5					
Lane Grp Cap (vph)		216	603			396	354			203				488	
v/s Ratio Prot		0.02	c0.20											c0.22	
v/s Ratio Perm		0.08				c0.20	0.18			0.11				c0.13	
v/c Ratio		0.37	0.62			0.90	0.84			0.94				1.06	
Uniform Delay, d1		25.1	25.8			34.0	33.4			39.0				29.9	
Progression Factor		1.00	1.00			1.00	1.00			1.00				1.00	
Incremental Delay, d2		0.4	1.5			23.0	15.3			44.5				58.2	
Delay (s)		25.5	27.3			57.0	48.7			83.5				88.1	
Level of Service		C	C			E	D			F				F	
Approach Delay (s)			27.0			53.2				83.5				88.1	
Approach LOS			C			D				F				F	
Intersection Summary															
HCM 2000 Control Delay			59.7			HCM 2000 Level of Service				E					
HCM 2000 Volume to Capacity ratio			0.86												
Actuated Cycle Length (s)			89.4			Sum of lost time (s)				26.2					
Intersection Capacity Utilization			84.6%			ICU Level of Service				E					
Analysis Period (min)			15												
c Critical Lane Group															

HCM Signalized Intersection Capacity Analysis
8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive

LEARN Early Childhood School TIS
2026 Background AM



Movement	SBR	SWL2	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	61	2	1	3
Future Volume (vph)	61	2	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)			4.1	
Lane Util. Factor			1.00	
Frt			0.93	
Flt Protected			0.98	
Satd. Flow (prot)			1729	
Flt Permitted			0.98	
Satd. Flow (perm)			1729	
Peak-hour factor, PHF	0.82	0.38	0.38	0.38
Adj. Flow (vph)	74	5	3	8
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	0	16	0
Heavy Vehicles (%)	7%	0%	0%	0%
Turn Type		Prot	Prot	
Protected Phases		6	6	
Permitted Phases				
Actuated Green, G (s)			8.9	
Effective Green, g (s)			8.9	
Actuated g/C Ratio			0.10	
Clearance Time (s)			4.1	
Vehicle Extension (s)			1.5	
Lane Grp Cap (vph)			172	
v/s Ratio Prot			c0.01	
v/s Ratio Perm				
v/c Ratio			0.09	
Uniform Delay, d1			36.6	
Progression Factor			1.00	
Incremental Delay, d2			1.1	
Delay (s)			37.7	
Level of Service			D	
Approach Delay (s)			37.7	
Approach LOS			D	
Intersection Summary				

Appendix C

Intersection Capacity Analysis Worksheets
2026 Combined Traffic Volumes
Weekday Morning Peak Hour

Lanes, Volumes, Timings
1: Site Driveway & Daniels Avenue

LEARN Early Childhood School TIS
2026 Combined AM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↰	↰	↰
Traffic Volume (vph)	41	184	125	20	174	114
Future Volume (vph)	41	184	125	20	174	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.890					0.850
Flt Protected				0.959	0.950	
Satd. Flow (prot)	1691	0	0	1489	1805	1214
Flt Permitted				0.959	0.950	
Satd. Flow (perm)	1691	0	0	1489	1805	1214
Link Speed (mph)	30			30	30	
Link Distance (ft)	1860			1746	1444	
Travel Time (s)	42.3			39.7	32.8	
Peak Hour Factor	0.57	0.57	0.69	0.69	0.58	0.58
Heavy Vehicles (%)	0%	0%	25%	6%	0%	33%
Adj. Flow (vph)	72	323	181	29	300	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	395	0	0	210	300	197
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 41.1%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	15.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱	↱
Traffic Vol, veh/h	41	184	125	20	174	114
Future Vol, veh/h	41	184	125	20	174	114
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	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	57	57	69	69	58	58
Heavy Vehicles, %	0	0	25	6	0	33
Mvmt Flow	72	323	181	29	300	197
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	395	0	625	234
Stage 1	-	-	-	-	234	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.35	-	6.4	6.53
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.425	-	3.5	3.597
Pot Cap-1 Maneuver	-	-	1049	-	452	734
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	688	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1049	-	373	734
Mov Cap-2 Maneuver	-	-	-	-	373	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	568	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		7.9		31.4	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	373	734	-	-	1049	-
HCM Lane V/C Ratio	0.804	0.268	-	-	0.173	-
HCM Control Delay (s)	44.3	11.7	-	-	9.1	0
HCM Lane LOS	E	B	-	-	A	A
HCM 95th %tile Q(veh)	7	1.1	-	-	0.6	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	95	93	64	103	103	97
Future Volume (vph)	95	93	64	103	103	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.933		0.917			
Flt Protected	0.975					0.975
Satd. Flow (prot)	1728	0	1729	0	0	1852
Flt Permitted	0.975					0.975
Satd. Flow (perm)	1728	0	1729	0	0	1852
Link Speed (mph)	30		30			30
Link Distance (ft)	1860		2865			1586
Travel Time (s)	42.3		65.1			36.0
Peak Hour Factor	0.53	0.53	0.73	0.73	0.85	0.85
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	179	175	88	141	121	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	354	0	229	0	0	235
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	41.5%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	9.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	95	93	64	103	103	97
Future Vol, veh/h	95	93	64	103	103	97
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	53	53	73	73	85	85
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	179	175	88	141	121	114
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	515	159	0	0	229	0
Stage 1	159	-	-	-	-	-
Stage 2	356	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	523	892	-	-	1351	-
Stage 1	875	-	-	-	-	-
Stage 2	713	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	473	892	-	-	1351	-
Mov Cap-2 Maneuver	473	-	-	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.5	0	4.1			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	616	1351	-	
HCM Lane V/C Ratio	-	-	0.576	0.09	-	
HCM Control Delay (s)	-	-	18.5	7.9	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	3.7	0.3	-	

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	97	59	52	35	56	94
Future Volume (vph)	97	59	52	35	56	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.916	
Flt Protected	0.970			0.971		
Satd. Flow (prot)	1728	0	0	1741	1692	0
Flt Permitted	0.970			0.971		
Satd. Flow (perm)	1728	0	0	1741	1692	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1746			2377	1139	
Travel Time (s)	39.7			54.0	25.9	
Peak Hour Factor	0.61	0.61	0.73	0.73	0.74	0.74
Heavy Vehicles (%)	2%	0%	10%	0%	1%	4%
Adj. Flow (vph)	159	97	71	48	76	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	256	0	0	119	203	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	32.4%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	97	59	52	35	56	94
Future Vol, veh/h	97	59	52	35	56	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	73	73	74	74
Heavy Vehicles, %	2	0	10	0	1	4
Mvmt Flow	159	97	71	48	76	127
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	330	140	203	0	-	0
Stage 1	140	-	-	-	-	-
Stage 2	190	-	-	-	-	-
Critical Hdwy	6.42	6.2	4.2	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	2.29	-	-	-
Pot Cap-1 Maneuver	665	913	1322	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	628	913	1322	-	-	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.9	4.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1322	-	712	-	-	
HCM Lane V/C Ratio	0.054	-	0.359	-	-	
HCM Control Delay (s)	7.9	0	12.9	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	1.6	-	-	

Lanes, Volumes, Timings
4: Route 156 (Rope Ferry Road) & Spithead Road

LEARN Early Childhood School TIS
2026 Combined AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	191	167	53	73	43
Future Volume (vph)	28	191	167	53	73	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.968		0.950	
Flt Protected		0.994			0.969	
Satd. Flow (prot)	0	1889	1804	0	1721	0
Flt Permitted		0.994			0.969	
Satd. Flow (perm)	0	1889	1804	0	1721	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1560	1746		2377	
Travel Time (s)		35.5	39.7		54.0	
Peak Hour Factor	0.82	0.82	0.84	0.84	0.65	0.65
Heavy Vehicles (%)	0%	0%	1%	5%	2%	1%
Adj. Flow (vph)	34	233	199	63	112	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	262	0	178	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	40.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	191	167	53	73	43
Future Vol, veh/h	28	191	167	53	73	43
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	82	82	84	84	65	65
Heavy Vehicles, %	0	0	1	5	2	1
Mvmt Flow	34	233	199	63	112	66
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	262	0	-	0	532	231
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	4.1	-	-	-	6.42	6.21
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.309
Pot Cap-1 Maneuver	1314	-	-	-	508	811
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	751	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1314	-	-	-	493	811
Mov Cap-2 Maneuver	-	-	-	-	493	-
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	751	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		14		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1314	-	-	-	577	
HCM Lane V/C Ratio	0.026	-	-	-	0.309	
HCM Control Delay (s)	7.8	0	-	-	14	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3	

Lanes, Volumes, Timings
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Combined AM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	239	223	29	38	139
Future Volume (vph)	123	239	223	29	38	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			500	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.894	
Flt Protected	0.950				0.989	
Satd. Flow (prot)	1805	1900	1881	1615	1663	0
Flt Permitted	0.596				0.989	
Satd. Flow (perm)	1132	1900	1881	1615	1663	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				35	143	
Link Speed (mph)		30	30		30	
Link Distance (ft)		1327	1665		516	
Travel Time (s)		30.2	37.8		11.7	
Peak Hour Factor	0.83	0.83	0.84	0.84	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	1%	1%
Adj. Flow (vph)	148	288	265	35	39	143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	288	265	35	182	0
Turn Type	D.P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Detector Phase	1	1 2	2	2	4	
Switch Phase						
Minimum Initial (s)	5.0		15.0	15.0	7.0	
Minimum Split (s)	9.0		22.5	22.5	11.0	
Total Split (s)	12.0		31.0	31.0	17.0	
Total Split (%)	20.0%		51.7%	51.7%	28.3%	
Maximum Green (s)	8.0		23.5	23.5	13.0	
Yellow Time (s)	3.0		4.8	4.8	3.0	
All-Red Time (s)	1.0		2.7	2.7	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		7.5	7.5	4.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Recall Mode	None		Max	Max	None	
Act Effct Green (s)	34.3	39.4	23.9	23.9	7.9	
Actuated g/C Ratio	0.66	0.76	0.46	0.46	0.15	
v/c Ratio	0.18	0.20	0.30	0.05	0.48	
Control Delay	3.5	3.2	11.6	4.4	11.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.5	3.2	11.6	4.4	11.9	
LOS	A	A	B	A	B	
Approach Delay		3.3	10.8		11.9	
Approach LOS		A	B		B	
Queue Length 50th (ft)	10	21	51	0	11	
Queue Length 95th (ft)	26	48	100	12	57	
Internal Link Dist (ft)		1247	1585		436	
Turn Bay Length (ft)	100			500		
Base Capacity (vph)	886	1402	870	766	532	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.17	0.21	0.30	0.05	0.34	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 51.6
Natural Cycle: 45
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 42.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Route 156 (Rope Ferry Road) & West Street



HCM Signalized Intersection Capacity Analysis
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Combined AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	239	223	29	38	139
Future Volume (vph)	123	239	223	29	38	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.5	7.5	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.89	
Flt Protected	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (prot)	1805	1900	1881	1615	1664	
Flt Permitted	0.60	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1132	1900	1881	1615	1664	
Peak-hour factor, PHF	0.83	0.83	0.84	0.84	0.97	0.97
Adj. Flow (vph)	148	288	265	35	39	143
RTOR Reduction (vph)	0	0	0	19	126	0
Lane Group Flow (vph)	148	288	265	16	56	0
Heavy Vehicles (%)	0%	0%	1%	0%	1%	1%
Turn Type	D,P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Actuated Green, G (s)	30.8	34.8	23.9	23.9	6.1	
Effective Green, g (s)	30.8	34.8	23.9	23.9	6.1	
Actuated g/C Ratio	0.59	0.66	0.46	0.46	0.12	
Clearance Time (s)	4.0		7.5	7.5	4.0	
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Lane Grp Cap (vph)	753	1261	857	736	193	
v/s Ratio Prot	0.03	c0.15	c0.14	0.01	c0.03	
v/s Ratio Perm	0.09					
v/c Ratio	0.20	0.23	0.31	0.02	0.29	
Uniform Delay, d1	4.8	3.5	9.0	7.8	21.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0	0.9	0.1	0.3	
Delay (s)	4.9	3.5	10.0	7.9	21.5	
Level of Service	A	A	A	A	C	
Approach Delay (s)		4.0	9.7		21.5	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			9.3		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.30			
Actuated Cycle Length (s)			52.4		Sum of lost time (s)	15.5
Intersection Capacity Utilization			42.9%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	26	126	31	32	145	26
Future Volume (vph)	26	126	31	32	145	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.888		0.931			
Flt Protected	0.991					0.959
Satd. Flow (prot)	1666	0	1702	0	0	1803
Flt Permitted	0.991					0.959
Satd. Flow (perm)	1666	0	1702	0	0	1803
Link Speed (mph)	30		30			30
Link Distance (ft)	516		1202			2865
Travel Time (s)	11.7		27.3			65.1
Peak Hour Factor	0.64	0.64	0.83	0.83	0.93	0.93
Heavy Vehicles (%)	2%	0%	6%	2%	0%	7%
Adj. Flow (vph)	41	197	37	39	156	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	238	0	76	0	0	184
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	31.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	7.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	126	31	32	145	26
Future Vol, veh/h	26	126	31	32	145	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	64	64	83	83	93	93
Heavy Vehicles, %	2	0	6	2	0	7
Mvmt Flow	41	197	37	39	156	28
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	397	57	0	0	76	0
Stage 1	57	-	-	-	-	-
Stage 2	340	-	-	-	-	-
Critical Hdwy	6.42	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	608	1015	-	-	1536	-
Stage 1	966	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	545	1015	-	-	1536	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.6	0		6.5		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	885	1536	-	
HCM Lane V/C Ratio	-	-	0.268	0.102	-	
HCM Control Delay (s)	-	-	10.6	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1.1	0.3	-	

Lanes, Volumes, Timings
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Combined AM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	361	159	35	400	162	56
Future Volume (vph)	361	159	35	400	162	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959				0.965	
Flt Protected				0.996	0.964	
Satd. Flow (prot)	1785	0	0	1875	1733	0
Flt Permitted				0.956	0.964	
Satd. Flow (perm)	1785	0	0	1800	1733	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	44				27	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1367			3259	1593	
Travel Time (s)	31.1			74.1	36.2	
Peak Hour Factor	0.91	0.91	0.88	0.88	0.81	0.81
Heavy Vehicles (%)	3%	0%	0%	1%	2%	2%
Adj. Flow (vph)	397	175	40	455	200	69
Shared Lane Traffic (%)						
Lane Group Flow (vph)	572	0	0	495	269	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	18.0		5.0		9.0	
Minimum Split (s)	23.9		8.1		18.2	
Total Split (s)	30.0		11.0		19.0	
Total Split (%)	50.0%		18.3%		31.7%	
Maximum Green (s)	24.1		7.9		14.8	
Yellow Time (s)	4.3		3.0		3.2	
All-Red Time (s)	1.6		0.1		1.0	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.9				4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	2.5		2.0		1.5	
Recall Mode	Min		Min		None	
Walk Time (s)					7.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	21.9			32.6	11.7	
Actuated g/C Ratio	0.40			0.59	0.21	
v/c Ratio	0.77			0.46	0.69	
Control Delay	22.5			6.9	28.1	
Queue Delay	0.0			0.0	0.0	
Total Delay	22.5			6.9	28.1	
LOS	C			A	C	
Approach Delay	22.5			6.9	28.1	
Approach LOS	C			A	C	
Queue Length 50th (ft)	143			61	77	
Queue Length 95th (ft)	#315			121	125	
Internal Link Dist (ft)	1287			3179	1513	
Turn Bay Length (ft)						
Base Capacity (vph)	817			1165	492	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.70			0.42	0.55	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 54.8
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 17.9	Intersection LOS: B
Intersection Capacity Utilization 69.2%	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: 7: Niantic River Road & Route 1 (Boston Post Road)



HCM Signalized Intersection Capacity Analysis
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Combined AM

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	361	159	35	400	162	56
Future Volume (vph)	361	159	35	400	162	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9			3.1	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.96			1.00	0.97	
Flt Protected	1.00			1.00	0.96	
Satd. Flow (prot)	1784			1875	1734	
Flt Permitted	1.00			0.96	0.96	
Satd. Flow (perm)	1784			1799	1734	
Peak-hour factor, PHF	0.91	0.91	0.88	0.88	0.81	0.81
Adj. Flow (vph)	397	175	40	455	200	69
RTOR Reduction (vph)	26	0	0	0	21	0
Lane Group Flow (vph)	546	0	0	495	248	0
Heavy Vehicles (%)	3%	0%	0%	1%	2%	2%
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Actuated Green, G (s)	21.9			29.7	11.7	
Effective Green, g (s)	21.9			29.7	11.7	
Actuated g/C Ratio	0.40			0.54	0.21	
Clearance Time (s)	5.9				4.2	
Vehicle Extension (s)	2.5				1.5	
Lane Grp Cap (vph)	715			989	371	
v/s Ratio Prot	c0.31			c0.07	c0.14	
v/s Ratio Perm				0.20		
v/c Ratio	0.76			0.50	0.67	
Uniform Delay, d1	14.1			7.8	19.7	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	4.6			0.1	3.5	
Delay (s)	18.7			7.9	23.2	
Level of Service	B			A	C	
Approach Delay (s)	18.7			7.9	23.2	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay			15.6		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			54.6		Sum of lost time (s)	13.2
Intersection Capacity Utilization			69.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

														
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL	SBT
Lane Configurations														
Traffic Volume (vph)	65	2	300	16	33	292	256	2	35	161	1	24	292	140
Future Volume (vph)	65	2	300	16	33	292	256	2	35	161	1	24	292	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175		0	0		300		0		0		0	
Storage Lanes		1		0	0		1		0		0		0	
Taper Length (ft)		25			25				25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992				0.850			0.985				0.983
Flt Protected		0.950				0.995				0.992				0.971
Satd. Flow (prot)	0	1788	1885	0	0	1890	1615	0	0	1843	0	0	0	1783
Flt Permitted		0.263				0.791				0.905				0.402
Satd. Flow (perm)	0	495	1885	0	0	1503	1615	0	0	1681	0	0	0	738
Right Turn on Red				No				No				No		
Satd. Flow (RTOR)														8
Link Speed (mph)			30			30				30				30
Link Distance (ft)			3259			1659				1121				1156
Travel Time (s)			74.1			37.7				25.5				26.3
Peak Hour Factor	0.84	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.79	0.79	0.79	0.79	0.82	0.82
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	77	2	357	19	38	336	294	2	44	204	1	30	356	171
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	79	376	0	0	374	296	0	0	279	0	0	0	601
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm		Perm	NA			D.P+P	NA
Protected Phases	1	1	1 2			2				5			4	4 5
Permitted Phases	2	2			2		2		5				5	
Detector Phase	1	1	1 2		2	2	2		5	5			4	4 5
Switch Phase														
Minimum Initial (s)	5.0	5.0			15.0	15.0	15.0		9.0	9.0			5.0	
Minimum Split (s)	9.0	9.0			22.8	22.8	22.8		15.2	15.2			19.1	
Total Split (s)	9.0	9.0			35.0	35.0	35.0		25.0	25.0			31.0	
Total Split (%)	8.2%	8.2%			31.8%	31.8%	31.8%		22.7%	22.7%			28.2%	
Maximum Green (s)	5.0	5.0			27.2	27.2	27.2		18.8	18.8			26.9	
Yellow Time (s)	3.0	3.0			4.4	4.4	4.4		3.5	3.5			3.1	
All-Red Time (s)	1.0	1.0			3.4	3.4	3.4		2.7	2.7			1.0	
Lost Time Adjust (s)		0.0				0.0	0.0			0.0				
Total Lost Time (s)		4.0				7.8	7.8			6.2				
Lead/Lag	Lead	Lead			Lag	Lag	Lag		Lead	Lead				
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes		Yes	Yes				
Vehicle Extension (s)	1.5	1.5			2.5	2.5	2.5		1.5	1.5			1.5	
Recall Mode	Min	Min			Min	Min	Min		None	None			None	
Walk Time (s)													7.0	
Flash Dont Walk (s)													8.0	
Pedestrian Calls (#/hr)													0	
Act Effct Green (s)		36.0	40.0			27.2	27.2			18.8				47.8
Actuated g/C Ratio		0.33	0.36			0.25	0.25			0.17				0.43
v/c Ratio		0.36	0.55			1.01	0.74			0.97				1.04
Control Delay		28.6	31.5			91.0	50.9			92.9				79.5
Queue Delay		0.0	0.0			0.0	0.0			0.0				0.0
Total Delay		28.6	31.5			91.0	50.9			92.9				79.5
LOS		C	C			F	D			F				E
Approach Delay			31.0			73.3				92.9				79.5
Approach LOS			C			E				F				E
Queue Length 50th (ft)		37	209			~268	193			198				~348
Queue Length 95th (ft)		66	277			#439	282			#295				#444
Internal Link Dist (ft)			3179			1579				1041				1076
Turn Bay Length (ft)		175					300							
Base Capacity (vph)		220	685			371	399			287				580
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		0.36	0.55			1.01	0.74			0.97				1.04
Intersection Summary														
Area Type:	Other													
Cycle Length:	110													



Lane Group	SBR	SWL2	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	61	2	1	3
Future Volume (vph)	61	2	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900
Storage Length (ft)	0		0	0
Storage Lanes	0		1	0
Taper Length (ft)			25	
Lane Util. Factor	1.00	1.00	1.00	1.00
Frt			0.932	
Flt Protected			0.976	
Satd. Flow (prot)	0	0	1728	0
Flt Permitted			0.976	
Satd. Flow (perm)	0	0	1728	0
Right Turn on Red	Yes			
Satd. Flow (RTOR)				
Link Speed (mph)			30	
Link Distance (ft)			1316	
Travel Time (s)			29.9	
Peak Hour Factor	0.82	0.38	0.38	0.38
Heavy Vehicles (%)	7%	0%	0%	0%
Adj. Flow (vph)	74	5	3	8
Shared Lane Traffic (%)				
Lane Group Flow (vph)	0	0	16	0
Turn Type		Prot	Prot	
Protected Phases		6	6	
Permitted Phases				
Detector Phase		6	6	
Switch Phase				
Minimum Initial (s)		5.0	5.0	
Minimum Split (s)		9.1	9.1	
Total Split (s)		10.0	10.0	
Total Split (%)		9.1%	9.1%	
Maximum Green (s)		5.9	5.9	
Yellow Time (s)		3.1	3.1	
All-Red Time (s)		1.0	1.0	
Lost Time Adjust (s)			0.0	
Total Lost Time (s)			4.1	
Lead/Lag		Lag	Lag	
Lead-Lag Optimize?		Yes	Yes	
Vehicle Extension (s)		1.5	1.5	
Recall Mode		Max	Max	
Walk Time (s)				
Flash Dont Walk (s)				
Pedestrian Calls (#/hr)				
Act Efect Green (s)			5.9	
Actuated g/C Ratio			0.05	
v/c Ratio			0.17	
Control Delay			54.3	
Queue Delay			0.0	
Total Delay			54.3	
LOS			D	
Approach Delay			54.3	
Approach LOS			D	
Queue Length 50th (ft)			11	
Queue Length 95th (ft)			15	
Internal Link Dist (ft)			1236	
Turn Bay Length (ft)				
Base Capacity (vph)			92	
Starvation Cap Reductn			0	
Spillback Cap Reductn			0	
Storage Cap Reductn			0	
Reduced v/c Ratio			0.17	
Intersection Summary				

Actuated Cycle Length: 110	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 68.2	Intersection LOS: E
Intersection Capacity Utilization 99.1%	ICU Level of Service F
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: 8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive



														
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	NBR2	SBL	SBT
Lane Configurations														
Traffic Volume (vph)	65	2	300	16	33	292	256	2	35	161	1	24	292	140
Future Volume (vph)	65	2	300	16	33	292	256	2	35	161	1	24	292	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			7.8	7.8			6.2				4.1
Lane Util. Factor		1.00	1.00			1.00	1.00			1.00				1.00
Frt		1.00	0.99			1.00	0.85			0.98				0.98
Flt Protected		0.95	1.00			0.99	1.00			0.99				0.97
Satd. Flow (prot)		1788	1886			1890	1615			1843				1784
Flt Permitted		0.26	1.00			0.79	1.00			0.90				0.40
Satd. Flow (perm)		496	1886			1503	1615			1681				738
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.87	0.87	0.87	0.87	0.79	0.79	0.79	0.79	0.82	0.82
Adj. Flow (vph)	77	2	357	19	38	336	294	2	44	204	1	30	356	171
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Lane Group Flow (vph)	0	79	376	0	0	374	296	0	0	279	0	0	0	596
Heavy Vehicles (%)	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	1%
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm		Perm	NA			D.P+P	NA
Protected Phases	1	1	1 2			2				5			4	4 5
Permitted Phases	2	2			2		2		5				5	
Actuated Green, G (s)		32.2	36.2			27.2	27.2			18.8				45.7
Effective Green, g (s)		32.2	36.2			27.2	27.2			18.8				45.7
Actuated g/C Ratio		0.29	0.33			0.25	0.25			0.17				0.42
Clearance Time (s)		4.0				7.8	7.8			6.2				
Vehicle Extension (s)		1.5				2.5	2.5			1.5				
Lane Grp Cap (vph)		203	620			371	399			287				562
v/s Ratio Prot		0.02	c0.20											c0.26
v/s Ratio Perm		0.10				c0.25	0.18			0.17				c0.18
v/c Ratio		0.39	0.61			1.01	0.74			0.97				1.06
Uniform Delay, d1		29.7	30.9			41.4	38.2			45.3				32.1
Progression Factor		1.00	1.00			1.00	1.00			1.00				1.00
Incremental Delay, d2		0.5	1.2			48.8	6.9			45.1				55.2
Delay (s)		30.2	32.1			90.2	45.1			90.4				87.3
Level of Service		C	C			F	D			F				F
Approach Delay (s)			31.8			70.2				90.4				87.3
Approach LOS			C			E				F				F
Intersection Summary														
HCM 2000 Control Delay			69.3		HCM 2000 Level of Service				E					
HCM 2000 Volume to Capacity ratio			0.96											
Actuated Cycle Length (s)			110.0		Sum of lost time (s)				26.2					
Intersection Capacity Utilization			99.1%		ICU Level of Service				F					
Analysis Period (min)			15											
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis
8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive

LEARN Early Childhood School TIS
2026 Combined AM

				
Movement	SBR	SWL2	SWL	SWR
Lane Configurations				
Traffic Volume (vph)	61	2	1	3
Future Volume (vph)	61	2	1	3
Ideal Flow (vphpl)	1900	1900	1900	1900
Total Lost time (s)			4.1	
Lane Util. Factor			1.00	
Frt			0.93	
Flt Protected			0.98	
Satd. Flow (prot)			1729	
Flt Permitted			0.98	
Satd. Flow (perm)			1729	
Peak-hour factor, PHF	0.82	0.38	0.38	0.38
Adj. Flow (vph)	74	5	3	8
RTOR Reduction (vph)	0	0	0	0
Lane Group Flow (vph)	0	0	16	0
Heavy Vehicles (%)	7%	0%	0%	0%
Turn Type		Prot	Prot	
Protected Phases		6	6	
Permitted Phases				
Actuated Green, G (s)			5.9	
Effective Green, g (s)			5.9	
Actuated g/C Ratio			0.05	
Clearance Time (s)			4.1	
Vehicle Extension (s)			1.5	
Lane Grp Cap (vph)			92	
v/s Ratio Prot			c0.01	
v/s Ratio Perm				
v/c Ratio			0.17	
Uniform Delay, d1			49.7	
Progression Factor			1.00	
Incremental Delay, d2			4.1	
Delay (s)			53.8	
Level of Service			D	
Approach Delay (s)			53.8	
Approach LOS			D	
Intersection Summary				

Appendix C

Intersection Capacity Analysis Worksheets
2026 Combined + Improved Traffic Volumes
Weekday Morning Peak Hour

Lanes, Volumes, Timings

3: Spithead Road & Daniels Avenue

LEARN Early Childhood School TIS
2026 Combined + Improved AM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	97	59	52	35	56	94
Future Volume (vph)	97	59	52	35	56	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.916	
Flt Protected	0.970			0.971		
Satd. Flow (prot)	1728	0	0	1741	1692	0
Flt Permitted	0.970			0.971		
Satd. Flow (perm)	1728	0	0	1741	1692	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1746			2377	1139	
Travel Time (s)	39.7			54.0	25.9	
Peak Hour Factor	0.61	0.61	0.73	0.73	0.74	0.74
Heavy Vehicles (%)	2%	0%	10%	0%	1%	4%
Adj. Flow (vph)	159	97	71	48	76	127
Shared Lane Traffic (%)						
Lane Group Flow (vph)	256	0	0	119	203	0
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 32.4% ICU Level of Service A

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	97	59	52	35	56	94
Future Vol, veh/h	97	59	52	35	56	94
Peak Hour Factor	0.61	0.61	0.73	0.73	0.74	0.74
Heavy Vehicles, %	2	0	10	0	1	4
Mvmt Flow	159	97	71	48	76	127
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.8	9.1	8.7
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	60%	62%	0%
Vol Thru, %	40%	0%	37%
Vol Right, %	0%	38%	63%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	87	156	150
LT Vol	52	97	0
Through Vol	35	0	56
RT Vol	0	59	94
Lane Flow Rate	119	256	203
Geometry Grp	1	1	1
Degree of Util (X)	0.166	0.324	0.242
Departure Headway (Hd)	5.027	4.566	4.305
Convergence, Y/N	Yes	Yes	Yes
Cap	713	788	833
Service Time	3.066	2.6	2.338
HCM Lane V/C Ratio	0.167	0.325	0.244
HCM Control Delay	9.1	9.8	8.7
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.6	1.4	0.9

Appendix D

Intersection Capacity Analysis Worksheets
2026 Background Traffic Volumes
Weekday Afternoon Peak Hour

Lanes, Volumes, Timings
1: Site Driveway & Daniels Avenue

LEARN Early Childhood School TIS
2026 Background PM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	38	2	3	34	2	5
Future Volume (vph)	38	2	3	34	2	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.910	
Flt Protected				0.996	0.984	
Satd. Flow (prot)	1852	0	0	1852	1561	0
Flt Permitted				0.996	0.984	
Satd. Flow (perm)	1852	0	0	1852	1561	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1860			1746	1444	
Travel Time (s)	42.3			39.7	32.8	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.78	0.78
Heavy Vehicles (%)	2%	2%	14%	1%	5%	11%
Adj. Flow (vph)	46	2	4	41	3	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	48	0	0	45	9	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	14.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱	
Traffic Vol, veh/h	38	2	3	34	2	5
Future Vol, veh/h	38	2	3	34	2	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	82	82	83	83	78	78
Heavy Vehicles, %	2	2	14	1	5	11
Mvmt Flow	46	2	4	41	3	6
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	48	0	96	47
Stage 1	-	-	-	-	47	-
Stage 2	-	-	-	-	49	-
Critical Hdwy	-	-	4.24	-	6.45	6.31
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.326	-	3.545	3.399
Pot Cap-1 Maneuver	-	-	1485	-	896	997
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	966	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1485	-	893	997
Mov Cap-2 Maneuver	-	-	-	-	893	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	963	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.6		8.8	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	965		-	-	1485	-
HCM Lane V/C Ratio	0.009		-	-	0.002	-
HCM Control Delay (s)	8.8		-	-	7.4	0
HCM Lane LOS	A		-	-	A	A
HCM 95th %tile Q(veh)	0		-	-	0	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	11	162	16	15	105
Future Volume (vph)	21	11	162	16	15	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.955		0.988			
Flt Protected	0.968					0.994
Satd. Flow (prot)	1745	0	1860	0	0	1872
Flt Permitted	0.968					0.994
Satd. Flow (perm)	1745	0	1860	0	0	1872
Link Speed (mph)	30		30			30
Link Distance (ft)	1860		2865			1586
Travel Time (s)	42.3		65.1			36.0
Peak Hour Factor	0.71	0.71	0.75	0.75	0.92	0.92
Heavy Vehicles (%)	1%	0%	1%	0%	0%	1%
Adj. Flow (vph)	30	15	216	21	16	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	45	0	237	0	0	130
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.2%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	11	162	16	15	105
Future Vol, veh/h	21	11	162	16	15	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	75	75	92	92
Heavy Vehicles, %	1	0	1	0	0	1
Mvmt Flow	30	15	216	21	16	114
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	373	227	0	0	237	0
Stage 1	227	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	630	817	-	-	1342	-
Stage 1	813	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	622	817	-	-	1342	-
Mov Cap-2 Maneuver	622	-	-	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	873	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.7	0		1		
HCM LOS	B					
Minor Lane/Major Mvmt		NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)		-	-	678	1342	-
HCM Lane V/C Ratio		-	-	0.066	0.012	-
HCM Control Delay (s)		-	-	10.7	7.7	0
HCM Lane LOS		-	-	B	A	A
HCM 95th %tile Q(veh)		-	-	0.2	0	-

Lanes, Volumes, Timings
3: Spithead Road & Daniels Avenue

LEARN Early Childhood School TIS
2026 Background PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	19	12	126	93	32
Future Volume (vph)	21	19	12	126	93	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.936				0.965	
Flt Protected	0.974			0.996		
Satd. Flow (prot)	1708	0	0	1842	1820	0
Flt Permitted	0.974			0.996		
Satd. Flow (perm)	1708	0	0	1842	1820	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1746			2377	1139	
Travel Time (s)	39.7			54.0	25.9	
Peak Hour Factor	0.63	0.63	0.88	0.88	0.85	0.85
Heavy Vehicles (%)	0%	3%	0%	3%	1%	0%
Adj. Flow (vph)	33	30	14	143	109	38
Shared Lane Traffic (%)						
Lane Group Flow (vph)	63	0	0	157	147	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	26.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	21	19	12	126	93	32
Future Vol, veh/h	21	19	12	126	93	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	88	88	85	85
Heavy Vehicles, %	0	3	0	3	1	0
Mvmt Flow	33	30	14	143	109	38
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	299	128	147	0	-	0
Stage 1	128	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	697	919	1447	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	689	919	1447	-	-	-
Mov Cap-2 Maneuver	689	-	-	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10	0.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1447	-	782	-	-	
HCM Lane V/C Ratio	0.009	-	0.081	-	-	
HCM Control Delay (s)	7.5	0	10	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Lanes, Volumes, Timings
4: Route 156 (Rope Ferry Road) & Spithead Road

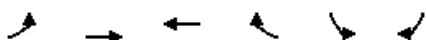
LEARN Early Childhood School TIS
2026 Background PM

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	111	256	290	28	34	68
Future Volume (vph)	111	256	290	28	34	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.988		0.910	
Flt Protected		0.985			0.984	
Satd. Flow (prot)	0	1853	1854	0	1690	0
Flt Permitted		0.985			0.984	
Satd. Flow (perm)	0	1853	1854	0	1690	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1560	1746		2377	
Travel Time (s)		35.5	39.7		54.0	
Peak Hour Factor	0.84	0.84	0.79	0.79	0.83	0.83
Heavy Vehicles (%)	1%	1%	1%	4%	2%	0%
Adj. Flow (vph)	132	305	367	35	41	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	437	402	0	123	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	52.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	111	256	290	28	34	68
Future Vol, veh/h	111	256	290	28	34	68
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	84	84	79	79	83	83
Heavy Vehicles, %	1	1	1	4	2	0
Mvmt Flow	132	305	367	35	41	82
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	402	0	-	0	954	385
Stage 1	-	-	-	-	385	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	4.11	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1162	-	-	-	287	667
Stage 1	-	-	-	-	688	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1162	-	-	-	248	667
Mov Cap-2 Maneuver	-	-	-	-	248	-
Stage 1	-	-	-	-	594	-
Stage 2	-	-	-	-	566	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		16.8		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1162	-	-	-	427	
HCM Lane V/C Ratio	0.114	-	-	-	0.288	
HCM Control Delay (s)	8.5	0	-	-	16.8	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.4	-	-	-	1.2	

Lanes, Volumes, Timings
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Background PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	290	320	71	31	86
Future Volume (vph)	77	290	320	71	31	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			500	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.900	
Flt Protected	0.950				0.987	
Satd. Flow (prot)	1805	1881	1900	1615	1671	0
Flt Permitted	0.544				0.987	
Satd. Flow (perm)	1034	1881	1900	1615	1671	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				81	101	
Link Speed (mph)		30	30		30	
Link Distance (ft)		1327	1665		516	
Travel Time (s)		30.2	37.8		11.7	
Peak Hour Factor	0.94	0.94	0.88	0.88	0.85	0.85
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	82	309	364	81	36	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	82	309	364	81	137	0
Turn Type	D.P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Detector Phase	1	1 2	2	2	4	
Switch Phase						
Minimum Initial (s)	5.0		15.0	15.0	7.0	
Minimum Split (s)	9.0		22.5	22.5	11.0	
Total Split (s)	11.0		35.0	35.0	14.0	
Total Split (%)	18.3%		58.3%	58.3%	23.3%	
Maximum Green (s)	7.0		27.5	27.5	10.0	
Yellow Time (s)	3.0		4.8	4.8	3.0	
All-Red Time (s)	1.0		2.7	2.7	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		7.5	7.5	4.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Recall Mode	None		Max	Max	None	
Act Effct Green (s)	37.9	42.9	27.8	27.8	7.7	
Actuated g/C Ratio	0.69	0.78	0.51	0.51	0.14	
v/c Ratio	0.10	0.21	0.38	0.09	0.43	
Control Delay	2.9	3.0	11.1	3.0	13.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	2.9	3.0	11.1	3.0	13.5	
LOS	A	A	B	A	B	
Approach Delay		3.0	9.6		13.5	
Approach LOS		A	A		B	
Queue Length 50th (ft)	5	23	73	0	11	
Queue Length 95th (ft)	16	54	137	18	47	
Internal Link Dist (ft)		1247	1585		436	
Turn Bay Length (ft)	100			500		
Base Capacity (vph)	822	1427	961	857	389	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.10	0.22	0.38	0.09	0.35	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 55
Natural Cycle: 45
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 41.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Route 156 (Rope Ferry Road) & West Street



HCM Signalized Intersection Capacity Analysis
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Background PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	77	290	320	71	31	86
Future Volume (vph)	77	290	320	71	31	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.5	7.5	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.90	
Flt Protected	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (prot)	1805	1881	1900	1615	1672	
Flt Permitted	0.54	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1034	1881	1900	1615	1672	
Peak-hour factor, PHF	0.94	0.94	0.88	0.88	0.85	0.85
Adj. Flow (vph)	82	309	364	81	36	101
RTOR Reduction (vph)	0	0	0	41	90	0
Lane Group Flow (vph)	82	309	364	40	47	0
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Turn Type	D,P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Actuated Green, G (s)	34.3	38.3	27.8	27.8	6.0	
Effective Green, g (s)	34.3	38.3	27.8	27.8	6.0	
Actuated g/C Ratio	0.61	0.69	0.50	0.50	0.11	
Clearance Time (s)	4.0		7.5	7.5	4.0	
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Lane Grp Cap (vph)	725	1291	946	804	179	
v/s Ratio Prot	0.01	c0.16	c0.19	0.02	c0.03	
v/s Ratio Perm	0.06					
v/c Ratio	0.11	0.24	0.38	0.05	0.26	
Uniform Delay, d1	4.3	3.3	8.7	7.2	22.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0	1.2	0.1	0.3	
Delay (s)	4.4	3.3	9.9	7.3	23.2	
Level of Service	A	A	A	A	C	
Approach Delay (s)		3.5	9.4		23.2	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			9.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			55.8		Sum of lost time (s)	15.5
Intersection Capacity Utilization			41.0%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	33	115	24	37	80	26
Future Volume (vph)	33	115	24	37	80	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.895		0.918			
Flt Protected	0.989					0.964
Satd. Flow (prot)	1644	0	1720	0	0	1823
Flt Permitted	0.989					0.964
Satd. Flow (perm)	1644	0	1720	0	0	1823
Link Speed (mph)	30		30			30
Link Distance (ft)	516		1202			2865
Travel Time (s)	11.7		27.3			65.1
Peak Hour Factor	0.77	0.77	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	3%	2%	1%	0%	2%
Adj. Flow (vph)	43	149	29	45	96	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	192	0	74	0	0	127
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.0%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	6.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	115	24	37	80	26
Future Vol, veh/h	33	115	24	37	80	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	83	83	83	83
Heavy Vehicles, %	0	3	2	1	0	2
Mvmt Flow	43	149	29	45	96	31
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	275	52	0	0	74	0
Stage 1	52	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	719	1013	-	-	1538	-
Stage 1	976	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	673	1013	-	-	1538	-
Mov Cap-2 Maneuver	673	-	-	-	-	-
Stage 1	976	-	-	-	-	-
Stage 2	767	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		5.7		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	910	1538	-	
HCM Lane V/C Ratio	-	-	0.211	0.063	-	
HCM Control Delay (s)	-	-	10	7.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.8	0.2	-	

Lanes, Volumes, Timings
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Background PM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	362	97	80	416	114	73
Future Volume (vph)	362	97	80	416	114	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.947	
Flt Protected				0.992	0.970	
Satd. Flow (prot)	1829	0	0	1866	1728	0
Flt Permitted				0.893	0.970	
Satd. Flow (perm)	1829	0	0	1680	1728	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	26				51	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1367			3259	1593	
Travel Time (s)	31.1			74.1	36.2	
Peak Hour Factor	0.94	0.94	0.93	0.93	0.75	0.75
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	385	103	86	447	152	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	488	0	0	533	249	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	18.0		5.0		9.0	
Minimum Split (s)	23.9		8.1		18.2	
Total Split (s)	29.0		12.0		19.0	
Total Split (%)	48.3%		20.0%		31.7%	
Maximum Green (s)	23.1		8.9		14.8	
Yellow Time (s)	4.3		3.0		3.2	
All-Red Time (s)	1.6		0.1		1.0	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.9				4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	2.5		2.0		1.5	
Recall Mode	Min		Min		None	
Walk Time (s)					7.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	20.6			32.1	11.1	
Actuated g/C Ratio	0.38			0.60	0.21	
v/c Ratio	0.68			0.52	0.63	
Control Delay	19.1			7.3	23.4	
Queue Delay	0.0			0.0	0.0	
Total Delay	19.1			7.3	23.4	
LOS	B			A	C	
Approach Delay	19.1			7.3	23.4	
Approach LOS	B			A	C	
Queue Length 50th (ft)	114			61	58	
Queue Length 95th (ft)	229			139	95	
Internal Link Dist (ft)	1287			3179	1513	
Turn Bay Length (ft)						
Base Capacity (vph)	808			1129	517	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.60			0.47	0.48	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 53.7
Natural Cycle: 60
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 15.0	Intersection LOS: B
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 7: Niantic River Road & Route 1 (Boston Post Road)



HCM Signalized Intersection Capacity Analysis
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Background PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (vph)	362	97	80	416	114	73
Future Volume (vph)	362	97	80	416	114	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9			3.1	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.97			1.00	0.95	
Flt Protected	1.00			0.99	0.97	
Satd. Flow (prot)	1828			1866	1729	
Flt Permitted	1.00			0.89	0.97	
Satd. Flow (perm)	1828			1679	1729	
Peak-hour factor, PHF	0.94	0.94	0.93	0.93	0.75	0.75
Adj. Flow (vph)	385	103	86	447	152	97
RTOR Reduction (vph)	16	0	0	0	40	0
Lane Group Flow (vph)	472	0	0	533	209	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Actuated Green, G (s)	20.6			29.3	11.1	
Effective Green, g (s)	20.6			29.3	11.1	
Actuated g/C Ratio	0.38			0.55	0.21	
Clearance Time (s)	5.9				4.2	
Vehicle Extension (s)	2.5				1.5	
Lane Grp Cap (vph)	702			948	358	
v/s Ratio Prot	c0.26			c0.09	c0.12	
v/s Ratio Perm				0.22		
v/c Ratio	0.67			0.56	0.58	
Uniform Delay, d1	13.7			8.0	19.2	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	2.3			0.5	1.6	
Delay (s)	16.0			8.4	20.7	
Level of Service	B			A	C	
Approach Delay (s)	16.0			8.4	20.7	
Approach LOS	B			A	C	
Intersection Summary						
HCM 2000 Control Delay			13.7		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.62			
Actuated Cycle Length (s)			53.6		Sum of lost time (s)	13.2
Intersection Capacity Utilization			73.8%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

														
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	SWL
Lane Configurations														
Traffic Volume (vph)	66	1	307	46	21	391	284	27	145	17	308	142	71	0
Future Volume (vph)	66	1	307	46	21	391	284	27	145	17	308	142	71	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175		0	0		300	0			0		0	0
Storage Lanes		1		0	0		1	0			0		0	1
Taper Length (ft)		25			25			25			25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.980				0.850		0.988			0.982		
Flt Protected		0.950				0.997			0.993			0.971		
Satd. Flow (prot)	0	1736	1845	0	0	1894	1615	0	1840	0	0	1796	0	1900
Flt Permitted		0.152				0.888			0.916			0.372		
Satd. Flow (perm)	0	278	1845	0	0	1687	1615	0	1697	0	0	688	0	1900
Right Turn on Red				No						No			Yes	
Satd. Flow (RTOR)												8		
Link Speed (mph)			30			30			30			30		30
Link Distance (ft)			3259			1659			1121			1156		1316
Travel Time (s)			74.1			37.7			25.5			26.3		29.9
Peak Hour Factor	0.89	0.89	0.89	0.89	0.90	0.90	0.90	0.69	0.69	0.69	0.82	0.82	0.82	0.90
Heavy Vehicles (%)	4%	0%	0%	7%	0%	0%	0%	8%	0%	2%	1%	0%	2%	0%
Adj. Flow (vph)	74	1	345	52	23	434	316	39	210	25	376	173	87	0
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	75	397	0	0	457	316	0	274	0	0	636	0	0
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA		Prot
Protected Phases	1	1	1 2			2			5		4	4 5		6
Permitted Phases	2	2			2		2	5			5			
Detector Phase	1	1	1 2		2	2	2	5	5		4	4 5		6
Switch Phase														
Minimum Initial (s)	5.0	5.0			15.0	15.0	15.0	9.0	9.0		5.0			5.0
Minimum Split (s)	9.0	9.0			22.8	22.8	22.8	15.2	15.2		19.1			9.1
Total Split (s)	9.0	9.0			43.0	43.0	43.0	28.0	28.0		39.0			11.0
Total Split (%)	6.9%	6.9%			33.1%	33.1%	33.1%	21.5%	21.5%		30.0%			8.5%
Maximum Green (s)	5.0	5.0			35.2	35.2	35.2	21.8	21.8		34.9			6.9
Yellow Time (s)	3.0	3.0			4.4	4.4	4.4	3.5	3.5		3.1			3.1
All-Red Time (s)	1.0	1.0			3.4	3.4	3.4	2.7	2.7		1.0			1.0
Lost Time Adjust (s)		0.0				0.0	0.0		0.0					0.0
Total Lost Time (s)		4.0				7.8	7.8		6.2					4.1
Lead/Lag	Lead	Lead			Lag	Lag	Lag	Lead	Lead					Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes	Yes					Yes
Vehicle Extension (s)	1.5	1.5			2.5	2.5	2.5	1.5	1.5		1.5			1.5
Recall Mode	Min	Min			Min	Min	Min	None	None		None			Max
Walk Time (s)											7.0			
Flash Dont Walk (s)											8.0			
Pedestrian Calls (#/hr)											0			
Act Effct Green (s)		44.0	48.0			35.2	35.2		21.8			58.8		
Actuated g/C Ratio		0.34	0.37			0.27	0.27		0.17			0.45		
v/c Ratio		0.50	0.58			1.00	0.72		0.96			1.04		
Control Delay		39.9	37.2			90.0	53.8		98.9			83.7		
Queue Delay		0.0	0.0			0.0	0.0		0.0			0.0		
Total Delay		39.9	37.2			90.0	53.8		98.9			83.7		
LOS		D	D			F	D		F			F		
Approach Delay			37.6			75.2			98.9			83.7		
Approach LOS			D			E			F			F		
Queue Length 50th (ft)		41	267			~387	242		232			~459		
Queue Length 95th (ft)		77	368			#612	354		#250			#573		
Internal Link Dist (ft)			3179			1579			1041			1076		1236
Turn Bay Length (ft)		175					300							
Base Capacity (vph)		150	681			456	437		284			613		
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		0.50	0.58			1.00	0.72		0.96			1.04		
Intersection Summary														
Area Type:	Other													
Cycle Length:	130													

Actuated Cycle Length: 130	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 72.5	Intersection LOS: E
Intersection Capacity Utilization 98.1%	ICU Level of Service F
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: 8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive



															
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	SWL	
Lane Configurations															
Traffic Volume (vph)	66	1	307	46	21	391	284	27	145	17	308	142	71	0	
Future Volume (vph)	66	1	307	46	21	391	284	27	145	17	308	142	71	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		4.0	4.0			7.8	7.8		6.2			4.1			
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00			1.00			
Frt		1.00	0.98			1.00	0.85		0.99			0.98			
Flt Protected		0.95	1.00			1.00	1.00		0.99			0.97			
Satd. Flow (prot)		1736	1846			1895	1615		1839			1796			
Flt Permitted		0.15	1.00			0.89	1.00		0.92			0.37			
Satd. Flow (perm)		279	1846			1688	1615		1696			687			
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.90	0.90	0.90	0.69	0.69	0.69	0.82	0.82	0.82	0.90	
Adj. Flow (vph)	74	1	345	52	23	434	316	39	210	25	376	173	87	0	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	5	0	0	
Lane Group Flow (vph)	0	75	397	0	0	457	316	0	274	0	0	631	0	0	
Heavy Vehicles (%)	4%	0%	0%	7%	0%	0%	0%	8%	0%	2%	1%	0%	2%	0%	
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA		Prot	
Protected Phases	1	1	1 2			2			5		4	4 5		6	
Permitted Phases	2	2			2		2	5			5				
Actuated Green, G (s)		40.2	44.2			35.2	35.2		21.8			56.7			
Effective Green, g (s)		40.2	44.2			35.2	35.2		21.8			56.7			
Actuated g/C Ratio		0.31	0.34			0.27	0.27		0.17			0.44			
Clearance Time (s)		4.0				7.8	7.8		6.2						
Vehicle Extension (s)		1.5				2.5	2.5		1.5						
Lane Grp Cap (vph)		142	627			457	437		284			597			
v/s Ratio Prot		0.02	c0.22									c0.28			
v/s Ratio Perm		0.14				c0.27	0.20		0.16			c0.18			
v/c Ratio		0.53	0.63			1.00	0.72		0.96			1.06			
Uniform Delay, d1		34.9	36.1			47.4	43.0		53.7			36.6			
Progression Factor		1.00	1.00			1.00	1.00		1.00			1.00			
Incremental Delay, d2		1.6	1.5			42.1	5.5		43.2			53.1			
Delay (s)		36.6	37.6			89.5	48.5		96.9			89.7			
Level of Service		D	D			F	D		F			F			
Approach Delay (s)			37.5			72.7			96.9			89.7		0.0	
Approach LOS			D			E			F			F		A	
Intersection Summary															
HCM 2000 Control Delay			73.1			HCM 2000 Level of Service			E						
HCM 2000 Volume to Capacity ratio			0.96												
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			26.2						
Intersection Capacity Utilization			98.1%			ICU Level of Service			F						
Analysis Period (min)			15												
c Critical Lane Group															

Appendix D

Intersection Capacity Analysis Worksheets
2026 Combined Traffic Volumes
Weekday Afternoon Peak Hour

Lanes, Volumes, Timings
1: Site Driveway & Daniels Avenue

LEARN Early Childhood School TIS
2026 Combined PM

	→	↘	↙	←	↖	↗
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↱	↱
Traffic Volume (vph)	38	124	83	34	129	90
Future Volume (vph)	38	124	83	34	129	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	75
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.897					0.850
Flt Protected				0.966	0.950	
Satd. Flow (prot)	1671	0	0	1665	1719	1455
Flt Permitted				0.966	0.950	
Satd. Flow (perm)	1671	0	0	1665	1719	1455
Link Speed (mph)	30			30	30	
Link Distance (ft)	1860			1746	1444	
Travel Time (s)	42.3			39.7	32.8	
Peak Hour Factor	0.82	0.82	0.83	0.83	0.78	0.78
Heavy Vehicles (%)	2%	2%	14%	1%	5%	11%
Adj. Flow (vph)	46	151	100	41	165	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	197	0	0	141	165	115
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 33.2%				ICU Level of Service A		
Analysis Period (min) 15						

Intersection						
Int Delay, s/veh	6.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↱			↱	↱	↱
Traffic Vol, veh/h	38	124	83	34	129	90
Future Vol, veh/h	38	124	83	34	129	90
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	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	83	83	78	78
Heavy Vehicles, %	2	2	14	1	5	11
Mvmt Flow	46	151	100	41	165	115
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	197	0	363	122
Stage 1	-	-	-	-	122	-
Stage 2	-	-	-	-	241	-
Critical Hdwy	-	-	4.24	-	6.45	6.31
Critical Hdwy Stg 1	-	-	-	-	5.45	-
Critical Hdwy Stg 2	-	-	-	-	5.45	-
Follow-up Hdwy	-	-	2.326	-	3.545	3.399
Pot Cap-1 Maneuver	-	-	1307	-	630	905
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1307	-	581	905
Mov Cap-2 Maneuver	-	-	-	-	581	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	730	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		5.7		12	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	581	905	-	-	1307	-
HCM Lane V/C Ratio	0.285	0.127	-	-	0.077	-
HCM Control Delay (s)	13.6	9.6	-	-	8	0
HCM Lane LOS	B	A	-	-	A	A
HCM 95th %tile Q(veh)	1.2	0.4	-	-	0.2	-

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	85	75	162	77	76	105
Future Volume (vph)	85	75	162	77	76	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.937		0.956			
Flt Protected	0.974					0.979
Satd. Flow (prot)	1725	0	1804	0	0	1849
Flt Permitted	0.974					0.979
Satd. Flow (perm)	1725	0	1804	0	0	1849
Link Speed (mph)	30		30			30
Link Distance (ft)	1860		2865			1586
Travel Time (s)	42.3		65.1			36.0
Peak Hour Factor	0.71	0.71	0.75	0.75	0.92	0.92
Heavy Vehicles (%)	1%	0%	1%	0%	0%	1%
Adj. Flow (vph)	120	106	216	103	83	114
Shared Lane Traffic (%)						
Lane Group Flow (vph)	226	0	319	0	0	197
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	42.3%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	85	75	162	77	76	105
Future Vol, veh/h	85	75	162	77	76	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	71	71	75	75	92	92
Heavy Vehicles, %	1	0	1	0	0	1
Mvmt Flow	120	106	216	103	83	114
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	548	268	0	0	319	0
Stage 1	268	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	499	776	-	-	1252	-
Stage 1	779	-	-	-	-	-
Stage 2	770	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	464	776	-	-	1252	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	779	-	-	-	-	-
Stage 2	715	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.3	0		3.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	572	1252	-	
HCM Lane V/C Ratio	-	-	0.394	0.066	-	
HCM Control Delay (s)	-	-	15.3	8.1	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	1.9	0.2	-	

Lanes, Volumes, Timings
3: Spithead Road & Daniels Avenue

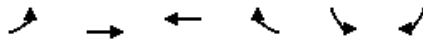
LEARN Early Childhood School TIS
2026 Combined PM

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	51	42	126	93	82
Future Volume (vph)	74	51	42	126	93	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.945				0.937	
Flt Protected	0.971			0.988		
Satd. Flow (prot)	1722	0	0	1836	1771	0
Flt Permitted	0.971			0.988		
Satd. Flow (perm)	1722	0	0	1836	1771	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1746			2377	1139	
Travel Time (s)	39.7			54.0	25.9	
Peak Hour Factor	0.63	0.63	0.88	0.88	0.85	0.85
Heavy Vehicles (%)	0%	3%	0%	3%	1%	0%
Adj. Flow (vph)	117	81	48	143	109	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	198	0	0	191	205	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	36.1%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	51	42	126	93	82
Future Vol, veh/h	74	51	42	126	93	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	88	88	85	85
Heavy Vehicles, %	0	3	0	3	1	0
Mvmt Flow	117	81	48	143	109	96
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	396	157	205	0	-	0
Stage 1	157	-	-	-	-	-
Stage 2	239	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	613	886	1378	-	-	-
Stage 1	876	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	590	886	1378	-	-	-
Mov Cap-2 Maneuver	590	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.4	1.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1378	-	683	-	-	
HCM Lane V/C Ratio	0.035	-	0.291	-	-	
HCM Control Delay (s)	7.7	0	12.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1.2	-	-	

Lanes, Volumes, Timings
4: Route 156 (Rope Ferry Road) & Spithead Road

LEARN Early Childhood School TIS
2026 Combined PM

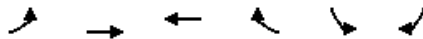


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	111	256	290	58	66	68
Future Volume (vph)	111	256	290	58	66	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.978		0.932	
Flt Protected		0.985			0.976	
Satd. Flow (prot)	0	1853	1831	0	1711	0
Flt Permitted		0.985			0.976	
Satd. Flow (perm)	0	1853	1831	0	1711	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		1560	1746		2377	
Travel Time (s)		35.5	39.7		54.0	
Peak Hour Factor	0.84	0.84	0.79	0.79	0.83	0.83
Heavy Vehicles (%)	1%	1%	1%	4%	2%	0%
Adj. Flow (vph)	132	305	367	73	80	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	437	440	0	162	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.2%			ICU Level of Service B		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	111	256	290	58	66	68
Future Vol, veh/h	111	256	290	58	66	68
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	84	84	79	79	83	83
Heavy Vehicles, %	1	1	1	4	2	0
Mvmt Flow	132	305	367	73	80	82
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	440	0	-	0	973	404
Stage 1	-	-	-	-	404	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	4.11	-	-	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.209	-	-	-	3.518	3.3
Pot Cap-1 Maneuver	1125	-	-	-	280	651
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	566	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1125	-	-	-	241	651
Mov Cap-2 Maneuver	-	-	-	-	241	-
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	566	-
Approach	EB	WB		SB		
HCM Control Delay, s	2.6	0		23.4		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1125	-	-	-	354	
HCM Lane V/C Ratio	0.117	-	-	-	0.456	
HCM Control Delay (s)	8.6	0	-	-	23.4	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0.4	-	-	-	2.3	

Lanes, Volumes, Timings
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Combined PM



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	290	320	71	31	139
Future Volume (vph)	128	290	320	71	31	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100			500	0	0
Storage Lanes	1			1	1	0
Taper Length (ft)	50				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt				0.850	0.889	
Flt Protected	0.950				0.991	
Satd. Flow (prot)	1805	1881	1900	1615	1657	0
Flt Permitted	0.544				0.991	
Satd. Flow (perm)	1034	1881	1900	1615	1657	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)				81	164	
Link Speed (mph)		30	30		30	
Link Distance (ft)		1327	1665		516	
Travel Time (s)		30.2	37.8		11.7	
Peak Hour Factor	0.94	0.94	0.88	0.88	0.85	0.85
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Adj. Flow (vph)	136	309	364	81	36	164
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	309	364	81	200	0
Turn Type	D.P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Detector Phase	1	1 2	2	2	4	
Switch Phase						
Minimum Initial (s)	5.0		15.0	15.0	7.0	
Minimum Split (s)	9.0		22.5	22.5	11.0	
Total Split (s)	10.0		35.0	35.0	15.0	
Total Split (%)	16.7%		58.3%	58.3%	25.0%	
Maximum Green (s)	6.0		27.5	27.5	11.0	
Yellow Time (s)	3.0		4.8	4.8	3.0	
All-Red Time (s)	1.0		2.7	2.7	1.0	
Lost Time Adjust (s)	0.0		0.0	0.0	0.0	
Total Lost Time (s)	4.0		7.5	7.5	4.0	
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Recall Mode	None		Max	Max	None	
Act Effct Green (s)	36.9	40.9	27.5	27.5	7.9	
Actuated g/C Ratio	0.65	0.72	0.48	0.48	0.14	
v/c Ratio	0.18	0.23	0.40	0.10	0.54	
Control Delay	3.4	3.4	11.3	3.0	12.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay	3.4	3.4	11.3	3.0	12.5	
LOS	A	A	B	A	B	
Approach Delay		3.4	9.8		12.5	
Approach LOS		A	A		B	
Queue Length 50th (ft)	9	23	70	0	11	
Queue Length 95th (ft)	27	59	137	18	53	
Internal Link Dist (ft)		1247	1585		436	
Turn Bay Length (ft)	100			500		
Base Capacity (vph)	754	1329	919	823	452	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.23	0.40	0.10	0.44	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 56.9
Natural Cycle: 45
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 47.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 5: Route 156 (Rope Ferry Road) & West Street



HCM Signalized Intersection Capacity Analysis
5: Route 156 (Rope Ferry Road) & West Street

LEARN Early Childhood School TIS
2026 Combined PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	128	290	320	71	31	139
Future Volume (vph)	128	290	320	71	31	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	7.5	7.5	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	1.00	0.85	0.89	
Flt Protected	0.95	1.00	1.00	1.00	0.99	
Satd. Flow (prot)	1805	1881	1900	1615	1658	
Flt Permitted	0.54	1.00	1.00	1.00	0.99	
Satd. Flow (perm)	1034	1881	1900	1615	1658	
Peak-hour factor, PHF	0.94	0.94	0.88	0.88	0.85	0.85
Adj. Flow (vph)	136	309	364	81	36	164
RTOR Reduction (vph)	0	0	0	42	141	0
Lane Group Flow (vph)	136	309	364	39	59	0
Heavy Vehicles (%)	0%	1%	0%	0%	1%	1%
Turn Type	D,P+P	NA	NA	Prot	Prot	
Protected Phases	1	1 2	2	2	4	
Permitted Phases	2					
Actuated Green, G (s)	33.4	37.4	27.5	27.5	7.9	
Effective Green, g (s)	33.4	37.4	27.5	27.5	7.9	
Actuated g/C Ratio	0.59	0.66	0.48	0.48	0.14	
Clearance Time (s)	4.0		7.5	7.5	4.0	
Vehicle Extension (s)	2.0		3.0	3.0	2.0	
Lane Grp Cap (vph)	688	1238	919	781	230	
v/s Ratio Prot	0.02	c0.16	c0.19	0.02	c0.04	
v/s Ratio Perm	0.10					
v/c Ratio	0.20	0.25	0.40	0.05	0.26	
Uniform Delay, d1	5.2	4.0	9.4	7.7	21.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.0	1.3	0.1	0.2	
Delay (s)	5.3	4.0	10.6	7.9	22.0	
Level of Service	A	A	B	A	C	
Approach Delay (s)		4.4	10.1		22.0	
Approach LOS		A	B		C	
Intersection Summary						
HCM 2000 Control Delay			10.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.36			
Actuated Cycle Length (s)			56.8		Sum of lost time (s)	15.5
Intersection Capacity Utilization			47.1%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
6: Niantic River Road & West Street

LEARN Early Childhood School TIS
2026 Combined PM

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	33	166	34	37	133	37
Future Volume (vph)	33	166	34	37	133	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.887		0.929			
Flt Protected	0.992					0.962
Satd. Flow (prot)	1631	0	1739	0	0	1820
Flt Permitted	0.992					0.962
Satd. Flow (perm)	1631	0	1739	0	0	1820
Link Speed (mph)	30		30			30
Link Distance (ft)	516		1202			2865
Travel Time (s)	11.7		27.3			65.1
Peak Hour Factor	0.77	0.77	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	0%	3%	2%	1%	0%	2%
Adj. Flow (vph)	43	216	41	45	160	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	259	0	86	0	0	205
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	34.7%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection						
Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	166	34	37	133	37
Future Vol, veh/h	33	166	34	37	133	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	77	77	83	83	83	83
Heavy Vehicles, %	0	3	2	1	0	2
Mvmt Flow	43	216	41	45	160	45
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	429	64	0	0	86	0
Stage 1	64	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	587	998	-	-	1523	-
Stage 1	964	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	524	998	-	-	1523	-
Mov Cap-2 Maneuver	524	-	-	-	-	-
Stage 1	964	-	-	-	-	-
Stage 2	631	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.9	0		6		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)	-	-	868	1523	-	
HCM Lane V/C Ratio	-	-	0.298	0.105	-	
HCM Control Delay (s)	-	-	10.9	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1.3	0.4	-	

Lanes, Volumes, Timings
7: Niantic River Road & Route 1 (Boston Post Road)

LEARN Early Childhood School TIS
2026 Combined PM

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	362	158	80	416	178	73
Future Volume (vph)	362	158	80	416	178	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.959				0.961	
Flt Protected				0.992	0.966	
Satd. Flow (prot)	1804	0	0	1866	1746	0
Flt Permitted				0.797	0.966	
Satd. Flow (perm)	1804	0	0	1499	1746	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	41				33	
Link Speed (mph)	30			30	30	
Link Distance (ft)	1367			3259	1593	
Travel Time (s)	31.1			74.1	36.2	
Peak Hour Factor	0.94	0.94	0.93	0.93	0.75	0.75
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Adj. Flow (vph)	385	168	86	447	237	97
Shared Lane Traffic (%)						
Lane Group Flow (vph)	553	0	0	533	334	0
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Detector Phase	2		1	1 2	4	
Switch Phase						
Minimum Initial (s)	18.0		5.0		9.0	
Minimum Split (s)	23.9		8.1		18.2	
Total Split (s)	28.0		13.0		19.0	
Total Split (%)	46.7%		21.7%		31.7%	
Maximum Green (s)	22.1		9.9		14.8	
Yellow Time (s)	4.3		3.0		3.2	
All-Red Time (s)	1.6		0.1		1.0	
Lost Time Adjust (s)	0.0				0.0	
Total Lost Time (s)	5.9				4.2	
Lead/Lag	Lag		Lead			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	2.5		2.0		1.5	
Recall Mode	Min		Min		None	
Walk Time (s)					7.0	
Flash Dont Walk (s)					7.0	
Pedestrian Calls (#/hr)					0	
Act Effct Green (s)	21.0			33.3	12.9	
Actuated g/C Ratio	0.37			0.59	0.23	
v/c Ratio	0.80			0.57	0.79	
Control Delay	26.2			8.6	34.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	26.2			8.6	34.3	
LOS	C			A	C	
Approach Delay	26.2			8.6	34.3	
Approach LOS	C			A	C	
Queue Length 50th (ft)	161			83	100	
Queue Length 95th (ft)	#321			139	139	
Internal Link Dist (ft)	1287			3179	1513	
Turn Bay Length (ft)						
Base Capacity (vph)	734			992	483	
Starvation Cap Reductn	0			0	0	
Spillback Cap Reductn	0			0	0	
Storage Cap Reductn	0			0	0	
Reduced v/c Ratio	0.75			0.54	0.69	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 56.7
Natural Cycle: 55
Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 7: Niantic River Road & Route 1 (Boston Post Road)



HCM Signalized Intersection Capacity Analysis
7: Niantic River Road & Route 1 (Boston Post Road)

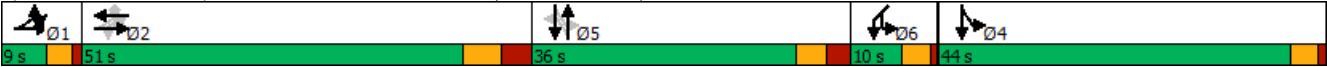
LEARN Early Childhood School TIS
2026 Combined PM

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↰	↰	
Traffic Volume (vph)	362	158	80	416	178	73
Future Volume (vph)	362	158	80	416	178	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9			3.1	4.2	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.96			1.00	0.96	
Flt Protected	1.00			0.99	0.97	
Satd. Flow (prot)	1804			1866	1746	
Flt Permitted	1.00			0.80	0.97	
Satd. Flow (perm)	1804			1499	1746	
Peak-hour factor, PHF	0.94	0.94	0.93	0.93	0.75	0.75
Adj. Flow (vph)	385	168	86	447	237	97
RTOR Reduction (vph)	26	0	0	0	25	0
Lane Group Flow (vph)	527	0	0	533	309	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	NA		D.P+P	NA	Prot	
Protected Phases	2		1	1 2	4	
Permitted Phases			2			
Actuated Green, G (s)	21.0			30.4	12.9	
Effective Green, g (s)	21.0			30.4	12.9	
Actuated g/C Ratio	0.37			0.54	0.23	
Clearance Time (s)	5.9				4.2	
Vehicle Extension (s)	2.5				1.5	
Lane Grp Cap (vph)	670			867	398	
v/s Ratio Prot	c0.29			c0.10	c0.18	
v/s Ratio Perm				0.23		
v/c Ratio	0.79			0.61	0.78	
Uniform Delay, d1	15.8			9.0	20.4	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	5.9			0.9	8.4	
Delay (s)	21.6			9.9	28.8	
Level of Service	C			A	C	
Approach Delay (s)	21.6			9.9	28.8	
Approach LOS	C			A	C	
Intersection Summary						
HCM 2000 Control Delay			18.9		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.75			
Actuated Cycle Length (s)			56.5		Sum of lost time (s)	13.2
Intersection Capacity Utilization			81.1%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

														
Lane Group	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	SWL
Lane Configurations														
Traffic Volume (vph)	66	1	307	46	31	391	284	27	187	28	308	182	71	0
Future Volume (vph)	66	1	307	46	31	391	284	27	187	28	308	182	71	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175		0	0		300	0			0		0	0
Storage Lanes		1		0	0		1	0			0		0	1
Taper Length (ft)		25			25			25			25			25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.980				0.850		0.984			0.983		
Flt Protected		0.950				0.996			0.994			0.973		
Satd. Flow (prot)	0	1736	1845	0	0	1892	1615	0	1838	0	0	1803	0	1900
Flt Permitted		0.154				0.775			0.922			0.319		
Satd. Flow (perm)	0	281	1845	0	0	1472	1615	0	1705	0	0	591	0	1900
Right Turn on Red				No						No			Yes	
Satd. Flow (RTOR)												7		
Link Speed (mph)			30			30			30			30		30
Link Distance (ft)			3259			1659			1121			1156		1316
Travel Time (s)			74.1			37.7			25.5			26.3		29.9
Peak Hour Factor	0.89	0.89	0.89	0.89	0.90	0.90	0.90	0.69	0.69	0.69	0.82	0.82	0.82	0.90
Heavy Vehicles (%)	4%	0%	0%	7%	0%	0%	0%	8%	0%	2%	1%	0%	2%	0%
Adj. Flow (vph)	74	1	345	52	34	434	316	39	271	41	376	222	87	0
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	75	397	0	0	468	316	0	351	0	0	685	0	0
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA		Prot
Protected Phases	1	1	1 2			2			5		4	4 5		6
Permitted Phases	2	2			2		2	5			5			
Detector Phase	1	1	1 2		2	2	2	5	5		4	4 5		6
Switch Phase														
Minimum Initial (s)	5.0	5.0			15.0	15.0	15.0	9.0	9.0		5.0			5.0
Minimum Split (s)	9.0	9.0			22.8	22.8	22.8	15.2	15.2		19.1			9.1
Total Split (s)	9.0	9.0			51.0	51.0	51.0	36.0	36.0		44.0			10.0
Total Split (%)	6.0%	6.0%			34.0%	34.0%	34.0%	24.0%	24.0%		29.3%			6.7%
Maximum Green (s)	5.0	5.0			43.2	43.2	43.2	29.8	29.8		39.9			5.9
Yellow Time (s)	3.0	3.0			4.4	4.4	4.4	3.5	3.5		3.1			3.1
All-Red Time (s)	1.0	1.0			3.4	3.4	3.4	2.7	2.7		1.0			1.0
Lost Time Adjust (s)		0.0				0.0	0.0		0.0					0.0
Total Lost Time (s)		4.0				7.8	7.8		6.2					4.1
Lead/Lag	Lead	Lead			Lag	Lag	Lag	Lead	Lead					Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes	Yes					Yes
Vehicle Extension (s)	1.5	1.5			2.5	2.5	2.5	1.5	1.5		1.5			1.5
Recall Mode	Min	Min			Min	Min	Min	None	None		None			Max
Walk Time (s)											7.0			
Flash Dont Walk (s)											8.0			
Pedestrian Calls (#/hr)											0			
Act Effct Green (s)		52.0	56.0			43.2	43.2		29.8			71.8		
Actuated g/C Ratio		0.35	0.37			0.29	0.29		0.20			0.48		
v/c Ratio		0.52	0.58			1.11	0.68		1.04			1.13		
Control Delay		45.3	41.6			124.2	55.9		116.3			117.1		
Queue Delay		0.0	0.0			0.0	0.0		0.0			0.0		
Total Delay		45.3	41.6			124.2	55.9		116.3			117.1		
LOS		D	D			F	E		F			F		
Approach Delay			42.2			96.7			116.3			117.1		
Approach LOS			D			F			F			F		
Queue Length 50th (ft)		48	309			~519	275		~368			~639		
Queue Length 95th (ft)		85	416			#742	388		#358			#742		
Internal Link Dist (ft)			3179			1579			1041			1076		1236
Turn Bay Length (ft)		175					300							
Base Capacity (vph)		145	688			423	465		338			608		
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		0.52	0.58			1.11	0.68		1.04			1.13		
Intersection Summary														
Area Type:	Other													
Cycle Length: 150														

Actuated Cycle Length: 150	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay: 94.6	Intersection LOS: F
Intersection Capacity Utilization 103.6%	ICU Level of Service G
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: 8: Spithead Road/Cross Road & Route 1 (Boston Post Road) & Sunnicrest Drive



														
Movement	EBL2	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	SWL
Lane Configurations														
Traffic Volume (vph)	66	1	307	46	31	391	284	27	187	28	308	182	71	0
Future Volume (vph)	66	1	307	46	31	391	284	27	187	28	308	182	71	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0			7.8	7.8		6.2			4.1		
Lane Util. Factor		1.00	1.00			1.00	1.00		1.00			1.00		
Frt		1.00	0.98			1.00	0.85		0.98			0.98		
Flt Protected		0.95	1.00			1.00	1.00		0.99			0.97		
Satd. Flow (prot)		1736	1846			1893	1615		1839			1803		
Flt Permitted		0.15	1.00			0.77	1.00		0.92			0.32		
Satd. Flow (perm)		282	1846			1472	1615		1705			591		
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.90	0.90	0.90	0.69	0.69	0.69	0.82	0.82	0.82	0.90
Adj. Flow (vph)	74	1	345	52	34	434	316	39	271	41	376	222	87	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	4	0	0
Lane Group Flow (vph)	0	75	397	0	0	468	316	0	351	0	0	681	0	0
Heavy Vehicles (%)	4%	0%	0%	7%	0%	0%	0%	8%	0%	2%	1%	0%	2%	0%
Turn Type	D.P+P	D.P+P	NA		Perm	NA	Perm	Perm	NA		D.P+P	NA		Prot
Protected Phases	1	1	1 2			2			5		4	4 5		6
Permitted Phases	2	2			2		2	5			5			
Actuated Green, G (s)		48.2	52.2			43.2	43.2		29.8			69.7		
Effective Green, g (s)		48.2	52.2			43.2	43.2		29.8			69.7		
Actuated g/C Ratio		0.32	0.35			0.29	0.29		0.20			0.46		
Clearance Time (s)		4.0				7.8	7.8		6.2					
Vehicle Extension (s)		1.5				2.5	2.5		1.5					
Lane Grp Cap (vph)		139	642			423	465		338			597		
v/s Ratio Prot		0.02	c0.22									c0.30		
v/s Ratio Perm		0.16				c0.32	0.20		0.21			c0.23		
v/c Ratio		0.54	0.62			1.11	0.68		1.04			1.14		
Uniform Delay, d1		39.3	40.6			53.4	47.3		60.1			40.1		
Progression Factor		1.00	1.00			1.00	1.00		1.00			1.00		
Incremental Delay, d2		2.0	1.3			75.8	3.6		59.3			82.3		
Delay (s)		41.3	41.9			129.2	50.8		119.4			122.5		
Level of Service		D	D			F	D		F			F		
Approach Delay (s)			41.8			97.6			119.4			122.5		0.0
Approach LOS			D			F			F			F		A
Intersection Summary														
HCM 2000 Control Delay			96.9			HCM 2000 Level of Service			F					
HCM 2000 Volume to Capacity ratio			1.06											
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			26.2					
Intersection Capacity Utilization			103.6%			ICU Level of Service			G					
Analysis Period (min)			15											
c Critical Lane Group														

Appendix D

Intersection Capacity Analysis Worksheets
2026 Combined + Improved Traffic Volumes
Weekday Afternoon Peak Hour

Lanes, Volumes, Timings

3: Spithead Road & Daniels Avenue

LEARN Early Childhood School TIS
2026 Combined + Improved PM



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	74	51	42	126	93	82
Future Volume (vph)	74	51	42	126	93	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.945				0.937	
Flt Protected	0.971			0.988		
Satd. Flow (prot)	1722	0	0	1836	1771	0
Flt Permitted	0.971			0.988		
Satd. Flow (perm)	1722	0	0	1836	1771	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	1746			2377	1139	
Travel Time (s)	39.7			54.0	25.9	
Peak Hour Factor	0.63	0.63	0.88	0.88	0.85	0.85
Heavy Vehicles (%)	0%	3%	0%	3%	1%	0%
Adj. Flow (vph)	117	81	48	143	109	96
Shared Lane Traffic (%)						
Lane Group Flow (vph)	198	0	0	191	205	0
Sign Control	Stop			Stop	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 36.1% ICU Level of Service A

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	51	42	126	93	82
Future Vol, veh/h	74	51	42	126	93	82
Peak Hour Factor	0.63	0.63	0.88	0.88	0.85	0.85
Heavy Vehicles, %	0	3	0	3	1	0
Mvmt Flow	117	81	48	143	109	96
Number of Lanes	1	0	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	1	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.3	9.2	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	SBLn1
Vol Left, %	25%	59%	0%
Vol Thru, %	75%	0%	53%
Vol Right, %	0%	41%	47%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	168	125	175
LT Vol	42	74	0
Through Vol	126	0	93
RT Vol	0	51	82
Lane Flow Rate	191	198	206
Geometry Grp	1	1	1
Degree of Util (X)	0.247	0.257	0.248
Departure Headway (Hd)	4.656	4.66	4.339
Convergence, Y/N	Yes	Yes	Yes
Cap	769	770	826
Service Time	2.691	2.698	2.373
HCM Lane V/C Ratio	0.248	0.257	0.249
HCM Control Delay	9.2	9.3	8.8
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1	1	1

Appendix E

Turning Movement Count (TMC) Data

File Name : 23537
Site Code : 23537
Start Date : 10/12/2022
Page No : 1

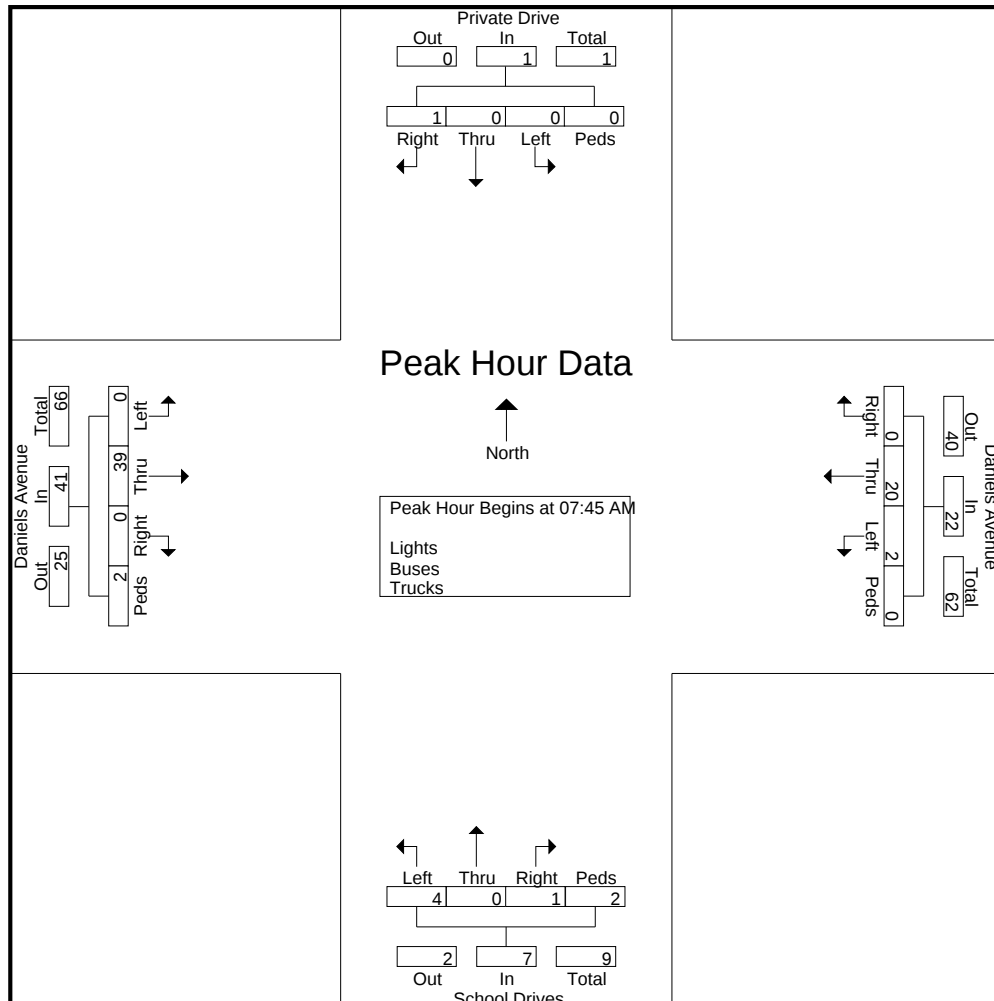
Groups Printed- Lights - Buses - Trucks																					
	Private Drive From North					Daniels Avenue From East					School Drives From South					Daniels Avenue From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	0	0	1	0	1	0	0	1	1	0	0	0	1	0	20	0	0	20	23
07:15 AM	0	0	0	0	0	0	3	2	0	5	1	0	0	0	1	1	6	0	0	7	13
07:30 AM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	10
07:45 AM	1	0	0	0	1	0	7	1	0	8	0	0	3	0	3	0	6	0	0	6	18
Total	2	0	1	0	3	0	13	3	0	16	2	0	3	0	5	1	39	0	0	40	64
08:00 AM	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	0	8	0	0	8	16
08:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	1	2	3	0	8	0	1	9	17
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	17	0	1	18	20
08:45 AM	0	0	0	1	1	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	11
Total	0	0	0	1	1	0	18	1	0	19	1	0	1	2	4	0	38	0	2	40	64
Grand Total	2	0	1	1	4	0	31	4	0	35	3	0	4	2	9	1	77	0	2	80	128
Apprch %	50	0	25	25		0	88.6	11.4	0		33.3	0	44.4	22.2		1.2	96.2	0	2.5		
Total %	1.6	0	0.8	0.8	3.1	0	24.2	3.1	0	27.3	2.3	0	3.1	1.6	7	0.8	60.2	0	1.6	62.5	
Lights	2	0	1	1	4	0	29	3	0	32	2	0	4	2	8	1	77	0	2	80	124
% Lights	100	0	100	100	100	0	93.5	75	0	91.4	66.7	0	100	100	88.9	100	100	0	100	100	96.9
Buses	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	0	0	0	0	0	3
% Buses	0	0	0	0	0	0	3.2	25	0	5.7	33.3	0	0	0	11.1	0	0	0	0	0	2.3
Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Trucks	0	0	0	0	0	0	3.2	0	0	2.9	0	0	0	0	0	0	0	0	0	0	0.8

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 23537
Site Code : 23537
Start Date : 10/12/2022
Page No : 2

	Private Drive From North					Daniels Avenue From East					School Drives From South					Daniels 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 07:45 AM																					
07:45 AM	1	0	0	0	1	0	7	1	0	8	0	0	3	0	3	0	6	0	0	6	18
08:00 AM	0	0	0	0	0	0	6	1	0	7	1	0	0	0	1	0	8	0	0	8	16
08:15 AM	0	0	0	0	0	0	5	0	0	5	0	0	1	2	3	0	8	0	1	9	17
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	17	0	1	18	20
Total Volume	1	0	0	0	1	0	20	2	0	22	1	0	4	2	7	0	39	0	2	41	71
% App. Total	100	0	0	0		0	90.9	9.1	0		14.3	0	57.1	28.6		0	95.1	0	4.9		
PHF	.250	.000	.000	.000	.250	.000	.714	.500	.000	.688	.250	.000	.333	.250	.583	.000	.574	.000	.500	.569	.888



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

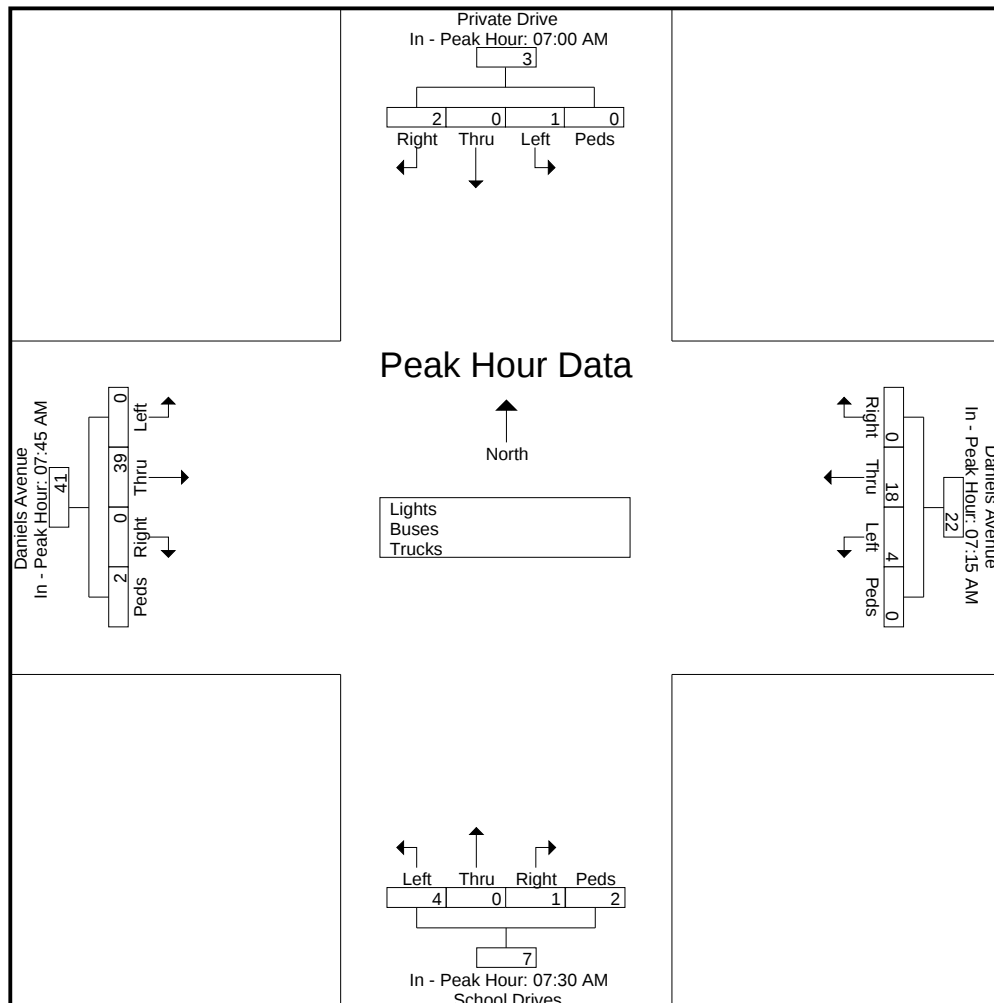
File Name : 23537
Site Code : 23537
Start Date : 10/12/2022
Page No : 3

	Private Drive From North					Daniels Avenue From East					School Drives From South					Daniels 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:

	07:00 AM					07:15 AM					07:30 AM					07:45 AM				
+0 mins.	1	0	0	0	1	0	3	2	0	5	0	0	0	0	0	0	6	0	0	6
+15 mins.	0	0	0	0	0	0	2	0	0	2	0	0	3	0	3	0	8	0	0	8
+30 mins.	0	0	1	0	1	0	7	1	0	8	1	0	0	0	1	0	8	0	1	9
+45 mins.	1	0	0	0	1	0	6	1	0	7	0	0	1	2	3	0	17	0	1	18
Total Volume	2	0	1	0	3	0	18	4	0	22	1	0	4	2	7	0	39	0	2	41
% App. Total	66.7	0	33.3	0		0	81.8	18.2	0		14.3	0	57.1	28.6		0	95.1	0	4.9	
PHF	.500	.000	.250	.000	.750	.000	.643	.500	.000	.688	.250	.000	.333	.250	.583	.000	.574	.000	.500	.569



File Name : 23535
Site Code : 23535
Start Date : 10/12/2022
Page No : 1

[illegible]

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

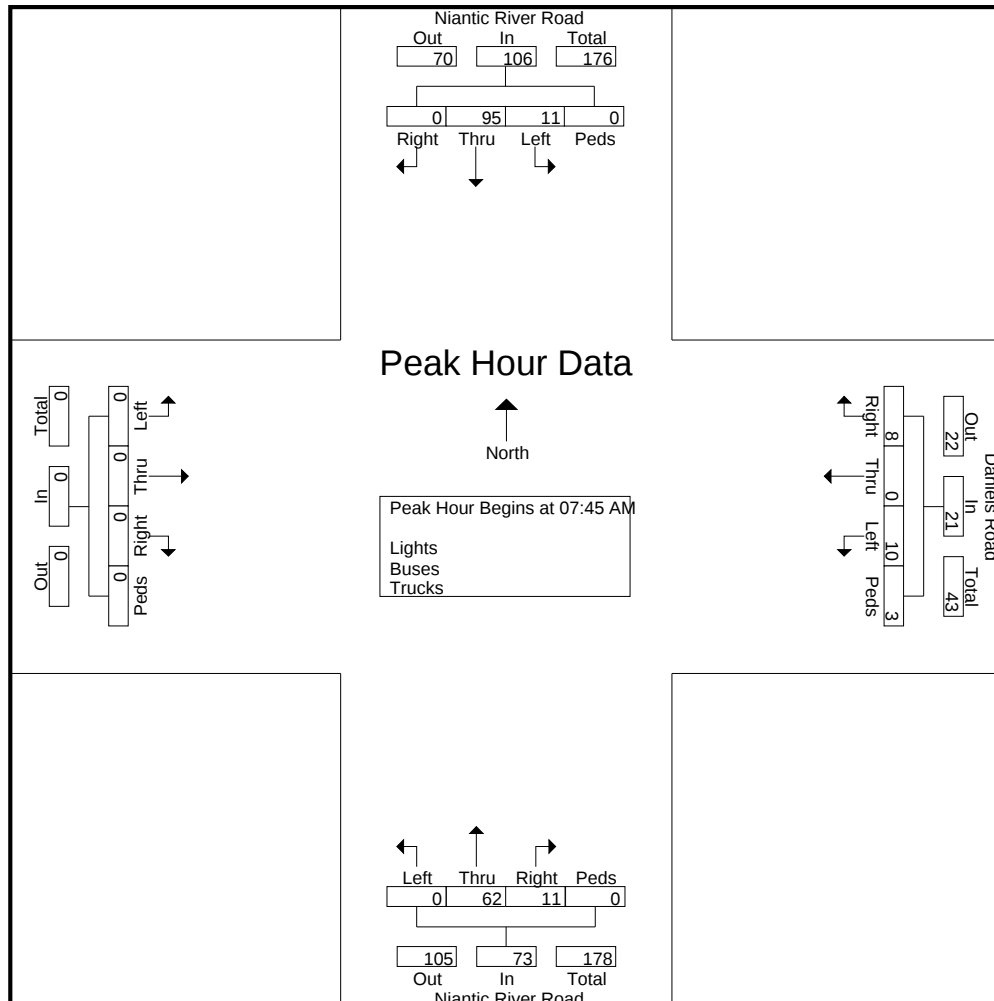
File Name : 23535
Site Code : 23535
Start Date : 10/12/2022
Page No : 2

	Niantic River Road From North					Daniels Road From East					Niantic River Road From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	0	28	2	0	30	6	0	3	1	10	2	16	0	0	18	0	0	0	0	0	58
08:00 AM	0	19	1	0	20	1	0	3	1	5	3	22	0	0	25	0	0	0	0	0	50
08:15 AM	0	23	2	0	25	1	0	4	0	5	2	14	0	0	16	0	0	0	0	0	46
08:30 AM	0	25	6	0	31	0	0	0	1	1	4	10	0	0	14	0	0	0	0	0	46
Total Volume	0	95	11	0	106	8	0	10	3	21	11	62	0	0	73	0	0	0	0	0	200
% App. Total	0	89.6	10.4	0		38.1	0	47.6	14.3		15.1	84.9	0	0		0	0	0	0		
PHF	.000	.848	.458	.000	.855	.333	.000	.625	.750	.525	.688	.705	.000	.000	.730	.000	.000	.000	.000	.000	.862



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

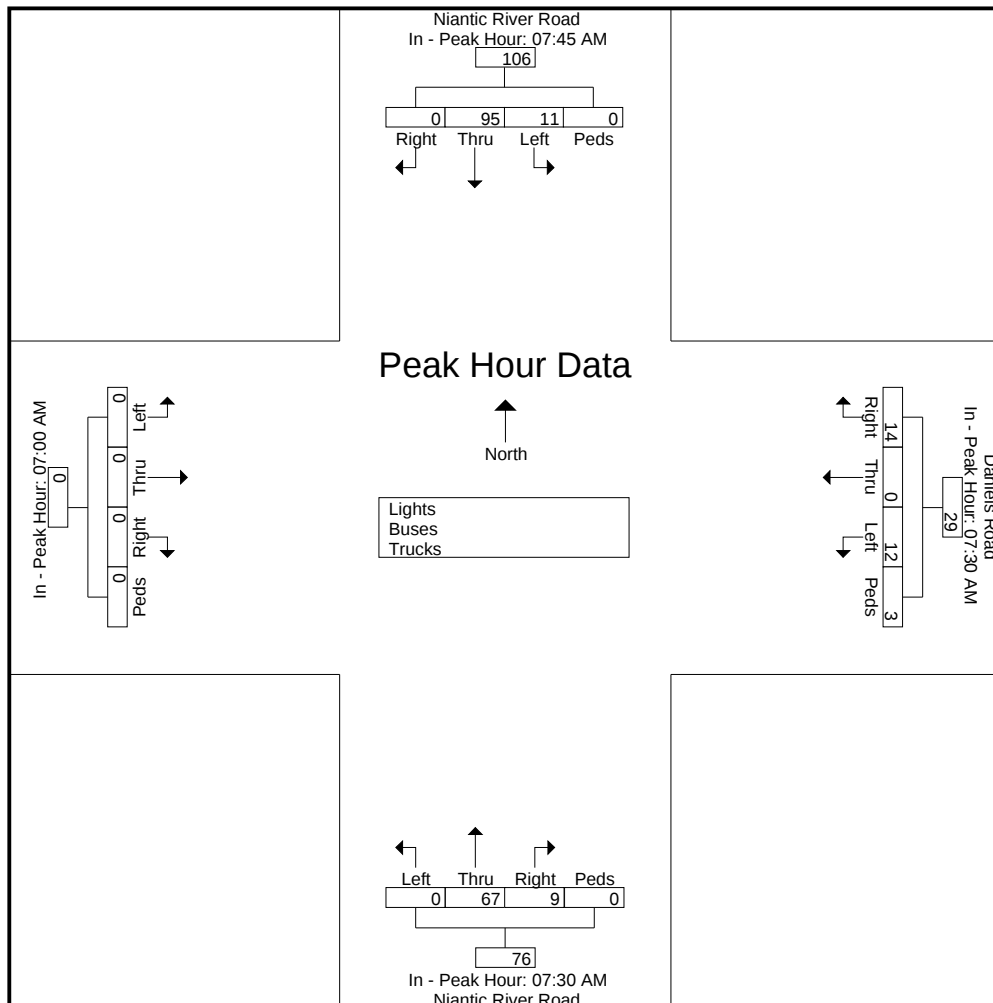
File Name : 23535
Site Code : 23535
Start Date : 10/12/2022
Page No : 3

	Niantic River Road From North					Daniels Road From East					Niantic River Road From South					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					07:30 AM					07:30 AM					07:00 AM				
+0 mins.	0	28	2	0	30	6	0	2	1	9	2	15	0	0	17	0	0	0	0	0
+15 mins.	0	19	1	0	20	6	0	3	1	10	2	16	0	0	18	0	0	0	0	0
+30 mins.	0	23	2	0	25	1	0	3	1	5	3	22	0	0	25	0	0	0	0	0
+45 mins.	0	25	6	0	31	1	0	4	0	5	2	14	0	0	16	0	0	0	0	0
Total Volume	0	95	11	0	106	14	0	12	3	29	9	67	0	0	76	0	0	0	0	0
% App. Total	0	89.6	10.4	0		48.3	0	41.4	10.3		11.8	88.2	0	0		0	0	0	0	
PHF	.000	.848	.458	.000	.855	.583	.000	.750	.750	.725	.750	.761	.000	.000	.760	.000	.000	.000	.000	.000



File Name : 23529
Site Code : 23529
Start Date : 10/12/2022
Page No : 1

[illegible]

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

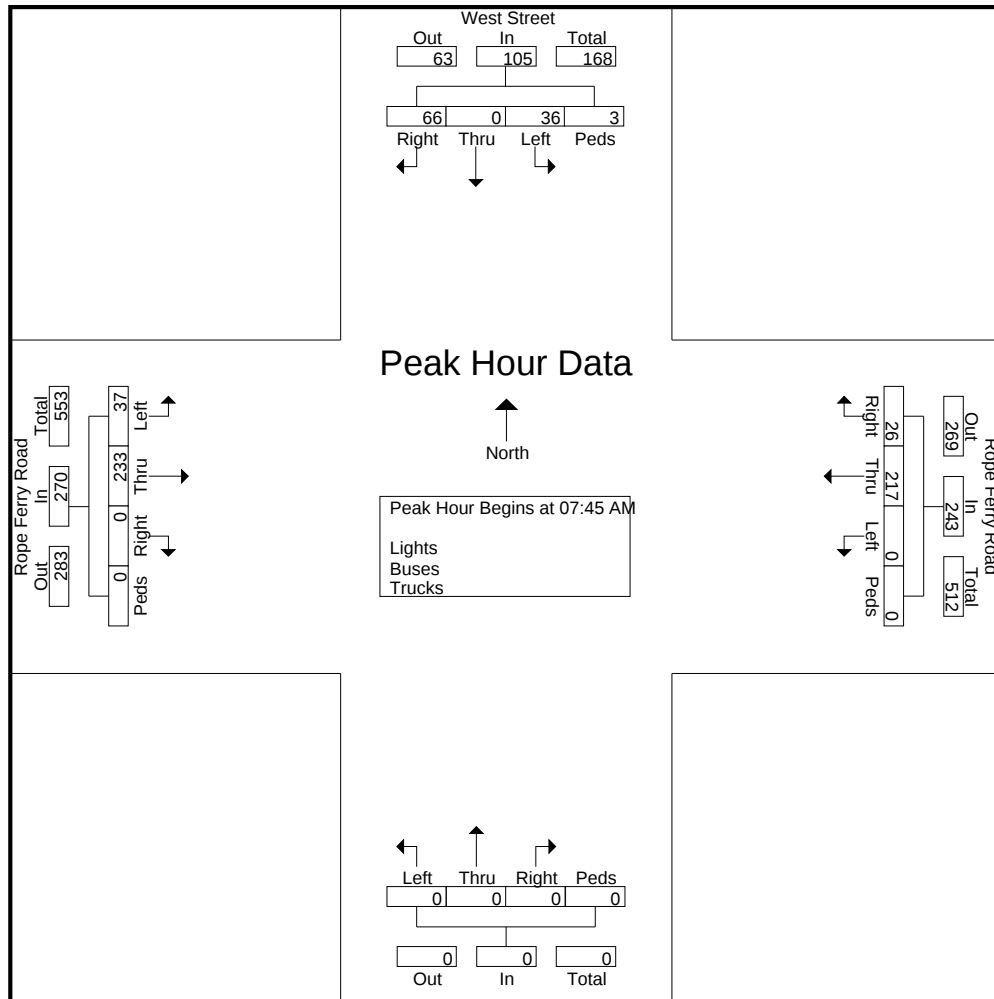
File Name : 23529
Site Code : 23529
Start Date : 10/12/2022
Page No : 2

Start Time	West Street From North					Rope Ferry Road From East					From South					Rope Ferry Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	15	0	12	0	27	5	53	0	0	58	0	0	0	0	0	0	70	11	0	81	166
08:00 AM	18	0	9	0	27	10	50	0	0	60	0	0	0	0	0	0	52	9	0	61	148
08:15 AM	19	0	6	1	26	2	51	0	0	53	0	0	0	0	0	0	64	7	0	71	150
08:30 AM	14	0	9	2	25	9	63	0	0	72	0	0	0	0	0	0	47	10	0	57	154
Total Volume	66	0	36	3	105	26	217	0	0	243	0	0	0	0	0	0	233	37	0	270	618
% App. Total	62.9	0	34.3	2.9		10.7	89.3	0	0		0	0	0	0		0	86.3	13.7	0		
PHF	.868	.000	.750	.375	.972	.650	.861	.000	.000	.844	.000	.000	.000	.000	.000	.000	.832	.841	.000	.833	.931



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

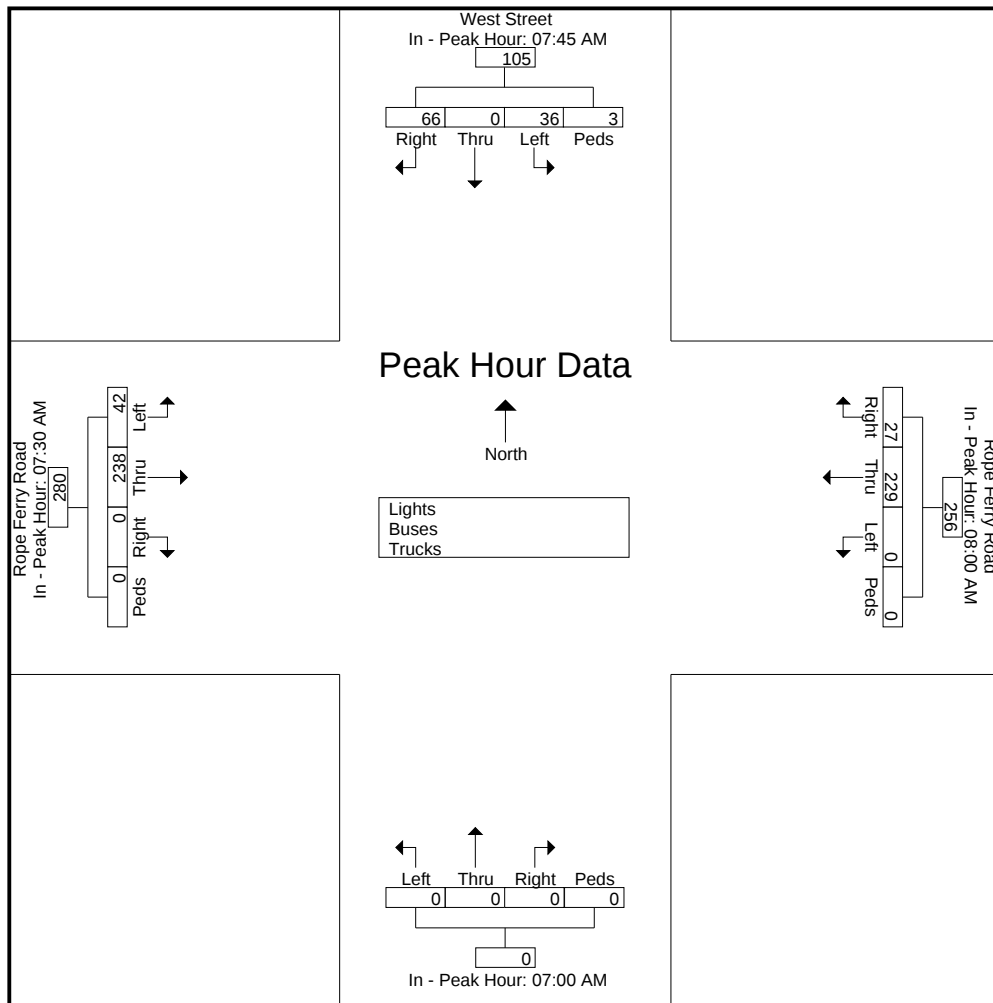
File Name : 23529
 Site Code : 23529
 Start Date : 10/12/2022
 Page No : 3

	West Street From North					Rope Ferry Road From East					From South					Rope Ferry Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM					08:00 AM					07:00 AM					07:30 AM				
+0 mins.	15	0	12	0	27	10	50	0	0	60	0	0	0	0	0	0	52	15	0	67
+15 mins.	18	0	9	0	27	2	51	0	0	53	0	0	0	0	0	0	70	11	0	81
+30 mins.	19	0	6	1	26	9	63	0	0	72	0	0	0	0	0	0	52	9	0	61
+45 mins.	14	0	9	2	25	6	65	0	0	71	0	0	0	0	0	0	64	7	0	71
Total Volume	66	0	36	3	105	27	229	0	0	256	0	0	0	0	0	0	238	42	0	280
% App. Total	62.9	0	34.3	2.9		10.5	89.5	0	0		0	0	0	0		0	85	15	0	
PHF	.868	.000	.750	.375	.972	.675	.881	.000	.000	.889	.000	.000	.000	.000	.000	.000	.850	.700	.000	.864



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Route 1 at Niantic River Road
Waterford, Connecticut

File Name : 23541
Site Code : 23541
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

Start Time	From North					Route 1 From East					Niantic River Road From South					Route 1 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
07:00 AM	0	0	0	0	0	0	62	6	0	68	25	0	18	0	43	9	58	0	0	67	178
07:15 AM	0	0	0	0	0	0	76	12	0	88	22	0	11	0	33	14	67	0	0	81	202
07:30 AM	0	0	0	0	0	0	97	8	0	105	18	0	23	0	41	14	81	0	0	95	241
07:45 AM	0	0	0	0	0	0	78	7	0	85	19	0	21	0	40	19	73	0	0	92	217
Total	0	0	0	0	0	0	313	33	0	346	84	0	73	0	157	56	279	0	0	335	838
08:00 AM	0	0	0	0	0	0	95	10	0	105	15	0	25	0	40	18	83	0	0	101	246
08:15 AM	0	0	0	0	0	0	108	5	0	113	9	0	16	0	25	12	102	0	0	114	252
08:30 AM	0	0	0	0	0	0	108	13	0	121	11	0	13	0	24	16	93	0	0	109	254
08:45 AM	0	0	0	0	0	0	62	6	0	68	15	0	6	0	21	17	54	0	0	71	160
Total	0	0	0	0	0	0	373	34	0	407	50	0	60	0	110	63	332	0	0	395	912
Grand Total	0	0	0	0	0	0	686	67	0	753	134	0	133	0	267	119	611	0	0	730	1750
Apprch %	0	0	0	0		0	91.1	8.9	0		50.2	0	49.8	0		16.3	83.7	0	0		
Total %	0	0	0	0	0	0	39.2	3.8	0	43	7.7	0	7.6	0	15.3	6.8	34.9	0	0	41.7	
Lights	0	0	0	0	0	0	676	67	0	743	132	0	131	0	263	119	596	0	0	715	1721
% Lights	0	0	0	0	0	0	98.5	100	0	98.7	98.5	0	98.5	0	98.5	100	97.5	0	0	97.9	98.3
Buses	0	0	0	0	0	0	5	0	0	5	2	0	2	0	4	0	9	0	0	9	18
% Buses	0	0	0	0	0	0	0.7	0	0	0.7	1.5	0	1.5	0	1.5	0	1.5	0	0	1.2	1
Trucks	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	11
% Trucks	0	0	0	0	0	0	0.7	0	0	0.7	0	0	0	0	0	0	1	0	0	0.8	0.6

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

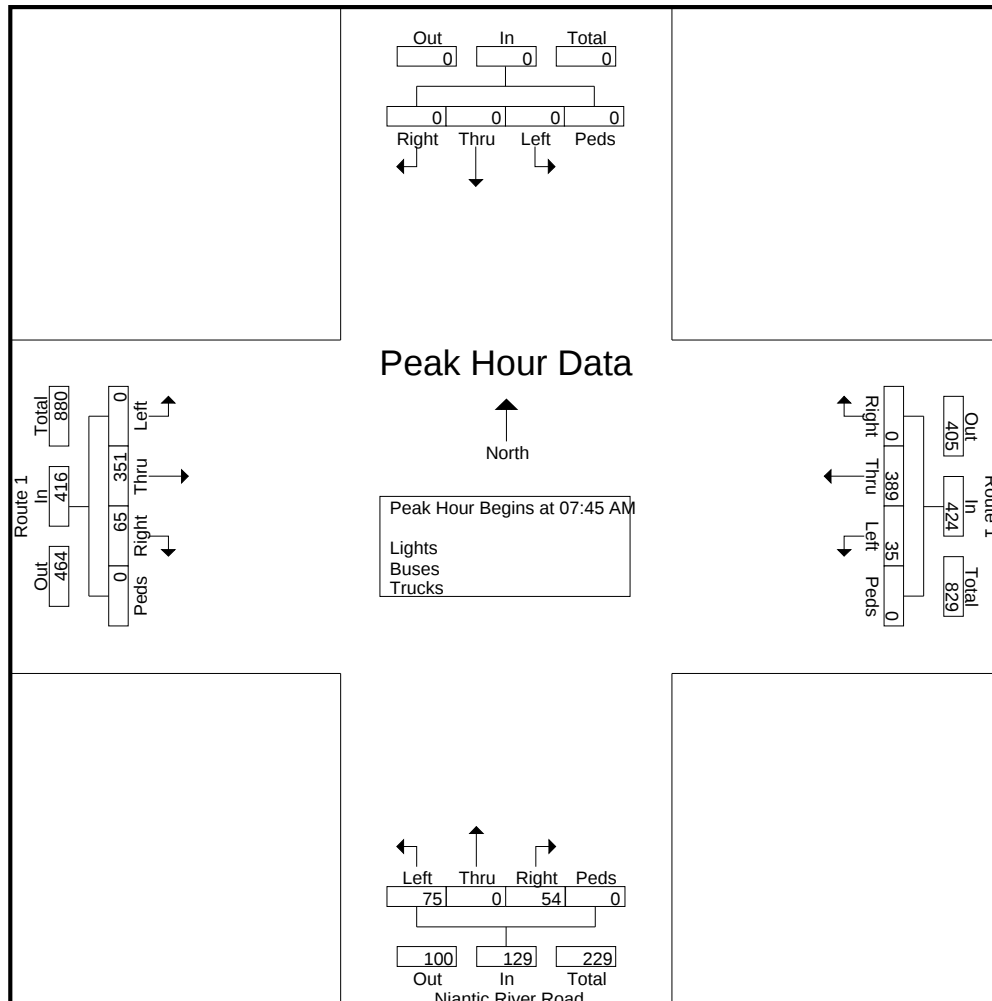
File Name : 23541
Site Code : 23541
Start Date : 10/12/2022
Page No : 2

Start Time	From North					Route 1 From East					Niantic River Road From South					Route 1 From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	0	0	0	0	0	0	78	7	0	85	19	0	21	0	40	19	73	0	0	92	217
08:00 AM	0	0	0	0	0	0	95	10	0	105	15	0	25	0	40	18	83	0	0	101	246
08:15 AM	0	0	0	0	0	0	108	5	0	113	9	0	16	0	25	12	102	0	0	114	252
08:30 AM	0	0	0	0	0	0	108	13	0	121	11	0	13	0	24	16	93	0	0	109	254
Total Volume	0	0	0	0	0	0	389	35	0	424	54	0	75	0	129	65	351	0	0	416	969
% App. Total	0	0	0	0	0	0	91.7	8.3	0		41.9	0	58.1	0		15.6	84.4	0	0		
PHF	.000	.000	.000	.000	.000	.000	.900	.673	.000	.876	.711	.000	.750	.000	.806	.855	.860	.000	.000	.912	.954



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

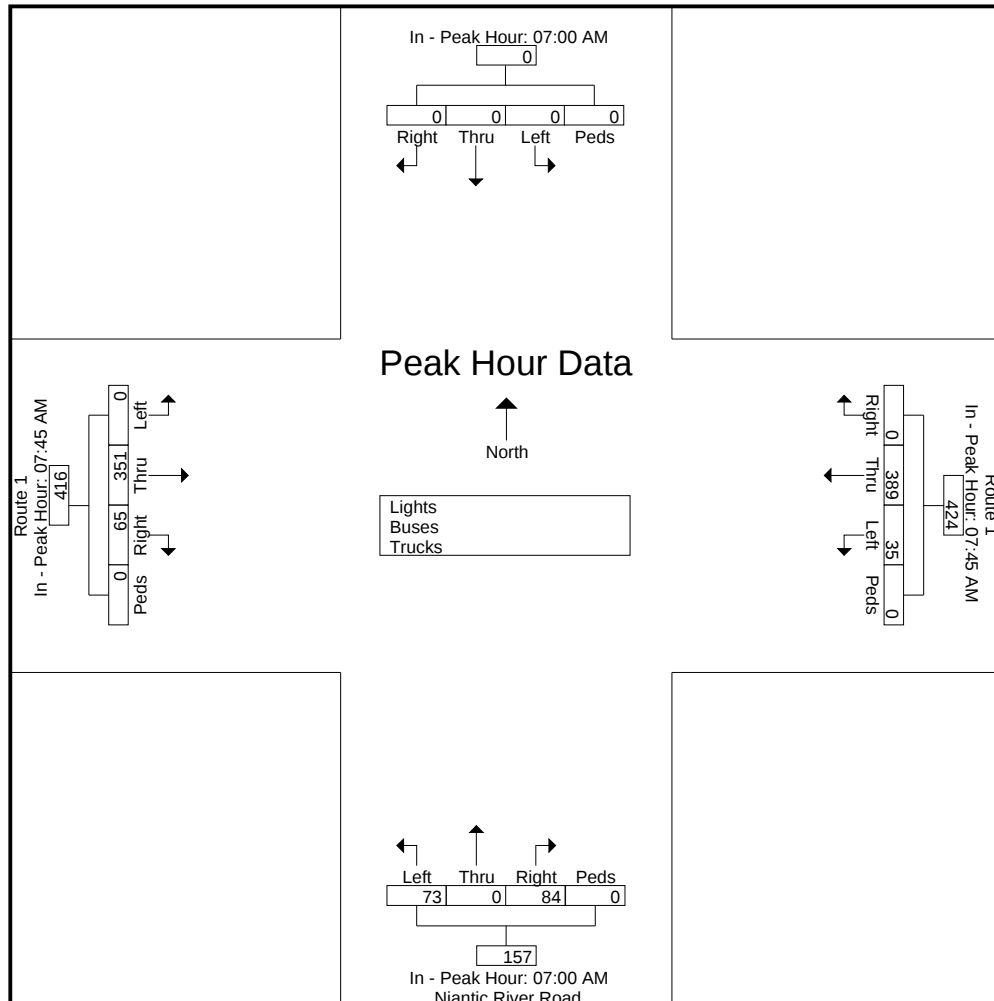
File Name : 23541
Site Code : 23541
Start Date : 10/12/2022
Page No : 3

	From North					Route 1 From East					Niantic River Road From South					Route 1 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:

	07:00 AM					07:45 AM					07:00 AM					07:45 AM				
+0 mins.	0	0	0	0	0	0	78	7	0	85	25	0	18	0	43	19	73	0	0	92
+15 mins.	0	0	0	0	0	0	95	10	0	105	22	0	11	0	33	18	83	0	0	101
+30 mins.	0	0	0	0	0	0	108	5	0	113	18	0	23	0	41	12	102	0	0	114
+45 mins.	0	0	0	0	0	0	108	13	0	121	19	0	21	0	40	16	93	0	0	109
Total Volume	0	0	0	0	0	0	389	35	0	424	84	0	73	0	157	65	351	0	0	416
% App. Total	0	0	0	0		0	91.7	8.3	0		53.5	0	46.5	0		15.6	84.4	0	0	
PHF	.000	.000	.000	.000	.000	.000	.900	.673	.000	.876	.840	.000	.793	.000	.913	.855	.860	.000	.000	.912



File Name : 23539
Site Code : 23539
Start Date : 10/12/2022
Page No : 1

[illegible]

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

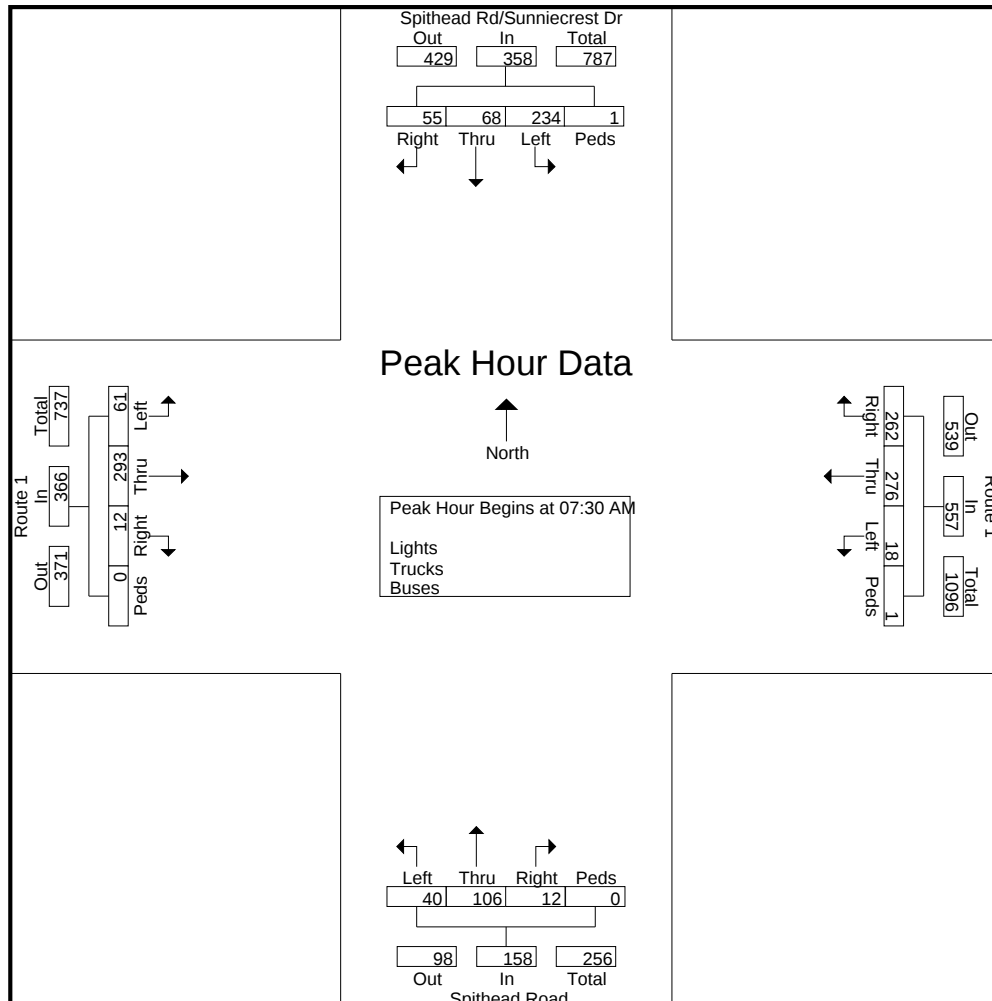
File Name : 23539
Site Code : 23539
Start Date : 10/12/2022
Page No : 2

	Spithead Rd/Sunnicrest Dr From North					Route 1 From East					Spithead Road From South					Route 1 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 07:30 AM

07:30 AM	13	15	59	0	87	86	72	3	0	161	3	24	8	0	35	3	66	13	0	82	365
07:45 AM	13	16	80	0	109	65	59	6	0	130	3	19	5	0	27	3	83	10	0	96	362
08:00 AM	13	22	55	1	91	63	66	0	0	129	4	35	11	0	50	1	62	16	0	79	349
08:15 AM	16	15	40	0	71	48	79	9	1	137	2	28	16	0	46	5	82	22	0	109	363
Total Volume	55	68	234	1	358	262	276	18	1	557	12	106	40	0	158	12	293	61	0	366	1439
% App. Total	15.4	19	65.4	0.3		47	49.6	3.2	0.2		7.6	67.1	25.3	0		3.3	80.1	16.7	0		
PHF	.859	.773	.731	.250	.821	.762	.873	.500	.250	.865	.750	.757	.625	.000	.790	.600	.883	.693	.000	.839	.986



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

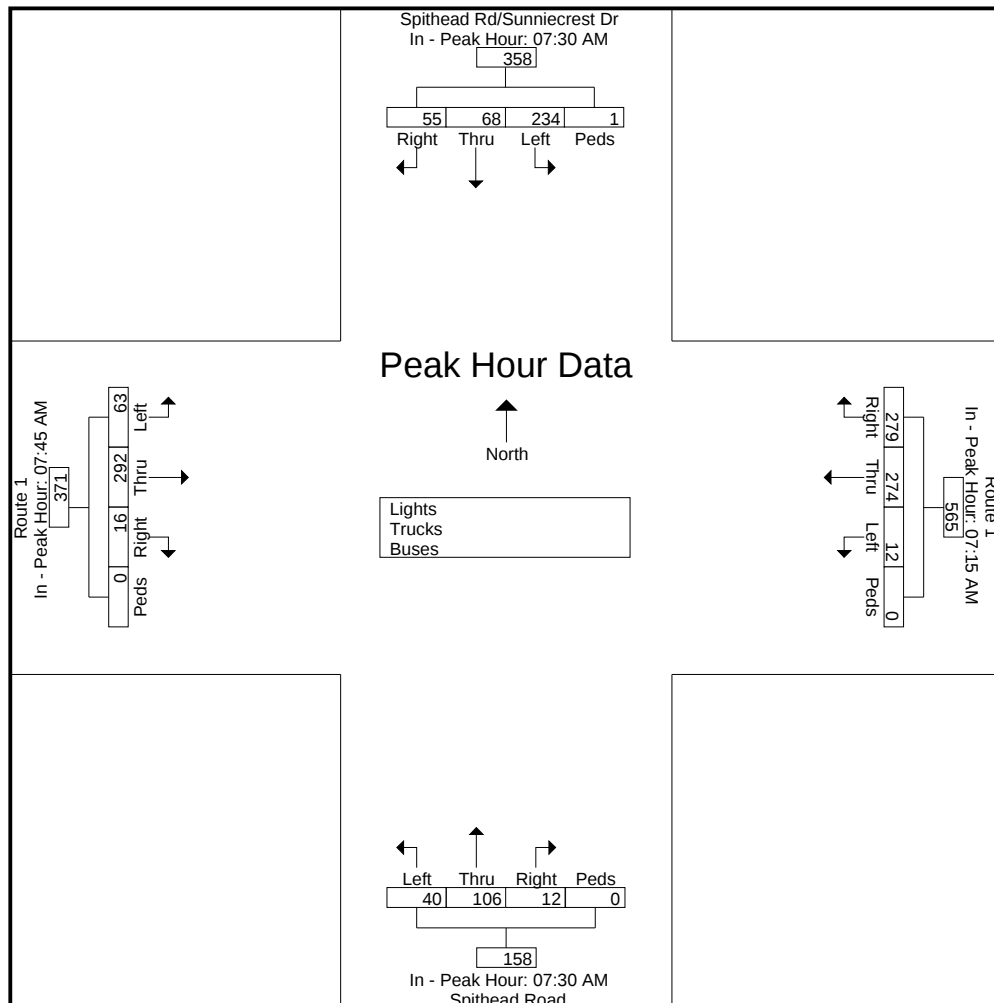
File Name : 23539
Site Code : 23539
Start Date : 10/12/2022
Page No : 3

	Spithead Rd/Sunnicrest Dr From North					Route 1 From East					Spithead Road From South					Route 1 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:

	07:30 AM					07:15 AM					07:30 AM					07:45 AM				
+0 mins.	13	15	59	0	87	65	77	3	0	145	3	24	8	0	35	3	83	10	0	96
+15 mins.	13	16	80	0	109	86	72	3	0	161	3	19	5	0	27	1	62	16	0	79
+30 mins.	13	22	55	1	91	65	59	6	0	130	4	35	11	0	50	5	82	22	0	109
+45 mins.	16	15	40	0	71	63	66	0	0	129	2	28	16	0	46	7	65	15	0	87
Total Volume	55	68	234	1	358	279	274	12	0	565	12	106	40	0	158	16	292	63	0	371
% App. Total	15.4	19	65.4	0.3		49.4	48.5	2.1	0		7.6	67.1	25.3	0		4.3	78.7	17	0	
PHF	.859	.773	.731	.250	.821	.811	.890	.500	.000	.877	.750	.757	.625	.000	.790	.571	.880	.716	.000	.851



File Name : 23533
Site Code : 23533
Start Date : 10/12/2022
Page No : 1

[illegible]

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

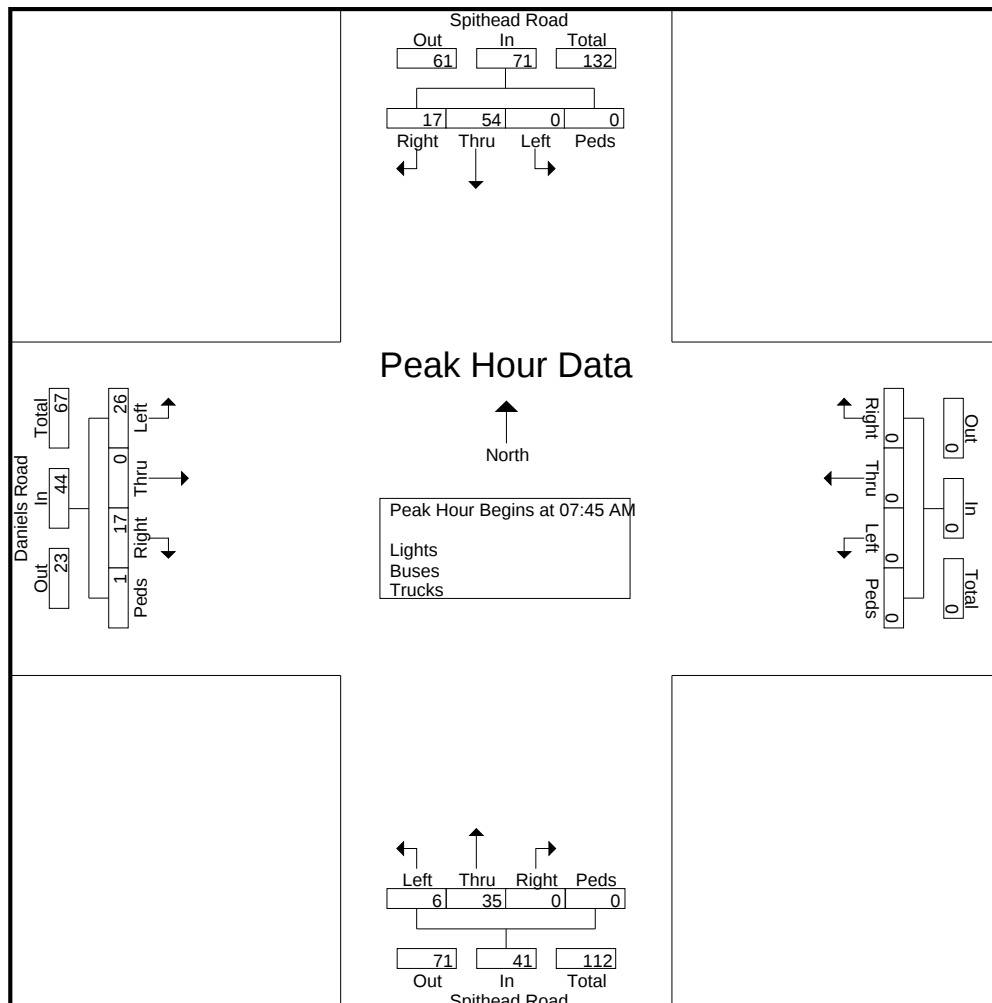
File Name : 23533
Site Code : 23533
Start Date : 10/12/2022
Page No : 2

Start Time	Spithead Road From North					From East					Spithead Road From South					Daniels Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	7	11	0	0	18	0	0	0	0	0	0	9	1	0	10	1	0	5	0	6	34
08:00 AM	5	19	0	0	24	0	0	0	0	0	0	10	4	0	14	2	0	8	0	10	48
08:15 AM	3	14	0	0	17	0	0	0	0	0	0	10	0	0	10	5	0	4	1	10	37
08:30 AM	2	10	0	0	12	0	0	0	0	0	0	6	1	0	7	9	0	9	0	18	37
Total Volume	17	54	0	0	71	0	0	0	0	0	0	35	6	0	41	17	0	26	1	44	156
% App. Total	23.9	76.1	0	0		0	0	0	0		0	85.4	14.6	0		38.6	0	59.1	2.3		
PHF	.607	.711	.000	.000	.740	.000	.000	.000	.000	.000	.000	.875	.375	.000	.732	.472	.000	.722	.250	.611	.813



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

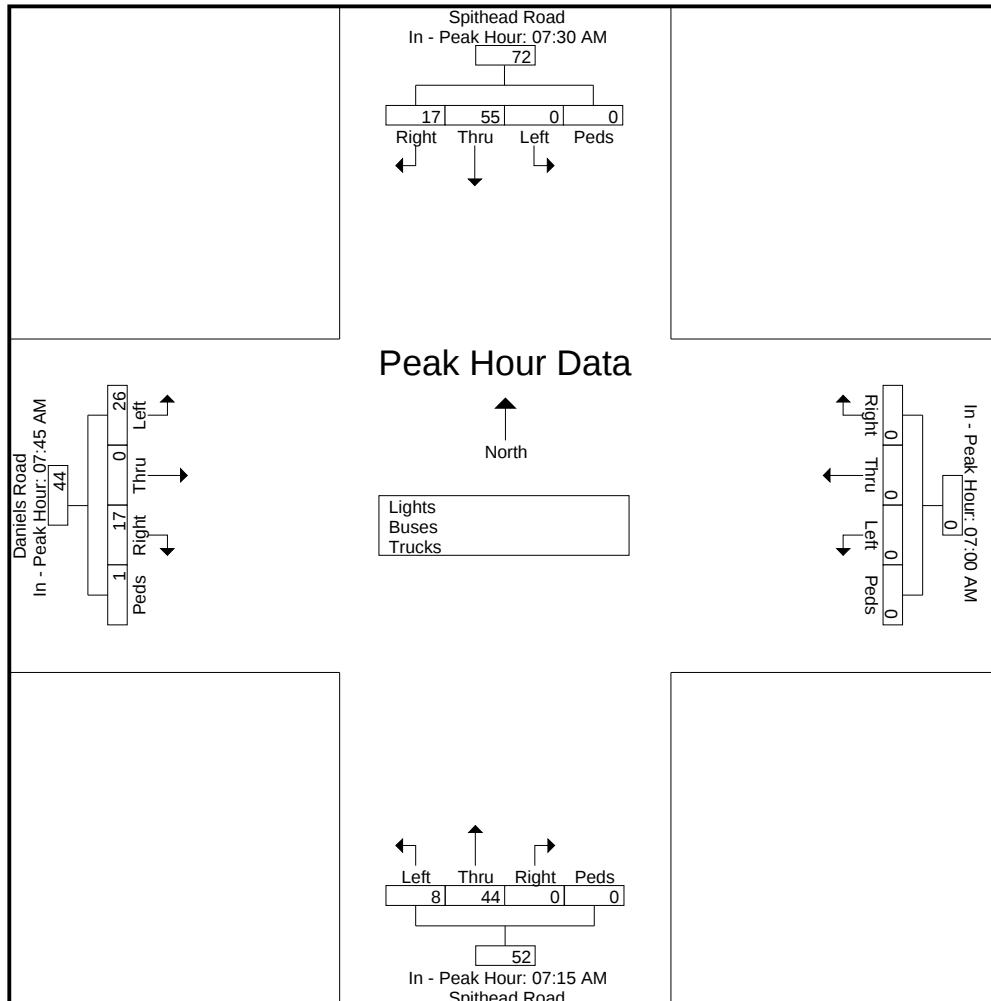
File Name : 23533
Site Code : 23533
Start Date : 10/12/2022
Page No : 3

	Spithead Road From North					From East					Spithead Road From South					Daniels Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM					07:00 AM					07:15 AM					07:45 AM				
+0 mins.	2	11	0	0	13	0	0	0	0	0	0	12	3	0	15	1	0	5	0	6
+15 mins.	7	11	0	0	18	0	0	0	0	0	0	13	0	0	13	2	0	8	0	10
+30 mins.	5	19	0	0	24	0	0	0	0	0	0	9	1	0	10	5	0	4	1	10
+45 mins.	3	14	0	0	17	0	0	0	0	0	0	10	4	0	14	9	0	9	0	18
Total Volume	17	55	0	0	72	0	0	0	0	0	0	44	8	0	52	17	0	26	1	44
% App. Total	23.6	76.4	0	0		0	0	0	0		0	84.6	15.4	0		38.6	0	59.1	2.3	
PHF	.607	.724	.000	.000	.750	.000	.000	.000	.000	.000	.000	.846	.500	.000	.867	.472	.000	.722	.250	.611



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Spithead Road at Rope Ferry Road
Waterford, Connecticut

File Name : 23531
Site Code : 23531
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

	Rope Ferry Road From North					Private Drive From East					Rope Ferry Road From South					Spithead Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	6	30	2	0	38	0	0	0	0	0	0	46	11	0	57	14	0	17	0	31	126
07:15 AM	4	46	1	0	51	0	0	0	0	0	0	38	10	0	48	12	0	6	0	18	117
07:30 AM	2	32	1	0	35	0	0	0	0	0	3	46	8	0	57	12	0	8	0	20	112
07:45 AM	2	42	3	0	47	0	0	0	0	0	4	61	6	0	71	7	0	4	0	11	129
Total	14	150	7	0	171	0	0	0	0	0	7	191	35	0	233	45	0	35	0	80	484
08:00 AM	3	37	1	0	41	0	0	0	0	0	1	43	9	0	53	15	0	7	0	22	116
08:15 AM	1	38	0	0	39	0	0	0	0	0	0	44	6	0	50	10	0	10	0	20	109
08:30 AM	1	46	1	0	48	0	0	0	0	0	0	37	7	0	44	9	0	10	1	20	112
08:45 AM	2	46	0	0	48	0	0	0	0	0	0	48	6	0	54	6	0	3	0	9	111
Total	7	167	2	0	176	0	0	0	0	0	1	172	28	0	201	40	0	30	1	71	448
Grand Total	21	317	9	0	347	0	0	0	0	0	8	363	63	0	434	85	0	65	1	151	932
Apprch %	6.1	91.4	2.6	0		0	0	0	0		1.8	83.6	14.5	0		56.3	0	43	0.7		
Total %	2.3	34	1	0	37.2	0	0	0	0	0	0.9	38.9	6.8	0	46.6	9.1	0	7	0.1	16.2	
Lights	20	313	9	0	342	0	0	0	0	0	8	363	63	0	434	84	0	64	1	149	925
% Lights	95.2	98.7	100	0	98.6	0	0	0	0	0	100	100	100	0	100	98.8	0	98.5	100	98.7	99.2
Buses	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
% Buses	4.8	0.6	0	0	0.9	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0	0.7	0.4
Trucks	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
% Trucks	0	0.6	0	0	0.6	0	0	0	0	0	0	0	0	0	0	1.2	0	0	0	0.7	0.3

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

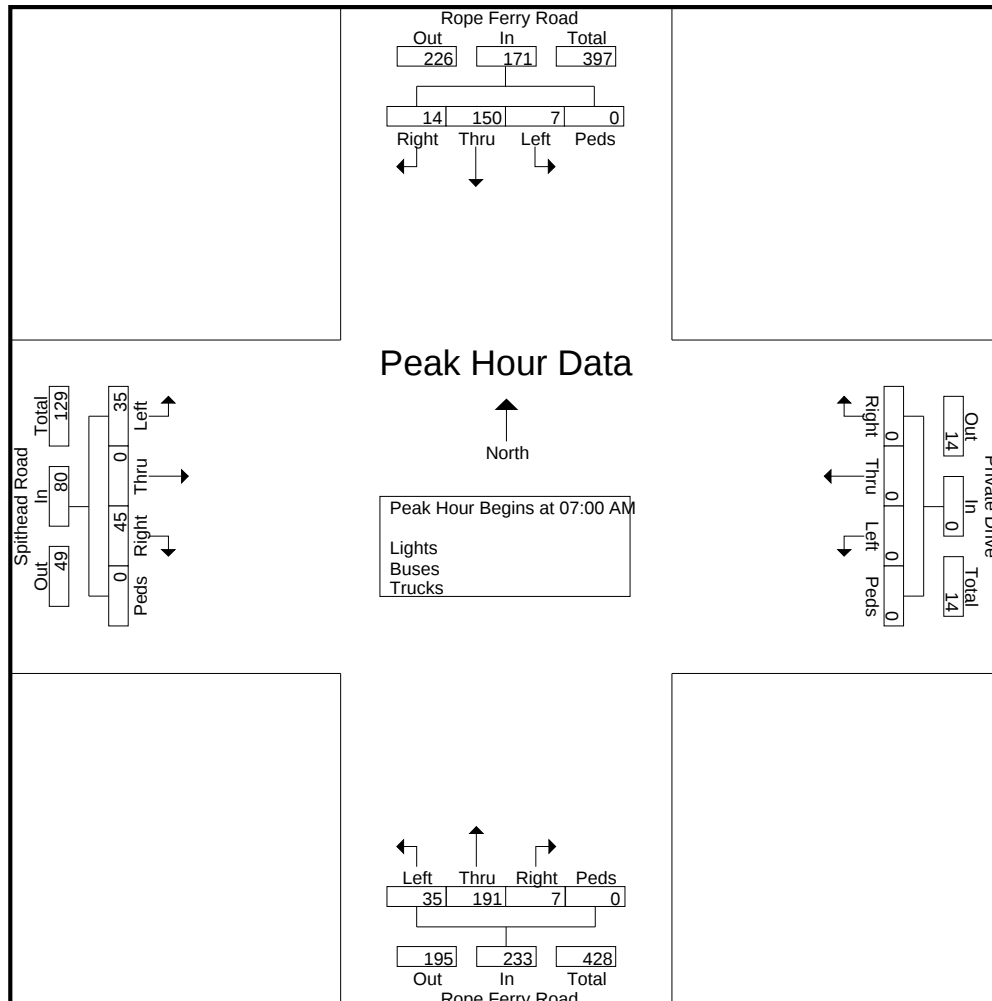
File Name : 23531
Site Code : 23531
Start Date : 10/12/2022
Page No : 2

	Rope Ferry Road From North					Private Drive From East					Rope Ferry Road From South					Spithead Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:00 AM

07:00 AM	6	30	2	0	38	0	0	0	0	0	0	46	11	0	57	14	0	17	0	31	126
07:15 AM	4	46	1	0	51	0	0	0	0	0	0	38	10	0	48	12	0	6	0	18	117
07:30 AM	2	32	1	0	35	0	0	0	0	0	3	46	8	0	57	12	0	8	0	20	112
07:45 AM	2	42	3	0	47	0	0	0	0	0	4	61	6	0	71	7	0	4	0	11	129
Total Volume	14	150	7	0	171	0	0	0	0	0	7	191	35	0	233	45	0	35	0	80	484
% App. Total	8.2	87.7	4.1	0		0	0	0	0		3	82	15	0		56.2	0	43.8	0		
PHF	.583	.815	.583	.000	.838	.000	.000	.000	.000	.000	.438	.783	.795	.000	.820	.804	.000	.515	.000	.645	.938



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

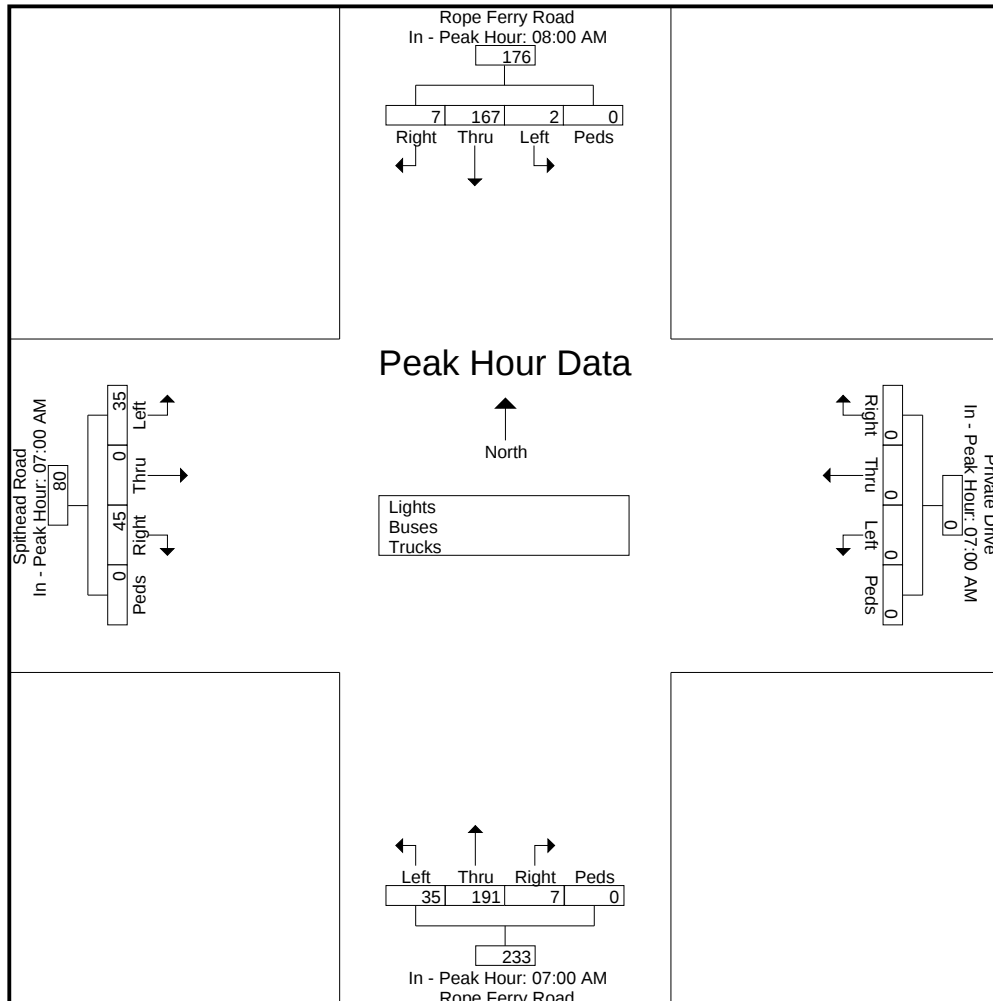
File Name : 23531
Site Code : 23531
Start Date : 10/12/2022
Page No : 3

	Rope Ferry Road From North					Private Drive From East					Rope Ferry Road From South					Spithead Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					07:00 AM					07:00 AM					07:00 AM				
+0 mins.	3	37	1	0	41	0	0	0	0	0	0	46	11	0	57	14	0	17	0	31
+15 mins.	1	38	0	0	39	0	0	0	0	0	0	38	10	0	48	12	0	6	0	18
+30 mins.	1	46	1	0	48	0	0	0	0	0	3	46	8	0	57	12	0	8	0	20
+45 mins.	2	46	0	0	48	0	0	0	0	0	4	61	6	0	71	7	0	4	0	11
Total Volume	7	167	2	0	176	0	0	0	0	0	7	191	35	0	233	45	0	35	0	80
% App. Total	4	94.9	1.1	0		0	0	0	0		3	82	15	0		56.2	0	43.8	0	
PHF	.583	.908	.500	.000	.917	.000	.000	.000	.000	.000	.438	.783	.795	.000	.820	.804	.000	.515	.000	.645



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Route 1 at Sunnecrest Dr
Waterford, Connecticut

File Name : 23539
Site Code : 23539
Start Date : 10/12/2022
Page No : 1

Groups Printed- Sunnecrest Dr

	Spithead Rd/Sunnecrest Dr From North					Route 1 From East					Spithead Road From South					Route 1 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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
*** BREAK ***																					
07:30 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	1	1	2	0	4	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	6
Total	2	1	2	0	5	1	0	0	0	1	0	0	0	0	0	0	0	2	0	2	8
*** BREAK ***																					
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
08:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	4	0	1	0	5	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	8
Grand Total	6	1	3	0	10	2	0	0	0	2	0	1	0	0	1	0	0	3	0	3	16
Apprch %	60	10	30	0		100	0	0	0		0	100	0	0		0	0	100	0		
Total %	37.5	6.2	18.8	0	62.5	12.5	0	0	0	12.5	0	6.2	0	0	6.2	0	0	18.8	0	18.8	

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

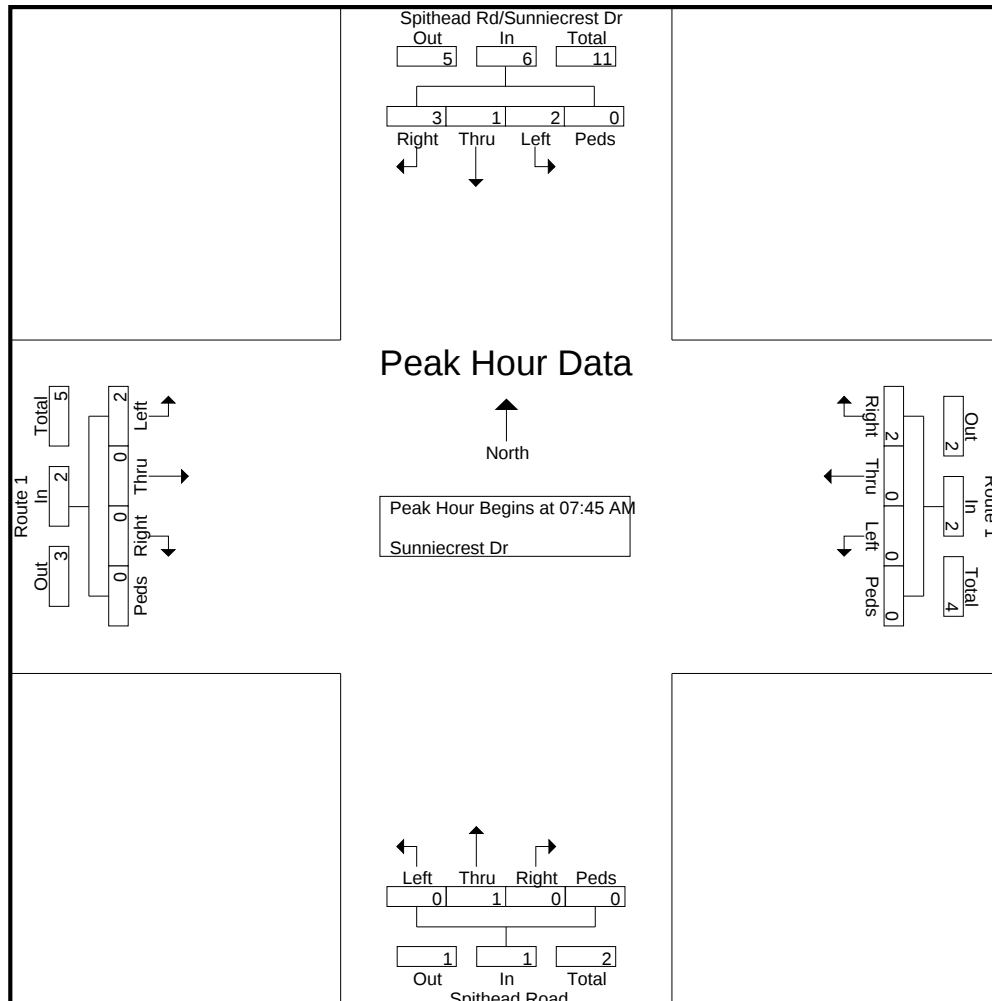
File Name : 23539
Site Code : 23539
Start Date : 10/12/2022
Page No : 2

	Spithead Rd/Sunnicrest Dr From North					Route 1 From East					Spithead Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:45 AM

07:45 AM	1	1	2	0	4	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	6
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
08:30 AM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total Volume	3	1	2	0	6	2	0	0	0	2	0	1	0	0	1	0	0	2	0	2	11
% App. Total	50	16.7	33.3	0		100	0	0	0		0	100	0	0		0	0	100	0		
PHF	.750	.250	.250	.000	.375	.500	.000	.000	.000	.500	.000	.250	.000	.000	.250	.000	.000	.500	.000	.500	.458



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

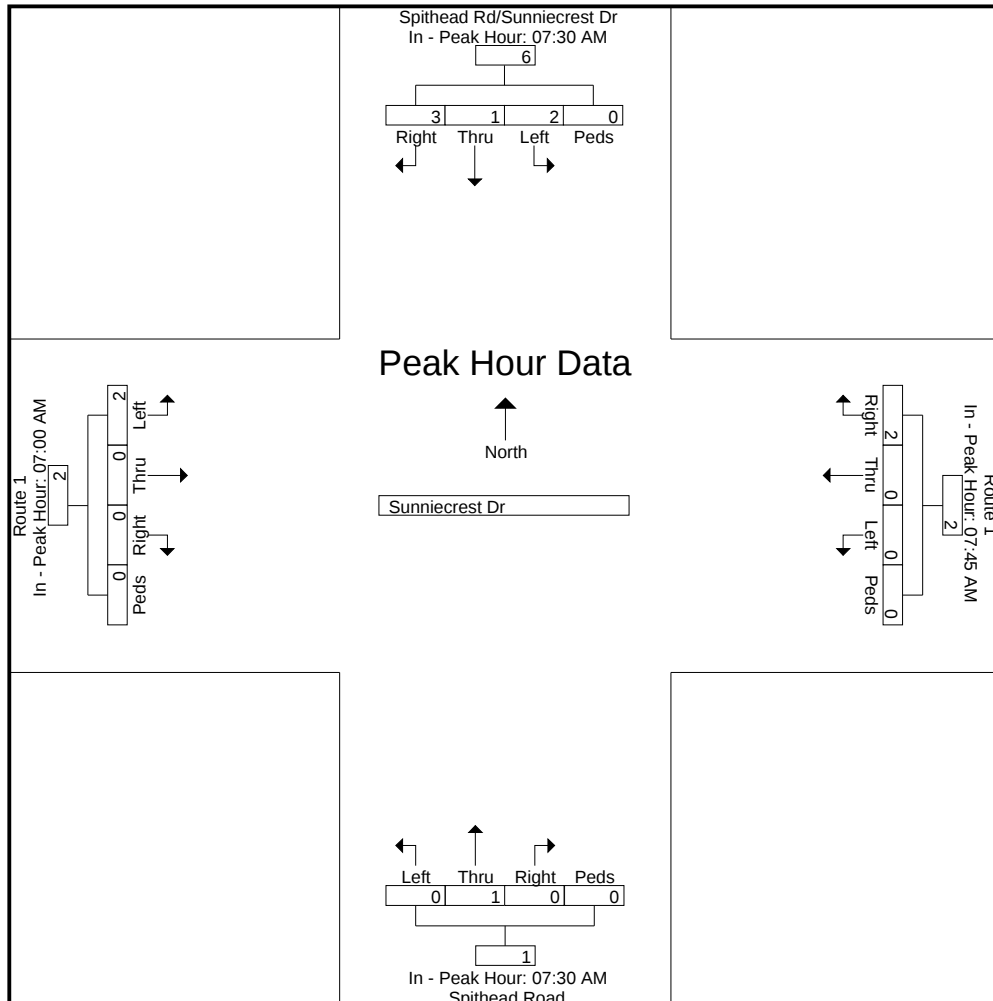
File Name : 23539
Site Code : 23539
Start Date : 10/12/2022
Page No : 3

	Spithead Rd/Sunnicrest Dr From North					Route 1 From East					Spithead Road From South					Route 1 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:

	07:30 AM					07:45 AM					07:30 AM					07:00 AM				
+0 mins.	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1
+15 mins.	1	1	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	1	0	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1
Total Volume	3	1	2	0	6	2	0	0	0	2	0	1	0	0	1	0	0	2	0	2
% App. Total	50	16.7	33.3	0		100	0	0	0		0	100	0	0		0	0	100	0	
PHF	.750	.250	.250	.000	.375	.500	.000	.000	.000	.500	.000	.250	.000	.000	.250	.000	.000	.500	.000	.500



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Niantic River Road at West Street
Waterford, Connecticut

File Name : 23725
Site Code : 23725
Start Date : 11/3/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

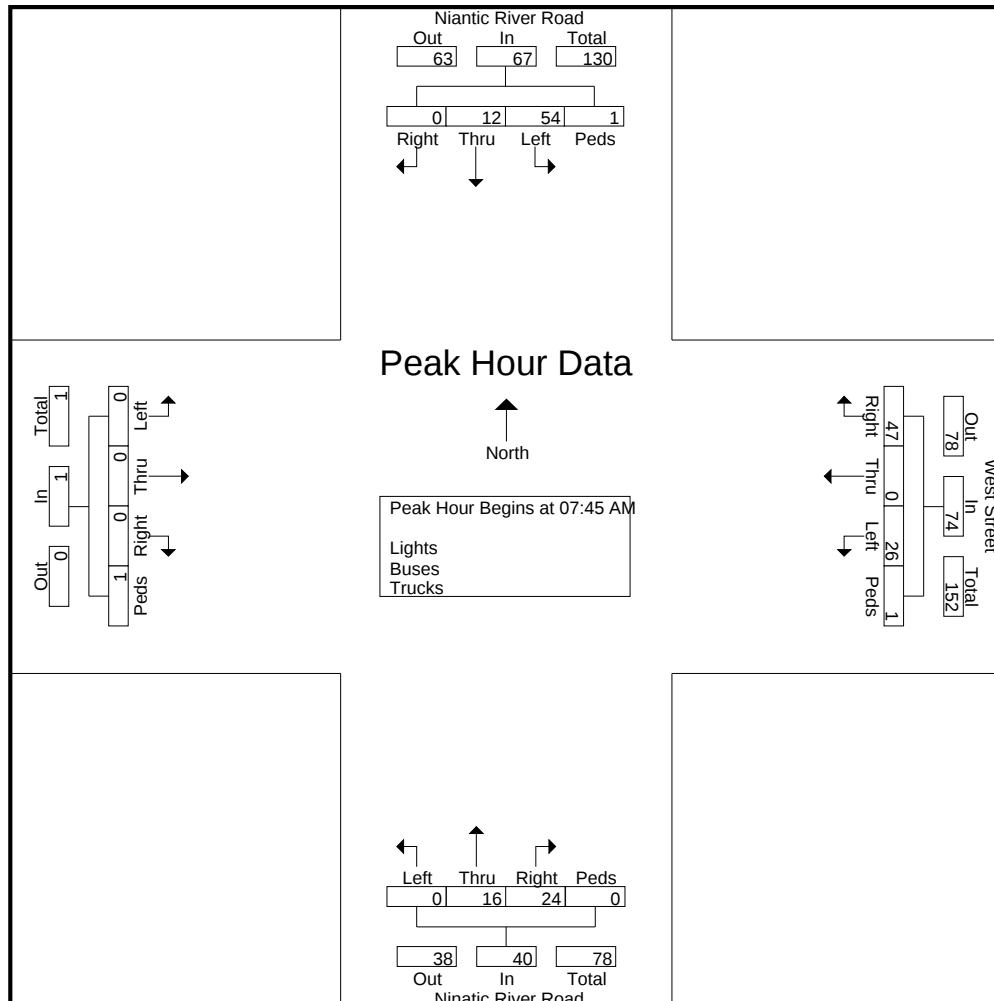
	Niantic River Road From North					West Street From East					Niantic River Road From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	6	9	0	15	8	0	3	1	12	4	1	0	0	5	0	0	0	0	0	32
07:15 AM	0	5	22	2	29	10	0	8	0	18	3	5	0	0	8	0	0	0	0	0	55
07:30 AM	0	2	14	0	16	3	0	4	0	7	2	9	0	0	11	0	0	0	1	1	35
07:45 AM	0	4	12	1	17	9	0	6	1	16	9	3	0	0	12	0	0	0	1	1	46
Total	0	17	57	3	77	30	0	21	2	53	18	18	0	0	36	0	0	0	2	2	168
08:00 AM	0	2	13	0	15	11	0	6	0	17	7	4	0	0	11	0	0	0	0	0	43
08:15 AM	0	4	14	0	18	9	0	3	0	12	3	5	0	0	8	0	0	0	0	0	38
08:30 AM	0	2	15	0	17	18	0	11	0	29	5	4	0	0	9	0	0	0	0	0	55
08:45 AM	0	2	9	0	11	15	0	5	0	20	8	3	0	0	11	0	0	0	0	0	42
Total	0	10	51	0	61	53	0	25	0	78	23	16	0	0	39	0	0	0	0	0	178
Grand Total	0	27	108	3	138	83	0	46	2	131	41	34	0	0	75	0	0	0	2	2	346
Apprch %	0	19.6	78.3	2.2		63.4	0	35.1	1.5		54.7	45.3	0	0		0	0	0	100		
Total %	0	7.8	31.2	0.9	39.9	24	0	13.3	0.6	37.9	11.8	9.8	0	0	21.7	0	0	0	0.6	0.6	
Lights	0	25	108	3	136	83	0	45	2	130	40	32	0	0	72	0	0	0	2	2	340
% Lights	0	92.6	100	100	98.6	100	0	97.8	100	99.2	97.6	94.1	0	0	96	0	0	0	100	100	98.3
Buses	0	1	0	0	1	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	4
% Buses	0	3.7	0	0	0.7	0	0	2.2	0	0.8	2.4	2.9	0	0	2.7	0	0	0	0	0	1.2
Trucks	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Trucks	0	3.7	0	0	0.7	0	0	0	0	0	0	2.9	0	0	1.3	0	0	0	0	0	0.6

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 23725
Site Code : 23725
Start Date : 11/3/2022
Page No : 2

	Niantic River Road From North					West Street From East					Niantic River Road From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	4	12	1	17	9	0	6	1	16	9	3	0	0	12	0	0	0	1	1	46
08:00 AM	0	2	13	0	15	11	0	6	0	17	7	4	0	0	11	0	0	0	0	0	43
08:15 AM	0	4	14	0	18	9	0	3	0	12	3	5	0	0	8	0	0	0	0	0	38
08:30 AM	0	2	15	0	17	18	0	11	0	29	5	4	0	0	9	0	0	0	0	0	55
Total Volume	0	12	54	1	67	47	0	26	1	74	24	16	0	0	40	0	0	0	1	1	182
% App. Total	0	17.9	80.6	1.5		63.5	0	35.1	1.4		60	40	0	0		0	0	0	100		
PHF	.000	.750	.900	.250	.931	.653	.000	.591	.250	.638	.667	.800	.000	.000	.833	.000	.000	.000	.250	.250	.827



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

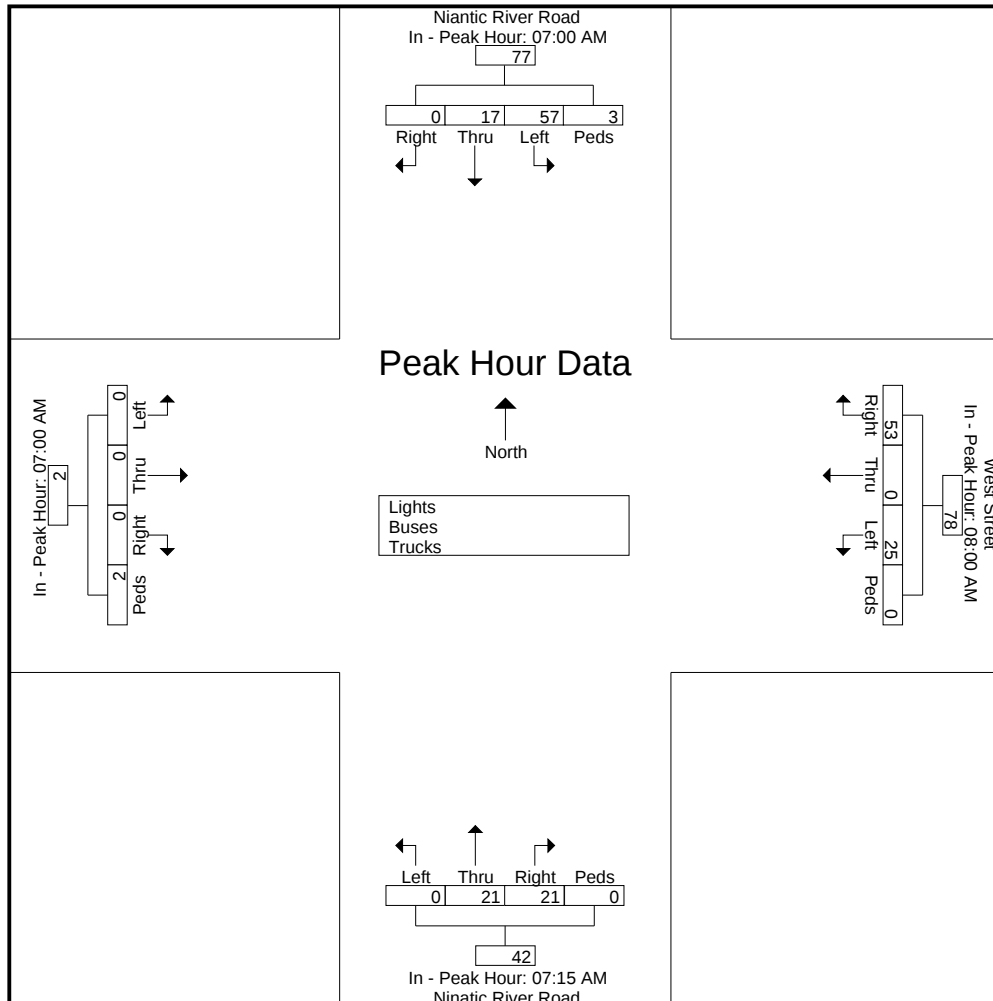
File Name : 23725
Site Code : 23725
Start Date : 11/3/2022
Page No : 3

	Niantic River Road From North					West Street From East					Niantic River Road From South					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:

	07:00 AM					08:00 AM					07:15 AM					07:00 AM				
+0 mins.	0	6	9	0	15	11	0	6	0	17	3	5	0	0	8	0	0	0	0	0
+15 mins.	0	5	22	2	29	9	0	3	0	12	2	9	0	0	11	0	0	0	0	0
+30 mins.	0	2	14	0	16	18	0	11	0	29	9	3	0	0	12	0	0	0	1	1
+45 mins.	0	4	12	1	17	15	0	5	0	20	7	4	0	0	11	0	0	0	1	1
Total Volume	0	17	57	3	77	53	0	25	0	78	21	21	0	0	42	0	0	0	2	2
% App. Total	0	22.1	74	3.9		67.9	0	32.1	0		50	50	0	0		0	0	0	100	
PHF	.000	.708	.648	.375	.664	.736	.000	.568	.000	.672	.583	.583	.000	.000	.875	.000	.000	.000	.500	.500



File Name : 23538
Site Code : 23538
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks																					
	Private Drive From North					Daniels Avenue From East					School Drives From South					Daniels 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
02:00 PM	0	0	0	0	0	0	6	3	0	9	2	0	4	0	6	1	10	0	0	11	26
02:15 PM	0	0	0	0	0	0	11	2	0	13	5	0	4	0	9	3	7	0	0	10	32
02:30 PM	0	0	0	0	0	0	8	4	0	12	3	0	3	1	7	7	6	0	0	13	32
02:45 PM	0	0	0	0	0	0	7	2	0	9	3	0	3	0	6	4	11	0	0	15	30
Total	0	0	0	0	0	0	32	11	0	43	13	0	14	1	28	15	34	0	0	49	120
03:00 PM	0	0	0	0	0	0	6	2	0	8	2	0	0	0	2	0	9	0	0	9	19
03:15 PM	0	0	0	0	0	0	9	0	0	9	1	0	1	0	2	1	5	0	0	6	17
03:30 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	8	0	0	8	15
03:45 PM	0	0	0	0	0	0	12	1	0	13	2	0	1	0	3	1	14	0	0	15	31
Total	0	0	0	0	0	0	34	3	0	37	5	0	2	0	7	2	36	0	0	38	82
04:00 PM	0	0	0	0	0	0	15	0	0	15	0	0	1	0	1	0	7	0	0	7	23
04:15 PM	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	0	8	0	0	8	20
04:30 PM	0	0	1	0	1	0	10	0	0	10	0	0	0	0	0	0	7	0	0	7	18
04:45 PM	0	0	0	0	0	1	15	0	0	16	0	0	0	0	0	1	5	0	0	6	22
Total	0	0	1	0	1	1	52	0	0	53	0	0	1	0	1	1	27	0	0	28	83
05:00 PM	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	9	0	0	9	18
05:15 PM	0	0	0	0	0	0	13	0	0	13	0	0	1	2	3	1	13	0	0	14	30
05:30 PM	0	0	0	0	0	1	11	0	0	12	0	0	0	0	0	0	11	0	0	11	23
05:45 PM	0	0	0	0	0	0	9	0	0	9	0	0	1	0	1	0	8	0	0	8	18
Total	1	0	0	0	1	1	41	0	0	42	0	0	2	2	4	1	41	0	0	42	89
Grand Total	1	0	1	0	2	2	159	14	0	175	18	0	19	3	40	19	138	0	0	157	374
Apprch %	50	0	50	0		1.1	90.9	8	0		45	0	47.5	7.5		12.1	87.9	0	0		
Total %	0.3	0	0.3	0	0.5	0.5	42.5	3.7	0	46.8	4.8	0	5.1	0.8	10.7	5.1	36.9	0	0	42	
Lights	1	0	1	0	2	2	156	12	0	170	16	0	18	3	37	19	138	0	0	157	366
% Lights	100	0	100	0	100	100	98.1	85.7	0	97.1	88.9	0	94.7	100	92.5	100	100	0	0	100	97.9
Buses	0	0	0	0	0	0	2	2	0	4	2	0	1	0	3	0	0	0	0	0	7
% Buses	0	0	0	0	0	0	1.3	14.3	0	2.3	11.1	0	5.3	0	7.5	0	0	0	0	0	1.9
Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Trucks	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0.3

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

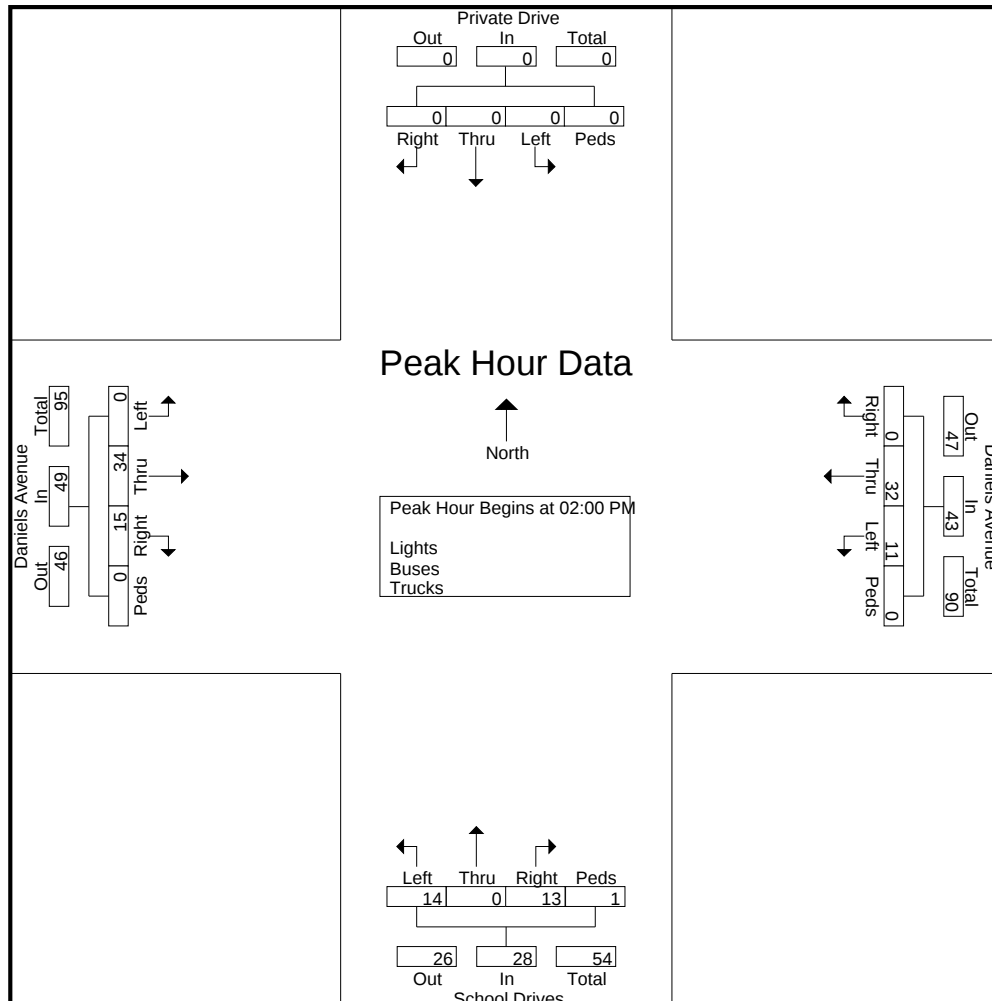
File Name : 23538
Site Code : 23538
Start Date : 10/12/2022
Page No : 2

	Private Drive From North					Daniels Avenue From East					School Drives From South					Daniels 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 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:00 PM

02:00 PM	0	0	0	0	0	0	6	3	0	9	2	0	4	0	6	1	10	0	0	11	26
02:15 PM	0	0	0	0	0	0	11	2	0	13	5	0	4	0	9	3	7	0	0	10	32
02:30 PM	0	0	0	0	0	0	8	4	0	12	3	0	3	1	7	7	6	0	0	13	32
02:45 PM	0	0	0	0	0	0	7	2	0	9	3	0	3	0	6	4	11	0	0	15	30
Total Volume	0	0	0	0	0	0	32	11	0	43	13	0	14	1	28	15	34	0	0	49	120
% App. Total	0	0	0	0	0	0	74.4	25.6	0		46.4	0	50	3.6		30.6	69.4	0	0		
PHF	.000	.000	.000	.000	.000	.000	.727	.688	.000	.827	.650	.000	.875	.250	.778	.536	.773	.000	.000	.817	.938



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

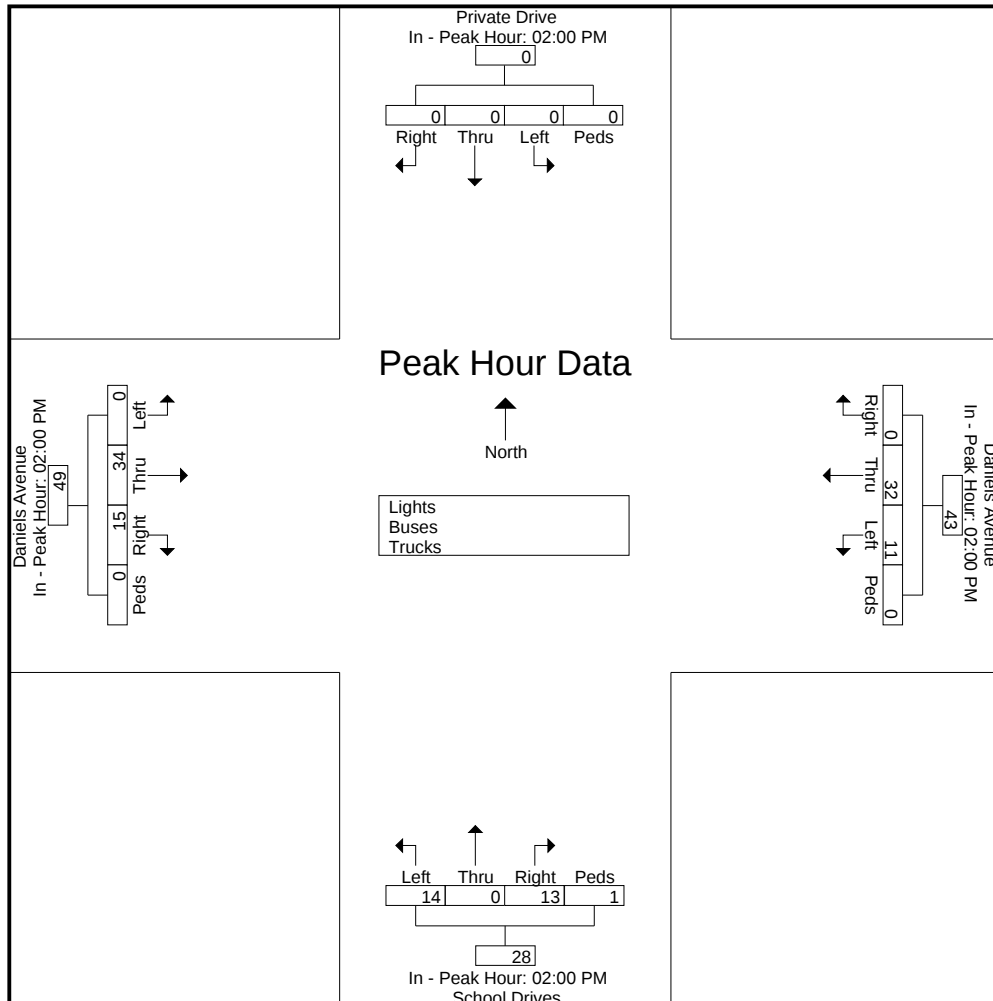
File Name : 23538
Site Code : 23538
Start Date : 10/12/2022
Page No : 3

	Private Drive From North					Daniels Avenue From East					School Drives From South					Daniels 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 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:00 PM					02:00 PM					02:00 PM					02:00 PM				
+0 mins.	0	0	0	0	0	0	6	3	0	9	2	0	4	0	6	1	10	0	0	11
+15 mins.	0	0	0	0	0	0	11	2	0	13	5	0	4	0	9	3	7	0	0	10
+30 mins.	0	0	0	0	0	0	8	4	0	12	3	0	3	1	7	7	6	0	0	13
+45 mins.	0	0	0	0	0	0	7	2	0	9	3	0	3	0	6	4	11	0	0	15
Total Volume	0	0	0	0	0	0	32	11	0	43	13	0	14	1	28	15	34	0	0	49
% App. Total	0	0	0	0		0	74.4	25.6	0		46.4	0	50	3.6		30.6	69.4	0	0	
PHF	.000	.000	.000	.000	.000	.000	.727	.688	.000	.827	.650	.000	.875	.250	.778	.536	.773	.000	.000	.817



File Name : 23726
Site Code : 23717
Start Date : 11/3/2022
Page No : 1

Groups Printed- Lights - Trucks - Buses																					
	Niantic River Road From North					West Street From East					Niantic River Road From South					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
02:00 PM	0	8	14	0	22	21	0	8	2	31	6	5	0	0	11	0	1	0	0	1	65
02:15 PM	0	6	20	0	26	28	0	7	0	35	12	3	0	0	15	0	0	0	0	0	76
02:30 PM	0	3	12	0	15	26	1	9	1	37	6	9	0	0	15	0	0	0	3	3	70
02:45 PM	0	7	15	0	22	45	0	5	0	50	14	7	0	0	21	0	0	0	0	0	93
Total	0	24	61	0	85	120	1	29	3	153	38	24	0	0	62	0	1	0	3	4	304
03:00 PM	0	2	21	0	23	22	0	7	2	31	14	5	0	0	19	0	0	0	0	0	73
03:15 PM	0	8	13	0	21	23	0	10	2	35	7	7	0	0	14	0	0	0	1	1	71
03:30 PM	0	8	16	1	25	26	0	11	1	38	6	4	0	0	10	0	0	0	0	0	73
03:45 PM	1	8	19	0	28	40	0	5	0	45	9	8	0	0	17	0	0	0	0	0	90
Total	1	26	69	1	97	111	0	33	5	149	36	24	0	0	60	0	0	0	1	1	307
Grand Total	1	50	130	1	182	231	1	62	8	302	74	48	0	0	122	0	1	0	4	5	611
Apprch %	0.5	27.5	71.4	0.5		76.5	0.3	20.5	2.6		60.7	39.3	0	0		0	20	0	80		
Total %	0.2	8.2	21.3	0.2	29.8	37.8	0.2	10.1	1.3	49.4	12.1	7.9	0	0	20	0	0.2	0	0.7	0.8	
Lights	1	49	130	1	181	230	1	60	8	299	73	47	0	0	120	0	1	0	4	5	605
% Lights	100	98	100	100	99.5	99.6	100	96.8	100	99	98.6	97.9	0	0	98.4	0	100	0	100	100	99
Trucks	0	1	0	0	1	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	5
% Trucks	0	2	0	0	0.5	0.4	0	1.6	0	0.7	1.4	2.1	0	0	1.6	0	0	0	0	0	0.8
Buses	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	1.6	0	0.3	0	0	0	0	0	0	0	0	0	0	0.2

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

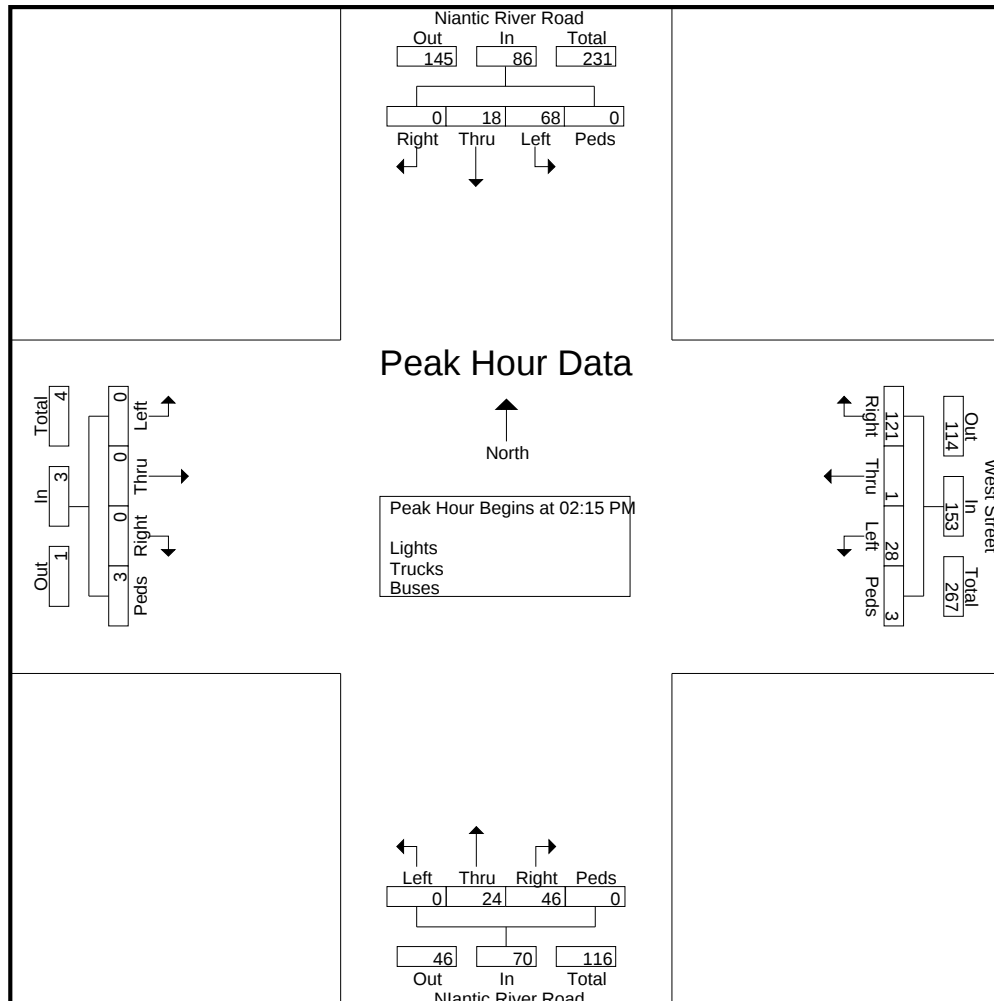
File Name : 23726
Site Code : 23717
Start Date : 11/3/2022
Page No : 2

	Niantic River Road From North					West Street From East					Niantic River Road From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:15 PM

02:15 PM	0	6	20	0	26	28	0	7	0	35	12	3	0	0	15	0	0	0	0	0	76
02:30 PM	0	3	12	0	15	26	1	9	1	37	6	9	0	0	15	0	0	0	3	3	70
02:45 PM	0	7	15	0	22	45	0	5	0	50	14	7	0	0	21	0	0	0	0	0	93
03:00 PM	0	2	21	0	23	22	0	7	2	31	14	5	0	0	19	0	0	0	0	0	73
Total Volume	0	18	68	0	86	121	1	28	3	153	46	24	0	0	70	0	0	0	3	3	312
% App. Total	0	20.9	79.1	0		79.1	0.7	18.3	2		65.7	34.3	0	0		0	0	0	100		
PHF	.000	.643	.810	.000	.827	.672	.250	.778	.375	.765	.821	.667	.000	.000	.833	.000	.000	.000	.250	.250	.839



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

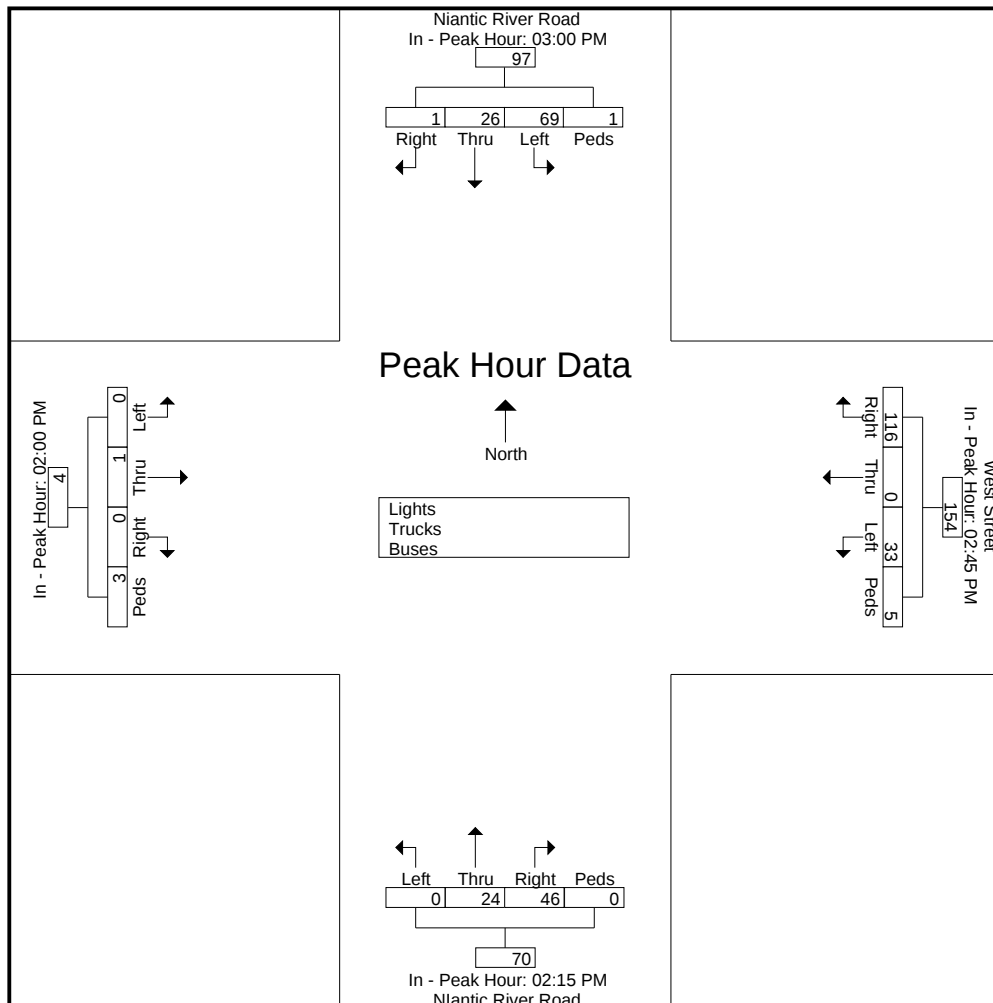
File Name : 23726
Site Code : 23717
Start Date : 11/3/2022
Page No : 3

	Niantic River Road From North					West Street From East					Niantic River Road From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM					02:45 PM					02:15 PM					02:00 PM				
+0 mins.	0	2	21	0	23	45	0	5	0	50	12	3	0	0	15	0	1	0	0	1
+15 mins.	0	8	13	0	21	22	0	7	2	31	6	9	0	0	15	0	0	0	0	0
+30 mins.	0	8	16	1	25	23	0	10	2	35	14	7	0	0	21	0	0	0	3	3
+45 mins.	1	8	19	0	28	26	0	11	1	38	14	5	0	0	19	0	0	0	0	0
Total Volume	1	26	69	1	97	116	0	33	5	154	46	24	0	0	70	0	1	0	3	4
% App. Total	1	26.8	71.1	1		75.3	0	21.4	3.2		65.7	34.3	0	0		0	25	0	75	
PHF	.250	.813	.821	.250	.866	.644	.000	.750	.625	.770	.821	.667	.000	.000	.833	.000	.250	.000	.250	.333



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Niantic River Road at Daniels Road
Waterford, Connecticut

File Name : 23536
Site Code : 23536
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

	Niantic River Road From North					Daniels Road From East					Niantic River Road From South					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
02:00 PM	0	18	3	0	21	2	0	3	0	5	1	21	0	0	22	0	0	0	0	0	48
02:15 PM	0	18	2	0	20	5	0	4	0	9	3	23	0	0	26	0	0	0	0	0	55
02:30 PM	0	25	4	0	29	2	0	3	0	5	5	30	0	0	35	0	0	0	0	0	69
02:45 PM	0	19	2	0	21	2	0	3	0	5	6	25	0	0	31	0	0	0	0	0	57
Total	0	80	11	0	91	11	0	13	0	24	15	99	0	0	114	0	0	0	0	0	229
03:00 PM	0	22	3	0	25	4	0	6	3	13	2	38	0	0	40	0	0	0	0	0	78
03:15 PM	0	27	3	0	30	1	0	5	0	6	3	35	0	0	38	0	0	0	0	0	74
03:30 PM	0	28	3	0	31	4	0	3	1	8	2	36	0	0	38	0	0	0	0	0	77
03:45 PM	0	26	6	0	32	2	0	7	1	10	9	49	0	0	58	0	0	0	0	0	100
Total	0	103	15	0	118	11	0	21	5	37	16	158	0	0	174	0	0	0	0	0	329
04:00 PM	0	30	2	0	32	8	0	5	4	17	5	59	0	0	64	0	0	0	0	0	113
04:15 PM	0	30	3	0	33	3	0	6	0	9	3	53	0	0	56	0	0	0	0	0	98
04:30 PM	0	35	2	0	37	1	0	7	3	11	2	33	0	0	35	0	0	0	0	0	83
04:45 PM	0	31	2	0	33	3	0	8	2	13	3	33	0	0	36	0	0	0	0	0	82
Total	0	126	9	0	135	15	0	26	9	50	13	178	0	0	191	0	0	0	0	0	376
05:00 PM	0	35	6	0	41	5	0	1	3	9	4	39	0	0	43	0	0	0	0	0	93
05:15 PM	0	33	3	0	36	6	0	4	4	14	3	27	0	0	30	0	0	0	0	0	80
05:30 PM	0	27	2	0	29	6	0	5	2	13	7	21	0	0	28	0	0	0	0	0	70
05:45 PM	0	23	2	0	25	1	0	2	4	7	4	19	0	0	23	0	0	0	0	0	55
Total	0	118	13	0	131	18	0	12	13	43	18	106	0	0	124	0	0	0	0	0	298
Grand Total	0	427	48	0	475	55	0	72	27	154	62	541	0	0	603	0	0	0	0	0	1232
Apprch %	0	89.9	10.1	0		35.7	0	46.8	17.5		10.3	89.7	0	0		0	0	0	0		
Total %	0	34.7	3.9	0	38.6	4.5	0	5.8	2.2	12.5	5	43.9	0	0	48.9	0	0	0	0	0	
Lights	0	424	48	0	472	55	0	71	27	153	62	538	0	0	600	0	0	0	0	0	1225
% Lights	0	99.3	100	0	99.4	100	0	98.6	100	99.4	100	99.4	0	0	99.5	0	0	0	0	0	99.4
Buses	0	0	0	0	0	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	3
% Buses	0	0	0	0	0	0	0	1.4	0	0.6	0	0.4	0	0	0.3	0	0	0	0	0	0.2
Trucks	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
% Trucks	0	0.7	0	0	0.6	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.3

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

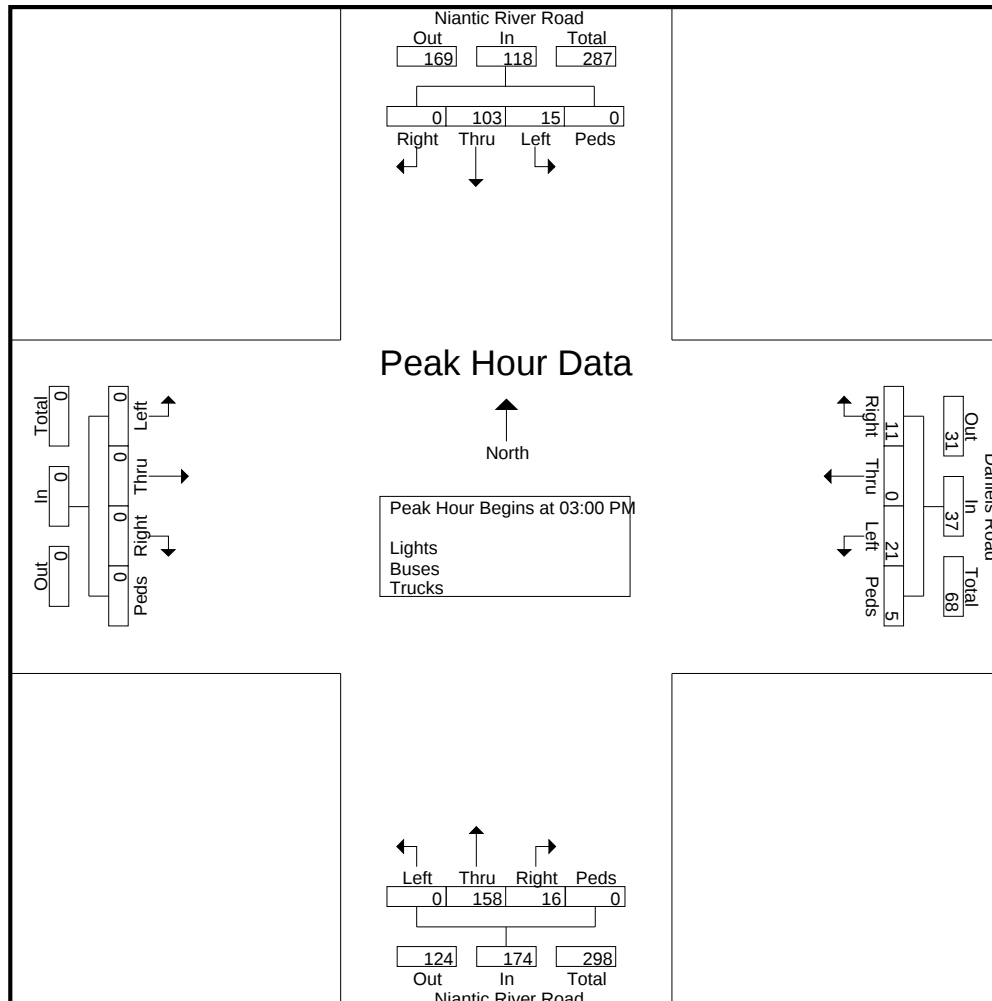
File Name : 23536
Site Code : 23536
Start Date : 10/12/2022
Page No : 2

Start Time	Niantic River Road From North					Daniels Road From East					Niantic River Road From South					From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

03:00 PM	0	22	3	0	25	4	0	6	3	13	2	38	0	0	40	0	0	0	0	0	78
03:15 PM	0	27	3	0	30	1	0	5	0	6	3	35	0	0	38	0	0	0	0	0	74
03:30 PM	0	28	3	0	31	4	0	3	1	8	2	36	0	0	38	0	0	0	0	0	77
03:45 PM	0	26	6	0	32	2	0	7	1	10	9	49	0	0	58	0	0	0	0	0	100
Total Volume	0	103	15	0	118	11	0	21	5	37	16	158	0	0	174	0	0	0	0	0	329
% App. Total	0	87.3	12.7	0		29.7	0	56.8	13.5		9.2	90.8	0	0		0	0	0	0		
PHF	.000	.920	.625	.000	.922	.688	.000	.750	.417	.712	.444	.806	.000	.000	.750	.000	.000	.000	.000	.000	.823



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

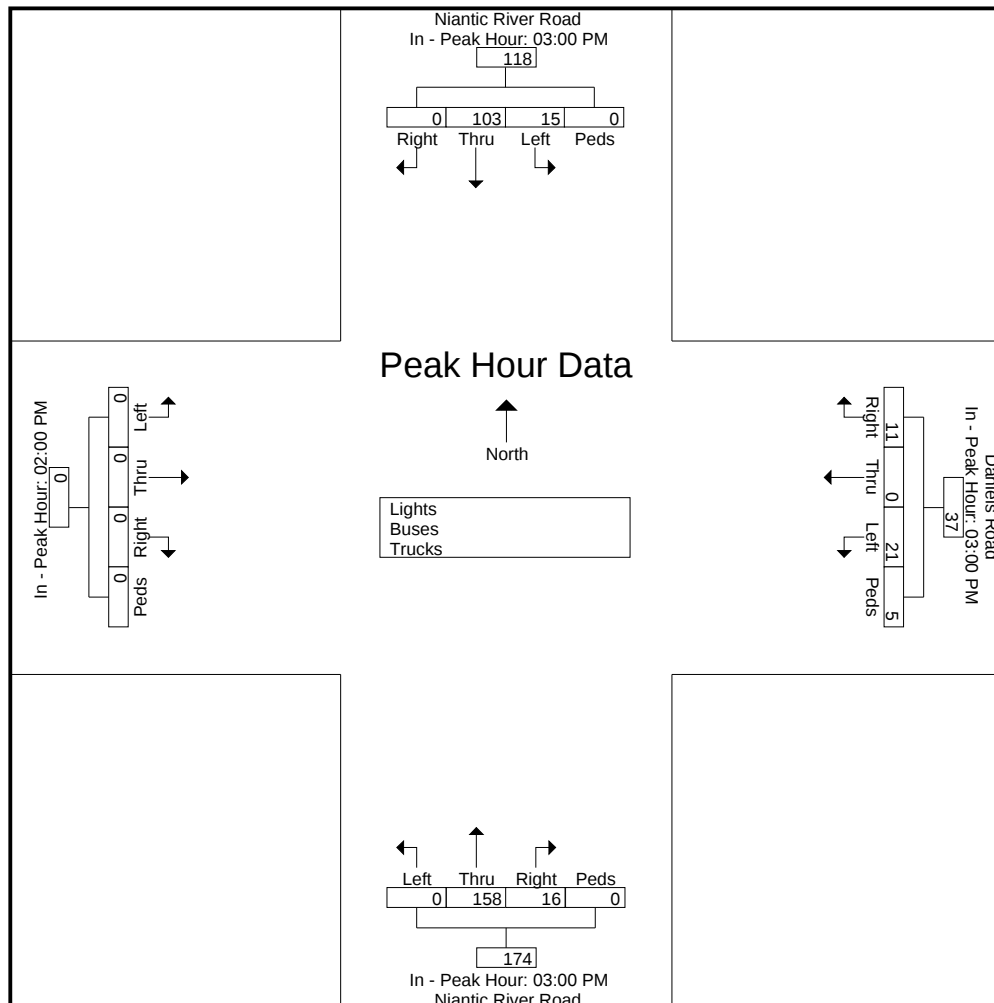
File Name : 23536
Site Code : 23536
Start Date : 10/12/2022
Page No : 3

	Niantic River Road From North					Daniels Road From East					Niantic River Road From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM					03:00 PM					03:00 PM					02:00 PM				
+0 mins.	0	22	3	0	25	4	0	6	3	13	2	38	0	0	40	0	0	0	0	0
+15 mins.	0	27	3	0	30	1	0	5	0	6	3	35	0	0	38	0	0	0	0	0
+30 mins.	0	28	3	0	31	4	0	3	1	8	2	36	0	0	38	0	0	0	0	0
+45 mins.	0	26	6	0	32	2	0	7	1	10	9	49	0	0	58	0	0	0	0	0
Total Volume	0	103	15	0	118	11	0	21	5	37	16	158	0	0	174	0	0	0	0	0
% App. Total	0	87.3	12.7	0		29.7	0	56.8	13.5		9.2	90.8	0	0		0	0	0	0	
PHF	.000	.920	.625	.000	.922	.688	.000	.750	.417	.712	.444	.806	.000	.000	.750	.000	.000	.000	.000	.000



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Rope Ferry Road at West Street
Waterford, Connecticut

File Name : 23530
Site Code : 23530
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

	West Street From North					Rope Ferry Road From East					From South					Rope Ferry Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	8	1	5	0	14	9	10	1	0	20	0	0	0	0	0	0	19	11	0	30	64
02:15 PM	13	0	5	0	18	8	15	1	0	24	0	0	1	0	1	0	19	8	0	27	70
02:30 PM	10	0	4	0	14	11	20	0	0	31	0	0	0	0	0	0	24	13	0	37	82
02:45 PM	11	0	8	0	19	12	21	0	0	33	0	0	0	0	0	0	37	12	0	49	101
Total	42	1	22	0	65	40	66	2	0	108	0	0	1	0	1	0	99	44	0	143	317
03:00 PM	16	0	8	0	24	12	69	0	0	81	0	0	0	0	0	0	73	8	0	81	186
03:15 PM	26	0	6	0	32	11	77	0	0	88	0	0	0	0	0	0	70	14	0	84	204
03:30 PM	18	0	8	0	26	19	85	0	0	104	0	0	0	0	0	0	71	20	0	91	221
03:45 PM	24	0	9	1	34	12	81	0	0	93	0	0	0	0	0	0	68	17	0	85	212
Total	84	0	31	1	116	54	312	0	0	366	0	0	0	0	0	0	282	59	0	341	823
04:00 PM	21	0	12	2	35	43	123	0	0	166	0	0	0	0	0	0	69	24	0	93	294
04:15 PM	29	0	12	4	45	42	124	0	0	166	0	0	0	0	0	0	94	25	0	119	330
04:30 PM	20	0	15	0	35	16	122	0	0	138	0	0	0	0	0	0	95	22	0	117	290
04:45 PM	25	0	13	0	38	12	100	0	0	112	0	0	0	0	0	0	84	23	0	107	257
Total	95	0	52	6	153	113	469	0	0	582	0	0	0	0	0	0	342	94	0	436	1171
05:00 PM	24	0	19	2	45	18	92	0	0	110	0	0	0	0	0	0	86	24	0	110	265
05:15 PM	17	0	18	2	37	12	96	0	1	109	0	0	0	0	0	0	75	18	0	93	239
05:30 PM	22	0	15	0	37	14	78	0	0	92	0	0	0	0	0	0	66	18	0	84	213
05:45 PM	18	0	15	1	34	13	76	0	0	89	0	0	0	0	0	0	65	18	0	83	206
Total	81	0	67	5	153	57	342	0	1	400	0	0	0	0	0	0	292	78	0	370	923
Grand Total	302	1	172	12	487	264	1189	2	1	1456	0	0	1	0	1	0	1015	275	0	1290	3234
Apprch %	62	0.2	35.3	2.5		18.1	81.7	0.1	0.1		0	0	100	0		0	78.7	21.3	0		
Total %	9.3	0	5.3	0.4	15.1	8.2	36.8	0.1	0	45	0	0	0	0	0	0	31.4	8.5	0	39.9	
Lights	300	1	170	12	483	263	1187										1010				
% Lights	99.3	100	98.8	100	99.2	99.6	99.8	100	100	99.8	0	0	100	0	100	0	99.5	100	0	99.6	99.6
Buses	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3
% Buses	0	0	1.2	0	0.4	0	0.1	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1
Trucks	2	0	0	0	2	1	1	0	0	2	0	0	0	0	0	0	5	0	0	5	9
% Trucks	0.7	0	0	0	0.4	0.4	0.1	0	0	0.1	0	0	0	0	0	0	0.5	0	0	0.4	0.3

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

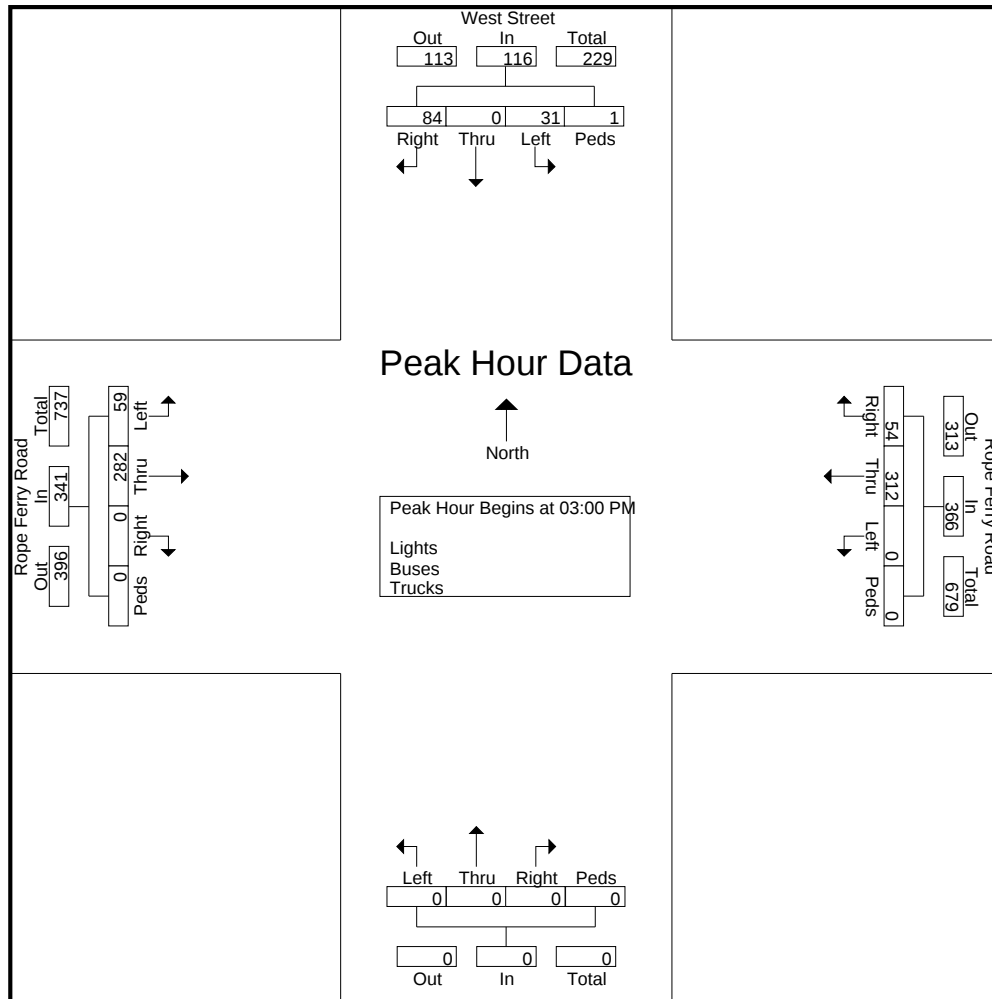
File Name : 23530
Site Code : 23530
Start Date : 10/12/2022
Page No : 2

Start Time	West Street From North					Rope Ferry Road From East					From South					Rope Ferry Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

03:00 PM	16	0	8	0	24	12	69	0	0	81	0	0	0	0	0	0	73	8	0	81	186
03:15 PM	26	0	6	0	32	11	77	0	0	88	0	0	0	0	0	0	70	14	0	84	204
03:30 PM	18	0	8	0	26	19	85	0	0	104	0	0	0	0	0	0	71	20	0	91	221
03:45 PM	24	0	9	1	34	12	81	0	0	93	0	0	0	0	0	0	68	17	0	85	212
Total Volume	84	0	31	1	116	54	312	0	0	366	0	0	0	0	0	0	282	59	0	341	823
% App. Total	72.4	0	26.7	0.9		14.8	85.2	0	0		0	0	0	0		0	82.7	17.3	0		
PHF	.808	.000	.861	.250	.853	.711	.918	.000	.000	.880	.000	.000	.000	.000	.000	.000	.966	.738	.000	.937	.931



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

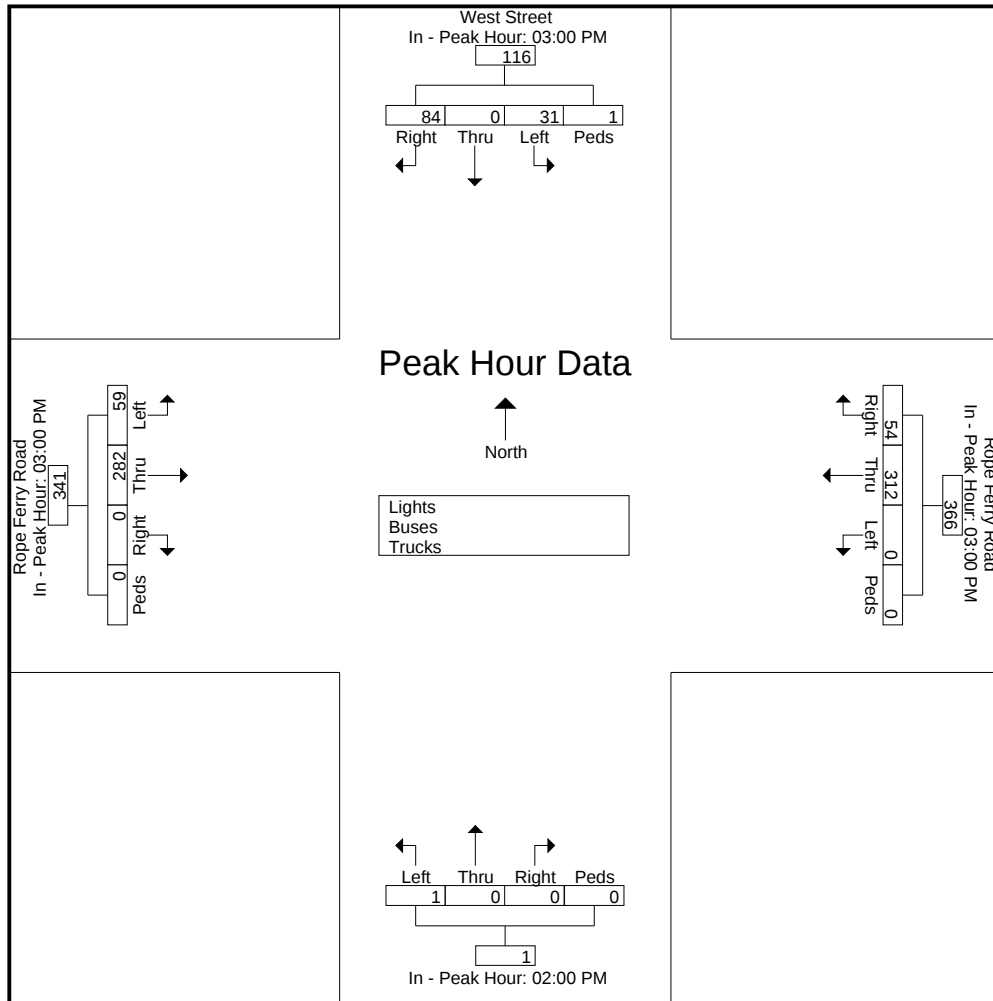
File Name : 23530
Site Code : 23530
Start Date : 10/12/2022
Page No : 3

	West Street From North					Rope Ferry Road From East					From South					Rope Ferry Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM					03:00 PM					02:00 PM					03:00 PM				
+0 mins.	16	0	8	0	24	12	69	0	0	81	0	0	0	0	0	0	73	8	0	81
+15 mins.	26	0	6	0	32	11	77	0	0	88	0	0	1	0	1	0	70	14	0	84
+30 mins.	18	0	8	0	26	19	85	0	0	104	0	0	0	0	0	0	71	20	0	91
+45 mins.	24	0	9	1	34	12	81	0	0	93	0	0	0	0	0	0	68	17	0	85
Total Volume	84	0	31	1	116	54	312	0	0	366	0	0	1	0	1	0	282	59	0	341
% App. Total	72.4	0	26.7	0.9		14.8	85.2	0	0		0	0	100	0		0	82.7	17.3	0	
PHF	.808	.000	.861	.250	.853	.711	.918	.000	.000	.880	.000	.000	.250	.000	.250	.000	.966	.738	.000	.937



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Route 1 at Niantic River Road
Waterford, Connecticut

File Name : 23542
Site Code : 23542
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

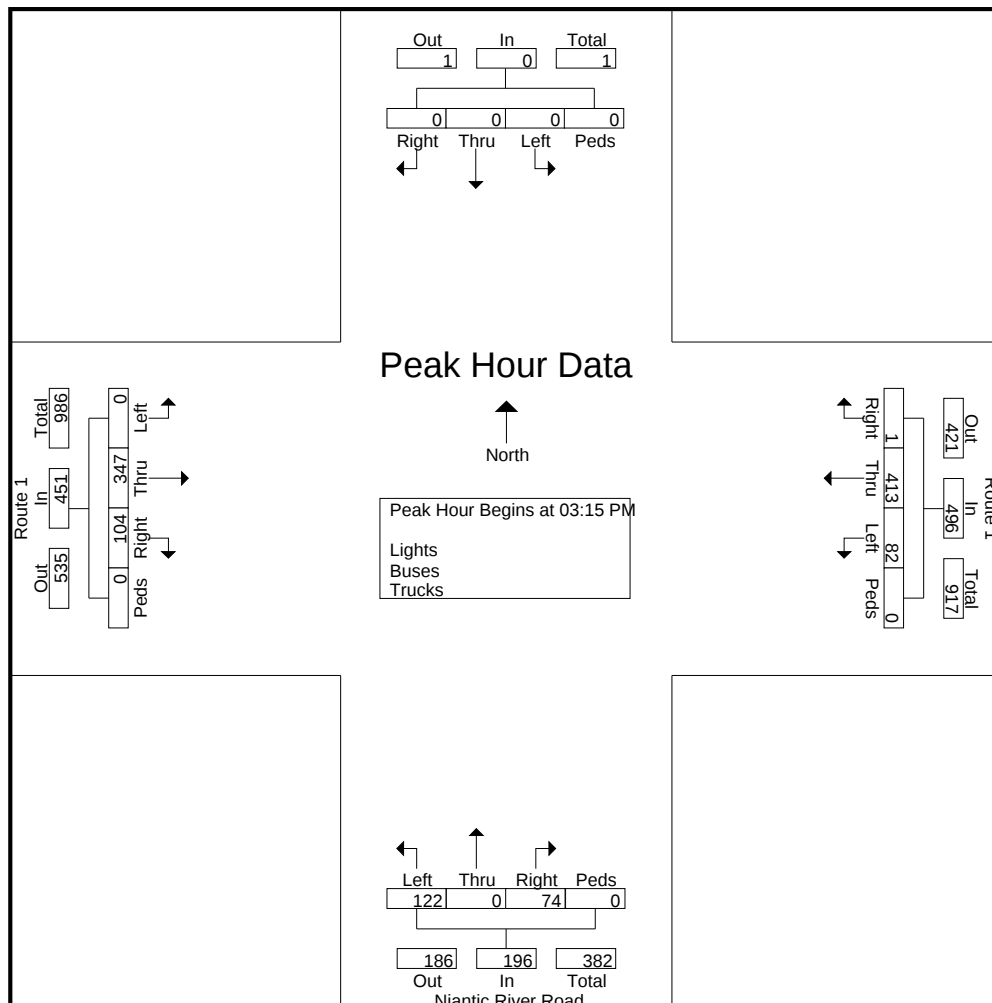
	From North					Route 1 From East					Niantic River Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	96	27	0	123	23	0	24	1	48	13	93	0	0	106	277
02:15 PM	0	0	0	0	0	0	80	15	0	95	16	0	20	0	36	13	62	0	0	75	206
02:30 PM	0	0	0	0	0	0	84	18	0	102	13	0	13	0	26	11	70	0	0	81	209
02:45 PM	0	0	0	0	0	0	103	15	0	118	13	0	22	0	35	15	71	0	0	86	239
Total	0	0	0	0	0	0	363	75	0	438	65	0	79	1	145	52	296	0	0	348	931
03:00 PM	0	0	0	0	0	0	103	17	0	120	23	0	27	0	50	18	98	0	0	116	286
03:15 PM	0	0	0	0	0	0	101	21	0	122	19	0	23	0	42	27	89	0	0	116	280
03:30 PM	0	0	0	0	0	1	100	25	0	126	13	0	31	0	44	23	92	0	0	115	285
03:45 PM	0	0	0	0	0	0	100	15	0	115	16	0	29	0	45	27	73	0	0	100	260
Total	0	0	0	0	0	1	404	78	0	483	71	0	110	0	181	95	352	0	0	447	1111
04:00 PM	0	0	0	0	0	0	112	21	0	133	26	0	39	0	65	27	93	0	0	120	318
04:15 PM	0	0	0	0	0	0	95	31	0	126	15	0	46	0	61	23	107	0	0	130	317
04:30 PM	0	0	0	0	0	0	121	25	0	146	10	0	25	0	35	17	110	0	0	127	308
04:45 PM	0	0	0	0	0	0	98	21	0	119	20	0	20	2	42	27	123	0	0	150	311
Total	0	0	0	0	0	0	426	98	0	524	71	0	130	2	203	94	433	0	0	527	1254
05:00 PM	0	0	0	0	0	0	83	22	0	105	18	0	28	0	46	30	96	0	0	126	277
05:15 PM	0	0	0	0	0	0	99	34	0	133	18	0	18	0	36	24	83	0	0	107	276
05:30 PM	0	0	0	0	0	0	65	27	0	92	26	0	11	0	37	24	91	0	0	115	244
05:45 PM	0	0	0	0	0	0	69	19	0	88	19	0	15	0	34	21	76	0	0	97	219
Total	0	0	0	0	0	0	316	102	0	418	81	0	72	0	153	99	346	0	0	445	1016
Grand Total	0	0	0	0	0	1	1509	353	0	1863	288	0	391	3	682	340	1427	0	0	1767	4312
Apprch %	0	0	0	0		0.1	81	18.9	0		42.2	0	57.3	0.4		19.2	80.8	0	0		
Total %	0	0	0	0	0	0	35	8.2	0	43.2	6.7	0	9.1	0.1	15.8	7.9	33.1	0	0	41	
Lights	0	0	0	0	0	1	1490									1411					
% Lights	0	0	0	0	0	100	98.7	99.2	0	98.8	99.3	0	98.7	100	99	99.1	98.9	0	0	98.9	98.9
Buses	0	0	0	0	0	0	6	0	0	6	1	0	2	0	3	2	7	0	0	9	18
% Buses	0	0	0	0	0	0	0.4	0	0	0.3	0.3	0	0.5	0	0.4	0.6	0.5	0	0	0.5	0.4
Trucks	0	0	0	0	0	0	13	3	0	16	1	0	3	0	4	1	9	0	0	10	30
% Trucks	0	0	0	0	0	0	0.9	0.8	0	0.9	0.3	0	0.8	0	0.6	0.3	0.6	0	0	0.6	0.7

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 23542
Site Code : 23542
Start Date : 10/12/2022
Page No : 2

	From North					Route 1 From East					Niantic River Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 04:00 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	0	0	0	0	0	101	21	0	122	19	0	23	0	42	27	89	0	0	116	280
03:30 PM	0	0	0	0	0	1	100	25	0	126	13	0	31	0	44	23	92	0	0	115	285
03:45 PM	0	0	0	0	0	0	100	15	0	115	16	0	29	0	45	27	73	0	0	100	260
04:00 PM	0	0	0	0	0	0	112	21	0	133	26	0	39	0	65	27	93	0	0	120	318
Total Volume	0	0	0	0	0	1	413	82	0	496	74	0	122	0	196	104	347	0	0	451	1143
% App. Total	0	0	0	0	0	0.2	83.3	16.5	0		37.8	0	62.2	0		23.1	76.9	0	0		
PHF	.000	.000	.000	.000	.000	.250	.922	.820	.000	.932	.712	.000	.782	.000	.754	.963	.933	.000	.000	.940	.899



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

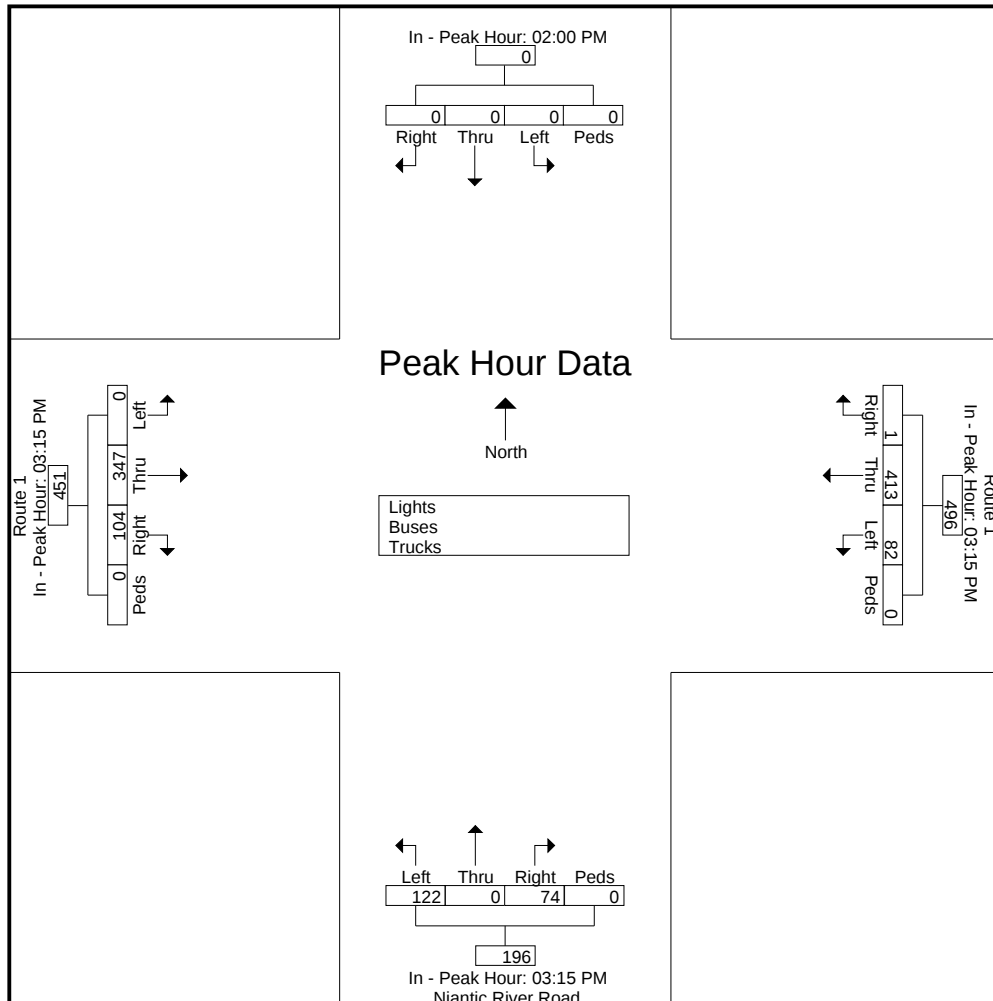
File Name : 23542
 Site Code : 23542
 Start Date : 10/12/2022
 Page No : 3

	From North					Route 1 From East					Niantic River Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:00 PM					03:15 PM					03:15 PM					03:15 PM				
+0 mins.	0	0	0	0	0	0	101	21	0	122	19	0	23	0	42	27	89	0	0	116
+15 mins.	0	0	0	0	0	1	100	25	0	126	13	0	31	0	44	23	92	0	0	115
+30 mins.	0	0	0	0	0	0	100	15	0	115	16	0	29	0	45	27	73	0	0	100
+45 mins.	0	0	0	0	0	0	112	21	0	133	26	0	39	0	65	27	93	0	0	120
Total Volume	0	0	0	0	0	1	413	82	0	496	74	0	122	0	196	104	347	0	0	451
% App. Total	0	0	0	0		0.2	83.3	16.5	0		37.8	0	62.2	0		23.1	76.9	0	0	
PHF	.000	.000	.000	.000	.000	.250	.922	.820	.000	.932	.712	.000	.782	.000	.754	.963	.933	.000	.000	.940



Connecticut Counts LLC

Kensington, Connecticut 06037

(860) 828-1693

Route 1 at Spithead Road
Waterford, Connecticut

File Name : 23540
Site Code : 23540
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Trucks - Buses

	Spithead Road From North					Route 1 From East					Spithead Road From South					Route 1 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
02:00 PM	17	18	58	0	93	63	73	3	0	139	3	32	3	0	38	5	64	19	0	88	358
02:15 PM	17	31	59	0	107	65	104	2	0	171	6	13	2	0	21	6	62	15	0	83	382
02:30 PM	18	31	48	0	97	66	87	3	0	156	3	35	9	0	47	7	60	9	0	76	376
02:45 PM	24	40	79	0	143	72	110	2	0	184	4	31	6	0	41	8	58	17	0	83	451
Total	76	120	244	0	440	266	374	10	0	650	16	111	20	0	147	26	244	60	0	330	1567
03:00 PM	12	23	55	0	90	75	81	4	0	160	0	24	6	0	30	9	70	21	0	100	380
03:15 PM	20	27	76	0	123	59	101	6	1	167	2	41	6	0	49	18	80	16	1	115	454
03:30 PM	19	47	73	0	139	68	113	8	0	189	5	28	6	0	39	6	87	15	0	108	475
03:45 PM	18	41	96	0	155	74	86	3	0	163	10	48	9	0	67	11	62	12	0	85	470
Total	69	138	300	0	507	276	381	21	1	679	17	141	27	0	185	44	299	64	1	408	1779
04:00 PM	16	42	61	0	119	99	95	4	0	198	2	65	8	0	75	9	81	20	0	110	502
04:15 PM	24	39	73	0	136	79	100	4	0	183	4	60	7	0	71	14	90	11	1	116	506
04:30 PM	23	33	86	0	142	71	107	3	0	181	4	56	0	0	60	10	92	20	0	122	505
04:45 PM	15	58	78	0	151	65	81	6	1	153	3	23	3	0	29	15	117	24	0	156	489
Total	78	172	298	0	548	314	383	17	1	715	13	204	18	0	235	48	380	75	1	504	2002
05:00 PM	19	37	83	0	139	55	75	9	1	140	4	28	13	0	45	7	77	16	0	100	424
05:15 PM	30	44	50	0	124	57	86	6	0	149	6	28	4	0	38	12	90	13	0	115	426
05:30 PM	16	36	63	0	115	53	83	5	0	141	3	23	6	0	32	12	98	16	0	126	414
05:45 PM	16	38	53	0	107	36	78	7	0	121	3	19	2	2	26	5	69	18	0	92	346
Total	81	155	249	0	485	201	322	27	1	551	16	98	25	2	141	36	334	63	0	433	1610
Grand Total	304	585	1091	0	1980	1057	1460	75	3	2595	62	554	90	2	708	154	1257	262	2	1675	6958
Apprch %	15.4	29.5	55.1	0		40.7	56.3	2.9	0.1		8.8	78.2	12.7	0.3		9.2	75	15.6	0.1		
Total %	4.4	8.4	15.7	0	28.5	15.2	21	1.1	0	37.3	0.9	8	1.3	0	10.2	2.2	18.1	3.8	0	24.1	
Lights	298	584	1084			1054	1460									1255					
% Lights	98	99.8	99.4	0	99.3	99.7	100	100	100	99.9	98.4	100	92.2	100	98.9	93.5	99.8	95.8	100	98.6	99.3
Trucks	6	1	6	0	13	3	0	0	0	3	1	0	7	0	8	9	2	11	0	22	46
% Trucks	2	0.2	0.5	0	0.7	0.3	0	0	0	0.1	1.6	0	7.8	0	1.1	5.8	0.2	4.2	0	1.3	0.7
Buses	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
% Buses	0	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0.1	0

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

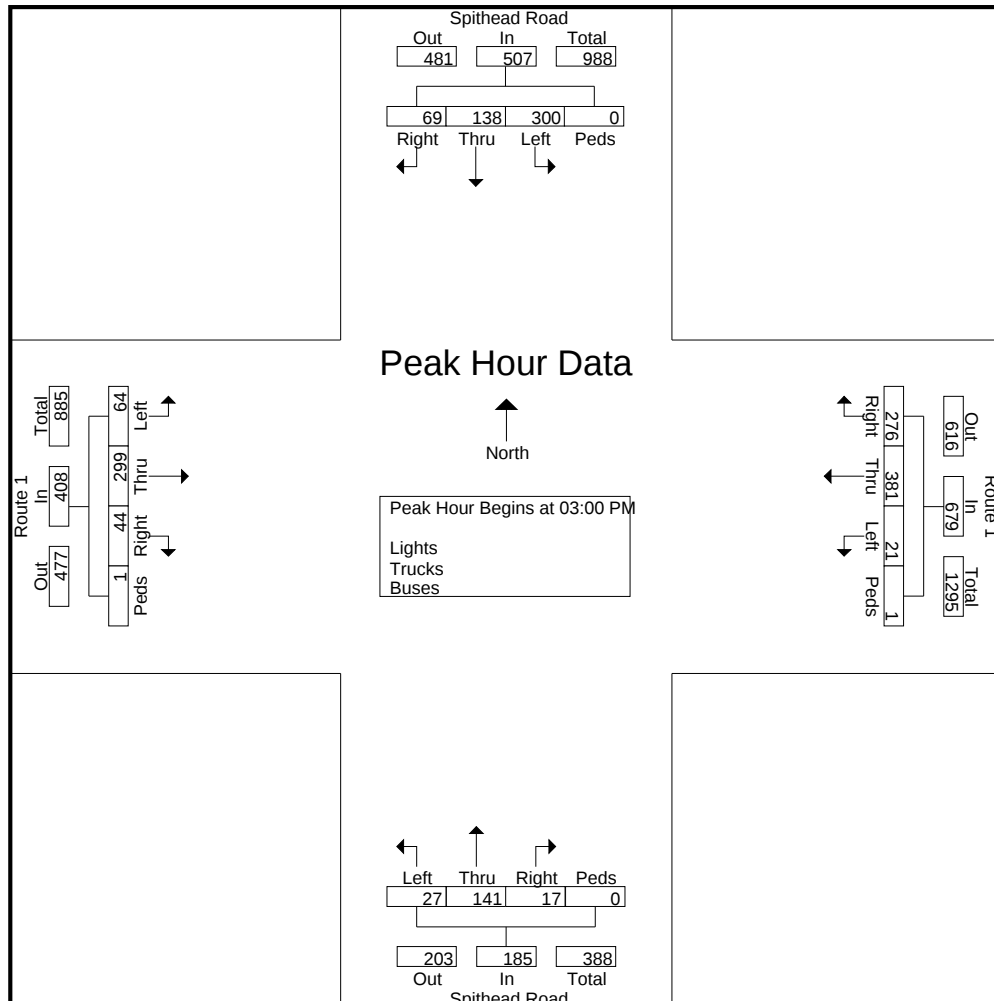
File Name : 23540
Site Code : 23540
Start Date : 10/12/2022
Page No : 2

	Spithead Road From North					Route 1 From East					Spithead Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

03:00 PM	12	23	55	0	90	75	81	4	0	160	0	24	6	0	30	9	70	21	0	100	380
03:15 PM	20	27	76	0	123	59	101	6	1	167	2	41	6	0	49	18	80	16	1	115	454
03:30 PM	19	47	73	0	139	68	113	8	0	189	5	28	6	0	39	6	87	15	0	108	475
03:45 PM	18	41	96	0	155	74	86	3	0	163	10	48	9	0	67	11	62	12	0	85	470
Total Volume	69	138	300	0	507	276	381	21	1	679	17	141	27	0	185	44	299	64	1	408	1779
% App. Total	13.6	27.2	59.2	0		40.6	56.1	3.1	0.1		9.2	76.2	14.6	0		10.8	73.3	15.7	0.2		
PHF	.863	.734	.781	.000	.818	.920	.843	.656	.250	.898	.425	.734	.750	.000	.690	.611	.859	.762	.250	.887	.936



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

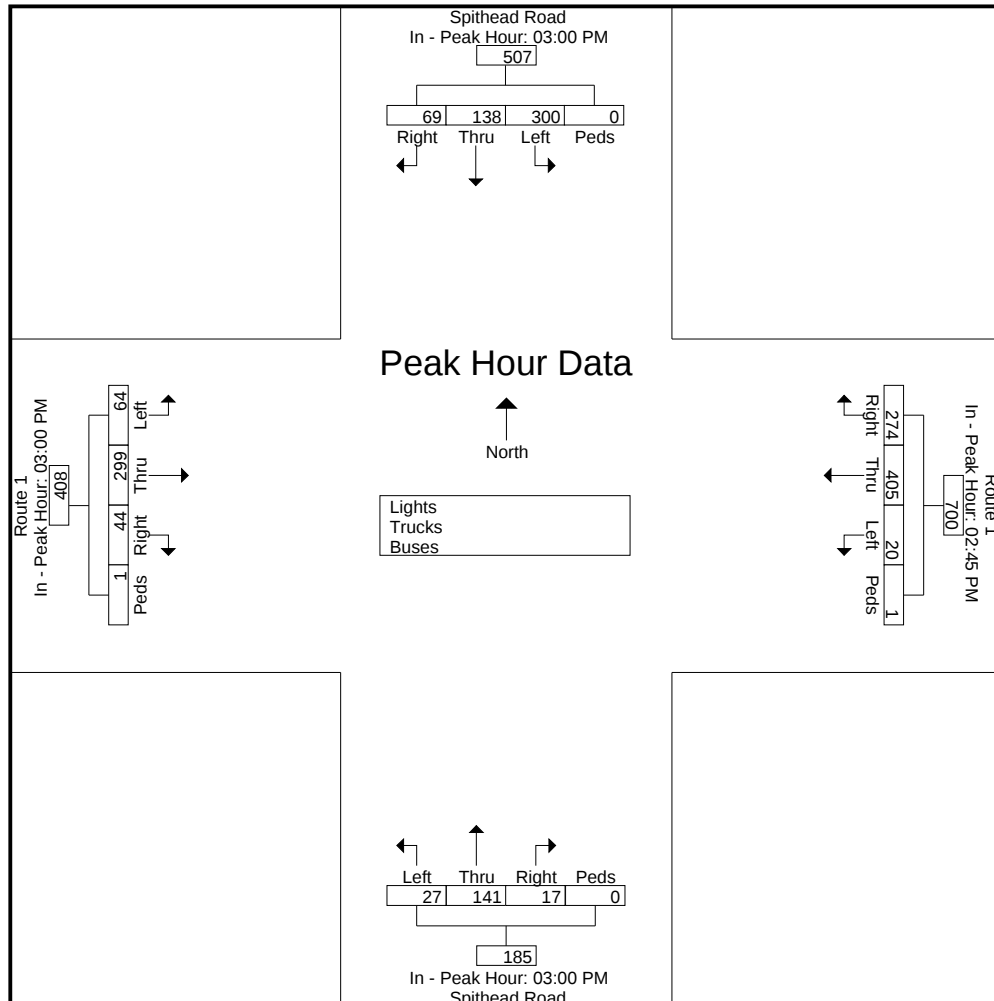
File Name : 23540
Site Code : 23540
Start Date : 10/12/2022
Page No : 3

	Spithead Road From North					Route 1 From East					Spithead Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM					02:45 PM					03:00 PM					03:00 PM				
+0 mins.	12	23	55	0	90	72	110	2	0	184	0	24	6	0	30	9	70	21	0	100
+15 mins.	20	27	76	0	123	75	81	4	0	160	2	41	6	0	49	18	80	16	1	115
+30 mins.	19	47	73	0	139	59	101	6	1	167	5	28	6	0	39	6	87	15	0	108
+45 mins.	18	41	96	0	155	68	113	8	0	189	10	48	9	0	67	11	62	12	0	85
Total Volume	69	138	300	0	507	274	405	20	1	700	17	141	27	0	185	44	299	64	1	408
% App. Total	13.6	27.2	59.2	0		39.1	57.9	2.9	0.1		9.2	76.2	14.6	0		10.8	73.3	15.7	0.2	
PHF	.863	.734	.781	.000	.818	.913	.896	.625	.250	.926	.425	.734	.750	.000	.690	.611	.859	.762	.250	.887



File Name : 23534
Site Code : 23534
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks																					
	Spithead Road From North					From East					Spithead Road From South					Daniels Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	5	10	0	0	15	0	0	0	0	0	0	19	3	0	22	2	0	2	0	4	41
02:15 PM	7	20	0	0	27	0	0	0	0	0	0	17	7	0	24	3	0	8	0	11	62
02:30 PM	3	27	0	0	30	0	0	0	0	0	0	19	1	0	20	1	0	8	0	9	59
02:45 PM	6	21	1	0	28	0	0	0	0	0	0	19	3	0	22	3	0	5	0	8	58
Total	21	78	1	0	100	0	0	0	0	0	0	74	14	0	88	9	0	23	0	32	220
03:00 PM	9	17	0	0	26	0	0	0	0	0	0	28	4	0	32	4	0	7	0	11	69
03:15 PM	7	21	0	0	28	0	0	0	0	0	0	26	2	0	28	4	0	2	0	6	62
03:30 PM	8	25	0	0	33	0	0	0	0	0	0	33	3	0	36	5	0	2	0	7	76
03:45 PM	8	28	0	0	36	0	0	0	0	0	0	35	3	0	38	6	0	10	0	16	90
Total	32	91	0	0	123	0	0	0	0	0	0	122	12	0	134	19	0	21	0	40	297
04:00 PM	8	22	0	0	30	0	0	0	0	0	0	58	7	0	65	3	0	4	0	7	102
04:15 PM	9	21	0	0	30	0	0	0	0	0	0	53	5	0	58	3	0	7	0	10	98
04:30 PM	7	19	0	0	26	0	0	0	0	0	0	41	2	0	43	1	0	5	0	6	75
04:45 PM	12	43	0	0	55	0	0	0	0	0	0	19	3	0	22	0	0	5	0	5	82
Total	36	105	0	0	141	0	0	0	0	0	0	171	17	0	188	7	0	21	0	28	357
05:00 PM	4	40	0	0	44	0	0	0	0	0	0	27	5	0	32	7	0	3	0	10	86
05:15 PM	5	29	0	0	34	0	0	0	0	0	0	16	9	0	25	9	0	4	0	13	72
05:30 PM	8	24	0	0	32	0	0	0	0	0	0	12	4	0	16	3	0	7	0	10	58
05:45 PM	9	21	0	0	30	0	0	0	0	0	0	10	3	0	13	4	0	4	0	8	51
Total	26	114	0	0	140	0	0	0	0	0	0	65	21	0	86	23	0	18	0	41	267
Grand Total	115	388	1	0	504	0	0	0	0	0	0	432	64	0	496	58	0	83	0	141	1141
Apprch %	22.8	77	0.2	0		0	0	0	0		0	87.1	12.9	0		41.1	0	58.9	0		
Total %	10.1	34	0.1	0	44.2	0	0	0	0	0	0	37.9	5.6	0	43.5	5.1	0	7.3	0	12.4	
Lights	115	384	0	0	499	0	0	0	0	0	0	431	62	0	493	56	0	83	0	139	1131
% Lights	100	99	0	0	99	0	0	0	0	0	0	99.8	96.9	0	99.4	96.6	0	100	0	98.6	99.1
Buses	0	3	0	0	3	0	0	0	0	0	0	1	2	0	3	2	0	0	0	2	8
% Buses	0	0.8	0	0	0.6	0	0	0	0	0	0	0.2	3.1	0	0.6	3.4	0	0	0	1.4	0.7
Trucks	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	0.3	100	0	0.4	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

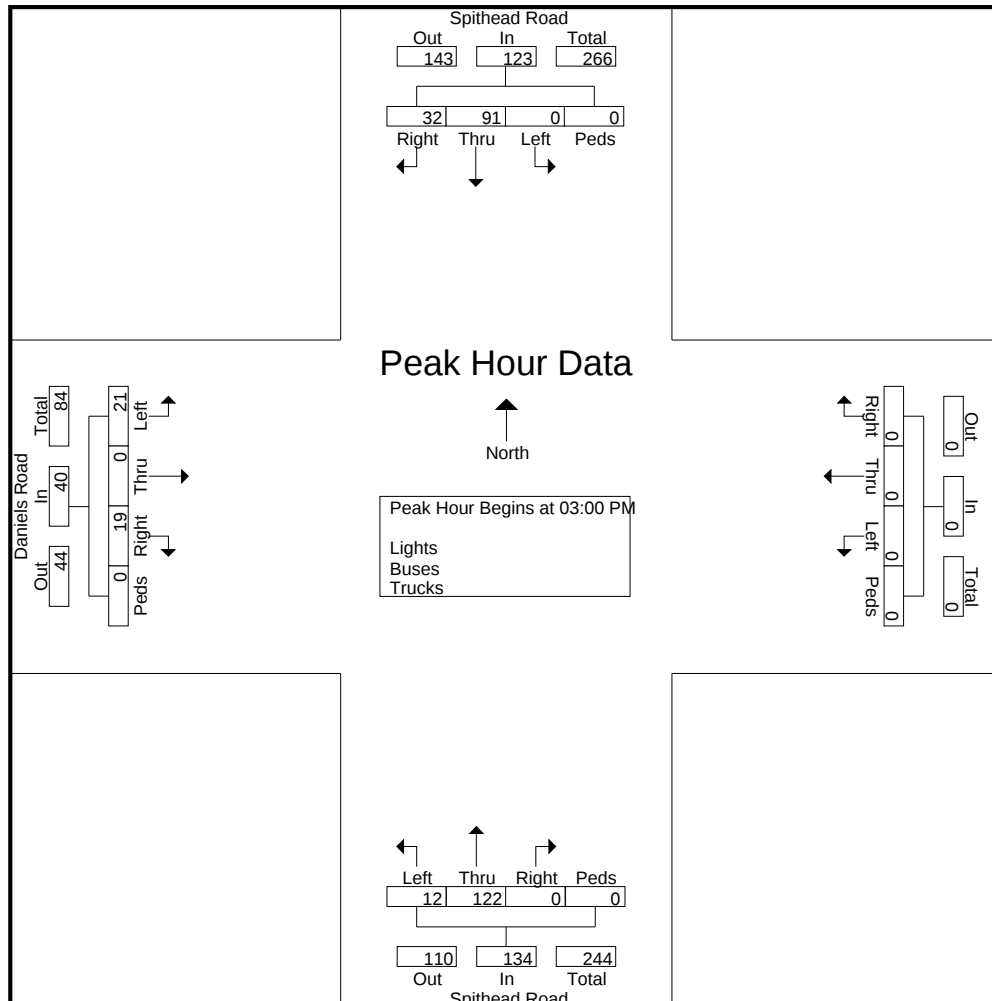
File Name : 23534
 Site Code : 23534
 Start Date : 10/12/2022
 Page No : 2

Start Time	Spithead Road From North					From East					Spithead Road From South					Daniels Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:00 PM

03:00 PM	9	17	0	0	26	0	0	0	0	0	0	28	4	0	32	4	0	7	0	11	69
03:15 PM	7	21	0	0	28	0	0	0	0	0	0	26	2	0	28	4	0	2	0	6	62
03:30 PM	8	25	0	0	33	0	0	0	0	0	0	33	3	0	36	5	0	2	0	7	76
03:45 PM	8	28	0	0	36	0	0	0	0	0	0	35	3	0	38	6	0	10	0	16	90
Total Volume	32	91	0	0	123	0	0	0	0	0	0	122	12	0	134	19	0	21	0	40	297
% App. Total	26	74	0	0		0	0	0	0		0	91	9	0		47.5	0	52.5	0		
PHF	.889	.813	.000	.000	.854	.000	.000	.000	.000	.000	.000	.871	.750	.000	.882	.792	.000	.525	.000	.625	.825



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

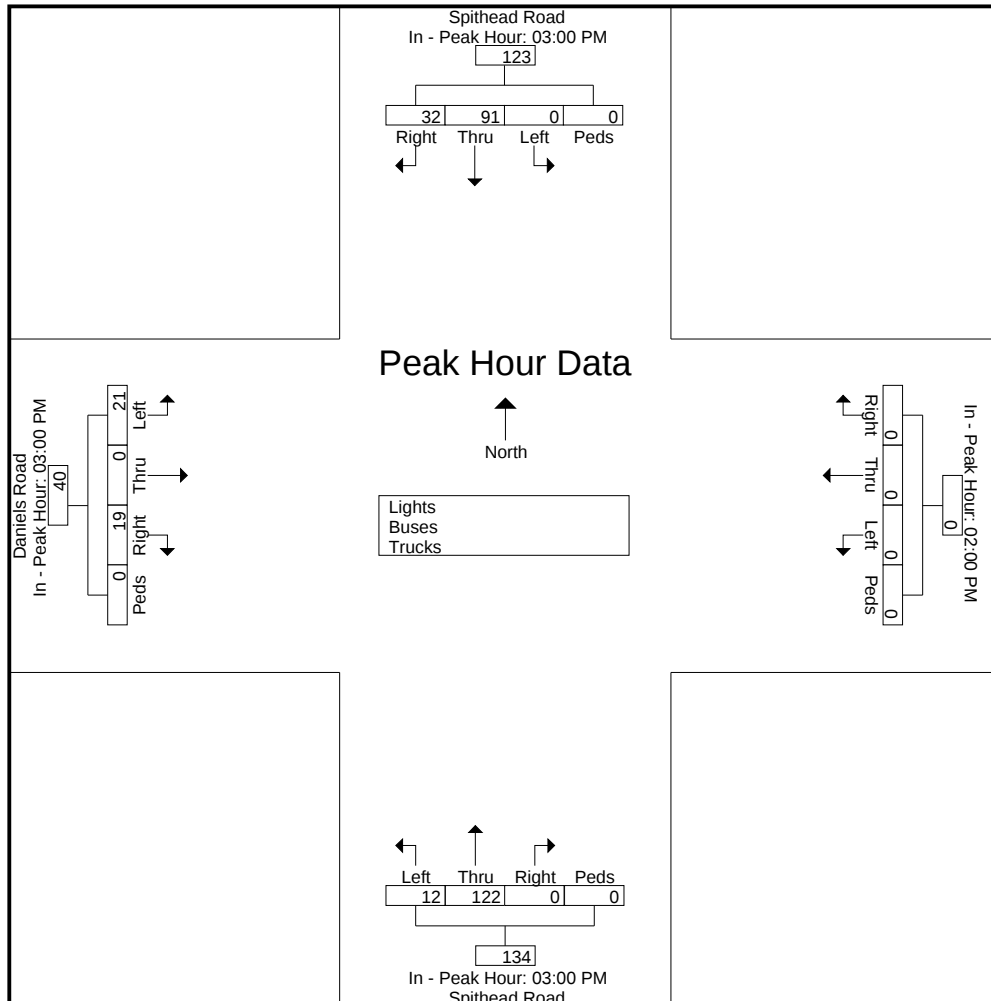
File Name : 23534
Site Code : 23534
Start Date : 10/12/2022
Page No : 3

	Spithead Road From North					From East					Spithead Road From South					Daniels Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:00 PM					02:00 PM					03:00 PM					03:00 PM				
+0 mins.	9	17	0	0	26	0	0	0	0	0	0	28	4	0	32	4	0	7	0	11
+15 mins.	7	21	0	0	28	0	0	0	0	0	0	26	2	0	28	4	0	2	0	6
+30 mins.	8	25	0	0	33	0	0	0	0	0	0	33	3	0	36	5	0	2	0	7
+45 mins.	8	28	0	0	36	0	0	0	0	0	0	35	3	0	38	6	0	10	0	16
Total Volume	32	91	0	0	123	0	0	0	0	0	0	122	12	0	134	19	0	21	0	40
% App. Total	26	74	0	0		0	0	0	0		0	91	9	0		47.5	0	52.5	0	
PHF	.889	.813	.000	.000	.854	.000	.000	.000	.000	.000	.000	.871	.750	.000	.882	.792	.000	.525	.000	.625



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Spithead Road at Rope Ferry Road
Waterford, Connecticut

File Name : 23532
Site Code : 23532
Start Date : 10/12/2022
Page No : 1

Groups Printed- Lights - Buses - Trucks

	Rope Ferry Road From North					Private Drive From East					Rope Ferry Road From South					Spithead Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	5	64	0	0	69	0	0	0	0	0	0	66	19	0	85	5	0	4	0	9	163
02:15 PM	8	62	1	0	71	0	0	0	0	0	1	65	17	0	83	17	0	8	0	25	179
02:30 PM	5	59	0	0	64	0	0	0	0	0	0	58	16	0	74	16	0	4	0	20	158
02:45 PM	9	71	0	0	80	0	0	0	0	0	0	51	22	0	73	16	1	5	0	22	175
Total	27	256	1	0	284	0	0	0	0	0	1	240	74	0	315	54	1	21	0	76	675
03:00 PM	11	69	1	0	81	0	0	0	0	0	0	64	27	0	91	18	1	7	0	26	198
03:15 PM	4	56	1	0	61	0	0	0	0	0	1	68	22	0	91	15	2	8	0	25	177
03:30 PM	6	75	3	0	84	0	0	0	0	0	2	49	26	0	77	15	3	10	0	28	189
03:45 PM	7	82	18	0	107	0	0	0	0	0	10	68	32	0	110	18	6	9	0	33	250
Total	28	282	23	0	333	0	0	0	0	0	13	249	107	0	369	66	12	34	0	112	814
04:00 PM	10	73	1	0	84	0	0	0	0	0	1	63	53	0	117	18	0	3	3	24	225
04:15 PM	9	82	2	0	93	0	0	0	0	0	0	74	54	0	128	23	1	1	3	28	249
04:30 PM	6	80	3	0	89	0	0	0	2	2	4	79	35	0	118	18	1	3	2	24	233
04:45 PM	6	100	12	0	118	0	0	0	0	0	8	63	18	0	89	37	3	2	0	42	249
Total	31	335	18	0	384	0	0	0	2	2	13	279	160	0	452	96	5	9	8	118	956
05:00 PM	13	93	0	0	106	0	0	0	0	0	2	73	16	0	91	39	0	3	0	42	239
05:15 PM	10	90	1	0	101	0	0	0	0	0	0	68	17	0	85	30	0	14	0	44	230
05:30 PM	6	64	1	0	71	0	0	0	0	0	0	61	10	0	71	25	0	2	2	29	171
05:45 PM	6	68	0	0	74	0	0	0	0	0	0	60	7	0	67	17	0	8	1	26	167
Total	35	315	2	0	352	0	0	0	0	0	2	262	50	0	314	111	0	27	3	141	807
Grand Total	121	1188	44	0	1353	0	0	0	2	2	29	1030	391	0	1450	327	18	91	11	447	3252
Apprch %	8.9	87.8	3.3	0		0	0	0	100		2	71	27	0		73.2	4	20.4	2.5		
Total %	3.7	36.5	1.4	0	41.6	0	0	0	0.1	0.1	0.9	31.7	12	0	44.6	10.1	0.6	2.8	0.3	13.7	
Lights	116	1182									1020										
% Lights	95.9	99.5	100	0	99.2	0	0	0	100	100	96.6	99	99.5	0	99.1	100	100	97.8	100	99.6	99.2
Buses	4	3	0	0	7	0	0	0	0	0	0	5	0	0	5	0	0	2	0	2	14
% Buses	3.3	0.3	0	0	0.5	0	0	0	0	0	0	0.5	0	0	0.3	0	0	2.2	0	0.4	0.4
Trucks	1	3	0	0	4	0	0	0	0	0	1	5	2	0	8	0	0	0	0	0	12
% Trucks	0.8	0.3	0	0	0.3	0	0	0	0	0	3.4	0.5	0.5	0	0.6	0	0	0	0	0	0.4

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

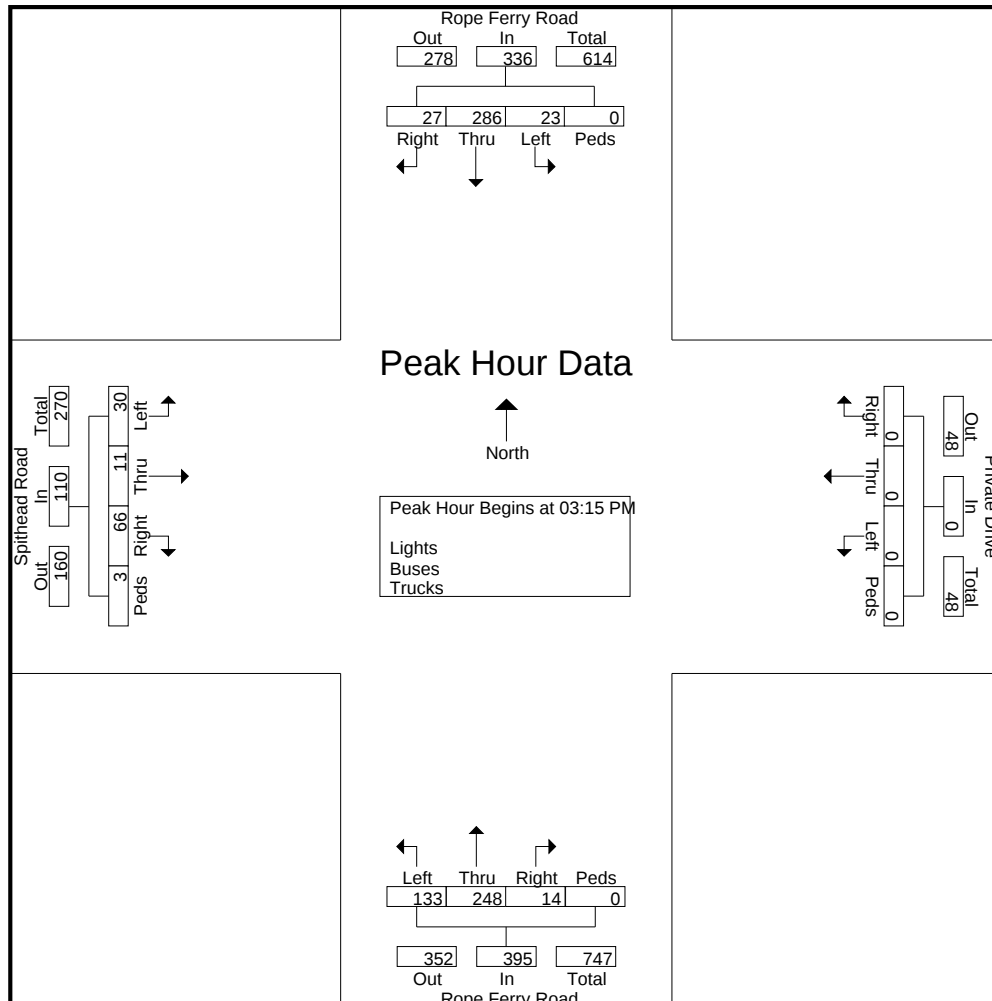
File Name : 23532
Site Code : 23532
Start Date : 10/12/2022
Page No : 2

	Rope Ferry Road From North					Private Drive From East					Rope Ferry Road From South					Spithead Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:00 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:15 PM

03:15 PM	4	56	1	0	61	0	0	0	0	0	1	68	22	0	91	15	2	8	0	25	177
03:30 PM	6	75	3	0	84	0	0	0	0	0	2	49	26	0	77	15	3	10	0	28	189
03:45 PM	7	82	18	0	107	0	0	0	0	0	10	68	32	0	110	18	6	9	0	33	250
04:00 PM	10	73	1	0	84	0	0	0	0	0	1	63	53	0	117	18	0	3	3	24	225
Total Volume	27	286	23	0	336	0	0	0	0	0	14	248	133	0	395	66	11	30	3	110	841
% App. Total	8	85.1	6.8	0		0	0	0	0		3.5	62.8	33.7	0		60	10	27.3	2.7		
PHF	.675	.872	.319	.000	.785	.000	.000	.000	.000	.000	.350	.912	.627	.000	.844	.917	.458	.750	.250	.833	.841



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

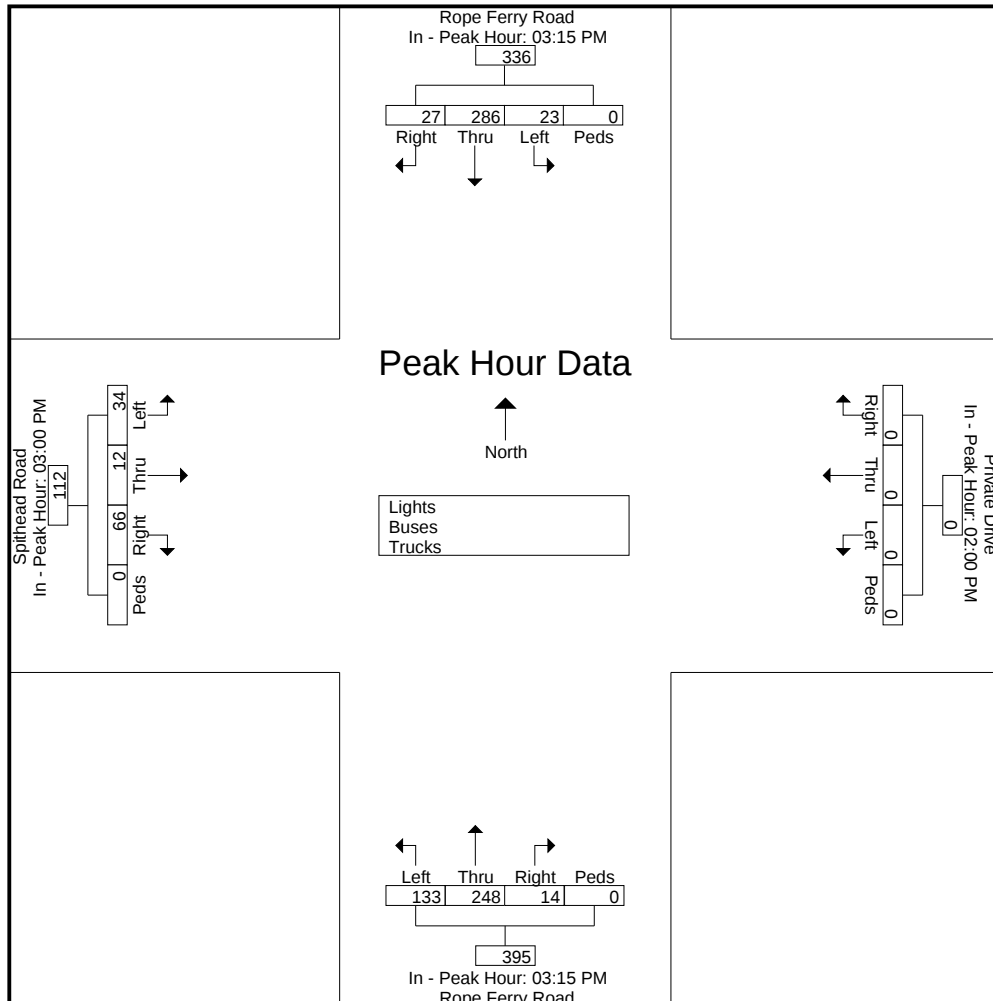
File Name : 23532
Site Code : 23532
Start Date : 10/12/2022
Page No : 3

	Rope Ferry Road From North					Private Drive From East					Rope Ferry Road From South					Spithead Road From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 04:00 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	03:15 PM					02:00 PM					03:15 PM					03:00 PM					
+0 mins.	4	56	1	0	61	0	0	0	0	0	1	68	22	0	91	18	1	7	0	26	
+15 mins.	6	75	3	0	84	0	0	0	0	0	2	49	26	0	77	15	2	8	0	25	
+30 mins.	7	82	18	0	107	0	0	0	0	0	10	68	32	0	110	15	3	10	0	28	
+45 mins.	10	73	1	0	84	0	0	0	0	0	1	63	53	0	117	18	6	9	0	33	
Total Volume	27	286	23	0	336	0	0	0	0	0	14	248	133	0	395	66	12	34	0	112	
% App. Total	8	85.1	6.8	0		0	0	0	0		3.5	62.8	33.7	0		58.9	10.7	30.4	0		
PHF	.675	.872	.319	.000	.785	.000	.000	.000	.000	.000	.350	.912	.627	.000	.844	.917	.500	.850	.000	.848	



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

Route 1 at Sunnycrest Dr
Waterford, Connecticut

File Name : 23540
Site Code : 23540
Start Date : 10/12/2022
Page No : 1

Groups Printed- Sunnycrest Dr

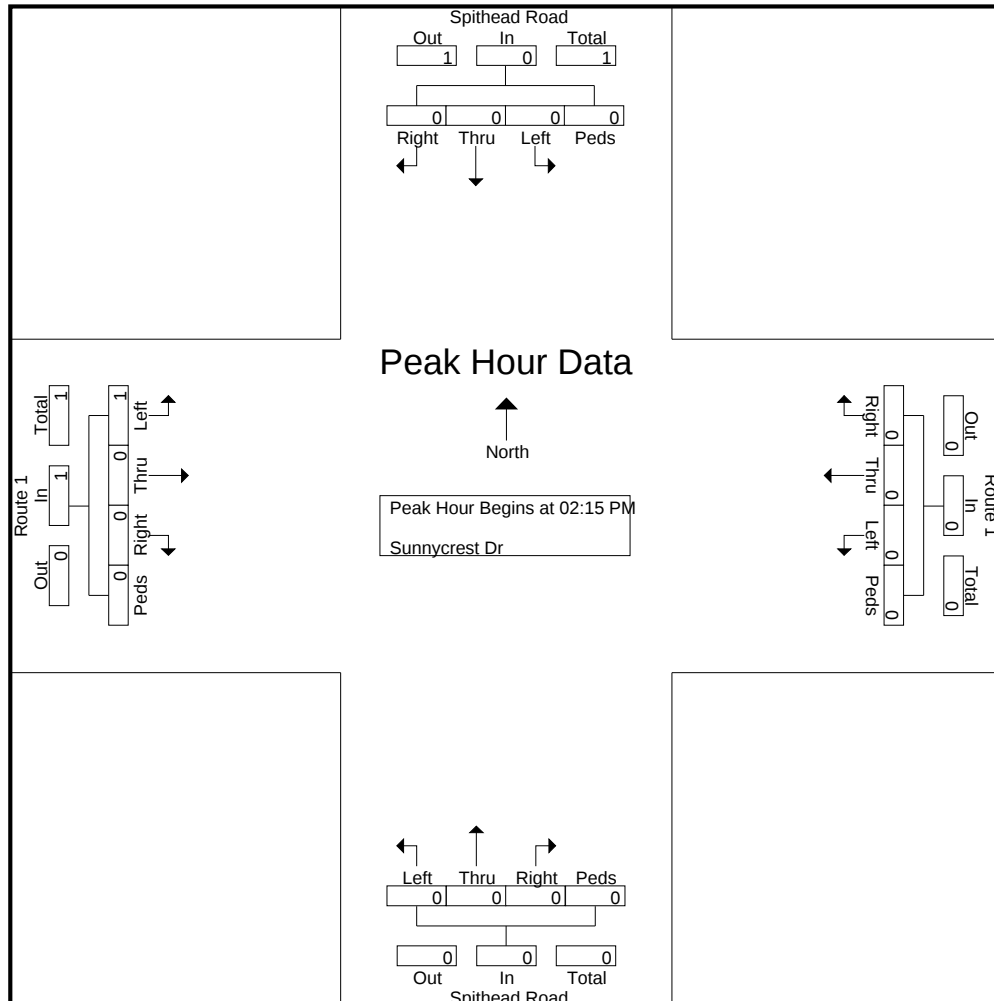
	Spithead Road From North					Route 1 From East					Spithead Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
*** BREAK ***																					
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
*** BREAK ***																					
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:00 PM	1	1	2	0	4	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	6
04:15 PM	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
*** BREAK ***																					
04:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	3	1	3	0	7	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	10
05:00 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
05:15 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
05:30 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	3
Total	3	0	3	0	6	1	0	0	0	1	0	0	0	0	0	0	0	4	0	4	11
Grand Total	6	1	6	0	13	3	0	0	0	3	0	0	0	0	0	0	0	6	0	6	22
Apprch %	46.2	7.7	46.2	0		100	0	0	0		0	0	0	0		0	0	100	0		
Total %	27.3	4.5	27.3	0	59.1	13.6	0	0	0	13.6	0	0	0	0	0	0	0	27.3	0	27.3	

Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

File Name : 23540
Site Code : 23540
Start Date : 10/12/2022
Page No : 2

	Spithead Road From North					Route 1 From East					Spithead Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	250	250
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250



Connecticut Counts LLC

Kensington, Connecticut 06037
(860) 828-1693

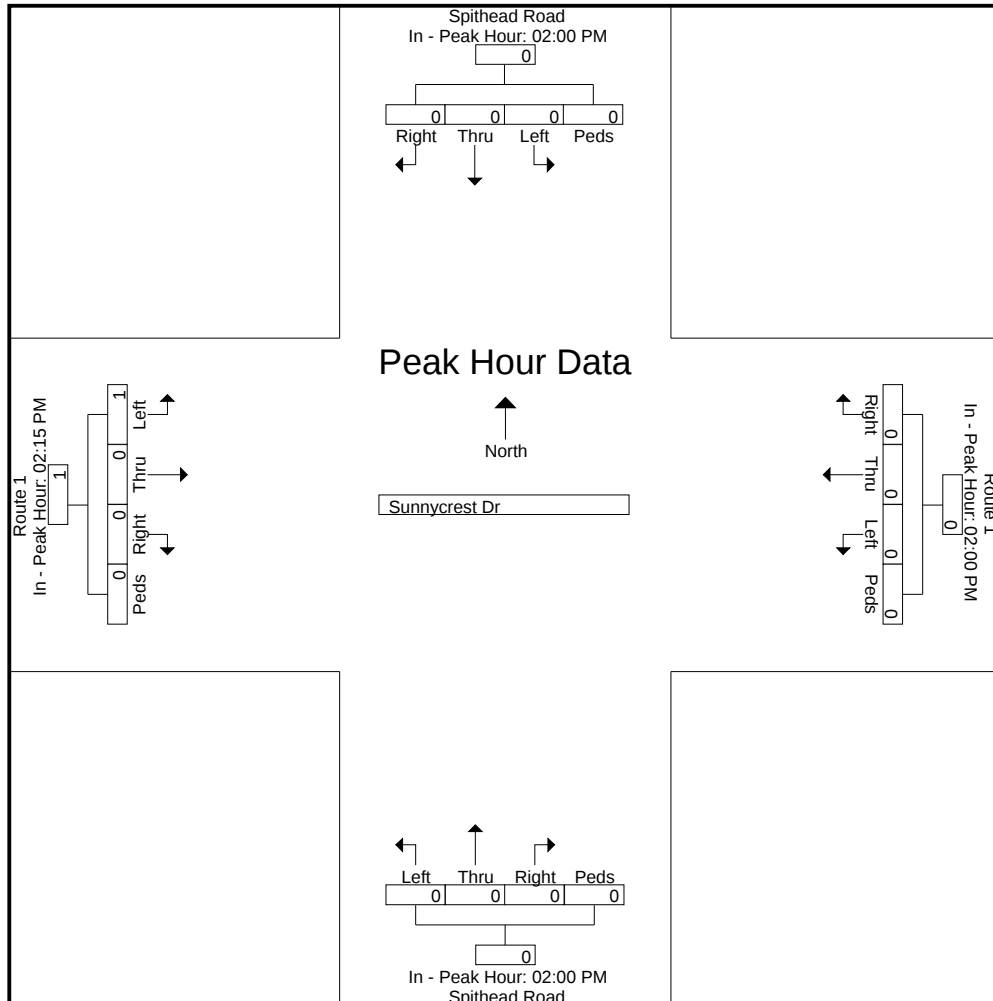
File Name : 23540
Site Code : 23540
Start Date : 10/12/2022
Page No : 3

	Spithead Road From North					Route 1 From East					Spithead Road From South					Route 1 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total

Peak Hour Analysis From 02:00 PM to 03:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	02:00 PM					02:00 PM					02:00 PM					02:15 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250



Appendix F

Crash Data Records

Uconn Crash Data
 LEARN Early Childhood School TIS
 Waterford, Connecticut
 January 1, 2022 - December 31, 2024

Date Of Crash	Time of Crash	Severity	No. of Vehicles	Number Of Non-Motorist	Intersecting Roadway	Collision Type	Weather	Light Condition	Road Surface Condition	Contributing Circumstances Roadway
01) Daniels Avenue at Site Driveway										
02) Daniels Avenue at Niantic River Road										
12/9/2023	16:33:00	Injury of any type (Serious, Minor, Possible)	2	0	NIANTIC RIVER RD	Angle	Clear	Dusk	Dry	None
10/28/2024	20:03:00	Injury of any type (Serious, Minor, Possible)	1	0	NIANTIC RIVER RD	Not Applicable	Clear	Dark-Lighted	Dry	None
03) Daniels Avenue at Spithead Road										
2/13/2022	6:57:00	Property Damage Only	1	0		Not Applicable	Snow	Daylight	Snow	Road Surface Condition (wet, icy, snow, slush, etc.)
5/27/2022	20:18:00	Injury of any type (Serious, Minor, Possible)	1	0		Not Applicable	Cloudy	Dusk	Wet	None
7/29/2023	16:13:00	Property Damage Only	1	0		Not Applicable	Clear	Daylight	Dry	None
04) Route 156 (Rope Ferry Road) at Spithead Road										
7/28/2022	16:30:00	Property Damage Only	2	0		Front to rear	Clear	Daylight	Dry	None
8/28/2022	20:57:00	Property Damage Only	2	0	SPITHEAD RD	Front to rear	Clear	Dark-Lighted	Dry	None
10/11/2024	14:55:00	Property Damage Only	2	0	SPITHEAD RD	Angle	Clear	Daylight	Dry	None
05) Route 156 (Rope Ferry Road) at West Street										
06) Niantic River at West Street										
07) Route 1 (Boston Post Road) at Niantic River Road										
1/30/2022	18:22:00	Injury of any type (Serious, Minor, Possible)	2	0		Sideswipe, opposite direction	Cloudy	Dark-Lighted	Slush	None
5/4/2022	21:03:00	Property Damage Only	2	0		Rear to side	Cloudy	Dark-Not Lighted	Dry	None
6/22/2022	13:57:00	Injury of any type (Serious, Minor, Possible)	2	0	NIANTIC RIVER RD	Angle	Cloudy	Daylight	Wet	None
7/17/2022	14:49:00	Injury of any type (Serious, Minor, Possible)	2	0		Sideswipe, same direction	Clear	Daylight	Dry	None
8/24/2022	12:56:00	Property Damage Only	3	0	NIANTIC RIVER RD	Front to rear	Clear	Daylight	Dry	None
12/31/2022	19:00:00	Property Damage Only	1	0	NIANTIC RIVER RD	Not Applicable	Rain	Dark-Lighted	Wet	Road Surface Condition (wet, icy, snow, slush, etc.)
1/24/2023	11:16:00	Property Damage Only	2	0		Front to rear	Clear	Daylight	Dry	None
5/17/2023	17:22:00	Injury of any type (Serious, Minor, Possible)	2	0	NIANTIC RIVER RD	Front to rear	Clear	Daylight	Dry	None
8/1/2023	11:48:00	Property Damage Only	2	0	NIANTIC RIVER RD	Sideswipe, opposite direction	Clear	Daylight	Dry	None
8/19/2023	20:56:00	Property Damage Only	2	0		Front to rear	Clear	Dark-Lighted	Dry	None
08) Route 1 (Boston Post Road) at Spithead Road and Cross Road/Sunnicrest Drive										
3/1/2022	11:44:00	Property Damage Only	1	0	1-N	Not Applicable	Clear	Daylight	Dry	None
4/28/2022	17:10:00	Property Damage Only	2	0		Front to rear	Clear	Daylight	Dry	None
6/17/2022	12:27:00	Property Damage Only	2	0	CROSS RD	Front to rear	Clear	Daylight	Dry	None
6/28/2022	15:45:00	Property Damage Only	2	0	CROSS RD	Front to rear	Clear	Daylight	Dry	None
8/16/2022	7:20:00	Property Damage Only	2	0		Front to rear	Clear	Daylight	Dry	None
9/23/2022	12:54:00	Property Damage Only	2	0		Sideswipe, same direction	Clear	Daylight	Dry	None
9/29/2022	12:02:00	Injury of any type (Serious, Minor, Possible)	3	0		Front to rear	Clear	Daylight	Dry	None
10/19/2022	10:44:00	Property Damage Only	3	0	CROSS RD	Front to rear	Cloudy	Daylight	Dry	None
10/4/2022	8:12:00	Property Damage Only	2	0		Angle	Rain	Daylight	Wet	None
10/29/2022	1:56:00	Property Damage Only	2	0		Front to front	Clear	Dark-Not Lighted	Dry	None
12/22/2022	13:43:00	Property Damage Only	2	0	CROSS RD	Angle	Cloudy	Daylight	Dry	None
1/3/2023	17:27:00	Property Damage Only	2	0		Angle	Clear	Dark-Not Lighted	Dry	None
5/1/2023	18:09:00	Property Damage Only	2	0		Sideswipe, same direction	Clear	Daylight	Dry	None
5/3/2023	16:15:00	Injury of any type (Serious, Minor, Possible)	2	0		Front to rear	Clear	Daylight	Dry	None
5/21/2023	12:00:00	Property Damage Only	2	0		Front to rear	Clear	Daylight	Dry	None
10/16/2023	16:22:00	Property Damage Only	2	0		Front to rear	Clear	Daylight	Dry	None
10/30/2023	17:20:00	Injury of any type (Serious, Minor, Possible)	2	0		Front to rear	Clear	Daylight	Dry	None
2/22/2024	9:02:00	Property Damage Only	2	0	SPITHEAD RD	Angle	Clear	Daylight	Dry	None
10/5/2024	10:55:00	Property Damage Only	2	0		Sideswipe, same direction	Clear	Daylight	Dry	None
10/6/2024	0:27:00	Property Damage Only	2	0		Angle	Clear	Dark-Lighted	Dry	None

CRASH DATA SUMMARY - January 2022 - December 2024
Daniels Avenue at Niantic River Road
WATERFORD, CONNECTICUT

Criteria

YEAR

2022	0
2023	1
2024	1
Total	2
Avg. No. of Crashes/ Year	0.67

CRASH TYPE

Angle	1
Guardrail Face	1
Total	2

SEVERITY

Injury - Possible	2
Total	2

CRASH DATA SUMMARY - January 2022 - December 2024
Daniels Avenue at Spithead Road
WATERFORD, CONNECTICUT

Criteria

YEAR

2022	2
2023	1
2024	0
Total	3
Avg. No. of Crashes/ Year	1.00

CRASH TYPE

Embankment	1
Curb	1
Utility Pole/Light Support	1
Total	3

SEVERITY

Property Damage Only	2
Injury - Minor	1
Total	3

CRASH DATA SUMMARY - January 2022 - December 2024
Route 156 (Rope Ferry Road) at Spithead Road
WATERFORD, CONNECTICUT

Criteria

YEAR

2022	2
2023	0
2024	1
Total	3
Avg. No. of Crashes/ Year	1.00

CRASH TYPE

Angle	1
Front to Rear	2
Total	3

SEVERITY

Property Damage Only	3
Total	3

CRASH DATA SUMMARY - January 2022 - December 2024
Route 1 (Boston Post Road) at Niantic River Road
WATERFORD, CONNECTICUT

Criteria

YEAR

2022	6
2023	4
2024	0
Total	10
Avg. No. of Crashes/ Year	3.33

CRASH TYPE

Angle	1
Front to Rear	4
Rear to Side	1
Sideswipe, Opposite Direction	2
Sideswipe, Same Direction	1
Signal Pole	1
Total	10

SEVERITY

Property Damage Only	6
Injury - Minor	2
Injury - Possible	2
Total	10

CRASH DATA SUMMARY - January 2022 - December 2024
Route 1 (Boston Post Road) at Spithead Road and Cross
WATERFORD, CONNECTICUT

Criteria

YEAR

2022	11
2023	6
2024	3
Total	20
Avg. No. of Crashes/ Year	6.67

CRASH TYPE

Angle	5
Front to Front	1
Front to Rear	10
Sideswipe, Same Direction	3
Signal Pole	1
Total	20

SEVERITY

Property Damage Only	17
Injury - Possible	3
Total	20