

May 16, 2025

# William C. O'Neil Bike Path – 4B Due Diligence

## Narragansett, RI

Prepared for:  
Town of Narragansett  
May 2025





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## 1.0 Executive Summary

DiPrete Engineering has prepared this Due Diligence Narrative and Supporting Material for the Conceptual Alignment extension of Phase 4B of the William C. O'Neill Bike Path. This analysis is in reference to the Town of Narragansett Request for Qualifications (RFQ) to explore the final connection of the South County Bike Path to Narragansett Beach.

The South County Bike Path currently ends at the Narragansett's Town Community Center located at 53 Mumford Road. A 2015 "Feasibility Study-South County Bike Path Phase 4 Canonchet Farm Extension" prepared by Fay Spofford and Thorndike was the basis for this alignment study. Our understanding based on the study is this connection would provide access from the terminus of Phase 4A to the Narragansett Beach.

DiPrete Engineering assembled a project team to include BETA Group and Pare Corporation (DiPrete Team). The DiPrete Team reviewed the project area of improvements per the RFQ entailing fully on-street alternatives, specifically avoiding Strathmore, Wanda, and Othmar Streets. In addition, an alternative alignment following the existing walking trail between the Community Center and the South County Museum (Canonchet Farm Trail). Furthermore, the DiPrete Team reviewed other options identified on publicly owned land or rights-of-way not previously known or considered.

As part of the feasibility study process, the DiPrete Team has evaluated the project area and during the Town of Narragansett, Town Council May 2024 Meeting presented the following describing the:

- Background Investigation
- Route Planning & Alternatives Analysis
- Site Investigation Requirements
- Schematic Design
- Cost Estimates

At the conclusion of the May 2024 Town Council meeting, council members and Town Staff made recommendations for an additional option for the Phase 4B Bike Path. This suggested pathway included utilizing the existing paved roadway from the Community Center through Sprague Park to Strathmore Road. Subsequently, the conceptual Phase 4B Bike Path would traverse around South County Museum to the existing Town Beach West parking lot.

Following the May 2024 Town Council meeting, in the summer and fall of 2024, the DiPrete Team extended the new due diligence work to include the option of a 'Strathmore Road Bike Route'. For the purpose of this narrative, we have summarized this new due diligence work first, then followed by the original evaluation as presented during the May, 2024 Town Council meeting.



2.0 May 2024 Conceptual 4B Bike Route

(Overall plan showing the extents of the scope of area for the Phase 4B Bike Route)

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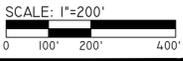
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2			B.T.

DESIGN BY: J.A.D.  
 DRAWN BY: K.R.R.

**MAY 2024 PROPOSED ROUTE**  
**WILLIAM C. O'NEIL BIKE PATH - 4B**  
 VARIOUS PROPERTIES - STATE & TOWN OWNED  
 NARRAGANSETT, RHODE ISLAND  
 PREPARED FOR:  
**TOWN OF NARRAGANSETT**  
 25 FIFTH AVENUE, NARRAGANSETT, RHODE ISLAND  
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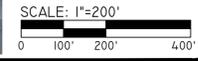
### 3.0 January 2025 Proposed 4B Bike Route

(Overall plan showing the extents of the scope of area for Strathmore Road Bike Route)

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**JANUARY 2025 ROUTE**  
**WILLIAM C. O'NEIL BIKE PATH - 4B**  
 VARIOUS PROPERTIES - STATE & TOWN OWNED  
 NARRAGANSETT, RHODE ISLAND

PREPARED FOR:  
**TOWN OF NARRAGANSETT**  
 25 FIFTH AVENUE, NARRAGANSETT, RHODE ISLAND

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## 4.0 January 2025 Town of Narragansett Review and New Request

Per the Town of Narragansett May 2024 meeting, it was requested that DiPrete Engineering, and the project team review an alternative location of the Phase 4B of the William C. O'Neill Bike Path, identified as the Strathmore Road Bike Route.

### Strathmore Road Bike Route

The Strathmore Road Bike Route would extend from the end of William C. O'Neil 4A through the Narragansett Community Center parking lot, travel southeastern down the Parks Department access road, and continue along the north side of the batting catch located in the Sprague Park. Once the route is in the monument park, it would curve around the grass area around playground areas, and along the wetland area associated with Crooked Brook. The route would continue between the point of the existing wetland area, and along the sidewalk of Kingstown Road. Then, the route will follow the remaining park area connecting into existing pavement areas at the intersection of Strathmore Road and Wanda Street. The bike route would follow Strathmore Road to the South County Museum, continue to follow Anne Hoxsie Lane to the Town Beach West Parking Lot. This bike path will end at a crossing in front of the Town Beach.

### Existing Wetland on Sprague Park

DiPrete Engineering further evaluated the Strathmore Road Bike Route for environmental impacts. Within Sprague Park, the wetland edge was delineated in August 2024 by DiPrete's Environmental Scientist. This wetland line and flags are shown on accompanying plans.

### Wetland Assessment

Crooked Brook enters town property from the south through a culvert that conveys flow beneath Narragansett Avenue. Crooked Brook flows north and is flanked by a wetland best classified as a wet meadow. Joe Pye Weed (*Eutrochium purpureum*) and jewelweed (*Impatiens capensis*) dominate this portion of the wetland. Crooked Brook continues north and flows within the interior of a deciduous forested wetland dominated by red maple (*Acer rubrum*), green ash (*Fraxinus pennsylvanica*), arrowwood (*Viburnum dentatum*), and sweet pepperbush (*Clethra alnifolia*). Crooked Brook and the surrounding wetland extend north towards Narrow River.



Wetland located at the Town of Narragansett  
Sprague Park



5.0 Sprague Park – Strathmore Road Bike Route

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NARRAGANSETT  
ELEMENTARY SCHOOL

STRATHMORE ROAD BIKE ROUTE  
TO CONTINUE  
FROM END OF  
NARRAGANSETT  
BIKE PATH 4A

NARRAGANSETT  
COMMUNITY CENTER

STRATHMORE ROAD BIKE ROUTE TO  
CONTINUE  
THROUGH EXISTING  
ACCESS DRIVES

NARRAGANSETT  
PARKS DEPT.

SPRAGUE  
MEMORIAL FIELD

POND

STRATHMORE ROAD BIKE ROUTE TO  
WRAP AROUND  
EXISTING BATTING  
CAGE AND PARKING

NARRAGANSETT  
LITTLE LEAGUE

SPRAGUE PARK

KINGSTOWN ROAD

BIKE ROUTE TO BE  
LOCATED BETWEEN  
EDGE OF FLAGGED  
WETLAND AND  
KINGSTOWN ROAD

CROOKED  
BROOK

FLAGGED  
WETLAND

ROUTE TO CURVE  
AROUND EXISTING  
CLEARED AREAS WITH  
LIMITED CLEARING

CROOKED  
BROOK

BIKE ROUTE CONTINUES WITHIN  
EXISTING ROADWAYS AND ACCESS  
WAYS TO NARRAGANSETT TOWN BEACH.  
SEE PARE'S TRAFFIC FEASIBILITY  
ASSESSMENT FOR RECOMMENDED  
IMPROVEMENTS

SEE PARE REPORT FOR  
CONTINUATION WITHIN  
STRATHMORE ROAD

OTHMAR ST

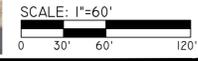
WANDA ST

STRATHMORE RD

KINGSTOWN ROAD

NARRAGANSETT AVE

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2			

DESIGN BY: J.A.D.

JANUARY 2025 INDIAN MONUMENT PARK ROUTE  
**WILLIAM C. O'NEIL BIKE PATH - 4B**  
 VARIOUS PROPERTIES - STATE & TOWN OWNED  
 NARRAGANSETT, RHODE ISLAND  
 PREPARED FOR:  
**TOWN OF NARRAGANSETT**  
 25 FIFTH AVENUE, NARRAGANSETT, RHODE ISLAND

## 6.0 Strathmore Road Bike Route – CRMC Follow Up

DiPrete Engineering further followed up with Coastal Resources Management Council (CRMC) with the Strathmore Road Bike Route. We corresponded with CRMC regarding the portion of the Strathmore Road Bike Route that is found within the vicinity of the delineated wetland and buffer of Sprague Park.

As part of the site's wetland review and coordination with CRMC, we considered the opportunity to go over the wetland area with a wooden structure. This would be similar to what was discussed in the Canonchet Farm wetland areas near the South County Museum (see Section 11.0). This design feature was reviewed to uniquely connect the Bike route through the existing park. For context, the above picture in Section 4.0 Wetland Assessment, is approximately the viewpoint in this area.

Ultimately, it is the opinion of CRMC's initial review of the portion of the bike path within the vicinity of the wetland areas Sprague Park, that the route should extend between the point of the existing wetland area and along the sidewalk of Kingstown Road. The intent would to minimize impacts to the environmental area. Furthermore, any work within the vicinity of the wetland and in CRMC's jurisdiction would require permitting review by the agency. See Section 9.0, Permitting Approach.



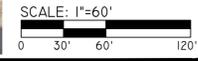
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2	05/25/2025	BIKE PATH EXHIBIT	K.P.R.	J.A.D.

JANUARY 2025  
 INDIAN MONUMENT PARK ALTERNATIVE ROUTE  
**WILLIAM C. O'NEIL BIKE PATH - 4B**  
 VARIOUS PROPERTIES - STATE & TOWN OWNED  
 NARRAGANSETT, RHODE ISLAND  
 PREPARED FOR:  
**TOWN OF NARRAGANSETT**  
 25 FIFTH AVENUE, NARRAGANSETT, RHODE ISLAND

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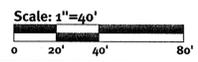
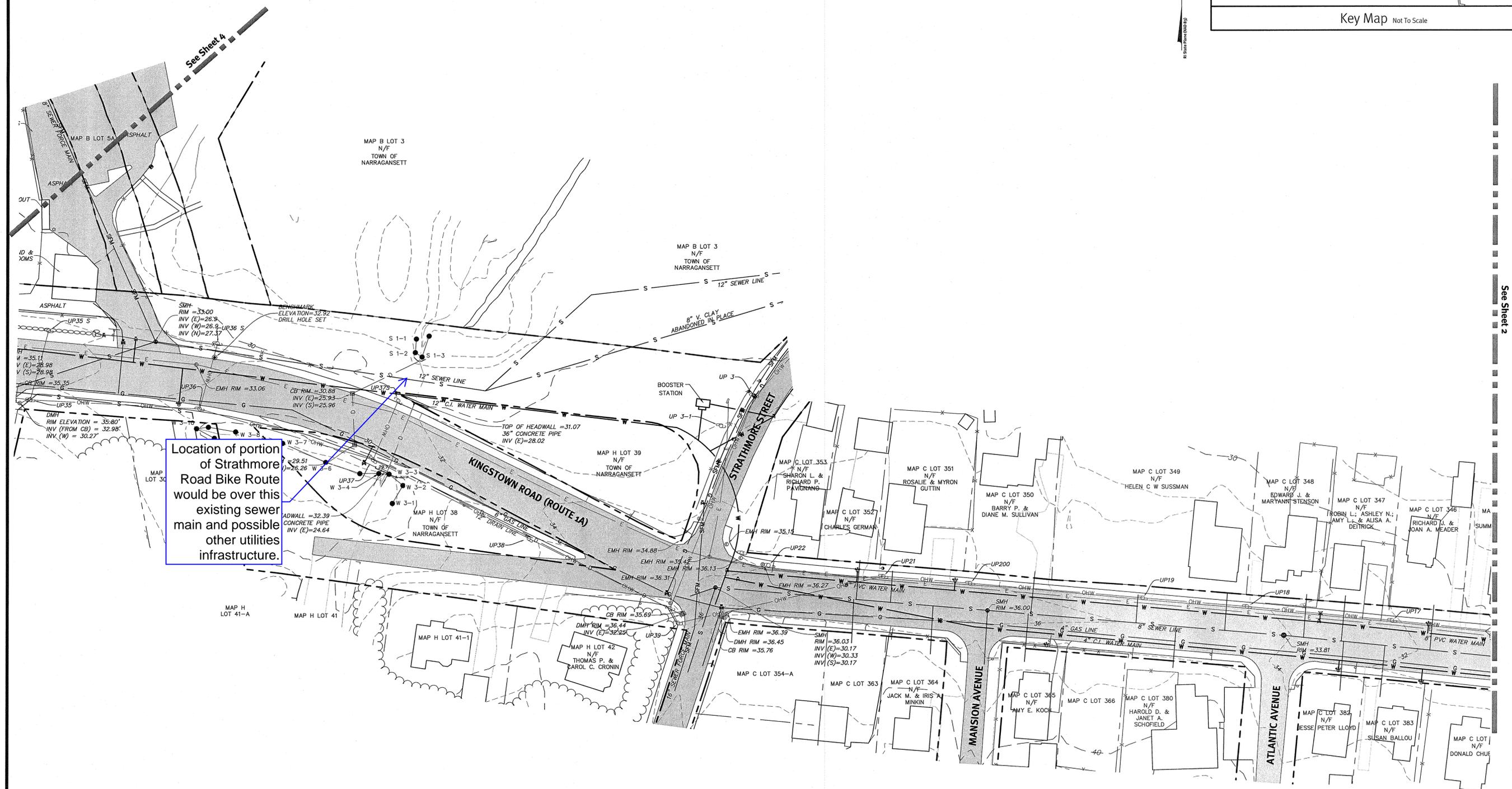
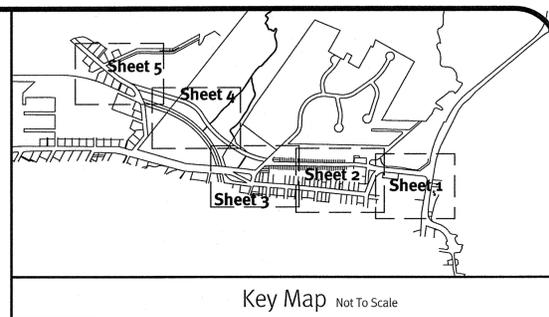




## 7.0 Strathmore Road Bike – Utility Reference of Record

We have obtained previously completed plans of record of a portion of the Sprague Park area. Specifically, the location of where the bike route would extend between the point of the existing wetland area and along the sidewalk of Kingstown Road. The provided plans show existing utilities and other infrastructure within the Sprague Park and within vicinity of this portion of the Strathmore Road Bike Route.

It is our opinion that it may be possible to provide an improved bike route through this area between the edge of the flagged wetland and the edge of the public right of way but would recommend further discussion with the Town of Narraganset departments.



No.	Date	Description	Drawn By: E.L.T.
1	04-16-2012	Final Conditions Plan	
2	03-23-2012	Existing Conditions Plan	



## 8.0 Strathmore Road Bike Route – Pare Corporation Traffic Assessment

Pare Corporation has provided a new Feasibility Assessment of the Strathmore Road Bike Route. In the accompanying report, Pare describes alternatives, viable implementations, costs, and recommendations for this bike route extension.

January 21, 2025

Ms. Molly R. Titus, P.E.  
DiPrete Engineering  
90 Broadway  
Newport, RI 02840

Re: **Traffic Feasibility Assessment**  
**William C. O'Neill Bike Path, Phase 4B**  
**Narragansett, Rhode Island**  
Pare Project No.: 23138.00

Dear Ms. Titus:

Pare Corporation (Pare) has completed a feasibility assessment of a potential additional pathway that the Town of Narragansett may choose to utilize to connect from the end of the existing O'Neill Bike Path to Narragansett Town Beach as part of its Phase 4B expansion. This potential route would be partially on-road and off-road, running from the end of the existing path along the existing vehicular access path along the Parks Department building, running between the existing trailhead and the Narragansett Indian Monument Park. From there it would run around Narragansett Indian Monument Park – wrapping around the wetlands, then continues on-street along Strathmore Road to the South County Museum. The path would then follow the South County Museum driveway (Anne Hoxsie Lane) out to Boston Neck Road, where users would cross Boston Neck Road at an existing crosswalk to the South Pavilion of the beach.

The following assessment details existing traffic conditions at and in the vicinity of the proposed route. In addition, Pare has also analyzed alternatives for the roadway cross sections for on-street sections including signage and striping requirements. Lastly, a preliminary cost estimate is also included for this alternative.

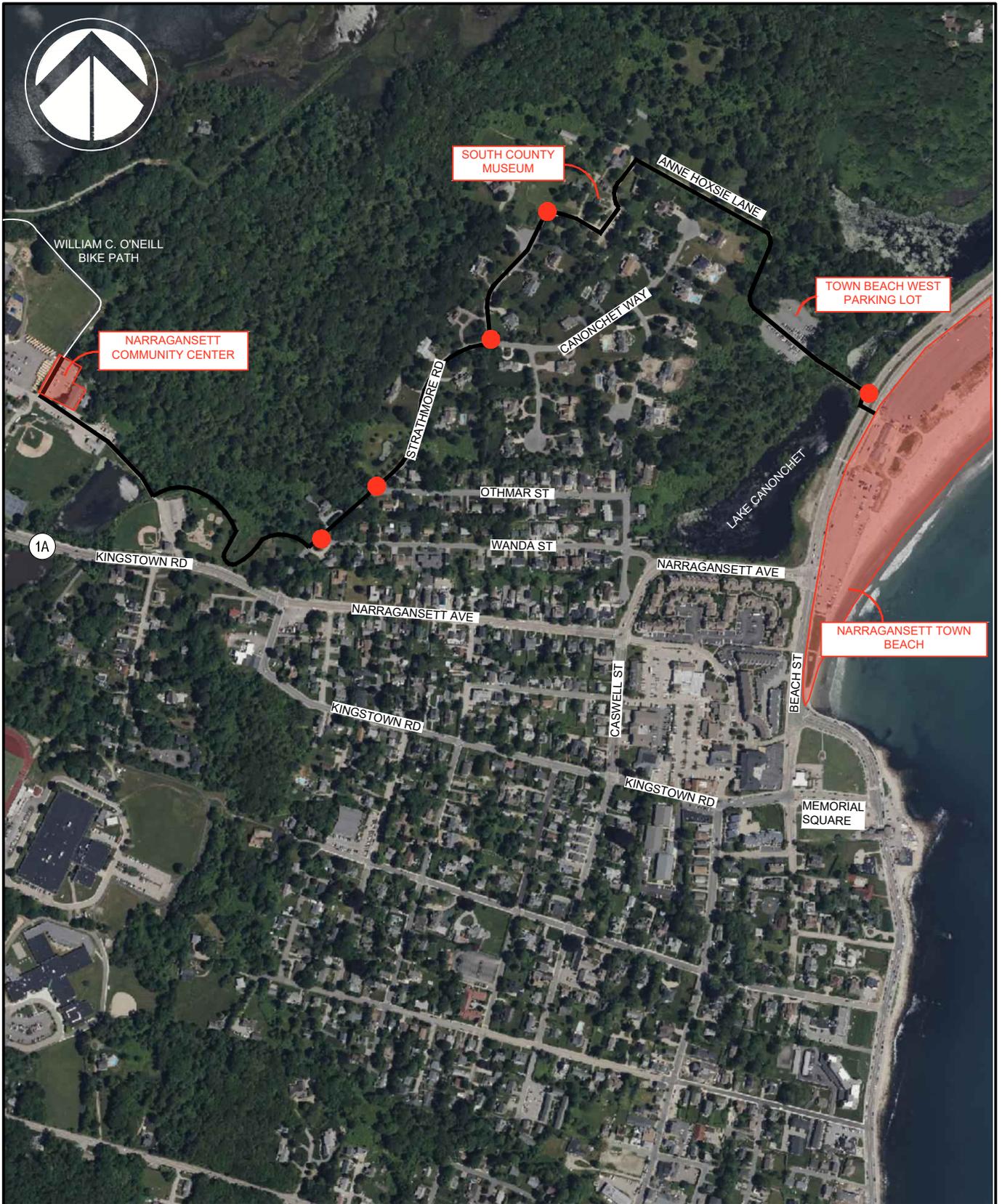
A study area map, showing the location of the area as well as the end of the existing O'Neill Bike Path and the proposed additional path is shown in **Figure 1**.

## EXISTING CONDITIONS

### *Data Collection*

A field review of the study area was conducted with geometric measurements and other field observations recorded along the roadways on September 30, 2024. Information obtained from this observation and previous observations completed by Pare previously were used in the understanding of the operations of the study area.

The study area is defined as the significant roadways and intersections that may be impacted by the bike path extensions. Listed below are the roadways and intersections included in the study area.



● = STUDY INTERSECTIONS      — = PROPOSED ADDITIONAL PATH



PROJECT NO. 23138.00      DATE: JANUARY 2025

**FIGURE 1**  
**LOCUS MAP**

WILLIAM C. O'NEILL BIKE PATH  
NARRAGANSETT, RHODE ISLAND

## Study Area Roadways

### *Strathmore Road*

Strathmore Road is a two-way road, classified as a local road that is owned and maintained by the Town of Narragansett. This roadway typically runs in the general southwest/northeast directions throughout the study area. A typical cross-section of this roadway includes a non-delineated 25-foot-wide travel lane for both directions. The entire length of Strathmore Road does not contain any striping, shoulders, or curbs. Land uses along this roadway are primarily residential with a mix of institutional use. The South County Museum is located at the northern end of Strathmore Road. The posted speed limit for this roadway is 25-miles-per-hour.

### *Anne Hoxsie Lane*

Anne Hoxsie Lane connects Strathmore Road and Boston Neck Road and runs through the South County Museum property and the Town Beach West Lot. The road characteristics of Anne Hoxsie Lane vary throughout its length. As it intersects with Strathmore Road and enters the South County Museum grounds, Anne Hoxsie Lane has a paved road that leads to the parking lot. After crossing the parking lot, an unpaved roadway covers the remaining museum grounds leading to the Town Beach West Parking Lot. Similarly, the parking area and the driveway are unpaved. The posted speed limit for this roadway is 15 miles per hour. There are three gates along Anne Hoxsie Lane which are located at the Strathmore Road entrance, between the museum driveway and the parking lot, and the driveway to the parking lot from Boston Neck Road. Figure 2 below shows cross-section images along Anne Hoxsie Lane.

**Figure 2: Anne Hoxsie Lane Cross-Section Images**



Study Area Intersections:

*Strathmore Road at Wanda Street*

The intersection of Strathmore Road at Wanda Street forms an unsignalized three-legged intersection. Strathmore Road makes up the southwestern and northeastern legs, while Wanda Street makes up the eastern leg and is stop-controlled. None of the legs are delineated except for the stop bar on Wanda Street. There are no sidewalks, curbs, or crosswalks present at this intersection. Land uses surrounding Strathmore Road at Wanda Street are exclusively single-family residential.



**Photo 1. Intersection of Strathmore Road at Wanda Street**

*Strathmore Road at Othmar Street*



**Photo 2. Intersection of Strathmore Road at Othmar Street**

Strathmore Road at Othmar Street forms an unsignalized three-legged intersection. This intersection is approximately 350 feet away from the intersection of Strathmore Road with Wanda Street. Similarly, Strathmore Road makes up the southwestern and northeastern legs of this intersection, while Othmar Street makes up the eastern leg. There are two stop-controlled legs at this intersection, the northeastern leg and the eastern leg. None of the legs are delineated beyond the presence of stop bars. There are no sidewalks, curbs, or crosswalks present at this intersection. The land surrounding this intersection is single-family residential.

*Strathmore Road at Canonchet Way*

Strathmore Road at Canonchet Way forms an unsignalized three-legged intersection. Strathmore Road makes up the northern and western legs, while Canonchet Way makes up the eastern leg. The northern leg of this intersection is stop-controlled. A stop bar is the only pavement marking at the intersection. There are no sidewalks, curbs, or crosswalks present at this intersection. Land uses surrounding Strathmore Road at Canonchet Way are predominantly single-family residential with some institutional use. Access to the South County Museum is located at the end of Strathmore Road.



**Photo 3. Intersection of Strathmore Road at Canonchet Way**

*Boston Neck Road at Anne Hoxsie Lane*



**Photo 4. Intersection of Boston Neck Road at Anne Hoxsie Lane**

The intersection of Boston Neck Road at Anne Hoxsie Lane forms a three-legged unsignalized intersection. Boston Neck Road makes up the northern and southern legs, while Anne Hoxsie Lane makes up the western leg. There is a median island at this section of Boston Neck Road, therefore, the western leg can only be accessed by southbound vehicles and exiting vehicles can only take a right-turn to head south. Anne Hoxsie Lane provides access to the Town Beach West Lot and the South County Museum. Crosswalks are present approximately 75 feet and 350 feet south of this intersection to provide safe crossing to other parking lots and the Narragansett Town Beach.

***Path Feasibility and Signage***

The proposed additional route between the end of the existing O'Neill Bike Path to Narragansett Town Beach is partially on-road and partially off-road. The section between the trailhead and the Narragansett Indian Monument Park, along the ballfields and Parks Department building (hereby referred to as the Sprague Park driveway), would remain unchanged from the initial report.

An off-road paved path would be routed behind the Narragansett Indian Monument Park and around the adjacent wetland. A width of at least ten feet is recommended to allow a two-way bike path. It is important to note that environmental permits will be required for the paving of this greenspace.

To better accommodate path users along Strathmore Road, wayfinding signage is recommended. Given the lightly traveled nature of the roadway due to its primarily residential land use, pavement markings are not necessary or recommended.

An access and maintenance easement may be necessary for the path to be routed through the museum property along Anne Hoxie Lane. Paving of this roadway is recommended with a recommended width due to the light vehicular volumes being 20 feet. Wider widths on certain areas of Anne Hoxie Lane might be useful, such as near the museum. Environmental permits may be required for the paving of this roadway. Similar to Strathmore Road, wayfinding signage is also recommended along Anne Hoxie Lane.

The final connection point to the beach is the crossing of Boston Neck Road. For this crossing several studies and alternatives are presented below.

**Speed Study**

On September 30, 2024, a spot speed study was conducted on Boston Neck Road near its intersection with Anne Hoxsie Lane to assess driving speeds along both roadways. Boston Neck Road near this segment has a posted speed limit of 25 miles per hour. A summary of the speed data results is shown in Table 1 below. The most notable metric presented in the table is the 85<sup>th</sup> percentile speed. A complete copy of the speed study data is enclosed.

**Table 1. Speed Study Summary on Boston Neck Road (Route 1A)**

	Posted Speed	Average Speed	True Median (50 <sup>th</sup> Percentile)	85 <sup>th</sup> Percentile	10 MPH Pace	% over Posted
Northbound	25	29	29	34	24 - 33	77
Southbound	25	30	29	34	24 - 33	80

According to the latest editions of the American Association of State Highway and Transportation Officials (AASHTO) publication *A Policy on the Geometric Design of Highways and Streets*, the minimum safe stopping sight distance for speeds of 35 miles per hour is 250 feet. A summary of the sight distance at the crosswalk nearest the Town Beach West Lot driveway/Anne Hoxie Lane can be found in Table 2 below.

**Table 2: Sight Distance Summary**

		Required SSD (ft)	Measured SSD (ft)
Town Beach West Lot driveway / Anne Hoxie Lane Crosswalk	Southbound	250	> 500
	Northbound	250	> 500

SSD = Stopping Sight Distance

As shown above, sight distance to the crosswalk exceeds the minimum sight distance requirements given the vehicle speeds in the area.

**Road Crossing Analysis**

As previously mentioned, the proposed bike path would cross Boston Neck Road at an existing crosswalk near the South Pavilion of the beach after exiting Anne Hoxsie Lane. At the crosswalk, the northbound lane consists of a single 12-foot-wide travel lane, a 12-foot-wide tapered buffer, as well as a six-foot-wide sidewalk. The southbound lane consists of two 12-foot-wide travel lanes, a five-foot-wide shoulder, and a six-foot-wide sidewalk. The two directions are separated by a vegetation median which also acts as a pedestrian refuge island where it intersects with the crosswalk.



**Photo 5. Crosswalk across Boston Neck Road to be used as part of the additional O’Neill Bike Path**

Boston Neck Road at this area is mostly flat with some minor horizontal curvature. Currently, the crosswalk has continental striping along with a pedestrian crossing post-mounted signage at each end, as well as at the pedestrian refuge island.

To better accommodate safe crossing for bikers and pedestrians at Boston Neck Road, different alternatives were reviewed and listed below.

**Alternative 1: Road Diet - Southbound**

Currently, the northbound vehicles have one lane of travel, while the southbound vehicles have two lanes of travel. Due to the anticipated increase in the volume of pedestrians and bicycles that will be utilizing this crosswalk, it is important for increasing driver awareness and reducing vehicle speeds. As the speed study shows, vehicles along this area of Boston Neck Road have an 85<sup>th</sup> percentile speed of 34 miles-per-hour.

For this alternative, a road diet is proposed for the southbound lanes within the road segment between the two crosswalks (approximately 265 feet apart). This roadway geometry would mimic that of the northbound lane, allowing one travel lane for vehicular use. Figures 3 and 4 below provide a graphic of the existing and proposed cross-sections near the crosswalk, respectively. Road diets can be a relatively low-cost alternative as most of the tasks required would consist primarily of the removal and restriping of pavement markings, with additional costs for adding post-mounted signages to warn driver of the changes in roadway geometry ahead.

*Figure 3: Existing Boston Neck Road Cross-Section Looking South*



**Figure 4: Proposed Boston Neck Road Cross-Section Looking South**



**Alternative 2: Use of Rectangular Rapid Flashing Beacon (RRFB) – with or without a road diet**

A pedestrian-actuated Rectangular Rapid Flashing Beacon (or RRFB) is a device that enhances pedestrian conspicuity and increases driver awareness. An RRFB typically consists of rectangular-shaped indications along with an LED which flashes with high frequency when activated.

This alternative proposes the installation of an RRFB at the crosswalk connecting Anne Hossie Lane, across Boston Neck Road, to the South Pavilion of the beach. This device can be activated with a push button or with passive pedestrian detection and remains unlit when not activated. For this scenario, an RRFB would be installed at each end of the crosswalk, as well as on the median.

To further increase pedestrian and bicyclist safety, an RRFB can be installed in conjunction with the road diet as mentioned in Alternative 1. However, it is anticipated that an RRFB alone can help with an increase in pedestrian and bicyclist awareness and reduction of vehicular speeds.

**Alternative 3: Installation of Pedestrian Hybrid Beacon (PHB)**

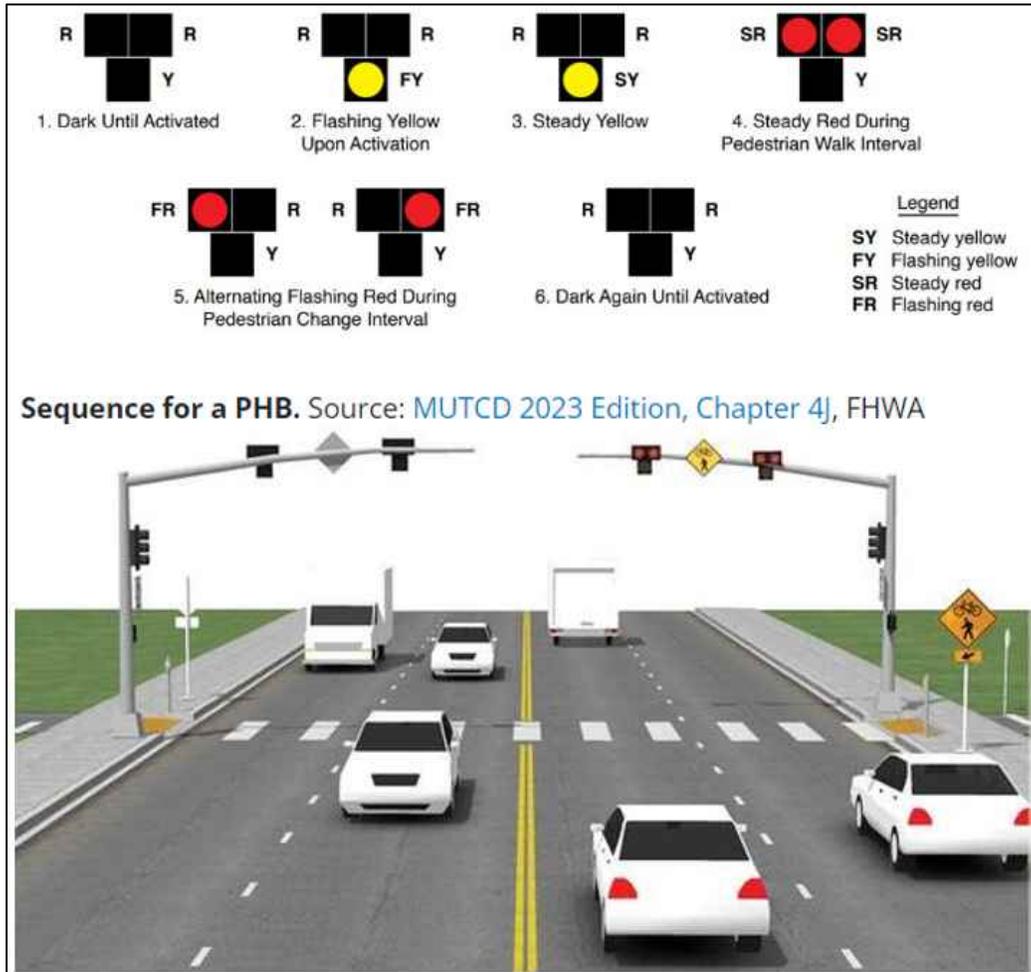
A pedestrian hybrid beacon (or PHB) is another traffic device to help crosswalk users to cross safely. The PHB consists of three heads, two red lenses at the top and a single yellow lens at the bottom. The lenses remain unlit when not activated through a push button actuation. As soon as it is activated, a sequence of flashing and steady indications follows as shown in Figure 6 below. Once its cycle is completed, all the lenses are off and stay unlit signifying vehicles are allowed to proceed.



**Figure 5: Rectangular Rapid Flashing Beacon Benefits**

Similar to Alternative 2, this alternative proposes the installation of a PHB at the crosswalk connecting Anne Hoxsie Lane, across Boston Neck Road, to the South Pavilion of the beach. This device can be activated with a push button and remains unlit when not activated.

**Figure 6: Pedestrian Hybrid Beacon Layout and Function**



**Estimated Costs**

As previously mentioned, it is recommended to add wayfinding signage on Strathmore Road and Anne Hoxsie Way, as well as paving Anne Hoxsie Way from Strathmore Road to Boston Neck Road. The on-road signing/stripping and paving has a combined estimated cost of approximately \$400,000.

In addition to these costs, Pare has also prepared an opinion of probable cost for each of the three alternatives for crossing Boston Neck Road, including signal equipment, signing, and striping on both sides of the crosswalk.

**Table 3: Boston Neck Road Crossing Cost Estimate Summary**

Alternatives	Signing and Striping	Signal Upgrades	Total
<b>Alternative 1: Road Diet Only</b>	\$10,000	\$0	\$10,000
<b>Alternative 2: Installation of RRFB</b>	\$4,000	\$150,000	\$154,000
<b>Alternative 3: Installation of PHB</b>	\$6,000	\$170,000	\$176,000

The road diet listed as Alternative 1 includes the addition of regulatory and warning signs for pedestrian crossing as well as additional pavement markings to stripe the southbound right lane. The striping will be present in between the two crosswalks on Boston Neck Road near the South Pavilion.

The installation of an RRFB includes four RRFBs to be located at each end of the crosswalk and the pedestrian refuge island/median as well as additional regulatory and warning signs for pedestrian crossings.

The installation of a PHB includes two mast arms, four PHB signal heads, a pedestrian push button and signal head at each end of the crosswalk, as well as a cabinet with a controller. Additionally, regulatory and warnings signs are also included for the crossing, and pavement markings for vehicle stop bars.

**Conclusions and Recommendations**

Pare has completed the feasibility of an additional proposed O’Neill Bike Path route connecting the end of the existing path to Narragansett Town Beach. The route runs off-road behind the Narragansett Indian Monument Park and around the adjacent wetland. The path then continues on-street following Strathmore Road to Anne Hoxsie Lane, where it must go through the Narragansett Town Beach West parking lot. At the end of Anne Hoxsie Lane, the path then crosses Boston Neck Road to reach the Town Beach.

Based on the observations made, Pare believes this path is viable given the implementation of the following recommendations for the on-street sections of the path:

- Install a fully paved path between the existing trailhead and around the Narragansett Indian Monument Park to Strathmore Road.
- Along Strathmore Road, add wayfinding signage to direct path users.

Ms. Molly Titus, P.E.

(12)

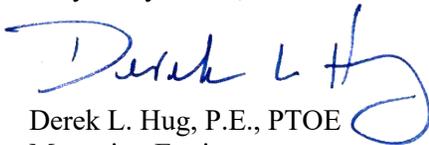
January 21, 2025

- Pave Anne Hoxie Way. Recommended width given the light vehicular volume is 20 feet but may be wider in certain areas were deemed useful, such as near the museum.
  - An easement may be necessary for the path to be routed through the museum property.
  - Environmental permits may be required for the paving of Anne Hoxie Way.
- Path users should be directed to cross Boston Neck Road at the existing crosswalk near the South Pavilion at the Town Beach. Pare has identified three viable options for improving the safety of this crossing. These include:
  - Reduce the number of southbound travel lanes at the crossing from two to one.
  - Install rectangular rapid flashing beacons at the crossing.
  - Install a pedestrian hybrid beacon.

Note that the reduction of southbound travel lanes can be completed on their own or in combination with the installation of either RRFBs or a PHB. It should also be noted that any changes proposed within the right-of-way along Boston Neck Road will require approval from the Rhode Island Department of Transportation through a Physical Alteration Permit.

If you have any questions, please feel free to give me a call.

Very Truly Yours,

A handwritten signature in blue ink that reads 'Derek L. Hug'.

Derek L. Hug, P.E., PTOE  
Managing Engineer

DLH/BSO/klS

Attachment:  
Speed Study Summary

Z:\JOBS\23 Jobs\23138.00 Narragansett-O'Neill Bike Path-RI\REPORTS\January 2025\Narragansett Bike Path\_Assessment\_.docx

# Pare Corporation

8 Blackstone Valley Place  
Lincoln, RI 02865

[www.parecorp.com](http://www.parecorp.com)

Roadway: Boston Neck Road  
City/State: Narragansett, RI  
Weather: 65 and Cloudy  
Taken By: BSO

File Name : Boston Neck Road Speed Study  
Site Code : 23138.00  
Start Date : 9/30/2024  
Page No : 1

#	Northbound	Southbound
1	33	34
2	29	39
3	35	34
4	28	41
5	31	28
6	31	37
7	24	28
8	36	33
9	29	25
10	32	27
11	32	24
12	34	32
13	29	27
14	26	26
15	35	28
16	24	26
17	26	23
18	32	24
19	28	21
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21	27	33
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57	26	27
58	41	29
59	34	30
60	29	25
61	38	31
62	35	32
63	29	29
64	33	20
65	30	23

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#	Northbound	Southbound
66	27	36
67	24	28
68	28	35
69	25	31
70	21	37
71	32	29
72	30	33
73	28	35
74	25	39
75	30	31
76	27	24
77	30	34
78	21	28
79	25	34
80	21	30
81	25	36
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87	35	27
88	26	33
89	34	34
90	25	29
91	30	29
92	34	35
93	28	28
94	33	35
95	29	36
96	26	29
97	27	33
98	23	27
99	38	32
100	34	27
101		

Class	Vehicle Count	85 Percentile	10 MPH Pace Speed	Number in Pace	Percent in Pace	Number of Vehicles Over 25 MPH	Percent of Vehicles Over 25 MPH	Average Speed	Number of Vehicles Over 25 MPH	Percent of Vehicles Over 25 MPH
Northbound	100	34	24 - 33	78	78	77	77	29	77	77
Southbound	100	34	24 - 33	72	72	80	80	30	80	80
Summary	200	34	24 - 33	150	75	157	78	29	157	78



## 9.0 Permitting Approach

Based on the Strathmore Road Bike Route, we have developed the following list of permits that may be sought:

- Coastal Resources Management Council Assent
  - For work within the vicinity of a wetland
- Rhode Island Department of Transportation
  - For possible work within the RIDOT State Right of Way. Limits of Survey to be further confirmed.
- Town of Narragansett
  - Town Council Review
  - Planning, Engineering and Utility Department Reviews

These above permits, included but not limited, would require additional engineering, surveying, and consulting services to support applications to review by State and Local agencies.

## 10.0 Strathmore Road Bike Route – Conclusion

DiPrete Engineering is available to discuss the proposed William C. O'Neil Bike Path 4B - Strathmore Road Bike Route extension. In our initial assessment, along with our subconsultants we have reviewed the extension of the bike path through Sprague Park and existing Town of Narragansett's paved roadways. The project information compiled to date provides insight into the background information of the area and the site improvements that may take place. It is our recommendation to have all the stakeholders review the project data and information for further coordination.

## 11.0 May 2024 Summary

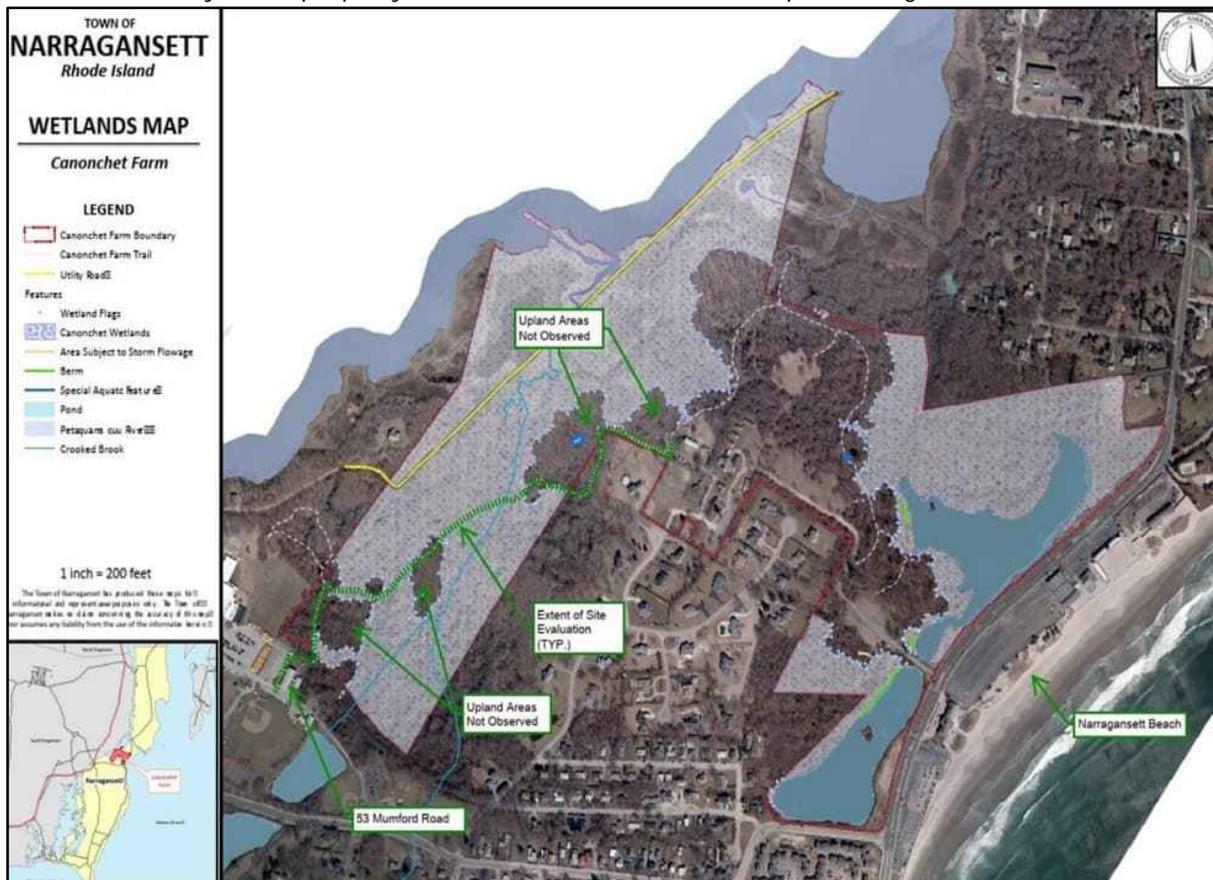
### Areas of Interest

This section of the Due Diligence, summaries the work and analysis completed prior to the May 2024 Town Council Meeting. The DiPrete Team reviewed areas within close proximity to the Narragansett Town Beach for the proposed extension of the William C. O’Neil Bike Path. This bike path extension was considered to extend from the existing 4A Bike Route, through existing off street, and on steep bike route options that would end at the Narragansett Town Beach West Parking Lot.

### Canonchet Farm Trail & South County Museum (BETA Group, Inc)

The Canonchet Farm site is approximately 139 acres and is located on the Town of Narragansett’s Assessor’s Plat B Lot 1-A. The site abuts the Narragansett Community Center has access, has existing trails, and includes the South County Museum.

BETA reviewed plans of record at the South County Museum for historical data regarding the existing trails and history of the property. See Canonchet’s Farm Trail Map following this section.



Town of Narragansett Wetlands Map

**Wetlands GIS Review**BETA performed a desktop review of the Wetlands associated with the Canonchet Farm lot for the presence of wetlands via the Town of Narragansett and RIDEM Environmental Resources Database. BETA identified upland areas to investigate and onsite areas for an off-road route.

## Site Investigation

Initial existing conditions evaluation of the Canonchet Farm property was conducted by BETA on October 6, 2022. The site walk found a 6- to 8-foot-wide existing compacted dirt trail surrounded by densely vegetated forested freshwater wetlands. Signage indicating the presence of vernal pools was also found along the trail. A Freshwater Wetlands permit would be required through RIDEM for this project. Full details of the findings can be found in the memo dated November 1, 2022, by BETA Group, Inc. called "William C. O'Neill Bike Path – Phase 4B Existing Conditions & Initial Permitting Evaluation Narragansett, RI"



Existing Wooden Canonchet Trail

### Coastal Resources Management Council Permitting Option

BETA & DiPrete contacted and reviewed with CRMC agency the proposed offsite path. BETA reviewed their findings for the existing Canonchet Farm Pathway. CRMC informed the team, that an improvement to the path could be possible be considered under their 'walkover program' if no other alternative were viable.



Example of walkover bridge within the Canonchet Farm Trail



12.0 Canonchet Farm – Geology and Historic Trail Features Plan  
(Plan by others. Available via online resources)

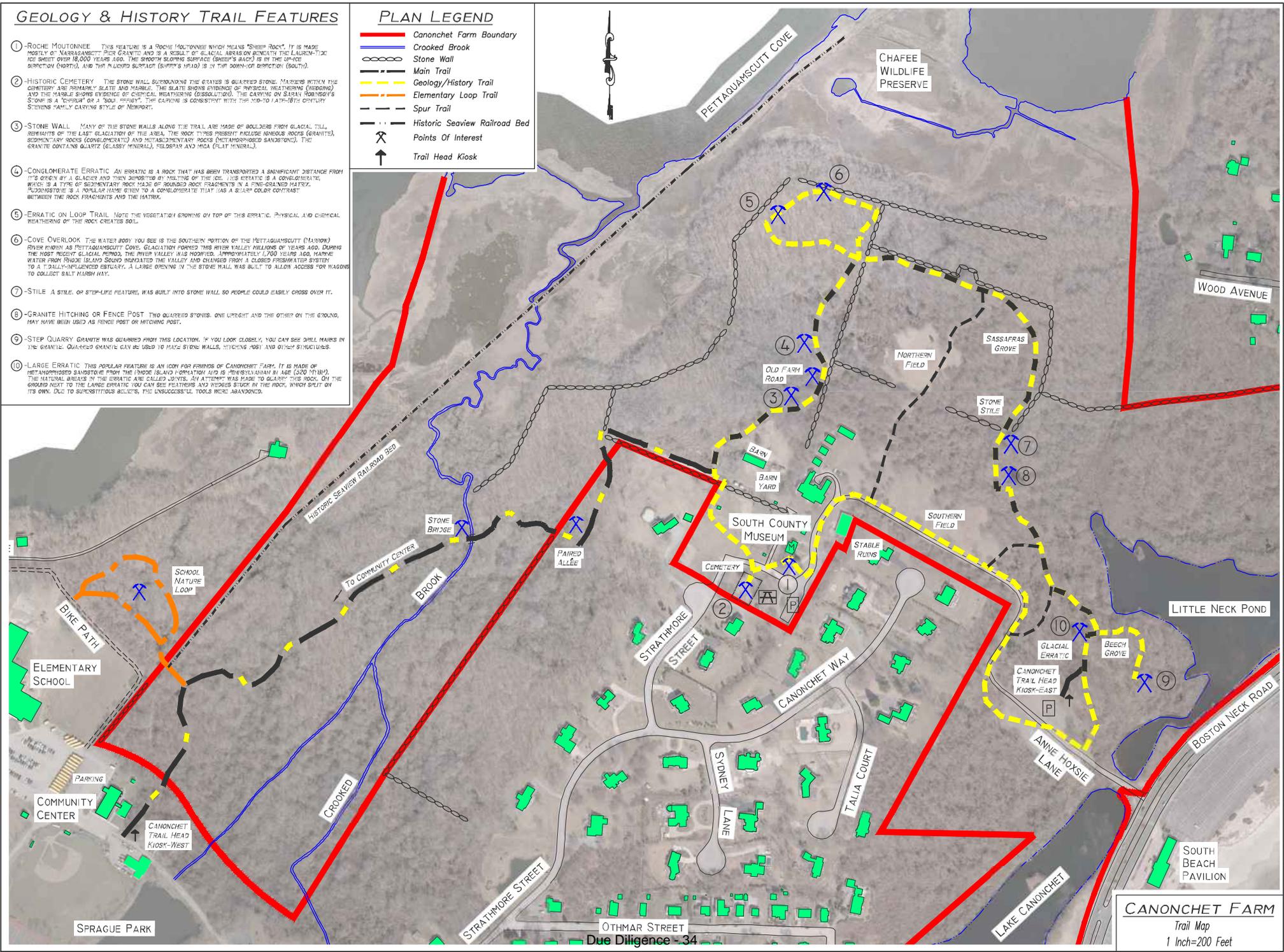
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# GEOLOGY & HISTORY TRAIL FEATURES

- 1 -ROCHE MOUTONNEE. THIS FEATURE IS A ROCHE MOUTONNEE WHICH MEANS "SHEEP ROCK". IT IS MADE MOSTLY OF VARISCIAN/ETNA GRANITE AND IS A RESULT OF GLACIAL ABRASION ON BENEATH THE LAURONTIC ICE SHEET OVER 18,000 YEARS AGO. THE SMOOTH SLOPING SURFACE (SHEEP'S BACK) IS IN THE NORTH DIRECTION (NORTH), AND THE PLUMPED SURFACE (SHEEP'S HEAD) IS IN THE DOWN-DIRECTION (SOUTH).
- 2 -HISTORIC CEMETERY. THE STONE WALL SURROUNDING THE GRAVES IS QUARRIED STONE. MARBLES WITHIN THE CEMETERY ARE PRIMARILY SLATE AND MARBLE. THE SLATE SHOWS EVIDENCE OF PHYSICAL WEATHERING (WEEDING) AND THE MARBLE SHOWS EVIDENCE OF CHEMICAL WEATHERING (DISSOLUTION). THE CARVING ON SARAH ROBINSON'S STONE IS A "COPPER" OR "SOLD" DESIGN. THE CARVING IS CONSISTENT WITH THE MID-TO LATE-18TH CENTURY STEVENS FAMILY CARVING STYLE OF MEMPHIS.
- 3 -STONE WALL. MANY OF THE STONE WALLS ALONG THE TRAIL ARE MADE OF BOLLERS FROM GLACIAL TILL, REMAINTS OF THE LAST GLACIATION OF THIS AREA. THE ROCK TYPES PRESENTLY INCLUDE ANEUSOUS ROCKS (GRANITE), SEDIMENTARY ROCKS (CONGLOMERATE) AND METASEDIMENTARY ROCKS (METAMORPHOSSED SANDSTONE). THE GRANITE CONTAINS QUARTZ (GLASSY MINERAL), FELDSPAR AND MICA (FLAT MINERAL).
- 4 -CONGLOMERATE ERRATIC. AN ERRATIC IS A ROCK THAT HAS BEEN TRANSPORTED A SIGNIFICANT DISTANCE FROM ITS ORIGIN BY A GLACIER AND THEN DEPOSITED BY MELTING OF THE ICE. THIS ERRATIC IS A CONGLOMERATE, WHICH IS A TYPE OF SEDIMENTARY ROCK MADE OF ROUNDED ROCK FRAGMENTS IN A FINE-GRAINED MATRIX. CONGLOMERATES IS A WORD OF ROMAN ORIGIN TO A CONGLOMERATE THAT HAS A SLIGHT COLOR CONTRAST BETWEEN THE ROCK FRAGMENTS AND THE MATRIX.
- 5 -ERRATIC ON LOOP TRAIL. NOTE THE VEGETATION GROWING ON TOP OF THIS ERRATIC. PHYSICAL AND CHEMICAL WEATHERING OF THE ROCK CREATES SOIL.
- 6 -COVE OVERLOOK. THE WATER BODY YOU SEE IS THE SOUTHERN PORTION OF THE PETTAQUANSUTT (MARRON) RIVER IN WHAT IS PETTAQUANSUTT COVE. GLACIATION FORMED THIS RIVER VALLEY MILLIONS OF YEARS AGO. DURING THE MOST RECENT GLACIAL PERIOD, THE RIVER VALLEY WAS HOVED. APPROXIMATELY 1,700 YEARS AGO, MARINE WATER FROM RHODE ISLAND SOUND INUNDATED THE VALLEY AND CHANGED FROM A CLOSED FRESHWATER SYSTEM TO A TIDALLY-INFLUENCED ESTUARY. A LARGE OPENING IN THE STONE WALL WAS BUILT TO ALLOW ACCESS FOR WAGONS TO COLLECT SILT MARSH HAY.
- 7 -STILE. A STILE, OR STEP-LIKE FEATURE, WAS BUILT INTO STONE WALL SO PEOPLE COULD EASILY CROSS OVER IT.
- 8 -GRANITE HITCHING OR FENCE POST. TWO QUARRIED STONES, ONE UPRIGHT AND THE OTHER ON THE GROUND, MAY HAVE BEEN USED AS FENCE POST OR HITCHING POST.
- 9 -STEP QUARRY. GRANITE WAS QUARRIED FROM THIS LOCATION. IF YOU LOOK CLOSELY, YOU CAN SEE DRILL MARKS IN THE GRANITE. QUARRIED GRANITE CAN BE USED TO MAKE STONE WALLS, HITCHING POSTS AND OTHER STRUCTURES.
- 10 -LARGE ERRATIC. THIS REGULAR FEATURE IS AN ICON FOR FRIENDS OF CANONCHET FARM. IT IS MADE OF METAMORPHOSSED SANDSTONE FROM THE RHODE ISLAND FORMATION AND IS PENNSYLVANIAN IN AGE (320 MYBP). THE NATURAL BREAKS IN THE ERRATIC ARE CALLED JOINTS. AN ATTEMPT WAS MADE TO QUARRY THIS ROCK. ON THE GROUND NEXT TO THE LARGE ERRATIC YOU CAN SEE PESTERS AND HORSES STUCK IN THE ROCK, WHICH BROKE ON ITS OWN. DUE TO SUPERSTITIOUS BELIEFS, THE UNSUCCESSFUL TOOLS WERE ABANDONED.

# PLAN LEGEND

- Canonchet Farm Boundary
- Crooked Brook
- Stone Wall
- Main Trail
- Geology/History Trail
- Elementary Loop Trail
- Spur Trail
- Historic Seaview Railroad Bed
- ✕ Points Of Interest
- ↑ Trail Head Kiosk



**CANONCHET FARM**  
 Trail Map  
 1 Inch=200 Feet

CADD File: Y:\EMG User\Engineering\Drp\Map\Canonchet Farm Trail Map



13.0 BETA, Inc Supplementary Off Street – Path 4B Options  
(Plan by others. Available via online resources)

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Date: November 1, 2022 Job No.: 22.10634.00

To: Randall L. Collins, Jr., RLA, ASLA

Cc: Emily Slotnick, AICP, CFM  
Laura Krause

From: Jonathan Niro

**Subject: William C. O’Neill Bike Path – Phase 4B  
Existing Conditions & Initial Permitting Evaluation  
Narragansett, RI**

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The purpose of this memorandum is to document BETA’s initial existing conditions evaluation conducted at the Canonchet Farm property (the Site) directly north of the Narragansett Community Senior Center at 53 Mumford Road in Narragansett, Rhode Island. This evaluation was conducted as part of due diligence to support the planning stages of the proposed Phase 4B segment of the William C. O’Neill Bike Path (WOBP). Specifically, this evaluation was conducted to determine the feasibility of routing the WOBP through a wooded parcel (the Project).

## BACKGROUND

The Town of Narragansett is proposing to complete the WOBP through the construction of the final segment, Phase 4B, which will begin at the current trail terminus at 53 Mumford Road and terminate at Narragansett Beach. The Project is currently in the initial planning and conceptual design stage, as the Project team reviews the feasibility of on- and off-road bike path alignments.

BETA Group, Inc. (BETA) conducted an existing conditions evaluation along an existing trail at Canonchet Farm on October 6, 2022, with a focus on potential routing of the WOBP and an analysis of environmental constraints related to Freshwater Wetlands pursuant to the Rhode Island Freshwater Wetlands Act (R.I.G.L. s.2-1-20 – the Act) and its recently revised regulations (250-RICR-150-15-3 – the Act Regulations). The following individuals were present for this evaluation:

- Randall L. Collins, Jr., RLA, ASLA (BETA)
- Jonathan Niro (BETA)
- Susan Cicilline-Buonano (Narragansett)

Although the Site walk was focused on documenting existing conditions and any associated design constraints, BETA also reviewed preliminary permitting considerations of proposing an off-road path alignment. The findings of this initial Site evaluation may be subject to change if/when a formal Freshwater Wetlands delineation is performed in accordance with Section 3.21.1 of the Act Regulations.

## EXISTING CONDITIONS & INITIAL PERMITTING EVALUATION

BETA conducted an evaluation of existing conditions as they relate to Freshwater Wetlands per the definition at Section 3.4A.32. of the Act Regulations by conducting the above-referenced Site evaluation, as well as reviewing publicly available data. BETA offers the following observations:

1. The Project would commence along the existing WOBP at its 90-degree turn directly north of 53 Mumford Road and traverse down a steep slope into the Site. The portion of the Site directly adjacent to the WOBP consists of maintained uplands and stormwater best management practices (BMPs) including a stormwater basin.

2. BETA traversed an existing trail at the Site, which consists of an approximately six (6)- to eight (8)-foot-wide compacted dirt trail with an approximately one (1)-inch layer of crushed stone in areas (Photo 1).
3. Upon accessing this trail at the toe of the aforementioned slope, BETA observed a densely vegetated forested Freshwater Wetland with hydrophytic species including red maple (*Acer rubrum*), roundleaf greenbrier (*Smilax rotundifolia*), cinnamon fern (*Osmunda cinnamomea*), spicebush (*Lindera benzoin*), and sweet pepperbush (*Clethra alnifolia*). Hydric soils characterized by thick organic horizons and observations of depletions and redoximorphic concentrations were present within these forested areas. Based on these field observations, these areas are classified as Deciduous Swamp (Red Maple Swamp) and are afforded protection under the Act as well as the federal Clean Water Act. The Deciduous Swamp appears to occupy a large portion of the Site.
4. Interpretive signage indicating the presence of Vernal Pools was observed along the trail (Photo 2).
5. During the site visit, a BETA Wetland Scientist also assessed the existing trail condition and presence of wetland indicators (Attachment B). The trail is generally at grade within the Freshwater Wetland and is primarily devoid of vegetation due to frequent foot traffic. However, hydric soil indicators including depleted matrices and redoximorphic concentrations were observed within 12 inches of the surface (Photo 3).
6. The entirety of the Site is relatively flat with little to no topographic relief; however, localized depressions have been improved with makeshift wooden footbridges, generally consisting of boards placed on timber sleepers (Photo 4). Channelized flow was observed under these footbridges in multiple locations (Photo 5) and indicating the presence of potential intermittent streams.
7. Given the presence of wetland indicator species directly adjacent to the trail, as well as the presence of hydric soils and indicators of hydrology within the trail, the trail itself would likely qualify as a Freshwater Wetland pursuant to Section 3.21.1.C. of the Act Regulations<sup>1</sup>, as there are no areas where indicators of hydrology cease to be present.
8. BETA also assessed potential areas of uplands at the Site as depicted on a GIS exhibit provided by the Town (Attachment B). No upland areas were observed along the existing trail within the southern portion of the Site. The mapped upland area at the northern extent of the Site exhibited a marginal vegetative community with many species, such as roundleaf greenbrier, having a FAC indicator status. Redoximorphic concentrations were also observed within 12 inches of the surface. Given the nature of the discrete transition in vegetation and potential presence of hydric soils, this area would likely be considered Freshwater Wetland per Section 3.21.1.C. of the Act Regulations.
9. According to Rhode Island Department of Environmental Management (RIDEM) data<sup>2</sup>, the Site is located with River Protection Region 2. Therefore, in accordance with Section 3.23H. of the Act Regulations, wetlands at the Site are afforded a 75-foot Buffer Zone.

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<sup>1</sup> Section 3.21.1.C.: Where no distinct edge is apparent based upon examination of vegetation alone (e.g., the plant community is transitional in nature and dominated by species having an indicator status of FACW, FAC or FACU), other hydrologic indicators must be considered before determining the location of the landward edge of vegetated freshwater wetlands. Where such indicators are present, the FACW, FAC, or FACU plant species are considered hydrophytes/hydrophytic vegetation; however, the landward edge of vegetated wetland in such transitional areas is located where other hydrologic indicators are no longer present.

<sup>2</sup> [RIDEM Environmental Resource Map \(arcgis.com\)](https://arcgis.com)

Section 3.4 of the Act Regulations defines a Buffer as the undeveloped/vegetated portion of the Buffer Zone that is to be retained in its natural state. Therefore, regardless of the presence of any potential upland “islands” at the Site, a majority of the Buffer Zone at the Site is protected as Buffer.

10. The existing trail crosses Crooked Brook, a perennial<sup>3</sup> tributary to the Pettaquamscutt River, via a wooden footbridge installed over an old stone culvert (Photo 6).
11. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) Nos. 44009C0203K, 44009C0211J, 44009C0212J, and 44009C0204K (Attachment C), the majority of the Site is within a Zone AE Flood Hazard with a Base Flood Elevation (BFE) of 14 feet (NAVD88) associated with the Pettaquamscutt River and Crooked Brook. Floodplains are afforded protection under the Act; however, a majority of the floodplain at the Site overlaps with the wetland complex.
12. Several large-diameter trees were observed along the existing trail at the northern extent of the Site, including a large horse chestnut (*Aesculus hippocastanum*) (Photo 7).

### SUMMARY & RECOMMENDATIONS

BETA has completed an initial field and desktop evaluation of the Site as it relates to Freshwater Wetlands and design considerations. The following recommendations are offered:

1. Delineate boundaries of wetlands that constrain the Project and complete a Freshwater Wetland Edge Verification with RIDEM along the Project, with specific focus on determining whether the existing trail’s is defined as a Freshwater Wetland.
2. Complete further studies of the feasibility of an on-road segment. Should development of the off-road alignment be pursued, a detailed Alternatives Analysis will be required to support permitting efforts. Given the extent of Freshwater Wetlands and Buffers at the Site, it is anticipated that a Variance pursuant to Section 3.7.3 of the Act Regulations will be required for the Project.
3. Once further information is gathered to support a determination of the extent of Freshwater Wetlands and the preparation of a preliminary Alternatives Analysis, the design team should schedule a meeting with the RIDEM Office of Customer and Technical Assistance (OCTA) to review potential permitting pathways. Given the existing conditions at the Site, it is anticipated that RIDEM will require the reuse of the existing trail, coupled with boardwalks, to minimize impacts to wetlands and floodplain and prevent random, unnecessary, or undesirable alterations<sup>4</sup> to Freshwater Wetlands.

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<sup>3</sup> Crooked Brook is mapped as perennial on USGS topographic maps.

<sup>4</sup> Section 3.4A.56. of the Act Regulations: a. A random alteration is any alteration to freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage for which the applicant does not specify in the application the entire project proposed or contemplated by the applicant or in which the purpose of the alteration cannot be determined.

b. An alteration is unnecessary unless it is essential, vital, or indispensable to the project and cannot be avoided by exhausting all other non-wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage alternatives.

c. An undesirable alteration is any alteration to freshwater wetlands, buffers, floodplains, areas subject to flooding or areas subject to storm flowage that individually or cumulatively may reduce or degrade any functions and values as set forth herein, which does not avoid and minimize to the maximum extent possible any damaging effects on these functions and values, or does not satisfy the review criteria in § 3.7.2 of this Part.

November 1, 2022

Page 4 of 4

Should you have any further questions, please do not hesitate to reach out to us at our office.

Attachments:

Attachment A – Photographic Documentation

Attachment B – BETA Markup of Town GIS Exhibit

Attachment C – FEMA FIRMette



Photo 1



Typical view of the existing trail at the Site—facing northeast.

Photo 2



View of interpretive signage along the existing trail—facing south.

**PHOTOGRAPHIC DOCUMENTATION**  
William C. O'Neill Bike Path - Phase 4B Site Walk  
Narragansett, Rhode Island  
Photographs Documented October 6, 2022

**Photo 3**



View of hydric soils observed within the existing trail.

**Photo 4**



Typical view of makeshift wooden bridges along the trail—facing northeast.

**PHOTOGRAPHIC DOCUMENTATION**  
William C. O’Neill Bike Path - Phase 4B Site Walk  
Narragansett, Rhode Island  
Photographs Documented October 6, 2022

**Photo 5**



View of channelized flow under a footbridge.

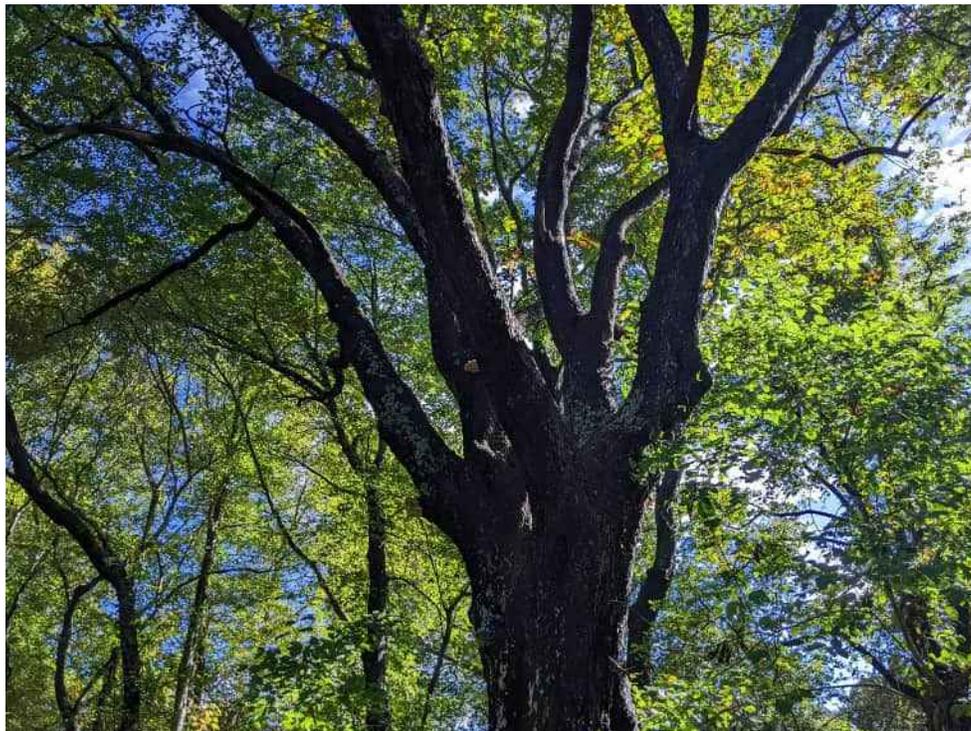
**Photo 6**



View of the stone culvert and footbridge over Crooked Brook.

**PHOTOGRAPHIC DOCUMENTATION**  
William C. O'Neill Bike Path - Phase 4B Site Walk  
Narragansett, Rhode Island  
Photographs Documented October 6, 2022

**Photo 7**



View of a large horse chestnut (*Aesculus hippocastanum*) at the northern extent of the Site—facing north-east.

**PHOTOGRAPHIC DOCUMENTATION**  
William C. O'Neill Bike Path - Phase 4B Site Walk  
Narragansett, Rhode Island  
Photographs Documented October 6, 2022

TOWN OF  
**NARRAGANSETT**  
*Rhode Island*

**WETLANDS MAP**

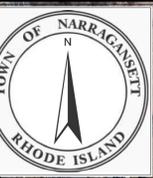
**Canonchet Farm**

**LEGEND**

-  Canonchet Farm Boundary
-  Canonchet Farm Trail
-  Utility Road
- Features**
-  Wetland Flags
-  Canonchet Wetlands
-  Area Subject to Storm Flowage
-  Berm
-  Special Aquatic Feature
-  Pond
-  Pettaquamscutt River
-  Crooked Brook

1 inch = 200 feet

The Town of Narragansett has produced these maps for informational and representative purposes only. The Town of Narragansett makes no claim concerning the accuracy of this map nor assumes any liability from the use of the information herein.



# National Flood Hazard Layer FIRMMette



71°28'16"W 41°26'28"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/27/2022 at 12:26 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

**PLAN LEGEND**

- - - - - EXISTING CANONCHET FARM TRAIL
- · - · - EXISTING CANONCHET FARM GEOLOGY / HISTORY TRAIL
- - - - - EXISTING ELEMENTARY LOOP TRAIL
- - - - - EXISTING CANONCHET FARM SPUR TRAIL
- · · · · PATH 4B - NEW WALKOVER STRUCTURE
- · · · · PATH 4B - STRIPING EXISTING ASPHALT
- · - · - PATH 4B - NEW ASPHALT MULTI-USE PATH
- · · · · PATH 4B - NEW MULTI-USE IN PARKING LOT

**ESTIMATE OF PROBABLE CONSTRUCTION COST (JUNE 2024)**

- · · · · PATH 4B - NEW WALKOVER STRUCTURE  
3,000 LF x \$3,200.00 = **\$9,600,000.00**  
8' WIDE WALKOVER STRUCTURE
- · · · · PATH 4B - STRIPING EXISTING ASPHALT  
525 LF x \$45.00 = **\$23,625.00**  
SIGNS AND STRIPING ONLY
- · - · - PATH 4B - NEW ASPHALT MULTI-USE PATH  
1,550 LF x \$1,950.00 = **\$3,022,250.00**  
10' WIDE ASPHALT MULTI-USE PATH
- · · · · PATH 4B - NEW MULTI-USE IN PARKING LOT  
600 LF x \$2,125.00 = **\$1,275,000.00**  
10' WIDE ASPHALT MULTI-USE PATH WITH SEPARATION BARRIER



### 14.0 Pare Corporation – On Street Route Analysis

Pare Corporation completed a Feasibility Study in December 2023 to examine the potential on-street routes to connect the William C. O'Neill Bike Path eastward to the shoreline. The on-street route would utilize a combination of Kingstown Road, Narragansett Avenue, and/or Caswell Street. Three potential routes have been developed and can be found in the Feasibility Study report called "Feasibility Study for the William C. O'Neill Bike Path Phase 4B", dated December 2023.



Pare Corporation – On Street Route Analysis

## Site Understanding

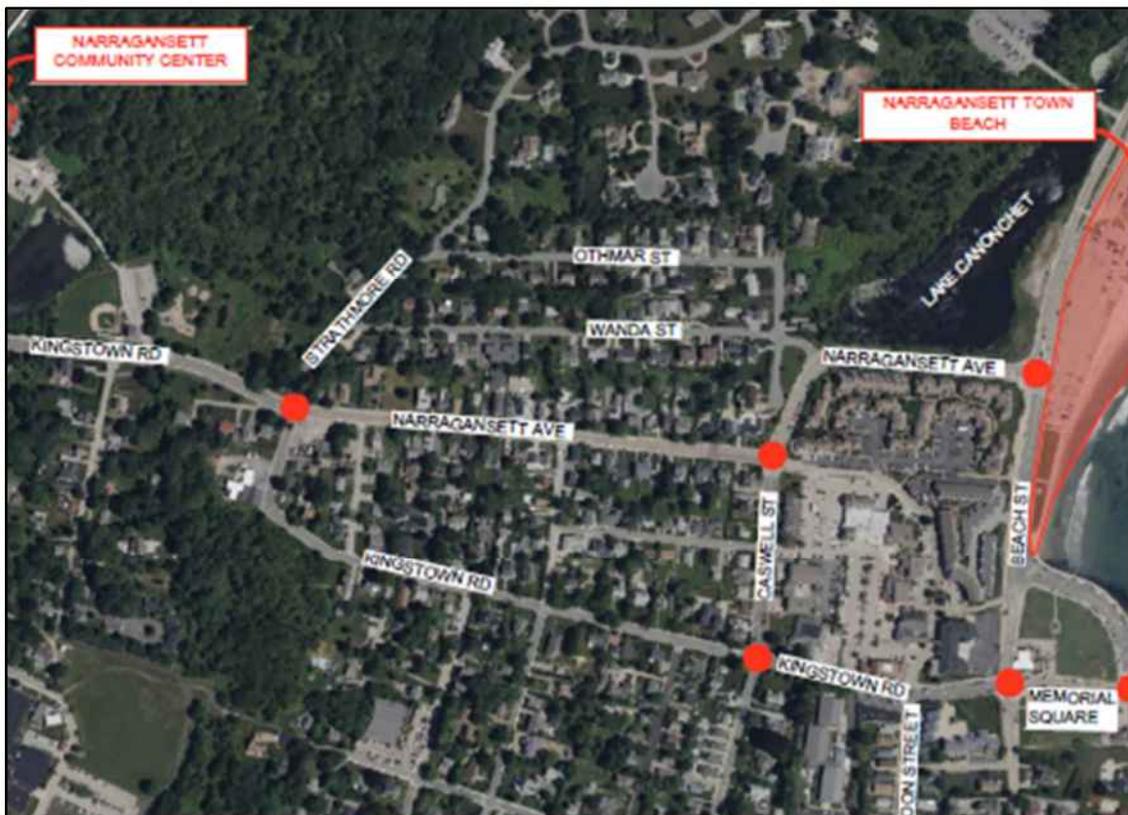
For the potential on-street bike route, Pare Corporation reviewed the classification of the existing roadways, intersection, performed speed studies, parking inventory of the occupancy. See accompanying See image below.

## Study Area Roadways

- Kingstown Road – from Mumford Road to Beach Street
- Narragansett Avenue – from Kingstown Road to Beach Street
- Caswell Street– from Kingstown Road to Narragansett Avenue
- Memorial Square – from Kingstown Road to Ocean Road

## Study Area Intersections

- Kingstown Road at Narragansett Avenue and Strathmore Road
- Narragansett Avenue at Caswell Street
- Narragansett Avenue at Beach Street and Boston Neck Road
- Kingstown Road at Caswell Street
- Kingstown Road at Beach Street, Mathewson Street and Memorial Square
- Memorial Square at Ocean Road



Pare Corporation – Intersection Study Area



### 15.0 Pare Corporation – Cost & Recommendations

#### Cost

Cost evaluation of the roadway sections and routes provided by Pare Corporation, Inc.

Roadway Section	Paving	Signing & Striping	Signal Upgrades	Optional Delineators	Optional Mill & Overlay
Little League Field Route to Narragansett Ave.	\$110,000	\$10,000	\$0	\$0	\$0
Narragansett Ave. – West of Caswell	\$0	\$41,000	\$140,000	\$17,000	\$420,000
Narragansett Ave. – Caswell to Beach	\$0	\$26,000	\$70,000	\$8,500	\$220,000
Caswell St. – Narragansett to Kingstown	\$0	\$22,000	\$0	\$5,300	\$130,000
Kingstown Rd. – Narragansett to Caswell	\$0	\$8,000	\$0	\$0	\$0
Memorial Sq. – Caswell to Ocean	\$0	\$36,000	\$0	\$9,500	\$240,000

#### Parking Space Impact Summary

Three routes were assessed for the extent of impacts to existing infrastructure. Impacts were identified as on-street parking spaces removed, conflict points with vehicular traffic, and the overall length of the trail.

<b><u>Summary of Impacts</u></b>	<b>Total Length in Linear Feet</b>	<b>Parking Spaces Removed</b>	<b>Parking Demand Shortage</b>
<b>Alternative #1</b>	3100	87	32
<b>Alternative #2</b>	4000	89	34
<b>Alternative #3</b>	3750	84	29



16.0 Pare Corporation – Phase 4B Feasibility Study

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**Feasibility Study for the  
William C. O'Neill Bike Path, Phase 4B  
On-Street Options**



Submitted to:

DiPrete Engineering

**Prepared May 2024 by**



## TABLE OF CONTENTS

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### Appendices

Appendix A	Count Data
Appendix B	Synchro Analysis
Appendix C	Speed Study
Appendix D	Crash Data



Phase 4B of the William C. O'Neill Bike Path is envisioned to provide the final connection between the Path's current terminus at the Narragansett Community Center to the Narragansett Town Beach. Existing sidewalks along both sides of the roadways throughout the study limits promote pedestrian safety. The continuation of a dedicated bicycle route will provide protection for this additional mode of transportation, accommodating more options for travel through the Town.

### **PURPOSE**

The purpose of this Feasibility Study is to examine the potential on-street routes that would connect the William C. O'Neill Bike Path eastward to the shoreline, past residential and commercial areas of the Town. More specifically, the route will create a designated space for non-motorized activity, utilizing a combination of Kingstown Road, Narragansett Avenue, and/or Caswell Street.

To develop the highest quality facility, with a focus on reducing vehicle conflict points, limiting the existing on-street parking to be disturbed, and reducing the travel distance to beach access, three route alternatives for the construction of the on-street bicycle path were reviewed.



The study began with a data collection process focused on understanding existing conditions relative to the primary areas of concern associated with the potential routes including right-of-way and encroachments, and operations and controls at locations where the path would need to cross roadways.

An initial field walk and investigation was conducted. During the site visit, various components of the existing condition were outlined including access points, roadway widths, utilities, and general topography. A parking inventory and speed studies were also conducted along the roadways that may be utilized for the route connecting the Community Center to the Town Beach.

In addition, crash data was requested from the Narragansett Police Department. Within the timeframe of this study, preliminary information was received and reviewed, providing a high-level summary of incidents within the study area.

Finally, traffic count data was obtained through manual turning movement counts (MTMCs) at the major intersections present within the study area. The intersections chosen for study were determined in cooperation with staff from the Town of Narragansett. Figure 1 depicts the study area, as well as these count locations.

### EXISTING CONDITIONS

The study area is defined as the significant roadways and intersections that may be impacted by the bike path extension. Listed below are the roadways and intersections included in the study area.

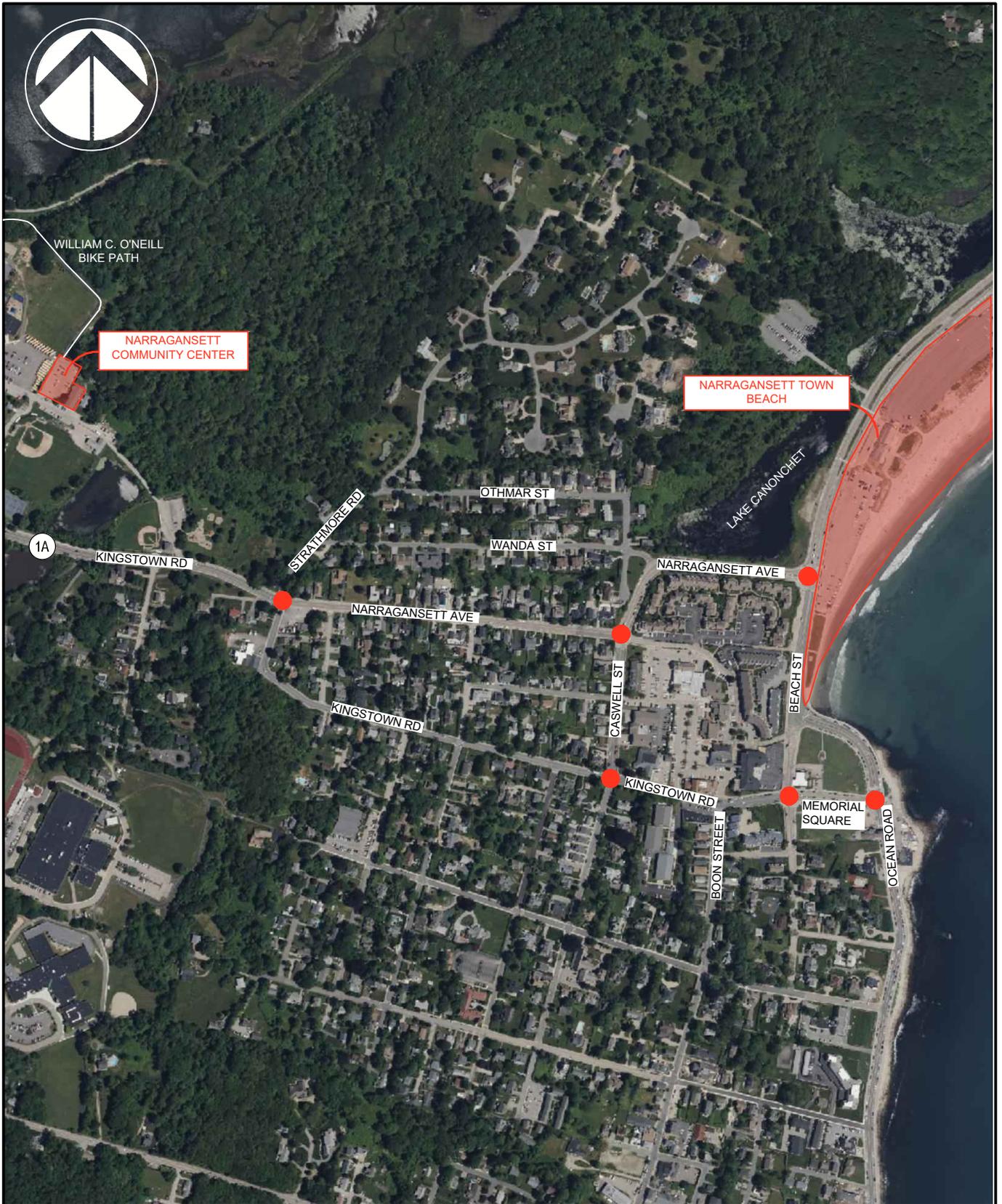
#### Study Area Roadways:

- Kingstown Road – from Mumford Road to Beach Street
- Narragansett Avenue – from Kingstown Road to Beach Street
- Caswell Street– from Kingstown Road to Narragansett Avenue
- Memorial Square – from Kingstown Road to Ocean Road

#### Study Area Intersections:

- Kingstown Road at Narragansett Avenue and Strathmore Road
- Narragansett Avenue at Caswell Street
- Narragansett Avenue at Beach Street and Boston Neck Road
- Kingstown Road at Caswell Street
- Kingstown Road at Beach Street, Mathewson Street and Memorial Square
- Memorial Square at Ocean Road





● = STUDY INTERSECTIONS

PROJECT NO. 23138.00

DATE: FEBRUARY 2024



**FIGURE 1**  
**LOCUS MAP**

WILLIAM C. O'NEILL BIKE PATH  
NARRAGANSETT, RHODE ISLAND

## Roadways

### *Kingstown Road*

Kingstown Road is a two-way road, classified as a principal arterial by the state of Rhode Island. Kingstown Road (Route 1A) traverses the Town of Narragansett running generally in the east/west direction through the study area. A short segment of the roadway traverses north/south between Narragansett Avenue and the Pier Ice Plant. Land uses for this section of roadway include high density residential, with a few commercial businesses, restaurants and institutions.



**KINGSTOWN ROAD, WEST OF STRATHMORE ROAD: LOOKING WEST**

The typical roadway cross-section of Kingstown Road west of Strathmore Road consists of a 12-foot-wide travel lane and an eight-foot-wide shoulder in each direction. A four-foot sidewalk, separated from the roadway by a three-foot grass buffer, runs along the north side



**KINGSTOWN ROAD, EAST OF CASWELL STREET: LOOKING WEST**

of the road and a 10-foot sidewalk runs along the south side of the road in this section. Kingstown Road between Strathmore Road and Caswell Street generally consists of a 12-foot travel lane with a one-foot shoulder in each direction. There are six-foot wide sidewalks on each side of the roadway in this section. Kingstown Road east of Caswell Street widens to a 12-foot-wide travel lane and eight-foot-wide parking lane in each direction. The sidewalk on the northern side of Kingstown Road varies from four feet to seven feet in width, while the southern

side has a four-foot-wide sidewalk, protected from the parking lane by a three-foot grass buffer. Kingstown Road between Boon Street and Memorial Drive consists of a 14.5-foot-wide travel lane and an eight-foot parking lane in each direction. On the northern side of the road, the existing sidewalk is four feet wide, with a three-foot grass buffer, while ten-foot sidewalks are present on the southern side of Kingstown Road in this area. Curb is present along both sides of the roadway in all four sections.

The posted speed limit for this roadway is 35-miles-per-hour west of Strathmore Road and 25 miles-per-hour south of Strathmore Road, with no posted speed limit signs located east of Caswell Street. There is a RIPTA bus stop on each side of Kingstown Road, east of the Caswell intersection. There is a bus shelter that marks this stop on the northern side of Kingstown Road.



**KINGSTOWN ROAD, WEST OF MEMORIAL SQUARE: LOOKING EAST**



## Narragansett Avenue



**NARRAGANSETT AVE, WEST OF CASWELL STREET: LOOKING EAST**

Narragansett Avenue is a two-way road, classified as a principal arterial by the State of Rhode Island and serves as a continuation of Route 1A east of Strathmore Road. This roadway runs in the general east/west direction through the study area, with a short segment running north/south between Caswell Street and Wanda Street. The typical roadway cross-section of Narragansett Avenue between Kingstown Road and Caswell Street consists of a 12-foot-wide travel lane and an eight-foot-wide parking lane in each direction. There are six-foot-wide concrete sidewalks on

both sides of the street. There is a catch basin on either side of Narragansett Avenue at the intersection with Caswell Street, and there are utility manholes and valves in the parking lane on the northern side of and in the center of the roadway of Narragansett Avenue. Between Caswell Street and Beach Street, the travel lanes are thirteen feet wide, with nine-foot parking lanes. A six-foot sidewalk with a three-foot grass buffer with curb is present on the southern side of the street, and no pedestrian facilities exist on the northern side. There are catch basins on the northern side of this section of Narragansett Avenue.

The posted speed limit in this area is 25 miles-per-hour. A speed study identified the 85<sup>th</sup> percentile speed of traffic on the northern section to be 24 miles-per hour for northbound traffic and 23 miles-per-hour for southbound traffic. There are numerous post-mounted Signs stating, "OVERNIGHT PARKING PROBITED 11PM-7AM EXCEPT BY PERMIT" and "2HR PARKING MAY 15-SEPT 15 9AM-4PM EXCEPT BY PERMIT." There are existing post-mounted bike route signs currently on both sides of the roadway. As Narragansett Avenue approaches Beach Street the north and south side shoulders taper allowing space for a left-turn-only lane and right-turn-only lane approximately 250 feet in length for the eastbound direction. Additionally, there are three bus stops north of the intersection with Caswell Street for bus route 14 of the Rhode Island Public Transit Authority (RIPTA). One is on the western side of Narragansett Avenue for southbound traffic, approximately 50 feet north of the intersection. There is one stop for each direction of traffic, approximately 80 feet west of the intersection with Beach Street.



**NARRAGANSETT AVE, WEST OF BEACH STREET: LOOKING WEST**



## Caswell Street



**CASWELL STREET: LOOKING NORTH**

Caswell Street is a two-way street, classified as a minor collector by the State of Rhode Island. This roadway runs in the north/south direction within the study area. The cross-section of Caswell Street consists of a twelve-foot-wide travel lane in each direction with eight-foot-wide parking lanes in each direction as well. The roadway is curbed on both sides. There are six-foot-wide sidewalks separated from the roadway by a four-foot-wide grass buffer on the western side of the

roadway, and a three-foot-wide grass buffer on the eastern side. The Rhode Island Public Transit Authority (RIPTA) Bus Route 14 runs along Caswell Street, with the nearest stop on Kingstown Road near the intersection of Caswell Street and Kingstown Road. Land uses around Caswell Street are predominantly residential and commercial.

## Memorial Square

Memorial Square is a two-way, delineated roadway running in the east/west direction between Beach Street/Mathewson Street and Ocean Road. This roadway serves as an extension of Kingstown Road. The cross-section of Memorial Square consists of a nine-foot-wide travel lane with an eight-foot-wide parking lane in each direction. Eight-foot-wide sidewalks are present along both sides of the roadway. Land use surrounding Memorial Square is primarily open space.

## Intersections

### *Kingstown Road at Narragansett Avenue and Strathmore Road*

The intersection of Kingstown Road at Narragansett Avenue and Strathmore Road forms a four-legged signalized intersection, with a private dead-end road for driveway access, approximately 70 feet west of the intersection, on the south side. Kingstown Road makes up the western and southern legs, while Narragansett Avenue is the eastern leg, and Strathmore Road is the northern leg. The western, eastern, and southern approaches are delineated, with one lane in each direction. The northern leg is a non-delineated, two-way street. Crosswalks are present across each leg of the intersection. There are sidewalks along both sides of each approach to the intersection. Pedestrian push buttons are present at each crosswalk, as well as pedestrian curb ramps (PCRs), although not all meet current ADA design standards. There are no crosswalks or ADA ramps located at the private drive adjacent to the intersection.



**KINGSTOWN ROAD: LOOKING WEST**



This signal operates under two phases. The first phase allows movements for eastbound and westbound traffic. The second phase allows movements for northbound and southbound traffic. There are no protected left turn movements. Pedestrian signals operate in concurrence with the parallel vehicular movements.

#### *Narragansett Avenue at Caswell Street*

The intersection of Narragansett Avenue at Caswell Street forms a four-legged signalized intersection. Narragansett Avenue makes up the western and northern legs, while Caswell Street makes up the southern leg, and an unnamed access road to condominiums and a commercial center forms the eastern leg. All legs of the intersection are two-way delineated streets, with one lane in each direction. Crosswalks are present across three legs of the intersection, with none across the northern leg of Narragansett Avenue. There are pedestrian push buttons and PCRs present at the three crossing locations, although the ramps for the western leg of Narragansett Avenue do not meet current ADA design standards.



**CASWELL STREET: LOOKING SOUTH**

This signal operates under three phases. The first phase allows movements for eastbound and westbound traffic. The second phase allows movements for northbound and southbound traffic. There are no protected left turn movements. The third phase is a dedicated pedestrian phase that is actuated by the pedestrian push buttons.

#### *Narragansett Avenue at Beach Street and Boston Neck Road*



**BOSTON NECK ROAD: LOOKING NORTH**

The intersection of Narragansett Avenue and Beach Street (Route 1A) forms a three-legged intersection. Narragansett Avenue approaches the intersection from the west, with Beach Street making up the southern leg, and Boston Neck Road making up the northern leg. To the east of the intersection, there is a parking lot which does not allow vehicular access at this location, separated from the intersection by a stone wall. All legs of the intersection are delineated two-way streets. Narragansett Avenue has three travel lanes, with both a left turn lane and right turn lane approaching the intersection. Beach Street and Boston Neck Road are two lanes in each direction, with directions of travel separated by a median. Crosswalks are present across all three legs of the intersection, with pedestrian push buttons and PCRs present at each location. The ramp at the southeast corner of the intersection does not appear to meet the most current ADA design standards.

This traffic signal operates under four phases. The first phase allows all movements for northbound traffic on Beach Street, with a protected left turn. The second phase allows

This traffic signal operates under four phases. The first phase allows all movements for northbound traffic on Beach Street, with a protected left turn. The second phase allows



movements for north and southbound traffic on Beach Street and Boston Neck Road. The third phase allows all movements from Narragansett Avenue onto Beach Street and Boston Neck Road. The fourth phase is a dedicated pedestrian phase that is actuated by the pedestrian push buttons.

*Kingstown Road at Caswell Street*

The intersection of Kingstown Road at Caswell Street forms a four-legged, all-way stop-controlled intersection. Kingstown Road comprises the eastern and western legs of the intersection, with Caswell Street making up the northern and southern legs. The western, northern, and eastern approaches are delineated, two-way streets with one lane in each direction. The southern leg of Caswell Street is a non-delineated, two-way street. Crosswalks exist across three legs of the intersection, with no crosswalk present across the southern leg of Caswell Street. PCRs are present at all crosswalk locations, though they do not meet current ADA design standards.



**KINGSTOWN ROAD: LOOKING WEST**

*Kingstown Road at Beach Street, Mathewson Street, and Memorial Square*



**BEACH STREET: LOOKING NORTH**

The intersection of Kingstown Road at Beach Street, Mathewson Street, and Memorial Square forms a four-legged all-way stop-controlled intersection. Kingstown Road forms the western leg of the intersection, Memorial Square forms the eastern leg, Beach Street forms the northern leg, and Mathewson forms Street the southern leg. Kingstown Road, Beach Street, and Memorial Square are delineated, two-way streets, with one lane in each direction. Mathewson Street is a non-

delineated, two-way street. Crosswalks are present across all legs of the intersection, with PCRs present at each crosswalk approach, though the ramps do not meet the current ADA standards.

*Memorial Square at Ocean Road*

The intersection of Memorial Square at Ocean Road forms a three-legged, non-signalized intersection. Memorial square comprises the western leg, with Ocean Road running north/south. Memorial square is stop-controlled, and Ocean Road is free-flowing. Both streets are delineated for two-way traffic, with one travel lane in each direction. The traffic on the northern leg of Ocean Road is separated by a median.



**OCEAN ROAD: LOOKING NORTH**



Crosswalks currently exist across two legs of the intersection, across Memorial Square and the northern leg of Ocean Road, with a refuge island located in the median. PCRs are present at the crosswalk locations, though they do not appear to meet current ADA design standards.

## SPEED STUDY

Spot speed studies were conducted on Kingstown Road between Caswell Street and Boon Street, on Narragansett Avenue between Caswell Street and Beach Street, and on Ocean Road between Beach Street and Memorial Square. Driving speeds were assessed in both directions along each roadway, and a speed limit of 25 mph was assumed in locations where no signage was posted. A summary of the speed data results is shown in **Tables 1, 2, and 3** below. The most notable metric presented in the table is the 85th percentile speed, which was utilized for the sight distance analysis. The full speed study data can be found in **Appendix C**.

**TABLE 1: KINGSTOWN ROAD SPEED STUDY SUMMARY**

	Regulatory Speed	Average Speed	True Median (50 <sup>th</sup> Percentile)	85 <sup>th</sup> Percentile	10 MPH Pace	% over Posted
Eastbound	25	19	18	23	15-24	0
Westbound	25	20	19	23	15-24	8

\*Regulatory speed assumed to be 25 miles per hour where not posted

**TABLE 2: NARRAGANSETT AVENUE SPEED STUDY SUMMARY**

	Regulatory Speed	Average Speed	True Median (50 <sup>th</sup> Percentile)	85 <sup>th</sup> Percentile	10 MPH Pace	% over Posted
Northbound	25	22	22	24	16-25	2
Southbound	25	21	21	23	16-25	8

\*Regulatory speed assumed to be 25 miles per hour where not posted

**TABLE 3: OCEAN ROAD SPEED STUDY SUMMARY**

	Regulatory Speed	Average Speed	True Median (50 <sup>th</sup> Percentile)	85 <sup>th</sup> Percentile	10 MPH Pace	% over Posted
Northbound	25	17	16	20	13-22	0
Southbound	25	21	21	27	14-23	17

\*Regulatory speed assumed to be 25 miles per hour where not posted



## Sight Distance

Sight distances at crosswalk locations will vary considerably depending on the presence of nearby on-street parked vehicles and the type of vehicle parked. However, as all of the intersections where pedestrians or bicyclists are anticipated to make a crossing movement are either signalized or all-way stops, sight distance is less of a concern. However, given the context of the area and the number of non-vehicular users in the area near the beach, consideration should be given to constructing bumpouts at intersection corners, which would allow pedestrians to stand closer to the traveled way and on-street parked vehicles would not interfere with their sight distance to oncoming traffic.

## EXISTING TRAFFIC VOLUMES

Manual turning movement counts (MTMCs) were conducted on Friday August 11, 2023 between the hours of 4:00 p.m. to 6:00 p.m. and Saturday August 12<sup>th</sup> during the hours of 11:00 am to 2:00 pm at the following intersections:

- Kingstown Road at Narragansett Avenue and Strathmore Road
- Narragansett Avenue at Caswell Street
- Narragansett Avenue at Beach Street and Boston Neck Road
- Kingstown Road at Memorial Square, Beach Street, at Mathewson Street

The observed existing traffic volumes are shown in **Figure 2**, and the raw traffic count data is provided in **Appendix A**.





 Signalized  
 Unsignalized



FRIDAY AFTERNOON VOLUMES (SATURDAY MIDDAY VOLUMES)

PROJECT NO. 23138.00

DATE: FEBRUARY 2024



**FIGURE 2**  
 EXISTING (2023) TRAFFIC VOLUMES  
 WILLIAM C. O'NEILL BIKE PATH  
 NARRAGANSETT, RHODE ISLAND

## PARKING INVENTORY

Available on-street parking spaces within the study area were inventoried and parking occupancy data was collected every 15 minutes between 4:00 p.m. and 6:00 p.m. on Friday, August 11<sup>th</sup> and between 11:00 a.m. and 2:00 p.m. on Saturday August 12, 2023. The areas where the parking counts were conducted are shown in **Figure 3** below and the occupancy data collected is shown in **Tables 4 and 5**.

**FIGURE 3. ON-STREET PARKING COUNT LOCATIONS**



Peak parking occupancy rates observed were as follows:

- Narragansett Avenue west of Caswell Street: 73% (56/77)
- Narragansett Avenue north of Caswell Street: 89% (59/66)
- Caswell Street: 44% (12/27)
- Kingstown Road: 100% (43/43)
- Beach Street: 100%+ (10/9)
- **Overall: 75% (167/222)**

The highest overall occupancy rate was approximately 75 percent for the area as a whole, with 55 available spaces at that time. However, this occurred during the last observation on Saturday. It is possible that higher occupancy rates would be observed with later observations on Saturday.



**TABLE 4. FRIDAY AFTERNOON PARKING OCCUPANCY**

Location	Side	Total Spaces	Number of Occupied Spaces							
			4:00 PM	4:15 PM	4:30 PM	4:45 PM	5:00 PM	5:15 PM	5:30 PM	5:45 PM
Narragansett Av. (West of Caswell St.)	N	44	12	10	9	9	10	18	14	14
	S	33	14	10	12	11	11	10	10	12
Narragansett Av. (North of Caswell St.)	N/W	40	26	24	27	27	25	24	20	14
	S/E	26	12	11	12	14	13	11	9	11
Caswell St.	W	11	4	4	4	4	4	4	5	5
	E	16	1	1	1	1	1	2	7	7
Kingstown Rd.	N	23	23	19	21	22	19	22	23	23
	S	20	20	15	18	17	19	20	20	20
Beach St.	W	6	4	6	6	6	6	6	6	6
	E	3	3	3	2	3	2	3	4	4

**TABLE 5. SATURDAY MIDDAY PARKING OCCUPANCY**

Location	Side	Total Spaces	Number of Occupied Spaces											
			11:00 AM	11:15 AM	11:30 AM	11:45 AM	12:00 PM	12:15 PM	12:30 PM	12:45 PM	1:00 PM	1:15 PM	1:30 PM	1:45 PM
Narragansett Av. (West of Caswell St.)	N	44	13	16	17	22	22	26	28	32	32	33	32	31
	S	33	12	10	10	12	13	13	16	13	18	20	20	25
Narragansett Av. (North of Caswell St.)	N/W	40	33	35	35	35	34	35	36	39	41	41	43	41
	S/E	26	17	15	15	17	17	17	15	16	15	16	16	16
Caswell St.	W	11	2	2	2	2	2	2	2	2	2	2	2	3
	E	16	4	4	5	6	4	5	6	6	4	6	8	6
Kingstown Rd.	N	23	22	23	23	22	23	23	23	23	23	23	23	23
	S	20	20	20	20	20	20	20	20	20	20	20	20	20
Beach St.	W	6	5	5	5	4	5	6	6	6	6	6	5	6
	E	3	0	0	0	1	0	0	0	1	0	0	0	1

## CAPACITY ANALYSES

Capacity analyses were completed for all study intersections for existing, future (2028) no-build, and future (2028) build conditions. Capacity analyses characterize intersections based on their level of service (LOS). LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of service measures such as speed, travel times, traffic interruptions, etc. Six LOS values, from A to F, are defined for each type of facility, with A representing the best operating conditions and F representing the worst operating conditions. The LOS criteria for signalized and unsignalized intersections are provided in **Table 6** below.

**TABLE 6: LOS CRITERIA FOR SIGNALIZED AND UNSIGNALIZED INTERSECTIONS**

LOS	Signalized Intersection	Unsignalized Intersection
	Delay Time (sec/veh)	Delay Time (sec/veh)
A	≤ 10	0-10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

As shown in **Tables 7 and 8**, all signalized intersections within the study area operate at a LOS C or better in the existing conditions with the exception of the eastbound approach on Narragansett at the intersection with Caswell Street during the weekday peak hour, which operates with a LOS D.

The unsignalized study intersections operate at an LOS D or better for both peak hours. The synchro analysis worksheets are provided in **Appendix B**.



**TABLE 7: FRIDAY AFTERNOON PEAK HOUR LOS SUMMARY**

Intersection	Movement		Existing (2023)	
			LOS (Delay <sup>1</sup> )	Queue Length <sup>2</sup>
<b>Kingstown Road, Narragansett Avenue, and Strathmore Road</b>	EB	LTR	C (21.3)	#344
	WB	LTR	B (12.8)	184
	NB	LTR	B (18.6)	92
	SB	LTR	A (6.2)	16
	Intersection		B (17.5)	
<b>Narragansett Avenue, Caswell Street, &amp; Private Driveway</b>	EB	LTR	D (36.3)	#427
	WB	LTR	B (10.6)	41
	NB	LTR	C (25.1)	62
	SB	LTR	C (25.1)	#230
	Intersection		C (26.9)	
<b>Narragansett Avenue, Beach Street &amp; Boston Neck Road</b>	EB	LR	D (51.3)	#401
	NB	LT	C (24.2)	174
	SB	TR	C (33.3)	#286
	Intersection		C (34.7)	
<b>Kingstown Road, Memorial Square, Beach Street, &amp; Mathewson Street</b>	EB	LTR	B (13.3)	70
	WB	LTR	A (9.9)	22.5
	NB	LTR	A (9.5)	10
	SB	LTR	B (11.4)	47.5
	Intersection		B (11.7)	

# - 95<sup>th</sup> percentile volume exceeds capacity; queue may be longer.

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet assuming 25 feet per vehicle.



**TABLE 8: SATURDAY AFTERNOON PEAK HOUR LOS SUMMARY**

Intersection	Movement		Existing (2023)	
			LOS (Delay <sup>1</sup> )	Queue Length <sup>2</sup>
Kingstown Road, Narragansett Avenue, and Strathmore Road	EB	LTR	B (18.0)	249
	WB	LTR	B (11.5)	137
	NB	LTR	B (18.1)	105
	SB	LTR	A (6.8)	15
	Intersection		B (15.6)	
Narragansett Avenue, Caswell Street, & Private Driveway	EB	LTR	C (34.1)	#345
	WB	LTR	A (9.4)	33
	NB	LTR	C (28.7)	68
	SB	LTR	C (20.9)	169
	Intersection		C (27.0)	
Narragansett Avenue, Beach Street & Boston Neck Road	EB	LR	D (40.8)	#331
	NB	LT	C (21.1)	152
	SB	TR	C (31.6)	#287
	Intersection		C (30.7)	
Kingstown Road, Memorial Square, Beach Street, & Mathewson Street	EB	LTR	B (11.5)	52.5
	WB	LTR	A (9.1)	17.5
	NB	LTR	A (8.8)	7.5
	SB	LTR	A (9.9)	32.5
	Intersection		B (10.3)	

# - 95<sup>th</sup> percentile volume exceeds capacity; queue may be longer.

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet assuming 25 feet per vehicle.

## CRASH ANALYSIS

Crash data was requested for the study area from the Narragansett Police Department for the five-year period from January 2018 to December 2022. A summary of the information can be found in **Table 9**, below. The full crash reports can be found in **Appendix D**.



**TABLE 9: CRASH DATA SUMMARY**

Roadway/ Intersection	Total Crashes	Crash Type						
		Single Vehicle	Angle	Rear-End	Head-on	Sideswipe	Rear – Side or Rear- Rear	Other/Not Specified
Kingstown Rd.	166	25	50	49	2	29	7	4
Memorial Sq.	19	1	4	4	0	6	4	0
Caswell St.	23	4	1	4	1	6	6	1
Narragansett Av.	70	17	14	21	1	10	6	1

There were 278 total incidents distributed throughout the study area during the five-year period, with the highest concentrations along Kingstown Road. The data shows higher occurrences of angle crashes and rear-end incidents. The information provided by the Narragansett Police Department is a summary of total crashes and does not indicate if the crashes involved bicyclists or pedestrians, or the severity of the crashes.



The conceptual design has been developed to incorporate the recommendations for the path as outcomes of the assessments. A compilation of the key features that are being incorporated into the conceptual design include, but are not limited to:

- Removal of on-street parking from one side of each roadway selected to allow for the installation of two bicycle lanes, one in each direction.
- Typical roadway cross section composed of two five-foot bicycle lanes, a two-foot buffer, two eleven-foot travel lanes, and an eight-foot parking space.
- Existing curb and sidewalk are proposed to remain in place.

### ROUTE ALTERNATIVES

Regardless of the on-street route chosen, path users will need to navigate from the end of the existing path at the Narragansett Community Center to Kingstown Road. The shortest and most desirable path to achieve access to Kingstown Road is by heading southeast from the Community Center parking lot down a partially paved path that runs adjacent to the Narragansett Parks Department garage, through the Little League field parking lot, and out to Kingstown Road. The length of this route is approximately 1,275 feet. The unpaved portion of this route would need to be paved or structurally enhanced to meet accessibility guidelines.

An alternative route would take path users southwest alongside Sprague Field and the tennis courts. This path is also partially unpaved. Further, this would result in a longer route to access the amenities at the shoreline by approximately 800 feet, which would add approximately 3.5 minutes to the route for a pedestrian, or approximately one minute for a cyclist. Each of these two Kingstown Road access options are shown graphically in **Figure 4**.

Three potential on-street routes have been identified to connect bicyclists from the eastern terminus of the O'Neill Bike Path to Narragansett Town Beach and other oceanside attractions. A map of the potential options can be found in **Figure 5**, and a detailed description of each can be found in the following paragraphs.

#### Alternative 1

From the terminus of the existing William C. O'Neill bike path, this route would traverse Kingstown Road, and continue east on Narragansett Avenue. At the intersection of Narragansett Avenue and Caswell Street, the protected bike lanes would continue north on Narragansett Avenue, to the intersection with Beach Street. This option is the most direct path, at approximately 3,100 linear feet in length.



**FIGURE 4. KINGSTOWN ROAD ACCESS OPTIONS**



If this route is implemented, there would be no conflicts with vehicular traffic at the intersection of Narragansett Avenue and Caswell Street. Eastbound bicycle riders would approach this intersection from the northern side of Narragansett Avenue and turn left onto the western side of northern Narragansett Avenue without crossing any vehicular travel lanes, which will better promote the safety of the bicycle riders and allow the existing traffic signal to continue to function in its current state.



FIGURE 5. BEACH ROUTE OPTIONS



FIGURE 6. KINGSTOWN ROAD WEST OF NARRAGANSETT AVENUE



This route begins on Kingstown Road west of Narragansett Avenue, where the curb-to-curb width is 40 feet. The existing 8 foot shoulder on the northern side of the roadway will be converted to protected 5 foot wide bike lanes, with a 2 foot buffer. The existing 12 foot travel lanes would be reduced to 11 feet, and the existing shoulder on the southern side of the road decreased from 8 feet to 6 feet.

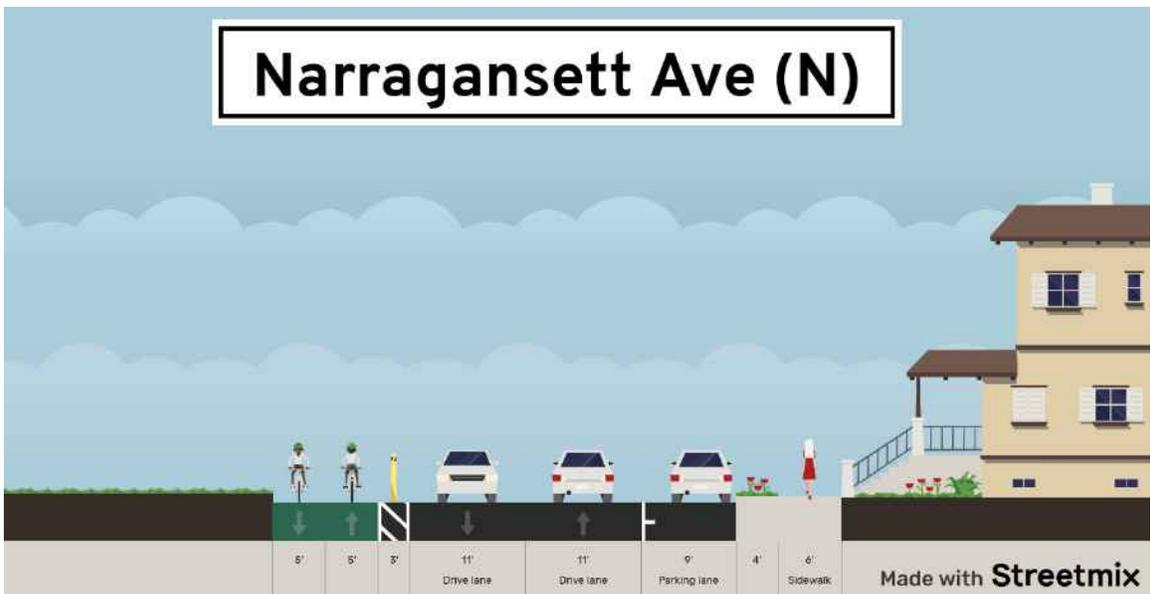
FIGURE 8. NARRAGANSETT AVENUE NORTH OF CASWELL STREET



FIGURE 7. NARRAGANSETT AVENUE BETWEEN KINGSTOWN ROAD AND CASWELL STREET



On Narragansett Avenue, traveling east/west between Kingstown Road and Caswell Street, the existing roadway width is 40 feet. To accommodate the five-foot travel lanes of the protected bike path, the on-street parking on the northern side of the roadway would be eliminated, with a two-foot buffer also installed. The existing 12-foot travel lanes would be converted to 10.5-foot travel lanes, and the existing 8 foot on-street parking on the southern side of Narragansett Avenue reduced to a seven-foot wide parking space.



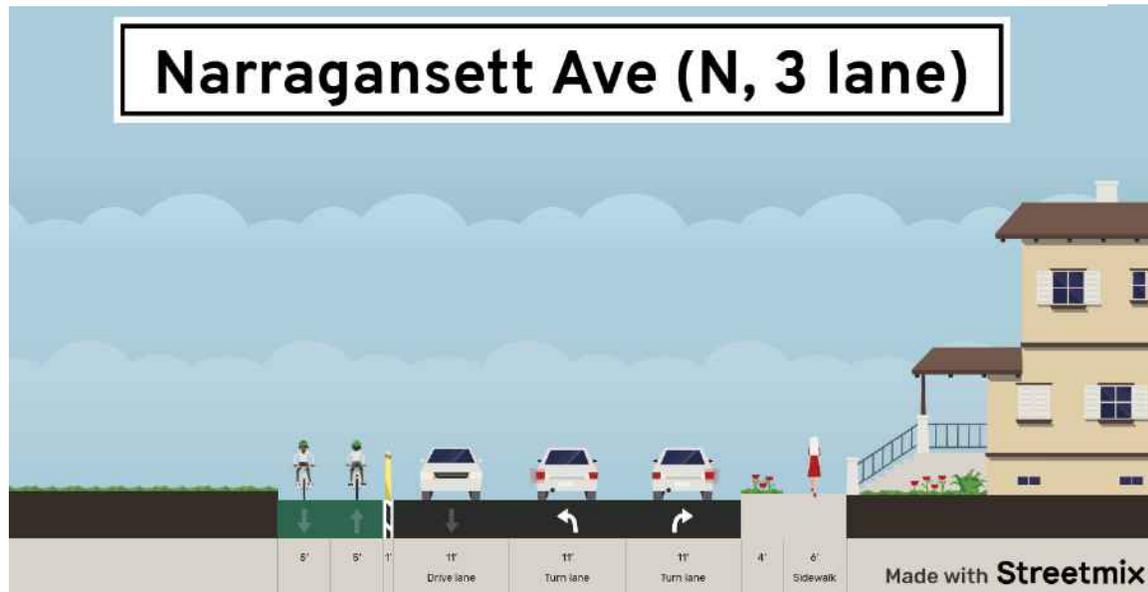
Narragansett Avenue north of Caswell Street is comprised of 13-foot travel lanes with 9-foot on-street parking spaces on both sides. By reducing the width of the travel lanes to 11 feet in both directions, two 5-foot bicycle lanes with a 3-foot buffer can be installed in place of the e



xisting on-street parking on the northwestern side of the roadway. The existing 9-foot on-street parking area on the southeastern side of the roadway can remain undisturbed.

As Narragansett Avenue approaches the intersection with Beach Street and Boston Neck Road, the on-street parking on the southeastern side of the roadway transitions into a right turn lane. In this section, the proposed buffer between bicycle and vehicular traffic can shrink to one-foot in width to allow the right turn lane to widen to 11 feet in width.

**FIGURE 9. NARRAGANSETT AVENUE AT BOSTON NECK ROAD**



To install buffered bicycle lanes along this preferred route, there would be 44 parking spaces removed from the northern side of Narragansett Ave, between Kingstown Road and Caswell Street. The section of Narragansett Avenue north of Caswell Street does not have delineated parking spaces, and the highest number of parked vehicles observed on this area of roadway was 43 vehicles.

At the terminus of this route, bicyclists would be required to cross Beach Street at its signalized intersection with Narragansett Avenue. Improved visibility of the crosswalks or other measures to improve pedestrian and bicycle safety at this intersection may be advisable.

### **Alternative 2**

The second alternate route would travel from the terminus of the existing William C. O'Neill pike path on Kingstown Road and continue east on Narragansett Avenue, similar to Alternative 1. At the intersection of Narragansett Avenue with Caswell Street, this route would turn south onto Caswell Street, before turning east on Kingstown Road. The route would continue east onto Memorial Square, to the intersection with Ocean Road.

This alternate route would result in a longer travel distance when compared to Alternative 1, approximately 4,000 linear feet, to connect the existing bike path to the shoreline and require



bicycle riders to traverse additional intersections, the majority of which are stop-controlled. Though this route is longer, it connects additional destination points, including the library, post office, and commercial center.

This route begins on Kingstown Road and continues onto Narragansett Avenue, similar to Alternative 1. At Caswell Street, the route would turn toward the south, and then back to the east at Kingstown Road, continuing onto Memorial Square to Ocean Road.

Caswell Street has an existing curb-to-curb width of 40 feet. To construct two five-foot bicycle lanes, the existing eight-foot-wide on-street parking on the western side of the roadway would be removed. By reducing the existing 12-foot travel lanes to 10.5 feet in width, and reducing the eight-foot-wide on-street parking on the eastern side of the roadway to seven feet, there is also room for a two foot buffer between the bike lanes and the vehicular lanes.

**FIGURE 9. CASWELL STREET**



**FIGURE 10. KINGSTOWN ROAD BETWEEN CASWELL STREET AND BOON STREET**



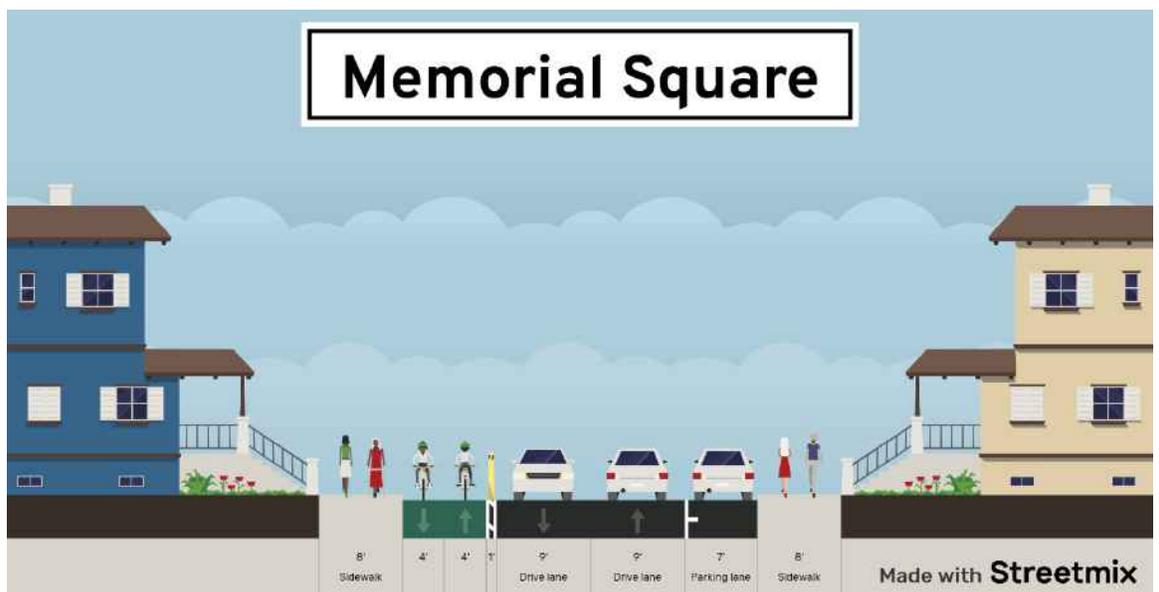
On Kingstown Road between Caswell Street and Boon Street, the existing 14.5-foot travel lanes in both directions can be reduced to 11.5-foot lanes. By removing the on-street parking on the northern side of the roadway, and reducing the southern side from eight feet to seven feet, there is room for two five-foot bicycle lanes and a two-foot buffer on the northern side of Kingstown Road.

Kingstown Road between Boon Street and Memorial Square has a 45 foot width curb-to-curb, with 14.5-foot travel lanes and eight-foot on-street parking spaces in both directions. To accommodate ten feet for a bicycle path and three feet for a buffer on the northern side of the roadway, the travel lanes would be reduced to 12 feet wide. The northern on-street parking would be eliminated.

**FIGURE 11. KINGSTOWN ROAD BETWEEN BOON STREET AND MEMORIAL SQUARE**



**FIGURE 12. MEMORIAL SQUARE**



Memorial Square has a 34-foot curb-to-curb width, with nine-foot lanes and eight-foot-wide on-street parking space in both directions. Without construction work to widen the roadway, only four-foot-wide bicycle lanes with a one-foot buffer could be installed. To accommodate this, the on-street parking on the southern side of the roadway would need to be reduced from eight feet to seven feet. To accommodate five-foot wide bicycle lanes, the sidewalk width could be reduced from eight feet to six feet.

To create the protected bicycle lanes along this route, there would be 44 parking spaces removed from Narragansett Avenue, 11 on-street spaces removed from Caswell Street, 23 from Kingstown Road, and 11 from Memorial Square, for a total of 89 removed on-street parking spaces.

The increased number of intersections along this route will increase the number of conflict points between bicycle and vehicular traffic. This would include the need to cross Narragansett Avenue at its signalized intersection with Caswell Street and a need to cross Caswell Street at its all-way stop controlled intersection with Kingstown Road. In addition, the path would cross the Pier Marketplace driveway along Kingstown Road, and would need to cross Beach Street at its all-way stop controlled intersection with Kingstown Road and Memorial Square. At the terminus of this route, in order to access the beach, bicyclists would be required to cross Ocean Road, where vehicular traffic is not stop-controlled. Improvements to improve visibility of bicyclists and pedestrians at this location, such as the installation of rectangular rapid flashing beacons (RRFBs) or providing a raised crosswalk may be advisable at this location.

### Alternative 3

FIGURE 13. KINGSTOWN ROAD BETWEEN NARRAGANSETT AVENUE AND CASWELL STREET



A third route option would run on Kingstown Road from Sprague Park to the intersection with Narragansett Avenue, turning right onto Kingstown Road. This route would continue east on Kingstown Road onto Memorial Square to the intersection with Ocean Road. Running approximately 3,750 linear feet, this route would be longer than Alternative 1, but shorter than Alternative 2.

Kingstown Road between Narragansett Avenue and Caswell Street has a curb-curb width of 26 feet, which cannot accommodate dedicated bicycle lanes. The 12-foot travel lanes can be identified as shared roadway lanes for bicycle and vehicular traffic. There is no existing on-street parking on this segment of Kingstown Road.

Upon reaching Caswell Street, the route would follow the same path as Alternative 2. East of Caswell Street, there would be 23 parking spaces removed from Kingstown Road and 11 from Memorial Square, for a total of 34 on-street parking spaces removed with this option.

While this route would remove fewer on-street parking spaces than the other options, the use of sharrows instead of dedicated and buffered bicycle lanes is a far less attractive option. The use of sharrows has generally fallen out of favor except in areas with very low vehicular speeds, as these have not been found to significantly improve bicyclist safety. This route would require the crossing of Kingstown Road at its signalized intersection with Narragansett Avenue. In addition, eastbound bicyclists would need to cross Kingstown Road again at Caswell Street to join the two-way bike lane between Caswell Street and Ocean Road. The crossings of the Pier Marketplace, Beach Street and Ocean Road would be the same as those described in Alternative 2.

## **IMPACTS**

Three routes were assessed for the extent of impacts to existing infrastructure. Impacts were identified as on-street parking spaces removed, conflict points with vehicular traffic, and the overall length of the trail.

The first alternative route would remove approximately 87 parking spaces, leaving an on-street parking demand shortage of at least 32 vehicles. This route is the shortest length, at approximately 3,100 linear feet, has the fewest conflict points between bicyclists and vehicles, and would interfere with the fewest existing intersections. This route would cross three roadways, including Strathmore Road, Wanda Street, and Beach Street. The route would traverse the signalized intersection of Narragansett Avenue and Caswell Street, though the bicycle lanes on the northern side of the roadways will reduce conflicts with vehicular traffic. This route would terminate at Beach Street and Boston Neck Road, providing direct access to Narragansett Town Beach.



The second route option would remove 89 on-street parking spaces, leaving an on-street parking demand shortage of at least 34 vehicles. This route would run approximately 4,000 linear feet through six intersections and multiple access driveways, including the fire department, the library, a commercial center, and the post office. The route will cross through the intersections of; Kingstown Road with Narragansett Avenue and Strathmore Road; Narragansett Avenue with Caswell Street; Kingstown Road with Caswell Street; Kingstown Road with multiple Pier Marketplace driveways; Kingstown Road with Beach Street, and Memorial Square with Ocean Road. This route will terminate at the intersection of Memorial Square with Ocean Road. This route would not provide direct access to the beach, but would provide access to other amenities, such as the library, post office, park space at Memorial Square and the gazebo, and ends just north of the towers.

The third route alternative would remove 34 on-street parking spaces, leaving some available demand for on-street parking. This route runs approximately 3,750 linear feet, through the same stop-controlled intersections as the first alternate route, including the terminus at Ocean Road, but would not intersect the signalized intersection of Narragansett Avenue with Caswell Street. Approximately 2,000 linear feet of this route would be shared bicycle and vehicular travel lanes, as the section of Kingstown Road between the intersections with Narragansett Avenue and with Caswell Street does not have a wide enough existing roadway width for dedicated bicycle lanes.

## **RECOMMENDATION**

Based on its more direct path and fewer conflict points with vehicular traffic, Pare recommends the Little League field route to connect the existing path to Kingstown Road and Alternative 1 as the recommended on-street alternative to reach the shoreline. Alternative 2 is viable, as dedicated bike lanes can be accommodated throughout its length, but the number of vehicular conflict points makes this a less attractive option. Alternative 3 is not recommended due to the significant length of the route where dedicated bicycle lanes cannot be accommodated. Alternative 1 would terminate directly at beach access, making the terminus a more desirable destination than the shoreline overlook.



### NEXT STEPS

Upon making a final decision for the route of Phase 4B of the William C. O'Neill Bike Path, finer detail can now be put into a design of the route. Careful consideration will need to be paid regarding treatments at intersections and at the path terminus point. In addition, consideration for making the bike lanes "protected" through use of delineators or other raised treatments within the buffers should be considered. With the need for most existing pavement markings to be obliterated to implement the on-street lanes, milling and overlaying the pavement on the affected sections of streets may be considered for aesthetic purposes.

As these alternatives consist mostly of pavement marking changes and few changes to the amount of impervious area, save for the relatively small area to be paved to connect the end of the path to Kingstown Road, it is not anticipated that this work would require significant environmental permitting from the Rhode Island Department of Environmental Management (RIDEM) for implementation. Some of this work will be within the jurisdiction of the Coastal Resources Management Council (CRMC), so an assent may be required. A Physical Alteration Permit (PAP) application would need to be submitted to the Rhode Island Department of Transportation (RIDOT), as Narragansett Avenue, Kingstown Road west of Narragansett Avenue, Boston Neck Road, and Beach Street north of Ocean Road are all state highways.

### COSTS

Order-of-magnitude construction cost estimates for the various options are shown in Table 10 below. It should be noted that for some items, such as signal upgrades, general estimates have been included, but the actual costs could be significantly less or more per intersection, depending on the final alignment and age/condition of the existing signal equipment. In addition, there are a wide range of delineator types and styles that can be utilized to fit the needs and context of the area that may impact costs. The estimates for other items, such as milling and overlays of existing streets contain far fewer variables, and are therefore, made with a greater degree of confidence.



**TABLE 10: ORDER-OF-MAGNITUDE CONSTRUCTION COST ESTIMATES**

Roadway Section	Paving	Signing & Striping	Signal Upgrades	Optional Delineators	Optional Mill & Overlay	TOTAL
Little League Field Route to Narragansett Ave.	\$110,000	\$10,000	\$0	\$0	\$0	<b>\$120,000</b>
Narragansett Ave. – West of Caswell	\$0	\$41,000	\$140,000	\$17,000	\$420,000	<b>\$618,000</b>
Narragansett Ave. – Caswell to Beach	\$0	\$26,000	\$70,000	\$8,500	\$220,000	<b>\$324,500</b>
Caswell St. – Narragansett to Kingstown	\$0	\$22,000	\$0	\$5,300	\$130,000	<b>\$157,300</b>
Kingstown Rd. – Narragansett to Caswell	\$0	\$8,000	\$0	\$0	\$0	<b>\$8,000</b>
Memorial Sq. – Caswell to Ocean	\$0	\$36,000	\$0	\$9,500	\$240,000	<b>\$285,500</b>



# **Appendix A**

## **Count Data**

**Transportation Data Corporation**  
 Mario Perone, mperone1@verizon.net  
 tel (781) 587-0086 cell (781) 439-4999

N/S: Strathmore Rd./Kingstown Rd.  
 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742A  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	8	0	0	0	1	118	1	0	1	0	37	3	28	110	12	1	320
04:15 PM	4	1	0	1	0	109	1	0	1	0	38	0	28	91	6	0	280
04:30 PM	7	1	0	5	0	130	1	0	0	0	39	0	32	121	8	0	344
04:45 PM	6	0	2	3	1	118	0	1	0	0	41	0	33	109	3	0	317
<b>Total</b>	<b>25</b>	<b>2</b>	<b>2</b>	<b>9</b>	<b>2</b>	<b>475</b>	<b>3</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>155</b>	<b>3</b>	<b>121</b>	<b>431</b>	<b>29</b>	<b>1</b>	<b>1261</b>
05:00 PM	6	0	0	1	1	115	0	0	2	0	55	2	24	140	10	0	356
05:15 PM	6	0	1	0	1	100	0	0	1	0	30	0	43	118	5	0	305
05:30 PM	5	1	0	2	0	123	0	0	0	1	29	0	32	124	8	2	327
05:45 PM	9	0	0	1	0	113	0	0	0	0	28	0	37	128	6	0	322
<b>Total</b>	<b>26</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>2</b>	<b>451</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>142</b>	<b>2</b>	<b>136</b>	<b>510</b>	<b>29</b>	<b>2</b>	<b>1310</b>
<b>Grand Total</b>	<b>51</b>	<b>3</b>	<b>3</b>	<b>13</b>	<b>4</b>	<b>926</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>297</b>	<b>5</b>	<b>257</b>	<b>941</b>	<b>58</b>	<b>3</b>	<b>2571</b>
Apprch %	72.9	4.3	4.3	18.6	0.4	99.1	0.3	0.1	1.6	0.3	96.4	1.6	20.4	74.7	4.6	0.2	
Total %	2	0.1	0.1	0.5	0.2	36	0.1	0	0.2	0	11.6	0.2	10	36.6	2.3	0.1	

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	7	1	0	5	13	0	130	1	0	131	0	0	39	0	39	32	121	8	0	161	344
04:45 PM	6	0	2	3	11	1	118	0	1	120	0	0	41	0	41	33	109	3	0	145	317
05:00 PM	6	0	0	1	7	1	115	0	0	116	2	0	55	2	59	24	140	10	0	174	356
05:15 PM	6	0	1	0	7	1	100	0	0	101	1	0	30	0	31	43	118	5	0	166	305
Total Volume	25	1	3	9	38	3	463	1	1	468	3	0	165	2	170	132	488	26	0	646	1322
% App. Total	65.8	2.6	7.9	23.7		0.6	98.9	0.2	0.2		1.8	0	97.1	1.2		20.4	75.5	4	0		
PHF	.893	.250	.375	.450	.731	.750	.890	.250	.250	.893	.375	.000	.750	.250	.720	.767	.871	.650	.000	.928	.928

# Transportation Data Corporation

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N/S: Strathmore Rd./Kingstown Rd.  
 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742A  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

### Groups Printed- Trucks & Buses

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
<b>Grand Total</b>	0	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	4
Apprch %	0	0	0	0	0	100	0	0	0	0	100	0	0	100	0	0	
Total %	0	0	0	0	0	25	0	0	0	0	50	0	0	25	0	0	

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	1	3
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	100	0	2	0	100	0	0	1	3
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.250	.000	.000	.250	.750

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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742A  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

### Groups Printed- Bikes by Direction

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	3	1	0	0	0	0	0	0	2	0	0	6
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
04:30 PM	2	0	0	0	0	5	0	0	0	0	1	0	0	3	0	0	11
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>22</b>
05:00 PM	1	0	0	0	0	1	0	0	0	0	0	0	5	1	2	0	10
05:15 PM	6	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	12
05:30 PM	3	0	0	0	1	1	0	0	0	0	2	0	2	2	0	0	11
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	5	0	6
<b>Total</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>12</b>	<b>0</b>	<b>39</b>
<b>Grand Total</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>11</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>11</b>	<b>13</b>	<b>0</b>	<b>61</b>
Apprch %	100	0	0	0	7.7	84.6	7.7	0	0	0	100	0	25	34.4	40.6	0	
Total %	19.7	0	0	0	1.6	18	1.6	0	0	0	6.6	0	13.1	18	21.3	0	

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	5	1	2	0	8	10
05:15 PM	6	0	0	0	6	0	0	0	0	0	0	0	1	0	1	0	0	5	0	5	12
05:30 PM	3	0	0	0	3	1	1	0	0	2	0	0	2	0	2	2	2	0	0	4	11
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	5	0	5	6
Total Volume	10	0	0	0	10	1	3	0	0	4	0	0	3	0	3	7	3	12	0	22	39
% App. Total	100	0	0	0		25	75	0	0		0	0	100	0		31.8	13.6	54.5	0		
PHF	.417	.000	.000	.000	.417	.250	.750	.000	.000	.500	.000	.000	.375	.000	.375	.350	.375	.600	.000	.688	.813

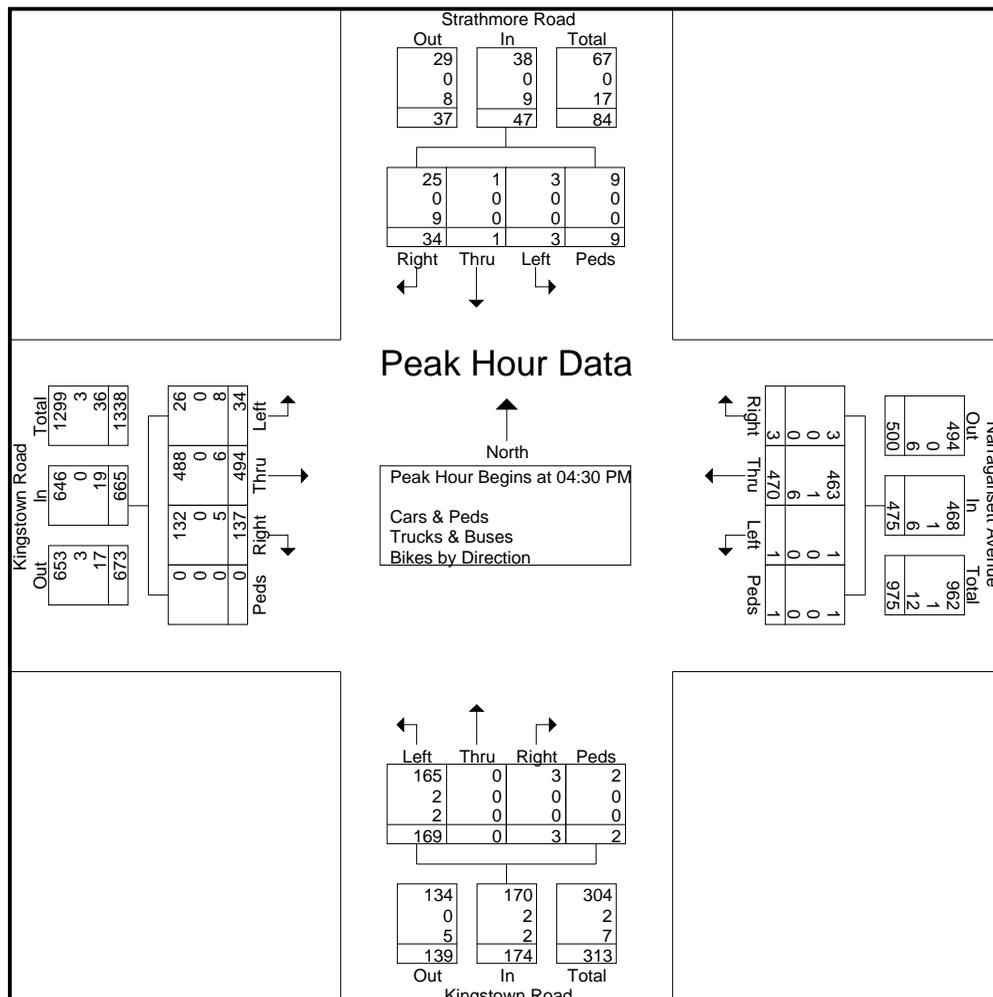
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City, State: Narragansett, RI  
Client: Pare/Derek Hug

File Name : 05742A  
Site Code : 23138.00  
Start Date : 8/11/2023  
Page No : 1

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	9	1	0	5	15	0	135	1	0	136	0	0	41	0	41	32	124	8	0	164	356
04:45 PM	6	0	2	3	11	1	118	0	1	120	0	0	42	0	42	33	111	4	0	148	321
05:00 PM	7	0	0	1	8	1	116	0	0	117	2	0	55	2	59	29	141	12	0	182	366
05:15 PM	12	0	1	0	13	1	101	0	0	102	1	0	31	0	32	43	118	10	0	171	318
Total Volume	34	1	3	9	47	3	470	1	1	475	3	0	169	2	174	137	494	34	0	665	1361
% App. Total	72.3	2.1	6.4	19.1		0.6	98.9	0.2	0.2		1.7	0	97.1	1.1		20.6	74.3	5.1	0		
PHF	.708	.250	.375	.450	.783	.750	.870	.250	.250	.873	.375	.000	.768	.250	.737	.797	.876	.708	.000	.913	.930
Cars & Peds	25	1	3	9	38	3	463	1	1	468	3	0	165	2	170	132	488	26	0	646	1322
% Cars & Peds	73.5	100	100	100	80.9	100	98.5	100	100	98.5	100	0	97.6	100	97.7	96.4	98.8	76.5	0	97.1	97.1
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	0	0	0	0	0	3
% Trucks & Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	1.2	0	1.1	0	0	0	0	0	0.2
Bikes by Direction	9	0	0	0	9	0	6	0	0	6	0	0	2	0	2	5	6	8	0	19	36
% Bikes by Direction	26.5	0	0	0	19.1	0	1.3	0	0	1.3	0	0	1.2	0	1.1	3.6	1.2	23.5	0	2.9	2.6



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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742A  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	8	0	0	0	1	121	2	0	1	0	37	3	28	112	12	1	326
04:15 PM	4	1	0	1	0	109	1	0	1	0	38	0	29	93	6	0	283
04:30 PM	9	1	0	5	0	135	1	0	0	0	41	0	32	124	8	0	356
04:45 PM	6	0	2	3	1	118	0	1	0	0	42	0	33	111	4	0	321
<b>Total</b>	<b>27</b>	<b>2</b>	<b>2</b>	<b>9</b>	<b>2</b>	<b>483</b>	<b>4</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>158</b>	<b>3</b>	<b>122</b>	<b>440</b>	<b>30</b>	<b>1</b>	<b>1286</b>
05:00 PM	7	0	0	1	1	116	0	0	2	0	55	2	29	141	12	0	366
05:15 PM	12	0	1	0	1	101	0	0	1	0	31	0	43	118	10	0	318
05:30 PM	8	1	0	2	1	124	0	0	0	1	31	0	34	126	8	2	338
05:45 PM	9	0	0	1	0	114	0	0	0	0	28	0	37	128	11	0	328
<b>Total</b>	<b>36</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>3</b>	<b>455</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>1</b>	<b>145</b>	<b>2</b>	<b>143</b>	<b>513</b>	<b>41</b>	<b>2</b>	<b>1350</b>
<b>Grand Total</b>	<b>63</b>	<b>3</b>	<b>3</b>	<b>13</b>	<b>5</b>	<b>938</b>	<b>4</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>303</b>	<b>5</b>	<b>265</b>	<b>953</b>	<b>71</b>	<b>3</b>	<b>2636</b>
Apprch %	76.8	3.7	3.7	15.9	0.5	98.9	0.4	0.1	1.6	0.3	96.5	1.6	20.5	73.8	5.5	0.2	
Total %	2.4	0.1	0.1	0.5	0.2	35.6	0.2	0	0.2	0	11.5	0.2	10.1	36.2	2.7	0.1	
Cars & Peds	51	3	3	13	4	926	3	1	5	1	297	5	257	941	58	3	2571
% Cars & Peds	81	100	100	100	80	98.7	75	100	100	100	98	100	97	98.7	81.7	100	97.5
Trucks & Buses	0	0	0	0	0	1	0	0	0	0	2	0	0	1	0	0	4
% Trucks & Buses	0	0	0	0	0	0.1	0	0	0	0	0.7	0	0	0.1	0	0	0.2
Bikes by Direction	12	0	0	0	1	11	1	0	0	0	4	0	8	11	13	0	61
% Bikes by Direction	19	0	0	0	20	1.2	25	0	0	0	1.3	0	3	1.2	18.3	0	2.3

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	9	1	0	5	15	0	135	1	0	136	0	0	41	0	41	32	124	8	0	164	356
04:45 PM	6	0	2	3	11	1	118	0	1	120	0	0	42	0	42	33	111	4	0	148	321
05:00 PM	7	0	0	1	8	1	116	0	0	117	2	0	55	2	59	29	141	12	0	182	366
05:15 PM	12	0	1	0	13	1	101	0	0	102	1	0	31	0	32	43	118	10	0	171	318
Total Volume	34	1	3	9	47	3	470	1	1	475	3	0	169	2	174	137	494	34	0	665	1361
% App. Total	72.3	2.1	6.4	19.1	0.6	98.9	0.2	0.2	1.7	0	97.1	1.1	20.6	74.3	5.1	0					
PHF	.708	.250	.375	.450	.783	.750	.870	.250	.250	.873	.375	.000	.768	.250	.737	.797	.876	.708	.000	.913	.930
Cars & Peds	25	1	3	9	38	3	463	1	1	468	3	0	165	2	170	132	488	26	0	646	1322
% Cars & Peds	73.5	100	100	100	80.9	100	98.5	100	100	98.5	100	0	97.6	100	97.7	96.4	98.8	76.5	0	97.1	97.1
Trucks & Buses	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	0	0	0	0	0	3
% Trucks & Buses	0	0	0	0	0	0	0.2	0	0	0.2	0	0	1.2	0	1.1	0	0	0	0	0	0.2
Bikes by Direction	9	0	0	0	9	0	6	0	0	6	0	0	2	0	2	5	6	8	0	19	36
% Bikes by Direction	26.5	0	0	0	19.1	0	1.3	0	0	1.3	0	0	1.2	0	1.1	3.6	1.2	23.5	0	2.9	2.6

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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742B  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	104	5	6	2	5	10	1	7	0	9	13	4	20	12	72	5	275
04:15 PM	99	9	8	5	5	8	5	1	1	8	8	4	15	10	74	1	261
04:30 PM	123	6	11	4	10	6	0	1	2	7	11	1	15	13	88	1	299
04:45 PM	102	6	6	0	10	11	4	4	0	3	10	2	18	10	83	1	270
Total	428	26	31	11	30	35	10	13	3	27	42	11	68	45	317	8	1105
05:00 PM	103	6	7	1	8	7	2	0	1	4	8	2	15	15	97	1	277
05:15 PM	77	8	10	5	6	11	1	0	1	7	8	6	24	12	90	2	268
05:30 PM	100	11	15	2	12	13	3	2	1	7	12	4	27	19	76	0	304
05:45 PM	86	7	13	6	5	17	1	2	2	5	9	8	20	25	81	0	287
Total	366	32	45	14	31	48	7	4	5	23	37	20	86	71	344	3	1136
Grand Total	794	58	76	25	61	83	17	17	8	50	79	31	154	116	661	11	2241
Apprch %	83.3	6.1	8	2.6	34.3	46.6	9.6	9.6	4.8	29.8	47	18.5	16.3	12.3	70.2	1.2	
Total %	35.4	2.6	3.4	1.1	2.7	3.7	0.8	0.8	0.4	2.2	3.5	1.4	6.9	5.2	29.5	0.5	

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	103	6	7	1	117	8	7	2	0	17	1	4	8	2	15	15	15	97	1	128	277
05:15 PM	77	8	10	5	100	6	11	1	0	18	1	7	8	6	22	24	12	90	2	128	268
05:30 PM	100	11	15	2	128	12	13	3	2	30	1	7	12	4	24	27	19	76	0	122	304
05:45 PM	86	7	13	6	112	5	17	1	2	25	2	5	9	8	24	20	25	81	0	126	287
Total Volume	366	32	45	14	457	31	48	7	4	90	5	23	37	20	85	86	71	344	3	504	1136
% App. Total	80.1	7	9.8	3.1		34.4	53.3	7.8	4.4		5.9	27.1	43.5	23.5		17.1	14.1	68.3	0.6		
PHF	.888	.727	.750	.583	.893	.646	.706	.583	.500	.750	.625	.821	.771	.625	.885	.796	.710	.887	.375	.984	.934

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N/S: Narragansett Av./Caswell St.  
 E/W: Oceanside Pl./Narragansett Av.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742B  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
Grand Total	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	4
Apprch %	0	100	0	0	0	0	0	0	0	100	0	0	0	0	100	0	
Total %	0	25	0	0	0	0	0	0	0	50	0	0	0	0	25	0	

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
% App. Total	0	100	0	0		0	0	0	0		0	0	0	0		0	0	100	0		
PHF	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.500

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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742B  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	1	1	0	0	0	1	1	0	0	0	0	0	2	0	0	0	6
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
04:30 PM	4	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	8
04:45 PM	1	0	1	0	0	0	0	0	0	0	0	0	2	1	0	0	5
<b>Total</b>	<b>6</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>21</b>
05:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
05:30 PM	2	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
<b>Total</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>9</b>
<b>Grand Total</b>	<b>9</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>4</b>	<b>3</b>	<b>0</b>	<b>30</b>
Apprch %	69.2	23.1	7.7	0	0	33.3	66.7	0	0	0	100	0	41.7	33.3	25	0	
Total %	30	10	3.3	0	0	3.3	6.7	0	0	0	6.7	0	16.7	13.3	10	0	

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	1	1	0	0	2	0	1	1	0	2	0	0	0	0	0	2	0	0	0	2	6
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
04:30 PM	4	0	0	0	4	0	0	0	0	0	0	2	0	2	0	0	0	2	0	2	8
04:45 PM	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	5
Total Volume	6	1	1	0	8	0	1	1	0	2	0	0	2	0	2	4	3	2	0	9	21
% App. Total	75	12.5	12.5	0		0	50	50	0		0	0	100	0		44.4	33.3	22.2	0		
PHF	.375	.250	.250	.000	.500	.000	.250	.250	.000	.250	.000	.000	.250	.000	.250	.500	.375	.250	.000	.750	.656

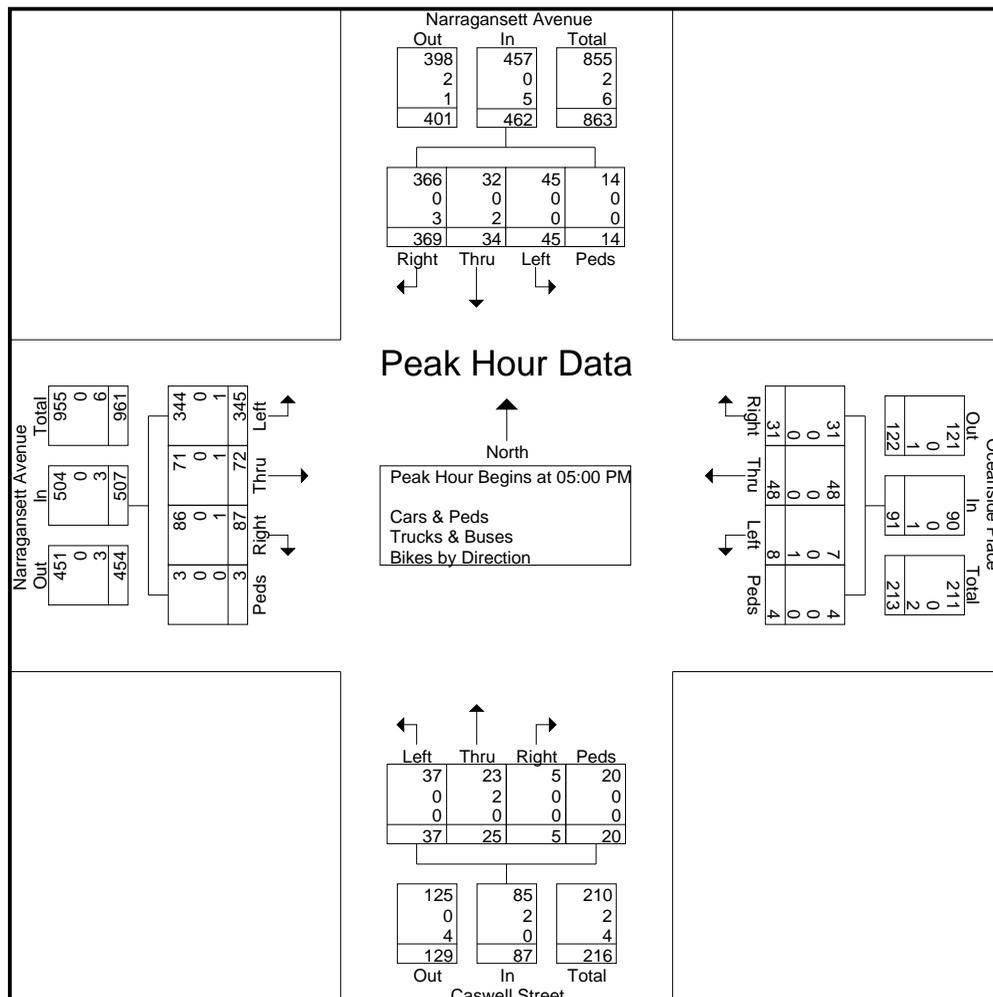
# Transportation Data Corporation

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E/W: Oceanside Pl./Narragansett Av.  
City, State: Narragansett, RI  
Client: Pare/Derek Hug

File Name : 05742B  
Site Code : 23138.00  
Start Date : 8/11/2023  
Page No : 1

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	104	6	7	1	118	8	7	2	0	17	1	4	8	2	15	15	15	97	1	128	278
05:15 PM	77	9	10	5	101	6	11	1	0	18	1	7	8	6	22	24	13	90	2	129	270
05:30 PM	102	12	15	2	131	12	13	4	2	31	1	8	12	4	25	27	19	76	0	122	309
05:45 PM	86	7	13	6	112	5	17	1	2	25	2	6	9	8	25	21	25	82	0	128	290
Total Volume	369	34	45	14	462	31	48	8	4	91	5	25	37	20	87	87	72	345	3	507	1147
% App. Total	79.9	7.4	9.7	3		34.1	52.7	8.8	4.4		5.7	28.7	42.5	23		17.2	14.2	68	0.6		
PHF	.887	.708	.750	.583	.882	.646	.706	.500	.500	.734	.625	.781	.771	.625	.870	.806	.720	.889	.375	.983	.928
Cars & Peds	366	32	45	14	457	31	48	7	4	90	5	23	37	20	85	86	71	344	3	504	1136
% Cars & Peds	99.2	94.1	100	100	98.9	100	100	87.5	100	98.9	100	92.0	100	100	97.7	98.9	98.6	99.7	100	99.4	99.0
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	8.0	0	0	2.3	0	0	0	0	0	0.2
Bikes by Direction	3	2	0	0	5	0	0	1	0	1	0	0	0	0	0	1	1	1	0	3	9
% Bikes by Direction	0.8	5.9	0	0	1.1	0	0	12.5	0	1.1	0	0	0	0	0	1.1	1.4	0.3	0	0.6	0.8



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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742B  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	105	6	6	2	5	11	2	7	0	9	13	4	22	12	72	5	281
04:15 PM	99	9	8	5	5	8	5	1	1	8	8	4	15	12	75	1	264
04:30 PM	127	6	11	4	10	6	0	1	2	7	13	1	15	13	90	1	307
04:45 PM	103	7	7	0	10	11	4	4	0	3	10	2	20	11	83	1	276
Total	434	28	32	11	30	36	11	13	3	27	44	11	72	48	320	8	1128
05:00 PM	104	6	7	1	8	7	2	0	1	4	8	2	15	15	97	1	278
05:15 PM	77	9	10	5	6	11	1	0	1	7	8	6	24	13	90	2	270
05:30 PM	102	12	15	2	12	13	4	2	1	8	12	4	27	19	76	0	309
05:45 PM	86	7	13	6	5	17	1	2	2	6	9	8	21	25	82	0	290
Total	369	34	45	14	31	48	8	4	5	25	37	20	87	72	345	3	1147
Grand Total	803	62	77	25	61	84	19	17	8	52	81	31	159	120	665	11	2275
Apprch %	83	6.4	8	2.6	33.7	46.4	10.5	9.4	4.7	30.2	47.1	18	16.6	12.6	69.6	1.2	
Total %	35.3	2.7	3.4	1.1	2.7	3.7	0.8	0.7	0.4	2.3	3.6	1.4	7	5.3	29.2	0.5	
Cars & Peds	794	58	76	25	61	83	17	17	8	50	79	31	154	116	661	11	2241
% Cars & Peds	98.9	93.5	98.7	100	100	98.8	89.5	100	100	96.2	97.5	100	96.9	96.7	99.4	100	98.5
Trucks & Buses	0	1	0	0	0	0	0	0	0	2	0	0	0	0	1	0	4
% Trucks & Buses	0	1.6	0	0	0	0	0	0	0	3.8	0	0	0	0	0.2	0	0.2
Bikes by Direction	9	3	1	0	0	1	2	0	0	0	2	0	5	4	3	0	30
% Bikes by Direction	1.1	4.8	1.3	0	0	1.2	10.5	0	0	0	2.5	0	3.1	3.3	0.5	0	1.3

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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	
05:00 PM	104	6	7	1	118	8	7	2	0	17	1	4	8	2	15	15	15	97	1	128	278
05:15 PM	77	9	10	5	101	6	11	1	0	18	1	7	8	6	22	24	13	90	2	129	270
05:30 PM	102	12	15	2	131	12	13	4	2	31	1	8	12	4	25	27	19	76	0	122	309
05:45 PM	86	7	13	6	112	5	17	1	2	25	2	6	9	8	25	21	25	82	0	128	290
Total Volume	369	34	45	14	462	31	48	8	4	91	5	25	37	20	87	87	72	345	3	507	1147
% App. Total	79.9	7.4	9.7	3		34.1	52.7	8.8	4.4		5.7	28.7	42.5	23		17.2	14.2	68	0.6		
PHF	.887	.708	.750	.583	.882	.646	.706	.500	.500	.734	.625	.781	.771	.625	.870	.806	.720	.889	.375	.983	.928
Cars & Peds	366	32	45	14	457	31	48	7	4	90	5	23	37	20	85	86	71	344	3	504	1136
% Cars & Peds	99.2	94.1	100	100	98.9	100	100	87.5	100	98.9	100	92.0	100	100	97.7	98.9	98.6	99.7	100	99.4	99.0
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	8.0	0	0	2.3	0	0	0	0	0	0.2
Bikes by Direction	3	2	0	0	5	0	0	1	0	1	0	0	0	0	0	1	1	1	0	0	3
% Bikes by Direction	0.8	5.9	0	0	1.1	0	0	12.5	0	1.1	0	0	0	0	0	1.1	1.4	0.3	0	0.6	0.8

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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742C  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
04:00 PM	97	92	8	85	23	8	9	81	0	403
04:15 PM	94	75	13	118	24	8	10	78	3	423
04:30 PM	119	90	2	92	33	2	18	90	1	447
04:45 PM	104	93	6	116	17	0	22	83	2	443
Total	414	350	29	411	97	18	59	332	6	1716
05:00 PM	100	84	6	97	21	0	16	95	7	426
05:15 PM	76	83	12	117	22	1	15	85	6	417
05:30 PM	121	96	10	98	18	3	9	98	4	457
05:45 PM	92	111	3	117	28	0	19	82	2	454
Total	389	374	31	429	89	4	59	360	19	1754
Grand Total	803	724	60	840	186	22	118	692	25	3470
Apprch %	50.6	45.6	3.8	80.2	17.7	2.1	14.1	82.9	3	
Total %	23.1	20.9	1.7	24.2	5.4	0.6	3.4	19.9	0.7	

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
05:00 PM	100	84	6	190	97	21	0	118	16	95	7	118	426
05:15 PM	76	83	12	171	117	22	1	140	15	85	6	106	417
05:30 PM	121	96	10	227	98	18	3	119	9	98	4	111	457
05:45 PM	92	111	3	206	117	28	0	145	19	82	2	103	454
Total Volume	389	374	31	794	429	89	4	522	59	360	19	438	1754
% App. Total	49	47.1	3.9		82.2	17	0.8		13.5	82.2	4.3		
PHF	.804	.842	.646	.874	.917	.795	.333	.900	.776	.918	.679	.928	.960

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 05:00 PM

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 W: Narragansett Avenue  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742C  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
04:00 PM	0	1	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	1	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	0	0	0	0	0	0	0	1
Total	1	1	0	0	0	0	0	1	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	2	0	2
Grand Total	1	1	0	0	0	0	0	3	0	5
Apprch %	50	50	0	0	0	0	0	100	0	
Total %	20	20	0	0	0	0	0	60	0	

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
04:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Volume	1	1	0	2	0	0	0	0	0	1	0	1	3
% App. Total	50	50	0		0	0	0		0	100	0		
PHF	.250	.250	.000	.500	.000	.000	.000	.000	.000	.250	.000	.250	.750

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1  
 Peak Hour for Entire Intersection Begins at 04:00 PM

# Transportation Data Corporation

Mario Perone, mperone1@verizon.net

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N/S: Boston Neck Rd./Beach St.  
 W: Narragansett Avenue  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742C  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

### Groups Printed- Bikes by Direction

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
04:00 PM	1	6	0	3	0	0	0	0	0	10
04:15 PM	0	1	0	0	0	0	0	0	0	1
04:30 PM	1	8	0	4	2	0	0	0	0	15
04:45 PM	1	0	0	0	0	0	2	0	0	3
<b>Total</b>	<b>3</b>	<b>15</b>	<b>0</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>29</b>
05:00 PM	2	1	0	3	0	0	0	0	0	6
05:15 PM	0	1	0	0	1	0	0	1	0	3
05:30 PM	4	2	0	0	0	0	0	0	0	6
05:45 PM	0	1	0	5	0	0	2	1	0	9
<b>Total</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>24</b>
<b>Grand Total</b>	<b>9</b>	<b>20</b>	<b>0</b>	<b>15</b>	<b>3</b>	<b>0</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>53</b>
Apprch %	31	69	0	83.3	16.7	0	66.7	33.3	0	
Total %	17	37.7	0	28.3	5.7	0	7.5	3.8	0	

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
04:00 PM	1	6	0	7	3	0	0	3	0	0	0	0	10
04:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	1
04:30 PM	1	8	0	9	4	2	0	6	0	0	0	0	15
04:45 PM	1	0	0	1	0	0	0	0	2	0	0	2	3
<b>Total Volume</b>	<b>3</b>	<b>15</b>	<b>0</b>	<b>18</b>	<b>7</b>	<b>2</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>29</b>
<b>% App. Total</b>	<b>16.7</b>	<b>83.3</b>	<b>0</b>	<b>77.8</b>	<b>22.2</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>483</b>
PHF	.750	.469	.000	.500	.438	.250	.000	.375	.250	.000	.000	.250	.483

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:00 PM

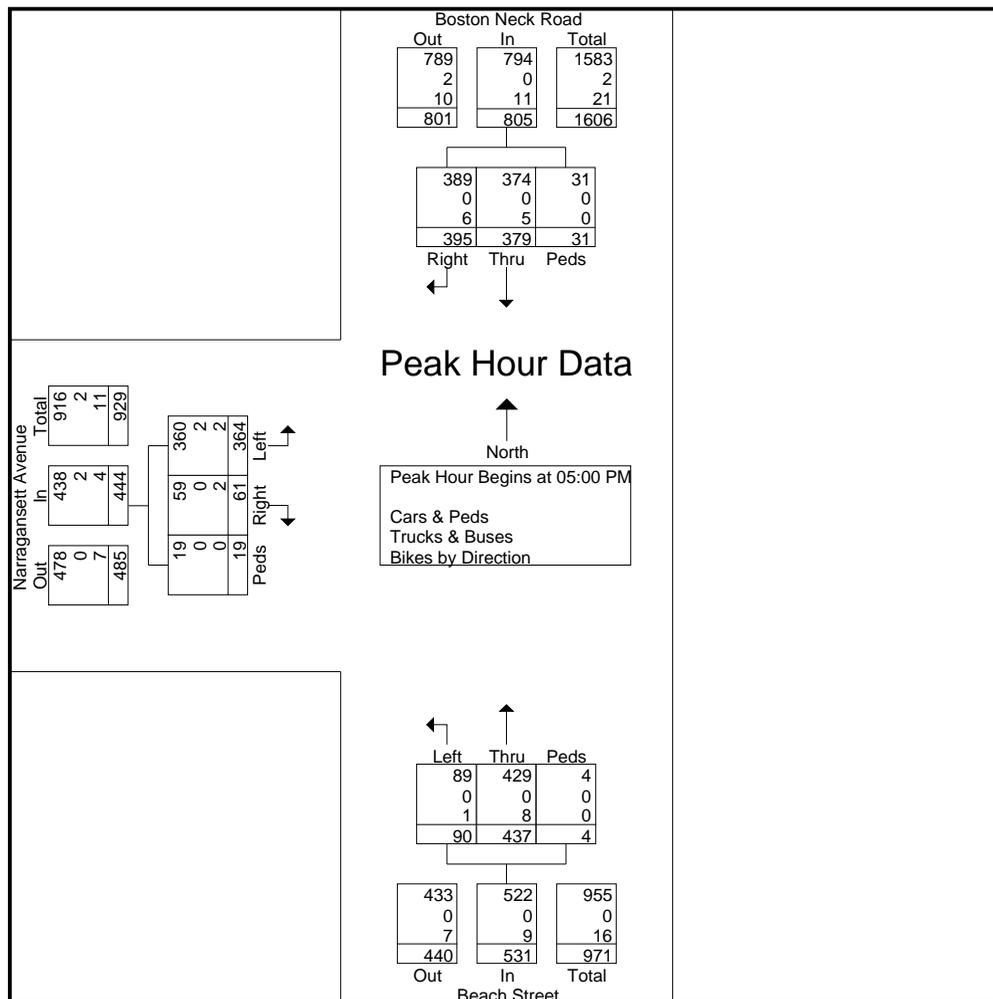
# Transportation Data Corporation

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N/S: Boston Neck Rd./Beach St.  
W: Narragansett Avenue  
City, State: Narragansett, RI  
Client: Pare/Derek Hug

File Name : 05742C  
Site Code : 23138.00  
Start Date : 8/11/2023  
Page No : 1

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	102	85	6	193	100	21	0	121	16	95	7	118	432
05:15 PM	76	84	12	172	117	23	1	141	15	86	6	107	420
05:30 PM	125	98	10	233	98	18	3	119	9	99	4	112	464
05:45 PM	92	112	3	207	122	28	0	150	21	84	2	107	464
Total Volume	395	379	31	805	437	90	4	531	61	364	19	444	1780
% App. Total	49.1	47.1	3.9		82.3	16.9	0.8		13.7	82	4.3		
PHF	.790	.846	.646	.864	.895	.804	.333	.885	.726	.919	.679	.941	.959
Cars & Peds	389	374	31	794	429	89	4	522	59	360	19	438	1754
% Cars & Peds	98.5	98.7	100	98.6	98.2	98.9	100	98.3	96.7	98.9	100	98.6	98.5
Trucks & Buses	0	0	0	0	0	0	0	0	0	2	0	2	2
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0.5	0	0.5	0.1
Bikes by Direction	6	5	0	11	8	1	0	9	2	2	0	4	24
% Bikes by Direction	1.5	1.3	0	1.4	1.8	1.1	0	1.7	3.3	0.5	0	0.9	1.3



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 Client: Pare/Derek Hug

File Name : 05742C  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
04:00 PM	98	99	8	88	23	8	9	81	0	414
04:15 PM	94	76	13	118	24	8	10	79	3	425
04:30 PM	120	98	2	96	35	2	18	90	1	462
04:45 PM	106	93	6	116	17	0	24	83	2	447
Total	418	366	29	418	99	18	61	333	6	1748
05:00 PM	102	85	6	100	21	0	16	95	7	432
05:15 PM	76	84	12	117	23	1	15	86	6	420
05:30 PM	125	98	10	98	18	3	9	99	4	464
05:45 PM	92	112	3	122	28	0	21	84	2	464
Total	395	379	31	437	90	4	61	364	19	1780
Grand Total	813	745	60	855	189	22	122	697	25	3528
Apprch %	50.2	46	3.7	80.2	17.7	2.1	14.5	82.6	3	
Total %	23	21.1	1.7	24.2	5.4	0.6	3.5	19.8	0.7	
Cars & Peds	803	724	60	840	186	22	118	692	25	3470
% Cars & Peds	98.8	97.2	100	98.2	98.4	100	96.7	99.3	100	98.4
Trucks & Buses	1	1	0	0	0	0	0	3	0	5
% Trucks & Buses	0.1	0.1	0	0	0	0	0	0.4	0	0.1
Bikes by Direction	9	20	0	15	3	0	4	2	0	53
% Bikes by Direction	1.1	2.7	0	1.8	1.6	0	3.3	0.3	0	1.5

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	102	85	6	193	100	21	0	121	16	95	7	118	432
05:15 PM	76	84	12	172	117	23	1	141	15	86	6	107	420
05:30 PM	125	98	10	233	98	18	3	119	9	99	4	112	464
05:45 PM	92	112	3	207	122	28	0	150	21	84	2	107	464
Total Volume	395	379	31	805	437	90	4	531	61	364	19	444	1780
% App. Total	49.1	47.1	3.9		82.3	16.9	0.8		13.7	82	4.3		
PHF	.790	.846	.646	.864	.895	.804	.333	.885	.726	.919	.679	.941	.959
Cars & Peds	389	374	31	794	429	89	4	522	59	360	19	438	1754
% Cars & Peds	98.5	98.7	100	98.6	98.2	98.9	100	98.3	96.7	98.9	100	98.6	98.5
Trucks & Buses	0	0	0	0	0	0	0	0	0	2	0	2	2
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0.5	0	0.5	0.1
Bikes by Direction	6	5	0	11	8	1	0	9	2	2	0	4	24
% Bikes by Direction	1.5	1.3	0	1.4	1.8	1.1	0	1.7	3.3	0.5	0	0.9	1.3

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 E/W: Memorial Sq./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742D  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	28	9	3	2	1	8	2	8	2	3	2	9	3	19	17	8	124
04:15 PM	26	13	5	8	2	11	3	14	1	4	3	11	5	25	25	8	164
04:30 PM	29	8	6	11	6	8	4	20	3	6	1	5	1	21	24	8	161
04:45 PM	26	9	7	11	16	22	4	22	4	7	2	14	3	18	34	6	205
Total	109	39	21	32	25	49	13	64	10	20	8	39	12	83	100	30	654
05:00 PM	34	9	8	9	11	18	3	5	3	5	4	8	1	15	35	21	189
05:15 PM	31	6	10	28	21	15	6	14	3	7	2	13	6	24	37	10	233
05:30 PM	32	14	10	30	7	19	8	17	6	5	6	18	5	23	49	8	257
05:45 PM	34	22	11	35	8	16	6	10	2	8	6	24	3	22	50	27	284
Total	131	51	39	102	47	68	23	46	14	25	18	63	15	84	171	66	963
Grand Total	240	90	60	134	72	117	36	110	24	45	26	102	27	167	271	96	1617
Apprch %	45.8	17.2	11.5	25.6	21.5	34.9	10.7	32.8	12.2	22.8	13.2	51.8	4.8	29.8	48.3	17.1	
Total %	14.8	5.6	3.7	8.3	4.5	7.2	2.2	6.8	1.5	2.8	1.6	6.3	1.7	10.3	16.8	5.9	

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	<b>34</b>	9	8	9	60	11	18	3	5	37	3	5	4	8	20	1	15	35	21	72	189
05:15 PM	31	6	10	28	75	<b>21</b>	15	6	14	<b>56</b>	3	7	2	13	25	<b>6</b>	<b>24</b>	37	10	77	233
05:30 PM	32	14	10	30	86	7	<b>19</b>	<b>8</b>	<b>17</b>	51	<b>6</b>	5	<b>6</b>	18	35	5	23	49	8	85	257
05:45 PM	34	<b>22</b>	<b>11</b>	<b>35</b>	<b>102</b>	8	16	6	10	40	2	<b>8</b>	6	<b>24</b>	<b>40</b>	3	22	<b>50</b>	<b>27</b>	<b>102</b>	<b>284</b>
Total Volume	131	51	39	102	323	47	68	23	46	184	14	25	18	63	120	15	84	171	66	336	963
% App. Total	40.6	15.8	12.1	31.6		25.5	37	12.5	25		11.7	20.8	15	52.5		4.5	25	50.9	19.6		
PHF	.963	.580	.886	.729	.792	.560	.895	.719	.676	.821	.583	.781	.750	.656	.750	.625	.875	.855	.611	.824	.848

**Transportation Data Corporation**

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 E/W: Memorial Sq./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742D  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Trucks & Buses

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total %																	

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742D  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	3
04:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	2	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>11</b>
05:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
05:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
05:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>8</b>
<b>Grand Total</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>1</b>	<b>0</b>	<b>19</b>
Apprch %	66.7	33.3	0	0	0	75	0	25	0	0	0	0	0	88.9	11.1	0	
Total %	21.1	10.5	0	0	0	15.8	0	5.3	0	0	0	0	0	42.1	5.3	0	

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	2	3
04:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	2	1	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
Total Volume	3	1	0	0	4	0	2	0	1	3	0	0	0	0	0	0	4	0	0	4	11
% App. Total	75	25	0	0		0	66.7	0	33.3		0	0	0	0		0	100	0	0		
PHF	.375	.250	.000	.000	.333	.000	.250	.000	.250	.375	.000	.000	.000	.000	.000	.000	.500	.000	.000	.500	.550

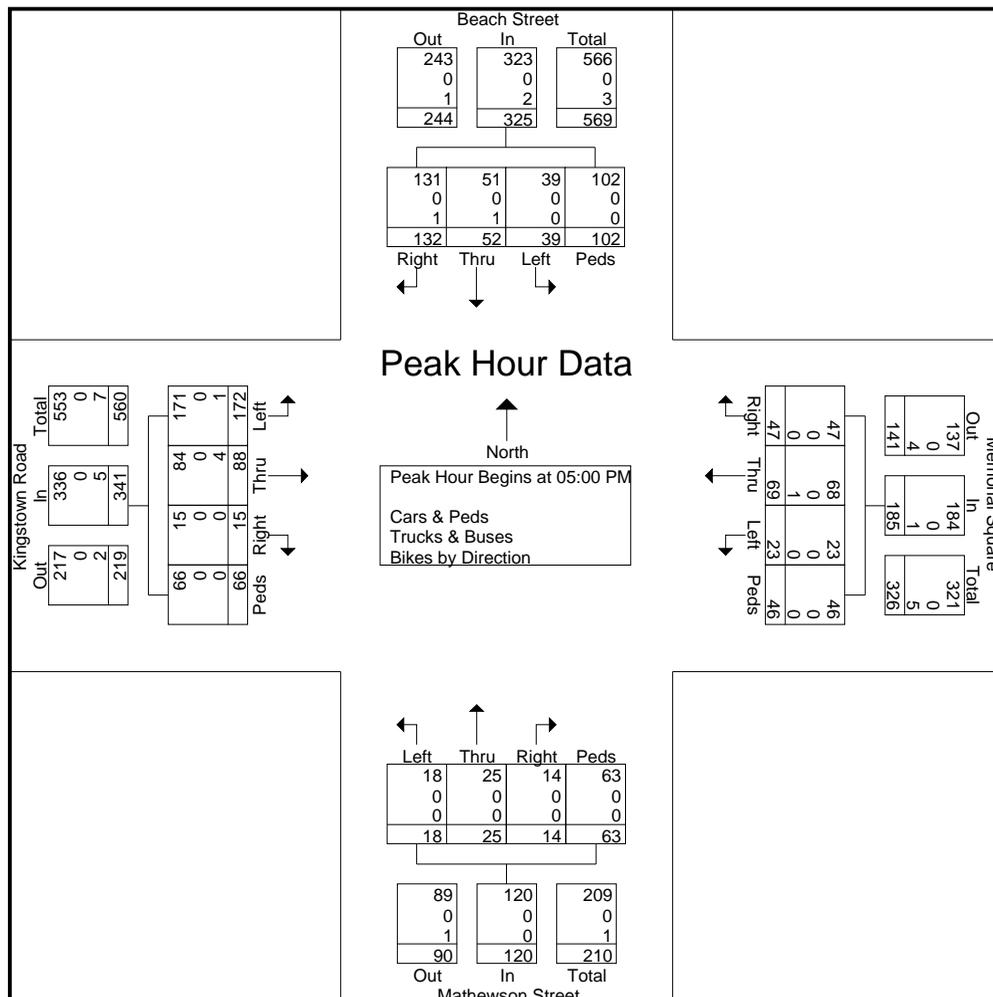
# Transportation Data Corporation

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E/W: Memorial Sq./Kingstown Rd.  
City, State: Narragansett, RI  
Client: Pare/Derek Hug

File Name : 05742D  
Site Code : 23138.00  
Start Date : 8/11/2023  
Page No : 1

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	34	10	8	9	61	11	18	3	5	37	3	5	4	8	20	1	16	35	21	73	191
05:15 PM	31	6	10	28	75	21	16	6	14	57	3	7	2	13	25	6	24	37	10	77	234
05:30 PM	32	14	10	30	86	7	19	8	17	51	6	5	6	18	35	5	23	50	8	86	258
05:45 PM	35	22	11	35	103	8	16	6	10	40	2	8	6	24	40	3	25	50	27	105	288
Total Volume	132	52	39	102	325	47	69	23	46	185	14	25	18	63	120	15	88	172	66	341	971
% App. Total	40.6	16	12	31.4		25.4	37.3	12.4	24.9		11.7	20.8	15	52.5		4.4	25.8	50.4	19.4		
PHF	.943	.591	.886	.729	.789	.560	.908	.719	.676	.811	.583	.781	.750	.656	.750	.625	.880	.860	.611	.812	.843
Cars & Peds	131	51	39	102	323	47	68	23	46	184	14	25	18	63	120	15	84	171	66	336	963
% Cars & Peds	99.2	98.1	100	100	99.4	100	98.6	100	100	99.5	100	100	100	100	100	100	95.5	99.4	100	98.5	99.2
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	4	1	0	5	8
% Bikes by Direction	0.8	1.9	0	0	0.6	0	1.4	0	0	0.5	0	0	0	0	0	0	4.5	0.6	0	1.5	0.8



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N/S: Beach St./Mathewson St.  
 E/W: Memorial Sq./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742D  
 Site Code : 23138.00  
 Start Date : 8/11/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
04:00 PM	28	9	3	2	1	8	2	9	2	3	2	9	3	21	17	8	127
04:15 PM	27	13	5	8	2	11	3	14	1	4	3	11	5	25	25	8	165
04:30 PM	31	9	6	11	6	10	4	20	3	6	1	5	1	21	24	8	166
04:45 PM	26	9	7	11	16	22	4	22	4	7	2	14	3	20	34	6	207
<b>Total</b>	<b>112</b>	<b>40</b>	<b>21</b>	<b>32</b>	<b>25</b>	<b>51</b>	<b>13</b>	<b>65</b>	<b>10</b>	<b>20</b>	<b>8</b>	<b>39</b>	<b>12</b>	<b>87</b>	<b>100</b>	<b>30</b>	<b>665</b>
05:00 PM	34	10	8	9	11	18	3	5	3	5	4	8	1	16	35	21	191
05:15 PM	31	6	10	28	21	16	6	14	3	7	2	13	6	24	37	10	234
05:30 PM	32	14	10	30	7	19	8	17	6	5	6	18	5	23	50	8	258
05:45 PM	35	22	11	35	8	16	6	10	2	8	6	24	3	25	50	27	288
<b>Total</b>	<b>132</b>	<b>52</b>	<b>39</b>	<b>102</b>	<b>47</b>	<b>69</b>	<b>23</b>	<b>46</b>	<b>14</b>	<b>25</b>	<b>18</b>	<b>63</b>	<b>15</b>	<b>88</b>	<b>172</b>	<b>66</b>	<b>971</b>
<b>Grand Total</b>	<b>244</b>	<b>92</b>	<b>60</b>	<b>134</b>	<b>72</b>	<b>120</b>	<b>36</b>	<b>111</b>	<b>24</b>	<b>45</b>	<b>26</b>	<b>102</b>	<b>27</b>	<b>175</b>	<b>272</b>	<b>96</b>	<b>1636</b>
Apprch %	46	17.4	11.3	25.3	21.2	35.4	10.6	32.7	12.2	22.8	13.2	51.8	4.7	30.7	47.7	16.8	
Total %	14.9	5.6	3.7	8.2	4.4	7.3	2.2	6.8	1.5	2.8	1.6	6.2	1.7	10.7	16.6	5.9	
Cars & Peds	240	90	60	134	72	117	36	110	24	45	26	102	27	167	271	96	1617
% Cars & Peds	98.4	97.8	100	100	100	97.5	100	99.1	100	100	100	100	100	95.4	99.6	100	98.8
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	4	2	0	0	0	3	0	1	0	0	0	0	0	8	1	0	19
% Bikes by Direction	1.6	2.2	0	0	0	2.5	0	0.9	0	0	0	0	0	4.6	0.4	0	1.2

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	34	10	8	9	61	11	18	3	5	37	3	5	4	8	20	1	16	35	21	73	191
05:15 PM	31	6	10	28	75	21	16	6	14	57	3	7	2	13	25	6	24	37	10	77	234
05:30 PM	32	14	10	30	86	7	19	8	17	51	6	5	6	18	35	5	23	50	8	86	258
05:45 PM	35	22	11	35	103	8	16	6	10	40	2	8	6	24	40	3	25	50	27	105	288
Total Volume	132	52	39	102	325	47	69	23	46	185	14	25	18	63	120	15	88	172	66	341	971
% App. Total	40.6	16	12	31.4		25.4	37.3	12.4	24.9		11.7	20.8	15	52.5		4.4	25.8	50.4	19.4		
PHF	.943	.591	.886	.729	.789	.560	.908	.719	.676	.811	.583	.781	.750	.656	.750	.625	.880	.860	.611	.812	.843
Cars & Peds	131	51	39	102	323	47	68	23	46	184	14	25	18	63	120	15	84	171	66	336	963
% Cars & Peds	99.2	98.1	100	100	99.4	100	98.6	100	100	99.5	100	100	100	100	100	100	95.5	99.4	100	98.5	99.2
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bikes by Direction	1	1	0	0	2	0	1	0	0	1	0	0	0	0	0	0	4	1	0	5	8
% Bikes by Direction	0.8	1.9	0	0	0.6	0	1.4	0	0	0.5	0	0	0	0	0	0	4.5	0.6	0	1.5	0.8

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N/S: Strathmore Rd./Kingstown Rd.  
 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742AA  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Cars & Peds

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	5	1	0	2	0	83	0	0	1	0	33	1	34	118	5	0	283
11:15 AM	6	0	0	0	0	88	1	0	2	0	33	0	29	106	1	0	266
11:30 AM	6	1	2	0	1	84	2	3	6	0	45	0	36	83	6	1	276
11:45 AM	8	0	0	0	1	103	2	0	1	2	53	1	39	93	5	0	308
<b>Total</b>	<b>25</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>358</b>	<b>5</b>	<b>3</b>	<b>10</b>	<b>2</b>	<b>164</b>	<b>2</b>	<b>138</b>	<b>400</b>	<b>17</b>	<b>1</b>	<b>1133</b>
12:00 PM	5	1	1	0	0	74	3	0	0	2	33	1	30	78	11	1	240
12:15 PM	5	1	2	4	0	68	1	0	2	0	42	1	30	109	7	0	272
12:30 PM	5	1	0	2	0	77	1	0	1	0	49	0	34	95	3	0	268
12:45 PM	6	0	1	3	0	86	3	0	5	0	41	0	44	103	3	0	295
<b>Total</b>	<b>21</b>	<b>3</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>305</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>2</b>	<b>165</b>	<b>2</b>	<b>138</b>	<b>385</b>	<b>24</b>	<b>1</b>	<b>1075</b>
01:00 PM	7	0	0	4	1	100	0	0	1	2	31	0	27	95	3	0	271
01:15 PM	8	0	0	1	0	85	0	0	2	0	39	0	19	87	1	0	242
01:30 PM	3	0	1	1	0	92	1	0	1	0	47	0	29	87	7	0	269
01:45 PM	13	1	1	0	1	95	0	0	2	0	36	0	29	96	4	0	278
<b>Total</b>	<b>31</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>2</b>	<b>372</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>153</b>	<b>0</b>	<b>104</b>	<b>365</b>	<b>15</b>	<b>0</b>	<b>1060</b>
<b>Grand Total</b>	<b>77</b>	<b>6</b>	<b>8</b>	<b>17</b>	<b>4</b>	<b>1035</b>	<b>14</b>	<b>3</b>	<b>24</b>	<b>6</b>	<b>482</b>	<b>4</b>	<b>380</b>	<b>1150</b>	<b>56</b>	<b>2</b>	<b>3268</b>
Apprch %	71.3	5.6	7.4	15.7	0.4	98	1.3	0.3	4.7	1.2	93.4	0.8	23.9	72.4	3.5	0.1	
Total %	2.4	0.2	0.2	0.5	0.1	31.7	0.4	0.1	0.7	0.2	14.7	0.1	11.6	35.2	1.7	0.1	

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	5	1	0	2	8	0	83	0	0	83	1	0	33	1	35	34	<b>118</b>	5	0	<b>157</b>	283
11:15 AM	6	0	0	0	6	0	88	1	0	89	2	0	33	0	35	29	106	1	0	136	266
11:30 AM	6	1	2	0	9	1	84	2	3	90	6	0	45	0	51	36	83	6	1	126	276
11:45 AM	8	0	0	0	8	1	<b>103</b>	2	0	<b>106</b>	1	2	<b>53</b>	1	<b>57</b>	<b>39</b>	93	5	0	137	<b>308</b>
Total Volume	25	2	2	2	31	2	358	5	3	368	10	2	164	2	178	138	400	17	1	556	1133
% App. Total	80.6	6.5	6.5	6.5		0.5	97.3	1.4	0.8		5.6	1.1	92.1	1.1		24.8	71.9	3.1	0.2		
PHF	.781	.500	.250	.250	.861	.500	.869	.625	.250	.868	.417	.250	.774	.500	.781	.885	.847	.708	.250	.885	.920

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 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742AA  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Trucks & Buses

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	3
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	3
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	3	0	0	4	0	0	7
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
<b>Total</b>	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	4
01:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	3
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
01:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
<b>Total</b>	0	0	0	0	0	4	0	0	0	0	0	0	1	4	0	0	9
<b>Grand Total</b>	0	0	0	0	0	6	0	0	0	0	3	0	3	8	0	0	20
Apprch %	0	0	0	0	0	100	0	0	0	0	100	0	27.3	72.7	0	0	
Total %	0	0	0	0	0	30	0	0	0	0	15	0	15	40	0	0	

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	2	3
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
01:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
<b>Total Volume</b>	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	1	4	0	0	5	9
<b>% App. Total</b>	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	20	80	0	0	0	
<b>PHF</b>	.000	.000	.000	.000	.000	.000	.333	.000	.000	.333	.000	.000	.000	.000	.000	.250	.500	.000	.000	.625	.750

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N/S: Strathmore Rd./Kingstown Rd.  
 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742AA  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Bikes by Direction

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	2	2	0	0	0	0	0	0	0	0	2	0	5	3	0	0	14
11:15 AM	0	0	0	0	0	2	0	0	0	0	0	0	3	6	0	0	11
11:30 AM	1	0	0	0	0	4	0	0	0	0	1	0	1	3	0	0	10
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	4	2	1	0	8
<b>Total</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>13</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>43</b>
12:00 PM	2	0	0	0	0	1	0	0	0	0	2	0	2	2	1	0	10
12:15 PM	1	1	0	0	0	2	0	0	0	0	0	0	0	1	1	0	6
12:30 PM	0	0	0	0	0	2	0	0	0	0	5	0	0	2	1	0	10
12:45 PM	0	0	0	0	0	1	0	0	0	1	2	0	0	1	0	0	5
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>3</b>	<b>0</b>	<b>31</b>
01:00 PM	0	0	1	0	0	2	0	0	0	0	0	0	4	3	1	0	11
01:15 PM	3	0	0	0	1	2	0	0	0	0	4	0	2	4	3	0	19
01:30 PM	0	0	0	0	0	3	0	0	0	0	0	0	2	0	0	0	5
01:45 PM	4	1	0	0	0	0	0	0	0	0	3	0	2	6	0	0	16
<b>Total</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>10</b>	<b>13</b>	<b>4</b>	<b>0</b>	<b>51</b>
<b>Grand Total</b>	<b>13</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>25</b>	<b>33</b>	<b>8</b>	<b>0</b>	<b>125</b>
<b>Apprch %</b>	<b>72.2</b>	<b>22.2</b>	<b>5.6</b>	<b>0</b>	<b>4.8</b>	<b>95.2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>95</b>	<b>0</b>	<b>37.9</b>	<b>50</b>	<b>12.1</b>	<b>0</b>	
<b>Total %</b>	<b>10.4</b>	<b>3.2</b>	<b>0.8</b>	<b>0</b>	<b>0.8</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.8</b>	<b>15.2</b>	<b>0</b>	<b>20</b>	<b>26.4</b>	<b>6.4</b>	<b>0</b>	

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 01:00 PM																					
01:00 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4	3	1	0	8	11
01:15 PM	3	0	0	0	3	1	2	0	0	3	0	0	4	0	4	2	4	3	0	9	19
01:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	2	0	0	0	2	5
01:45 PM	4	1	0	0	5	0	0	0	0	0	0	0	3	0	3	2	6	0	0	8	16
<b>Total Volume</b>	<b>7</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>7</b>	<b>10</b>	<b>13</b>	<b>4</b>	<b>0</b>	<b>27</b>	<b>51</b>
<b>% App. Total</b>	<b>77.8</b>	<b>11.1</b>	<b>11.1</b>	<b>0</b>		<b>12.5</b>	<b>87.5</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>100</b>	<b>0</b>		<b>37</b>	<b>48.1</b>	<b>14.8</b>	<b>0</b>		
<b>PHF</b>	<b>.438</b>	<b>.250</b>	<b>.250</b>	<b>.000</b>	<b>.450</b>	<b>.250</b>	<b>.583</b>	<b>.000</b>	<b>.000</b>	<b>.667</b>	<b>.000</b>	<b>.000</b>	<b>.438</b>	<b>.000</b>	<b>.438</b>	<b>.625</b>	<b>.542</b>	<b>.333</b>	<b>.000</b>	<b>.750</b>	<b>.671</b>

# Transportation Data Corporation

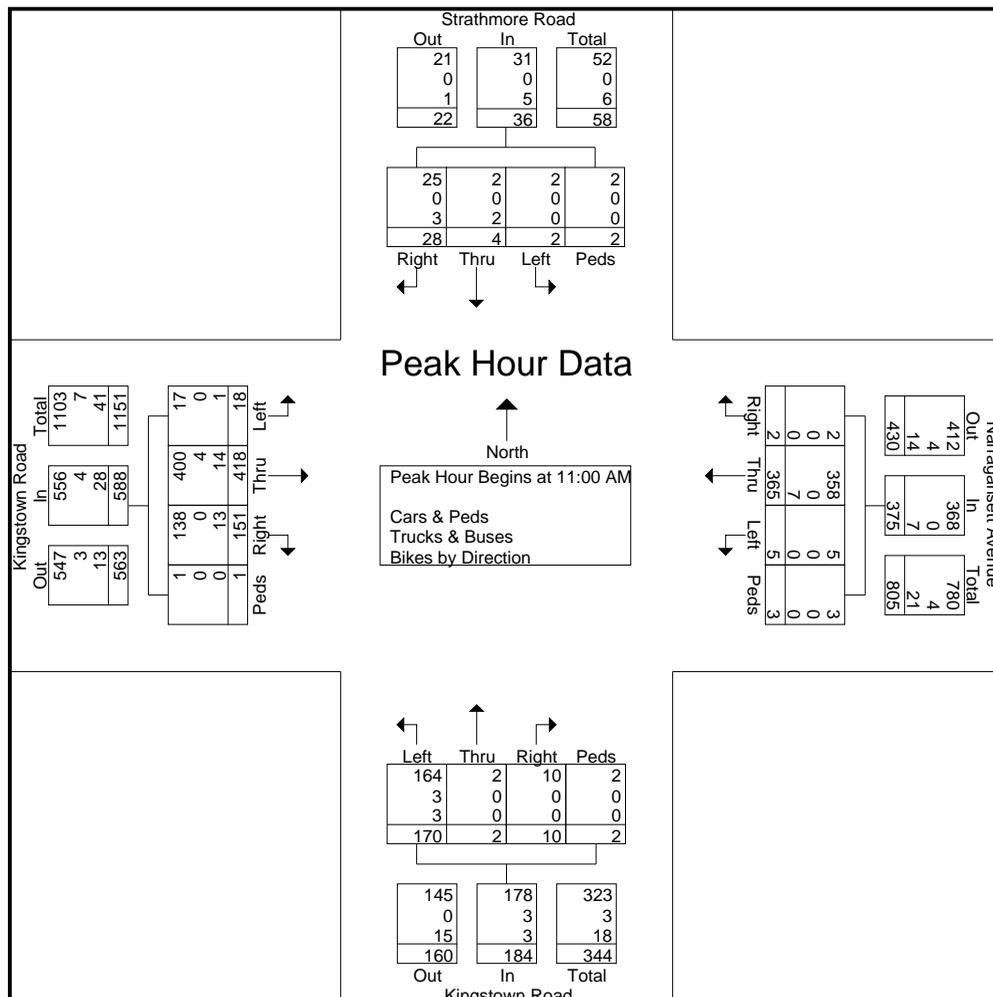
Mario Perone, [mperone1@verizon.net](mailto:mperone1@verizon.net)

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N/S: Strathmore Rd./Kingstown Rd.  
 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742AA  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	7	3	0	2	12	0	83	0	0	83	1	0	37	1	39	39	122	5	0	166	300
11:15 AM	6	0	0	0	6	0	90	1	0	91	2	0	33	0	35	32	113	1	0	146	278
11:30 AM	7	1	2	0	10	1	88	2	3	94	6	0	46	0	52	37	86	6	1	130	286
11:45 AM	8	0	0	0	8	1	104	2	0	107	1	2	54	1	58	43	97	6	0	146	319
Total Volume	28	4	2	2	36	2	365	5	3	375	10	2	170	2	184	151	418	18	1	588	1183
% App. Total	77.8	11.1	5.6	5.6		0.5	97.3	1.3	0.8		5.4	1.1	92.4	1.1		25.7	71.1	3.1	0.2		
PHF	.875	.333	.250	.250	.750	.500	.877	.625	.250	.876	.417	.250	.787	.500	.793	.878	.857	.750	.250	.886	.927
Cars & Peds	25	2	2	2	31	2	358	5	3	368	10	2	164	2	178	138	400	17	1	556	1133
% Cars & Peds	89.3	50.0	100	100	86.1	100	98.1	100	100	98.1	100	100	96.5	100	96.7	91.4	95.7	94.4	100	94.6	95.8
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	4	0	0	4	7
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0	1.6	0	1.0	0	0	0.7	0.6
Bikes by Direction	3	2	0	0	5	0	7	0	0	7	0	0	3	0	3	13	14	1	0	28	43
% Bikes by Direction	10.7	50.0	0	0	13.9	0	1.9	0	0	1.9	0	0	1.8	0	1.6	8.6	3.3	5.6	0	4.8	3.6



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N/S: Strathmore Rd./Kingstown Rd.  
 E/W: Narragansett Ave./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742AA  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Strathmore Road From North				Narragansett Avenue From East				Kingstown Road From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	7	3	0	2	0	83	0	0	1	0	37	1	39	122	5	0	300
11:15 AM	6	0	0	0	0	90	1	0	2	0	33	0	32	113	1	0	278
11:30 AM	7	1	2	0	1	88	2	3	6	0	46	0	37	86	6	1	286
11:45 AM	8	0	0	0	1	104	2	0	1	2	54	1	43	97	6	0	319
<b>Total</b>	<b>28</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>365</b>	<b>5</b>	<b>3</b>	<b>10</b>	<b>2</b>	<b>170</b>	<b>2</b>	<b>151</b>	<b>418</b>	<b>18</b>	<b>1</b>	<b>1183</b>
12:00 PM	7	1	1	0	0	75	3	0	0	2	35	1	33	80	12	1	251
12:15 PM	6	2	2	4	0	70	1	0	2	0	42	1	30	110	8	0	278
12:30 PM	5	1	0	2	0	80	1	0	1	0	54	0	34	97	4	0	279
12:45 PM	6	0	1	3	0	88	3	0	5	1	43	0	45	104	3	0	302
<b>Total</b>	<b>24</b>	<b>4</b>	<b>4</b>	<b>9</b>	<b>0</b>	<b>313</b>	<b>8</b>	<b>0</b>	<b>8</b>	<b>3</b>	<b>174</b>	<b>2</b>	<b>142</b>	<b>391</b>	<b>27</b>	<b>1</b>	<b>1110</b>
01:00 PM	7	0	1	4	1	103	0	0	1	2	31	0	32	99	4	0	285
01:15 PM	11	0	0	1	1	87	0	0	2	0	43	0	21	93	4	0	263
01:30 PM	3	0	1	1	0	95	1	0	1	0	47	0	31	88	7	0	275
01:45 PM	17	2	1	0	1	98	0	0	2	0	39	0	31	102	4	0	297
<b>Total</b>	<b>38</b>	<b>2</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>383</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>2</b>	<b>160</b>	<b>0</b>	<b>115</b>	<b>382</b>	<b>19</b>	<b>0</b>	<b>1120</b>
<b>Grand Total</b>	<b>90</b>	<b>10</b>	<b>9</b>	<b>17</b>	<b>5</b>	<b>1061</b>	<b>14</b>	<b>3</b>	<b>24</b>	<b>7</b>	<b>504</b>	<b>4</b>	<b>408</b>	<b>1191</b>	<b>64</b>	<b>2</b>	<b>3413</b>
Apprch %	71.4	7.9	7.1	13.5	0.5	98	1.3	0.3	4.5	1.3	93.5	0.7	24.5	71.5	3.8	0.1	
Total %	2.6	0.3	0.3	0.5	0.1	31.1	0.4	0.1	0.7	0.2	14.8	0.1	12	34.9	1.9	0.1	
Cars & Peds	77	6	8	17	4	1035	14	3	24	6	482	4	380	1150	56	2	3268
% Cars & Peds	85.6	60	88.9	100	80	97.5	100	100	100	85.7	95.6	100	93.1	96.6	87.5	100	95.8
Trucks & Buses	0	0	0	0	0	6	0	0	0	0	3	0	3	8	0	0	20
% Trucks & Buses	0	0	0	0	0	0.6	0	0	0	0	0.6	0	0.7	0.7	0	0	0.6
Bikes by Direction	13	4	1	0	1	20	0	0	0	1	19	0	25	33	8	0	125
% Bikes by Direction	14.4	40	11.1	0	20	1.9	0	0	0	14.3	3.8	0	6.1	2.8	12.5	0	3.7

Start Time	Strathmore Road From North					Narragansett Avenue From East					Kingstown Road From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	7	3	0	2	12	0	83	0	0	83	1	0	37	1	39	39	122	5	0	166	300
11:15 AM	6	0	0	0	6	0	90	1	0	91	2	0	33	0	35	32	113	1	0	146	278
11:30 AM	7	1	2	0	10	1	88	2	3	94	6	0	46	0	52	37	86	6	1	130	286
11:45 AM	8	0	0	0	8	1	104	2	0	107	1	2	54	1	58	43	97	6	0	146	319
Total Volume	28	4	2	2	36	2	365	5	3	375	10	2	170	2	184	151	418	18	1	588	1183
% App. Total	77.8	11.1	5.6	5.6		0.5	97.3	1.3	0.8		5.4	1.1	92.4	1.1		25.7	71.1	3.1	0.2		
PHF	.875	.333	.250	.250	.750	.500	.877	.625	.250	.876	.417	.250	.787	.500	.793	.878	.857	.750	.250	.886	.927
Cars & Peds	25	2	2	2	31	2	358	5	3	368	10	2	164	2	178	138	400	17	1	556	1133
% Cars & Peds	89.3	50.0	100	100	86.1	100	98.1	100	100	98.1	100	100	96.5	100	96.7	91.4	95.7	94.4	100	94.6	95.8
Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	4	0	0	4	7
% Trucks & Buses	0	0	0	0	0	0	0	0	0	0	0	0	1.8	0	1.6	0	1.0	0	0	0.7	0.6
Bikes by Direction	3	2	0	0	5	0	7	0	0	7	0	0	3	0	3	13	14	1	0	28	43
% Bikes by Direction	10.7	50.0	0	0	13.9	0	1.9	0	0	1.9	0	0	1.8	0	1.6	8.6	3.3	5.6	0	4.8	3.6

# Transportation Data Corporation

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 E/W: Oceanside Pl./Narragansett Av.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742BB  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Cars & Peds

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	53	18	7	12	4	9	2	8	4	8	7	4	20	14	73	5	248
11:15 AM	60	16	9	14	9	5	1	8	2	12	8	5	14	12	81	4	260
11:30 AM	65	15	6	14	6	3	3	9	4	13	11	12	17	8	65	8	259
11:45 AM	74	17	7	7	10	8	1	2	2	4	12	2	15	11	62	2	236
<b>Total</b>	<b>252</b>	<b>66</b>	<b>29</b>	<b>47</b>	<b>29</b>	<b>25</b>	<b>7</b>	<b>27</b>	<b>12</b>	<b>37</b>	<b>38</b>	<b>23</b>	<b>66</b>	<b>45</b>	<b>281</b>	<b>19</b>	<b>1003</b>
12:00 PM	66	18	6	4	5	8	0	4	2	8	7	6	11	5	66	3	219
12:15 PM	60	14	5	10	7	4	0	4	0	9	7	2	12	9	81	6	230
12:30 PM	64	14	9	8	11	5	1	2	2	6	12	3	14	18	74	3	246
12:45 PM	85	16	6	16	10	7	2	2	4	6	7	0	12	14	69	6	262
<b>Total</b>	<b>275</b>	<b>62</b>	<b>26</b>	<b>38</b>	<b>33</b>	<b>24</b>	<b>3</b>	<b>12</b>	<b>8</b>	<b>29</b>	<b>33</b>	<b>11</b>	<b>49</b>	<b>46</b>	<b>290</b>	<b>18</b>	<b>957</b>
01:00 PM	76	15	7	11	9	12	1	2	1	9	14	3	10	11	74	3	258
01:15 PM	74	12	2	4	6	5	1	2	2	5	6	2	10	7	70	4	212
01:30 PM	84	15	5	12	3	6	0	6	1	6	9	4	10	12	65	9	247
01:45 PM	71	10	7	17	11	11	1	4	1	7	10	0	6	9	70	8	243
<b>Total</b>	<b>305</b>	<b>52</b>	<b>21</b>	<b>44</b>	<b>29</b>	<b>34</b>	<b>3</b>	<b>14</b>	<b>5</b>	<b>27</b>	<b>39</b>	<b>9</b>	<b>36</b>	<b>39</b>	<b>279</b>	<b>24</b>	<b>960</b>
<b>Grand Total</b>	<b>832</b>	<b>180</b>	<b>76</b>	<b>129</b>	<b>91</b>	<b>83</b>	<b>13</b>	<b>53</b>	<b>25</b>	<b>93</b>	<b>110</b>	<b>43</b>	<b>151</b>	<b>130</b>	<b>850</b>	<b>61</b>	<b>2920</b>
Apprch %	68.4	14.8	6.2	10.6	37.9	34.6	5.4	22.1	9.2	34.3	40.6	15.9	12.7	10.9	71.3	5.1	
Total %	28.5	6.2	2.6	4.4	3.1	2.8	0.4	1.8	0.9	3.2	3.8	1.5	5.2	4.5	29.1	2.1	

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	53	<b>18</b>	7	12	90	4	<b>9</b>	2	8	<b>23</b>	4	8	7	4	23	<b>20</b>	<b>14</b>	73	5	<b>112</b>	248
11:15 AM	60	16	<b>9</b>	<b>14</b>	99	9	5	1	8	23	2	12	8	5	27	14	12	<b>81</b>	4	111	<b>260</b>
11:30 AM	65	15	6	14	100	6	3	<b>3</b>	<b>9</b>	21	4	<b>13</b>	11	<b>12</b>	<b>40</b>	17	8	65	<b>8</b>	98	259
11:45 AM	<b>74</b>	17	7	7	<b>105</b>	<b>10</b>	8	1	2	21	2	4	<b>12</b>	2	20	15	11	62	2	90	236
Total Volume	252	66	29	47	394	29	25	7	27	88	12	37	38	23	110	66	45	281	19	411	1003
% App. Total	64	16.8	7.4	11.9		33	28.4	8	30.7		10.9	33.6	34.5	20.9		16.1	10.9	68.4	4.6		
PHF	.851	.917	.806	.839	.938	.725	.694	.583	.750	.957	.750	.712	.792	.479	.688	.825	.804	.867	.594	.917	.964

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 Client: Pare/Derek Hug

File Name : 05742BB  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Trucks & Buses

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
11:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
<b>Total</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>6</b>
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
01:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
01:15 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0	4
01:30 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
01:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>10</b>
<b>Grand Total</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>19</b>
Apprch %	75	25	0	0	100	0	0	0	0	100	0	0	33.3	0	66.7	0	
Total %	31.6	10.5	0	0	5.3	0	0	0	0	5.3	0	0	15.8	0	31.6	0	

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	2
01:15 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4
01:30 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
<b>Total Volume</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>10</b>
% App. Total	75	25	0	0		100	0	0	0		0	100	0	0		0	0	100	0		
PHF	.750	.250	.000	.000	.500	.250	.000	.000	.000	.250	.000	.250	.000	.000	.250	.000	.000	.500	.000	.500	.625

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 E/W: Oceanside Pl./Narragansett Av.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742BB  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4
11:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	3	0	5
11:30 AM	2	1	0	0	0	2	0	0	0	3	0	0	0	3	1	0	12
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	1	0	3
<b>Total</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>24</b>
12:00 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	5
12:15 PM	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4
12:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	1	1	0	6
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>15</b>
01:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	2
01:15 PM	2	0	0	0	0	0	0	0	0	0	0	0	2	1	4	0	9
01:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
01:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	5	1	0	8
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>20</b>
<b>Grand Total</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>13</b>	<b>14</b>	<b>0</b>	<b>59</b>
Apprch %	84.6	15.4	0	0	16.7	83.3	0	0	0	88.9	0	11.1	12.9	41.9	45.2	0	
Total %	18.6	3.4	0	0	1.7	8.5	0	0	0	13.6	0	1.7	6.8	22	23.7	0	

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	3	0	4	5
11:30 AM	2	1	0	0	3	0	2	0	0	2	0	3	0	0	3	0	3	1	0	4	12
11:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	1	0	2	3
12:00 PM	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	5
Total Volume	4	1	0	0	5	0	3	0	0	3	0	5	0	0	5	2	5	5	0	12	25
% App. Total	80	20	0	0		0	100	0	0		0	100	0	0		16.7	41.7	41.7	0		
PHF	.500	.250	.000	.000	.417	.000	.375	.000	.000	.375	.000	.417	.000	.000	.417	.500	.417	.417	.000	.750	.521

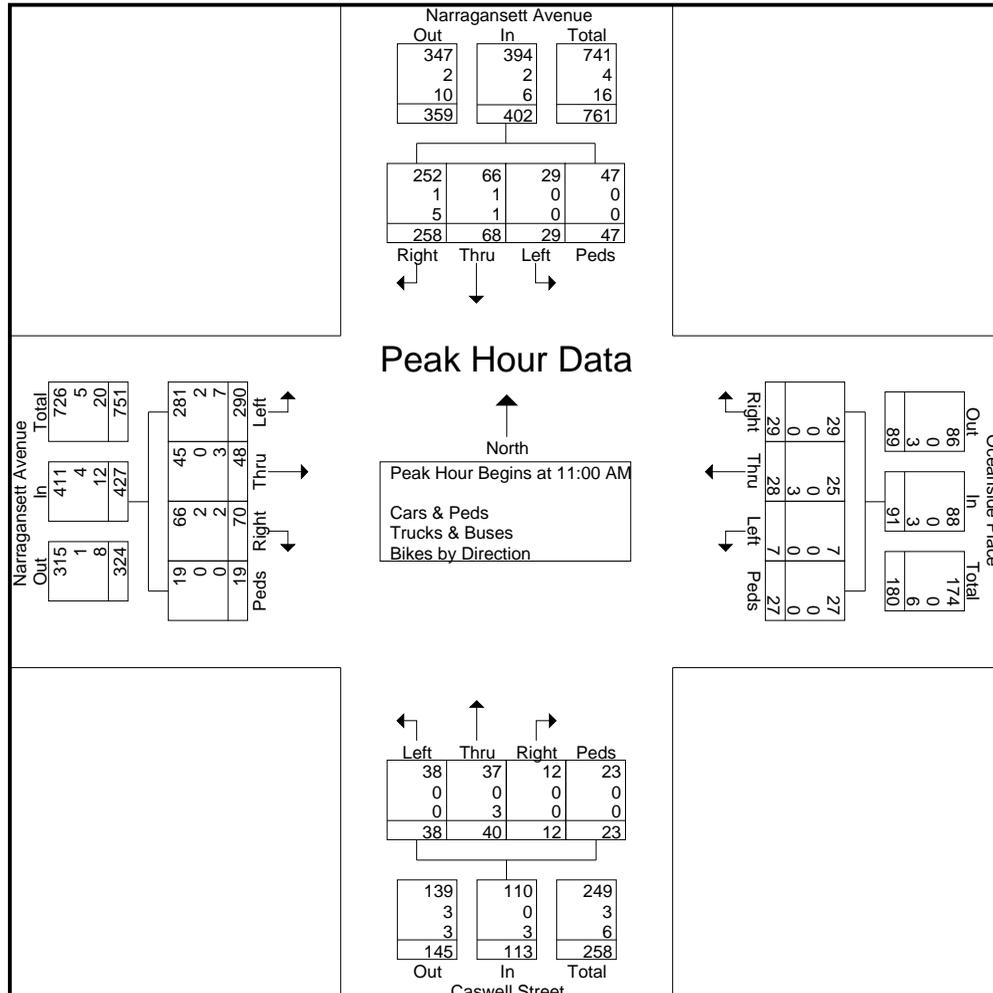
# Transportation Data Corporation

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N/S: Narragansett Av./Caswell St.  
E/W: Oceanside Pl./Narragansett Av.  
City, State: Narragansett, RI  
Client: Pare/Derek Hug

File Name : 05742BB  
Site Code : 23138.00  
Start Date : 8/5/2023  
Page No : 1

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	56	18	7	12	93	4	9	2	8	23	4	8	7	4	23	20	14	76	5	115	254
11:15 AM	61	16	9	14	100	9	5	1	8	23	2	12	8	5	27	16	12	85	4	117	267
11:30 AM	67	17	6	14	104	6	5	3	9	23	4	16	11	12	43	17	11	66	8	102	272
11:45 AM	74	17	7	7	105	10	9	1	2	22	2	4	12	2	20	17	11	63	2	93	240
Total Volume	258	68	29	47	402	29	28	7	27	91	12	40	38	23	113	70	48	290	19	427	1033
% App. Total	64.2	16.9	7.2	11.7		31.9	30.8	7.7	29.7		10.6	35.4	33.6	20.4		16.4	11.2	67.9	4.4		
PHF	.872	.944	.806	.839	.957	.725	.778	.583	.750	.989	.750	.625	.792	.479	.657	.875	.857	.853	.594	.912	.949
Cars & Peds	252	66	29	47	394	29	25	7	27	88	12	37	38	23	110	66	45	281	19	411	1003
% Cars & Peds	97.7	97.1	100	100	98.0	100	89.3	100	100	96.7	100	92.5	100	100	97.3	94.3	93.8	96.9	100	96.3	97.1
Trucks & Buses	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4	6
% Trucks & Buses	0.4	1.5	0	0	0.5	0	0	0	0	0	0	0	0	0	0	2.9	0	0.7	0	0.9	0.6
Bikes by Direction	5	1	0	0	6	0	3	0	0	3	0	3	0	0	3	2	3	7	0	12	24
% Bikes by Direction	1.9	1.5	0	0	1.5	0	10.7	0	0	3.3	0	7.5	0	0	2.7	2.9	6.3	2.4	0	2.8	2.3



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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742BB  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Narragansett Avenue From North				Oceanside Place From East				Caswell Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	56	18	7	12	4	9	2	8	4	8	7	4	20	14	76	5	254
11:15 AM	61	16	9	14	9	5	1	8	2	12	8	5	16	12	85	4	267
11:30 AM	67	17	6	14	6	5	3	9	4	16	11	12	17	11	66	8	272
11:45 AM	74	17	7	7	10	9	1	2	2	4	12	2	17	11	63	2	240
<b>Total</b>	<b>258</b>	<b>68</b>	<b>29</b>	<b>47</b>	<b>29</b>	<b>28</b>	<b>7</b>	<b>27</b>	<b>12</b>	<b>40</b>	<b>38</b>	<b>23</b>	<b>70</b>	<b>48</b>	<b>290</b>	<b>19</b>	<b>1033</b>
12:00 PM	67	18	6	4	5	8	0	4	2	10	7	6	12	7	66	3	225
12:15 PM	61	15	5	10	7	4	0	4	0	10	7	2	12	10	81	6	234
12:30 PM	66	14	9	8	12	6	1	2	2	7	12	3	14	19	75	3	253
12:45 PM	86	16	6	16	10	7	2	2	4	6	7	0	12	14	69	6	263
<b>Total</b>	<b>280</b>	<b>63</b>	<b>26</b>	<b>38</b>	<b>34</b>	<b>25</b>	<b>3</b>	<b>12</b>	<b>8</b>	<b>33</b>	<b>33</b>	<b>11</b>	<b>50</b>	<b>50</b>	<b>291</b>	<b>18</b>	<b>975</b>
01:00 PM	76	15	7	11	10	13	1	2	1	9	14	3	10	11	76	3	262
01:15 PM	77	12	2	4	6	5	1	2	2	6	6	2	12	8	76	4	225
01:30 PM	86	16	5	12	3	6	0	6	1	6	9	4	10	12	66	9	251
01:45 PM	72	10	7	17	11	11	1	4	1	8	10	1	6	14	71	8	252
<b>Total</b>	<b>311</b>	<b>53</b>	<b>21</b>	<b>44</b>	<b>30</b>	<b>35</b>	<b>3</b>	<b>14</b>	<b>5</b>	<b>29</b>	<b>39</b>	<b>10</b>	<b>38</b>	<b>45</b>	<b>289</b>	<b>24</b>	<b>990</b>
<b>Grand Total</b>	<b>849</b>	<b>184</b>	<b>76</b>	<b>129</b>	<b>93</b>	<b>88</b>	<b>13</b>	<b>53</b>	<b>25</b>	<b>102</b>	<b>110</b>	<b>44</b>	<b>158</b>	<b>143</b>	<b>870</b>	<b>61</b>	<b>2998</b>
Apprch %	68.6	14.9	6.1	10.4	37.7	35.6	5.3	21.5	8.9	36.3	39.1	15.7	12.8	11.6	70.6	5	
Total %	28.3	6.1	2.5	4.3	3.1	2.9	0.4	1.8	0.8	3.4	3.7	1.5	5.3	4.8	29	2	
<b>Cars &amp; Peds</b>	<b>832</b>	<b>180</b>	<b>76</b>	<b>129</b>	<b>91</b>	<b>83</b>	<b>13</b>	<b>53</b>	<b>25</b>	<b>93</b>	<b>110</b>	<b>43</b>	<b>151</b>	<b>130</b>	<b>850</b>	<b>61</b>	<b>2920</b>
% Cars & Peds	98	97.8	100	100	97.8	94.3	100	100	100	91.2	100	97.7	95.6	90.9	97.7	100	97.4
<b>Trucks &amp; Buses</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>19</b>
% Trucks & Buses	0.7	1.1	0	0	1.1	0	0	0	0	1	0	0	1.9	0	0.7	0	0.6
<b>Bikes by Direction</b>	<b>11</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>1</b>	<b>4</b>	<b>13</b>	<b>14</b>	<b>0</b>	<b>59</b>
% Bikes by Direction	1.3	1.1	0	0	1.1	5.7	0	0	0	7.8	0	2.3	2.5	9.1	1.6	0	2

Start Time	Narragansett Avenue From North					Oceanside Place From East					Caswell Street From South					Narragansett Avenue 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	56	<b>18</b>	7	12	93	4	<b>9</b>	2	8	<b>23</b>	4	8	7	4	23	<b>20</b>	<b>14</b>	76	5	115	254
11:15 AM	61	16	<b>9</b>	<b>14</b>	100	9	5	1	8	23	2	12	8	5	27	16	12	<b>85</b>	4	<b>117</b>	267
11:30 AM	67	17	6	14	104	6	5	<b>3</b>	<b>9</b>	23	4	<b>16</b>	11	<b>12</b>	<b>43</b>	17	11	66	<b>8</b>	102	<b>272</b>
11:45 AM	<b>74</b>	17	7	7	<b>105</b>	<b>10</b>	9	1	2	22	2	4	<b>12</b>	2	20	17	11	63	2	93	240
Total Volume	258	68	29	47	402	29	28	7	27	91	12	40	38	23	113	70	48	290	19	427	1033
% App. Total	64.2	16.9	7.2	11.7		31.9	30.8	7.7	29.7		10.6	35.4	33.6	20.4		16.4	11.2	67.9	4.4		
PHF	.872	.944	.806	.839	.957	.725	.778	.583	.750	.989	.750	.625	.792	.479	.657	.875	.857	.853	.594	.912	.949
<b>Cars &amp; Peds</b>	<b>252</b>	<b>66</b>	<b>29</b>	<b>47</b>	<b>394</b>	<b>29</b>	<b>25</b>	<b>7</b>	<b>27</b>	<b>88</b>	<b>12</b>	<b>37</b>	<b>38</b>	<b>23</b>	<b>110</b>	<b>66</b>	<b>45</b>	<b>281</b>	<b>19</b>	<b>411</b>	<b>1003</b>
% Cars & Peds	97.7	97.1	100	100	98.0	100	89.3	100	100	96.7	100	92.5	100	100	97.3	94.3	93.8	96.9	100	96.3	97.1
<b>Trucks &amp; Buses</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>6</b>
% Trucks & Buses	0.4	1.5	0	0	0.5	0	0	0	0	0	0	0	0	0	0	2.9	0	0.7	0	0.9	0.6
<b>Bikes by Direction</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>7</b>	<b>0</b>	<b>12</b>	<b>24</b>
% Bikes by Direction	1.9	1.5	0	0	1.5	0	10.7	0	0	3.3	0	7.5	0	0	2.7	2.9	6.3	2.4	0	2.8	2.3

# Transportation Data Corporation

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 W: Narragansett Avenue  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742CC  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Cars & Peds

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
11:00 AM	66	87	12	90	15	13	17	61	2	363
11:15 AM	70	100	9	94	18	15	28	75	4	413
11:30 AM	72	93	15	88	19	9	24	70	4	394
11:45 AM	83	102	11	101	16	16	15	63	5	412
<b>Total</b>	<b>291</b>	<b>382</b>	<b>47</b>	<b>373</b>	<b>68</b>	<b>53</b>	<b>84</b>	<b>269</b>	<b>15</b>	<b>1582</b>
12:00 PM	79	99	8	93	14	15	23	66	3	400
12:15 PM	70	97	14	78	19	24	28	71	2	403
12:30 PM	67	108	14	89	21	8	18	77	2	404
12:45 PM	85	79	18	89	25	9	17	65	3	390
<b>Total</b>	<b>301</b>	<b>383</b>	<b>54</b>	<b>349</b>	<b>79</b>	<b>56</b>	<b>86</b>	<b>279</b>	<b>10</b>	<b>1597</b>
01:00 PM	86	103	6	112	15	19	19	84	2	446
01:15 PM	68	103	12	86	23	19	21	62	6	400
01:30 PM	83	112	9	94	26	12	13	70	5	424
01:45 PM	75	112	9	108	12	18	13	81	1	429
<b>Total</b>	<b>312</b>	<b>430</b>	<b>36</b>	<b>400</b>	<b>76</b>	<b>68</b>	<b>66</b>	<b>297</b>	<b>14</b>	<b>1699</b>
<b>Grand Total</b>	<b>904</b>	<b>1195</b>	<b>137</b>	<b>1122</b>	<b>223</b>	<b>177</b>	<b>236</b>	<b>845</b>	<b>39</b>	<b>4878</b>
Apprch %	40.4	53.4	6.1	73.7	14.7	11.6	21.1	75.4	3.5	
Total %	18.5	24.5	2.8	23	4.6	3.6	4.8	17.3	0.8	

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 01:00 PM													
01:00 PM	<b>86</b>	103	6	195	<b>112</b>	15	<b>19</b>	<b>146</b>	19	<b>84</b>	2	<b>105</b>	<b>446</b>
01:15 PM	68	103	<b>12</b>	183	86	23	19	128	<b>21</b>	62	<b>6</b>	89	400
01:30 PM	83	<b>112</b>	9	<b>204</b>	94	<b>26</b>	12	132	13	70	5	88	424
01:45 PM	75	112	9	196	108	12	18	138	13	81	1	95	429
Total Volume	312	430	36	778	400	76	68	544	66	297	14	377	1699
% App. Total	40.1	55.3	4.6		73.5	14	12.5		17.5	78.8	3.7		
PHF	.907	.960	.750	.953	.893	.731	.895	.932	.786	.884	.583	.898	.952

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W: Narragansett Avenue  
City, State: Narragansett, RI  
Client: Pare/Derek Hug

File Name : 05742CC  
Site Code : 23138.00  
Start Date : 8/5/2023  
Page No : 1

### Groups Printed- Trucks & Buses

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
11:00 AM	1	0	0	0	0	0	0	1	0	2
11:15 AM	0	0	0	0	0	0	0	1	0	1
11:30 AM	1	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>4</b>
12:00 PM	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	1	0	0	0	0	1
12:45 PM	0	0	0	0	1	0	0	0	0	1
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
01:00 PM	0	0	0	0	0	0	0	2	0	2
01:15 PM	0	0	0	1	0	0	1	2	0	4
01:30 PM	2	0	0	0	0	0	0	1	0	3
01:45 PM	1	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>10</b>
<b>Grand Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>16</b>
Apprch %	100	0	0	33.3	66.7	0	12.5	87.5	0	
Total %	31.2	0	0	6.2	12.5	0	6.2	43.8	0	

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 12:45 PM													
12:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
01:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	2
01:15 PM	0	0	0	0	1	0	0	1	1	2	0	3	4
01:30 PM	2	0	0	2	0	0	0	0	0	1	0	1	3
<b>Total Volume</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>5</b>	<b>0</b>	<b>6</b>	<b>10</b>
% App. Total	100	0	0		50	50	0		16.7	83.3	0		
PHF	.250	.000	.000	.250	.250	.250	.000	.500	.250	.625	.000	.500	.625

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 W: Narragansett Avenue  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742CC  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Bikes by Direction

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
11:00 AM	1	2	0	0	2	0	2	0	0	7
11:15 AM	1	1	0	3	1	0	1	2	0	9
11:30 AM	2	4	0	3	0	0	0	2	0	11
11:45 AM	0	1	0	1	0	0	2	1	0	5
<b>Total</b>	<b>4</b>	<b>8</b>	<b>0</b>	<b>7</b>	<b>3</b>	<b>0</b>	<b>5</b>	<b>5</b>	<b>0</b>	<b>32</b>
12:00 PM	2	2	0	2	1	0	3	0	0	10
12:15 PM	1	2	0	4	0	0	0	0	0	7
12:30 PM	1	3	0	0	1	0	0	2	0	7
12:45 PM	2	2	0	7	0	0	0	0	0	11
<b>Total</b>	<b>6</b>	<b>9</b>	<b>0</b>	<b>13</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>35</b>
01:00 PM	0	0	0	1	0	0	1	0	0	2
01:15 PM	2	1	0	0	0	0	3	0	0	6
01:30 PM	0	4	0	0	0	0	0	0	0	4
01:45 PM	4	0	0	3	0	0	0	1	0	8
<b>Total</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>1</b>	<b>0</b>	<b>20</b>
<b>Grand Total</b>	<b>16</b>	<b>22</b>	<b>0</b>	<b>24</b>	<b>5</b>	<b>0</b>	<b>12</b>	<b>8</b>	<b>0</b>	<b>87</b>
Apprch %	42.1	57.9	0	82.8	17.2	0	60	40	0	
Total %	18.4	25.3	0	27.6	5.7	0	13.8	9.2	0	

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 11:15 AM													
11:15 AM	1	1	0	2	3	1	0	4	1	2	0	3	9
11:30 AM	2	4	0	6	3	0	0	3	0	2	0	2	11
11:45 AM	0	1	0	1	1	0	0	1	2	1	0	3	5
12:00 PM	2	2	0	4	2	1	0	3	3	0	0	3	10
<b>Total Volume</b>	<b>5</b>	<b>8</b>	<b>0</b>	<b>13</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>11</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>11</b>	<b>35</b>
<b>% App. Total</b>	<b>38.5</b>	<b>61.5</b>	<b>0</b>		<b>81.8</b>	<b>18.2</b>	<b>0</b>		<b>54.5</b>	<b>45.5</b>	<b>0</b>		
PHF	.625	.500	.000	.542	.750	.500	.000	.688	.500	.625	.000	.917	.795

# Transportation Data Corporation

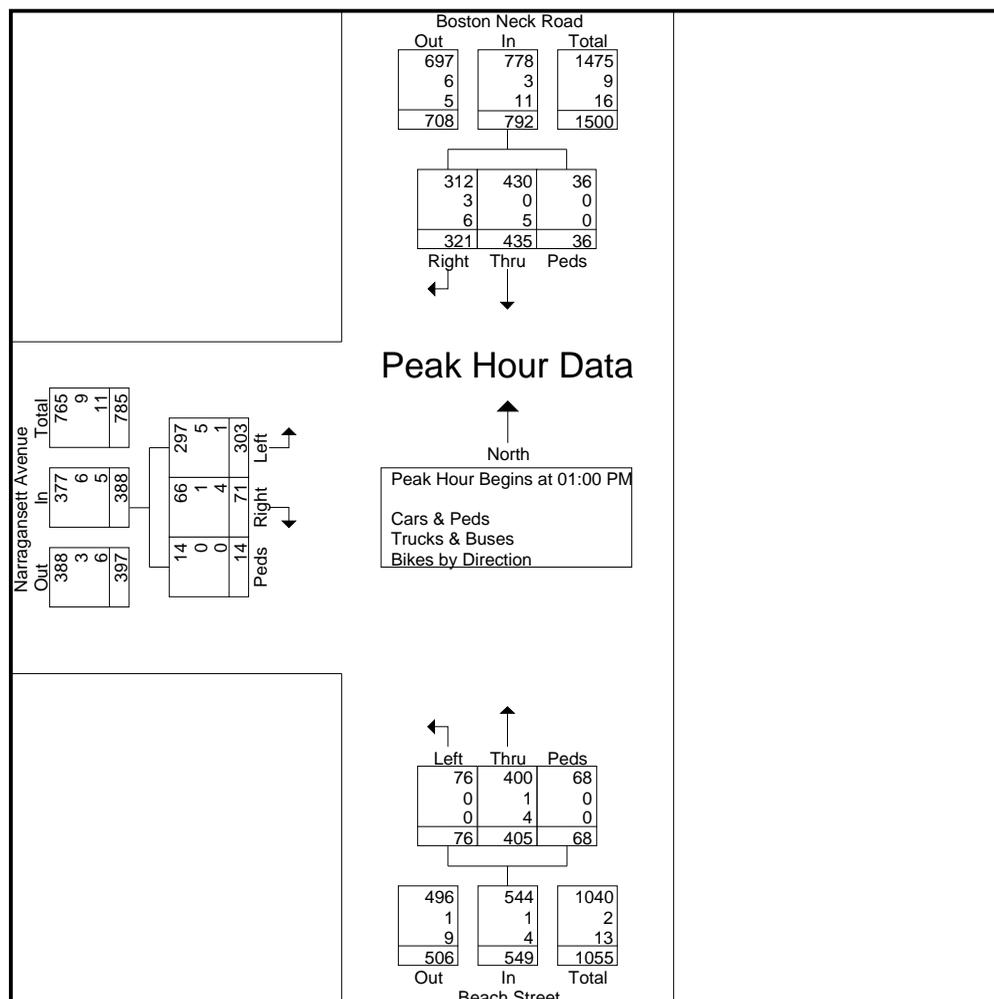
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 W: Narragansett Avenue  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742CC  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 01:00 PM													
01:00 PM	86	103	6	195	113	15	19	147	20	86	2	108	450
01:15 PM	70	104	12	186	87	23	19	129	25	64	6	95	410
01:30 PM	85	116	9	210	94	26	12	132	13	71	5	89	431
01:45 PM	80	112	9	201	111	12	18	141	13	82	1	96	438
Total Volume	321	435	36	792	405	76	68	549	71	303	14	388	1729
% App. Total	40.5	54.9	4.5		73.8	13.8	12.4		18.3	78.1	3.6		
PHF	.933	.938	.750	.943	.896	.731	.895	.934	.710	.881	.583	.898	.961
Cars & Peds	312	430	36	778	400	76	68	544	66	297	14	377	1699
% Cars & Peds	97.2	98.9	100	98.2	98.8	100	100	99.1	93.0	98.0	100	97.2	98.3
Trucks & Buses	3	0	0	3	1	0	0	1	1	5	0	6	10
% Trucks & Buses	0.9	0	0	0.4	0.2	0	0	0.2	1.4	1.7	0	1.5	0.6
Bikes by Direction	6	5	0	11	4	0	0	4	4	1	0	5	20
% Bikes by Direction	1.9	1.1	0	1.4	1.0	0	0	0.7	5.6	0.3	0	1.3	1.2



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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742CC  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction

Start Time	Boston Neck Road From North			Beach Street From South			Narragansett Avenue From West			Int. Total
	Right	Thru	Peds	Thru	Left	Peds	Right	Left	Peds	
11:00 AM	68	89	12	90	17	13	19	62	2	372
11:15 AM	71	101	9	97	19	15	29	78	4	423
11:30 AM	75	97	15	91	19	9	24	72	4	406
11:45 AM	83	103	11	102	16	16	17	64	5	417
<b>Total</b>	<b>297</b>	<b>390</b>	<b>47</b>	<b>380</b>	<b>71</b>	<b>53</b>	<b>89</b>	<b>276</b>	<b>15</b>	<b>1618</b>
12:00 PM	81	101	8	95	15	15	26	66	3	410
12:15 PM	71	99	14	82	19	24	28	71	2	410
12:30 PM	68	111	14	89	23	8	18	79	2	412
12:45 PM	87	81	18	96	26	9	17	65	3	402
<b>Total</b>	<b>307</b>	<b>392</b>	<b>54</b>	<b>362</b>	<b>83</b>	<b>56</b>	<b>89</b>	<b>281</b>	<b>10</b>	<b>1634</b>
01:00 PM	86	103	6	113	15	19	20	86	2	450
01:15 PM	70	104	12	87	23	19	25	64	6	410
01:30 PM	85	116	9	94	26	12	13	71	5	431
01:45 PM	80	112	9	111	12	18	13	82	1	438
<b>Total</b>	<b>321</b>	<b>435</b>	<b>36</b>	<b>405</b>	<b>76</b>	<b>68</b>	<b>71</b>	<b>303</b>	<b>14</b>	<b>1729</b>
<b>Grand Total</b>	<b>925</b>	<b>1217</b>	<b>137</b>	<b>1147</b>	<b>230</b>	<b>177</b>	<b>249</b>	<b>860</b>	<b>39</b>	<b>4981</b>
Apprch %	40.6	53.4	6	73.8	14.8	11.4	21.7	74.9	3.4	
Total %	18.6	24.4	2.8	23	4.6	3.6	5	17.3	0.8	
Cars & Peds	904	1195	137	1122	223	177	236	845	39	4878
% Cars & Peds	97.7	98.2	100	97.8	97	100	94.8	98.3	100	97.9
Trucks & Buses	5	0	0	1	2	0	1	7	0	16
% Trucks & Buses	0.5	0	0	0.1	0.9	0	0.4	0.8	0	0.3
Bikes by Direction	16	22	0	24	5	0	12	8	0	87
% Bikes by Direction	1.7	1.8	0	2.1	2.2	0	4.8	0.9	0	1.7

Start Time	Boston Neck Road From North				Beach Street From South				Narragansett Avenue From West				Int. Total
	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 01:00 PM													
01:00 PM	<b>86</b>	103	6	195	<b>113</b>	15	<b>19</b>	<b>147</b>	20	<b>86</b>	2	<b>108</b>	<b>450</b>
01:15 PM	70	104	<b>12</b>	186	87	23	19	129	<b>25</b>	64	<b>6</b>	95	410
01:30 PM	85	<b>116</b>	9	<b>210</b>	94	<b>26</b>	12	132	13	71	5	89	431
01:45 PM	80	112	9	201	111	12	18	141	13	82	1	96	438
Total Volume	321	435	36	792	405	76	68	549	71	303	14	388	1729
% App. Total	40.5	54.9	4.5		73.8	13.8	12.4		18.3	78.1	3.6		
PHF	.933	.938	.750	.943	.896	.731	.895	.934	.710	.881	.583	.898	.961
Cars & Peds	312	430	36	778	400	76	68	544	66	297	14	377	1699
% Cars & Peds	97.2	98.9	100	98.2	98.8	100	100	99.1	93.0	98.0	100	97.2	98.3
Trucks & Buses	3	0	0	3	1	0	0	1	1	5	0	6	10
% Trucks & Buses	0.9	0	0	0.4	0.2	0	0	0.2	1.4	1.7	0	1.5	0.6
Bikes by Direction	6	5	0	11	4	0	0	4	4	1	0	5	20
% Bikes by Direction	1.9	1.1	0	1.4	1.0	0	0	0.7	5.6	0.3	0	1.3	1.2

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 E/W: Memorial Sq./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742DD  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Groups Printed- Cars & Peds

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	30	7	5	13	6	12	2	4	2	3	2	10	5	26	33	27	187
11:15 AM	28	8	5	9	9	22	4	14	3	10	2	7	4	24	46	20	215
11:30 AM	37	9	14	7	9	11	5	20	5	2	6	16	4	30	23	19	217
11:45 AM	31	5	7	6	10	21	6	8	2	5	2	21	8	25	31	15	203
<b>Total</b>	126	29	31	35	34	66	17	46	12	20	12	54	21	105	133	81	822
12:00 PM	20	10	9	6	10	14	6	14	2	6	4	10	3	30	26	7	177
12:15 PM	23	4	12	9	6	13	8	7	3	3	2	8	3	23	26	9	159
12:30 PM	29	15	6	13	4	18	2	15	2	3	5	20	7	20	32	12	203
12:45 PM	33	15	7	6	15	17	5	13	2	10	3	16	2	22	21	11	198
<b>Total</b>	105	44	34	34	35	62	21	49	9	22	14	54	15	95	105	39	737
01:00 PM	29	10	9	9	11	13	8	9	4	9	6	11	6	17	29	20	200
01:15 PM	21	16	9	4	8	14	3	10	4	7	5	13	4	17	35	16	186
01:30 PM	30	14	22	8	10	13	3	8	0	6	3	4	3	22	31	15	192
01:45 PM	27	13	18	11	15	16	6	19	6	6	1	4	0	15	29	10	196
<b>Total</b>	107	53	58	32	44	56	20	46	14	28	15	32	13	71	124	61	774
<b>Grand Total</b>	338	126	123	101	113	184	58	141	35	70	41	140	49	271	362	181	2333
Apprch %	49.1	18.3	17.9	14.7	22.8	37.1	11.7	28.4	12.2	24.5	14.3	49	5.7	31.4	41.9	21	
Total %	14.5	5.4	5.3	4.3	4.8	7.9	2.5	6	1.5	3	1.8	6	2.1	11.6	15.5	7.8	

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	30	7	5	<b>13</b>	55	6	12	2	4	24	2	3	2	10	17	5	26	33	<b>27</b>	91	187
11:15 AM	28	8	5	9	50	9	<b>22</b>	4	14	<b>49</b>	3	<b>10</b>	2	7	22	4	24	<b>46</b>	20	<b>94</b>	215
11:30 AM	<b>37</b>	<b>9</b>	<b>14</b>	7	<b>67</b>	9	11	5	<b>20</b>	45	<b>5</b>	2	<b>6</b>	16	29	4	<b>30</b>	23	19	76	<b>217</b>
11:45 AM	31	5	7	6	49	<b>10</b>	21	<b>6</b>	8	45	2	5	2	<b>21</b>	<b>30</b>	<b>8</b>	25	31	15	79	203
Total Volume	126	29	31	35	221	34	66	17	46	163	12	20	12	54	98	21	105	133	81	340	822
% App. Total	57	13.1	14	15.8		20.9	40.5	10.4	28.2		12.2	20.4	12.2	55.1		6.2	30.9	39.1	23.8		
PHF	.851	.806	.554	.673	.825	.850	.750	.708	.575	.832	.600	.500	.500	.643	.817	.656	.875	.723	.750	.904	.947

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N/S: Beach St./Mathewson St.  
 E/W: Memorial Sq./Kingstown Rd.  
 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742DD  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

### Groups Printed- Trucks & Buses

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Grand Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>
Apprch %	100	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	50	0	0	0	0	0	0	0	0	0	0	0	0	50	0	0	

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
<b>Total Volume</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
% App. Total	100	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.250	.000	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

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 City, State: Narragansett, RI  
 Client: Pare/Derek Hug

File Name : 05742DD  
 Site Code : 23138.00  
 Start Date : 8/5/2023  
 Page No : 1

Groups Printed- Bikes by Direction

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	0	0	0	0	0	1	0	0	1	2	0	0	0	10	1	0	15
11:15 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	7	1	0	10
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11:45 AM	2	2	1	0	0	0	0	0	0	1	0	0	0	2	1	0	9
<b>Total</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>4</b>	<b>0</b>	<b>35</b>
12:00 PM	1	1	1	0	0	0	0	0	0	0	0	0	0	4	4	0	11
12:15 PM	0	0	3	0	0	1	0	0	0	0	0	0	0	1	0	0	5
12:30 PM	1	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	5
12:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0	3
<b>Total</b>	<b>2</b>	<b>1</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>5</b>	<b>0</b>	<b>24</b>
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
01:15 PM	0	2	1	0	0	2	0	0	0	2	0	0	0	4	0	0	11
01:30 PM	2	0	1	0	0	1	0	0	0	1	0	0	0	1	0	0	6
01:45 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	7
<b>Total</b>	<b>4</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>26</b>
<b>Grand Total</b>	<b>9</b>	<b>6</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>33</b>	<b>13</b>	<b>0</b>	<b>85</b>
Apprch %	40.9	27.3	31.8	0	0	100	0	0	11.1	88.9	0	0	0	71.7	28.3	0	
Total %	10.6	7.1	8.2	0	0	9.4	0	0	1.2	9.4	0	0	0	38.8	15.3	0	

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	0	0	0	0	0	0	1	0	0	1	1	2	0	0	3	0	10	1	0	11	15
11:15 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	7	1	0	8	10
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
11:45 AM	2	2	1	0	5	0	0	0	0	0	0	1	0	0	1	0	2	1	0	3	9
<b>Total Volume</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>19</b>	<b>4</b>	<b>0</b>	<b>23</b>	<b>35</b>
% App. Total	42.9	42.9	14.3	0		0	100	0	0		25	75	0	0		0	82.6	17.4	0		
PHF	.375	.375	.250	.000	.350	.000	.250	.000	.000	.250	.250	.375	.000	.000	.333	.000	.475	1.00	.000	.523	.583

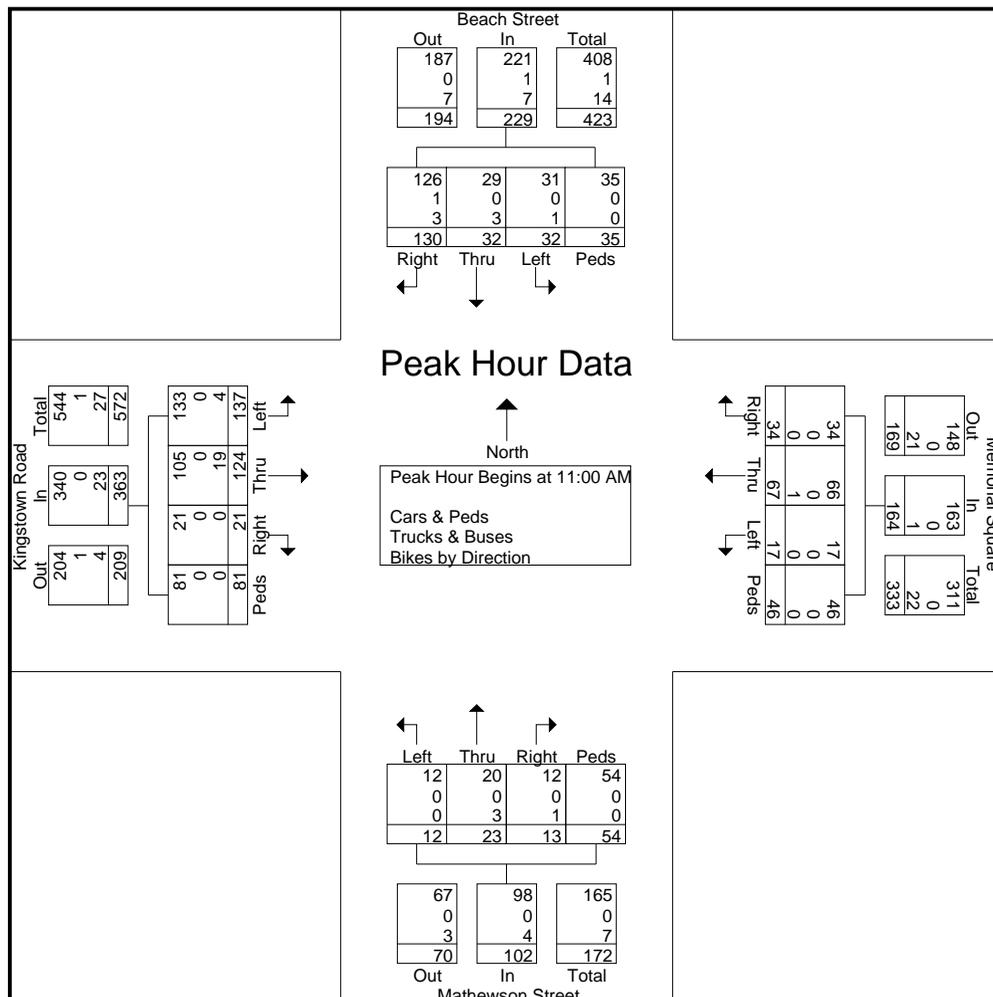
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Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown Road From West					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:00 AM																					
11:00 AM	30	7	5	13	55	6	13	2	4	25	3	5	2	10	20	5	36	34	27	102	202
11:15 AM	29	9	5	9	52	9	22	4	14	49	3	10	2	7	22	4	31	47	20	102	225
11:30 AM	37	9	14	7	67	9	11	5	20	45	5	2	6	16	29	4	30	24	19	77	218
11:45 AM	34	7	8	6	55	10	21	6	8	45	2	6	2	21	31	8	27	32	15	82	213
Total Volume	130	32	32	35	229	34	67	17	46	164	13	23	12	54	102	21	124	137	81	363	858
% App. Total	56.8	14	14	15.3		20.7	40.9	10.4	28		12.7	22.5	11.8	52.9		5.8	34.2	37.7	22.3		
PHF	.878	.889	.571	.673	.854	.850	.761	.708	.575	.837	.650	.575	.500	.643	.823	.656	.861	.729	.750	.890	.953
Cars & Peds	126	29	31	35	221	34	66	17	46	163	12	20	12	54	98	21	105	133	81	340	822
% Cars & Peds	96.9	90.6	96.9	100	96.5	100	98.5	100	100	99.4	92.3	87.0	100	100	96.1	100	84.7	97.1	100	93.7	95.8
Trucks & Buses	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Trucks & Buses	0.8	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Bikes by Direction	3	3	1	0	7	0	1	0	0	1	1	3	0	0	4	0	19	4	0	23	35
% Bikes by Direction	2.3	9.4	3.1	0	3.1	0	1.5	0	0	0.6	7.7	13.0	0	0	3.9	0	15.3	2.9	0	6.3	4.1



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**Groups Printed- Cars & Peds - Trucks & Buses - Bikes by Direction**

Start Time	Beach Street From North				Memorial Square From East				Mathewson Street From South				Kingstown Road From West				Int. Total
	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	
11:00 AM	30	7	5	13	6	13	2	4	3	5	2	10	5	36	34	27	202
11:15 AM	29	9	5	9	9	22	4	14	3	10	2	7	4	31	47	20	225
11:30 AM	37	9	14	7	9	11	5	20	5	2	6	16	4	30	24	19	218
11:45 AM	34	7	8	6	10	21	6	8	2	6	2	21	8	27	32	15	213
<b>Total</b>	<b>130</b>	<b>32</b>	<b>32</b>	<b>35</b>	<b>34</b>	<b>67</b>	<b>17</b>	<b>46</b>	<b>13</b>	<b>23</b>	<b>12</b>	<b>54</b>	<b>21</b>	<b>124</b>	<b>137</b>	<b>81</b>	<b>858</b>
12:00 PM	21	11	10	6	10	14	6	14	2	6	4	10	3	34	30	7	188
12:15 PM	23	4	15	9	6	14	8	7	3	3	2	8	3	24	26	9	164
12:30 PM	30	15	6	13	4	21	2	15	2	3	5	20	7	21	32	12	208
12:45 PM	33	15	7	6	15	17	5	13	2	12	3	16	2	22	22	11	201
<b>Total</b>	<b>107</b>	<b>45</b>	<b>38</b>	<b>34</b>	<b>35</b>	<b>66</b>	<b>21</b>	<b>49</b>	<b>9</b>	<b>24</b>	<b>14</b>	<b>54</b>	<b>15</b>	<b>101</b>	<b>110</b>	<b>39</b>	<b>761</b>
01:00 PM	29	10	9	9	11	13	8	9	4	9	6	11	6	20	29	20	203
01:15 PM	21	18	10	4	8	16	3	10	4	9	5	13	4	21	35	16	197
01:30 PM	32	14	23	8	10	14	3	8	0	7	3	4	3	23	31	15	198
01:45 PM	29	13	18	11	15	16	6	19	6	6	1	4	0	16	33	10	203
<b>Total</b>	<b>111</b>	<b>55</b>	<b>60</b>	<b>32</b>	<b>44</b>	<b>59</b>	<b>20</b>	<b>46</b>	<b>14</b>	<b>31</b>	<b>15</b>	<b>32</b>	<b>13</b>	<b>80</b>	<b>128</b>	<b>61</b>	<b>801</b>
<b>Grand Total</b>	<b>348</b>	<b>132</b>	<b>130</b>	<b>101</b>	<b>113</b>	<b>192</b>	<b>58</b>	<b>141</b>	<b>36</b>	<b>78</b>	<b>41</b>	<b>140</b>	<b>49</b>	<b>305</b>	<b>375</b>	<b>181</b>	<b>2420</b>
Apprch %	48.9	18.6	18.3	14.2	22.4	38.1	11.5	28	12.2	26.4	13.9	47.5	5.4	33.5	41.2	19.9	
Total %	14.4	5.5	5.4	4.2	4.7	7.9	2.4	5.8	1.5	3.2	1.7	5.8	2	12.6	15.5	7.5	
<b>Cars &amp; Peds</b>	<b>338</b>	<b>126</b>	<b>123</b>	<b>101</b>	<b>113</b>	<b>184</b>	<b>58</b>	<b>141</b>	<b>35</b>	<b>70</b>	<b>41</b>	<b>140</b>	<b>49</b>	<b>271</b>	<b>362</b>	<b>181</b>	<b>2333</b>
% Cars & Peds	97.1	95.5	94.6	100	100	95.8	100	100	97.2	89.7	100	100	100	88.9	96.5	100	96.4
Trucks & Buses	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
% Trucks & Buses	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.1
Bikes by Direction	9	6	7	0	0	8	0	0	1	8	0	0	0	33	13	0	85
% Bikes by Direction	2.6	4.5	5.4	0	0	4.2	0	0	2.8	10.3	0	0	0	10.8	3.5	0	3.5

Start Time	Beach Street From North					Memorial Square From East					Mathewson Street From South					Kingstown 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		
<b>Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1</b>																						
<b>Peak Hour for Entire Intersection Begins at 11:00 AM</b>																						
11:00 AM	30	7	5	13	55	6	13	2	4	25	3	5	2	10	20	5	36	34	27	102	202	
11:15 AM	29	9	5	9	52	9	22	4	14	49	3	10	2	7	22	4	31	47	20	102	225	
11:30 AM	37	9	14	7	67	9	11	5	20	45	5	2	6	16	29	4	30	24	19	77	218	
11:45 AM	34	7	8	6	55	10	21	6	8	45	2	6	2	21	31	8	27	32	15	82	213	
<b>Total Volume</b>	<b>130</b>	<b>32</b>	<b>32</b>	<b>35</b>	<b>229</b>	<b>34</b>	<b>67</b>	<b>17</b>	<b>46</b>	<b>164</b>	<b>13</b>	<b>23</b>	<b>12</b>	<b>54</b>	<b>102</b>	<b>21</b>	<b>124</b>	<b>137</b>	<b>81</b>	<b>363</b>	<b>858</b>	
% App. Total	56.8	14	14	15.3		20.7	40.9	10.4	28		12.7	22.5	11.8	52.9		5.8	34.2	37.7	22.3			
PHF	.878	.889	.571	.673	.854	.850	.761	.708	.575	.837	.650	.575	.500	.643	.823	.656	.861	.729	.750	.890	.953	
<b>Cars &amp; Peds</b>	<b>126</b>	<b>29</b>	<b>31</b>	<b>35</b>	<b>221</b>	<b>34</b>	<b>66</b>	<b>17</b>	<b>46</b>	<b>163</b>	<b>12</b>	<b>20</b>	<b>12</b>	<b>54</b>	<b>98</b>	<b>21</b>	<b>105</b>	<b>133</b>	<b>81</b>	<b>340</b>	<b>822</b>	
% Cars & Peds	96.9	90.6	96.9	100	96.5	100	98.5	100	100	99.4	92.3	87.0	100	100	96.1	100	84.7	97.1	100	93.7	95.8	
Trucks & Buses	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Trucks & Buses	0.8	0	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1
Bikes by Direction	3	3	1	0	7	0	1	0	0	1	1	3	0	0	4	0	19	4	0	23	35	
% Bikes by Direction	2.3	9.4	3.1	0	3.1	0	1.5	0	0	0.6	7.7	13.0	0	0	3.9	0	15.3	2.9	0	6.3	4.1	

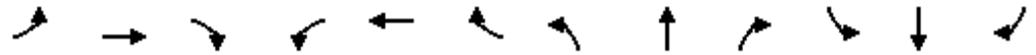
# **Appendix B**

## **Synchro Analysis**

Lanes, Volumes, Timings

3: Caswell Street & Narragansett Avenue & Private Driveway

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	345	72	87	8	48	31	37	25	5	45	34	369
Future Volume (vph)	345	72	87	8	48	31	37	25	5	45	34	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr <sub>t</sub>		0.977			0.952			0.990			0.889	
Fl <sub>t</sub> Protected		0.967			0.995			0.973			0.995	
Satd. Flow (prot)	0	1760	0	0	1764	0	0	1794	0	0	1648	0
Fl <sub>t</sub> Permitted		0.729			0.953			0.493			0.961	
Satd. Flow (perm)	0	1327	0	0	1690	0	0	909	0	0	1591	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			42			5			305	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1628			464			608			1084	
Travel Time (s)		37.0			10.5			13.8			24.6	
Peak Hour Factor	0.98	0.98	0.98	0.73	0.73	0.73	0.87	0.87	0.87	0.88	0.88	0.88
Adj. Flow (vph)	352	73	89	11	66	42	43	29	6	51	39	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	514	0	0	119	0	0	78	0	0	509	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA										
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Detector Phase	2	2		2	2		1	1		1	1	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	

# Lanes, Volumes, Timings

## 3: Caswell Street & Narragansett Avenue & Private Driveway

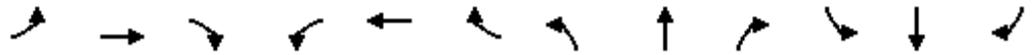
11/20/2023

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0

Lanes, Volumes, Timings

3: Caswell Street & Narragansett Avenue & Private Driveway

11/20/2023

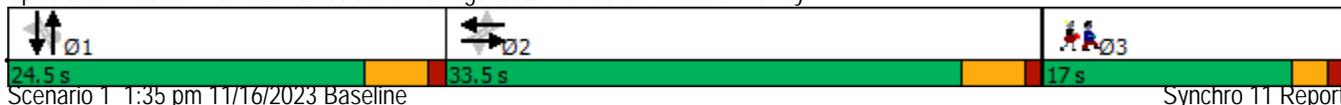


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	14.5	14.5		14.5	14.5		14.5	14.5		14.5	14.5	
Total Split (s)	33.5	33.5		33.5	33.5		24.5	24.5		24.5	24.5	
Total Split (%)	44.7%	44.7%		44.7%	44.7%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	29.0	29.0		29.0	29.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	
Recall Mode	None	None										
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		27.1			27.1			15.5			15.5	
Actuated g/C Ratio		0.45			0.45			0.25			0.25	
v/c Ratio		0.86			0.15			0.33			0.81	
Control Delay		36.3			10.6			25.1			21.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		36.3			10.6			25.1			21.5	
LOS		D			B			C			C	
Approach Delay		36.3			10.6			25.1			21.5	
Approach LOS		D			B			C			C	
Queue Length 50th (ft)		212			21			27			83	
Queue Length 95th (ft)		#427			41			62			#230	
Internal Link Dist (ft)		1548			384			528			1004	
Turn Bay Length (ft)												
Base Capacity (vph)		699			901			330			767	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.74			0.13			0.24			0.66	

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 60.8  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.86  
 Intersection Signal Delay: 26.9  
 Intersection LOS: C  
 Intersection Capacity Utilization 69.3%  
 ICU Level of Service C  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Caswell Street & Narragansett Avenue & Private Driveway



# Lanes, Volumes, Timings

## 3: Caswell Street & Narragansett Avenue & Private Driveway

11/20/2023

Lane Group	Ø3
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	23%
Maximum Green (s)	14.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	41
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
<b>Intersection Summary</b>	

# Lanes, Volumes, Timings

## 5: Beach Street/Boston Neck Road & Narragansett Avenue

11/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø4
Lane Configurations							
Traffic Volume (vph)	364	61	90	437	379	395	
Future Volume (vph)	364	61	90	437	379	395	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	245	0	0			0	
Storage Lanes	1	1	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Frt		0.850			0.923		
Flt Protected	0.950			0.992			
Satd. Flow (prot)	1770	1583	0	3511	3267	0	
Flt Permitted	0.950			0.532			
Satd. Flow (perm)	1770	1583	0	1883	3267	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		65			261		
Link Speed (mph)	30			30	30		
Link Distance (ft)	1084			998	187		
Travel Time (s)	24.6			22.7	4.3		
Peak Hour Factor	0.94	0.94	0.89	0.89	0.86	0.86	
Adj. Flow (vph)	387	65	101	491	441	459	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	387	65	0	592	900	0	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	12			0	0		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15	9	15			9	
Number of Detectors	1	1	1	2	2		
Detector Template	Left	Right	Left	Thru	Thru		
Leading Detector (ft)	20	20	20	100	100		
Trailing Detector (ft)	0	0	0	0	0		
Detector 1 Position(ft)	0	0	0	0	0		
Detector 1 Size(ft)	20	20	20	6	6		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		
Detector 2 Position(ft)				94	94		
Detector 2 Size(ft)				6	6		
Detector 2 Type				Cl+Ex	Cl+Ex		
Detector 2 Channel							
Detector 2 Extend (s)				0.0	0.0		
Turn Type	Prot	pt+ov	D.P+P	NA	NA		
Protected Phases	3	13	1	12	2		4
Permitted Phases			2				

Scenario 1 1:35 pm 11/16/2023 Baseline

Synchro 11 Report  
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# Lanes, Volumes, Timings

## 5: Beach Street/Boston Neck Road & Narragansett Avenue

11/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø4
Detector Phase	3	1 3	1	1 2	2		
Switch Phase							
Minimum Initial (s)	5.0		5.0		10.0		1.0
Minimum Split (s)	10.0		10.0		15.0		25.0
Total Split (s)	27.0		15.0		28.0		25.0
Total Split (%)	28.4%		15.8%		29.5%		26%
Maximum Green (s)	22.0		10.0		23.0		22.0
Yellow Time (s)	3.0		3.0		3.0		2.0
All-Red Time (s)	2.0		2.0		2.0		1.0
Lost Time Adjust (s)	0.0				0.0		
Total Lost Time (s)	5.0				5.0		
Lead/Lag	Lead		Lead		Lag		Lag
Lead-Lag Optimize?	Yes		Yes		Yes		Yes
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	None		None		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							54
Act Effct Green (s)	21.4	33.0		32.9	22.8		
Actuated g/C Ratio	0.24	0.38		0.38	0.26		
v/c Ratio	0.90	0.10		0.66	0.86		
Control Delay	59.4	3.3		24.2	33.3		
Queue Delay	0.0	0.0		0.0	0.0		
Total Delay	59.4	3.3		24.2	33.3		
LOS	E	A		C	C		
Approach Delay	51.3			24.2	33.3		
Approach LOS	D			C	C		
Queue Length 50th (ft)	227	0		130	201		
Queue Length 95th (ft)	#401	13		174	#286		
Internal Link Dist (ft)	1004			918	107		
Turn Bay Length (ft)	245						
Base Capacity (vph)	456	634		919	1071		
Starvation Cap Reductn	0	0		0	0		
Spillback Cap Reductn	0	0		0	0		
Storage Cap Reductn	0	0		0	0		
Reduced v/c Ratio	0.85	0.10		0.64	0.84		

### Intersection Summary

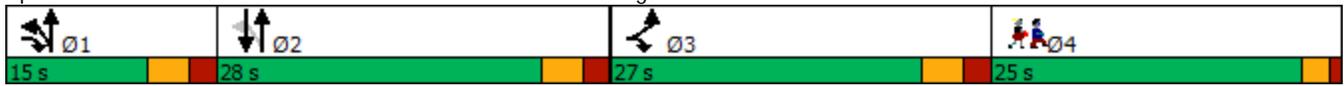
Area Type:	Other
Cycle Length:	95
Actuated Cycle Length:	87.7
Natural Cycle:	90
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.90
Intersection Signal Delay:	34.7
Intersection LOS:	C
Intersection Capacity Utilization:	70.5%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

# Lanes, Volumes, Timings

## 5: Beach Street/Boston Neck Road & Narragansett Avenue

11/20/2023

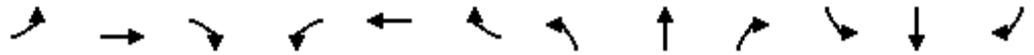
Splits and Phases: 5: Beach Street/Boston Neck Road & Narragansett Avenue



Lanes, Volumes, Timings

8: Kingstown Road & Narragansett Avenue & Strathmore Road

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	34	494	137	1	470	3	169	0	3	3	1	34
Future Volume (vph)	34	494	137	1	470	3	169	0	3	3	1	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr <sub>t</sub>		0.972			0.999			0.998			0.879	
Fl <sub>t</sub> Protected		0.997						0.953			0.996	
Satd. Flow (prot)	0	1805	0	0	1861	0	0	1772	0	0	1631	0
Fl <sub>t</sub> Permitted		0.960			0.999			0.694			0.980	
Satd. Flow (perm)	0	1738	0	0	1859	0	0	1290	0	0	1605	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		33			1			18			44	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		291			1628			348			206	
Travel Time (s)		6.6			37.0			7.9			4.7	
Peak Hour Factor	0.91	0.91	0.91	0.87	0.87	0.87	0.74	0.74	0.74	0.78	0.78	0.78
Adj. Flow (vph)	37	543	151	1	540	3	228	0	4	4	1	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	731	0	0	544	0	0	232	0	0	49	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru										
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex										
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA										
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

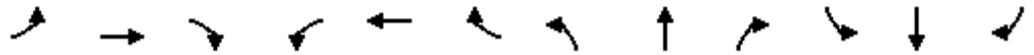
Scenario 1 1:35 pm 11/16/2023 Baseline

Synchro 11 Report  
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Lanes, Volumes, Timings

8: Kingstown Road & Narragansett Avenue & Strathmore Road

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	32.0	32.0		32.0	32.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	11	11		11	11		1	1		1	1	
Act Effect Green (s)		27.9			27.9			20.2			20.2	
Actuated g/C Ratio		0.50			0.50			0.36			0.36	
v/c Ratio		0.83			0.59			0.49			0.08	
Control Delay		21.3			12.8			18.6			6.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.3			12.8			18.6			6.2	
LOS		C			B			B			A	
Approach Delay		21.3			12.8			18.6			6.2	
Approach LOS		C			B			B			A	
Queue Length 50th (ft)		182			117			61			1	
Queue Length 95th (ft)		#344			184			92			16	
Internal Link Dist (ft)		211			1548			268			126	
Turn Bay Length (ft)												
Base Capacity (vph)		1014			1069			475			605	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.72			0.51			0.49			0.08	

Intersection Summary

Area Type: Other  
 Cycle Length: 60  
 Actuated Cycle Length: 56.2  
 Natural Cycle: 45  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.83  
 Intersection Signal Delay: 17.5  
 Intersection LOS: B  
 Intersection Capacity Utilization 84.2%  
 ICU Level of Service E  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 8: Kingstown Road & Narragansett Avenue & Strathmore Road



Scenario 1 1:35 pm 11/16/2023 Baseline

Synchro 11 Report

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Intersection	
Intersection Delay, s/veh	11.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	172	88	15	23	69	47	18	25	14	39	52	132
Future Vol, veh/h	172	88	15	23	69	47	18	25	14	39	52	132
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	1.00	0.75	0.75	0.75	0.79	0.79	0.79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	212	109	19	28	85	47	24	33	19	49	66	167
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

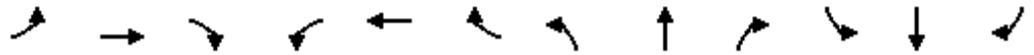
Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	9.9	9.5	11.4
HCM LOS	B	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	32%	63%	17%	17%
Vol Thru, %	44%	32%	50%	23%
Vol Right, %	25%	5%	34%	59%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	275	139	223
LT Vol	18	172	23	39
Through Vol	25	88	69	52
RT Vol	14	15	47	132
Lane Flow Rate	76	340	161	282
Geometry Grp	1	1	1	1
Degree of Util (X)	0.119	0.494	0.234	0.398
Departure Headway (Hd)	5.654	5.236	5.252	5.074
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	633	689	682	709
Service Time	3.698	3.267	3.288	3.107
HCM Lane V/C Ratio	0.12	0.493	0.236	0.398
HCM Control Delay	9.5	13.3	9.9	11.4
HCM Lane LOS	A	B	A	B
HCM 95th-tile Q	0.4	2.8	0.9	1.9

Lanes, Volumes, Timings

3: Caswell Street & Narragansett Avenue & Private Driveway

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	290	48	70	7	28	29	38	40	12	29	68	258
Future Volume (vph)	290	48	70	7	28	29	38	40	12	29	68	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr <sub>t</sub>		0.977			0.939			0.982			0.902	
Fl <sub>t</sub> Protected		0.966			0.995			0.979			0.996	
Satd. Flow (prot)	0	1758	0	0	1740	0	0	1791	0	0	1673	0
Fl <sub>t</sub> Permitted		0.749			0.955			0.609			0.967	
Satd. Flow (perm)	0	1363	0	0	1670	0	0	1114	0	0	1625	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			29			10			174	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1628			464			665			1084	
Travel Time (s)		37.0			10.5			15.1			24.6	
Peak Hour Factor	0.91	0.91	0.91	0.99	0.99	0.99	0.66	0.66	0.66	0.96	0.96	0.96
Adj. Flow (vph)	319	53	77	7	28	29	58	61	18	30	71	269
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	449	0	0	64	0	0	137	0	0	370	0
Turn Type	Perm	NA										
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		
Detector Phase	2	2		2	2		1	1		1	1	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	14.5	14.5		14.5	14.5		14.5	14.5		14.5	14.5	
Total Split (s)	33.5	33.5		33.5	33.5		24.5	24.5		24.5	24.5	
Total Split (%)	44.7%	44.7%		44.7%	44.7%		32.7%	32.7%		32.7%	32.7%	
Maximum Green (s)	29.0	29.0		29.0	29.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.4	2.4		2.4	2.4		2.4	2.4		2.4	2.4	
Recall Mode	None	None										
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		23.5			23.5			14.9			14.9	
Actuated g/C Ratio		0.39			0.39			0.25			0.25	
v/c Ratio		0.83			0.10			0.49			0.70	
Control Delay		34.1			9.4			28.7			20.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		34.1			9.4			28.7			20.9	
LOS		C			A			C			C	
Approach Delay		34.1			9.4			28.7			20.9	
Approach LOS		C			A			C			C	

# Lanes, Volumes, Timings

## 3: Caswell Street & Narragansett Avenue & Private Driveway

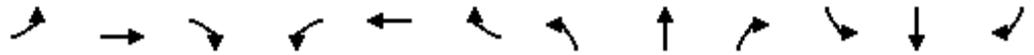
11/20/2023

Lane Group	Ø3
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	3
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	17.0
Total Split (s)	17.0
Total Split (%)	23%
Maximum Green (s)	14.0
Yellow Time (s)	2.0
All-Red Time (s)	1.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	9.0
Pedestrian Calls (#/hr)	116
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Lanes, Volumes, Timings

3: Caswell Street & Narragansett Avenue & Private Driveway

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		151			8			47			74	
Queue Length 95th (ft)		#345			33			68			169	
Internal Link Dist (ft)		1548			384			585			1004	
Turn Bay Length (ft)												
Base Capacity (vph)		733			903			415			707	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.61			0.07			0.33			0.52	

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	60.7
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	27.0
Intersection LOS:	C
Intersection Capacity Utilization:	58.5%
ICU Level of Service:	B
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 3: Caswell Street & Narragansett Avenue & Private Driveway



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Lane Group	Ø3
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

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# Lanes, Volumes, Timings

## 5: Beach Street/Boston Neck Road & Narragansett Avenue

11/20/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø4
Lane Configurations							
Traffic Volume (vph)	303	71	76	405	435	321	
Future Volume (vph)	303	71	76	405	435	321	
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	245	0	0			0	
Storage Lanes	1	1	0			0	
Taper Length (ft)	25		25				
Lane Util. Factor	1.00	1.00	0.95	0.95	0.95	0.95	
Frt		0.850			0.936		
Flt Protected	0.950			0.992			
Satd. Flow (prot)	1770	1583	0	3511	3313	0	
Flt Permitted	0.950			0.596			
Satd. Flow (perm)	1770	1583	0	2109	3313	0	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		79			185		
Link Speed (mph)	30			30	30		
Link Distance (ft)	1084			1000	187		
Travel Time (s)	24.6			22.7	4.3		
Peak Hour Factor	0.90	0.90	0.93	0.93	0.94	0.94	
Adj. Flow (vph)	337	79	82	435	463	341	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	337	79	0	517	804	0	
Turn Type	Prot	pt+ov	D.P+P	NA	NA		
Protected Phases	3	1 3	1	1 2	2		4
Permitted Phases			2				
Detector Phase	3	1 3	1	1 2	2		
Switch Phase							
Minimum Initial (s)	5.0		5.0		10.0		1.0
Minimum Split (s)	10.0		10.0		15.0		25.0
Total Split (s)	27.0		15.0		28.0		25.0
Total Split (%)	28.4%		15.8%		29.5%		26%
Maximum Green (s)	22.0		10.0		23.0		22.0
Yellow Time (s)	3.0		3.0		3.0		2.0
All-Red Time (s)	2.0		2.0		2.0		1.0
Lost Time Adjust (s)	0.0				0.0		
Total Lost Time (s)	5.0				5.0		
Lead/Lag	Lead		Lead		Lag		Lag
Lead-Lag Optimize?	Yes		Yes		Yes		Yes
Vehicle Extension (s)	3.0		3.0		3.0		3.0
Recall Mode	None		None		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							15.0
Pedestrian Calls (#/hr)							118
Act Effect Green (s)	20.6	32.3		33.1	22.8		
Actuated g/C Ratio	0.24	0.37		0.38	0.26		
v/c Ratio	0.81	0.12		0.53	0.80		
Control Delay	49.6	3.2		21.1	31.6		
Queue Delay	0.0	0.0		0.0	0.0		
Total Delay	49.6	3.2		21.1	31.6		

Scenario 1 1:35 pm 11/16/2023 Baseline

Synchro 11 Report  
Page 5

Lanes, Volumes, Timings

5: Beach Street/Boston Neck Road & Narragansett Avenue

11/20/2023

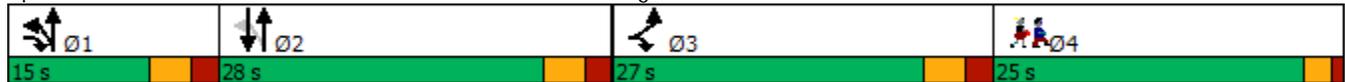


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	Ø4
LOS	D	A		C	C		
Approach Delay	40.8			21.1	31.6		
Approach LOS	D			C	C		
Queue Length 50th (ft)	191	0		111	188		
Queue Length 95th (ft)	#331	14		152	#287		
Internal Link Dist (ft)	1004			920	107		
Turn Bay Length (ft)	245						
Base Capacity (vph)	461	642		991	1037		
Starvation Cap Reductn	0	0		0	0		
Spillback Cap Reductn	0	0		0	0		
Storage Cap Reductn	0	0		0	0		
Reduced v/c Ratio	0.73	0.12		0.52	0.78		

Intersection Summary

Area Type: Other  
 Cycle Length: 95  
 Actuated Cycle Length: 87  
 Natural Cycle: 80  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.81  
 Intersection Signal Delay: 30.7  
 Intersection LOS: C  
 Intersection Capacity Utilization 65.0%  
 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.

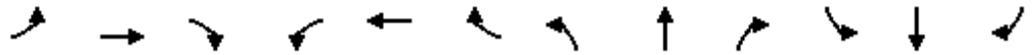
Splits and Phases: 5: Beach Street/Boston Neck Road & Narragansett Avenue



Lanes, Volumes, Timings

8: Kingstown Road & Narragansett Avenue & Strathmore Road

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	18	418	151	5	365	2	170	2	10	2	4	28
Future Volume (vph)	18	418	151	5	365	2	170	2	10	2	4	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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
Fr <sub>t</sub>		0.965			0.999			0.992			0.889	
Fl <sub>t</sub> Protected		0.998			0.999			0.956			0.997	
Satd. Flow (prot)	0	1794	0	0	1859	0	0	1767	0	0	1651	0
Fl <sub>t</sub> Permitted		0.984			0.992			0.708			0.985	
Satd. Flow (perm)	0	1769	0	0	1846	0	0	1308	0	0	1631	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		45			1			5			37	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		274			1628			348			206	
Travel Time (s)		6.2			37.0			7.9			4.7	
Peak Hour Factor	0.89	0.89	0.89	0.88	0.88	0.88	0.79	0.79	0.79	0.75	0.75	0.75
Adj. Flow (vph)	20	470	170	6	415	2	215	3	13	3	5	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	660	0	0	423	0	0	231	0	0	45	0
Turn Type	Perm	NA										
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Detector Phase	1	1		1	1		2	2		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	8.0		8.0	8.0		8.0	8.0		8.0	8.0	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	32.0	32.0		32.0	32.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag	Lead	Lead		Lead	Lead		Lag	Lag		Lag	Lag	
Lead-Lag Optimize?	Yes	Yes										
Vehicle Extension (s)	2.7	2.7		2.7	2.7		2.1	2.1		2.1	2.1	
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	4	4		4	4		4	4		4	4	
Act Effct Green (s)		24.8			24.8			20.4			20.4	
Actuated g/C Ratio		0.47			0.47			0.38			0.38	
v/c Ratio		0.78			0.49			0.46			0.07	
Control Delay		18.0			11.5			18.1			6.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.0			11.5			18.1			6.8	
LOS		B			B			B			A	
Approach Delay		18.0			11.5			18.1			6.8	
Approach LOS		B			B			B			A	

Lanes, Volumes, Timings

8: Kingstown Road & Narragansett Avenue & Strathmore Road

11/20/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		147			84			55			2	
Queue Length 95th (ft)		249			137			105			15	
Internal Link Dist (ft)		194			1548			268			126	
Turn Bay Length (ft)												
Base Capacity (vph)		1099			1129			503			646	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.37			0.46			0.07	

Intersection Summary

Area Type:	Other
Cycle Length:	60
Actuated Cycle Length:	53.3
Natural Cycle:	40
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	15.6
Intersection LOS:	B
Intersection Capacity Utilization:	65.5%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 8: Kingstown Road & Narragansett Avenue & Strathmore Road



Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	137	124	21	17	67	34	12	23	13	32	32	130
Future Vol, veh/h	137	124	21	17	67	34	12	23	13	32	32	130
Peak Hour Factor	0.89	0.89	0.89	0.84	0.84	0.84	0.82	0.82	0.82	0.85	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	154	139	24	20	80	40	15	28	16	38	38	153
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	9.1	8.8	9.9
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	49%	14%	16%
Vol Thru, %	48%	44%	57%	16%
Vol Right, %	27%	7%	29%	67%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	48	282	118	194
LT Vol	12	137	17	32
Through Vol	23	124	67	32
RT Vol	13	21	34	130
Lane Flow Rate	59	317	140	228
Geometry Grp	1	1	1	1
Degree of Util (X)	0.085	0.427	0.19	0.301
Departure Headway (Hd)	5.235	4.85	4.88	4.744
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	677	735	728	751
Service Time	3.329	2.921	2.966	2.815
HCM Lane V/C Ratio	0.087	0.431	0.192	0.304
HCM Control Delay	8.8	11.5	9.1	9.9
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2.1	0.7	1.3

## **Appendix C**

### **Speed Study**

# Pare Corporation

8 Blackstone Valley Place  
 Lincoln, RI, 02865  
 401-334-4100  
 www.parecorp.com

Roadway: Kingstown Road  
 City/State: Narragansett, RI  
 Weather: 43 and Sunny  
 Taken By: AB

File Name : Kingstown Road Speed Study  
 Site Code : 2313800\_  
 Start Date : 11/8/2023  
 Page No : 1

#	EB	WB
1	12	15
2	17	27
3	15	26
4	18	21
5	16	23
6	20	22
7	14	22
8	22	20
9	13	23
10	18	19
11	19	19
12	25	16
13	17	19
14	15	18
15	17	17
16	21	20
17	22	18
18	24	17
19	23	15
20	17	24
21	12	23
22	16	14
23	24	13
24	15	15
25	21	15
26	24	18
27	16	22
28	15	19
29	20	19
30	23	26
31	20	18
32	15	21
33	20	17
34	23	21
35	19	18
36	21	24
37	15	25
38	17	19
39	20	19
40	23	17
41		

Class	Vehicle Count	85 Percentile	10 MPH Pace Speed	Number in Pace	Percent in Pace	Number of Vehicles Over 25 MPH	Percent of Vehicles Over 25 MPH	Average Speed	True Median (50th Percentile)
EB	40	23	15 - 24	35	88	0	0	19	18
WB	40	23	15 - 24	34	85	3	8	20	19
Summary	80	23	15 - 24	69	86	3	4	19	19

# Pare Corporation

8 Blackstone Valley Place  
 Lincoln, RI, 02865  
 401-334-4100  
 www.parecorp.com

Roadway: Narragansett Avenue  
 City/State: Narragansett, RI  
 Weather: 42 and Sunny  
 Taken By: AB

File Name : Narragansett Ave Speed Study  
 Site Code : 2313800\_  
 Start Date : 11/8/2023  
 Page No : 1

#	NB	SB
1	14	13
2	16	19
3	17	22
4	19	19
5	20	18
6	21	16
7	21	21
8	24	21
9	22	18
10	24	18
11	24	27
12	22	24
13	23	23
14	25	25
15	22	28
16	23	23
17	22	21
18	20	21
19	23	20
20	21	21
21	23	22
22	20	23
23	21	19
24	24	21
25	25	23
26	20	21
27	21	17
28	23	19
29	23	19
30	25	26
31	23	18
32	22	16
33	24	27
34	22	21
35	22	16
36	21	24
37	21	22
38	25	23
39	20	21
40	25	23
41	21	19
42	20	21
43	21	21
44	17	17
45	21	17
46	26	18
47	24	19
48	21	18
49	20	20
50	22	25
51		

Class	Vehicle Count	85 Percentile	10 MPH Pace Speed	Number in Pace	Percent in Pace	Number of Vehicles Over 25 MPH	Percent of Vehicles Over 25 MPH	Average Speed	True Median (50th Percentile)
NB	50	24	16 - 25	48	96	1	2	22	22
SB	50	23	16 - 25	45	90	4	8	21	21
Summary	100	24	16 - 25	93	93	5	5	21	21

# Pare Corporation

8 Blackstone Valley Place  
 Lincoln, RI, 02865  
 401-334-4100  
 www.parecorp.com

Roadway: Ocean Road  
 City/State: Narragansett, RI  
 Weather: 43 and Sunny  
 Taken By: AB

File Name : Ocean Road Speed Study  
 Site Code : 2313800  
 Start Date : 11/8/2023  
 Page No : 1

#	NB	SB
1	17	22
2	19	17
3	22	19
4	24	23
5	13	22
6	15	20
7	15	31
8	16	30
9	14	17
10	13	23
11	17	28
12	12	19
13	13	21
14	17	22
15	14	12
16	19	15
17	15	14
18	16	20
19	16	29
20	15	19
21	21	23
22	15	19
23	16	27
24	19	19
25	18	22
26	13	14
27	19	21
28	16	23
29	20	27
30	19	14
31	24	17
32	17	17
33	15	14
34	18	21
35	19	24
36	22	27
37	14	24
38	13	23
39	16	23
40	15	24
41	21	20
42		

Class	Vehicle Count	85 Percentile	10 MPH Pace Speed	Number in Pace	Percent in Pace	Number of Vehicles Over 25 MPH	Percent of Vehicles Over 25 MPH	Average Speed	True Median (50th Percentile)
NB	41	20	13 - 22	38	93	0	0	17	16
SB	41	27	14 - 23	30	73	7	17	21	21
Summary	82	23	14 - 23	63	77	7	9	19	19

## **Appendix D**

### **Crash Data**



Jurisdictions: 501  
Location: ALL  
Street: 501 > KINGSTOWN RD (Odd # 1-179 Even # 2-178 Blanks Included)  
Intersecting Street:  
Zones: ALL

Manner Of Impact

	Occurrence (s)	Percentage
Not a Collision Between Two Motor Vehicles in Tran	25	15.1
Rear-to-Side	5	3.0
Rear-to-Rear	2	1.2
Other	1	0.6
Unknown	3	1.8
Rear End (Front-to-Rear)	49	29.5
Head-On (Front-to-Front)	2	1.2
Angle (Front-to-Side) Same Direction	21	12.7
Angle (Front-to-Side) Opposite Direction	5	3.0
Angle (Front-to-Side) Right Angle (Includes Broads	23	13.9
Angle-Direction Not Specified	1	0.6
Sideswipe, Same Direction	27	16.3
Sideswipe, Opposite Direction	2	1.2
Total Occurrences	166	100.0 %



Jurisdictions: 501  
Location: ALL  
Street: 501 > MEMORIAL SQ  
Intersecting Street:  
Zones: ALL

Manner Of Impact

	Occurrence (s)	Percentage
Not a Collision Between Two Motor Vehicles in Tran	1	5.3
Rear-to-Side	4	21.1
Rear End (Front-to-Rear)	4	21.1
Angle (Front-to-Side) Same Direction	2	10.5
Angle (Front-to-Side) Right Angle (Includes Broads	2	10.5
Sideswipe, Same Direction	6	31.6
Total Occurrences	19	100.0 %



Jurisdictions: 501  
Location: ALL  
Street: 501 > CASWELL ST (Odd # 29-35 Even # 28-34 Blanks Included)  
Intersecting Street:  
Zones: ALL

Manner Of Impact

	Occurrence (s)	Percentage
Not a Collision Between Two Motor Vehicles in Tran	4	17.4
Rear-to-Side	4	17.4
Rear-to-Rear	2	8.7
Unknown	1	4.3
Rear End (Front-to-Rear)	4	17.4
Head-On (Front-to-Front)	1	4.3
Angle (Front-to-Side) Same Direction	1	4.3
Sideswipe, Same Direction	5	21.7
Sideswipe, Opposite Direction	1	4.3
<hr/> Total Occurrences	23	100.0 %



Jurisdictions: 501  
Location: ALL  
Street: 501 > NARRAGANSETT AVE (Odd # 1-117 Even # 2-118 Blanks Included)  
Intersecting Street:  
Zones: ALL

Manner Of Impact

	Occurrence (s)	Percentage
Not a Collision Between Two Motor Vehicles in Tran	17	24.3
Rear-to-Side	6	8.6
Unknown	1	1.4
Rear End (Front-to-Rear)	21	30.0
Head-On (Front-to-Front)	1	1.4
Angle (Front-to-Side) Same Direction	7	10.0
Angle (Front-to-Side) Opposite Direction	3	4.3
Angle (Front-to-Side) Right Angle (Includes Broads	4	5.7
Sideswipe, Same Direction	8	11.4
Sideswipe, Opposite Direction	2	2.9
Total Occurrences	70	100.0 %