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# Town of Mashpee Road Safety Audit

## Nathan Ellis HWY (Route 151) at Old Barnstable Road Intersection

August 2014





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**Prepared by the Cape Cod Commission in cooperation with the Town of Mashpee, and MassDOT Highway Division Traffic Safety and District 5 Offices.**



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## Background

All levels of government— local, regional, state, and federal—have been considering locations where crashes are most severe for many years. Several years ago the national consensus was that there should be goals to reduce crashes, and in the 2005 federal legislation: *Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users* (SAFETEA-LU), there was more emphasis on improving highway safety along with a dedicated funding program—the Highway Safety Improvement Program (HSIP). The latest federal legislation: *Moving Ahead for Progress in the 21st Century* (MAP-21), signed into law on July 6, 2012, has consolidated many highway programs while retaining the Highway Safety Improvement Program (HSIP) as one of the five core highway programs.

In an effort to reduce the number of crash-related fatalities and incapacitating injuries, Massachusetts developed a Strategic Highway Safety Plan in 2006. The mission of the Safety Plan is to “Develop, promote, implement, and evaluate data-driven, multidisciplinary strategies to maximize safety for users of the roadway system.” One of the many strategies noted in the Safety Plan is to “conduct Road Safety Audits (RSA) at high-crash locations throughout the Commonwealth.” MassDOT incorporated the RSA as a requirement for securing Federal funding (Highway Safety Improvement Program [HSIP] funds) for safety projects.

The Federal Highway Administration (FHWA) defines a Road Safety Audit (RSA) as the formal safety examination of an existing or future road or intersection by an independent, multidisciplinary team. The purpose of an RSA is to identify potential safety issues and possible opportunities for safety improvements while considering all roadway users.

The Cape Cod Commission, serving as the regional planning agency for the fifteen towns on Cape Cod, has reviewed many transportation locations over the years during various processes, including the Regional Transportation Plan, the Transportation Improvement Program, and Developments of Regional Impact, considering the existing safety issues and potential improvements. In addition, the CCC began looking at specific safety locations annually through safety studies and Road Safety Audits (RSAs). A portion of the federal HSIP funds are allocated for improvements to the region’s highest crash locations.

## Introduction

The Town of Mashpee has 13,950 residents as of the 2012 United States American Community Survey, and is the seventh most populous of the fifteen towns on Cape Cod. Unlike many communities in Massachusetts, the town gained population from the year 2000 to 2010 in the United States Census of Population, at an increase of about eight percent. Mashpee is part of the Barnstable urbanized area (UZA).



Overall, the UZA population grew from 2000-2010 and remains fourth highest in the state, following Boston, Springfield, and Worcester UZA populations.

Mashpee is the home of vibrant residential areas and cultural areas managed by the Mashpee Wampanoag Tribe. The town includes beaches and great ponds, golf courses, shopping places, and museums. A portion of the town is under the jurisdiction of Joint Base Cape Cod (formerly the Massachusetts Military Reservation). The center of town includes Mashpee Commons, a destination for shopping and entertainment, the Mashpee Public Library, and the Mashpee High and Middle Schools. In conclusion, there is a lot of activity in the town.

In 2014, Town of Mashpee officials approached CCC staff to request a Road Safety Audit (RSA) at the intersection of Route 151 and Old Barnstable Road.

## Project Data

The crash reports were requested from the Town of Mashpee for this Road Safety Audit and were supplied by the Mashpee Police Department. The crash data were reviewed and a crash diagram was developed. In reviewing the crashes by manner of collision, there were 14% angle crashes, 63% rear-end, and no same direction sideswipes. Close to 7% of the crashes occurred during the hours from 10 a.m. to 2 p.m., while 42% were between 2 and 6 p.m. Most of the crashes, or 84%, were in daylight with 93% in clear weather. The highest driver contributing code was of 88% due to driver inattention.

Cape Cod Commission staff also prepared reports of the traffic volume data. Turning movement counts (TMCs) were performed for this intersection during a.m. and p.m. peak hours during the summer and the school year in 2011. New turning movement counts are being collected by the Cape Cod Commission staff during summer of 2014.

The crash diagram, summary data, and the traffic count data are included in the appendices.

## Multidisciplinary Team

The Road Safety Audit was scheduled with MassDOT, town officials, and representatives of the institutions served by the intersection. The Road Safety Audit meeting was held on July 9, 2014, beginning at 1:00 p.m., at Mashpee High School's Administrative Conference Room. The multidisciplinary team also visited the site during the RSA meeting, and then reconvened at the high school.



Table 1. Participating Audit Team Members

<b>Audit Team Member</b>	<b>Agency / Affiliation</b>
Joyce Mason	Mashpee Town Administrator
Rodney Collins	Mashpee Police Chief
Catherine Laurent	Mashpee DPW Supervisor
Lisa Schletzbaum	MassDOT Safety
Pamela Haznar	MassDOT – Dist. 5
Robert Wheeler	MassDOT – Dist. 5
Anthony Tanner	MassDOT Safety
Yuan Liu	MassDOT Safety
Michelle Deng	MassDOT Safety
Douglas Prentiss	FST
Glenn Cannon	Cape Cod Commission
Garry Meus	Cape Cod Commission
Lev Malakhoff	Cape Cod Commission

## Project Location and Description

The intersection of Route 151 at Old Barnstable Road in the town of Mashpee is a four-way signalized intersection, with the minor roadways crossing at a moderately skewed angle. Route 151 is functionally classified as an urban principal arterial. Old Barnstable Road is classified as an Urban Collector. Both roads are under the jurisdiction of Mashpee.

Both approaches of the minor road, Old Barnstable Road, include an exclusive right-turn lane and a shared left-turn/through lane. Both approaches of the major road, Route 151, include an exclusive left-turn lane and a shared right-turn/through lane. Approximately one car-length back of the stop bars, right-turning vehicles from Route 151 are accommodated by an exclusive slip-lane. Views of the intersection are presented following the locus map on the next page.





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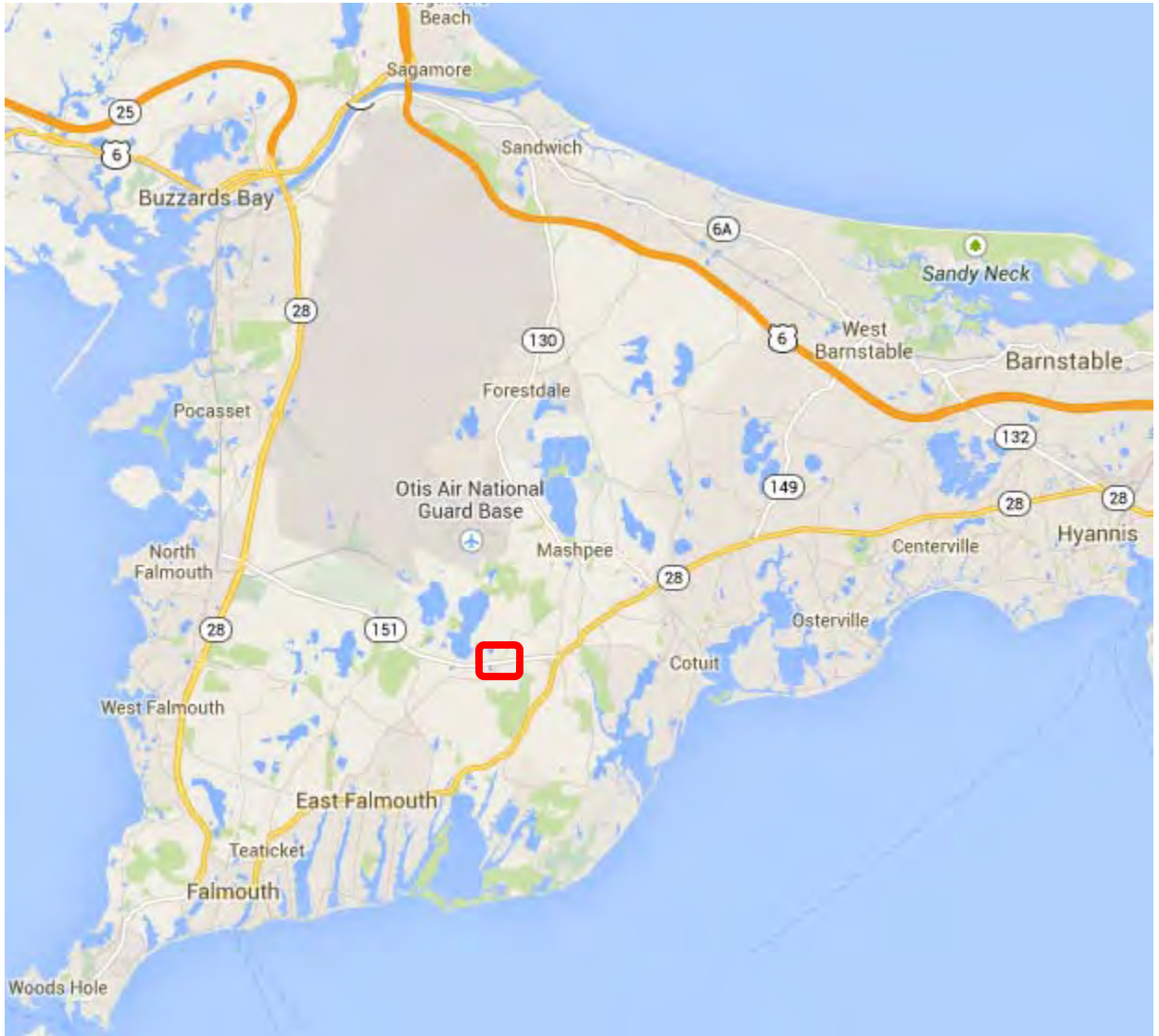


Figure 1. Locus Map





Figure 2. Nathan Ellis highway (Route 151) at Old Barnstable Road intersection.





## Road Safety Audit:

The RSA Team met for discussion of the existing conditions, visited the site for field observations, and returned to discuss the safety issues at the location. The summary crash data, crash diagram, and traffic volume reports were brought to the RSA team meeting, and are included in the Appendices.

The RSA Team reviewed the crash diagram, the crash summary, the traffic volumes, and discussed the existing conditions.



Example of drivers completing left turns from both directions of Route 151 onto Old Barnstable Road.

The Mashpee Police Department provided local crash reports, and 43 crashes were found to be at this location for the years between 2011-2014 with 30 property damage only, 12 injury crashes, and no fatal crashes. The resulting equivalent property damage only (EPDO) for just these crashes is 91. Of the 43 crashes, the majority, or 62%, were rear-end crashes, with 14% angled crashes, and 9% sideswipe in the same direction crashes.

Road Safety Audit observations of the safety issues and potential enhancements, and a summary table follow.



# Audit Observations and Potential Safety Enhancements

## SAFETY ISSUE #1. SPEED & DRIVER BEHAVIOR

### Observations:

Vehicles traveling easterly on Route 151 in advance of the intersection are presented with a “Speed Limit 45” sign in the vicinity of the Childs River, approximately 3,500 feet west of the intersection. The speed limit increases to 50 mph approximately 1,000 feet west of the intersection – encouraging drivers to accelerate for a relatively short distance before arriving at the traffic signal. Rear-end crashes are by far the most common type of crash at this intersection. There were six rear-end crashes on the eastbound approach of Route 151 – half of which involved injuries. Speed may also be a contributing cause in westbound Route 151 rear-end crashes (total of nine rear-end crashes; four involving injuries).

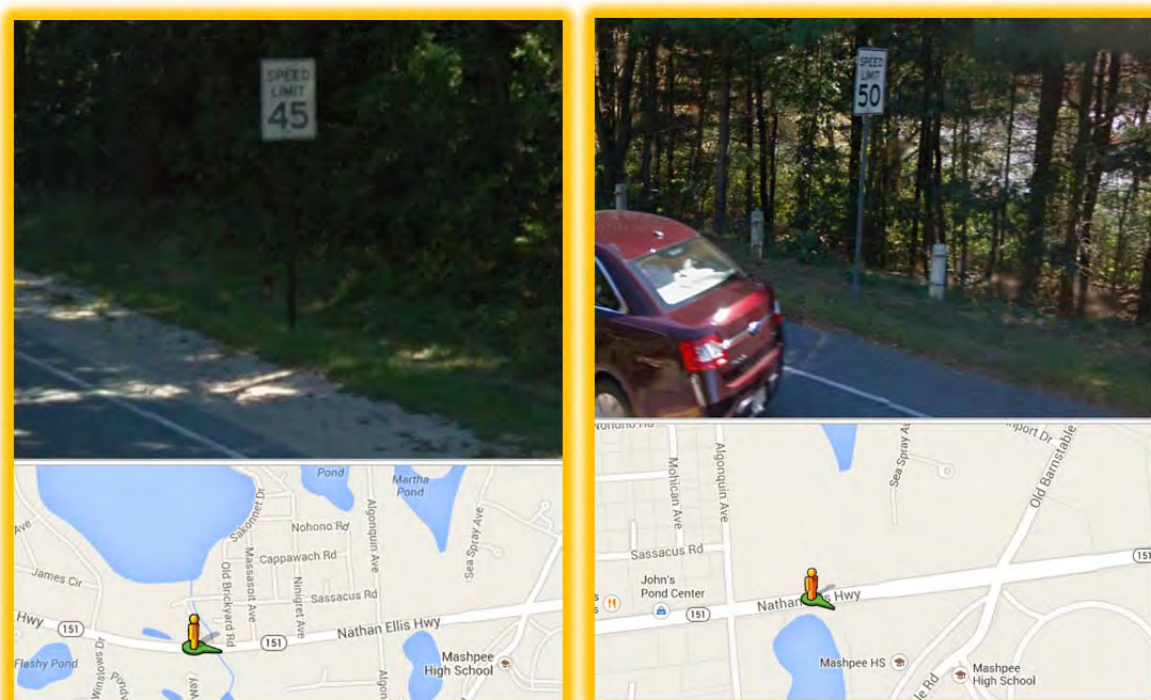


Figure 3. Speed Limits on Route 151 Eastbound

Local officials noted that during busy times through drivers on Route 151 frequently “block the box” – preventing side street traffic from entering the intersection.

Red light running is a common occurrence, several instances where observed during the site visit. Local officials noted that occasionally school buses are also running the red signal.



Users include a higher mix of student-age drivers and senior citizens in addition to other traffic, with a wider variation in motorist response times and experience. Additional traffic generation is expected as Southpoint expands and a Senior Living development is constructed.

The skew angle of the minor street approaches complicates the decision-making process as some drivers, especially senior citizens, have more difficulty turning their heads/upper torso and looking back to the left when approaching the intersection. Additionally, the flatter angle of the minor street approaches facilitates higher-speed (potentially hazardous) right turns.

**Enhancements:**

Remove the Route 151 eastbound “Speed Limit 50” sign from the western approach to the intersection. Consider additional advanced intersection warning signage

Include “Don’t Block the Box” signage on approaches to the intersection.

Conduct traffic safety workshop to remind school bus drivers of the importance of obeying all traffic laws – especially stopping in advance of red signals.

Consider intersection realignment to bring minor street approaches closer to 90-degree angles; also investigate feasibility of construction of a modern roundabout to lower travel speeds and improve safer merging.





## SAFETY ISSUE #2. BICYCLE & PEDESTRIAN ACCOMMODATIONS

### **Observations:**

The crosswalk on the northern leg of the intersection (Old Barnstable Road) appears to have been installed subsequent to the current configuration of curbing. This results in directing users into the Route 151 westbound travel lane. Also, there is no pedestrian button for this crossing.

A significant amount of sand has accumulated in the wheelchair ramps and crosswalk markings are worn.

Several pedestrians were observed traveling to or from the west of the intersection along the north side of Route 151. There is no sidewalk to the west despite the apparent need evidenced by the worn dirt track.

Local officials have noted that there is pedestrian activity between the trailer park in the southwest quadrant and the high school.



Example of pedestrian activity going west from Old Barnstable Road along Route 151 without any pedestrian accommodations.



Pedestrian facilities are available as follows:

- East leg: multi-use path separated by vegetated buffer along the north side of Route 151. Crosswalk apron on the south side to access the Mashpee High School
- West leg: none
- North leg: sidewalks on both sides of Old Barnstable Road
- South leg: Sidewalk on the east side connecting from the Mashpee High School drive to the intersection



Pedestrian accommodation crossing Old Barnstable Road going east along Route 151 without handicap accessibility on the pedestrian island and directing pedestrian into incoming vehicular traffic heading west along Route 151.





Pedestrian accommodation island in the north east quadrant of the Old Barnstable Road/Route 151 intersection.

**Enhancements:**

Realign the crosswalk on the northern leg to be parallel with Route 151; modify curbing on island to accommodate wheelchair users and meet ADA requirements.

Replace pedestrian signal push buttons with APS vibro-tactile buttons (to accommodate senior residents).

Schedule regular street sweeping to remove sand and debris from wheelchair ramps.

Re-apply crosswalk markings.

Consider construction of a crosswalk on Old Barnstable Road's southern leg to accommodate pedestrians traveling between the trailer park and the high school.

During corridor-wide improvements, construct pedestrian and bicycle accommodations to the west of the intersection.





### SAFETY ISSUE #3. INTERSECTION CONTROL & AUXILLIARY LANES

**Observations:**

Given the speed of approaching vehicles and the width of intersection crossing distances, it appears that the amount of yellow and all-red time may be inadequate.

There is a “One Way” sign on the island along the west side of the southern leg of the intersection. The “Do Not Enter” sign is faded.



One Way sign on Island in southwest quadrant with a faded “Do Not Enter” sign.

Queuing of through vehicles on Route 151 prevents access to some vehicles’ abilities to enter the left-turn lanes, most notably on the westbound approach. This may frustrate some drivers and encourage them to violate the double-yellow center line in order to get into the left-turn lane.

Southbound vehicle queues on the northern leg are exacerbated by the conflicts with the opposing traffic.



The only advanced warning sign for the intersection on Route 151 eastbound is the W2-1 - Cross Road sign (black on yellow).

Figure 4. Example of existing advanced warning signage

Heading south on Old Barnstable Road away from the intersection, there is a sign prohibiting left turns installed adjacent to the left shoulder.



Left turn prohibition sign on east side of Old Barnstable Road's southern leg

**Enhancements:**

Remove the “One Way” sign and replace the “Do Not Enter” sign currently located on the island on the western side of the southern leg of the intersection.

Remove the left-turn prohibition sign from the east side of the southern leg of Old Barnstable Road

Consider signalization modification to increase yellow times and include an advance green phase for southbound Old Barnstable Road.

Consider lengthening storage areas of left-turn lanes on Route 151.

Consider re-visiting lane allocation and revised signal timing and phasing.

Consider intersection realignment; also investigate the feasibility of constructing a modern roundabout to improve safety and traffic flow.



## SAFETY ISSUE #4. LIGHTING, WEATHER & OBSTRUCTIONS

### **Observations:**

Pavement degradation (rutting) was observed on the Route 151 approaches. This could cause difficulty in snow removal and result in ice remaining in the wheel paths where vehicles should be stopping for the signal. Rutting also degrades ease of pedestrian crossings – especially wheelchairs and strollers.

The east-west orientation of the roadway results in excessive sun glare during certain times of the year/times of the day.

Street lighting is available at the intersection and on all approaches except the northern leg of Old Barnstable Road.

Vegetation growth on the southwest quadrant slightly impairs views of drivers on northbound Old Barnstable Road.

### **Enhancements:**

Perform pavement rehabilitation during next intersection upgrade.

Consider installation of larger signal heads and backplates on Route 151 approaches.

Install street lighting on northern approach of Old Barnstable Road



## SAFETY ISSUE #5. ANIMALS

### **Observations:**

The intersection is adjacent to heavily wooded areas. During the site visit the audit team was surprised to observe a large group of wild turkeys consisting of two adults and several juveniles. This small flock was observed first crossing the southern leg of Old Barnstable Road in an easterly direction and subsequently the eastern leg of Route 151 in a northerly direction, bringing traffic to a standstill.



Example of vehicular traffic in both directions allowing a family of turkeys to cross Route 151.

### **Enhancements:**

Explore techniques to reduce vehicular travel speeds to enhance safety for animals and other non-motorized travelers.





## Summary of Road Safety Audit

The summary list of the Road Safety Audit observations and enhancements is provided to assist in the design and/or implementation of potential improvements elicited during the process. It is also recommended that any design process for more involved geometric changes include further analysis and public input.

Safety payoff estimates are subjective and may be based on the relative percent of crashes that may be reduced by the enhancement based on known and documented crash reduction factors, if available, or estimated crash reduction based on a stated source [for example, low (<30%), medium (31% to 70%), and high (>71%)]. The time frame is categorized as short-term (<1 year), medium-term (1 to 3 years), or long-term (>3 years). The costs are categorized as low (<\$10,000), medium (\$10,001 to \$50,000), or high (>\$50,001).



Southbound view from the pedestrian island looking onto traffic stopped on Old Barnstable Road.



Table 2. Potential Safety Enhancement Summary

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Responsible Agency
Speed & Driver Behavior	Remove eastbound “Speed Limit 50” sign. Consider additional advanced intersection warning signage	Low	Short-term	Low	Mashpee DPW
	Include “Don’t Block the Box” signage	Low	Short-term	Low	Mashpee DPW
	Conduct traffic safety workshop for school bus drivers	Low	Short-term	Low	Mashpee School Dept.
	Consider intersection realignment also investigate feasibility of a modern roundabout	High	Long-term	High	Mashpee
Bicycle & Pedestrian Accommodations	Realign the north leg crosswalk; modify curbing to comply with ADA.	Low	Medium-term	Medium	Mashpee DPW
	Replace pedestrian signal push buttons with APS vibro-tactile buttons				Mashpee DPW
	Schedule regular street sweeping				Mashpee DPW
	Re-apply crosswalk markings				Mashpee DPW
	Consider construction of a crosswalk southern leg				Mashpee DPW
During corridor-wide improvements, construct pedestrian and bicycle accommodations to the west					
Intersection Control & Auxiliary Lanes	Remove the “One Way” sign and replace the “Do Not Enter” signs currently located on the southern island	Low	Short-term	Low	Mashpee DPW
	Remove the left-turn prohibition sign from the east side of the southern leg of Old Barnstable Road	Low	Short-term	Low	Mashpee DPW



	<p>Consider increase of yellow times and include an advance green phase for southbound Old Barnstable Road.</p> <p>Consider lengthening storage areas of left-turn lanes on Route 151</p> <p>Consider re-visiting lane allocation and revised signal timing and phasing</p> <p>Consider intersection realignment; also investigate feasibility of a modern roundabout</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p> <p>High</p>	<p>Short-term</p> <p>Medium-term</p> <p>Medium-term</p> <p>Long-term</p>	<p>Low</p> <p>Medium</p> <p>Medium</p> <p>High</p>	<p>Mashpee DPW</p> <p>Mashpee DPW</p> <p>Mashpee DPW</p> <p>Mashpee DPW</p>
Lighting, Weather & Obstructions	<p>Perform pavement rehabilitation</p> <p>Consider installation of larger signal heads and backplates on Route 151 approaches.</p> <p>Install street lighting on northern approach of Old Barnstable Road</p>	<p>Medium</p> <p>Medium</p> <p>Low</p>	<p>Medium-term</p> <p>Medium-term</p> <p>Short-term</p>	<p>Medium</p> <p>Medium</p> <p>Medium</p>	<p>Mashpee DPW</p> <p>Mashpee DPW</p> <p>Mashpee DPW</p>
Animals	<p>Explore techniques to reduce vehicular travel speeds to enhance safety for animals and other non-motorized travelers.</p>	<p>Low</p>	<p>Medium-term</p>	<p>Medium</p>	<p>Mashpee DPW</p>



# Appendix A. RSA Meeting Agenda

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3225 MAIN STREET • P.O. BOX 226  
BARNSTABLE, MASSACHUSETTS 02630

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## Road Safety Audit (RSA) Meeting

### Mashpee: Intersection of Route 151 at Old Barnstable Road

Wednesday, July 9, 2014

1:00 p.m. – 3:00 p.m.

Location: Mashpee High School – Administrative Conference Room  
500 Old Barnstable Road, Mashpee MA 02649

#### **1:00 p.m. Welcome and Introductions**

#### **1:10 p.m. Review of Site-Specific Material**

- Crash and Traffic Volume Summaries
- Existing Geometries and Conditions

#### **1:30 p.m. Visit the Site**

- Assemble as a group at the site for observation of conditions
- As a group, identify areas for improvement

#### **2:15 p.m. Post-Visit Discussion at Meeting Room / Completion of RSA**

- Discuss observations and finalize on-site findings
- Discuss potential improvements and draft recommendations

#### **3:00 p.m. Adjourn**

**Next Steps:** After the RSA meeting, CCC staff will prepare a draft document and circulate it to participants. Participants are asked to comment and respond to the draft document to assure that it is reflective of the RSA completed by the multidisciplinary team. With comments submitted, a final document is then produced; the final document is expected to be available within three weeks of the RSA.



# Appendix B. RSA Audit Team Contact List

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## Participating Audit Team Members

RSA Location: Route 151 – Old Barnstable Road intersection; Town of Mashpee

July 9, 2014

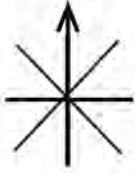
<b>Audit Team Member</b>	<b>Agency/Affiliation</b>	<b>Email address</b>
Joyce Mason	Mashpee Town Administrator	jmason@mashpeema.gov
Rodney Collins	Mashpee Police Chief	rcollins@mashpeepd.com
Catherine Laurent	Mashpee DPW Supervisor	claurent@mashpeema.gov
Lisa Schletzbaum	MassDOT Safety	Lisa.Schletzbaum@mhd.state.ma.us
Pamela Haznar	MassDOT – Dist. 5	Pamela.Haznar@state.ma.us
Robert Wheeler	MassDOT – Dist. 5	
Anthony Tanner	MassDOT Safety	
Yuan Liu	MassDOT Safety	Yuan.liu@state.ma.us
Michelle Deng	MassDOT Safety	michelle.deng@state.ma.us
Douglas Prentiss	FST	dprentiss@fstinc.com
Glenn Cannon	Cape Cod Commission	gcannon@capecodcommission.org
Garry Meus	Cape Cod Commission	gmeus@capecodcommission.org
Lev Malakhoff	Cape Cod Commission	lmalakhoff@capecodcommission.org

## Appendix C. Detailed Crash Data

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**Source: Crash Diagram developed based on September 2009-2012 crash reports provided by the Town of Mashpee Police Department**

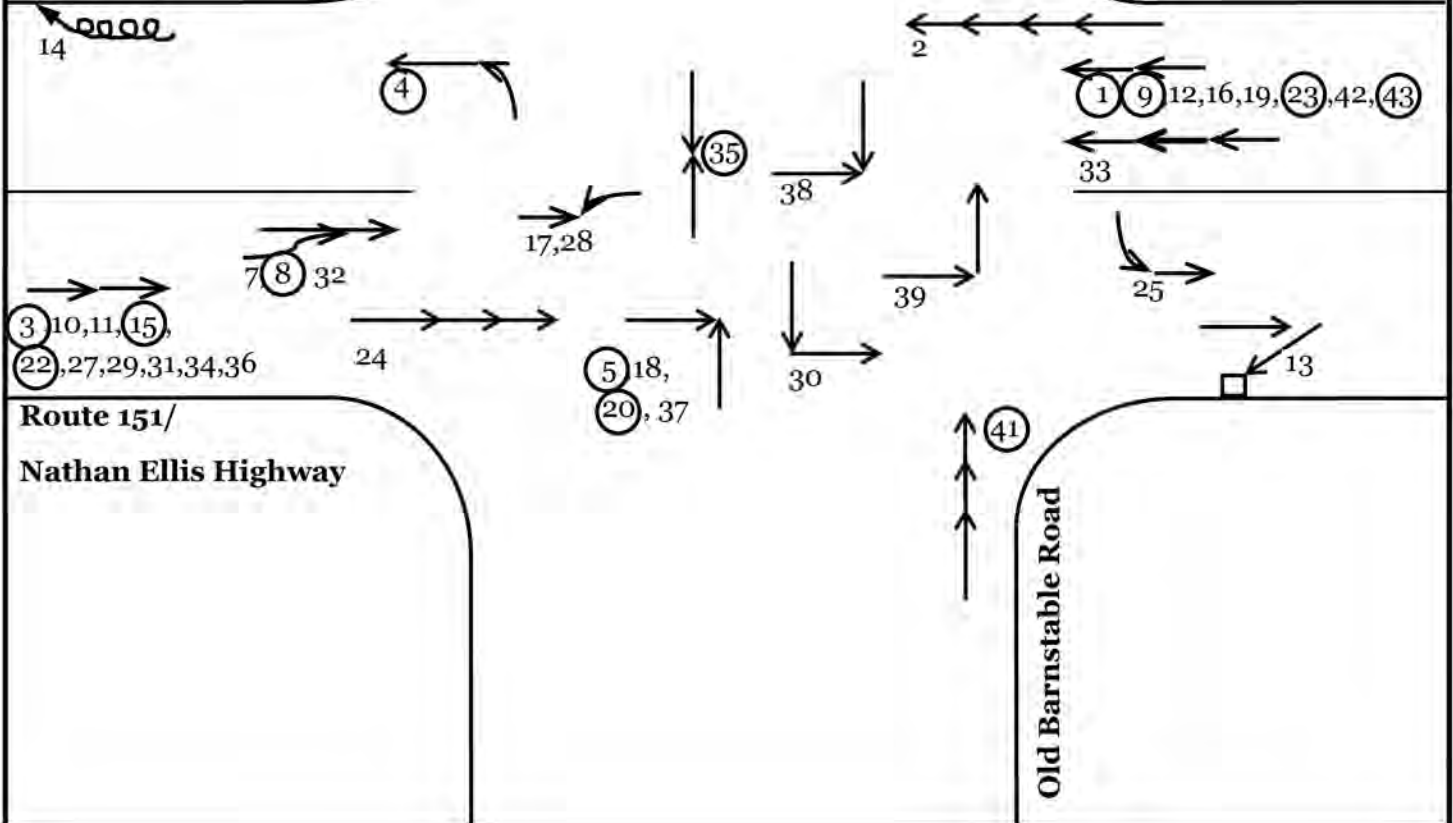
# Collision Diagram



North arrow



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Route 151/  
Nathan Ellis Highway

Old Barnstable Road

SYMBOLS	TYPES OF COLLISIONS	ACCIDENT INFORMATION
<ul style="list-style-type: none"> <li> Moving Vehicle</li> <li> Backing Vehicle</li> <li> Non-involved Vehicle</li> <li> Pedestrian</li> <li> Bicyclist/Motorcycle</li> <li> Animal</li> <li> Parked Vehicle</li> <li> Fixed Object</li> <li> Fatal Crash</li> <li> Injury Crash</li> </ul>	<ul style="list-style-type: none"> <li> Rear-End</li> <li> Head On</li> <li> Side Swipe</li> <li> Out of Control</li> <li> Turning Movement</li> <li> Right Angle</li> </ul>	<p>Each crash is numbered, and additional information is included on the crash summary.</p> <p>Notes: Equivalent Property Damage Only (EPDO) Index = 91</p>

LOCATION Along Nathan Ellis Highway (Route 151) at the intersection of Old Barnstable Road in Mashpee, MA

CRASHES FROM 01/18/2011 TO 02/18/2014

Crash #	Crash Number	Crash Hour	Crash Time	Day of Week	Month	Crash Year	Crash Date	Crash Severity	Maximum Injury Severity Reported	Number of NonFatal Injuries	Number of Vehicles	Manner of Collision	Vehicle Travel Directions	Age of Driver - Youngest Known	Age of Driver - Oldest Known	Driver Contributing Codes	Road Surface	Ambient Light	Weather Condition	Speed Limit	EPDO
1	11-18-AC	04:00PM to 04:59PM	4:52 PM	2	1	2011	1/18/2011	Non-fatal injury	No injury	0	2	Rear-end	V1:W / V2: W	45-54	85-94	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	1
2	11-58-AC	01:00PM to 01:59PM	1:18 PM	2	3	2011	3/1/2011	Property damage only	Injury	1	4	Rear-end	V1:W / V2:W / V3:W / V4:W	45-54	85-94	D4:(Inattention) D3:(No improper driving) D2:(No improper driving) D:1(No improper driving)	Dry	Daylight	Clear	50	5
3	11-59-AC	05:00PM to 05:59PM	5:21 PM	4	3	2011	3/3/2011	Non-fatal injury	Injury	1	2	Rear-end	V1:E / V2: NE	25-34	35-44	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	5
4	11-60-AC	04:00PM to 04:59PM	4:38 PM	5	3	2011	3/4/2011	Non-fatal injury	Injury	3	2	Rear-end	V1:NW / V2: E	15-24	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	5
5	11-86-AC	11:00AM to 11:59AM	11:18 AM	4	4	2011	4/21/2011	Non-fatal injury	Injury	1	2	Angle	V1:E / V2: N	15-24	75-84	D2:(Improper driving) D2:(No Improper driving)	Dry	Daylight	Clear	50	5
6	11-94-AC	07:00AM to 07:59AM	7:55 AM	2	5	2011	5/3/2011	Property damage only	No injury	0	2	Sideswipe, same direction	V1:S / V2: S	45-54	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
7	11-174-AC	11:00AM to 11:59AM	11:37 AM	7	7	2011	7/10/2011	Property damage only	No injury	0	2	Sideswipe, same direction	V1:E / V2:E	15-24	55-64	D1:(No improper driving) D2:(No Improper Driving)	Dry	Daylight	Clear	50	1
8	11-192-AC	11:00PM to 11:59PM	11:27 PM	1	7	2011	7/25/2011	Non-fatal injury	No injury	0	2	Sideswipe, same direction	V1:E / V2: E	15-24		D2:(Inattention) D1:(No improper driving)	Dry	Nighttime	Clear	50	1
9	11-206-AC	01:00PM to 01:59PM	1:50 PM	4	8	2011	8/4/2011	Non-fatal injury	Injury	1	2	Rear-end	V1:W / V2: W	45-54	95-100	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	5
10	11-218-AC	08:00PM to 08:59PM	8:56 PM	5	8	2011	8/12/2011	Property damage only	No injury	0	2	Rear-end	V1:E / V2: E	35-44	35-44	D1:(Inattention) D2:(No improper driving)	Dry	Nighttime	Clear	50	1
11	11-224-AC	04:00PM to 04:59PM	4:35 PM	2	8	2011	8/16/2011	Property damage only	No injury	0	2	Rear-end	V1:E / V2: E	45-54	65-74	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
12	11-248-AC	05:00PM to 05:59PM	5:08 PM	6	9	2011	9/10/2011	Property damage only	No injury	0	2	Rear-end	V1: W / V2: W	55-64	75-84	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	1
13	12-10-AC	04:00PM to 04:59PM	4:00 PM	2	1	2012	1/17/2012	Property damage only	No injury	0	2	Angle	V1:W / V2: W	15-24	45-54	D1:(Improper driving)	Dry	Daylight	Clear	50	1
14	12-20-AC	06:00AM to 06:59AM	6:31 AM	1	1	2012	1/30/2012	Property damage only	No injury	0	1	Single vehicle crash	V1:W	45-54		D1:(Loss of Control)	Icy	Daylight	Cloudy	50	1
15	12-28-AC	05:00PM to 05:59PM	5:05 PM	1	2	2012	2/6/2012	Non-fatal injury	Injury	2	2	Rear-end	V1:E / V2: E	25-34	55-64	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	5
16	12-31-AC	10:00AM to 10:59AM	10:53 AM	4	2	2012	2/9/2012	Property damage only	No injury	2	0	Rear-end	V1:W / V2: W	15-24	15-24	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
17	12-93-AC	02:00PM to 02:59PM	2:34 PM	2	5	2012	5/1/2012	Property damage only	No injury	0	2	Head-on	V1:W / V2: W	45-54	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
18	12-109-AC	08:00AM to 08:59AM	8:15 AM	7	5	2012	5/20/2012	Property damage only	No injury	0	2	Angle	V1:E / V2: E	35-44	95-104	D1:(Inattention) D2:(No improper driving)	Dry	Nighttime	Clear	50	1
19	12-130-AC	04:00PM to 04:59PM	4:32 PM	4	6	2012	6/7/2012	Property damage only	No injury	0	2	Rear-end	V1:W / V2: W	35-44	35-44	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
20	12-155-AC	07:00PM to 07:59PM	7:40 PM	3	7	2012	7/4/2012	Non-fatal injury	Injury	4	2	Angle	V1:W / V2: N	15-24	25-34	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	5
21	12-190-AC	05:00PM to 05:59PM	5:51 PM	4	7	2012	7/26/2012	Property damage only	No injury	0	2	Rear-end	V1:S / V2: S	35-44	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1



22	12-192-AC	03:00PM to 03:59PM	3:53 PM	5	7	2012	7/27/2012	Non-fatal injury	Injury	1	2	Rear-end	V1:E / V2: E	15-24	25-34	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	5
23	12-208-AC	01:00AM to 01:59AM	1:11 AM	4	6	2012	6/7/2012	Non-fatal injury	Injury	4	2	Rear-end	V1:W / V2: W	35-44	35-44	D2:(Inattention) D1:(No improper driving)	Dry	Nighttime	Clear	50	5
24	12-219-AC	03:00PM to 03:59PM	3:56 PM	6	8	2012	8/18/2012	Property damage only	No injury	0	3	Rear-end	V1:E / V2:E / V3:E	25-34	45-54	D1:(Inattention) D2:(No improper driving) D3:(No improper driving)	Dry	Daylight	Clear	50	1
25	12-258-AC	02:00PM to 02:59PM	2:10 PM	3	10	2012	10/3/2012	Property damage only	No injury	0	2	Angle	V1:E / V2:E	15-24	25-34	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	1
26	12-316-AC	08:00AM to 08:59AM	8:06 AM	1	12	2012	12/3/2012	Property damage only	No injury	0	2	Rear-end	V1:S / V2: S	35-44	65-74	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	1
27	12-343-AC	05:00PM to 05:59PM	5:17 PM	7	12	2012	12/16/2012	Property damage only	No injury	0	2	Rear-end	V1:E / V2:E	15-24	55-64	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	1
28	12-357-AC	09:00PM to 09:59PM	9:36 PM	6	12	2012	12/29/2012	Property damage only	No injury	0	2	Head-on	V1:E / V2:W	15-24	25-34	D1:(Loss of Control)	Icy	Nighttime	Snowy	50	1
29	13-18-AC	06:00PM to 06:59PM	6:13 PM	3	1	2013	1/16/2013	Property damage only	No injury	0	2	Rear-end	V1:E / V2:E	55-64	65-74	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
30	13-51-AC	05:00PM to 05:59PM	5:32 PM	2	2	2013	2/12/2013	Property damage only	No injury	0	2	Angle	V1:S / V2:E	25-34	45-54	D2:(Inattention) D1:(No improper driving)	Dry	Daylight	Clear	50	1
31	13-91-AC	02:00PM to 02:59PM	2:49 PM	2	4	2013	4/2/2013	Property damage only	No injury	0	2	Rear-end	V1:E / V2:E	25-34	55-64	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
32	13-112-AC	08:00AM to 08:59AM	8:11 AM	1	4	2013	4/22/2013	Property damage only	No injury	0	2	Sideswipe, same direction	V1:E / V2:E	45-54	65-74	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
33	13-174-AC	06:00PM to 06:59PM	6:25 PM	1	6	2013	6/17/2013	Property damage only	No injury	0	3	Rear-end	V1:W / V2:W / V3:W	15-24	15-24	D3:(Inattention) D2:(No improper driving) D1:(No improper driving)	Dry	Daylight	Clear	50	1
34	13-258-AC	11:00AM to 11:59AM	11:50 AM	3	8	2013	8/7/2013	Property damage only	No injury	0	2	Rear-end	V1:E / V2:E	15-24	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
35	13-278-AC	12:00PM to 12:59PM	12:37 PM	2	8	2013	8/20/2013	Non-fatal injury	Injury	1	2	Head-on	V1:S / V2:N			D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	5
36	13-290-AC	01:00PM to 01:59PM	1:40 PM	6	8	2013	8/31/2013	Property damage only	No injury	0	2	Rear-end	V1:E / V2: E	15-24	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
37	13-297-AC	08:00PM to 08:59PM	8:59 PM	3	9	2013	9/4/2013	Property damage only	No injury	0	2	Head-on	V1:E / V2:N	25-34	35-44	D1:(Inattention) D2:(No improper driving)	Dry	Nighttime	Clear	50	1
38	13-301-AC	05:00AM to 05:59AM	5:42 AM	1	9	2013	9/9/2013	Property damage only	No injury	0	2	Head-on	V1:E / V2:S	35-44	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
39	13-313-AC	08:00AM to 08:59AM	8:04 AM	2	9	2013	9/17/2013	Property damage only	No injury	0	2	Rear-end	V1:E / V2:N	45-54	45-54	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
40	13-359-AC	09:00PM to 09:59PM	9:39 PM	5	10	2013	10/25/2013	Property damage only	No injury	0	2	Rear-end	V1:S / V2: S	25-34		D1:(Inattention) D2:(No improper driving)	Dry	Nighttime	Clear	50	1
41	13-373-AC	07:00AM to 07:59AM	7:34 AM	4	11	2013	11/7/2013	Non-fatal injury	Injury	1	3	Rear-end	V1:N / V2:N / V3:N	15-24	45-54	D1:(Inattention) D2:(No improper driving) D3:(No improper driving)	Dry	Daylight	Clear	50	5
42	13-383-AC	02:00PM to 02:59PM	2:43 PM	4	11	2013	11/14/2013	Property damage only	No injury	0	2	Rear-end	V1:W / V2: W	25-34	65-74	D1:(Inattention) D2:(No improper driving)	Dry	Daylight	Clear	50	1
43	14-54-AC	04:00PM to 04:59PM	4:19 PM	2	2	2014	2/18/2014	Non-fatal injury	Injury	1	2	Rear-end	V1:W / V2: W	15-24	45-54	D1:(Inattention) D2:(No improper driving)	Slush/Icy	Daylight	Snowy/Rain	50	5

# Appendix D. Turning Movement Count Data

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- Summer Weekday P.M.
- Summer Weekday A.M.
- Fall Weekday A.M.
- Fall Weekday P.M.

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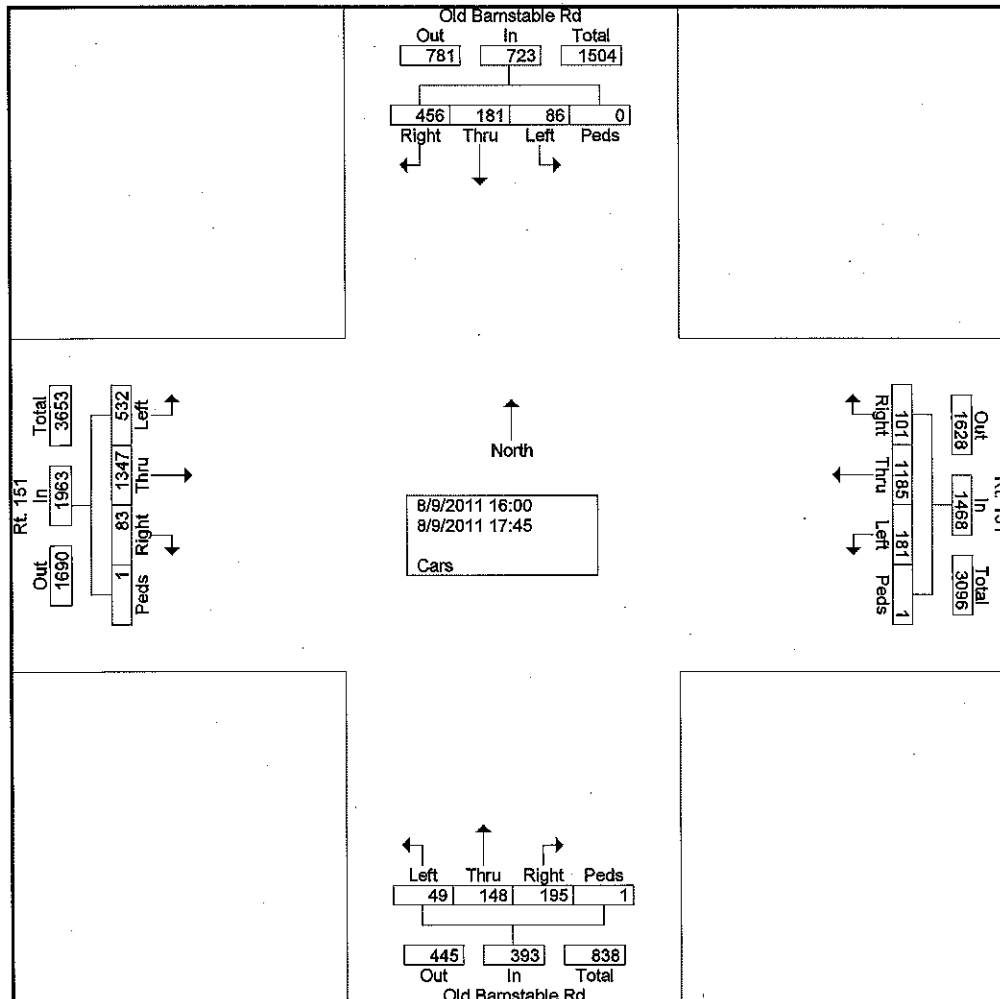
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Counter #: 4, 5  
 Counted By: DW, DA  
 Rt. 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08092011  
 Site Code : 3004  
 Start Date : 8/9/2011  
 Page No : 1

## Groups Printed- Cars

Start Time	Old Barnstable Rd From North				Rt. 151 From East				Old Barnstable Rd From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
16:00	11	11	48	0	18	160	9	0	3	12	23	0	60	170	1	0	526
16:15	13	19	56	0	18	149	10	0	2	17	16	0	64	151	4	0	519
16:30	14	24	55	0	18	144	18	0	2	16	27	0	48	174	11	0	551
16:45	9	29	57	0	21	149	16	0	8	22	23	0	78	168	16	1	597
Total	47	83	216	0	75	602	53	0	15	67	89	0	250	663	32	1	2193
17:00	11	40	47	0	35	146	15	1	8	24	24	0	75	169	20	0	615
17:15	11	17	69	0	32	157	12	0	13	23	42	0	76	153	16	0	621
17:30	11	21	71	0	16	127	8	0	10	21	20	1	64	180	8	0	558
17:45	6	20	53	0	23	153	13	0	3	13	20	0	67	182	7	0	560
Total	39	98	240	0	106	583	48	1	34	81	106	1	282	684	51	0	2354
Grand Total	86	181	456	0	181	1185	101	1	49	148	195	1	532	1347	83	1	4547
Approch %	11.9	25	63.1	0	12.3	80.7	6.9	0.1	12.5	37.7	49.6	0.3	27.1	68.6	4.2	0.1	
Total %	1.9	4	10	0	4	26.1	2.2	0	1.1	3.3	4.3	0	11.7	29.6	1.8	0	



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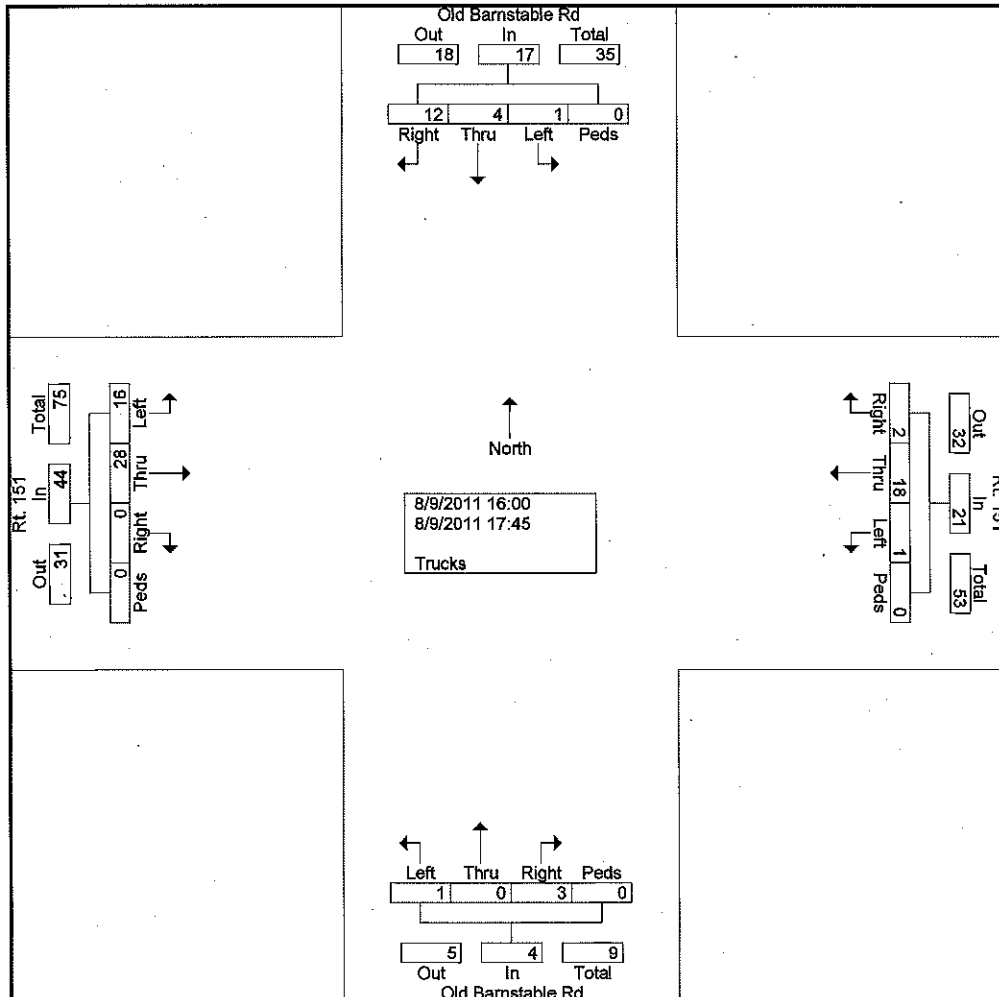
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 E-Mail: trans@capecodcommission.org

Counter #: 4, 5  
 Counted By: DW, DA  
 Rt. 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08092011  
 Site Code : 3004  
 Start Date : 8/9/2011  
 Page No : 1

### Groups Printed- Trucks

Start Time	Old Barnstable Rd From North				Rt. 151 From East				Old Barnstable Rd From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
16:00	0	1	4	0	0	0	0	0	0	0	0	0	1	6	0	0	12
16:15	1	0	2	0	0	7	0	0	0	0	0	0	2	7	0	0	19
16:30	0	0	0	0	1	2	0	0	0	0	0	0	4	3	0	0	10
16:45	0	0	1	0	0	0	0	0	1	0	0	0	2	3	0	0	7
<b>Total</b>	<b>1</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>1</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>48</b>
17:00	0	0	2	0	0	2	0	0	0	0	2	0	3	3	0	0	12
17:15	0	1	0	0	0	2	0	0	0	0	1	0	1	4	0	0	9
17:30	0	1	0	0	0	3	1	0	0	0	0	0	1	1	0	0	7
17:45	0	1	3	0	0	2	1	0	0	0	0	0	2	1	0	0	10
<b>Total</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>7</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>38</b>
<b>Grand Total</b>	<b>1</b>	<b>4</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>18</b>	<b>2</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>16</b>	<b>28</b>	<b>0</b>	<b>0</b>	<b>86</b>
Apprch %	5.9	23.5	70.6	0	4.8	85.7	9.5	0	25	0	75	0	36.4	63.6	0	0	
Total %	1.2	4.7	14	0	1.2	20.9	2.3	0	1.2	0	3.5	0	18.6	32.6	0	0	



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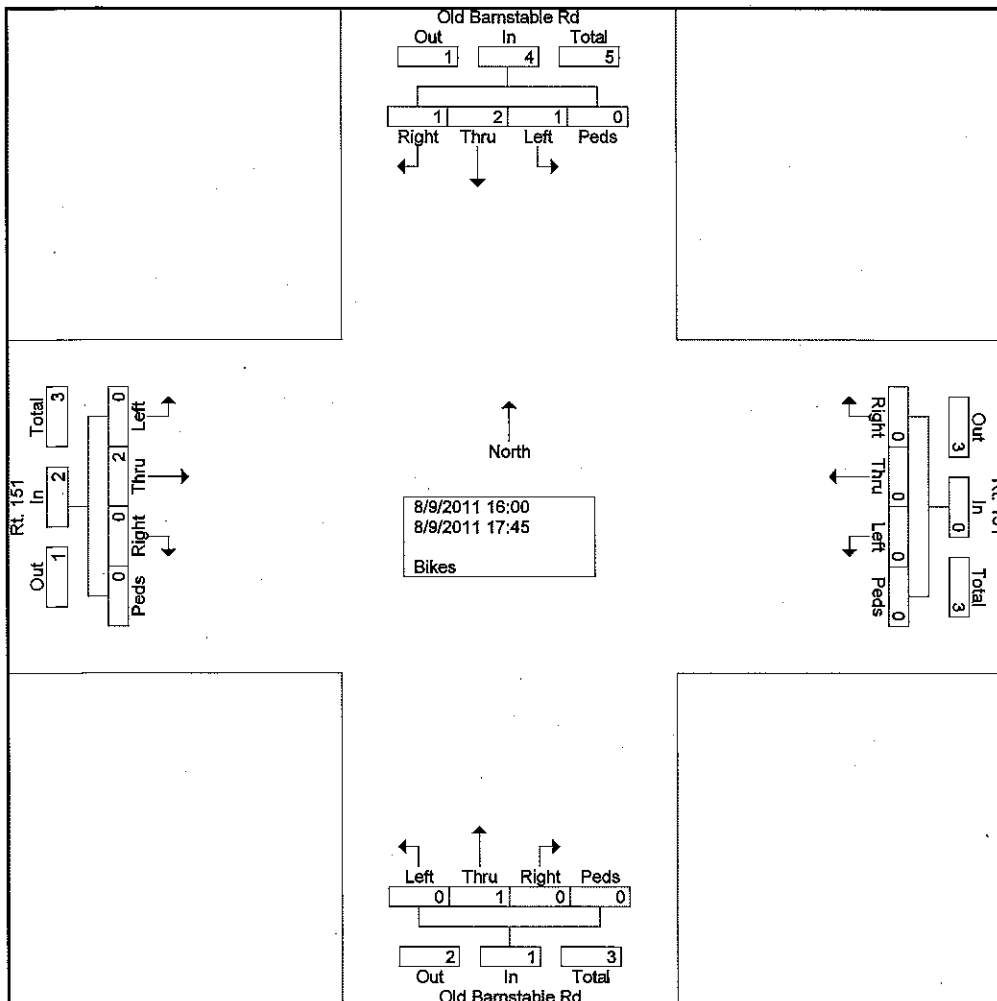
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 E-Mail: trans@capecodcommission.org

Counter #: 4, 5  
 Counted By: DW, DA  
 Loc: 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08092011  
 Site Code : 3004  
 Start Date : 8/9/2011  
 Page No : 1

### Groups Printed- Bikes

Start Time	Old Barnstable Rd From North				Rt. 151 From East				Old Barnstable Rd From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
16:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
16:15	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
16:30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	2	1	0	0	0	0	0	0	0	0	0	0	2	0	0	6
*** BREAK ***																	
17:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
Grand Total	1	2	1	0	0	0	0	0	0	1	0	0	0	2	0	0	7
Approch %	25	50	25	0	0	0	0	0	0	100	0	0	0	100	0	0	
Total %	14.3	28.6	14.3	0	0	0	0	0	0	14.3	0	0	0	28.6	0	0	



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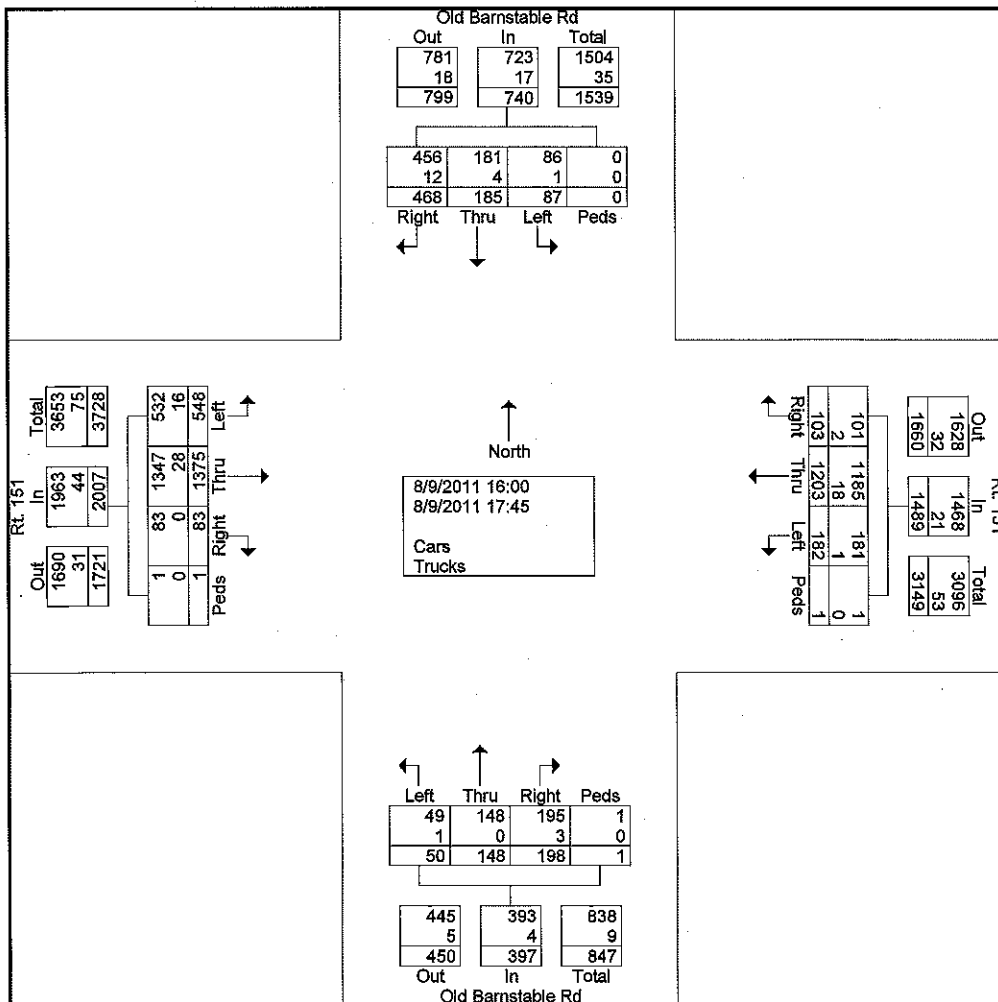
Counter #: 4, 5  
Counted By: DW, DA  
Rt. 151 & Old Barnstable Rd.  
Mashpee

File Name : 3004\_08092011  
Site Code : 3004  
Start Date : 8/9/2011  
Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Old Barnstable Rd From North				Rt. 151 From East				Old Barnstable Rd From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
16:00	11	12	52	0	18	160	9	0	3	12	23	0	61	176	1	0	538
16:15	14	19	58	0	18	156	10	0	2	17	16	0	66	158	4	0	538
16:30	14	24	55	0	19	146	18	0	2	16	27	0	52	177	11	0	561
16:45	9	29	58	0	21	149	16	0	9	22	23	0	80	171	16	1	604
<b>Total</b>	<b>48</b>	<b>84</b>	<b>223</b>	<b>0</b>	<b>76</b>	<b>611</b>	<b>53</b>	<b>0</b>	<b>16</b>	<b>67</b>	<b>89</b>	<b>0</b>	<b>259</b>	<b>682</b>	<b>32</b>	<b>1</b>	<b>2241</b>
17:00	11	40	49	0	35	148	15	1	8	24	26	0	78	172	20	0	627
17:15	11	18	69	0	32	159	12	0	13	23	43	0	77	157	16	0	630
17:30	11	22	71	0	16	130	9	0	10	21	20	1	65	181	8	0	565
17:45	6	21	56	0	23	155	14	0	3	13	20	0	69	183	7	0	570
<b>Total</b>	<b>39</b>	<b>101</b>	<b>245</b>	<b>0</b>	<b>106</b>	<b>592</b>	<b>50</b>	<b>1</b>	<b>34</b>	<b>81</b>	<b>109</b>	<b>1</b>	<b>289</b>	<b>693</b>	<b>51</b>	<b>0</b>	<b>2392</b>
<b>Grand Total</b>	<b>87</b>	<b>185</b>	<b>468</b>	<b>0</b>	<b>182</b>	<b>1203</b>	<b>103</b>	<b>1</b>	<b>50</b>	<b>148</b>	<b>198</b>	<b>1</b>	<b>548</b>	<b>1375</b>	<b>83</b>	<b>1</b>	<b>4633</b>
Apprch %	11.8	25	63.2	0	12.2	80.8	6.9	0.1	12.6	37.3	49.9	0.3	27.3	68.5	4.1	0	
Total %	1.9	4	10.1	0	3.9	26	2.2	0	1.1	3.2	4.3	0	11.8	29.7	1.8	0	
Cars	86	181	456	0	181	1185	101	1	49	148	195	1	532	1347	83	1	4547
% Cars	98.9	97.8	97.4	0	99.5	98.5	98.1	100	98	100	98.5	100	97.1	98	100	100	98.1
Trucks	1	4	12	0	1	18	2	0	1	0	3	0	16	28	0	0	86
% Trucks	1.1	2.2	2.6	0	0.5	1.5	1.9	0	2	0	1.5	0	2.9	2	0	0	1.9

(2240)



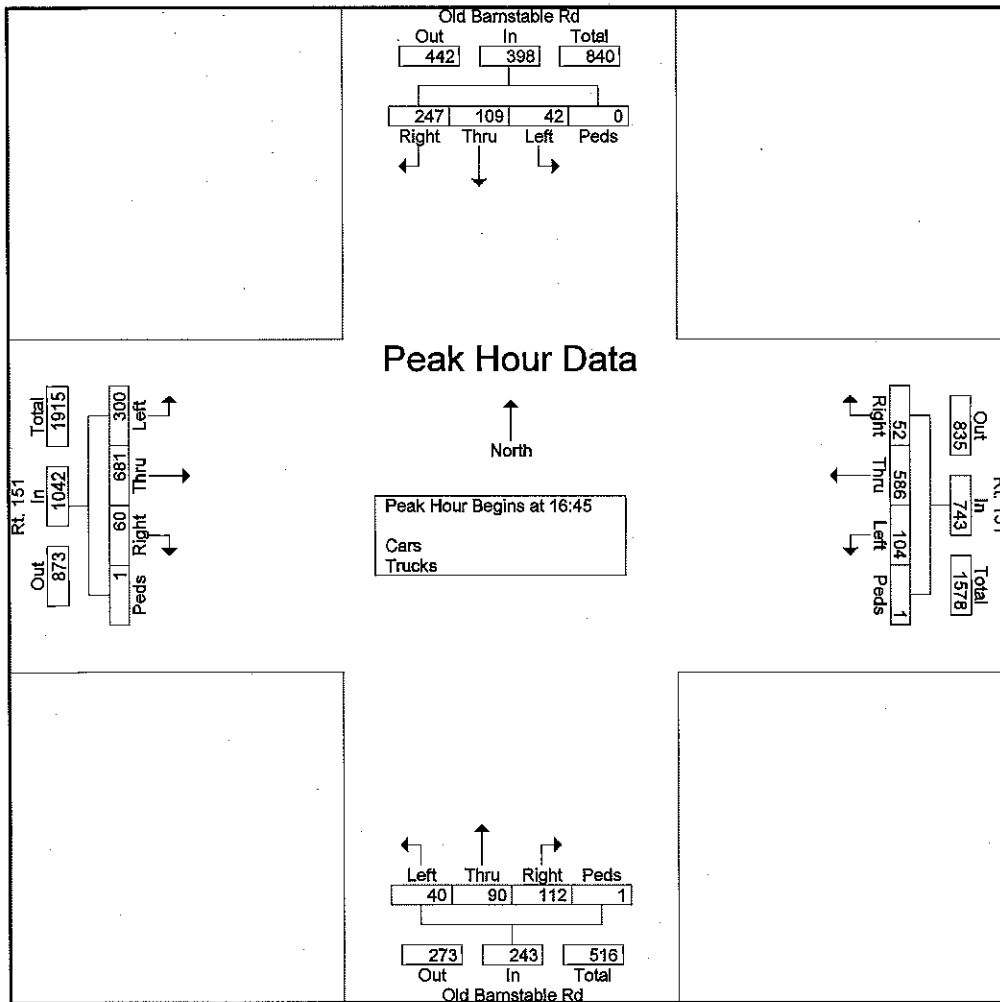
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 Barnstable, MA 02630  
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 E-Mail: trans@capecodcommission.org

Counter #: 4, 5  
 Counted By: DW, DA  
 Rt. 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08092011  
 Site Code : 3004  
 Start Date : 8/9/2011  
 Page No : 2

Start Time	Old Barnstable Rd From North					Rt. 151 From East					Old Barnstable Rd From South					Rt. 151 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	9	29	58	0	96	21	149	16	0	186	9	22	23	0	54	80	171	16	1	268	604
17:00	11	40	49	0	100	35	148	15	1	199	8	24	26	0	58	78	172	20	0	270	627
17:15	11	18	69	0	98	32	159	12	0	203	13	23	43	0	79	77	157	16	0	250	630
17:30	11	22	71	0	104	16	130	9	0	155	10	21	20	1	52	65	181	8	0	254	565
Total Volume	42	109	247	0	398	104	586	52	1	743	40	90	112	1	243	300	681	60	1	1042	2426
% App. Total	10.6	27.4	62.1	0		14	78.9	7	0.1		16.5	37	46.1	0.4		28.8	65.4	5.8	0.1		
PHF	.955	.681	.870	.000	.957	.743	.921	.813	.250	.915	.769	.938	.651	.250	.769	.938	.941	.750	.250	.965	.963





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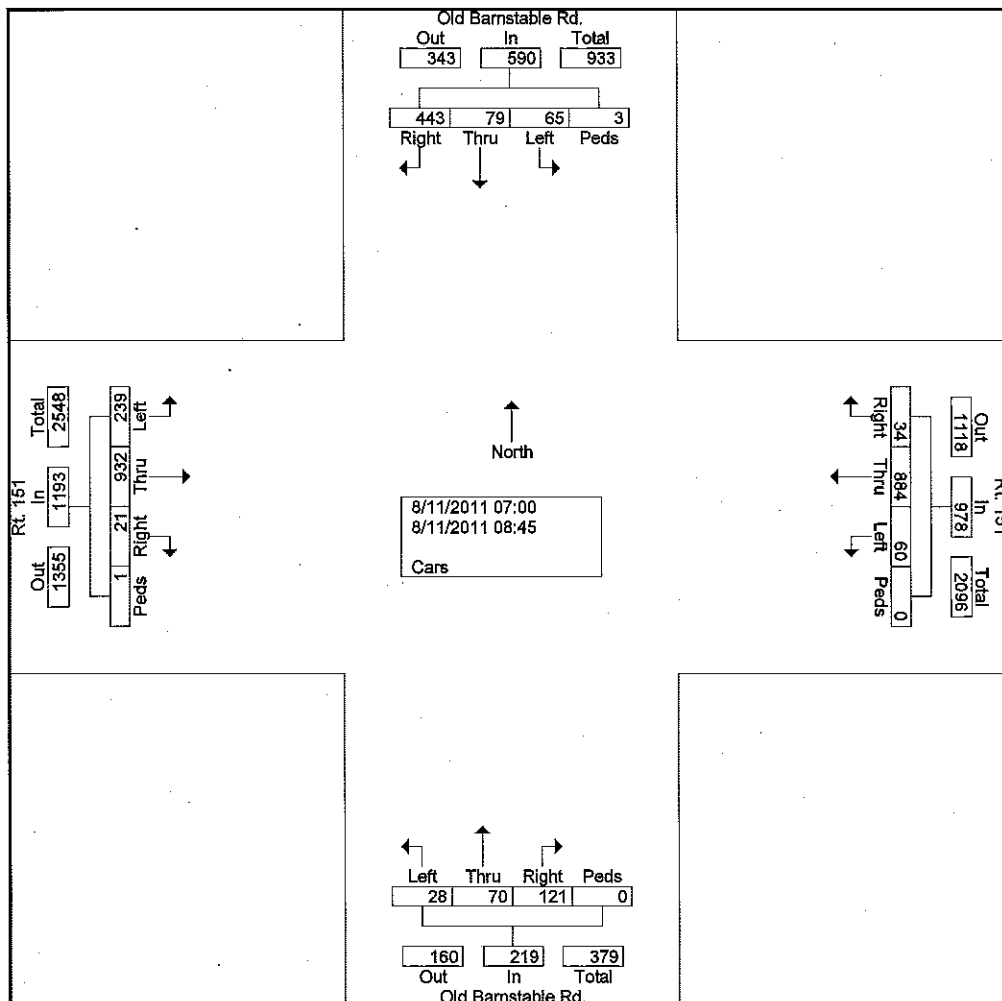
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 Barnstable, MA 02630  
 Tel: 508.362.3828 • Fax: 508.362.3136  
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Counter #: 4,5  
 Counted By: DA, DW  
 At: 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08112011  
 Site Code : 3004  
 Start Date : 8/11/2011  
 Page No : 1

### Groups Printed- Cars

Start Time	Old Barnstable Rd. From North				Rt. 151 From East				Old Barnstable Rd. From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	3	12	43	2	6	79	2	0	2	9	13	0	20	61	3	0	255
07:15	5	7	45	0	6	105	3	0	2	3	6	0	24	113	0	0	319
07:30	3	7	45	0	9	122	4	0	3	9	8	0	28	110	2	0	350
07:45	6	5	63	1	8	129	3	0	7	9	31	0	34	137	4	0	437
<b>Total</b>	<b>17</b>	<b>31</b>	<b>196</b>	<b>3</b>	<b>29</b>	<b>435</b>	<b>12</b>	<b>0</b>	<b>14</b>	<b>30</b>	<b>58</b>	<b>0</b>	<b>106</b>	<b>421</b>	<b>9</b>	<b>0</b>	<b>1361</b>
08:00	8	8	62	0	4	108	4	0	2	5	17	0	27	120	4	0	369
08:15	25	13	58	0	9	112	4	0	3	15	16	0	34	149	4	0	442
08:30	8	11	66	0	5	96	4	0	6	7	14	0	37	115	1	1	371
08:45	7	16	61	0	13	133	10	0	3	13	16	0	35	127	3	0	437
<b>Total</b>	<b>48</b>	<b>48</b>	<b>247</b>	<b>0</b>	<b>31</b>	<b>449</b>	<b>22</b>	<b>0</b>	<b>14</b>	<b>40</b>	<b>63</b>	<b>0</b>	<b>133</b>	<b>511</b>	<b>12</b>	<b>1</b>	<b>1619</b>
<b>Grand Total</b>	<b>65</b>	<b>79</b>	<b>443</b>	<b>3</b>	<b>60</b>	<b>884</b>	<b>34</b>	<b>0</b>	<b>28</b>	<b>70</b>	<b>121</b>	<b>0</b>	<b>239</b>	<b>932</b>	<b>21</b>	<b>1</b>	<b>2980</b>
Apprch %	11	13.4	75.1	0.5	6.1	90.4	3.5	0	12.8	32	55.3	0	20	78.1	1.8	0.1	
Total %	2.2	2.7	14.9	0.1	2	29.7	1.1	0	0.9	2.3	4.1	0	8	31.3	0.7	0	



# CAPE COD COMMISSION

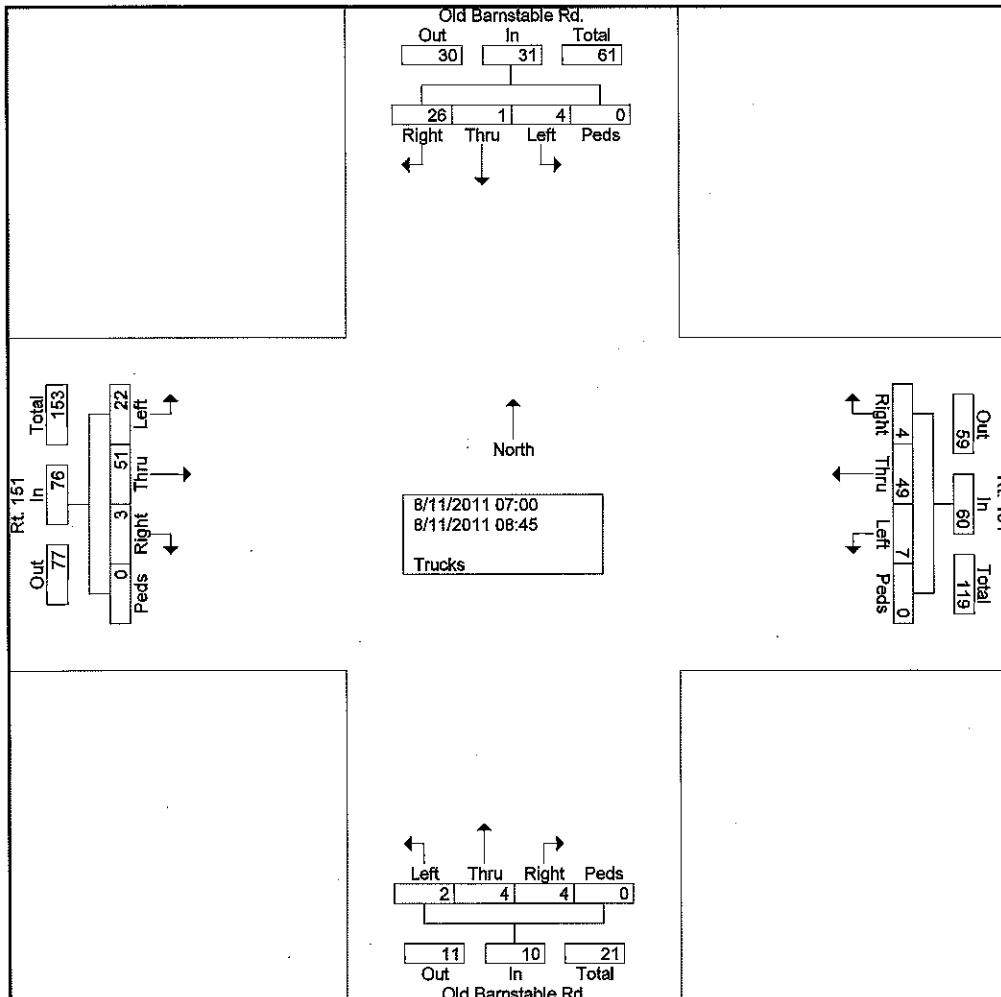
3225 Main Street • P.O. Box 226  
Barnstable, MA 02630  
Tel: 508.362.3828 • Fax: 508.362.3136  
E-Mail: trans@capecodcommission.org

Counter #: 4,5  
Counted By: DA, DW  
Rt. 151 & Old Barnstable Rd.  
Mashpee

File Name : 3004\_08112011  
Site Code : 3004  
Start Date : 8/11/2011  
Page No : 1

### Groups Printed- Trucks

Start Time	Old Barnstable Rd. From North				Rt. 151 From East				Old Barnstable Rd. From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	0	0	2	0	1	6	0	0	0	0	0	0	0	7	1	0	17
07:15	0	1	3	0	0	2	0	0	0	0	1	0	3	6	1	0	17
07:30	0	0	1	0	3	5	0	0	0	0	1	0	3	6	0	0	19
07:45	0	0	3	0	2	9	0	0	0	1	0	0	3	7	1	0	26
<b>Total</b>	0	1	9	0	6	22	0	0	0	1	2	0	9	26	3	0	79
08:00	2	0	5	0	1	9	0	0	0	2	1	0	2	4	0	0	26
08:15	0	0	3	0	0	7	2	0	0	1	1	0	5	9	0	0	28
08:30	0	0	4	0	0	6	1	0	2	0	0	0	5	8	0	0	26
08:45	2	0	5	0	0	5	1	0	0	0	0	0	1	4	0	0	18
<b>Total</b>	4	0	17	0	1	27	4	0	2	3	2	0	13	25	0	0	98
<b>Grand Total</b>	4	1	26	0	7	49	4	0	2	4	4	0	22	51	3	0	177
Apprch %	12.9	3.2	83.9	0	11.7	81.7	6.7	0	20	40	40	0	28.9	67.1	3.9	0	
Total %	2.3	0.6	14.7	0	4	27.7	2.3	0	1.1	2.3	2.3	0	12.4	28.8	1.7	0	



# CAPE COD COMMISSION

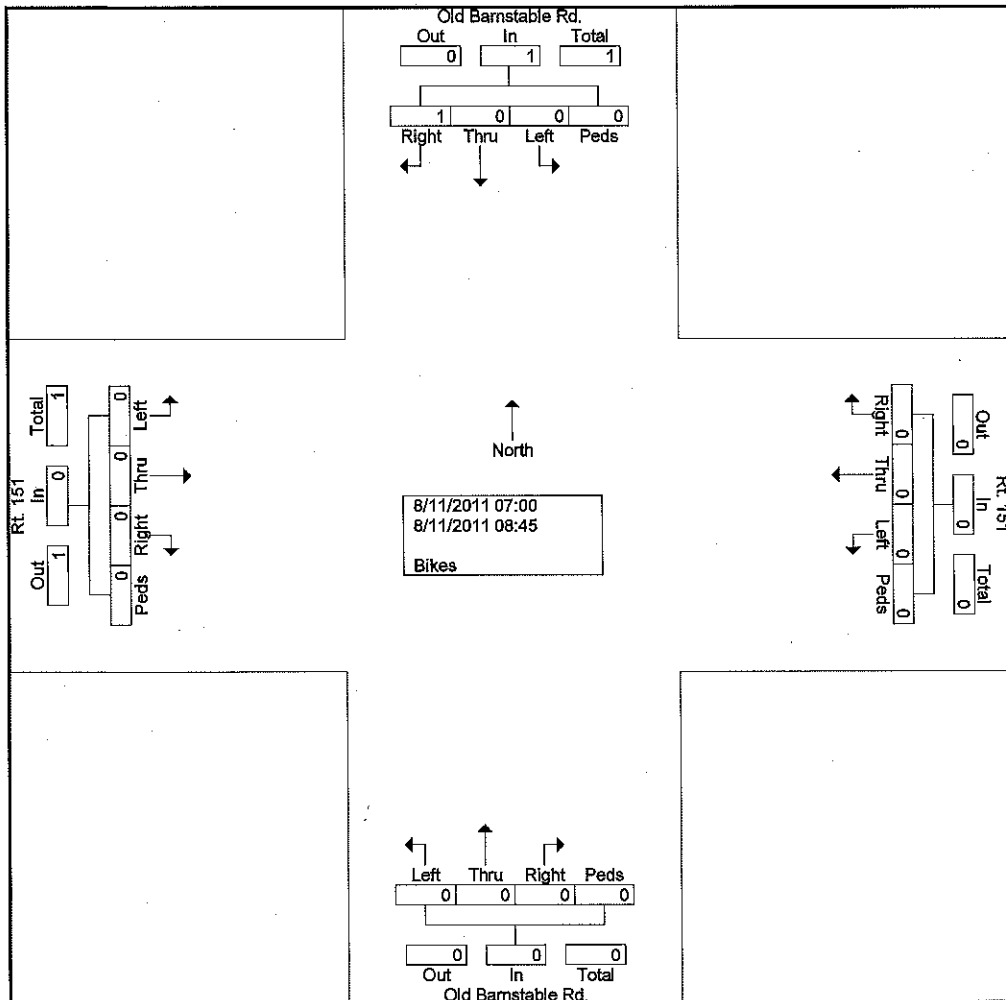
3225 Main Street • P.O. Box 226  
 Barnstable, MA 02630  
 Tel: 508.362.3828 • Fax: 508.362.3136  
 E-Mail: trans@capecodcommission.org

Counter #: 4,5  
 Mounted By: DA, DW  
 Rt. 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08112011  
 Site Code : 3004  
 Start Date : 8/11/2011  
 Page No : 1

### Groups Printed- Bikes

Start Time	Old Barnstable Rd. From North				Rt. 151 From East				Old Barnstable Rd. From South				Rt. 151 From West				Int. Total				
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds					
*** BREAK ***																					
08:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																					
Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Apprch %	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total %	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	



# CAPE COD COMMISSION

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 Barnstable, MA 02630  
 Tel: 508.362.3828 • Fax: 508.362.3136  
 E-Mail: trans@capecodcommission.org

Counter #: 4,5  
 Printed By: DA, DW  
 Loc: 151 & Old Barnstable Rd.  
 Mashpee

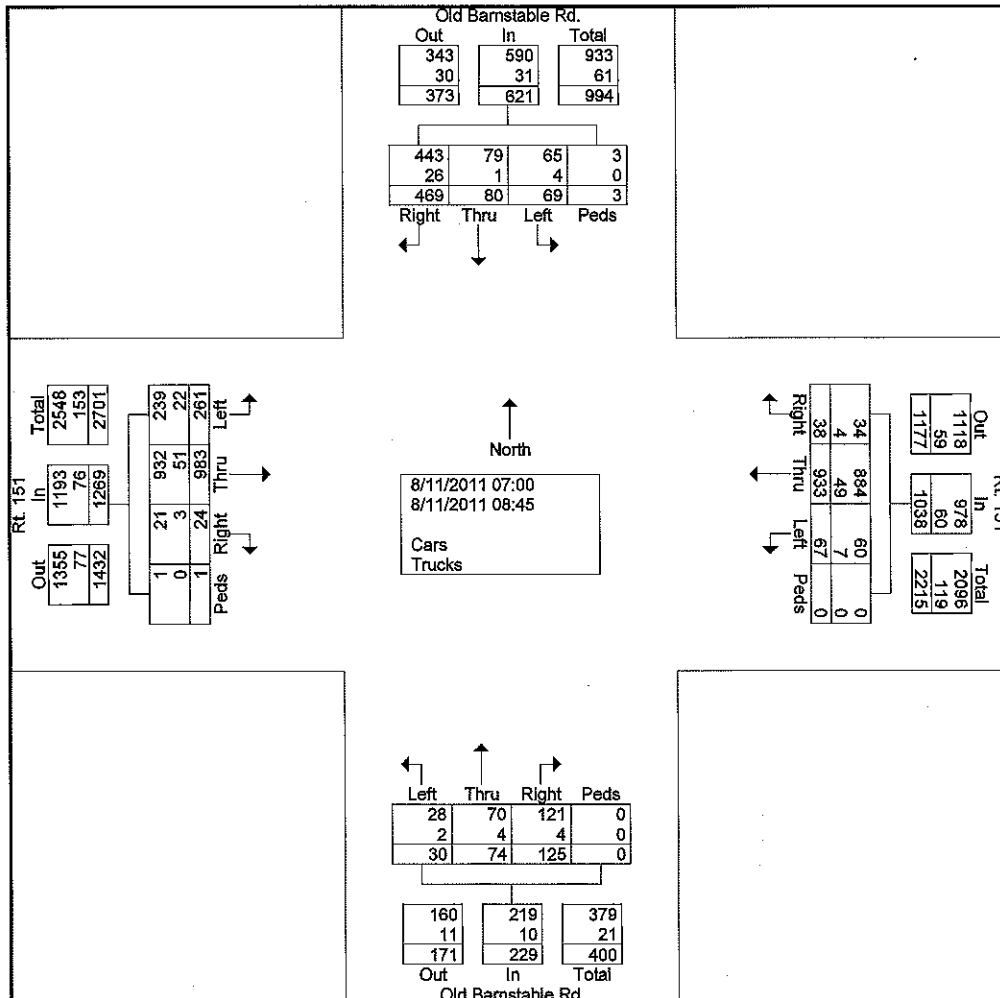
File Name : 3004\_08112011  
 Site Code : 3004  
 Start Date : 8/11/2011  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Old Barnstable Rd. From North				Rt. 151 From East				Old Barnstable Rd. From South				Rt. 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	3	12	45	2	7	85	2	0	2	9	13	0	20	68	4	0	272
07:15	5	8	48	0	6	107	3	0	2	3	7	0	27	119	1	0	336
07:30	3	7	46	0	12	127	4	0	3	9	9	0	31	116	2	0	369
07:45	6	5	66	1	10	138	3	0	7	10	31	0	37	144	5	0	463
<b>Total</b>	<b>17</b>	<b>32</b>	<b>205</b>	<b>3</b>	<b>35</b>	<b>457</b>	<b>12</b>	<b>0</b>	<b>14</b>	<b>31</b>	<b>60</b>	<b>0</b>	<b>115</b>	<b>447</b>	<b>12</b>	<b>0</b>	<b>1440</b>
08:00	10	8	67	0	5	117	4	0	2	7	18	0	29	124	4	0	395
08:15	25	13	61	0	9	119	6	0	3	16	17	0	39	158	4	0	470
08:30	8	11	70	0	5	102	5	0	8	7	14	0	42	123	1	1	397
08:45	9	16	66	0	13	138	11	0	3	13	16	0	36	131	3	0	455
<b>Total</b>	<b>52</b>	<b>48</b>	<b>264</b>	<b>0</b>	<b>32</b>	<b>476</b>	<b>26</b>	<b>0</b>	<b>16</b>	<b>43</b>	<b>65</b>	<b>0</b>	<b>146</b>	<b>536</b>	<b>12</b>	<b>1</b>	<b>1717</b>
<b>Grand Total</b>	<b>69</b>	<b>80</b>	<b>469</b>	<b>3</b>	<b>67</b>	<b>933</b>	<b>38</b>	<b>0</b>	<b>30</b>	<b>74</b>	<b>125</b>	<b>0</b>	<b>261</b>	<b>983</b>	<b>24</b>	<b>1</b>	<b>3157</b>
Approch %	11.1	12.9	75.5	0.5	6.5	89.9	3.7	0	13.1	32.3	54.6	0	20.6	77.5	1.9	0.1	
Total %	2.2	2.5	14.9	0.1	2.1	29.6	1.2	0	1	2.3	4	0	8.3	31.1	0.8	0	
Cars	65	79	443	3	60	884	34	0	28	70	121	0	239	932	21	1	2980
% Cars	94.2	98.8	94.5	100	89.6	94.7	89.5	0	93.3	94.6	96.8	0	91.6	94.8	87.5	100	94.4
Trucks	4	1	26	0	7	49	4	0	2	4	4	0	22	51	3	0	177
% Trucks	5.8	1.2	5.5	0	10.4	5.3	10.5	0	6.7	5.4	3.2	0	8.4	5.2	12.5	0	5.6

[422]

C4716



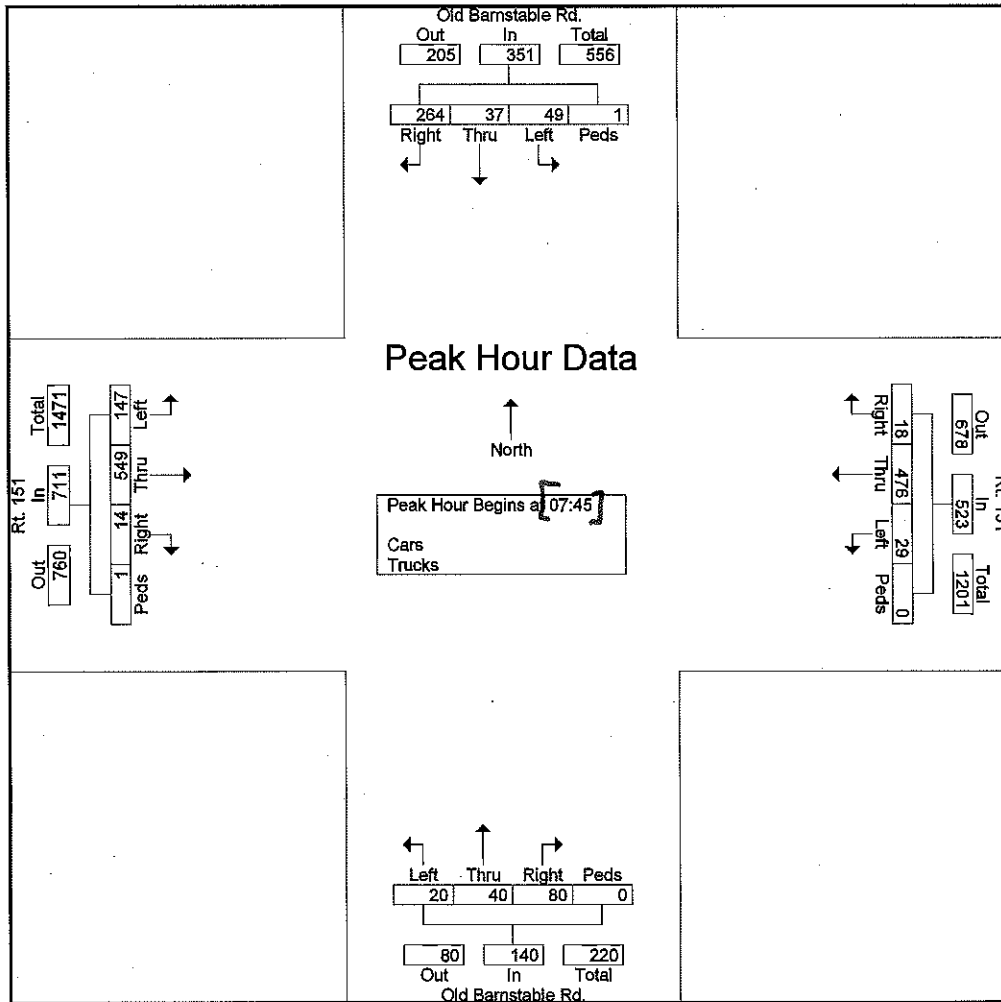
# CAPE COD COMMISSION

3225 Main Street • P.O. Box 226  
 Barnstable, MA 02630  
 Tel: 508.362.3828 • Fax: 508.362.3136  
 E-Mail: trans@capecodcommission.org

Counter #: 4,5  
 Counted By: DA, DW  
 Rt. 151 & Old Barnstable Rd.  
 Mashpee

File Name : 3004\_08112011  
 Site Code : 3004  
 Start Date : 8/11/2011  
 Page No : 2

Start Time	Old Barnstable Rd. From North					Rt. 151 From East					Old Barnstable Rd. From South					Rt. 151 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	6	5	66	1	78	10	138	3	0	151	7	10	31	0	48	37	144	5	0	186	463
08:00	10	8	67	0	85	5	117	4	0	126	2	7	18	0	27	29	124	4	0	157	395
08:15	25	13	61	0	99	9	119	6	0	134	3	16	17	0	36	39	158	4	0	201	470
08:30	8	11	70	0	89	5	102	5	0	112	8	7	14	0	29	42	123	1	1	167	397
Total Volume	49	37	264	1	351	29	476	18	0	523	20	40	80	0	140	147	549	14	1	711	1725
% App. Total	14	10.5	75.2	0.3		5.5	91	3.4	0		14.3	28.6	57.1	0		20.7	77.2	2	0.1		
PHF	.490	.712	.943	.250	.886	.725	.862	.750	.000	.866	.625	.625	.645	.000	.729	.875	.869	.700	.250	.884	.918





# CAPE COD COMMISSION

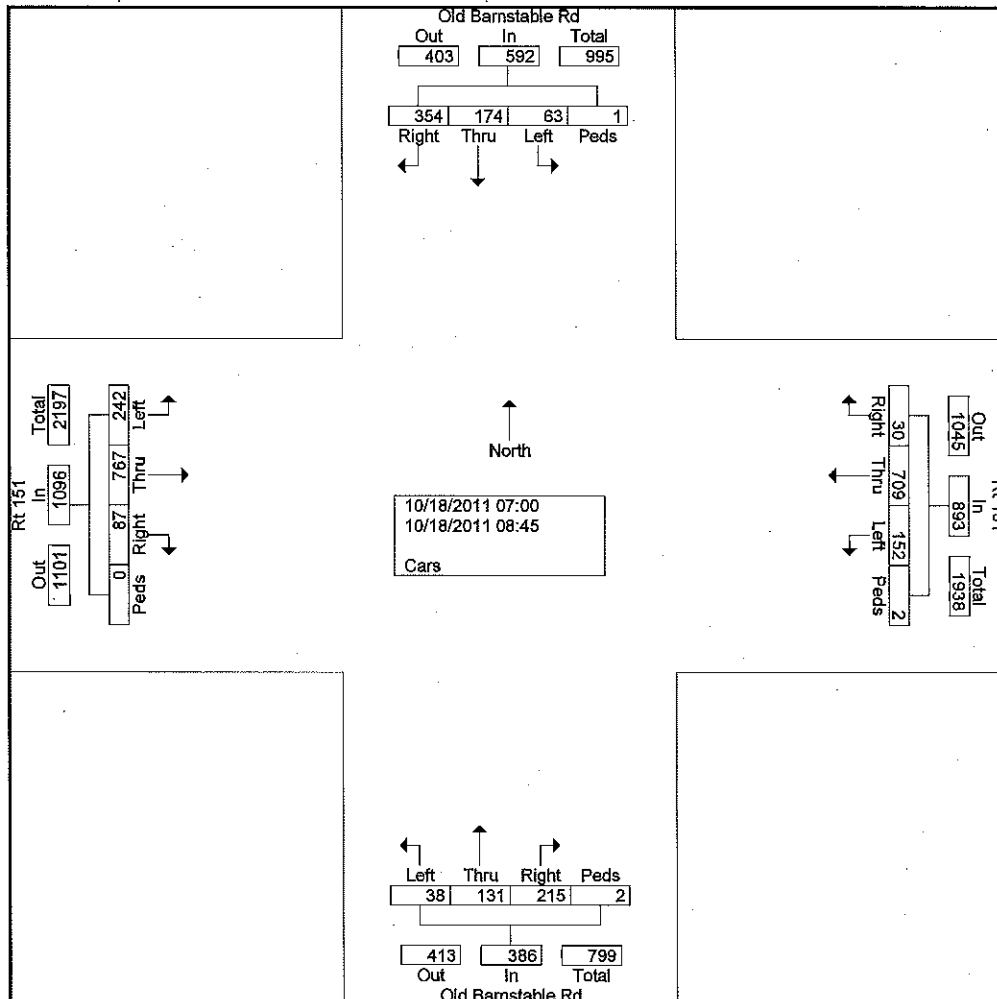
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 E-Mail: trans@capecodcommission.org

Counter #:5  
 Counted By:LAM  
 Mashpee:Rt 151/Old Barnstable Rd  
 Date: 10/18/2011

File Name : 3004\_10182011  
 Site Code : 00300401  
 Start Date : 10/18/2011  
 Page No : 1

### Groups Printed- Cars

Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	3	29	36	1	36	68	2	0	7	12	27	0	18	80	24	0	343
07:15	3	63	49	0	69	85	2	1	14	23	63	0	25	110	15	0	522
07:30	5	16	57	0	13	99	5	0	4	19	21	0	29	92	11	0	371
07:45	9	10	42	0	7	93	3	0	4	22	26	0	42	104	7	0	369
<b>Total</b>	<b>20</b>	<b>118</b>	<b>184</b>	<b>1</b>	<b>125</b>	<b>345</b>	<b>12</b>	<b>1</b>	<b>29</b>	<b>76</b>	<b>137</b>	<b>0</b>	<b>114</b>	<b>386</b>	<b>57</b>	<b>0</b>	<b>1605</b>
08:00	12	17	30	0	3	87	3	0	0	20	18	0	43	104	7	0	344
08:15	20	12	50	0	6	100	3	0	4	13	21	0	21	98	3	0	351
08:30	6	15	48	0	11	88	5	0	3	16	19	2	19	90	5	0	327
08:45	5	12	42	0	7	89	7	1	2	6	20	0	45	89	15	0	340
<b>Total</b>	<b>43</b>	<b>56</b>	<b>170</b>	<b>0</b>	<b>27</b>	<b>364</b>	<b>18</b>	<b>1</b>	<b>9</b>	<b>55</b>	<b>78</b>	<b>2</b>	<b>128</b>	<b>381</b>	<b>30</b>	<b>0</b>	<b>1362</b>
<b>Grand Total</b>	<b>63</b>	<b>174</b>	<b>354</b>	<b>1</b>	<b>152</b>	<b>709</b>	<b>30</b>	<b>2</b>	<b>38</b>	<b>131</b>	<b>215</b>	<b>2</b>	<b>242</b>	<b>767</b>	<b>87</b>	<b>0</b>	<b>2967</b>
Apprch %	10.6	29.4	59.8	0.2	17	79.4	3.4	0.2	9.8	33.9	55.7	0.5	22.1	70	7.9	0	
Total %	2.1	5.9	11.9	0	5.1	23.9	1	0.1	1.3	4.4	7.2	0.1	8.2	25.9	2.9	0	



# CAPE COD COMMISSION

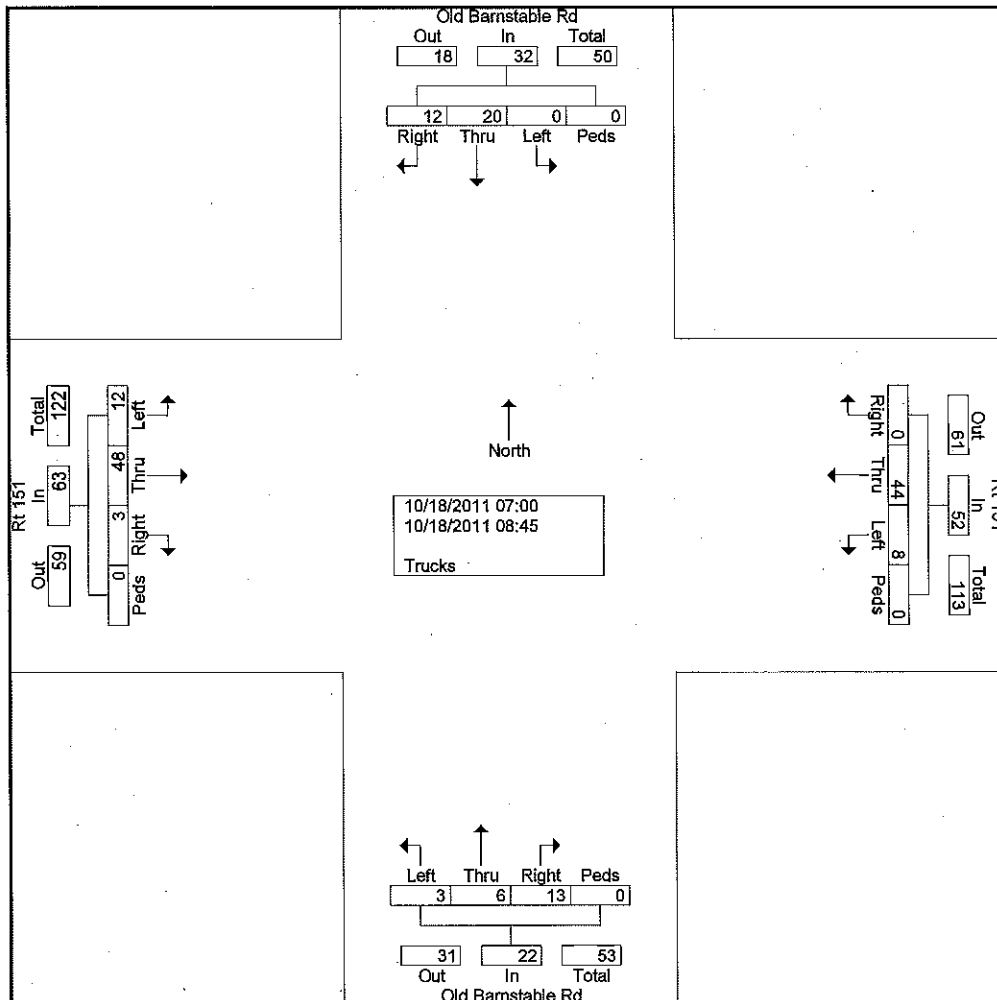
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 E-Mail: trans@capecodcommission.org

Counter #:5  
 Counted By:LAM  
 Mashpee:Rt 151/Old Barnstable Rd  
 Date: 10/18/2011

File Name : 3004\_10182011  
 Site Code : 00300401  
 Start Date : 10/18/2011  
 Page No : 1

### Groups Printed- Trucks

Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	0	4	1	0	2	3	0	0	0	0	1	0	0	5	2	0	18
07:15	0	0	0	0	2	11	0	0	2	1	9	0	0	1	0	0	26
07:30	0	1	3	0	1	6	0	0	0	0	0	0	1	5	0	0	17
07:45	0	1	1	0	1	3	0	0	0	1	0	0	4	5	0	0	16
<b>Total</b>	0	6	5	0	6	23	0	0	2	2	10	0	5	16	2	0	77
08:00	0	0	3	0	0	5	0	0	0	0	0	0	3	2	1	0	14
08:15	0	13	2	0	2	1	0	0	0	2	3	0	1	5	0	0	29
08:30	0	0	0	0	0	7	0	0	1	1	0	0	2	12	0	0	23
08:45	0	1	2	0	0	8	0	0	0	1	0	0	1	13	0	0	26
<b>Total</b>	0	14	7	0	2	21	0	0	1	4	3	0	7	32	1	0	92
<b>Grand Total</b>	0	20	12	0	8	44	0	0	3	6	13	0	12	48	3	0	169
Approch %	0	62.5	37.5	0	15.4	84.6	0	0	13.6	27.3	59.1	0	19	76.2	4.8	0	
Total %	0	11.8	7.1	0	4.7	26	0	0	1.8	3.6	7.7	0	7.1	28.4	1.8	0	



# CAPE COD COMMISSION

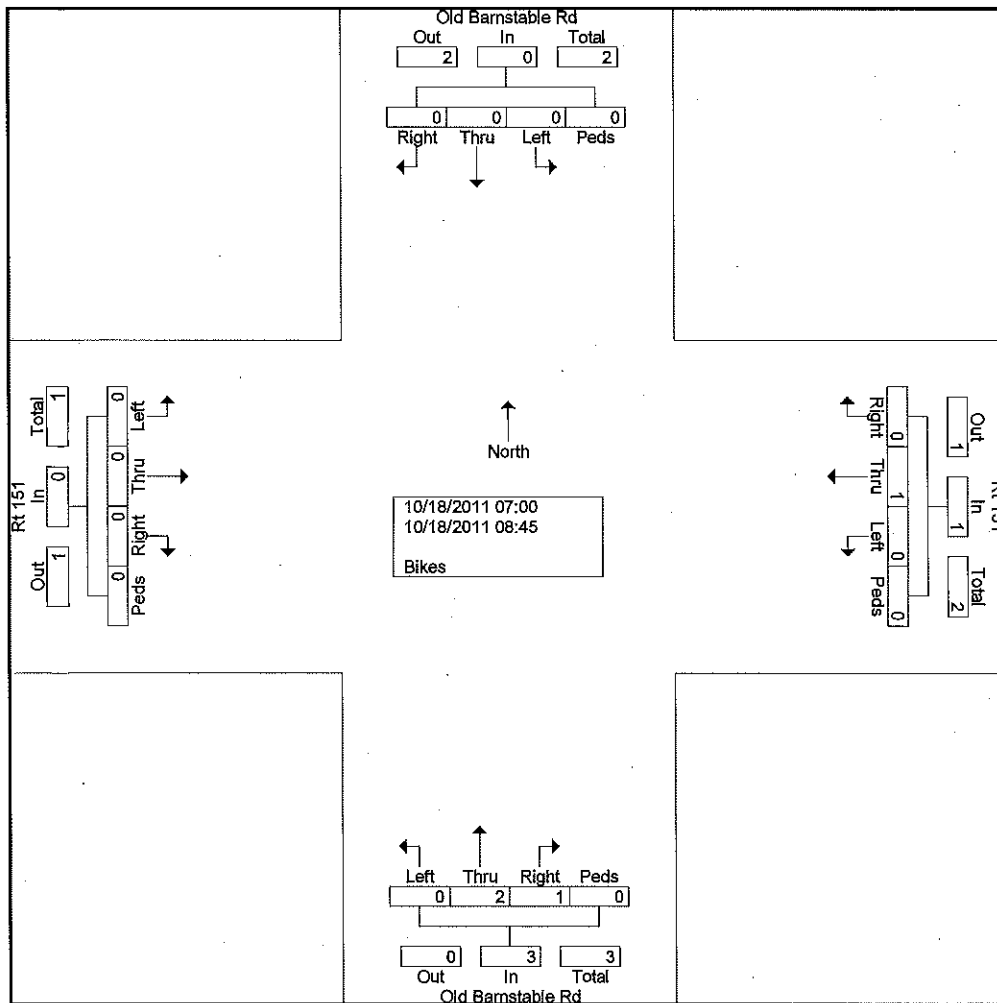
3225 Main Street • P.O. Box 226  
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 Tel: 508.362.3828 • Fax: 508.362.3136  
 E-Mail: trans@capecodcommission.org

Counter #:5  
 Counted By:LAM  
 Mashpee:Rt 151/Old Barnstable Rd  
 Date: 10/18/2011

File Name : 3004\_10182011  
 Site Code : 00300401  
 Start Date : 10/18/2011  
 Page No : 1

### Groups Printed- Bikes

Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
*** BREAK ***																	
08:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
08:15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
08:45	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
Total	0	0	0	0	0	1	0	0	0	2	1	0	0	0	0	0	4
Grand Total	0	0	0	0	0	1	0	0	0	2	1	0	0	0	0	0	4
Approch %	0	0	0	0	0	100	0	0	0	66.7	33.3	0	0	0	0	0	
Total %	0	0	0	0	0	25	0	0	0	50	25	0	0	0	0	0	



# CAPE COD COMMISSION

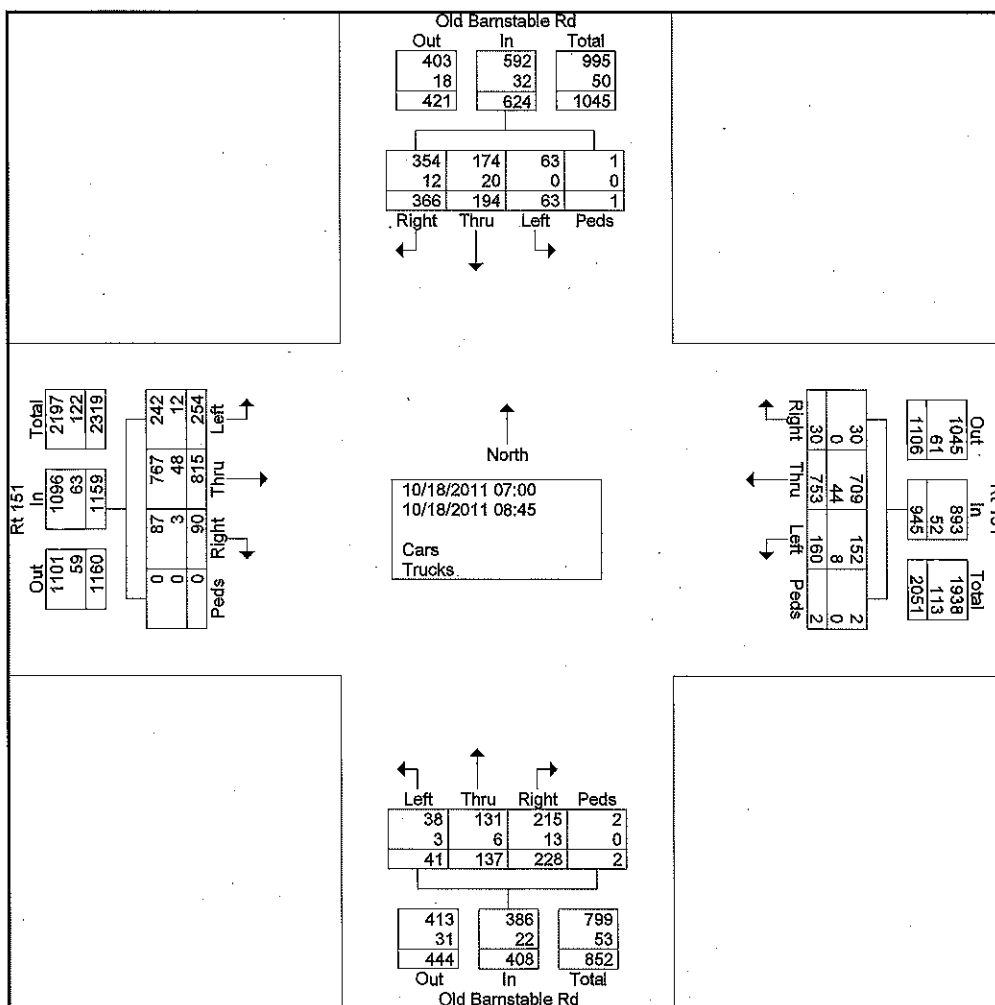
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 E-Mail: trans@capecodcommission.org

Counter #:5  
 Counted By:LAM  
 Mashpee:Rt 151/Old Barnstable Rd  
 Date: 10/18/2011

File Name : 3004\_10182011  
 Site Code : 00300401  
 Start Date : 10/18/2011  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
07:00	3	33	37	1	38	71	2	0	7	12	28	0	18	85	26	0	361
07:15	3	63	49	0	71	96	2	1	16	24	72	0	25	111	15	0	548
07:30	5	17	60	0	14	105	5	0	4	19	21	0	30	97	11	0	388
07:45	9	11	43	0	8	96	3	0	4	23	26	0	46	109	7	0	385
<b>Total</b>	<b>20</b>	<b>124</b>	<b>189</b>	<b>1</b>	<b>131</b>	<b>368</b>	<b>12</b>	<b>1</b>	<b>31</b>	<b>78</b>	<b>147</b>	<b>0</b>	<b>119</b>	<b>402</b>	<b>59</b>	<b>0</b>	<b>1682</b>
08:00	12	17	33	0	3	92	3	0	0	20	18	0	46	106	8	0	358
08:15	20	25	52	0	8	101	3	0	4	15	24	0	22	103	3	0	380
08:30	6	15	48	0	11	95	5	0	4	17	19	2	21	102	5	0	350
08:45	5	13	44	0	7	97	7	1	2	7	20	0	46	102	15	0	366
<b>Total</b>	<b>43</b>	<b>70</b>	<b>177</b>	<b>0</b>	<b>29</b>	<b>385</b>	<b>18</b>	<b>1</b>	<b>10</b>	<b>59</b>	<b>81</b>	<b>2</b>	<b>135</b>	<b>413</b>	<b>31</b>	<b>0</b>	<b>1454</b>
<b>Grand Total</b>	<b>63</b>	<b>194</b>	<b>366</b>	<b>1</b>	<b>160</b>	<b>753</b>	<b>30</b>	<b>2</b>	<b>41</b>	<b>137</b>	<b>228</b>	<b>2</b>	<b>254</b>	<b>815</b>	<b>90</b>	<b>0</b>	<b>3136</b>
Approch %	10.1	31.1	58.7	0.2	16.9	79.7	3.2	0.2	10	33.6	55.9	0.5	21.9	70.3	7.8	0	
Total %	2	6.2	11.7	0	5.1	24	1	0.1	1.3	4.4	7.3	0.1	8.1	26	2.9	0	
Cars	63	174	354	1	152	709	30	2	38	131	215	2	242	767	87	0	2967
% Cars	100	89.7	96.7	100	95	94.2	100	100	92.7	95.6	94.3	100	95.3	94.1	96.7	0	94.6
Trucks	0	20	12	0	8	44	0	0	3	6	13	0	12	48	3	0	169
% Trucks	0	10.3	3.3	0	5	5.8	0	0	7.3	4.4	5.7	0	4.7	5.9	3.3	0	5.4



**CAPE COD COMMISSION**

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Counter #:5  
 Counted By:LAM  
 Mashpee:Rt 151/Old Barnstable Rd  
 Date: 10/18/2011

File Name : 3004\_10182011  
 Site Code : 00300401  
 Start Date : 10/18/2011  
 Page No : 2

Start Time	Old Barnstable Rd From North					Rt 151 From East					Old Barnstable Rd From South					Rt 151 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	3	33	37	1	74	38	71	2	0	111	7	12	28	0	47	18	85	26	0	129	361
07:15	3	63	49	0	115	71	96	2	1	170	16	24	72	0	112	25	111	15	0	151	548
07:30	5	17	60	0	82	14	105	5	0	124	4	19	21	0	44	30	97	11	0	138	388
07:45	9	11	43	0	63	8	96	3	0	107	4	23	26	0	53	46	109	7	0	162	385
Total Volume	20	124	189	1	334	131	368	12	1	512	31	78	147	0	256	119	402	59	0	580	1682
% App. Total	6	37.1	56.6	0.3		25.6	71.9	2.3	0.2		12.1	30.5	57.4	0		20.5	69.3	10.2	0		
PHF	.556	.492	.788	.250	.726	.461	.876	.600	.250	.753	.484	.813	.510	.000	.571	.647	.905	.567	.000	.895	.767



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Counter #: 4&5  
 Counted By: LAM&BCS  
 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

File Name : 3004\_10252011  
 Site Code : 00300402  
 Start Date : 10/25/2011  
 Page No : 1

### Groups Printed- Cars

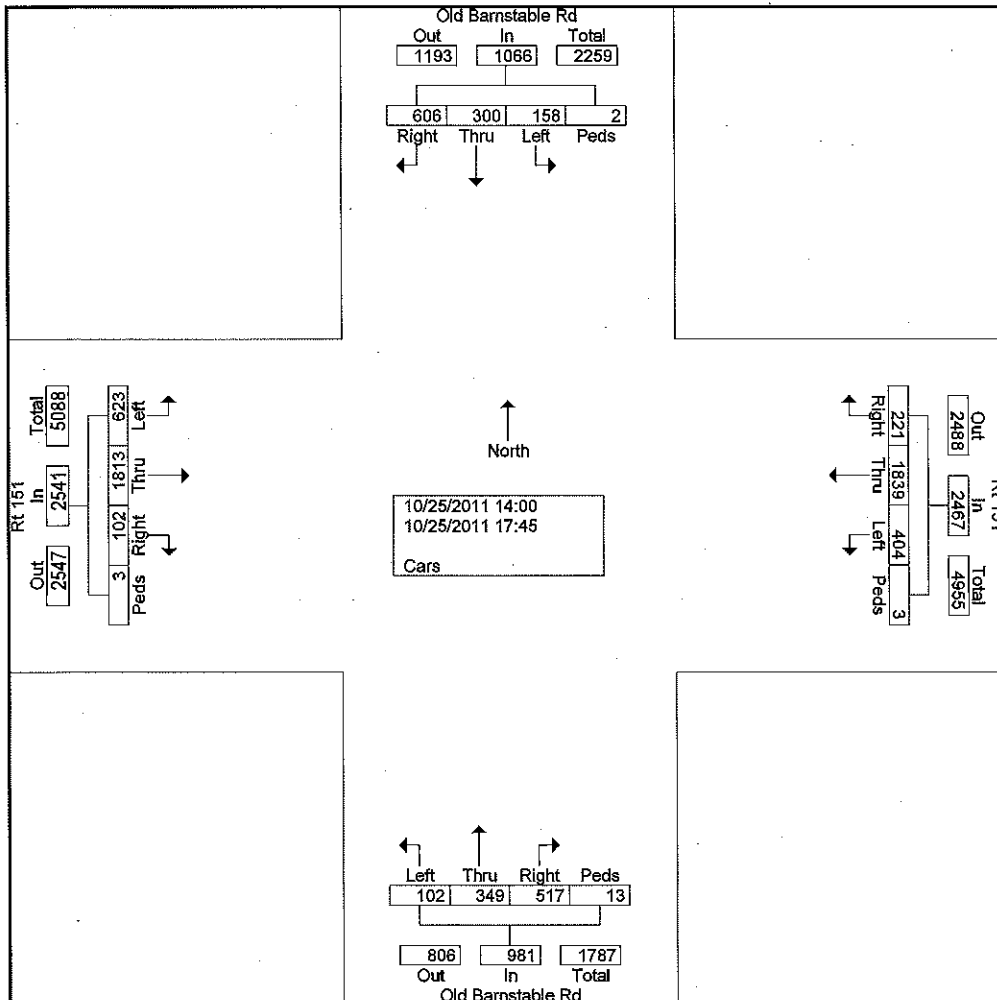
Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
14:00	16	14	31	0	22	79	10	0	13	25	38	3	21	81	10	0	363
14:15	8	10	36	0	14	109	14	1	2	11	21	2	31	100	6	0	365
14:30	17	14	40	0	22	109	17	0	13	18	22	1	42	96	6	1	418
14:45	11	12	31	0	22	112	26	0	4	14	28	0	26	101	5	0	392
<b>Total</b>	<b>52</b>	<b>50</b>	<b>138</b>	<b>0</b>	<b>80</b>	<b>409</b>	<b>67</b>	<b>1</b>	<b>32</b>	<b>68</b>	<b>109</b>	<b>6</b>	<b>120</b>	<b>378</b>	<b>27</b>	<b>1</b>	<b>1538</b>
15:00	13	20	48	0	19	91	12	0	5	28	15	0	27	111	5	1	395
15:15	10	22	48	0	20	121	28	1	1	18	27	1	47	112	3	0	459
15:30	11	20	40	0	30	124	10	0	5	19	21	0	36	124	3	0	443
15:45	10	18	38	2	23	130	14	1	1	32	30	0	38	128	3	0	468
<b>Total</b>	<b>44</b>	<b>80</b>	<b>174</b>	<b>2</b>	<b>92</b>	<b>466</b>	<b>64</b>	<b>2</b>	<b>12</b>	<b>97</b>	<b>93</b>	<b>1</b>	<b>148</b>	<b>475</b>	<b>14</b>	<b>1</b>	<b>1765</b>
16:00	9	25	28	0	28	129	15	0	9	18	28	2	50	126	7	0	474
16:15	6	25	42	0	29	106	16	0	0	29	37	0	34	125	11	0	460
16:30	7	18	33	0	20	110	8	0	9	22	30	0	54	106	8	0	425
16:45	5	21	38	0	24	131	14	0	4	17	42	0	45	127	5	0	473
<b>Total</b>	<b>27</b>	<b>89</b>	<b>141</b>	<b>0</b>	<b>101</b>	<b>476</b>	<b>53</b>	<b>0</b>	<b>22</b>	<b>86</b>	<b>137</b>	<b>2</b>	<b>183</b>	<b>484</b>	<b>31</b>	<b>0</b>	<b>1832</b>
17:00	8	19	41	0	38	136	9	0	10	22	39	0	46	121	11	1	501
17:15	12	22	33	0	30	131	11	0	5	26	42	4	58	150	9	0	533
17:30	7	21	38	0	31	120	10	0	7	24	56	0	35	121	7	0	477
17:45	8	19	41	0	32	101	7	0	14	26	41	0	33	84	3	0	409
<b>Total</b>	<b>35</b>	<b>81</b>	<b>153</b>	<b>0</b>	<b>131</b>	<b>488</b>	<b>37</b>	<b>0</b>	<b>36</b>	<b>98</b>	<b>178</b>	<b>4</b>	<b>172</b>	<b>476</b>	<b>30</b>	<b>1</b>	<b>1920</b>
<b>Grand Total</b>	<b>158</b>	<b>300</b>	<b>606</b>	<b>2</b>	<b>404</b>	<b>1839</b>	<b>221</b>	<b>3</b>	<b>102</b>	<b>349</b>	<b>517</b>	<b>13</b>	<b>623</b>	<b>1813</b>	<b>102</b>	<b>3</b>	<b>7055</b>
<b>Apprch %</b>	<b>14.8</b>	<b>28.1</b>	<b>56.8</b>	<b>0.2</b>	<b>16.4</b>	<b>74.5</b>	<b>9</b>	<b>0.1</b>	<b>10.4</b>	<b>35.6</b>	<b>52.7</b>	<b>1.3</b>	<b>24.5</b>	<b>71.3</b>	<b>4</b>	<b>0.1</b>	
<b>Total %</b>	<b>2.2</b>	<b>4.3</b>	<b>8.6</b>	<b>0</b>	<b>5.7</b>	<b>26.1</b>	<b>3.1</b>	<b>0</b>	<b>1.4</b>	<b>4.9</b>	<b>7.3</b>	<b>0.2</b>	<b>8.8</b>	<b>25.7</b>	<b>1.4</b>	<b>0</b>	

# CAPE COD COMMISSION

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Counter #: 4&5  
 Counted By: LAM&BCS  
 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

File Name : 3004\_10252011  
 Site Code : 00300402  
 Start Date : 10/25/2011  
 Page No : 2



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### Groups Printed- Trucks

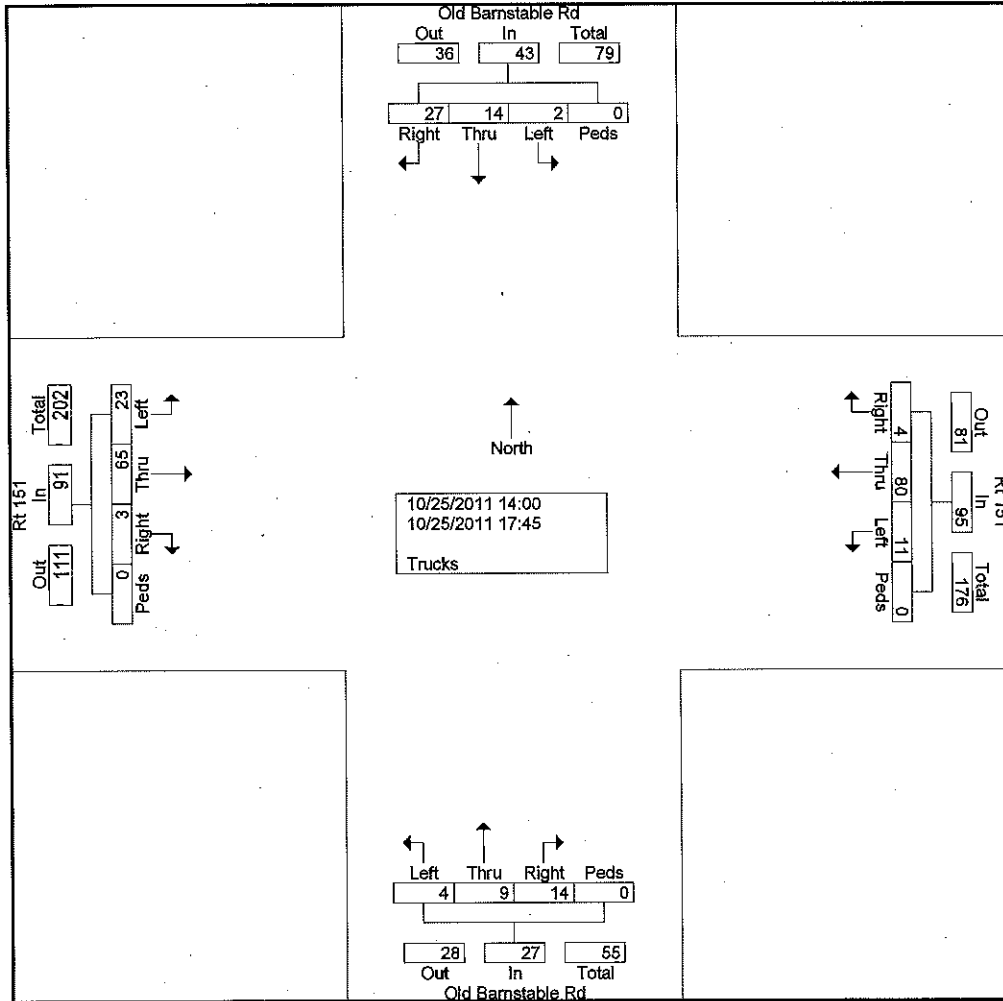
Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
14:00	0	0	1	0	2	8	2	0	0	6	7	0	1	9	1	0	37
14:15	1	0	3	0	0	5	0	0	1	1	0	0	2	7	0	0	20
14:30	0	0	2	0	0	7	0	0	0	1	0	0	3	3	0	0	16
14:45	0	0	2	0	1	7	0	0	1	0	1	0	2	8	0	0	22
<b>Total</b>	1	0	8	0	3	27	2	0	2	8	8	0	8	27	1	0	95
15:00	0	1	3	0	0	4	0	0	0	0	0	0	2	3	0	0	13
15:15	0	0	0	0	1	6	0	0	0	0	0	0	2	4	0	0	13
15:30	0	5	4	0	0	7	0	0	0	0	0	0	3	8	1	0	28
15:45	1	4	4	0	3	9	1	0	0	1	1	0	0	3	0	0	27
<b>Total</b>	1	10	11	0	4	26	1	0	0	1	1	0	7	18	1	0	81
16:00	0	0	2	0	0	8	0	0	0	0	2	0	4	2	0	0	18
16:15	0	1	2	0	3	3	0	0	0	0	0	0	0	3	0	0	12
16:30	0	1	1	0	0	4	0	0	1	0	0	0	1	3	1	0	12
16:45	0	0	1	0	0	4	0	0	0	0	0	0	1	1	0	0	7
<b>Total</b>	0	2	6	0	3	19	0	0	1	0	2	0	6	9	1	0	49
17:00	0	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	6
17:15	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	0	5
17:30	0	2	0	0	0	3	1	0	0	0	2	0	2	3	0	0	13
17:45	0	0	1	0	0	2	0	0	1	0	1	0	0	2	0	0	7
<b>Total</b>	0	2	2	0	1	8	1	0	1	0	3	0	2	11	0	0	31
<b>Grand Total</b>	2	14	27	0	11	80	4	0	4	9	14	0	23	65	3	0	256
<b>Apprch %</b>	4.7	32.6	62.8	0	11.6	84.2	4.2	0	14.8	33.3	51.9	0	25.3	71.4	3.3	0	
<b>Total %</b>	0.8	5.5	10.5	0	4.3	31.2	1.6	0	1.6	3.5	5.5	0	9	25.4	1.2	0	

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Counter #: 4&5  
 Counted By: LAM&BCS  
 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

File Name : 3004\_10252011  
 Site Code : 00300402  
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 Page No : 1

**Groups Printed- Bikes**

Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
*** BREAK ***																	
14:45	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
*** BREAK ***																	
15:30	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2
16:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
16:15	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	3
*** BREAK ***																	
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
Total	0	0	0	0	0	1	0	0	0	4	0	0	0	2	0	0	7
*** BREAK ***																	
17:45	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	5	0	0	0	5	0	0	0	2	1	0	13
Apprch %	0	0	0	0	0	100	0	0	0	100	0	0	0	66.7	33.3	0	
Total %	0	0	0	0	0	38.5	0	0	0	38.5	0	0	0	15.4	7.7	0	

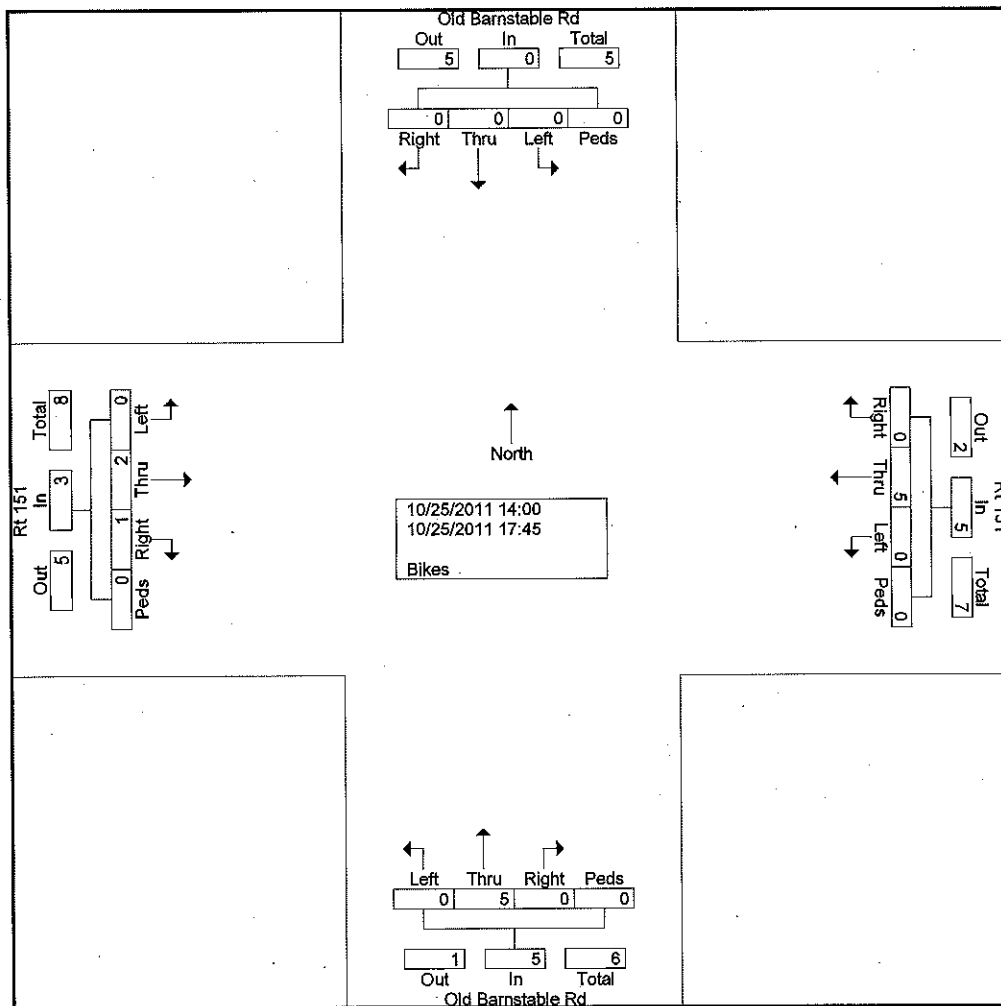


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Counter #: 4&5  
 Counted By: LAM&BCS  
 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

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 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

File Name : 3004\_10252011  
 Site Code : 00300402  
 Start Date : 10/25/2011  
 Page No : 1

### Groups Printed- Cars - Trucks

Start Time	Old Barnstable Rd From North				Rt 151 From East				Old Barnstable Rd From South				Rt 151 From West				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
14:00	16	14	32	0	24	87	12	0	13	31	45	3	22	90	11	0	400
14:15	9	10	39	0	14	114	14	1	3	12	21	2	33	107	6	0	385
14:30	17	14	42	0	22	116	17	0	13	19	22	1	45	99	6	1	434
14:45	11	12	33	0	23	119	26	0	5	14	29	0	28	109	5	0	414
<b>Total</b>	<b>53</b>	<b>50</b>	<b>146</b>	<b>0</b>	<b>83</b>	<b>436</b>	<b>69</b>	<b>1</b>	<b>34</b>	<b>76</b>	<b>117</b>	<b>6</b>	<b>128</b>	<b>405</b>	<b>28</b>	<b>1</b>	<b>1633</b>
15:00	13	21	51	0	19	95	12	0	5	28	15	0	29	114	5	1	408
15:15	10	22	48	0	21	127	28	1	1	18	27	1	49	116	3	0	472
15:30	11	25	44	0	30	131	10	0	5	19	21	0	39	132	4	0	471
15:45	11	22	42	2	26	139	15	1	1	33	31	0	38	131	3	0	495
<b>Total</b>	<b>45</b>	<b>90</b>	<b>185</b>	<b>2</b>	<b>96</b>	<b>492</b>	<b>65</b>	<b>2</b>	<b>12</b>	<b>98</b>	<b>94</b>	<b>1</b>	<b>155</b>	<b>493</b>	<b>15</b>	<b>1</b>	<b>1846</b>
16:00	9	25	30	0	28	137	15	0	9	18	30	2	54	128	7	0	492
16:15	6	26	44	0	32	109	16	0	0	29	37	0	34	128	11	0	472
16:30	7	19	34	0	20	114	8	0	10	22	30	0	55	109	9	0	437
16:45	5	21	39	0	24	135	14	0	4	17	42	0	46	128	5	0	480
→ <b>Total</b>	<b>27</b>	<b>91</b>	<b>147</b>	<b>0</b>	<b>104</b>	<b>495</b>	<b>53</b>	<b>0</b>	<b>23</b>	<b>86</b>	<b>139</b>	<b>2</b>	<b>189</b>	<b>493</b>	<b>32</b>	<b>0</b>	<b>1881</b>
17:00	8	19	41	0	38	137	9	0	10	22	39	0	46	126	11	1	507
17:15	12	22	34	0	31	133	11	0	5	26	42	4	58	151	9	0	538
17:30	7	23	38	0	31	123	11	0	7	24	58	0	37	124	7	0	490
17:45	8	19	42	0	32	103	7	0	15	26	42	0	33	86	3	0	416
<b>Total</b>	<b>35</b>	<b>83</b>	<b>155</b>	<b>0</b>	<b>132</b>	<b>496</b>	<b>38</b>	<b>0</b>	<b>37</b>	<b>98</b>	<b>181</b>	<b>4</b>	<b>174</b>	<b>487</b>	<b>30</b>	<b>1</b>	<b>1951</b>
<b>Grand Total</b>	<b>160</b>	<b>314</b>	<b>633</b>	<b>2</b>	<b>415</b>	<b>1919</b>	<b>225</b>	<b>3</b>	<b>106</b>	<b>358</b>	<b>531</b>	<b>13</b>	<b>646</b>	<b>1878</b>	<b>105</b>	<b>3</b>	<b>7311</b>
<b>Apprch %</b>	<b>14.4</b>	<b>28.3</b>	<b>57.1</b>	<b>0.2</b>	<b>16.2</b>	<b>74.9</b>	<b>8.8</b>	<b>0.1</b>	<b>10.5</b>	<b>35.5</b>	<b>52.7</b>	<b>1.3</b>	<b>24.5</b>	<b>71.4</b>	<b>4</b>	<b>0.1</b>	
<b>Total %</b>	<b>2.2</b>	<b>4.3</b>	<b>8.7</b>	<b>0</b>	<b>5.7</b>	<b>26.2</b>	<b>3.1</b>	<b>0</b>	<b>1.4</b>	<b>4.9</b>	<b>7.3</b>	<b>0.2</b>	<b>8.8</b>	<b>25.7</b>	<b>1.4</b>	<b>0</b>	
<b>Cars</b>	<b>158</b>	<b>300</b>	<b>606</b>	<b>2</b>	<b>404</b>	<b>1839</b>	<b>221</b>	<b>3</b>	<b>102</b>	<b>349</b>	<b>517</b>	<b>13</b>	<b>623</b>	<b>1813</b>	<b>102</b>	<b>3</b>	<b>7055</b>
<b>% Cars</b>	<b>98.8</b>	<b>95.5</b>	<b>95.7</b>	<b>100</b>	<b>97.3</b>	<b>95.8</b>	<b>98.2</b>	<b>100</b>	<b>96.2</b>	<b>97.5</b>	<b>97.4</b>	<b>100</b>	<b>96.4</b>	<b>96.5</b>	<b>97.1</b>	<b>100</b>	<b>96.5</b>
<b>Trucks</b>	<b>2</b>	<b>14</b>	<b>27</b>	<b>0</b>	<b>11</b>	<b>80</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>9</b>	<b>14</b>	<b>0</b>	<b>23</b>	<b>65</b>	<b>3</b>	<b>0</b>	<b>256</b>
<b>% Trucks</b>	<b>1.2</b>	<b>4.5</b>	<b>4.3</b>	<b>0</b>	<b>2.7</b>	<b>4.2</b>	<b>1.8</b>	<b>0</b>	<b>3.8</b>	<b>2.5</b>	<b>2.6</b>	<b>0</b>	<b>3.6</b>	<b>3.5</b>	<b>2.9</b>	<b>0</b>	<b>3.5</b>

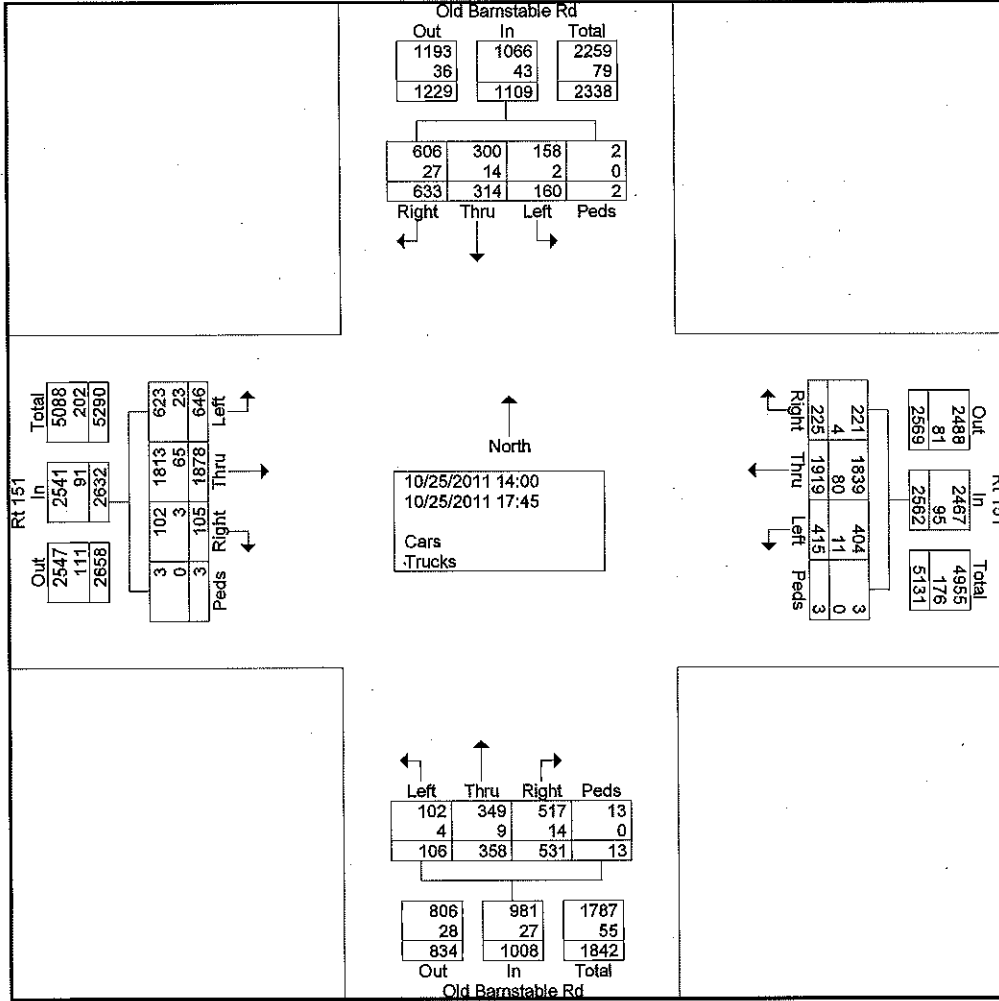
1879

# CAPE COD COMMISSION

3225 Main Street • P.O. Box 226  
 Barnstable, MA 02630  
 Tel: 508.362.3828 • Fax: 508.362.3136  
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Counter #: 4&5  
 Counted By: LAM&BCS  
 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

File Name : 3004\_10252011  
 Site Code : 00300402  
 Start Date : 10/25/2011  
 Page No : 2



CAPE COD COMMISSION

325 Main Street • P.O. Box 226  
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Counter #: 4&5  
 Counted By: LAM&BCS  
 Rt 151/Old Barnstable Rd Mashpee  
 Date: 10/26/2011

File Name : 3004\_10252011  
 Site Code : 00300402  
 Start Date : 10/25/2011  
 Page No : 3

Start Time	Old Barnstable Rd From North					Rt 151 From East					Old Barnstable Rd From South					Rt 151 From West					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour Analysis From 14:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45 ←																					
16:45	5	21	39	0	65	24	135	14	0	173	4	17	42	0	63	46	128	5	0	179	480
17:00	8	19	41	0	68	38	137	9	0	184	10	22	39	0	71	46	126	11	1	184	507
17:15	12	22	34	0	68	31	133	11	0	175	5	26	42	4	77	58	151	9	0	218	538
17:30	7	23	38	0	68	31	123	11	0	165	7	24	58	0	89	37	124	7	0	168	490
Total Volume	32	85	152	0	269	124	528	45	0	697	26	89	181	4	300	187	529	32	1	749	2015
% App. Total	11.9	31.6	56.5	0		17.8	75.8	6.5	0		8.7	29.7	60.3	1.3		25	70.6	4.3	0.1		
PHF	.667	.924	.927	.000	.989	.816	.964	.804	.000	.947	.650	.856	.780	.250	.843	.806	.876	.727	.250	.859	.936

## Appendix E. Road Safety Audit References

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## Road Safety Audit References

Road Safety Audits. Institute of Transportation Engineers and U.S. Department of Transportation, Federal Highway Administration, [www.roadwaysafetyaudits.org](http://www.roadwaysafetyaudits.org).

FHWA Road Safety Audit Guidelines. U.S. Department of Transportation, Federal Highway Administration, 2006.

*Desktop Reference for Crash Reduction Factors*. Report No. FHWA-SA-08-011. U.S. Department of Transportation, Federal Highway Administration, September 2008

MassDOT Highway Division Traffic Engineering and Safety resources online, at <http://www.mhd.state.ma.us/default.asp?pgid=trafficIndex&sid=level2>

U.S. DOT Memorandum from Tony Furst, Acting Associate Administrator for Safety, to Division Administrators, January 12, 2012, Promoting the Implementation of Proven Safety Countermeasures



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