ROAD SAFETY AUDIT

Brockton Avenue (Route 123) at Rockland Street and Elm Street

Abington, Massachusetts

April 6, 2021

Prepared by Old Colony Planning Council
Through the Old Colony MPO
FFY 2021 Unified Planning Work Program:
Under Contract with MassDOT

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Background

This Road Safety Audit for Brockton Avenue (Route 123) at Rockland Street at Elm Street, was prepared as part of the Old Colony Metropolitan Planning Organization's (MPO) Road Safety Audits at Multiple Locations project in the MPO's FFY 2021 Unified Planning Work Program. It was done in conjunction with another Road Safety Audit for Randolph Street (Route 139) at Chestnut Street and Old Randolph Street. The objective of the Road Safety Audits at Multiple Locations project is to identify known issues and potential improvements that can be implemented at high crash locations in a continuing effort to achieve safety performance targets for reducing serious injuries and fatalities on the regional highway network. Locations were selected through a data driven process as part of the MPO's Safety Management System and consultation with the communities of the Old Colony MPO.

Project Data

This Road Safety Audit was conducted on April 6, 2021. Due to the continuing State of Emergency in the Commonwealth of Massachusetts in response to the COVID-19 pandemic, this Road Safety Audit was conducted virtually through a webinar format. Participants were provided crash data and associated analysis (crash characteristics charts, collision diagrams) prior to the Audit for review, and background traffic data (traffic volumes, speeds, heavy vehicle traffic) along with surrounding land use were discussed ruing the Audit.

During the audit, crash analysis, land use, and traffic data was discussed. Photographs of the intersection from each approach were provided. There was an Old Colony Planning Council staff planner on site at the intersection, providing live video links and commentary for each location, and responding to on-demand inquiries.

Table 1 lists the participants present during the Road Safety Audit.

Table 1: Participating Audit Team Members

Audit Team Member	Agency/Affiliation
Bill McNulty	Old Colony Planning Council
Ray Guarino	Old Colony Planning Council
Mary Waldron	Old Colony Planning Council
Charles Kilmer, AICP	Old Colony Planning Council
Kyle Mowatt	Old Colony Planning Council
Shawn Bailey	Old Colony Planning Council
John Stone	Abington Department of Public Works
John Nuttall	Abington Fire Department
John Glynn	Abington Fire Department
Scott Lambiase	Abington Town Manager
Bruce Hughes	Abington Planning Board
Curtis Boucher	Office of Representative Alyson Sullivan
Ana Fill	MassDOT Traffic and Safety
Kevin Fitzgerald	MassDOT
Bianca Marshall	MassDOT District 5
David Soares	MassDOT
Jason Walters	MassDOT District 5 Projects
Vivian Ortiz	Massachusetts Safe Routes to School

Project Location and Description

The intersection of Brockton Avenue (Route 123) at Rockland Street and Elm Street is located near the geographic center of Abington, 350 feet east of the intersection of State Numbered Routes 18 and 123. It is a four-legged intersection, with Rockland Street coming into Route 123 at a 45-dgeree angle (see Figure 2). Elm Street is a one-way roadway, with direction of travel southbound away from the intersection. Rockland Street is STOP sign controlled, with STOP signs posted on both sides of the roadway. The following roadways form the intersection:

- **Brockton Avenue (Route 123)**: Brockton Avenue is a two-lane, state numbered highway under state jurisdiction of the Massachusetts Department of Transportation (MassDOT), functionally classified as a Principal Arterial. The speed limit is 30 MPH in each direction in this area. There are sidewalks on both sides on Brockton Avenue east of the intersection, but only on one-side west of the intersection. There are no crosswalks at the intersection, and none of the roadways in this area of bicycle infrastructure.

- **Rockland Street**: Rockland Street is a functionally classified as a Major Collector under local jurisdiction of the Town of Abington. The posted speed limit is 30 MPH.

- **Elm Street**: Elm Street is a one-way local roadway, with direction of travel away from the intersection.

The intersection was previously studied in the Old Colony MPO's 2018 Route 123 Corridor Study.

Figure 1: Locus Map

Audit Observations and Potential Safety Enhancements

The following issues were observed during the road safety audit, with discussion of potential safety enhancements for each.

Difficulty for drivers crossing Brockton Avenue (Route 123) from Rockland Street to Elm Street: The predominant move for drivers approaching the intersection from Rockland Street Is to travel straight through to Elm Street southbound. Consequently, there is a high frequency of crashes between drivers traveling straight across the intersection from Rockland Street, particularly in collisions with vehicles traveling west on Route 123. Drivers likely jump on an available gap during a stoppage in traffic on the eastbound side and misjudge approach speed of vehicles arriving from the west.

> *Potential Safety Enhancement: Reconstruct the intersection with the installation of either a roundabout or traffic signals.*

Driver confusion about movements from Rockland Street: Observation of driver behavior indicates drivers through this intersection are often unclear on what direction of travel drivers exiting Rockland Street are going to make. Additionally, due to the lack of striping, drivers have difficulty determining the edge of the travel way on Route 123. The wide flared exit of Rockland Street allows drivers to form two lanes, creating a de facto right-turn lane.

> *Potential Safety Enhancement: Stripe Rockland Street approach to Brockton Avenue with dedicated movement lanes (either a dedicated lane for each movement, or a right turn lane and a shared through and left turn lane). Better delineate traveled way on Route 123.*

Sight line restrictions from Rockland Street: From where the Stop Line currently is, it can be difficult to see approaching vehicles on Brockton Avenue, or to assess which direction they are going (either traveling straight through from the east, or turning right onto Rockland Street), A vertical crest on Brockton Avenue also reduces lines of sight.

> *Potential Safety Enhancement: Consider relocating Stop Line closer to Brockton Avenue. The vertical crest in the area should be considered in determining best spot for stop bar.*

Image 1: Image shows Rockland Street Stop Line set far back from travel lane of Brockton Avenue, and proximity of gas station curb cuts to intersection.

Queuing on Eastbound Approach of Route 123 from Route 18 blocks intersection: The intersection of Route 123 at Route 18 is only 350 feet to the east of this intersection. Queued vehicles from the Route 18 intersection approach and back into and past the Rockland Street intersection on Red cycles, particularly during the peak demand hours.

> *Potential Safety Enhancements: Use "Do Not Block Intersection" signage and roadway markings through intersection to request drivers not block the intersection. Retime phasing at Route 18 and Route 123 to allow more efficient clearing of Brockton Avenue (Route 123) eastbound approach to decrease frequency of intersection blockage. Long term option to be considered would be signalization of Brockton Avenue (Route 123) at Rockland Street with coordination with the traffic signals at Route18.*

Drivers cut through gas station on northwest corner: Drivers frustrated by queues and delay approaching from Rockland Street will often cut through the gas station on the northwest corner of the intersection.

> *Potential Safety Enhancements: Examine potential of closing one or both access points closest to the intersection on Brockton Avenue and Rockland Street, noting these access points may be necessary for fuel deliveries given location of underground gas tanks. Evaluate potential turn restrictions (example: right turn in, right turn out only) for driveways.*

Emergency Preemption Signals at Route 123 and Route 18 not functioning: The emergency signal preemption ("OptiCom") equipment on the traffic signals at Route 123 and Route 18 are malfunctioning (not detecting signals from vehicles or failing to activate). Fire apparatus from fire station on northeast corner of intersection cannot clear queue on Route 123 eastbound without this equipment functioning. Note that the Town of Abington is considering relocating this station.

Potential Safety Enhancements: Identify funding opportunities to maintain and repair system.

Lane Drop from Route 18 to Rockland Street: The westbound Brockton Avenue (Route 123) approach to Route 18 consists of two shared movement lanes both allowing through movements. However, there is only one receiving lane on the other side of Route 18. This often creates a scenario of drivers accelerating quickly from Route 18 to Rockland Street as drivers maneuver for position.

Potential Safety Enhancements: Reconfigure lane assignments at Route 18 and Route 123 (issue was identified in Road Safety Audit done for that intersection). Consider keeping two lanes westbound from Route 18 to Rockland Street, with right lane dedicated for right turns.

Poor Pavement Conditions on Elm Street: Pavement conditions are in poor condition on Elm Street.

Potential Safety Enhancements: Resurface roadway.

High rate of speed for right turning vehicles from Route 123 onto Rockland Street: The angle to which Rockland Street meets Brockton Avenue creates a wide wight turn from Route 123 westbound onto Rockland Street, allowing for drivers to make this movement at a high rate of speed. There are often near misses between drivers making this turn and fire apparatus either exiting station or backing up into station when returning to quarters. This also poses a safety concern for pedestrians in the area.

Potential Safety Enhancements: Tighten the geometry on the northeast corner, forcing drivers to reduce speed. Emergency traffic signals in front of station could also mitigate issue, however Town of Abington has long term plans to relocate this station.

Poor Pedestrian Access: Pedestrian infrastructure is in poor condition or non-existent throughout the intersection. Sidewalk on the eastbound side of Route 123 is in disrepair. There are no curb ramps or a crosswalk across Elm Street. The sidewalk on the westbound side of Route 123 between Route 18 and Rockland Street continues onto Rockland Street, and is discontinued on Route 123. The southbound side of Rockland Street does not have a sidewalk, nor does either side of Elm Street. There are no marked crosswalks for pedestrians to safely cross

Image 2: Image shows poor pedestrian connectivity through intersection, and ponding of water on southwest corner.

Rockland Street, or cross to Elm Street where the other side of Route 123 where the crosswalk continues. Additionally, utility poles obstruct the sidewalks in several spots.

Potential Safety Enhancements: Reconstruct all sidewalks in disrepair. Construct sidewalks on westbound side of Route 123 from Rockland Street westwards. Consider relocating utility poles or made new sidewalks wife enough to avoid obstructions by poles. Install safe crossing points.

Lack of Bicycle Infrastructure: None of the roadways contain bicycle accommodations.

Potential Safety Enhancements: Stripe bike lanes on Route 123 where right of way and geometry permit. Consider making Rockland Street a Complete Street from Route 123 to Linwood Street, as this is a connection to the Ames Nowell Park entrance.

Summary of Road Safety Audit

Table 3 lists and summarizes the potential safety enhancements for each identified issue from this Road Safety Audit.

Table 2: Estimated Time Frame and Costs Breakdown

Time Frame	
Short-Term	<1 Year
Mid-Term	1-3 Years
Long-Term	>3 Years

Costs	
Low	<$10,000
Medium	$10,001-$50,000
High	>$50,000

Table 3: Potential Safety Enhancement Summary

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
Difficulty for drivers crossing Brockton Avenue (Route 123) from Rockland Street to Elm Street	Reconstruct intersection with a roundabout or traffic signals	High	Long-Term	High	MassDOT
Driver Confusion about movements from Rockland Street	Consider striping lanes and lane assignments for movements from Rockland Street Better delineate travel way on Route 123.	Moderate	Mid-Term	Low	Abington
Sight line restrictions from Rockland Street	Consider re-locating Stop Line.	Moderate	Short-Term	Low	Abington
Queues on Rout e123 Eastbound from Route 18 blocking intersection	Use roadway markings and “Do Not Block Intersection” signage to request drivers not block the intersection. Retime phasing of traffic signals at Route 123 and Route 18 to clear traffic queue more efficiently	Low-Moderate	Short-Term	Low	MassDOT
Drivers cutting through gas station on northwest corner	Close curb cuts if feasible. Evaluate turn restrictions into and out of driveways.	Low	Mid-Term	Medium	MassDOT / Abington
“Emergency signal preemption at Route 123 and Route 18 not functioning.	Maintain and repair system	High	Mid-Term	Medium	MassDOT
Lane drop on Route 18 westbound from Route 18 to Rockland Street	Reconfigure geometry, phasing, and lane assignments at Route 123 and Route 18	High	Long-Term	Medium	MassDOT
Poor pavement conditions on Elm Street	Resurface roadway	Medium	Short Term	High	Abington

Safety Issue	Potential Safety Enhancement	Safety Payoff	Time Frame	Cost	Jurisdiction
High rate of speed of right turns from Route 123 onto Rockland Street	Reconstruct intersection to tighten geometry	High	Long-Term	High	MassDOT
Poor pedestrian access	Reconstruct existing sidewalks and construct sidewalks and crossings where they don't exist. Utility poles should be relocated, or sidewalk made wide enough so utility poles do no obstruct.	High	Long-Term	High	MassDOT on Route 123, Abington on Rockland Street
Lack of Bicycle infrastructure	Restripe Route 123 to allow for bike accommodations where geometry and right of way permit	Moderate	Mid-Term	Medium	MassDOT

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Appendix A. RSA Meeting Agenda

Agenda	**Road Safety Audit for Randolph Street (Route 139) ay Chestnut Street, and Brockton Avenue (Route 123) at Rockland Street, Abington, MA** **Tuesday, April 6, 2021** **1:00 PM – 3:00 PM**
Contact:	Bill McNulty, Old Colony Planning Council (508) 583-1833 ext. 207 wmcnulty@ocpcrpa.org
Attendees:	Invited Participants Include a Multidisciplinary Team including Abington Officials (Chief Elected Officials, DPW, Police, Fire, Administration, Schools), MassDOT, Safe Routes to School, FHWA, Legislative Delegation
Please Bring:	Thoughts and Suggestions
Meeting Location:	**Virtual Meeting (Zoom):** https://us02web.zoom.us/j/81764518613?pwd=QjZJWG9BeGFtd0pxYjFuY1ZzYjVSQT09 **Webinar ID:** 817 6451 8613 **Password:** 372614
1:00 PM	Welcome and Introductions
1:10 PM	Virtual Road Safety Audit of Randolph Street (Route 139) at Chestnut Street and Old Randolph Street • Review of Traffic Data • Existing Conditions and Known Challenges • Identification of Potential Safety Improvements
1:45 PM	Virtual Road Safety Audit of Brockton Avenue (Route 123) at Rockland Street and Elm Street • Identify any deficiencies and/or potential improvements at the study area location • OCPC staff will document all observations and comments • Identification of Potential Safety Improvements
2:30 PM	Wrap-Up Site Audit; Discussion of Next Steps

Instructions For Participants:

- Before attending the Road Safety Audit, participants are encouraged to familiarize themselves with the study area, and make note of existing conditions and any deficiencies they observe
- All participants will be actively involved in the process throughout. Participants are encouraged to come with thoughts and ideas, but are reminded that the synergy that develops and respect for others' opinions are key elements to the success of the Road Safety Audit process
- After the meeting, participants will be asked to comment and respond to the document materials to ensure it is reflective of the Road Safety Audit completed by the multidisciplinary team

Appendix B. RSA Audit Team Contact List

Participating Audit Team Members

Date: April 6, 2021 Location: Virtual Participation from Remote Locations

Audit Team Members	**Agency/Affiliation**
Name	Agency
Bill McNulty	Old Colony Planning Council
Ray Guarino	Old Colony Planning Council
Mary Waldron	Old Colony Planning Council
Charles Kilmer, AICP	Old Colony Planning Council
Kyle Mowatt	Old Colony Planning Council
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John Glynn	Abington Fire Department
Scott Lambiase	Abington Town Manager
Bruce Hughes	Abington Planning Board
Curtis Boucher	Office of Representative Alyson Sullivan
Ana Fill	MassDOT Traffic and Safety
Kevin Fitzgerald	MassDOT
Bianca Marshall	MassDOT District 5
David Soares	MassDOT
Jason Walters	MassDOT District 5 Projects
Vivian Ortiz	Massachusetts Safe Routes to School

Appendix C. Detailed Crash Data

Crash Data Summary Table

Brockton Avenue (Route 123) at Rockland Street and Elm Street, Abington

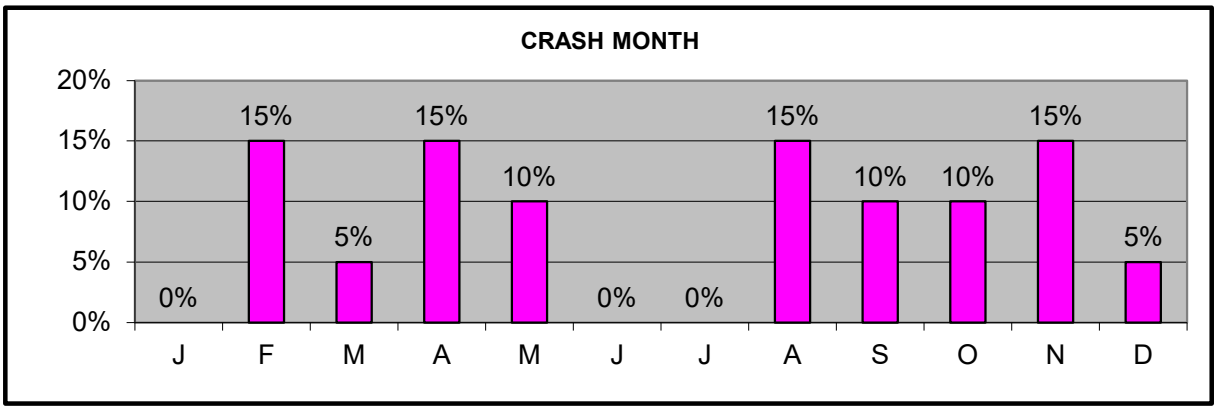
December 1, 2017 - January 31, 2020

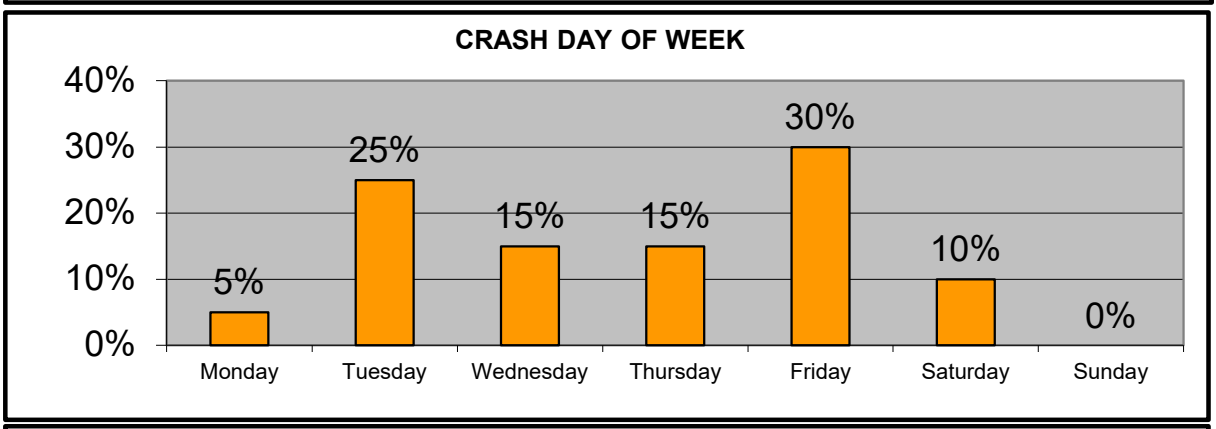
Crash Diagram Ref #	Crash Date	Crash Day	Time of Day	Manner of Collision	Light Condition	Weather Condition	Road Surface	Driver Contributing Code	Ages				Comments
	m/d/y			*Type*	*Type*	*Type*	*Type*	*Type*	*D1*	*D2*	*D3*	*D4*	
1	2/22/17	Wednesday	5:09 PM	Angle	Daylight	Cloudy	Dry	Failed to yield right of way	56	60			
2	4/6/17	Thursday	4:01 PM	Angle	Daylight	Rain	Wet	Failed to yield right of way	30	33			
3	4/7/17	Friday	5:29 PM	Angle	Daylight	Cloudy	Dry	Inattention	28	47			
4	5/16/17	Tuesday	6:03 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way	22	25			
5	8/4/17	Friday	11:19 AM	Angle	Daylight	Clear	Dry	Failed to yield right of way	37	25			
6	9/20/17	Wednesday	3:53 PM	Angle	Daylight	Rain	Wet	Inattention	40	36			
7	10/3/17	Tuesday	6:32 PM	Angle	Dark - lighted roadway	Clear	Dry	Inattention	33	26			
8	11/21/17	Tuesday	5:36 PM	Angle	Dark - lighted roadway	Clear	Dry	Failed to yield right of way	26	20			
9	11/22/17	Wednesday	3:37 PM	Angle	Daylight	Rain	Dry	Failed to yield right of way	35	26			
10	2/12/18	Monday	7:06 AM	Angle	Daylight	Clear	Dry	Failure to keep in proper lane or running off road	21	32			
11	4/5/18	Thursday	12:08 AM	Single Vehicle Crash	Dark - lighted roadway	Clear	Dry	Operating Vehicle in erratic, reckless, careless, negligent, or aggressive manner	19				
12	9/14/18	Friday	5:27 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way	59	27			
13	5/9/19	Thursday	12:49 PM	Angle	Daylight	Cloudy	Dry	Failed to yield right of way	77	24			
14	8/6/19	Tuesday	6:29 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way	36	19			
15	8/16/19	Friday	5:34 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way	20	36			
16	10/4/19	Friday	7:36 AM	Angle	Daylight	Clear	Dry	Failed to yield right of way	55	47			
17	11/16/19	Saturday	1:27 PM	Sideswipe, opposite direction	Daylight	Clear	Dry	No Improper Driving	27	59			
18	12/20/19	Friday	5:23 PM	Angle	Dark - lighted roadway	Clear	Dry	Inattention	25	52			
19	2/4/20	Tuesday	4:58 PM	Angle	Daylight	Clear	Dry	Failed to yield right of way	42	61			
20	3/7/20	Saturday	4:58 PM	Rear-end	Daylight	Cloudy	Dry	Followed too closely	41	59			

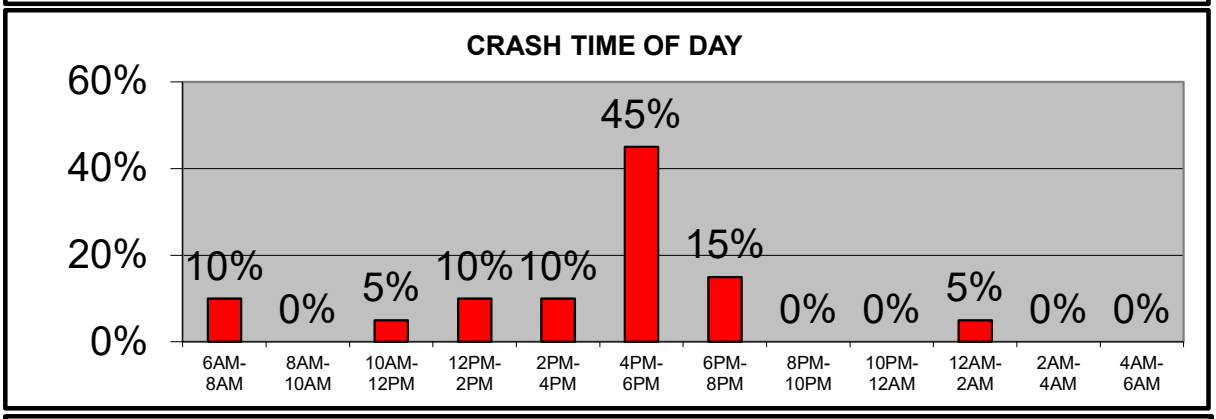
*Courtesy Crash - A term used to describe a crash that occurs subsequent to a non-involved mainline driver who gives the right of way, contrary to the rules of the road, to another driver.

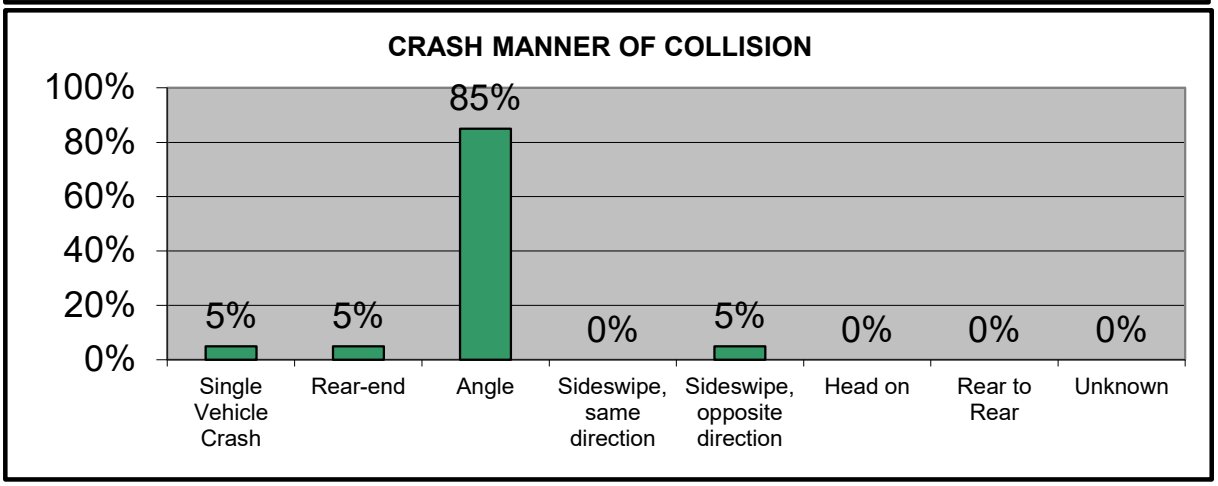
Crash Data Summary Tables and Charts

Brockton Avenue (Route 123) at Rockland Street and Elm Street, Abington



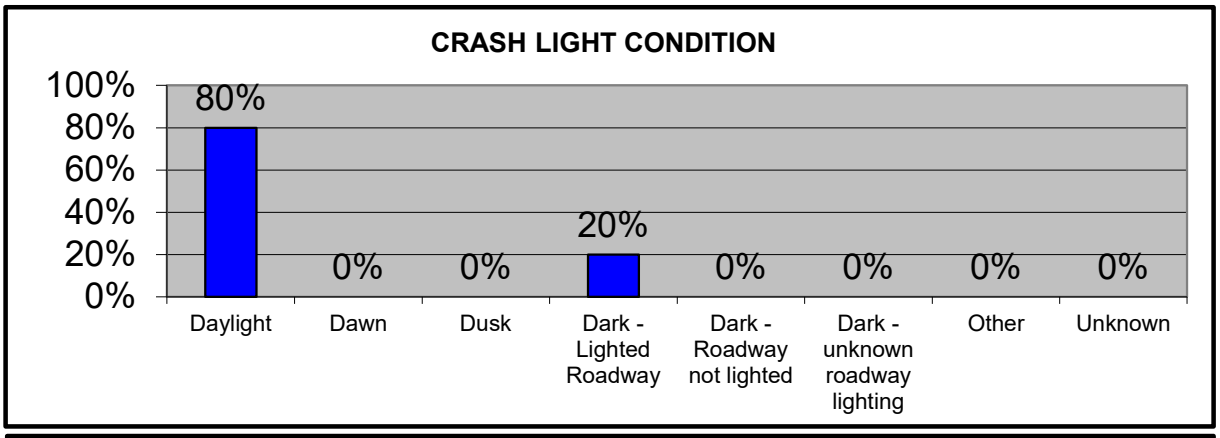


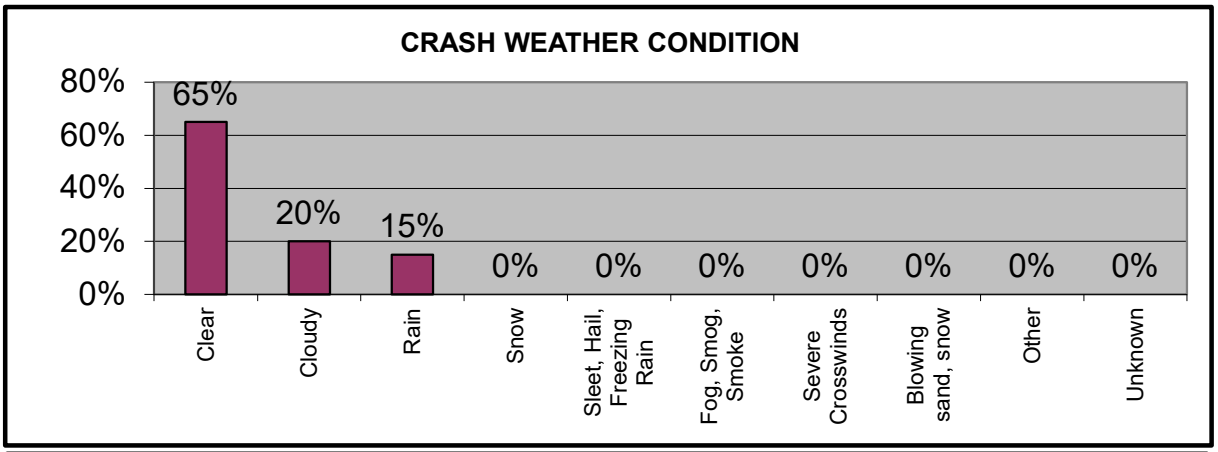


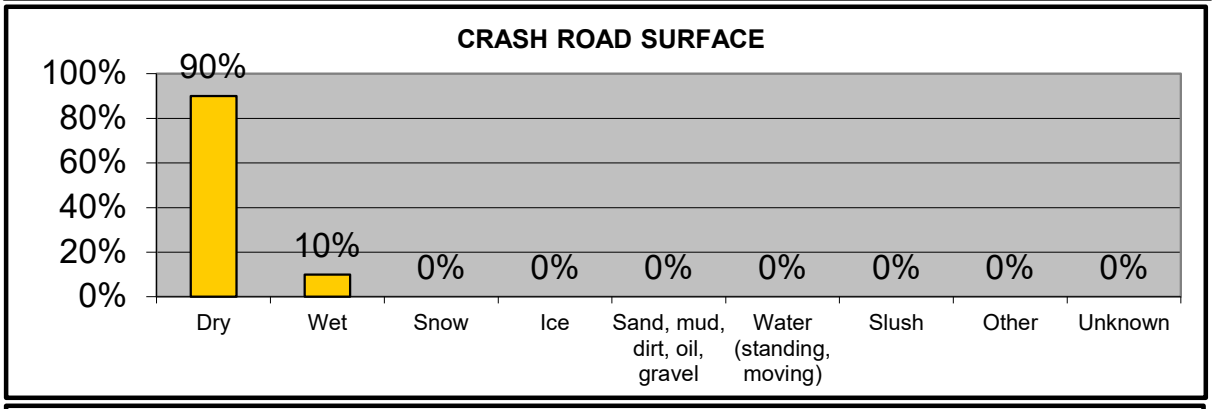


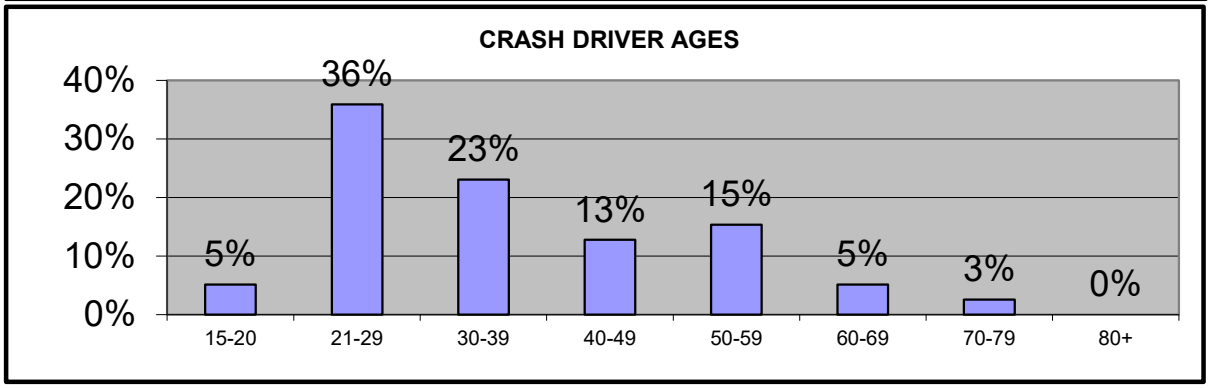
Crash Data Summary Tables and Charts

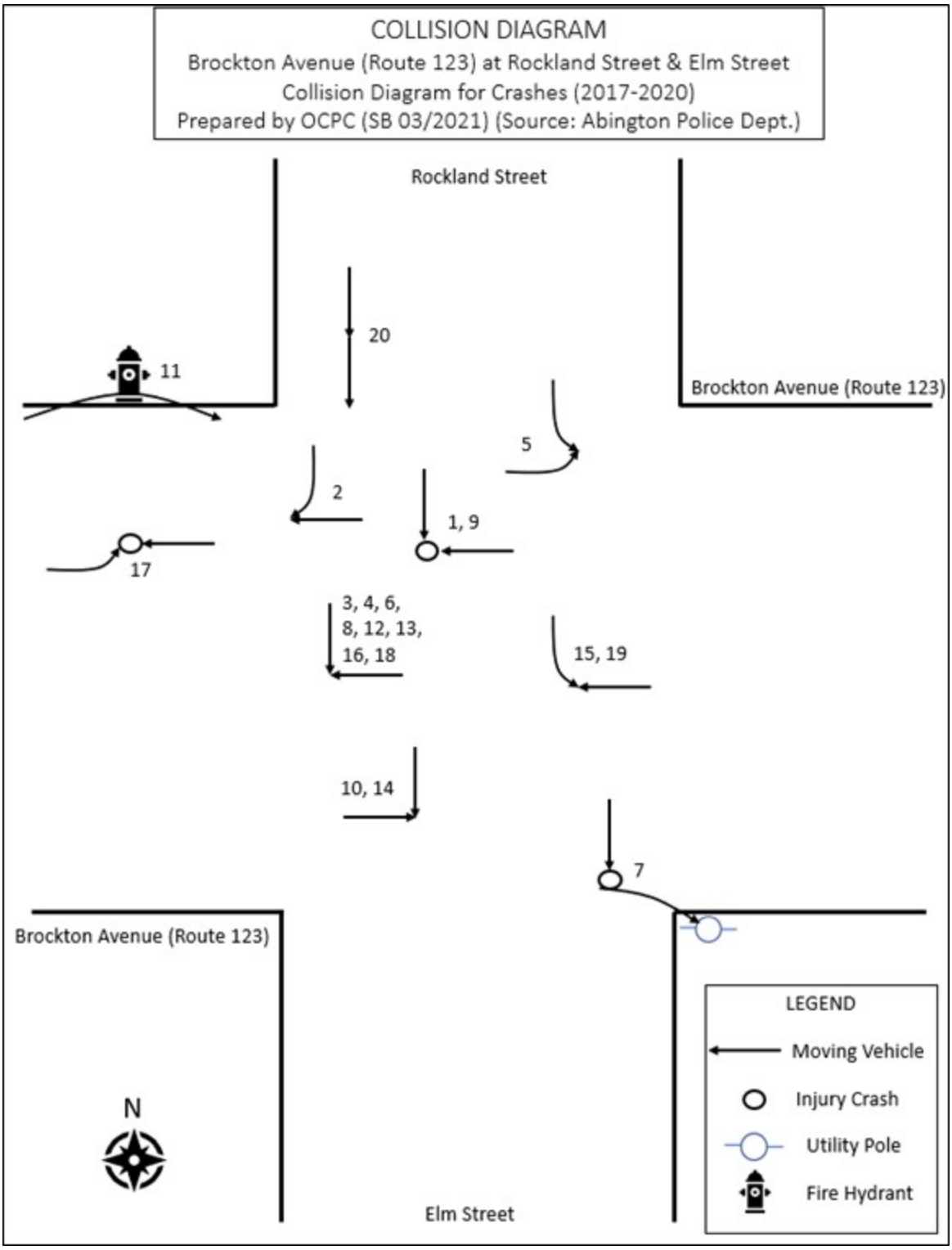
Brockton Avenue (Route 123) at Rockland Street and Elm Street, Abington










COLLISION DIAGRAM
Brockton Avenue (Route 123) at Rockland Street & Elm Street
Collision Diagram for Crashes (2017-2020)
Prepared by OCPC (SB 03/2021) (Source: Abington Police Dept.)
Rockland Street
Brockton Avenue (Route 123)
Brockton Avenue (Route 123)
Elm Street
20
11
5
2
1, 9
17
3, 4, 6,
8, 12, 13,
16, 18
15, 19
10, 14
7
N
LEGEND
Moving Vehicle
Injury Crash
Utility Pole
Fire Hydrant

Appendix D. Additional Information

Old Colony Planning Council
70 School Street
Brockton, MA 02301
(508) 583-1833
www.ocpcrpa.org

Community: Abington
Weather: Clear
Board # & Staff: TDC-8 (2) / RG
Traffic Control: Stop Sign

File Name : Brockton Avenue (Route 123) & Rockland_Elm_AM
Site Code : 1
Start Date : 10/4/2016
Page No : 1

Groups Printed- Cars - Buses - Trucks

	Rockland Street Southbound					Brockton Avenue (Route 123) Westbound					Elm Street Northbound					Brockton Avenue (Route 123) Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	8	12	9	0	29	31	160	0	0	191	0	0	0	0	0	1	162	12	0	175	395
07:15 AM	10	14	11	0	35	46	203	0	0	249	0	0	0	0	0	1	187	15	0	203	487
07:30 AM	14	12	4	0	30	40	232	1	0	273	0	0	0	0	0	0	197	10	0	207	510
07:45 AM	8	11	6	0	25	43	235	1	0	279	0	0	0	0	0	0	179	11	0	190	494
Total	40	49	30	0	119	160	830	2	0	992	0	0	0	0	0	2	725	48	0	775	1886
08:00 AM	6	11	15	0	32	34	227	3	0	264	0	0	0	0	0	1	163	9	0	173	469
08:15 AM	14	10	4	0	28	47	209	0	0	256	0	0	0	0	0	1	155	3	0	159	443
08:30 AM	6	5	6	0	17	26	186	3	0	215	0	0	0	0	0	2	144	15	0	161	393
08:45 AM	16	10	8	0	34	33	172	1	0	206	0	0	0	0	0	0	166	8	0	174	414
Total	42	36	33	0	111	140	794	7	0	941	0	0	0	0	0	4	628	35	0	667	1719
Grand Total	82	85	63	0	230	300	1624	9	0	1933	0	0	0	0	0	6	1353	83	0	1442	3605
Apprch %	35.7	37	27.4	0		15.5	84	0.5	0		0	0	0	0		0.4	93.8	5.8	0		
Total %	2.3	2.4	1.7	0	6.4	8.3	45	0.2	0	53.6	0	0	0	0	0	0.2	37.5	2.3	0	40	
Cars	77	80	59	0	216	298	1567	9	0	1874	0	0	0	0	0	5	1275	80	0	1360	3450
% Cars	93.9	94.1	93.7	0	93.9	99.3	96.5	100	0	96.9	0	0	0	0	0	83.3	94.2	96.4	0	94.3	95.7
Buses	2	0	2	0	4	1	7	0	0	8	0	0	0	0	0	0	6	0	0	6	18
% Buses	2.4	0	3.2	0	1.7	0.3	0.4	0	0	0.4	0	0	0	0	0	0	0.4	0	0	0.4	0.5
Trucks	3	5	2	0	10	1	50	0	0	51	0	0	0	0	0	1	72	3	0	76	137
% Trucks	3.7	5.9	3.2	0	4.3	0.3	3.1	0	0	2.6	0	0	0	0	0	16.7	5.3	3.6	0	5.3	3.8

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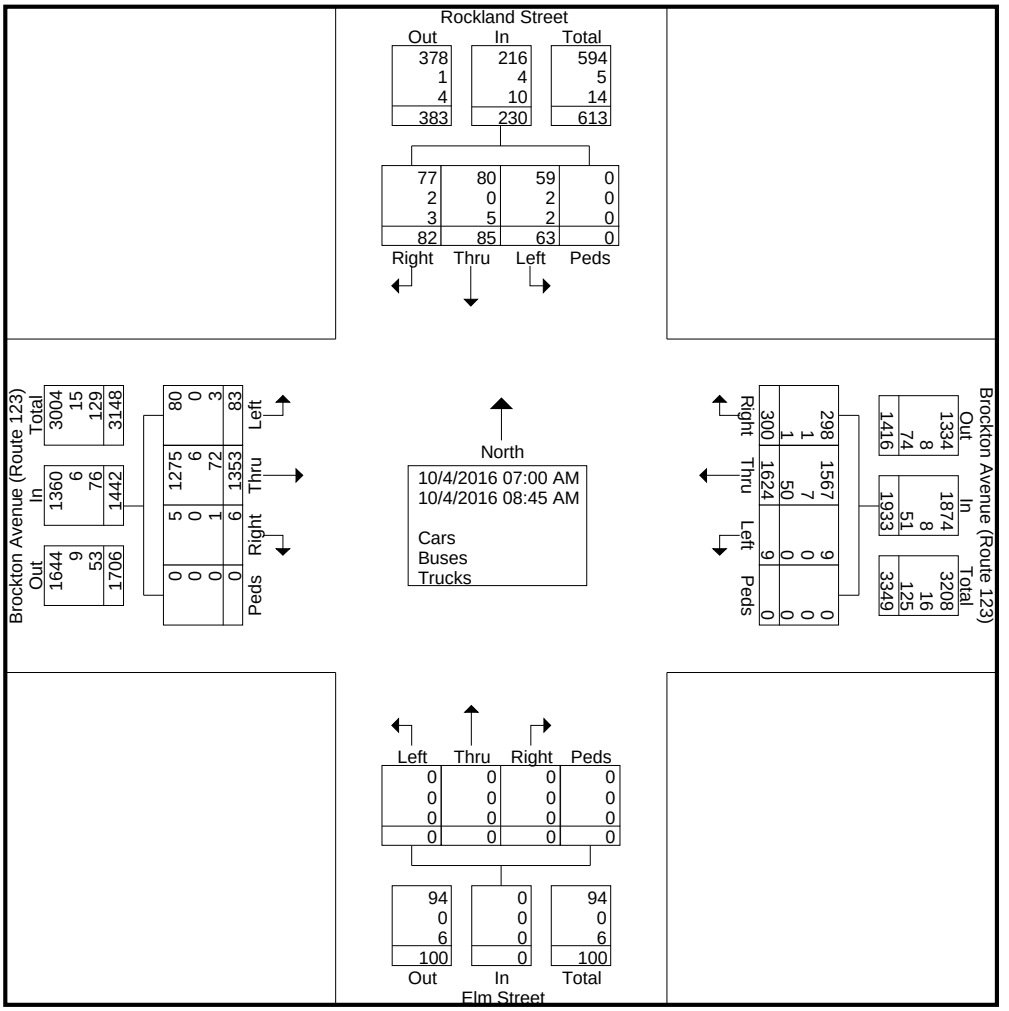

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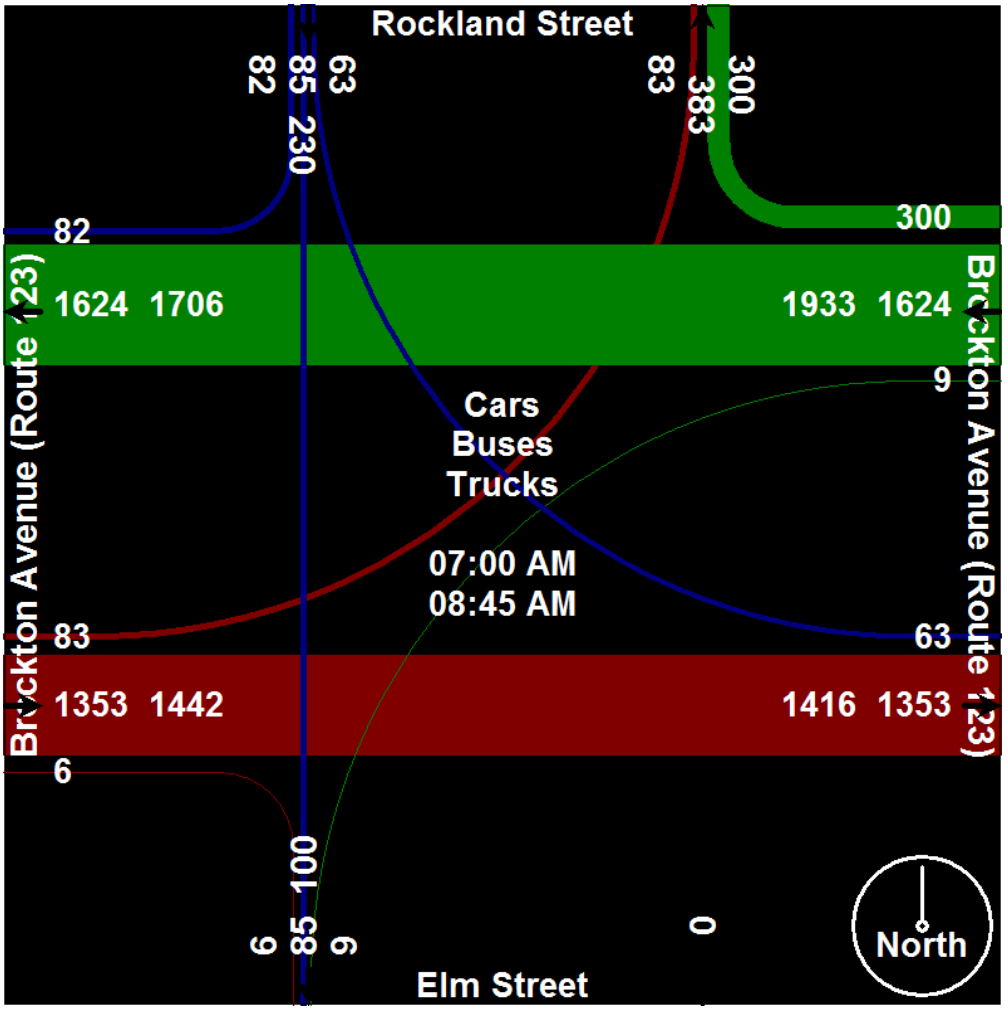

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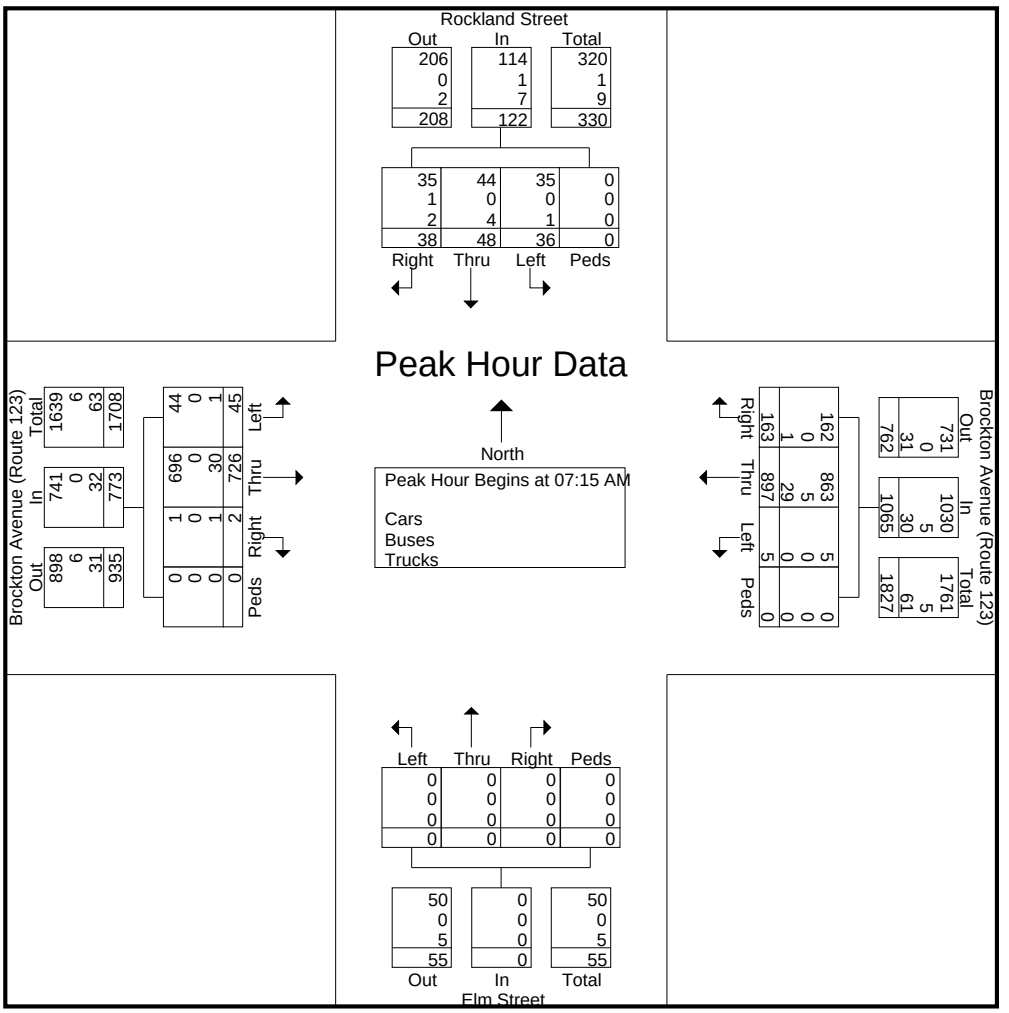
Start Date : 10/4/2016

	Rockland Street Southbound					Brockton Avenue (Route 123) Westbound					Elm Street Northbound					Brockton Avenue (Route 123) Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	10	**14**	11	0	**35**	**46**	203	0	0	249	0	0	0	0	0	**1**	187	**15**	0	203	487
07:30 AM	**14**	12	4	0	30	40	232	1	0	273	0	0	0	0	0	0	**197**	10	0	**207**	**510**
07:45 AM	8	11	6	0	25	43	**235**	1	0	**279**	0	0	0	0	0	0	179	11	0	190	494
08:00 AM	6	11	**15**	0	32	34	227	**3**	0	264	0	0	0	0	0	1	163	9	0	173	469
Total Volume	38	48	36	0	122	163	897	5	0	1065	0	0	0	0	0	2	726	45	0	773	1960
% App. Total	31.1	39.3	29.5	0		15.3	84.2	0.5	0		0	0	0	0		0.3	93.9	5.8	0		
PHF	.679	.857	.600	.000	.871	.886	.954	.417	.000	.954	.000	.000	.000	.000	.000	.500	.921	.750	.000	.934	.961
Cars	35	44	35	0	114	162	863	5	0	1030	0	0	0	0	0	1	696	44	0	741	1885
% Cars	92.1	91.7	97.2	0	93.4	99.4	96.2	100	0	96.7	0	0	0	0	0	50.0	95.9	97.8	0	95.9	96.2
Buses	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	6
% Buses	2.6	0	0	0	0.8	0	0.6	0	0	0.5	0	0	0	0	0	0	0	0	0	0	0.3
Trucks	2	4	1	0	7	1	29	0	0	30	0	0	0	0	0	1	30	1	0	32	69
% Trucks	5.3	8.3	2.8	0	5.7	0.6	3.2	0	0	2.8	0	0	0	0	0	50.0	4.1	2.2	0	4.1	3.5



Old Colony Planning Council
70 School Street
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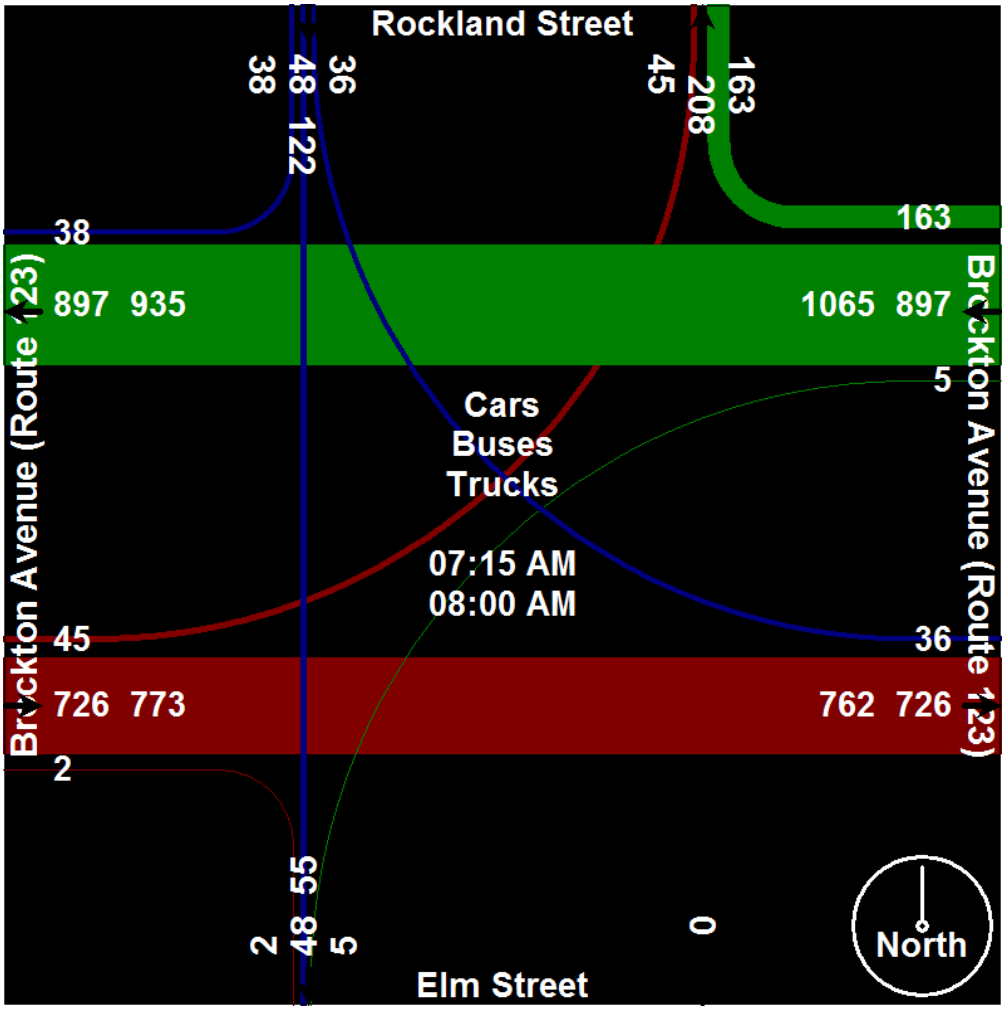
(508) 583-1833
www.ocpcrpa.org

Community: Abington
Weather: Clear
Board # & Staff: TDC-8 (2) / RG
Traffic Control: Stop Sign

File Name : Brockton Avenue (Route 123) & Rockland_Elm_AM
Site Code : 1
Start Date : 10/4/2016
Page No : 5



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Site Code : 1
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Groups Printed- Cars - Buses - Trucks

	Rockland Street Southbound					Brockton Avenue (Route 123) Westbound					Elm Street Northbound					Brockton Avenue (Route 123) Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	7	36	10	0	53	35	214	0	0	249	0	0	0	0	0	3	187	10	0	200	502
04:15 PM	17	34	8	0	59	29	171	2	0	202	0	0	0	0	0	0	184	7	0	191	452
04:30 PM	19	33	9	0	61	30	173	3	0	206	0	0	0	0	0	2	186	10	0	198	465
04:45 PM	19	43	12	0	74	24	191	1	0	216	0	0	0	0	0	4	186	8	0	198	488
Total	62	146	39	0	247	118	749	6	0	873	0	0	0	0	0	9	743	35	0	787	1907
05:00 PM	15	43	13	0	71	20	184	0	0	204	0	0	0	0	0	1	189	12	0	202	477
05:15 PM	15	35	7	0	57	35	178	2	0	215	0	0	0	0	0	0	188	9	0	197	469
05:30 PM	10	42	9	0	61	18	196	5	0	219	0	0	0	0	0	1	192	3	0	196	476
05:45 PM	17	41	16	0	74	31	204	2	0	237	0	0	0	0	0	1	177	7	0	185	496
Total	57	161	45	0	263	104	762	9	0	875	0	0	0	0	0	3	746	31	0	780	1918
Grand Total	119	307	84	0	510	222	1511	15	0	1748	0	0	0	0	0	12	1489	66	0	1567	3825
Apprch %	23.3	60.2	16.5	0		12.7	86.4	0.9	0		0	0	0	0		0.8	95	4.2	0		
Total %	3.1	8	2.2	0	13.3	5.8	39.5	0.4	0	45.7	0	0	0	0	0	0.3	38.9	1.7	0	41	
Cars	119	303	82	0	504	220	1478	15	0	1713	0	0	0	0	0	12	1471	65	0	1548	3765
% Cars	100	98.7	97.6	0	98.8	99.1	97.8	100	0	98	0	0	0	0	0	100	98.8	98.5	0	98.8	98.4
Buses	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2
% Buses	0	0	0	0	0	0.5	0	0	0	0.1	0	0	0	0	0	0	0.1	0	0	0.1	0.1
Trucks	0	4	2	0	6	1	33	0	0	34	0	0	0	0	0	0	17	1	0	18	58
% Trucks	0	1.3	2.4	0	1.2	0.5	2.2	0	0	1.9	0	0	0	0	0	0	1.1	1.5	0	1.1	1.5

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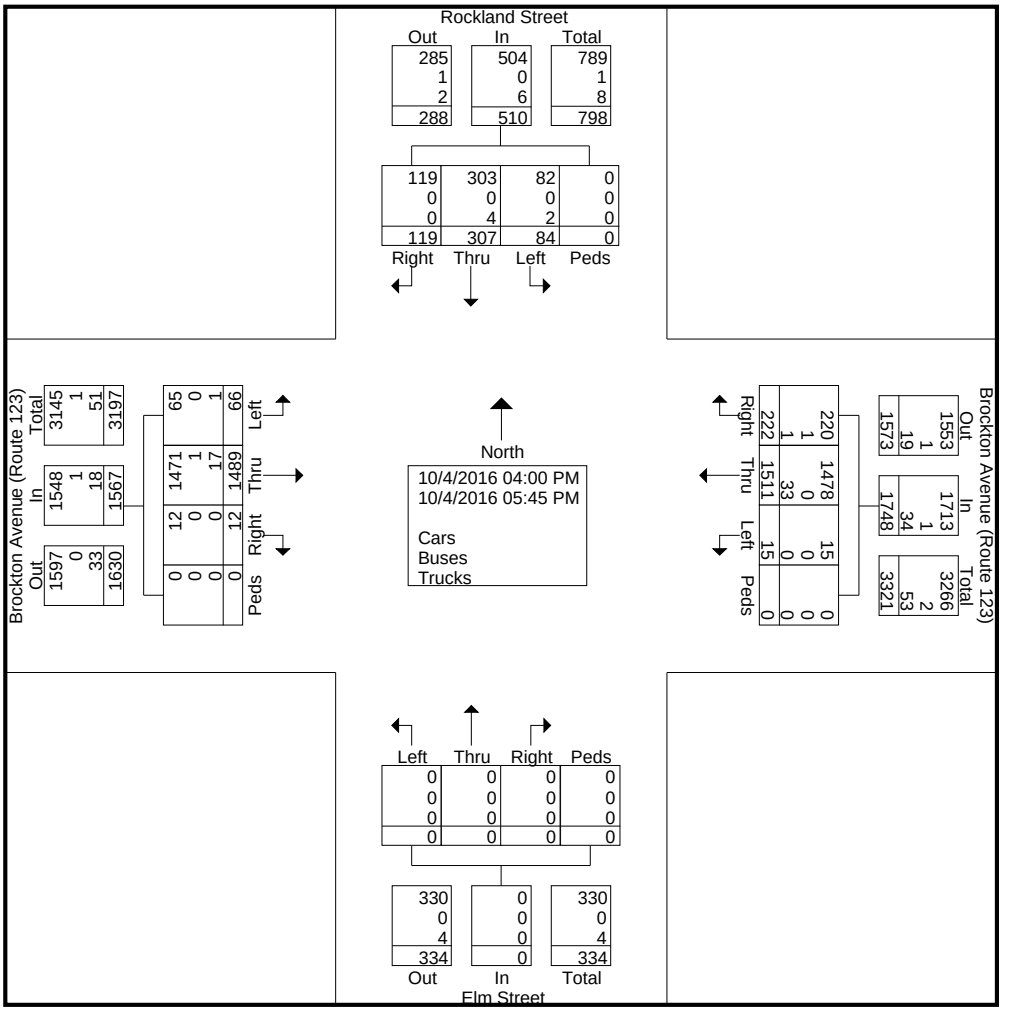

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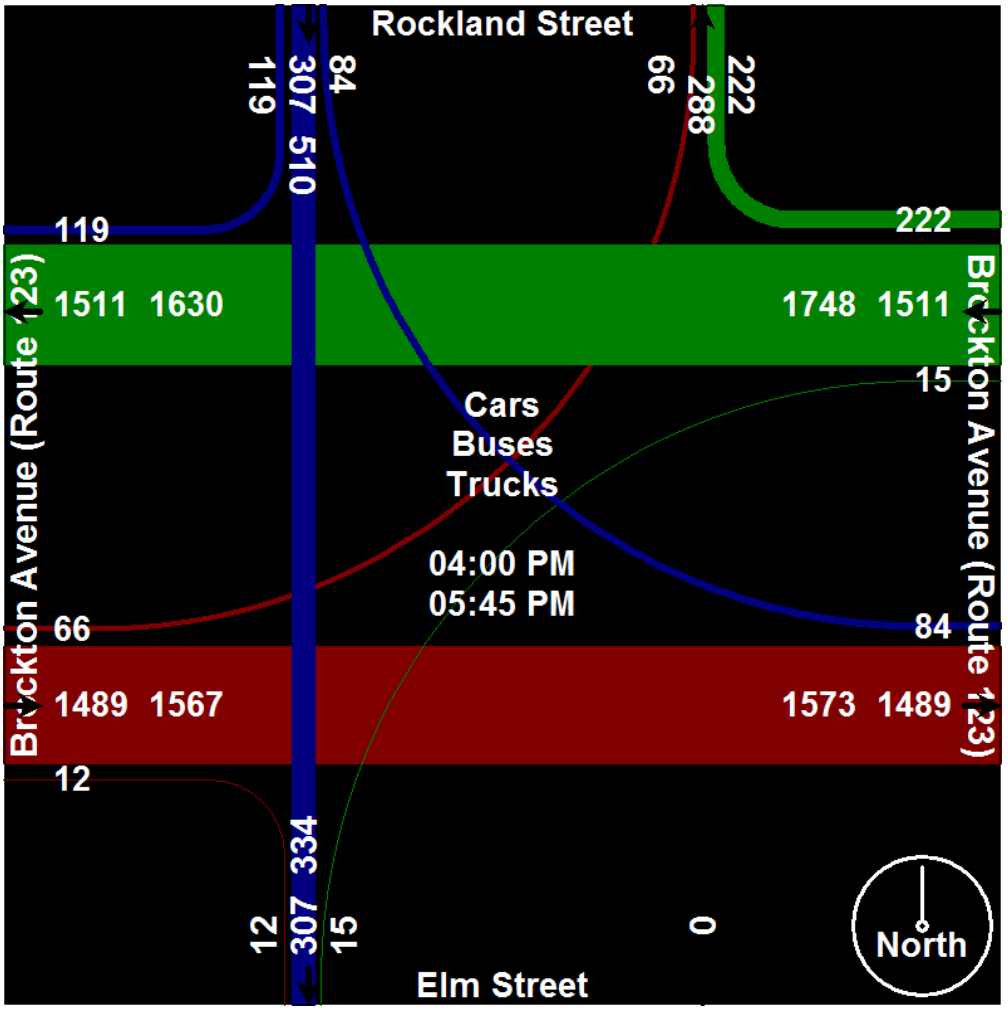

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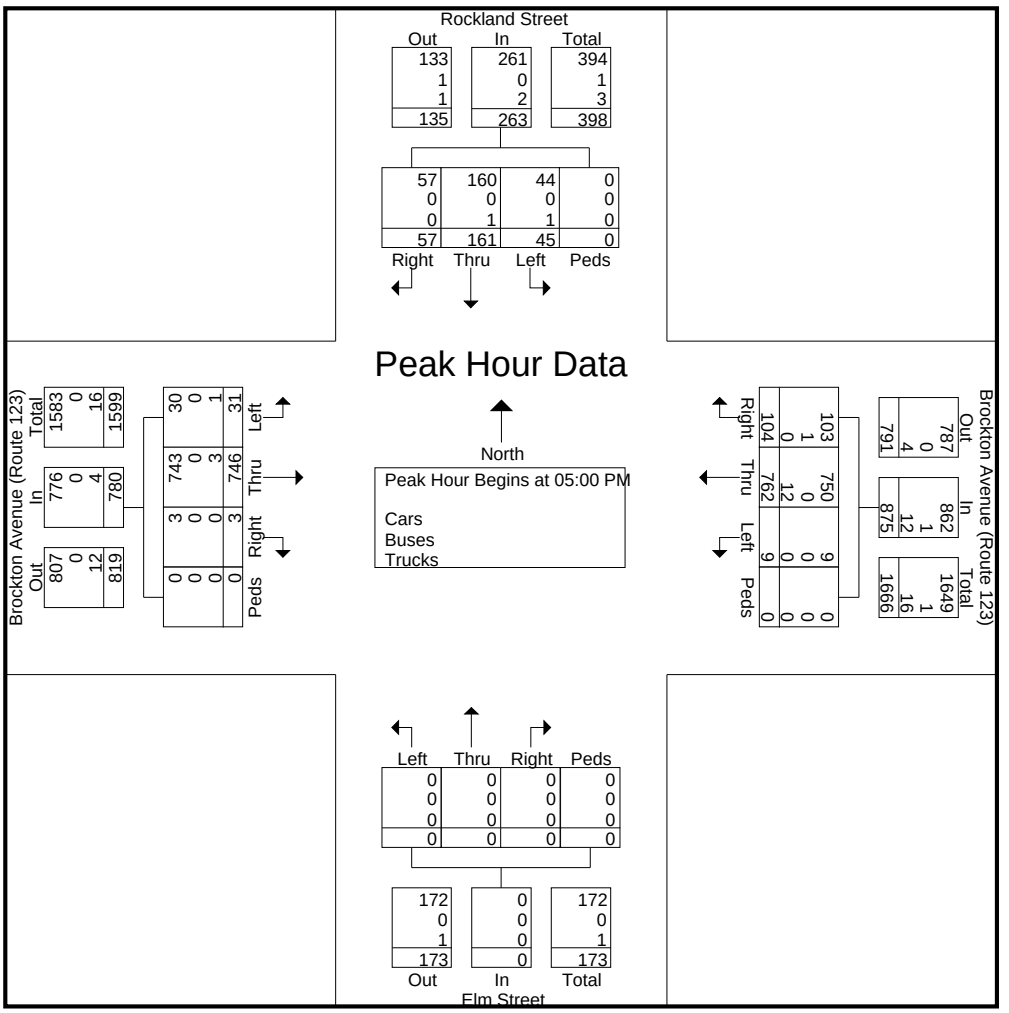
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	15	**43**	13	0	71	20	184	0	0	204	0	0	0	0	0	**1**	189	**12**	0	**202**	477
05:15 PM	15	35	7	0	57	**35**	178	2	0	215	0	0	0	0	0	0	188	9	0	197	469
05:30 PM	10	42	9	0	61	18	196	**5**	0	219	0	0	0	0	0	1	**192**	3	0	196	476
05:45 PM	**17**	41	**16**	0	**74**	31	**204**	2	0	**237**	0	0	0	0	0	1	177	7	0	185	**496**
Total Volume	57	161	45	0	263	104	762	9	0	875	0	0	0	0	0	3	746	31	0	780	1918
% App. Total	21.7	61.2	17.1	0		11.9	87.1	1	0		0	0	0	0		0.4	95.6	4	0		
PHF	.838	.936	.703	.000	.889	.743	.934	.450	.000	.923	.000	.000	.000	.000	.000	.750	.971	.646	.000	.965	.967
Cars	57	160	44	0	261	103	750	9	0	862	0	0	0	0	0	3	743	30	0	776	1899
% Cars	100	99.4	97.8	0	99.2	99.0	98.4	100	0	98.5	0	0	0	0	0	100	99.6	96.8	0	99.5	99.0
Buses	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0	0	0	0	1.0	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0.1
Trucks	0	1	1	0	2	0	12	0	0	12	0	0	0	0	0	0	3	1	0	4	18
% Trucks	0	0.6	2.2	0	0.8	0	1.6	0	0	1.4	0	0	0	0	0	0	0.4	3.2	0	0.5	0.9



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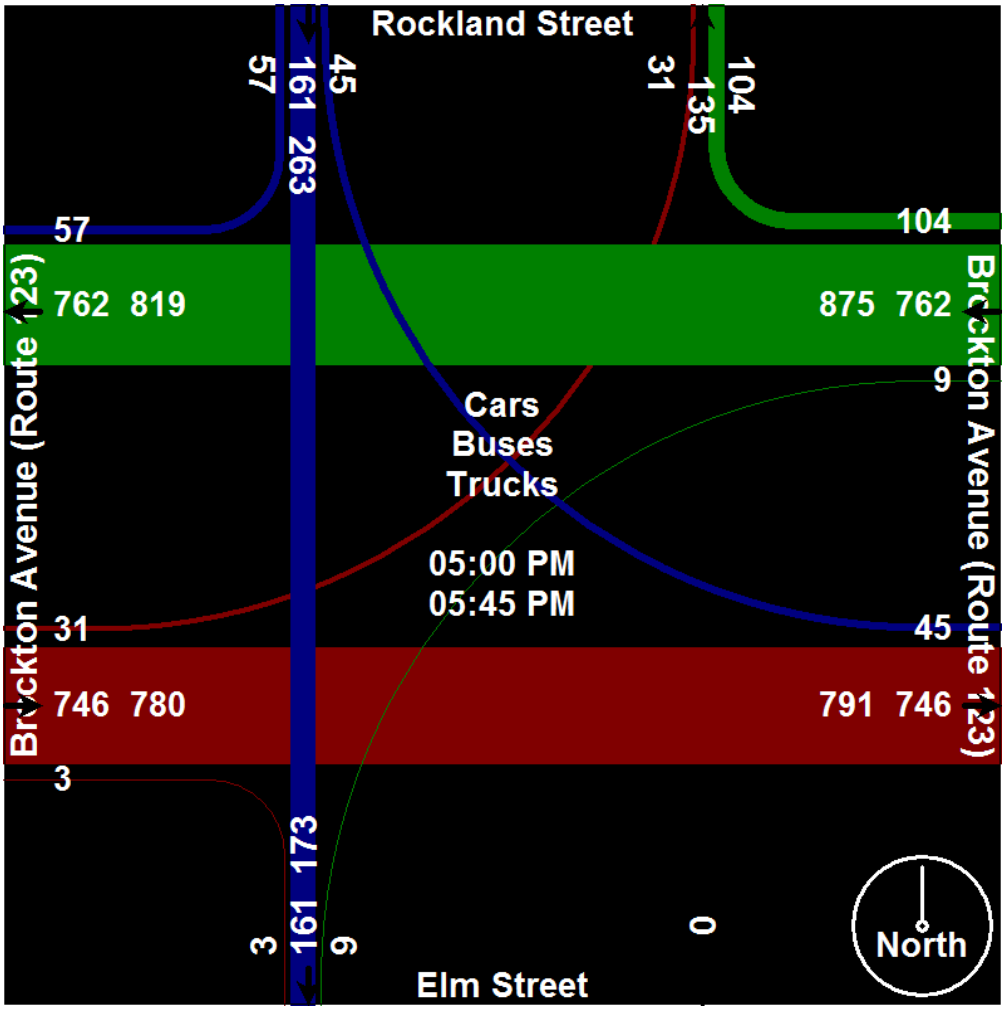

Appendix E. Road Safety Audit References

Road Safety Audit References

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