

# *Proposed Stop & Shop Redevelopment*

Tisbury,  
Massachusetts

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Prepared for **The Stop & Shop Supermarket Company**  
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# Executive Summary

Vanasse Hangen Brustlin, Inc. [VHB] has evaluated the traffic impacts associated with the proposed redevelopment and expansion of the Stop & Shop Supermarket located at the intersection of Norton Lane and Water Street in Tisbury, Massachusetts. The site is generally bounded by Norton Lane to the north, Water Street to the east, and Cromwell Lane to the west.

Under existing conditions the site is occupied by a 13,731 sf Stop & Shop Supermarket, a 4,132 sf furniture store, a 2,364 sf Chinese restaurant, and 4,856 sf of residential units. The proposed project will consist of the redevelopment and expansion of the existing Stop & Shop Supermarket and the removal of all other uses on site. Under the proposed condition, the site would be comprised of approximately 28,094 sf Stop & Shop Supermarket with 43 parking spaces to be provided below the retail area (street level) in a parking garage. Access to the site would be provided from an enter/exit driveway along Norton Lane and an egress only driveway to Water Street (right-turn only).

Based on VHB's knowledge of the area, the development of typical traffic impact and access evaluations, the anticipated level of traffic expected to be generated by the proposed development, and consultation with the Martha's Vineyard Commission (MVC), the following intersections were included in this assessment:

- Water Street at Norton Lane/Steamship Ingress Driveway - *unsignalized*
- Water Street at Municipal Parking Lot Driveway - *unsignalized*
- Water Street at Union Street - *unsignalized*
- Five Corners - Beach Road at Water Street/Lagoon Pond - *unsignalized*
- Main Street at Norton Lane - *unsignalized*
- Union Street at Main Street - *unsignalized*
- Norton Lane at Cromwell Lane - *unsignalized*
- Main Street at Beach Road - *unsignalized*
- Spring Street at Main Street - *unsignalized*

Manual turning movement counts [collecting *peak hour* data] were conducted at each of the study-area intersections during the weekday evening from 3:00 PM to 6:00 PM and during the Saturday midday peak period from 10:30 to 2:30 PM on January 18 and 19, 2013. Concurrent with the TMCs, 24-hour automatic traffic recorder (ATR) counts were conducted on Water Street.

The proposed project is expected to generate approximately 87 new vehicle trips (41 entering/46 exiting) during the weekday evening peak hour and 95 new vehicle trips (46 entering/49 exiting) during the Saturday midday peak hour.

Capacity analyses were conducted for each of the study area intersections under 2013 Existing conditions, 2015 No-Build conditions (without the proposed redevelopment), and 2015 Build conditions (with the proposed redevelopment). Based on the results of these analyses and the anticipated site-generated traffic, the proponent will implement the following measures:

- Transportation Demand Management Program
- Signage and striping improvements along Water Street
- Pedestrian enhancements adjacent to the site

Overall, VHB concludes that the proposed project will have minimal impact on the local roadway network and implementation of the above-mentioned mitigation measures will be a benefit of the project.

## Introduction

This traffic study documents the findings of the traffic evaluation conducted for the project including an assessment of existing conditions, projection of future traffic volumes without and with the proposed development, analysis of impacts of the proposed development and recommendations for improving existing capacity deficiencies as well as to offset project related traffic impacts.

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### Project Description

The project site is located at the intersection of Norton Lane and Water Street in the Town of Tisbury, Massachusetts. The site is generally bounded by Norton Lane to the north, Water Street to the east, and Cromwell Lane to the west. Figure 1 shows the site location map.

Under existing conditions the site is occupied by a 13,731 sf Stop & Shop Supermarket, a 4,132 sf furniture store, a 2,364 sf Chinese restaurant, and 4,856 sf of residential units. The proposed project will consist of the redevelopment and expansion of the existing Stop & Shop Supermarket and the removal of all other uses on site. Under the proposed condition, the site would be comprised of approximately 28,094 sf Stop & Shop Supermarket with 43 parking spaces to be provided below the retail area (street level). Access to the site would be provided from an enter/exit driveway along Norton Lane and an egress only driveway to Water Street (right-turn only).

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### Study Methodology

This traffic assessment has been conducted in three stages. The first stage involved an assessment of existing traffic conditions within the project area including an inventory of existing roadway geometry; observations of traffic flow, including daily and peak period traffic counts; and a review of vehicular crash data.

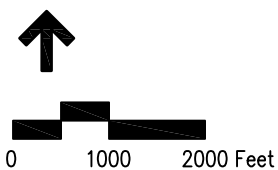


Site Location Key



Source: USGS Quadrangles

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Site Location Map  
18 Water Street  
Tisbury, Massachusetts

Figure 1





The second stage of the study established the framework for evaluating the transportation impacts of the proposed project. Specific travel demand forecasts for the project were assessed along with future traffic demands on the study area roadways due to projected background traffic growth and other proposed area development that will occur, independent of the proposed development. The year 2015, a five-year time horizon, was selected as the design year for analysis for the preparation of this traffic impact and access assessment to satisfy the *Executive Office of Environmental Affairs/Executive Office of Transportation* [EOEA/EOT] guidelines. It is anticipated that the proposed redevelopment project would begin construction in and Fall of 2013 and would be open prior to summer of 2014.

The third and final stage involved conducting traffic analyses to identify both existing and projected future roadway capacities and demands. This analysis was used as the basis for determining potential project impacts and potential mitigation measures.

## Existing Conditions

Evaluation of the transportation impacts associated with the proposed project requires a thorough understanding of the existing transportation system in the project study area. Existing transportation conditions in the study area include roadway geometry, traffic controls, daily and peak period traffic flow, and vehicular crash information data. Each of these elements is described in detail below.

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### Study Area

Based on VHB's knowledge of the area, the development of typical traffic impact and access evaluations, and the anticipated level of traffic expected to be generated by the proposed development, and consultation with the MVC (Land Use Planning Committee LUPC) the following intersections were included in this assessment:

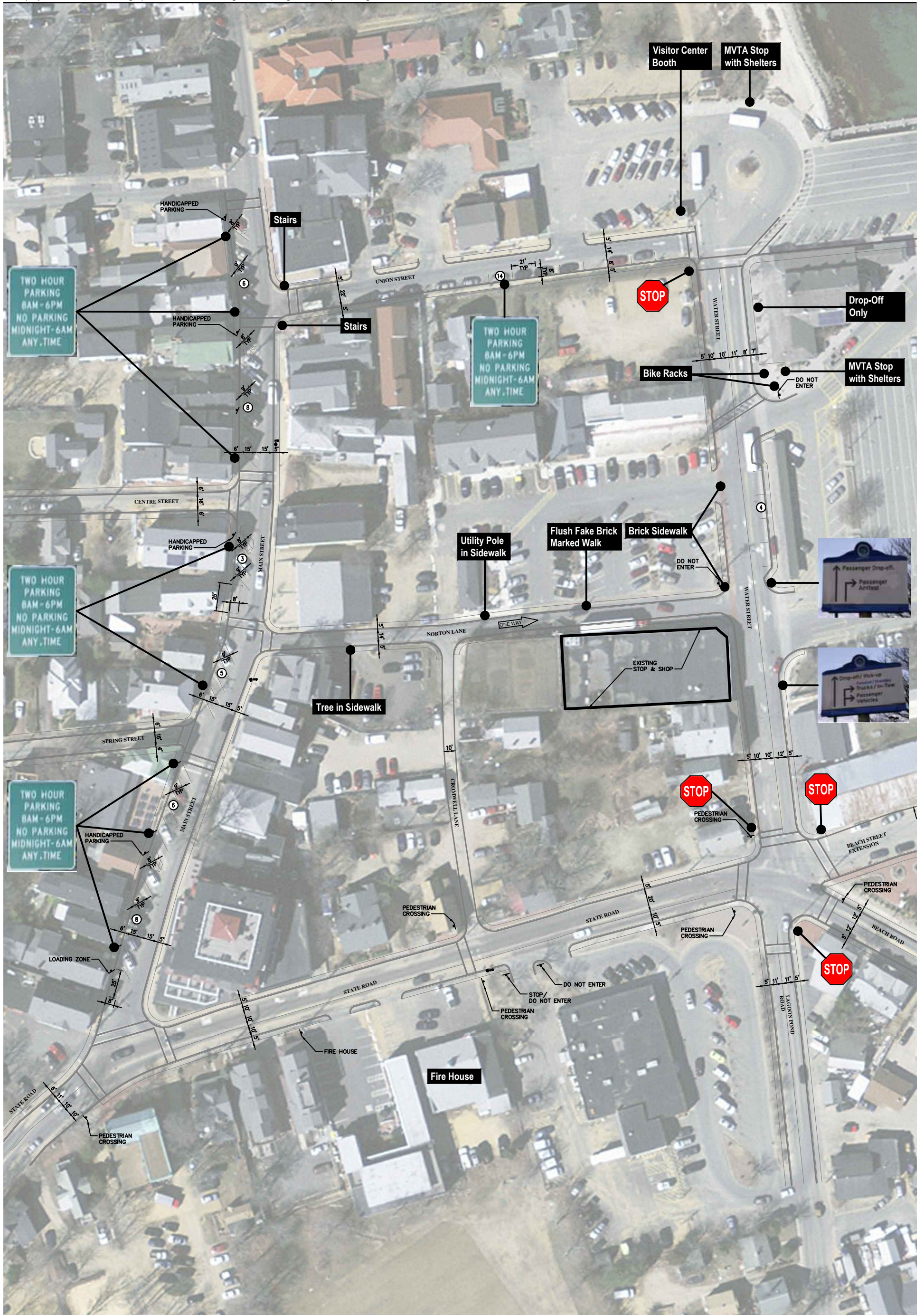
- Water Street at Norton Lane/Steamship Ingress Driveway - *unsignalized*
- Water Street at Municipal Parking Lot Driveway - *unsignalized*
- Water Street at Union Street - *unsignalized*
- Five Corners - Beach Road at Water Street/Lagoon Pond - *unsignalized*
- Main Street at Norton Lane - *unsignalized*
- Union Street at Main Street - *unsignalized*
- Norton Lane at Cromwell Lane - *unsignalized*
- Main Street at Beach Road - *unsignalized*
- Spring Street at Main Street - *unsignalized*

The existing conditions evaluation consisted of an inventory of the traffic control; roadway, driveway, and intersection geometry in the study area; the collection of daily and peak period traffic volumes; and a review of recent vehicular crash history.

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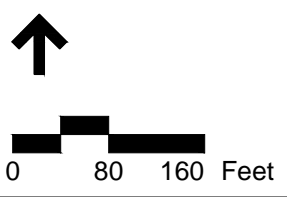
### Roadway Geometry

The major travel routes and intersections within the study area are described below. Figure 2 shows the observed existing geometry, traffic control, and pedestrian accommodations at each study-area intersection.



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Figure 2  
Existing Conditions  
Stop & Shop Expansion  
Tisbury, Massachusetts





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## Roadways

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### State Road

State Road is a two-lane, arterial roadway running generally in the east-west direction. The roadway is under MassDOT jurisdiction and has a posted speed limit of 20 mph in the vicinity of the site. The land use along State Road is a mix of single family residential and commercial.

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### Water Street

Water Street runs in the north-south direction bound by Beach Road/Lagoon Pond Road in the south and Union Street in the north. The roadway is one lane in the northbound direction and two lanes in the southbound direction as it approaches Beach Road. Water Street is under local jurisdiction with no posted speed limit within the study area. Land use consists of commercial uses including the Steams Ship Authority(SSA) Terminal, Stop & Shop and Retail and a municipal parking lot.

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### Main Street

Main Street runs in the north-south and is a one-way street in the northbound direction, away from State Road. The roadway is one lane with angled on-street parking on the western side of the street. Main Street is under local jurisdiction and is the primary “downtown” commercial area. Within the study area, the land use on Main Street is made up of all commercial and business uses. There is no posted speed limit in the study area.



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## Intersections

The following sections describe the study-area intersections in detail.

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## Water Street at Norton Lane/Steamship Ingress Driveway

Norton Lane intersects Water Street from the west and the Steamship Ingress Driveway from the east to form a four-legged unsignalized intersection. Water Street's approach from the north consists of an exclusive through lane and a shared through-right lane. From the south, the approach is comprised of a single shared through-right turn lane. Norton Lane is one-way in the eastbound direction between Main Street and Water Street. The approach to Water Street is currently consists of an exclusive left turn lane and shared through-right turn lane and is STOP controlled. The Steamship Ingress Driveway consists of a two lane ingress driveway separating temporary passenger parking from staging for vehicular ferry access. Sidewalks run along both sides of Water Street and ramp down and continue at street level at Norton Lane and the Steamship Ingress Driveway. No crosswalks exist across Water Street at the intersection. The Stop & Shop supermarket is located on the southwest corner of this intersection. Review of existing signing and striping at this intersection and along Water Street indicates that it is in moderate to poor condition.

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## Water Street at Municipal Parking Lot Driveway

The municipal parking lot driveway intersects Water Street from the west and off-set from this driveway, the Steamship Egress Driveway intersects Water Street in the same area from the east. The southbound approach of Water Street is comprised of a through lane and a shared right-through lane. The northbound approach is made up of one shared left-through lane. The municipal parking lot driveway consists of a single entry and exit lane with the exit lane consisting of a shared left-right turn lane and under STOP control. The Steamship Egress Driveway is STOP controlled and consists of one wide travel lane accommodating all movements. A crosswalk exists on the northern side of the intersection across Water Street. Sidewalks are located along both sides of Water Street and ramp down and continue at the intersections with the Municipal Parking Lot and the Steamship Egress Driveway.

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## Water Street at Union Street

Union Street intersects Water Street from the west, and the existing MVTA "loop" is located directly to the north of the intersection. Water Street's northbound approach consists of a single through travel lane. The southbound approach from the MVTA "loop" is made up of two through travel lanes. Union Street is one-way in the eastbound direction between Main Street and Water Street and is under STOP control. The approach is comprised of a shared left-right turn lane. Crosswalks exist across the approaches of Water Street and Union Street. Sidewalks are present along both sides of Water Street and Union Street. The Steamship Authority is located on the eastern side of the intersection and parking lots border the western side. There is currently drop off parking area for the SSA along Water Street on the east side as Water Street approaches Union Street.

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## Five Corners – Beach Road at Water Street/Lagoon Pond

Beach Road intersects Water Street from the north, Lagoon Pond Road from the south, Beach Street Extension from the east, and Beach Road from the southeast to form a five-legged, unsignalized intersection known as “Five Corners.” Beach Road’s eastbound approach and Beach Road’s north westbound approach both consist of a single travel lane accommodating all movements. The southbound approach of Water Street consists of an exclusive left turn lane and a shared through-right lane and is under STOP control. The westbound approach of Beach Street Extension and the northbound approach of Lagoon Pond Road are comprised of a single travel lane accommodating all movements and are under STOP control. Crosswalks are present across all approaches. Sidewalks exist on both sides of all approaches with the exception of Beach Street Extension. Land use near the intersection consists of a U.S. Post Office and other commercial uses.

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## Main Street at Norton Lane

Main Street intersects Norton Lane from the east to form a three-legged, unsignalized intersection. Main Street is one-way in the northbound direction and the northbound approach consists of a shared through-right turn lane. Norton Lane is one-way in the eastbound direction. Crosswalks are present across the northern and eastern sides of the intersection. Sidewalks are located on all sides of the intersections. Angled on-street parking is present along the western side of Main Street. Land use at the intersection is primarily local businesses.

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## Union Street at Main Street

Main Street intersects Union Street from the east to form a three-legged, unsignalized intersection. Main Street is one-way in the northbound direction and the northbound approach is comprised of a shared through-right turn lane. Union Street is one-way in the eastbound direction. Crosswalks exist across the northbound approach of Main Street and the approach of Union Street. Sidewalks exist on all sides of the intersection. Angled on-street parking is present along the western side of Main Street. Land use at the intersection is primarily local businesses.

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## Norton Lane at Cromwell Lane

Norton Lane intersects Cromwell Lane from the south and a driveway from the north forming a four-legged, unsignalized intersection. Norton Lane is one-way in the eastbound direction and the eastbound approach consists of a single travel lane accommodating all movements. Cromwell Lane's northbound approach consists of a shared through-right turn lane under STOP control. The southbound approach is comprised of a shared through-left turn lane under STOP control. No crosswalks exist at the intersection. Sidewalks are located on both sides of the eastern leg of Norton Lane. The Stop & Shop is located on the southeastern corner of the intersection and the Municipal Building is located in the northeastern corner. Other land use at the intersection is made up of residential and local business.

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## Main Street at State Road

State Road intersects Main Street from the north and a hotel parking lot from the northwest forming a four-legged, unsignalized intersection. State Road's eastbound approach consists of an exclusive left turn lane and an exclusive through travel lane. The westbound approach is comprised of an exclusive right turn lane and an exclusive through travel lane. Main Street is one-way in the northbound direction. The southeast-bound approach consists of a single travel lane accommodating all movements and is under STOP control. Sidewalks are present along all sides of the intersection. Crosswalks exist across all approaches. Land use consists of residential and business uses.

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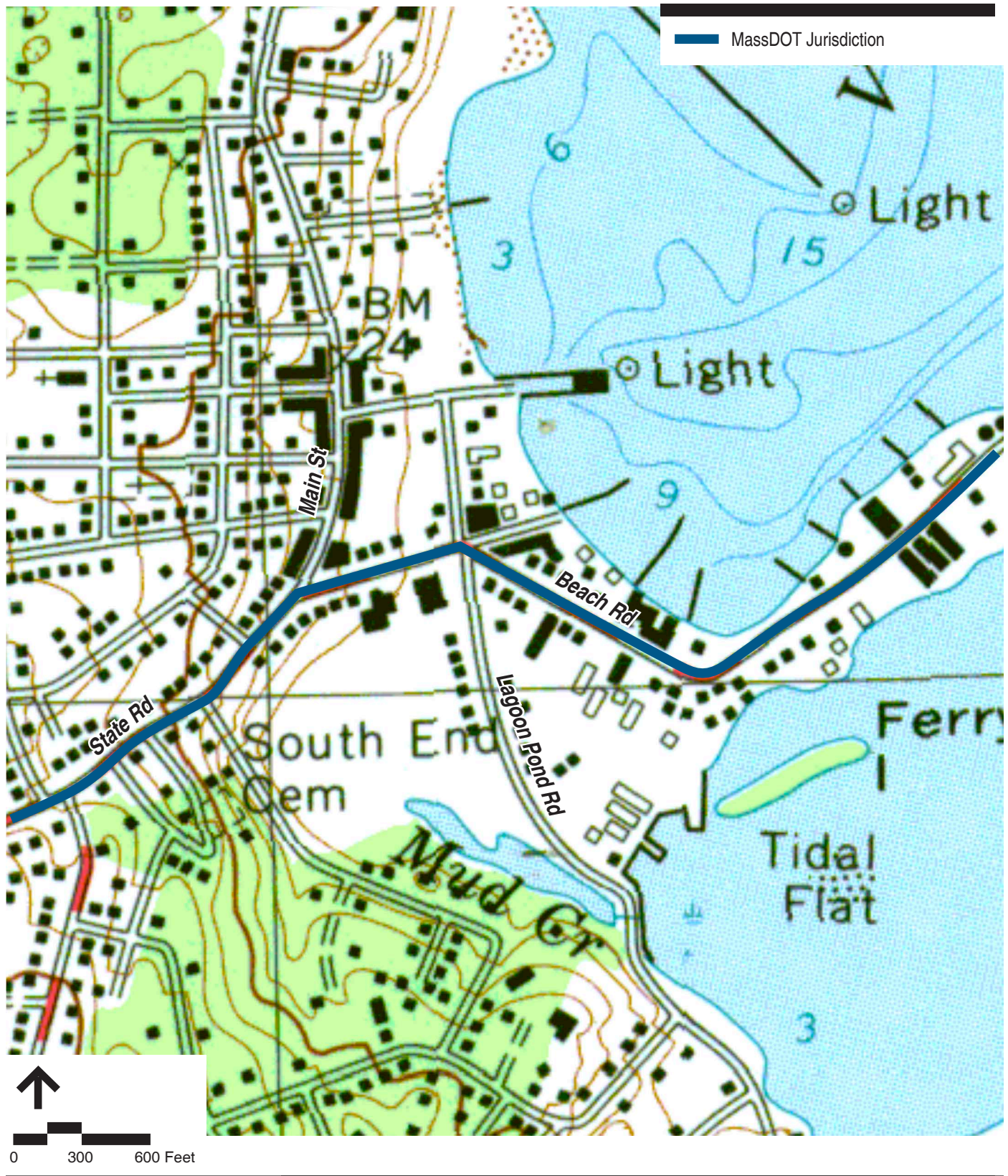
## Spring Street at Main Street

Main Street intersects Spring Street from the west forming a three-legged, unsignalized intersection. Main Street is one-way in the northbound direction and the northbound approach consists of an exclusive through travel lane. Spring Street is one-way in the eastbound direction and the eastbound approach is comprised of an exclusive left-turn lane, under STOP control. Angled on-street parking is present along the western side of Main Street. Sidewalks are located on all side of the intersection. Crosswalks are present across the eastbound and northbound approaches. Land use consists of residential and local business.

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## Roadway Jurisdiction

Roadways within the Town of Tisbury are either under the jurisdiction of the Town or under the jurisdiction of MassDOT. Within the project study area, State Road is the only roadway owned and maintained by the state. All other roadways within the project study area are under local jurisdiction or are privately maintained. The roadway jurisdiction is illustrated in Figure 3.



Vanasse Hangen Brustlin, Inc.

Roadway Jurisdiction

Figure 3

Stop & Shop Expansion  
Tisbury, Massachusetts



## Traffic Volume Data

Manual turning movement counts [collecting *peak hour* data] were conducted at each of the study-area intersections during the weekday evening from 3:00 PM to 6:00 PM, and Saturday from 10:30 AM to 2:30 PM. These counts were conducted in January 2013. The peak periods expanded beyond the typical two-hour period to capture the Steamship activity during the typical peak of shopping/commercial activity. These periods represent the most critical traffic volume conditions. The weekday evening peak period occurred 3:00 PM to 4:00 PM, and the Saturday midday peak period occurred from 11:30 AM to 12:30 PM. Concurrent with the TMCs, 48-hour automatic traffic recorder (ATR) counts were conducted. A summary of the ATR traffic data is presented in Table 1.

**Table 1**  
**Existing Traffic Volumes**

	Weekday ADT <sup>a</sup>	Weekday PM Peak Period			Saturday ADT <sup>a</sup>	Saturday Midday Peak Period		
		Volume <sup>b</sup>	K <sup>c</sup>	Dir. Dist <sup>d</sup>		Volume <sup>b</sup>	K <sup>c</sup>	Dir. Dist <sup>d</sup>
Water Street <i>North of Beach Road</i>	5,460	530	9.7%	69% SB	4,920	455	9.2%	62% SB

- a daily traffic expressed in vehicles per day
- b peak period volumes expressed in vehicles per hour
- c percent of daily traffic that occurs during the peak period
- d directional distribution of peak period traffic

As shown in Table 1, the traffic volume on Water Street at the time the counts were conducted was approximately 5,460 vehicle trips per day (vpd) on a weekday and 4,920 on a Saturday. Approximately 9.7% of the daily traffic occurred during the weekday evening peak hour and 9.2% of the daily traffic occurred during the Saturday midday peak hour. The weekday evening and Saturday peak hour volumes were 530 vehicles per hour (vph) and 455 vph, respectively.

## Seasonality of Count Data

Comparison of traffic count data with historic seasonal data available from MassDOT indicated that the January traffic counts should be adjusted upward by a factor of 1.26 to reflect average season conditions and a factor of 1.66 to reflect peak summer season conditions. Figures 4 and 5 reflect the 2013 Existing weekday evening and Saturday midday peak hour traffic volumes, respectively. The average conditions traffic volume networks and the seasonal adjustment factors from MassDOT are provided in the Appendix.

neg = Negligible



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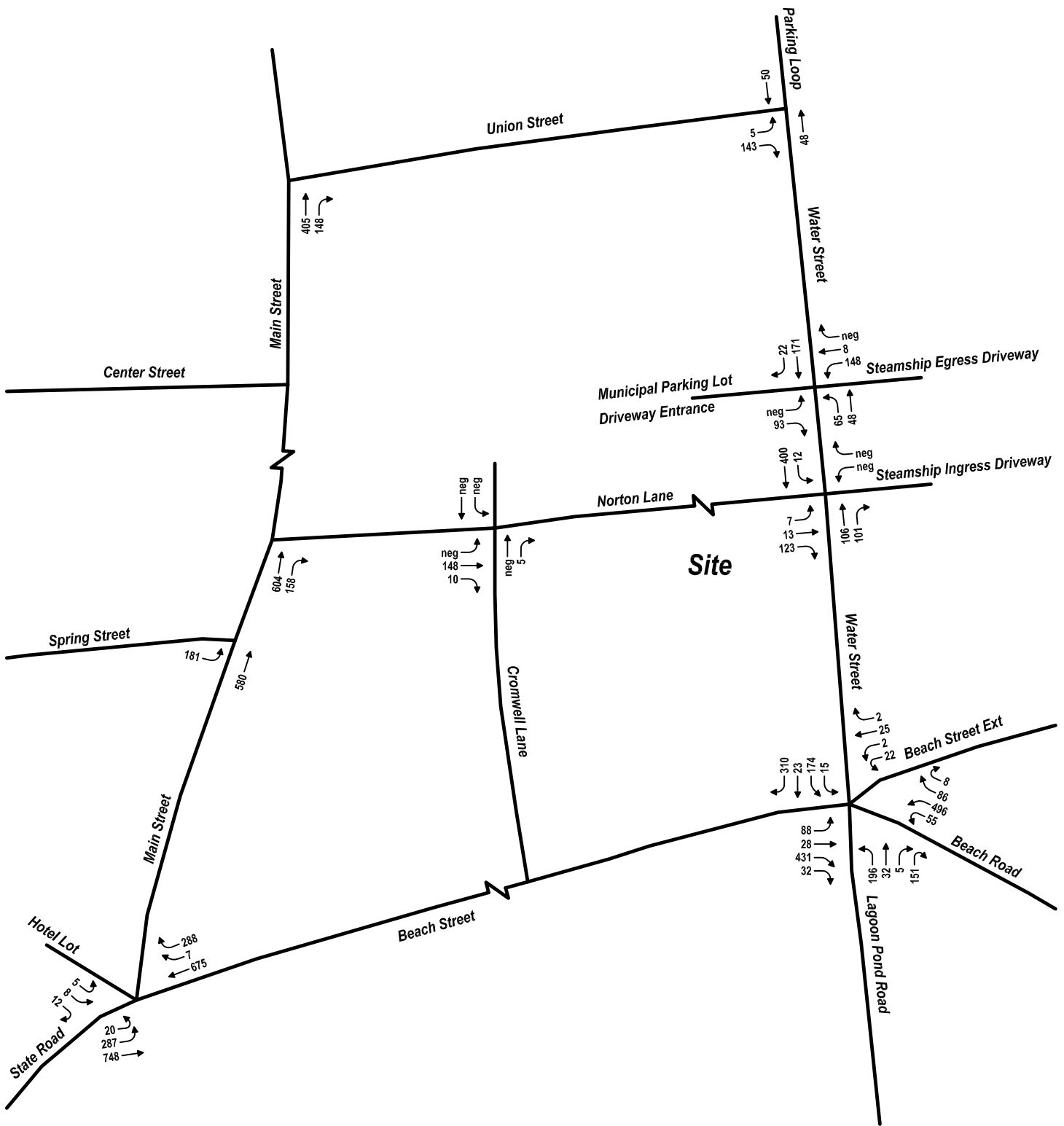
2013 Existing Conditions - Peak Season  
Weekday Evening Peak Hour  
Traffic Volumes  
Stop & Shop Redevelopment  
Tisbury (Vineyard Haven), Massachusetts

Figure 4  
February 2013



Not to Scale

neg = Negligible



**Vanasse Hangen Brustlin, Inc.**

2013 Existing Conditions - Peak Season  
Saturday Midday Peak Hour  
Traffic Volumes  
Stop & Shop Redevelopment  
Tisbury (Vineyard Haven), Massachusetts

Figure 5  
February 2013



Not to Scale

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## Public Transportation

Public transportation on island and in the vicinity of the proposed Stop & Shop Redevelopment project is robust with numerous opportunities including bus service, steamship authority ferry service to mainland, and localized shuttle bus activities. The Stop & Shop facility is located directly across Water Street from the Steamship Authority (SSA) which is the primary year round steamship terminal for island access. The following sections describe each of these existing local services.

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### Martha's Vineyard Regional Transit Authority

The Martha's Vineyard Regional Transit Authority (VTA) provides year-round public transit service to the six towns of Martha's Vineyard: Aquinnah, Chilmark, Edgartown, Oak Bluffs, Tisbury, and West Tisbury. The VTA's transportation services consist of both fixed routes and paratransit services, known as the "Lift, everyday of the year with the only exceptions being Thanksgiving and Christmas. VTA fixed route service varies throughout the year, depending on the seasonal travel demand. The VTA's peak season of operation typically runs from May to October, with thirteen routes that travel Island-wide.

There are 13, year-round, fixed-route service provided by VTA throughout the year. Routes that operate in the vicinity of the site including the following:

- Route #1 "Edgartown – Vineyard Haven Road". The Route 1 bus provides varying headways from approximately 5:30 AM to 11:30 PM.
- Route #2 "West Tisbury – Vineyard Haven via Old County Road". The Route 2 bus provides varying headways from approximately 7 AM to 8 PM.
- Route #3 "Vineyard Haven – West Tisbury via State Road". The Route 3 bus provides varying headways from approximately 7 AM to midnight.
- Route #10 "Tisbury Park and Ride". The Route #10 bus provides connection between the Steam Ship Authority (SSA) and the Park and Ride from 5:30 AM to 10 PM with varying headways.
- Route #10A "West Chop Loop". The Route 10A bus provides varying headways between 7AM and 7:30 PM.
- Route # 13 "Edgartown Oak Bluffs Vineyard Haven via Beach Roads". The Route 10 bus operates during peak season between 6 AM to 11:30 PM. Departures from each stop every 15 minutes between 10:30 AM and 6:00 PM, varies during other periods.

Figure 6 is provided to demonstrate bus routing in the immediate vicinity of the site. A full island map and specific bus route information for all island routes is provided in the Appendix.

### #1 Edgartown - Vineyard Haven Road

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

Blue shading indicates extended service: DAILY October 9 - November 24, 2012, DAILY March 29 - April 26, 2013 and FRIDAY AND SATURDAY NIGHTS ONLY November 30, 2012 - March 23, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**EDGARTOWN TO VINEYARD HAVEN**

AM	PM
Depart CHURCH ST. EDG. 6:25 6:55 7:25 7:55 8:25 8:45 9:25 9:40 10:25 11:25 12:25 1:25 1:50 2:25 2:50 3:20 3:50 4:25 4:50 5:25 5:45 6:20 7:12 8:01 8:55 9:47	
Across from HOLLY BEAR LANE 6:29 6:59 7:29 7:59 8:29 8:49 9:29 9:44 10:29 11:29 12:29 1:29 1:54 2:29 2:54 3:24 3:54 4:29 4:54 5:29 5:49 6:24 7:16 8:05 8:59 9:51	
Across from DOGGERS HOLE RD. 6:33 7:03 7:33 8:03 8:33 8:53 9:33 9:48 10:33 11:33 12:33 1:33 1:58 2:33 2:58 3:28 3:58 4:33 4:58 5:33 5:53 6:28 7:20 8:09 9:03 9:55	
SKATE PARK SHELTER 6:35 7:05 -- -- 8:05 -- -- 8:55 -- -- 9:50 -- -- 11:35 -- -- 1:35 -- -- 2:35 -- -- 3:30 -- -- 4:35 -- -- 6:30 -- -- 8:11 -- -- 9:57	
YMCA / WOODSIDE / MVCS 6:37 7:07 7:37 8:07 8:37 8:57 9:37 9:52 10:37 11:37 12:37 1:37 2:05 2:37 3:05 3:32 4:05 4:37 5:05 5:40 6:00 6:32 7:27 8:13 9:10 9:59	
THE BLINKER INTERSECTION 6:40 7:10 7:40 8:10 8:40 9:00 9:40 9:55 10:40 11:40 12:40 1:40 2:10 2:40 3:10 3:35 4:05 4:35 5:10 5:40 6:10 6:40 7:35 8:25 9:20 10:07	
HILLSIDE VILLAGE (Pull In) 6:42 7:12 7:42 8:12 8:42 9:02 9:42 9:57 10:42 11:42 12:42 1:42 2:12 2:42 3:12 3:37 4:07 4:37 5:10 5:40 6:10 6:40 7:35 8:25 9:20 10:07	
Arrive VHS SSA TERMINAL 6:46 7:16 7:46 8:16 8:46 9:06 9:46 9:59 10:46 11:46 12:46 1:46 2:16 2:46 3:16 3:41 4:11 4:41 5:11 5:40 6:10 6:40 7:35 8:25 9:20 10:07	
<b>NEXT ROUTE #2 TO ROUTE #3 TO W.T.</b> 6:52 7:22 7:52 8:22 8:52 9:10 9:50 10:00 10:50 11:50 12:50 1:50 2:10 2:40 3:10 3:35 4:05 4:35 5:10 5:40 6:10 6:40 7:35 8:25 9:20 10:07	
<b>NEXT ROUTE #10A TO WEST CHOP</b> 7:30 7:50 8:50 8:50 9:48 9:48 12:00 12:00 1:25 2:36 2:36 3:21 3:21 4:00 5:45 5:45 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --	
<b>NEXT ROUTE #13 TO OAK BLUFFS</b> 7:10 7:40 7:55 8:49 9:10 9:10 10:10 10:10 12:10 12:10 1:10 2:10 2:40 2:55 2:55 3:40 4:10 4:40 5:10 5:10 6:05 6:15 7:10 8:22 8:22 9:20 10:38	

**VINEYARD HAVEN TO EDGARTOWN**

AM	PM
Depart VHS SSA TERMINAL 6:25 6:55 7:25 7:55 8:25 8:55 9:10 9:55 10:55 11:55 12:55 1:55 2:20 2:55 3:20 3:55 4:20 4:55 5:20 5:55 6:50 7:38 8:30 9:20 10:10	
HILLSIDE VILLAGE (Pull In) 6:30 7:00 7:30 8:00 8:30 9:00 9:15 10:00 11:00 12:00 1:00 2:00 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --	
THE BLINKER INTERSECTION 6:33 7:03 7:33 8:03 8:33 9:03 9:18 10:03 11:03 12:03 1:03 2:03 2:28 3:03 3:28 4:03 4:28 5:03 5:28 6:03 6:58 7:46 8:38 9:27 10:17	
YMCA / WOODSIDE / MVCS 6:35 7:05 -- -- 8:05 -- -- 9:05 9:20 10:05 11:05 12:05 -- -- -- -- -- -- -- -- -- -- -- -- -- -- -- --	
WV HIGH SCHOOL BENCH STOP 6:34 7:04 7:34 8:04 8:34 9:04 9:17 10:07 11:07 12:07 1:07 2:07 2:29 3:07 3:29 4:07 4:29 5:07 5:29 6:07 6:59 7:50 8:39 9:31 10:18	
DOGGERS HOLE ROAD 6:40 7:10 7:40 8:10 8:40 9:10 9:28 10:13 11:13 12:13 1:13 2:13 2:35 3:13 3:35 4:13 4:35 5:13 5:35 6:13 7:05 7:56 8:45 9:37 10:24	
HOLLY BEAR LANE 6:42 7:12 7:42 8:12 8:42 9:12 9:28 10:18 11:18 12:18 1:18 2:18 2:40 3:18 3:40 4:18 4:40 5:18 5:40 6:18 7:10 8:01 8:50 9:42 10:29	
Arrive CHURCH ST. EDG. 6:46 7:16 7:46 8:16 8:46 9:16 9:33 10:28 11:28 12:28 1:28 2:28 2:50 3:28 3:50 4:28 4:50 5:28 6:00 6:18 7:10 8:01 8:50 9:42 10:29	
<b>NEXT ROUTE #6 TO MV AIRPORT</b> 7:53 7:53 7:53 8:22 8:33 8:33 9:37 10:22 10:22 12:20 3:02 3:02 3:02 4:51 4:51 4:51 4:51 5:45 5:45 -- -- -- -- -- -- -- -- -- -- -- --	
<b>NEXT ROUTE #13 TO OAK BLUFFS</b> 6:56 7:10 7:40 8:40 8:40 9:40 9:40 10:40 10:40 12:40 12:40 1:40 2:40 2:40 3:40 3:40 4:40 4:40 5:40 5:40 6:40 6:40 7:40 8:50 8:50 9:50 10:50	

NOTES: Early morning and evening trips into Hillside Village and Woodside Village are made upon request. **SB** indicates a "Same Bus" transfer between routes. **SB** indicates a "Same Bus" transfer between routes. Most Route #1 buses continue on after arrival as a Route #1 in the opposite direction. **Bold Italic** indicates next Route #13 trips that operate during the off-season shoulder periods only (check Route #13 timetable).

### #2 West Tisbury - Vineyard Haven via Old County Road and Lambert's Cove Road

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**WEST TISBURY TO VINEYARD HAVEN via OLD COUNTY & LAMBERTS COVE RD.**

AM	PM
Depart WEST TISBURY TOWN HALL 8:17 9:01 11:25 2:00 4:43 5:13	
Across from WEST TISBURY SCHOOL 8:21 9:05 11:29 2:04 4:47 5:17	
GREAT PLAINS ROAD 8:23 9:07 11:31 2:06 4:49 5:19	
Depart VHS BUSINESS DISTRICT 8:29 9:13 11:37 2:12 4:56 5:25	
Across from LAMBERT'S COVE BEACH 8:35 9:19 11:43 2:18 5:31 6:04	
JOHN HOFF ROAD 8:39 9:23 11:47 2:22 5:35 6:08	
TISBURY STATE RD. BUS. DISTRICT 8:45 9:29 11:53 2:28 5:41 6:14	
Arrive VHS SSA TERMINAL 8:49 9:33 11:57 2:32 5:45 6:18	

**VINEYARD HAVEN TO WEST TISBURY via LAMBERTS COVE ROAD & STATE ROAD**

AM	PM
Depart VHS SSA TERMINAL 7:22 -- -- 10:04 12:16 -- 2:15 4:15 --	
TISBURY STATE RD. BUS. DISTRICT 7:27 -- -- 10:09 12:21 -- 2:20 4:20 --	
Across from JOHN HOFF ROAD 7:32 -- -- 10:14 12:26 -- 2:25 4:25 --	
LAMBERT'S COVE BEACH 7:37 -- -- 10:19 12:31 -- 2:30 4:30 --	
WEST TISBURY BUSINESS DISTRICT 6:20 7:45 8:10 10:27 12:39 1:55 2:38 4:38 6:20	
POLLY HILL ARBORETUM 6:22 7:47 8:12 10:29 12:41 1:57 2:40 4:40 6:22	
Arrive WEST TISBURY TOWN HALL 6:25 -- -- 8:15 10:32 12:44 2:00 -- 4:43 6:25	

**NEXT ROUTE #4 OR ROUTE #5 UP-ISL** 6:25 6:25 6:25 6:15 10:33 12:45 2:55 2:55 6:14 6:14 6:07 6:07

**NEXT ROUTE #4 TO MV AIRPORT** 7:55 7:55 7:55 7:55 10:35 12:45 2:55 2:55 6:14 6:14 6:07 6:07

NOTES: **SB** indicates a "Same Bus" transfer between routes. Most Route #1 buses continue on after arrival as a Route #1 in the opposite direction. **Bold Italic** indicates next Route #13 trips that operate during the off-season shoulder periods only (check Route #13 timetable).

### #3 Vineyard Haven - West Tisbury via State Road and Old County Road

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**WEST TISBURY TO VINEYARD HAVEN via STATE ROAD**

AM	PM
Depart WEST TISBURY TOWN HALL 8:17 9:01 11:25 2:00 4:43 5:13	
Across from POLLY HILL ARBORETUM 8:21 9:05 11:29 2:04 4:47 5:17	
WEST TISBURY BUSINESS DISTRICT 8:29 9:13 11:37 2:12 4:56 5:25	
Across from LAMBERT'S COVE BEACH 8:35 9:19 11:43 2:18 5:31 6:04	
JOHN HOFF ROAD 8:39 9:23 11:47 2:22 5:35 6:08	
TISBURY STATE RD. BUS. DISTRICT 8:45 9:29 11:53 2:28 5:41 6:14	
Arrive VHS SSA TERMINAL 8:49 9:33 11:57 2:32 5:45 6:18	

**VINEYARD HAVEN TO WEST TISBURY via STATE ROAD and OLD COUNTY ROAD**

AM	PM
Depart VHS SSA TERMINAL 6:08 -- -- 7:55 9:09 9:38 10:08 11:00 1:40 -- 3:36 4:49 5:18	
TISBURY STATE RD. BUS. DISTRICT 6:11 6:43 7:14 8:43 10:13 11:05 1:45 -- 3:41 4:54 5:21	
Across from STONEY HILL ROAD 6:15 -- -- 8:04 9:18 9:47 10:17 11:09 1:49 -- 3:45 4:58 5:25	
Arrive VHS BUSINESS DISTRICT 6:20 -- -- 8:09 9:23 9:52 10:22 11:14 1:54 -- 3:50 5:03 5:30	
Depart WT BUSINESS DISTRICT 7:45 -- -- 8:24 -- -- 10:23 11:15 -- 2:38 3:51 5:04	
Across from GREAT PLAINS ROAD 7:48 -- -- 9:27 -- -- 10:26 11:18 -- 2:41 3:54 5:07	
WT ELEMENTARY SCHOOL 7:51 -- -- 9:30 -- -- 10:29 11:21 -- 2:44 3:57 5:10	
Arrive WEST TISBURY TOWN HALL 7:55 -- -- 9:34 -- -- 10:33 11:25 -- 2:48 4:01 5:14	

**NEXT ROUTE #2 TO WEST TISBURY** 6:00 6:00 6:00 6:10 10:27 1:58 6:00

**NEXT ROUTE #4 OR ROUTE #5 UP-ISL** 6:15 6:15 6:15 6:25 10:30 12:45 2:55 2:55 6:14 6:14 6:07 6:07

**NEXT ROUTE #4 TO MV AIRPORT** 7:55 7:55 7:55 7:55 10:35 12:45 2:55 2:55 6:14 6:14 6:07 6:07

NOTES: **SB** indicates a "Same Bus" transfer between routes. **Bold Italic** indicates next Route #13 trips that operate during the off-season shoulder periods only (check Route #13 timetable).

### #10A West Chop Loop

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**DEPART VHS SSA TERMINAL**

AM	PM
7:30 8:50 9:49 12:00 1:25 2:36 3:21 4:00 5:50	
TISBURY PUBLIC LIBRARY 7:33 8:53 9:52 12:03 1:28 2:39 3:24 4:03 5:53	
THORNCROFT INN 7:34 8:54 9:53 12:04 1:29 2:40 3:25 4:04 5:54	
WEST CHOP LIGHTHOUSE 7:36 8:56 9:55 12:06 1:31 2:42 3:27 4:06 5:56	
WEST CHOP TENNIS CLUB 7:37 8:57 9:56 12:07 1:32 2:43 3:28 4:07 5:57	
TASHMOOD WOODS 7:38 8:58 9:57 12:09 1:34 2:45 3:30 4:09 5:59	
TISBURY TOWN HALL 7:41 9:01 10:00 12:11 1:36 2:47 3:32 4:11 6:01	
ARRIVE VHS SSA TERMINAL 7:45 9:05 10:04 12:15 1:40 2:51 3:36 4:15 6:05	

**NEXT ROUTE #1 TO EDGARTOWN** 7:55 9:10 10:55 12:55 1:55 2:55 3:55 4:20 6:50

**NEXT ROUTE #8 OR ROUTE #3 TO W.T.** 7:55 9:00 10:00 12:00 1:40 2:40 3:30 4:10 6:50

**NEXT ROUTE #13 TO OAK BLUFFS** 7:55 9:10 10:10 12:10 1:40 2:40 3:30 4:10 6:50

NOTES: **SB** indicates a "Same Bus" transfer between routes. **Bold Italic** indicates next Route #13 trips that operate during the off-season shoulder periods only.

### #13 Edgartown - Oak Bluffs - Vineyard Haven via Beach Roads

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

Yellow shading and bold italics indicate trips that operate DAILY October 9 - November 24, 2012 and March 29 - April 26, 2013 ONLY

Blue shading indicates extended service: DAILY October 9 - November 24, 2012, DAILY March 29 - April 26, 2013 and FRIDAY AND SATURDAY NIGHTS ONLY November 30, 2012 - March 23, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**EDGARTOWN TO OAK BLUFFS TO VINEYARD HAVEN**

AM	PM
Depart CHURCH ST. EDGARTOWN 6:40 6:58 7:10 7:40 8:10 8:40 9:10 9:40 10:10 10:40 11:10 11:40 12:10 12:40 -- 1:10 1:40 2:10 2:40 -- 3:10 3:40 4:10 4:34 5:40 6:40 7:40 8:50 9:50	
Depart OAK BLUFFS SSA TERMINAL 6:54 7:10 7:24 7:54 8:24 8:54 9:24 9:54 10:24 10:54 11:24 11:54 12:24 12:54 1:10 1:24 1:54 2:24 2:54 3:09 3:24 3:54 4:24 4:45 5:54 6:54 7:55 9:50 10:08	
MARTHA'S VINEYARD HOSPITAL -- -- -- 7:57 -- -- -- 9:57 -- -- -- 11:57 -- -- -- 1:57 -- -- -- 3:57 -- -- -- 5:57 -- -- -- 7:57 -- -- -- 9:57	
Arrive VINEYARD HAVEN SSA TERMINAL 7:06 7:22 7:36 8:06 8:36 9:06 9:36 10:06 10:36 11:06 11:36 12:06 12:36 1:06 1:22 1:36 2:06 2:36 3:06 3:21 3:36 4:06 4:26 4:57 6:06 7:06 8:07 9:17 10:17	

**NEXT ROUTE #1 TO EDGARTOWN** 7:25 7:25 7:55 8:25 8:55 9:10 9:55 10:55 11:55 12:55 1:55 1:55 2:20 2:55 3:20 3:55 4:20 4:50 5:50 7:38 8:30 9:20

**NEXT ROUTE #8 OR ROUTE #3 TO W.T.** 7:25 7:25 7:55 8:00 9:00 9:00 9:30 10:00 11:00 11:55 11:55 12:55 1:55 1:55 2:20 2:55 3:20 3:55 4:20 4:50 5:50 7:38 8:30 9:20

**NEXT ROUTE #10A TO WEST CHOP** 7:30 7:30 8:50 8:50 9:40 9:40 12:00 12:00 1:25 1:25 2:25 2:25 3:36 3:36 4:21 4:21 5:10 5:10 6:05 6:05 7:10 8:22 8:22 9:20 10:38

**VINEYARD HAVEN TO OAK BLUFFS TO EDGARTOWN**

AM	PM
Depart VHS SSA TERMINAL 7:10 -- -- 7:40 7:55 8:10 8:40 9:10 9:40 10:10 10:40 11:10 11:40 12:10 12:40 1:10 1:40 2:10 2:40 2:55 3:10 3:40 4:10 4:40 5:10 6:05 6:15 7:10 8:22 9:20 10:38	
MARTHA'S VINEYARD HOSPITAL -- -- -- 7:40 7:55 8:10 8:40 9:10 9:40 10:10 10:40 11:10 11:40 12:10 12:40 1:10 1:40 2:10 2:40 2:55 3:10 3:40 4:10 4:40 5:10 6:05 6:15 7:10 8:22 9:20 10:38	
Depart OCEAN PARK, OAK BLUFFS 7:22 7:38 7:55 8:07 8:22 8:55 9:22 9:55 10:22 10:55 11:22 11:55 12:22 12:55 1:22 1:55 2:22 2:55 3:09 3:24 3:54 4:24 4:45 5:54 6:54 7:55 9:50 10:08	
Arrive CHURCH ST. EDGARTOWN 7:34 7:50 8:07 8:19 8:34 8:07 9:34 10:07 10:34 11:07 11:34 12:07 12:34 1:07 1:34 2:07 2:34 2:57 3:10 3:34 4:07 4:34 4:57 6:06 7:06 8:07 9:17 10:17	

**NEXT ROUTE #1 TO VINEYARD HAVEN** 7:55 7:55 8:25 8:25 8:45 9:25 9:40 10:35 11:35 11:35 12:25 12:25 1:25 1:25 1:50 2:25 2:50 3:20 -- 3:50 4:25 4:50 5:25 5:45 -- 7:12 8:01 8:55 9:47 --

**NEXT ROUTE #8 TO WEST TISBURY** 7:53 7:53 8:22 8:22 8:38 9:33 10:22 10:22 12:20 12:20 1:20 1:20 1:50 3:02 3:02 3:02 4:51 -- 4:51 4:51 4:51 5:45 5:45 -- -- -- -- -- -- -- -- -- -- -- --

NOTES: **SB** indicates a "Same Bus" transfer between routes. Most Route #13 buses continue on after arrival as a Route #13 in the opposite direction.

### #7 Oak Bluffs - Airport via County Road / Barnes Road

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**INBOUND TO OAK BLUFFS**

AM	PM
Depart MV AIRPORT 7:33 8:33 10:44 -- -- --	
WOODSIDE VILLAGE / MVCS -- -- -- 12:51 3:28 4:08	
THE BLINKER INTERSECTION 7:38 8:38 10:49 12:56 3:32 4:12	
POND VIEW DRIVE 7:40 8:40 10:51 12:57 3:34 4:14	
OB FIRE STATION INTERSECTION 7:42 8:42 10:53 12:59 3:36 4:16	
VINEYARD AVENUE 7:43 8:43 10:54 1:00 3:37 4:17	
OAK BLUFFS LIBRARY / TOWN HALL 7:44 8:44 10:55 1:01 3:38 4:18	
Arrive OCEAN PARK 7:48 8:48 10:59 1:05 3:42 4:22	

**NEXT ROUTE #13 TO VINEYARD HAVEN** 7:54 8:54 11:24 11:54 1:00 3:54 4:24 4:40

**NEXT ROUTE #13 TO EDGARTOWN** 7:59 8:59 11:29 11:59 1:05 3:59 4:29 4:45

**OUTBOUND TO MV AIRPORT**

AM	PM
Depart OCEAN PARK 9:00 10:14 12:35 3:12 3:55 4:40 5:22	
OCEAN AVE. & HEALEY WAY 9:02 10:16 12:37 3:14 3:57 4:42 5:24	
NIANTIC PARK 9:04 10:18 12:39 3:16 3:59 4:44 5:26	
OB FIRE STATION INTERSECTION 9:08 10:22 12:43 3:20 4:03 4:48 5:30	
TOWER RIDGE ROAD 9:09 10:23 12:44 3:21 4:04 4:49 5:31	
Arrive YMCA 9:13 10:27 12:48 3:25 4:08 4:53 5:35	
Depart YMCA 9:14 10:28 -- -- -- 4:54 5:36	
WOODSIDE VILLAGE / MVCS 9:14 10:28 -- -- -- 4:55 5:37	
THE BLINKER INTERSECTION 9:17 10:31 -- -- -- 4:57 5:39	
AIRPORT BUSINESS PARK 9:19 10:33 -- -- -- 4:59 5:41	
Arrive MV AIRPORT 9:22 10:36 -- -- -- 5:02 5:44	

**NEXT ROUTE #6 TO W. TISBURY** 12:33 12:33 -- -- -- 5:02 5:50

**NEXT ROUTE #6 TO EDGARTOWN** 9:25 9:25 -- -- -- 5:05 5:53

NOTES: **SB** indicates a "Same Bus" transfer between routes. **Bold Italic** indicates next Route #13 trips that operate during the off-season shoulder periods.

### #9 Oak Bluffs - Hospital - Airport via Barnes / County Road

OCTOBER 9, 2012 THROUGH APRIL 26, 2013

White shading indicates trips that do NOT run: SUNDAYS AND HOLIDAYS December 2, 2012 - March 24, 2013

**INBOUND TO OAK BLUFFS**

AM	PM
Depart MV AIRPORT 7:12 9:45 12:05 2:44 3:28 4:12 4:55	
Across from AIRPORT BUS. PARK 7:15 9:48 12:08 2:47 3:29 4:15 4:58	
THE BLINKER INTERSECTION 7:17 9:50 12:10 2:49 3:31 4:17 5:00	
YMCA / WOODSIDE / MVCS 7:19 9:52 12:12 2:51 3:33 4:19 5:05	
WV HIGH SCHOOL BENCH STOP 7:21 9:54 12:14 2:53 3:35 4:21 5:07	
Across from TOWER RIDGE ROAD 7:25 9:58 12:18 2:57 3:39 4:25 5:11	
OB FIRE STATION INTERSECTION 7:27 10:00 12:20 2:59 3:41 4:27 5:13	
VINEYARD AVENUE 7:28 10:01 12:21 3:00 3:42 4:28 5:14	
MARTHA'S VINEYARD HOSPITAL 7:	

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## Steam Ship Authority

The Steams Ship Authority (SSA) runs vehicle and passenger Ferry Service between Martha's Vineyard year round. The primary SSA terminal for the island is directly across Water Street from the proposed redevelopment site. In general transportation between Martha's Vineyard and the mainland is provided daily by the SSA between the hours of 6AM and 10:30PM with normal headways of approximately an hour to an hour an hour and fifteen minutes.

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## Taxi Activity

Taxi activity is commonplace on the Vineyard with numerous carriers that frequent the ferry terminals, the airport, and downtown areas. In the vicinity of the site, taxi presence is provided at the SSA terminal during ferry arrival and departure periods.

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## Pedestrian and Bicycle Infrastructure

The existing bike network on Martha's Vineyard consists of a combination of on-street and off-street (bike path) facilities. In the vicinity of the site, the bicycle network is primarily on street. There is currently an initiative to improve the bicycle and pedestrian network between the Vineyard Haven SSA Facility and State Road by possibly improving/modifying Cromwell Lane to be more pedestrian and bicycle focused. This initiative effort is in the early stages of planning but since Cromwell Lane is located immediately adjacent to the project site, the Proponent will work with the Town and the MVC on this initiative as it is pushed forward. A map of all designated bicycle facilities on Martha's Vineyard is provided in the Appendix of this document.

In addition, in the spring of 2009 the MVC initiated a Pre-Feasibility Study of the Extension of the Martha's Vineyard Network of Shared-Use Paths (SUP). This study was completed by GPI, Inc. Preliminary evaluation of possible expansion of facilities along Beach Road between Lagoon Pond Road and Beach Road from Saltwater Restaurant to Five Corners intersection was considered and several alternatives were considered. In addition, the potential connection between, Norton Lane and War Veterans Memorial Park by use of Cromwell Lane was also identified as a possible future connection bike connection in this area.

Pedestrian amenities in the immediate vicinity of the site consist of a series of sidewalks and crosswalks. Sidewalk and designated walkways exist along the site frontage along Water Street and the Norton Lane side of the site. Refer back to Figure 2 for details of existing pedestrian in the area surrounding the site. Existing pedestrian facilities are in moderate to poor shape within this area, as a result the Proponent is proposing to make some improvements (Water Street) to the existing facilities as part of the proposed project.

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## Vehicular Crash History

To identify potential vehicle crash trends in the study area, reported vehicular crash data for the study-area intersections was obtained from MassDOT for the years 2008 through 2010, the most recent three-year history available. A summary of the MassDOT vehicle crash history is presented in Table 2.

As shown in Table 2, eight of the nine study area intersections averaged between 0 and 1.33 crashes per year. The only intersection that experienced a notable crash frequency was the Five Corners intersection, which averaged 5.67 crashes per year. It should be noted that 76% of these crashes were property damage only. While there was no clear trend in the crash type, the crash frequency is most likely due to the unorthodox layout of the intersection, confusion over who has the right of way, and the impact associated heavy ferry traffic conditions leading to and after ferry arrivals.

Table 2 Study Area Intersection Crash Summary - 2008 through 2010

	Water Street at		Union Street	Union Street	Main Street at			Beach Road	Cromwell Lane at	Five Corners
	Norton Lane/Steamship Ingress Driveway	Municipal Parking Lot Driveway Entrance			Norton Lane	Spring Street	Norton Lane		Beach Road at Water Street/Lagoon Pond Road	
<b>Year</b>										
2008	0	1	1	0	0	0	1	0	7	
2009	0	1	2	1	0	2	2	0	6	
<u>2010</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>4</u>	
Total	1	3	4	1	0	3	3	0	17	
Average Crashes Per Year	0.33	1.00	1.33	0.33	0.00	1.00	1.00	0.00	5.67	
<b>Collision Type</b>										
Not collision between vehicles in traffic	0	0	0	1	0	0	0	0	1	
Angle	0	0	0	0	0	0	1	0	1	
Head-on	0	0	1	0	0	0	0	0	3	
Rear-end	0	1	2	0	0	1	1	0	5	
Sideswipe, opposite direction	0	0	0	0	0	0	0	0	0	
Sideswipe, same direction	0	1	1	0	0	1	0	0	2	
Single vehicle crash	1	1	0	0	0	1	1	0	3	
Not reported/Unknown	0	0	0	0	0	0	0	0	2	
<b>Crash Severity</b>										
Fatal injury	0	0	0	0	0	0	0	0	0	
Non-fatal injury	0	2	0	0	0	0	2	0	4	
Property damage only (none injured)	1	0	3	1	0	3	1	0	13	
Not Reported/Unknown	0	1	1	0	0	0	0	0	0	
<b>Time of Day</b>										
Weekday, 7:00 AM - 9:00 AM	1	0	0	0	0	0	1	0	7	
Weekday, 4:00 PM - 6:00 PM	0	0	0	0	0	0	1	0	4	
Saturday, 11:00 AM - 2:00 PM	0	0	0	0	0	1	0	0	0	
Weekday, other time	0	3	2	1	0	1	1	0	3	
Weekend, other time	0	0	2	0	0	1	0	0	3	
<b>Pavement Conditions</b>										
Dry	1	2	3	1	0	3	2	0	15	
Wet	0	0	1	0	0	0	1	0	1	
Snow/Ice	0	0	0	0	0	0	0	0	0	
Other/Not Reported/Unknown	0	1	0	0	0	0	0	0	1	
<b>Lighting Conditions</b>										
Daylight	1	3	3	1	0	3	2	0	14	
Dawn/Dusk	0	0	0	0	0	0	1	0	0	
Dark-Lighted Roadway	0	0	1	0	0	0	0	0	2	
No Reported/Unknown	0	0	0	0	0	0	0	0	1	
<b>Non Motorist (Bike, Pedestrian)</b>	0	0	0	0	0	0	1	0	1	

Source: MassDOT database records, compiled by VHB



## Future Conditions

Traffic volumes in the study area were projected to the year 2015, reflecting the intended traffic-planning horizon. Independent of the project, volumes on the roadway network under year 2015 No-Build conditions were assumed to include existing traffic and new traffic resulting from background traffic. Anticipated site-generated traffic volumes were added to the year 2015 No-Build traffic volumes to reflect the year 2015 Build conditions in the study area.

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### Background Traffic Growth

Traffic growth on area roadways is a function of the expected land development, economic activity, and changes in demographics. A frequently used procedure is to estimate an annual percentage increase and apply that increase to study-area traffic volumes. An alternative procedure is to identify estimated traffic generated by specific planned major developments that would be expected to affect the project study area roadways. For the purpose of this assessment, *both* methods were utilized.



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## Historic Traffic Growth

Based on information provided in the Martha's Vineyard Regional Transportation Plan (2003 Update), traffic volumes increased at a rate of 1.7 percent per year from 1981 to 1996 at a number of "down island" locations. One of the locations studied to obtain this growth factor was Edgartown Road in Tisbury, which is just east of the proposed site. While the 2015 Regional Transportation Plan Draft Update states that peak season volumes have remained relatively flat, to provide a conservative assessment, we propose using the historical growth factor of 1.7 percent per year for future traffic projections in the TIAS for the proposed development. Evaluation of existing traffic volume conditions will be based on counts performed in 2013. Given the Proponent's desire to construct the proposed project as quickly as possible, evaluation of future conditions will utilize a two-year projection (project horizon) and will involve analysis of 2015 No-Build conditions (without the proposed development) and 2015 Build conditions (with the proposed development in operation). Assuming the Proponent receives the necessary approvals to proceed, construction would start in the fall of 2013 and the store would be complete by summer of 2014.



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## Site-Specific Growth

Based on communications with the staff of the Martha's Vineyard Commission, there are no development projects planned within the study area that would impact traffic volumes.



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## Existing Development Credit

Removal of the existing uses on site to allow for the construction of the proposed mixed use development will also *remove existing and potential future traffic* from the area. Therefore, to account for the traffic reduction, trip generation projections were made based on the building area that is present on site and the types of uses that are allowed and operational on site. ITE trip generation rates were utilized for these projections and the existing roadway patterns were used to distribute the existing trips.



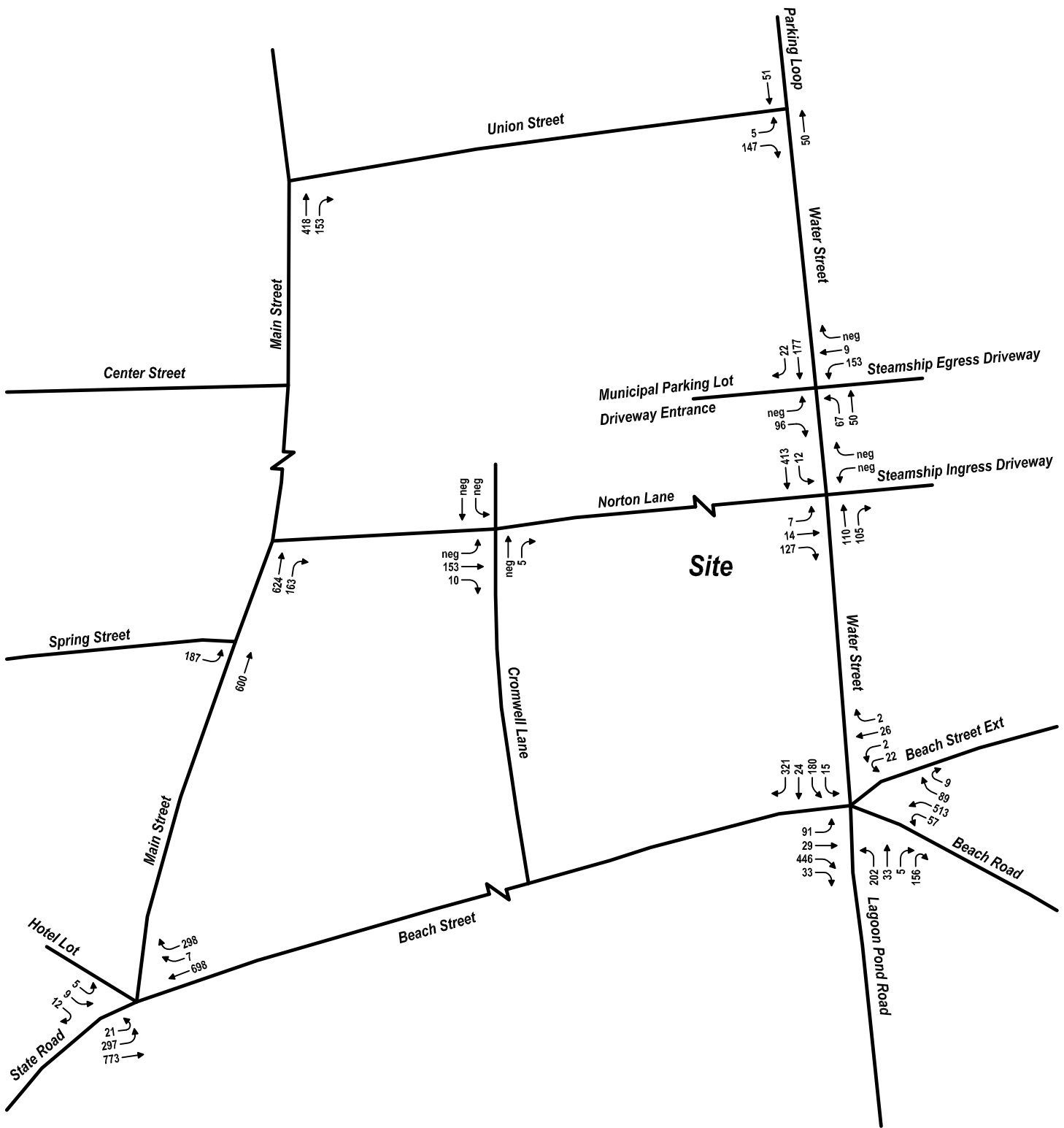
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## No-Build Traffic Volumes

The 2015 No-Build (peak season) traffic volumes were developed by applying the 1.7 percent annual growth rate over the two-year study horizon to the 2013 Existing traffic volumes. Figures 7 and 8 shows the resulting 2015 No-Build peak hour traffic volumes.



neg = Negligible



**Vanasse Hangen Brustlin, Inc.**

2015 No Build Conditions - Peak Season  
Saturday Midday Peak Hour  
Traffic Volumes  
Stop & Shop Redevelopment  
Tisbury (Vineyard Haven), Massachusetts

Figure 8  
February 2013



Not to Scale

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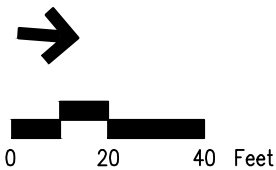
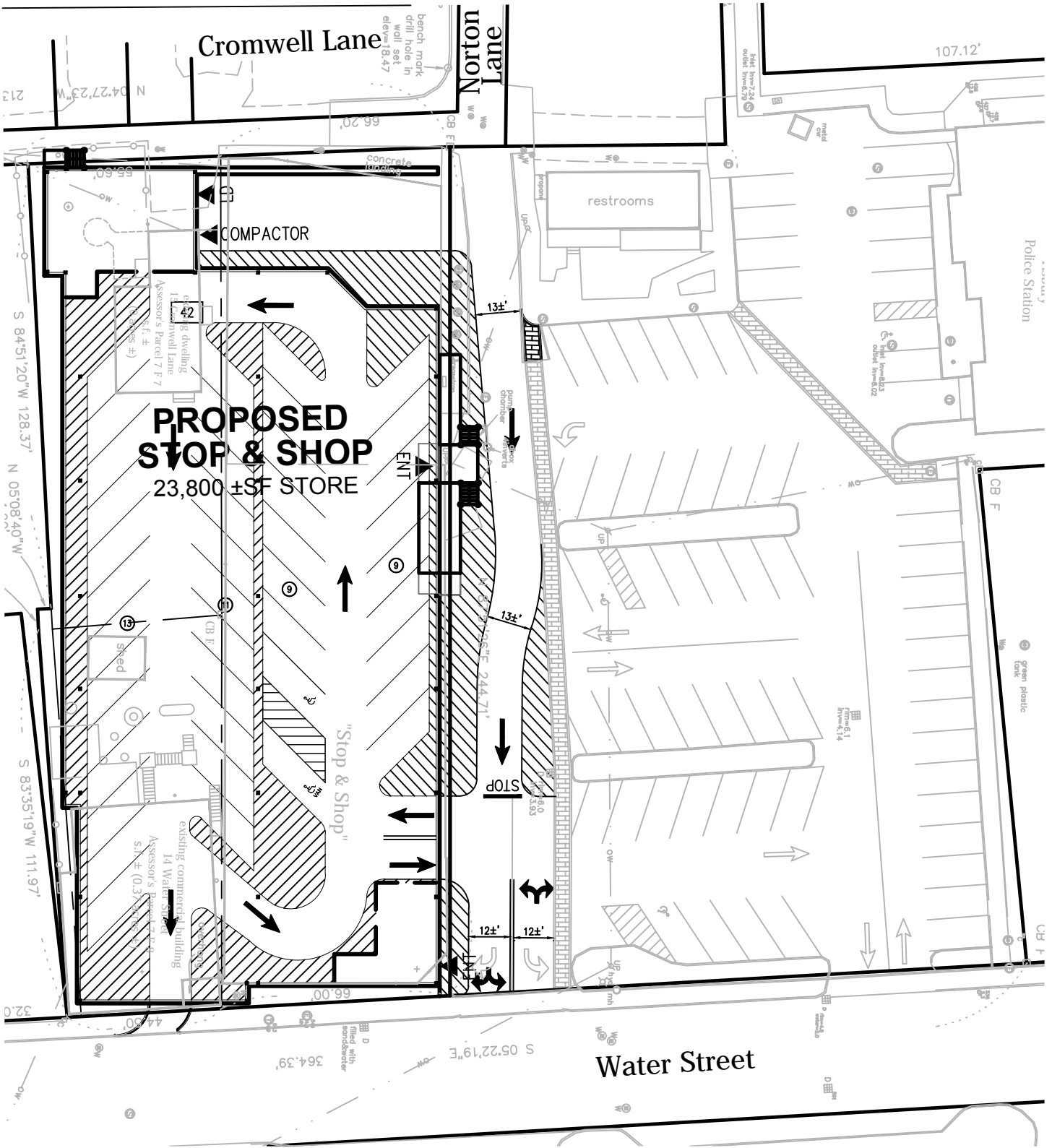
## Future Roadway Conditions

In assessing future traffic conditions, proposed roadway improvements within the study area were considered. Based on discussions with the Martha's Vineyard Commission, there are currently no roadway improvements projects proposed in the vicinity of the site that would affect traffic in the study area.

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## Site Access and Parking

The proposed redevelopment project includes removal of existing businesses and expansion to the existing supermarket facility. In addition to the retail expansion, changes in site access and parking supply are also proposed to improve the overall customer experience at the facility. The following text describes the proposed modifications that are demonstrated on Figure 9.



Vanasse Hangen Brustlin, Inc.

Proposed Site Access Modifications to  
Norton Lane  
Stop & Shop  
Water Street  
Tisbury, Massachusetts

Figure 9



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## Access

Access to the site is proposed from Water Street and Norton Lane. Under existing conditions, vehicular access to the site relies on an existing municipal parking supply in the vicinity of the supermarket facility. The primary parking supply is provided by the municipal parking lot located directly across Norton Lane from the existing supermarket. Access to this municipal lot is provided from Water Street and Norton Lane. Currently there are several access points to the municipal lot, one full access along Water Street and 3 access drives along Norton Lane. The eastern access along Norton Lane is one-way in a northerly direction (away from S&S), the middle driveway is two way and the western driveway is one-way in the southerly direction (toward S&S). Under the proposed condition access to the municipal lot will remain unchanged. However, a new parking garage located under the proposed redeveloped S&S Supermarket will be provided and will include a total of 43 customer parking spaces. Access to this parking garage is proposed from Norton Lane, just west of Water Street. To accomplish full access to the garage at this location, modification to Norton Lane between Water Street and the garage access driveway will be necessary. Under existing conditions, Norton Lane is one-way in an easterly direction between Main Street and Water Street. As Norton Lane approaches Water Street, it becomes two lanes, a left turn lane and a right turn lane. Under the proposed plan, modifications would be made to Norton Lane between Cromwell Lane and Water Street. Lane configurations will be modified slightly along this section to allow for better controlled vehicular and pedestrian movement. In addition, Norton Lane will become two-way between Water Street and the Stop & Shop Parking Garage entrance/exit. Also the Norton Lane eastbound approach at the Stop & Shop Parking Garage entrance would be under STOP control. To accomplish a short section of two way travel along Norton Lane, the existing left turn lane exiting Norton Lane would have to be eliminated and the eastbound approach on Norton Lane would operate as a shared left/right-turn lane. Review of the traffic conditions at this location indicates that there are very few left turns. In fact, Water Street to the north of the site is a dead end with no outlets and so other than to gain access to the ferry terminal and to re-circulate in the municipal lot, there is no reason to make a left turn from Norton Lane. Refer to Figure 9 which demonstrates the proposed changes. In addition, truck delivery access along Norton Lane and car access to the parking garage is demonstrated using Auto Turn and is included in the Appendix of this document (Figures 1A and 1B).

In addition to these access modifications, a supplemental egress from the proposed parking garage is planned to Water Street. This egress only driveway would be restricted to right-turns only and it is an important element of the plans to try to minimize the future traffic activity at the Norton Lane and Water Street intersection.



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## Parking

The existing Stop & Shop operates at Vineyard Haven without any dedicated customer parking supply. However the municipal parking lot located directly adjacent to the Stop & Shop Supermarket is regularly used by Stop & Shop customers. As a result, Stop & Shop has worked with the Town to improve and maintain the existing parking supply within the municipal parking lot. Under existing conditions the municipal parking lot consists of 65 parking spaces that are shared among area uses. Under the proposed redeveloped Stop & Shop Supermarket, a dedicated parking garage is being proposed under the retail store (at street level). The parking garage will accommodate 43 customer parking spaces all of which will be within a garage under the main building. Access to the parking garage will be provided from Norton Lane with an entrance and exit, and a second means of egress from the garage to Water Street (right turn only).

The project is located within a zoning district that has no specific parking requirements. Under existing conditions, the facility does not have any dedicated parking on site. Under the proposed redevelopment plan, the site would be developed to include a 43 parking space garage under the main supermarket building. This represents a substantial parking enhancement over existing conditions. To assess the parking requirements based on standardized parking generation rates, the Institute of Transportation Engineers *Parking Generation* manual<sup>1</sup> was utilized. Because the project is a redevelopment of the existing Stop & Shop facility, this generation assessment focused on the incremental increase in building program which is approximately 14,723 sf. Based on this increment, the ITE Manual was utilized. Land Use Code 850 (Supermarket) was utilized and applied to the incremental increase building area to assess a “typical” parking need. Based on this approach the expansion of the site could potentially require between 28 and 77 additional parking spaces for a “typical” grocery store depending on day of the week. Given that the store will provide an additional 43 parking spaces which is within the range of what would typically be required, the proposed parking supply is likely adequate for a typical type of supermarket facility.



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## Delivery Truck Access

In addition, delivery truck activity to the site will be substantially improved under the existing conditions. Under existing conditions, the site has very limited internal storage area and as a result, delivery trucks to the site are frequent and the products often go directly from the truck to the shelves. This inefficient condition results in tractor trailers sitting in the loading area for extended periods of times until products can be taken from the truck to the shelves. The existing loading area is essentially on Norton Lane with trucks parked in the roadway layout.



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<sup>1</sup> Parking Generation (3<sup>rd</sup> Edition); Institute of Transportation Engineers ; Washington DC



Under the proposed redevelopment plan, loading to the site will be accomplished through a formal loading dock at the rear of the site, completely off of Norton Lane. The loading will take place onsite exclusively, and trucks will not impede movements on Norton Lane in any way. For the purposes of demonstrating the delivery truck access and egress to the loading area, refer to Figure 1B in the Appendix of this document.

## Trip Generation

As discussed, the proposed project involves the redevelopment and expansion of the existing Stop & Shop Supermarket. To accommodate the expansion of the supermarket, existing retail, restaurant, and residential units will be eliminated as part of the project. With this in mind, traffic credits for the removal of existing uses have been assessed along with the proposed supermarket expansion. For the purpose of this evaluation, the Institute of Transportation Engineers' publication *Trip Generation, 9th Edition* was utilized. Based on this approach, which utilizes Land Use Code (LUC) 850 (Supermarket), LUC 931 (Quality Restaurant), LUC 890 (Furniture Store), and LUC 220 (Apartments) the resulting project traffic generation is summarized in Table 3. Refer to the Appendix for more detailed calculations.

**Table 3**  
**Existing Trip Generation**

Time Period	Direction	Stop & Shop Propose Condition <sup>a</sup> (13,371 sf)	Chinese Restaurant <sup>b</sup> (2,364 sf)	Retail <sup>c</sup> (4,132sf)	Residential <sup>d</sup> (5 units)	Total Existing Trips (a+b+c+d)
Weekday Daily	Enter	684	106	10	17	817
	Exit	<u>684</u>	<u>106</u>	<u>10</u>	<u>17</u>	<u>817</u>
	Total	1,368	212	20	34	1,634
Weekday Evening Peak Hour	Enter	65	12	1	2	80
	Exit	<u>62</u>	<u>6</u>	<u>1</u>	<u>1</u>	<u>70</u>
	Total	127	18	2	3	150
Saturday Daily	Enter	1,187	112	10	16	1,325
	Exit	<u>1,187</u>	<u>112</u>	<u>10</u>	<u>16</u>	<u>1,325</u>
	Total	2,374	224	20	32	2,650
Saturday Middyay Peak Hour	Enter	73	15	2	2	92
	Exit	<u>70</u>	<u>10</u>	<u>2</u>	<u>1</u>	<u>83</u>
	Total	143	25	4	3	175

- a Trip Generation estimate based on ITE LUC 850 (Supermarket) for 13,371 sf of space.  
b Trip Generation estimate based on ITE LUC 931 (Quality Sit Down Restaurant) for 2,364 sf of  
c Trip Generation estimate based on ITE LUC 890 (Furniture Store) for 4,132 sf  
d Trip Generation estimate based on ITE LUC 220 (Apartments) for 5 units

The proposed project trip generation was estimated using ITE LUC 850 (Supermarket) for 28,094 sf of building area. Table 4 provides a summary of the proposed project trip generation and the net total increase based the projected traffic credits associated with the existing uses.

**Table 4  
Proposed Project Trip Generation**

Time Period	Direction	Existing Condition <sup>a</sup>	Stop & Shop Proposed Condition <sup>b</sup> (28,094 sf)	Net Total Trips <sup>c</sup>
Weekday Daily	Enter	817	1,436	619
	Exit	<u>817</u>	<u>1,436</u>	<u>619</u>
	Total	1,634	2,872	1,238
Weekday Evening Peak Hour	Enter	80	136	56
	Exit	<u>70</u>	<u>131</u>	<u>61</u>
	Total	150	267	117
Saturday Daily	Enter	1,325	2,495	1,170
	Exit	<u>1,325</u>	<u>2,495</u>	<u>1,170</u>
	Total	2,650	4,990	2,340
Saturday Midday Peak Hour	Enter	92	153	61
	Exit	<u>83</u>	<u>147</u>	<u>64</u>
	Total	175	300	125

- a Trip Generation estimate based on Existing Conditions total from Table 1.
- b Trip Generation estimate based on ITE LUC 850 (Supermarket) for 24,000 sf of supermarket space.
- c Trip Generation, change between existing and proposed with credits for uses to be removed from the site.

As shown in Table 4, the proposed project is expected to generate a net total of 117 trips (56 entering/61 exiting) during the weekday evening peak hour, and 125 trips (61 entering/64 exiting) during the Saturday midday peak hour.

It should also be noted that not all trips associated with the proposed project will represent “new” traffic added to the study area roadways. A portion of the vehicle trips generated will be drawn from the existing traffic passing the site in the form of pass-by traffic. ITE data suggests that up to 57 percent of the traffic generated by supermarkets could be pass-by traffic<sup>2</sup>. For this assessment, the 25% pass-by rate allowed within the state guidelines for retail traffic activity was applied. A summary of the trip generation breakdown is shown in Table 5.

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.....  
<sup>2</sup> ITE Trip Generation Handbook, 2012, Table 5.10

**Table 5  
Proposed Project Trip Generation Breakdown**

Time Period	Direction	Total Trips <sup>a</sup>	Pass-by Trips <sup>b</sup>	New Trips
Weekday Daily	Enter	619	155	464
	<u>Exit</u>	<u>619</u>	<u>155</u>	<u>464</u>
	Total	1,238	310	929
Weekday Evening Peak Hour	Enter	56	15	41
	<u>Exit</u>	<u>61</u>	<u>15</u>	<u>46</u>
	Total	117	30	87
Saturday Daily	Enter	1,170	293	877
	<u>Exit</u>	<u>1,170</u>	<u>293</u>	<u>877</u>
	Total	2,340	586	1,754
Saturday Midday Peak Hour	Enter	61	15	46
	<u>Exit</u>	<u>64</u>	<u>15</u>	<u>49</u>
	Total	125	30	95

a Values taken from Table 2

b Assumes a Pass-By Rate of 25 percent for the Stop & Shop Supermarket.

As shown in Table 5, the proposed project is expected to generate a total of 87 ‘new’ vehicle trips (41 entering/46 exiting) during the weekday evening peak hour and 95 ‘new’ vehicle trips (46 entering/49 exiting) during the Saturday midday peak hour.

## Trip Distribution and Assignment

The project is comprised of the redevelopment and expansion of an existing S&S supermarket. As a result, the future traffic patterns are expected to largely reflect those under existing conditions. VHB assessed the existing traffic patterns observed in the vicinity of the site based on traffic counts conducted by the Martha’s Vineyard Commission (MVC), and updated traffic counts that were conducted by the Proponent as part of the proposed project. Based on review of the traffic data supplied to the Proponent by the MVC (2009-2010), the distribution for the peak periods of review are summarized in Table 6 and illustrated in Figure 10.

xx = Entering  
(xx) = Exiting



Vanasse Hangen Brustlin, Inc.

Trip Distribution

Figure 10  
February 2013



Not to Scale

Stop & Shop Redevelopment  
Tisbury (Vineyard Haven), Massachusetts

**Table 6**  
**Trip Distribution**

Travel Route	Direction (To/From)	Percent of New Site-Generated Traffic Assigned to Route
Beach Road	<i>East</i>	31%
Howard Ave/Lagoon Pond Road	<i>South</i>	11%
State Road	<i>South/West</i>	45%
Spring Street	<i>North/West</i>	<u>13%</u>
		100%

The projected site-generated traffic volume, as shown in Table 5, was distributed on the study area roadways using the trip distribution shown in Table 6 and added to the 2015 No-Build peak hour traffic volumes to develop the 2015 Build peak hour traffic volumes. These 2015 Build traffic volumes are shown in Figures 11 and 12.

neg = Negligible



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2015 Build Conditions - Peak Season  
 Weekday Evening Peak Hour  
 Traffic Volumes  
 Stop & Shop Redevelopment  
 Tisbury (Vineyard Haven), Massachusetts

Figure 11  
 February 2013



Not to Scale

neg = Negligible



**Vanasse Hangen Brustlin, Inc.**

2015 Build Conditions - Peak Season  
Saturday Midday Peak Hour  
Traffic Volumes  
Stop & Shop Redevelopment  
Tisbury (Vineyard Haven), Massachusetts

Figure 12  
February 2013



Not to Scale

# 4

## Traffic Operations Analysis

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic within the study area. To assess quality of flow, roadway capacity analyses were conducted with respect to the 2013 Existing conditions and projected 2015 No-Build and Build traffic volume conditions. Capacity analyses provide an indication of the adequacy of the roadway facilities to serve the anticipated traffic demands. As mentioned previously, given the seasonal fluctuation in traffic volumes on the island, the traffic volumes collected for this study were adjusted to peak season. The capacity analyses summarized in this chapter are based on the peak season volumes. Capacity analyses for average conditions were also conducted and are provided in the Appendix.

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### Level-of-Service and Delay Criteria

The evaluation criteria used to analyze area intersections in this traffic study are based on the 2000 Highway Capacity Manual [HCM]<sup>3</sup>. The term ‘level of service’ [LOS] is used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay, and freedom to maneuver.

- Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Level-of-service is derived *directly* from the delay calculation.



<sup>3</sup> Transportation Research Board, Highway Capacity Manual, Washington, D.C., 2000.



- Delay is a complex measure that depends upon a number of variables such as quality of signal progression, cycle length, allocation of green time, and volume-to-capacity (v/c) ratio. Of all the factors cited, v/c ratios have the least effect on delay. Thus, for any given v/c ratio, a range of delay values [and, therefore, levels of service] may result. Conversely, for a given level of service, the v/c ratio may lie anywhere within a broad range. Comparison of intersection capacity results therefore requires that *in addition to the LOS, the other measures of effectiveness [MOEs] must also be considered.*

The level-of-service designations, which are based on delay, are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street, and is typically the left turn out of the side street or site driveway.

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## Level-of-Service Analysis

Levels-of-service analyses were conducted for the 2013 Existing, 2015 No-Build, and 2015 Build conditions for the study-area intersections. Table 7 presents a summary of the capacity analyses for the unsignalized intersections in the study area. The capacity analyses worksheets are included in the Appendix.

The analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as high critical gaps<sup>4</sup>. Actual field observations indicate that drivers on minor streets generally accept smaller gaps in traffic than those used in the analysis procedures and therefore experience less delay than reported by the analysis software. Consequently, the analysis results tend to overstate the actual delays experienced in the field. For this reason, the results of the unsignalized intersection analyses should be considered highly conservative.



<sup>4</sup> 'critical gap' is defined as the minimum time, in seconds, between successive major-stream vehicles, in which a minor-street vehicle can make a maneuver

**Table 7**  
**Unsignalized Intersection Capacity Analyses – Peak Season**

Location	Critical Movement	Peak Period	2013 Existing Conditions				2015 No-Build Conditions				2015 Build Conditions			
			Dem <sup>a</sup>	v/c <sup>b</sup>	Del <sup>c</sup>	LOS <sup>d</sup>	Dem	v/c	Del	LOS	Dem	v/c	Del	LOS
Beach Road at Water Street/ Lagoon Pond Road ("Five Corners")	NB LTR	Weekday Evening	359	Err	>50	F	372	Err	>50	F	377	Err	>50	F
	NB LTR	Saturday Middy	379	Err	>50	F	391	Err	>50	F	396	Err	>50	F
Water Street at Norton Lane/ Steamship Ingress	EB L	Weekday Evening	10	0.08	30	D	10	0.09	31	D	200	0.64	29	D
	EB LR				n/a			n/a						
	EB L	Saturday Middy	7	0.04	25	D	7	0.05	26	D	156	0.40	19	C
	EB LR				n/a			n/a						
Water Street at Municipal Lot Driveway/Steamship Egress	WB LTR	Weekday Evening	166	1.15	>50	F	171	1.23	>50	F	171	1.27	>50	F
	WB LTR	Saturday Middy	156	1.14	>50	F	162	1.22	>50	F	162	1.25	>50	F
Water Street at Union Street/ Parking Loop	EB LR	Weekday Evening	121	0.20	10	A	125	0.21	10	A	125	0.21	10	A
	EB LR	Saturday Middy	148	0.21	9	A	152	0.22	10	A	152	0.22	10	A
Norton Lane at Cromwell Lane	NB TR	Weekday Evening	0	0.00	0	A	0	0.00	0	A	0	0.00	0	A
	NB TR	Saturday Middy	5	0.01	9	A	5	0.01	9	A	5	0.01	10	A
Main Street at Norton Lane	NB TR	Weekday Evening	723	0.51	0	A	748	0.53	0	A	786	0.56	0	A
	NB TR	Saturday Middy	762	0.51	0	A	787	0.53	0	A	829	0.55	0	A
Main Street at Union Street	NB TR	Weekday Evening	497	0.34	0	A	514	0.36	0	A	520	0.36	0	A
	NB TR	Saturday Middy	553	0.33	0	A	571	0.34	0	A	577	0.35	0	A
Main Street at Spring Street	EB L	Weekday Evening	172	0.54	23	C	178	0.58	25	C	183	0.63	28	D
	EB L	Saturday Middy	181	0.52	22	C	187	0.56	23	C	193	0.60	26	D
Main Street at State Road/ Hotel Lot	SEB LTR	Weekday Evening	18	0.13	28	D	19	0.14	30	D	19	0.14	31	D
	EB L			262	0.57	20	C	271	0.61	22	C	298	0.70	26
	SEB LTR	Saturday Middy	25	0.27	33	D	26	0.31	38	E	26	0.32	39	E
	EB L			287	0.51	17	C	297	0.55	19	C	327	0.63	21
Water Street at Parking Garage Exit	EB LR	Weekday Evening									45	0.07	11	B
	EB LR	Saturday Middy									48	0.07	11	B

- a demand in vehicles per hour for unsignalized intersections; the demand applies to only the most critical street approach or lane group
- b volume-to-capacity ratio for the critical movement
- c delay of critical approach only, rounded to the nearest whole second
- d level of service of the critical movement
- NA Driveway does not exist under this scenario
- LTR shared left, through, right
- LR shared left, right
- TR shared through, right
- L left
- R right

As shown in the Table 7, the critical movements at all of the study area intersections currently operate at an acceptable LOS D or better under 2013 Existing conditions with the exception of the Five Corners intersection and the intersection of Water Street at the Steamship Authority egress driveway. Similar levels of operation are expected under future No Build and Build conditions, with only minor increases in delay resulting from the site-generated traffic volumes.

It should be noted that at the intersection of Water Street and the Steamship Authority egress, the peak hour factor of the Steamship Authority approach is 0.41 and 0.32 during the weekday evening and Saturday midday peak hours, respectively. These peak hour factors are so low due to the concentrated waves of egress traffic after a ferry comes in and releases passengers. While this intersection carries a relatively low volume on an hourly basis, the spike in traffic drives the level of service down for that particular 15-minute interval. Essentially, the LOS at this intersection would likely be LOS C or better during times between ferry arrivals. It should be noted that police details are placed at this location during crunch times during peak season and as result, the operations that can be expected, even during the concentrated wave periods, are likely better than that identified.

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## Alternative Circulation Patterns

During preliminary discussions with the Martha's Vineyard Commission regarding the proposed Vineyard Haven Stop & Shop Redevelopment project, staff of the Martha's Vineyard Commission (MVC) has suggested that downtown Vineyard Haven traffic patterns have long been in question. The possibility of changing direction of flow is something that some think might be worth considering. As part of the preparation of the TIAS for the Stop & Shop Redevelopment project, VHB has taken a preliminary look at the existing circulation patterns in the area immediately surrounding the Stop & Shop facility. The area of consideration includes the existing downtown area consisting of Water Street, Union Street, Main Street (between State Road and Union Street) and Beach Road (between Main Street and Water Street). Under existing conditions, traffic flow within this rectangular area is limited, in sections by one way roads. This includes Main Street which is one way northbound along this section, Union Street which is one way eastbound, and Norton Lane which is one way in an eastbound direction. During preliminary discussions with the MVC, staff raised the question as to whether there would be any advantage to considering changing the direction of flow of Union Street or Norton Lane, and would such a change have a positive influence on the critical Five Corners intersection. While this type of assessment is clearly outside of the scope of the proposed project, a preliminary assessment of potential changes has been evaluated. Please refer to the Appendix where a brief memorandum of the preliminary assessment is provided for Town and MVC consideration.

## Mitigation

The preceding analysis of the 2013 Existing conditions and projected future traffic demands in the 2015 No-Build and Build conditions indicate that site-generated traffic volumes during the peak-hour periods have only a negligible impact on intersection capacity within the study area. As such, the proponent proposes to focus on non-structural mitigation measures, which are identified below.

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### Transportation Demand Management

The goal of the Transportation Demand Management (TDM) plan is to reduce the Project's overall traffic impact through the implementation of measures that are aimed at affecting the demand side of the transportation equation, rather than the supply side. By their very nature, TDM programs attempt to change people's behavior, and to be successful, they must rely on incentives or disincentives to make these shifts in behavior attractive to the commuter or retail customer<sup>5</sup>. TDM programs are designed to maximize the people-moving capability of the existing transportation infrastructure by increasing the number of persons in a vehicle, providing and/or encouraging the use of alternate modes of travel, or influencing the time of, or need to, travel.

The term TDM encompasses both alternatives to driving alone and the techniques or supporting strategies that encourage the use of alternative types of transportation<sup>6</sup>. TDM alternatives to driving alone include carpools and vanpools, public and private transit, and non-motorized travel, including bicycling and walking. TDM alternatives can also influence when trips are made. For example, alternative work hours (compressed work weeks, flextime, and telecommuting) can affect what time of day trips are made, or if trips occur at all on certain days. On an area-wide basis, the provision of park and ride facilities and transit services can also provide a competitive alternative to drive-alone commuting. TDM strategies are the

▼  
<sup>5</sup> Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience, prepared by Comsis Corporation and the Institute of Transportation Engineers, for the U.S. Department of Transportation, DOT-T-94-02, September, 1993, p. I-1.

<sup>6</sup> Implementing Effective Travel Demand Management Measures: Inventory of Measures and Synthesis of Experience, prepared by Comsis Corporation and The Institute of Transportation Engineers, for the U.S. Department of Transportation, DOT-T-94-02, September, 1993, P. 1-2.

supporting measures that encourage the use of alternatives to driving alone. TDM strategies, at times, include financial incentives, time incentives, the provision of new or enhanced commuter services, dissemination of information, and marketing alternative services. TDM strategies include all the incentives and disincentives that increase the likelihood for people to change their existing travel behavior.



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## Transportation Demand Management Program

The Proponent is committed to implementing a TDM program as part of the redevelopment project. Generally, TDM measures are most effective with office type uses but TDM can effectively be implemented with retail projects as well. The site's unique characteristics with direct proximity to existing transit, ferry, bicycle, and pedestrian opportunities make it a perfect candidate for participation in an organized program. The following initiatives are proposed by the Proponent and are described in further detail in the following pages:

- Provide an TDM coordinator on site
- Provide comprehensive commuter information on the site
- Promote carpool/rideshare programs
- Promote guaranteed ride home programs
- Promote alternate transportation modes
- Facilitate bicycle and pedestrian travel

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## General TDM Measures

### **TDM Coordinator**

A TDM coordinator will be appointed to oversee site-related transportation demand management initiatives. The person (or persons) in this role will coordinate with staff and customers to help alleviate the reliance on single-occupant motor-vehicle travel to the site. To that end, the TDM measures identified in the following section will be implemented under the direction and supervision of this person. The duties of the TDM Coordinator will include, but not be limited to: disseminating information on alternate modes of transportation and developing related marketing materials; developing and implementing appropriate TDM measures; and monitoring the effectiveness of those measures.

### **Commuter Information**

The TDM coordinator will provide central commuter information centers within the buildings (both for public and employees) on site to assist employees and customers. Available information will include schedules for the Martha's Vineyard Transit Authority (MVTA), SSA Ferry Schedules, area pedestrian and bicycle amenities. Specific measures to promote this program are also noted below for specific uses.

### **Facilitate Bicycle and Pedestrian Travel**

Travel to the site by biking or walking will be promoted by the Proponent or through the provision of convenient bicycle and pedestrian amenities. Bike racks will be provided on site within the new parking structure. Due to the site's proximity to residential neighborhoods and Main Street Vineyard Haven, walking to/from the site will be encouraged by the provision of pedestrian-friendly connections to existing side walk infrastructure. As part of the proposed project, several area pedestrian features will be enhanced including improved sidewalk, restriping of crosswalks, and connection to the future enhanced MV bicycle network. Refer to Figure 13 for details of the proposed enhancements and locations for proposed bike racks.

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### **Specific TDM Measures**

The TDM coordinator will encourage employee to participate with TDM initiatives. As part of the onsite TDM Plan, the Proponent will implement the following measures at a minimum:

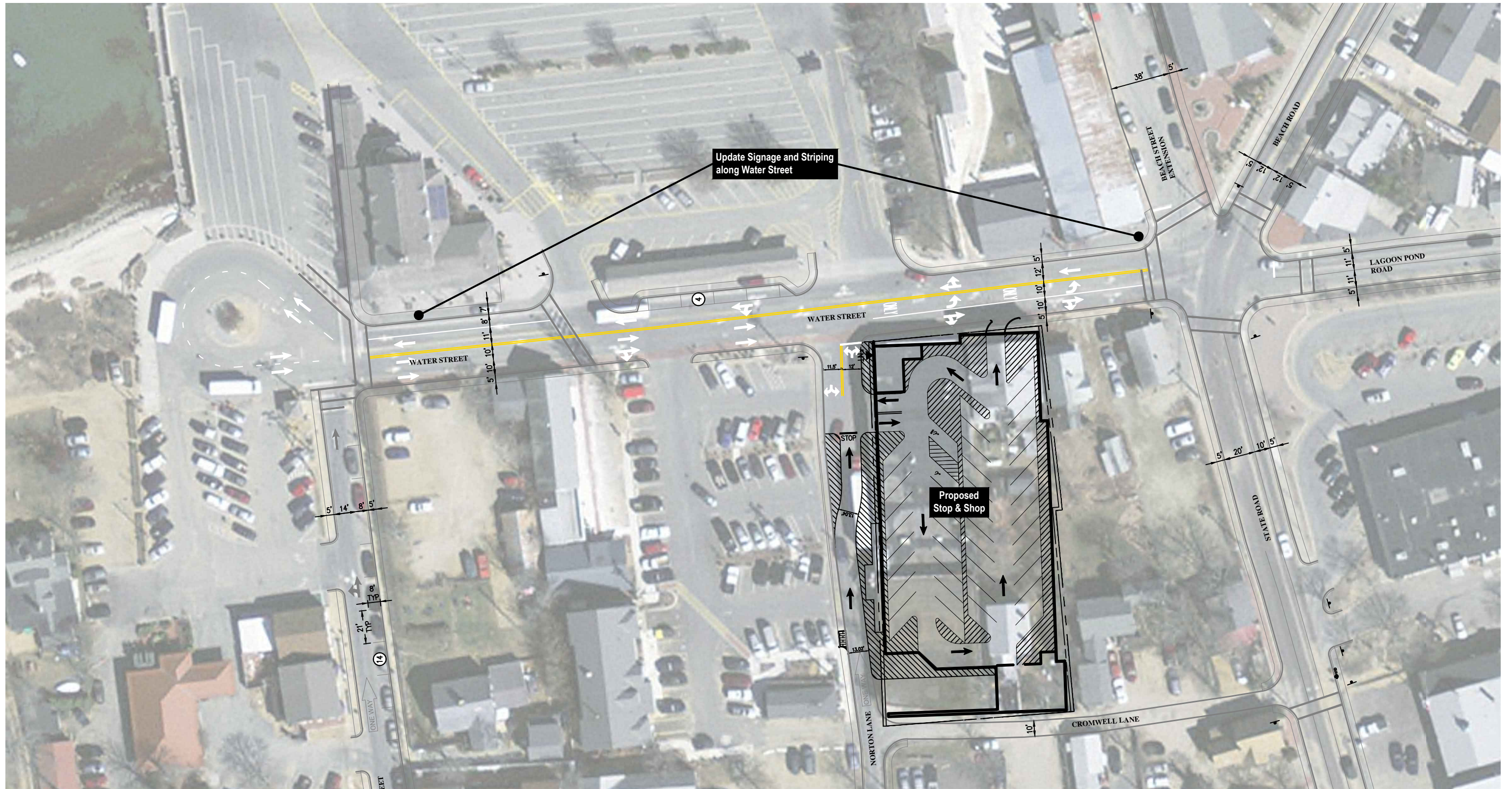
- Provide flexible hours so that employees have the option of commuting outside the peak traffic periods (when possible). Similar benefits can also be realized through staggered work hours so that employee trips occur over a broader period and thereby reduce peak hour demands.
- Provide a car pool program for employees of the facility and provide incentives for employees to participate.
- Provide a "guaranteed ride" home program through a taxi voucher system to eliminate an often-cited deterrent to carpool participation in case of emergencies.
- Provide financial incentives for employees who choose to use MVTA, or who walk or bike to and from work.
- Offer direct deposit to employees to minimize trip making needs during the course of a work day.

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### **On-site Services**

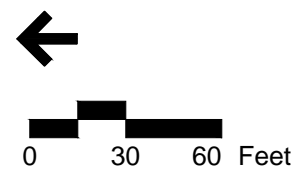
Employees make midday trips during their breaks and at lunchtime to conduct personal business. On-site services could reduce the need for employees to leave the site to conduct errands during the day. However, prospective supermarket employees will generally work less than eight-hour shifts. These schedules are made to accommodate working parents, older workers, after-school workers, etc. Subsequently, the level of midday trip making will likely be less than at other types of retail or office uses. Nevertheless, the proposed on-site services will result in reduced midday trip making for employee personal business and errands. The following on-site services will be provided on-site to decrease employee midday trip-making:

- Food services



**Vanasse Hangen Brustlin, Inc.**

**Figure 13**  
**Proposed Signage and Striping Improvements**  
**Stop & Shop Expansion**  
**Tisbury, Massachusetts**



- Employee refrigerators
- Employee break room
- Automatic teller machine

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## Intersection/Roadway Mitigation

As outlined in the capacity analysis summary table (Table 7) impacts to peak hour, peaks season operations at study area intersections between future No-Build and Build conditions are expected to be relatively minor as a result of the proposed project. In fact, most study area intersection are projected to operate well within the acceptable range even during peak summer, peak hour conditions. During average season conditions, operations would be expected to be even better. Average condition analyses for all study area intersections have been prepared and are presented in the Appendix of this document for informational purposes.

The two intersections that are currently operating poorly during peak hour periods include the Five Corner Intersection and the Egress driveway from the SSA facility. Project impacts at each location are minor. At the Five Corner intersection, there is only an increase of 5 vehicles per hour on the critical movement during both the weekday evening and Saturday midday peak hours. At the Water Street and SSA Egress Driveway the project is not expected to have any impact on operations with delays remaining steady between the No-Build and Build conditions.

As discussed in the existing conditions section of this document, existing striping (lane markings, cross walks, etc.) and signage along Water Street is in mediocre to poor shape under existing conditions. To ensure that operations are accommodated as efficiently as possible with the project in place, the Proponent is proposing to restripe Water Street along its entire length between Beach Road and the MVTA turnaround. Refer to Figure 13 for a graphical representation of the area included in the proposed striping and signage upgrade, as well as the modifications proposed at the intersection of Water Street and Norton Lane. Note, the Proponent will work with the Town, the SSA, and the MVC during development of the striping and signage plan to ensure that the optimal plan is implemented along this section.



# 6

## Conclusion

This traffic study presented a detail assessment that evaluated the traffic impacts associated with the proposed redevelopment and expansion of the Stop & Shop Supermarket located at the intersection of Norton Lane and Water Street in Tisbury, Massachusetts.

Under existing conditions the site is occupied by a 13,731 sf Stop & Shop Supermarket, a 4,132 sf furniture store, a 2,364 sf Chinese restaurant, and 4,856 sf of residential units. The proposed project will consist of the redevelopment and expansion of the existing Stop & Shop Supermarket and the removal of all other uses on site. Under the proposed condition, the site would be comprised of approximately 28,094 sf Stop & Shop Supermarket with 43 parking spaces to be provided below the retail area (street level) in a parking garage. Access to the site would be provided from an enter/exit driveway along Norton Lane and an egress only driveway to Water Street (right-turn only).

The proposed project is expected to generate approximately 87 new vehicle trips (41 entering/46 exiting) during the weekday evening peak hour and 95 new vehicle trips (46 entering/49 exiting) during the Saturday midday peak hour.

Capacity analyses were conducted for each of the study area intersections under 2013 Existing conditions, 2015 No-Build conditions (without the proposed redevelopment), and 2015 Build conditions (with the proposed redevelopment). The results of the capacity analysis conducted as part of this study indicates that site generated traffic volumes during the peak-hour periods have only a negligible impact on intersection capacity within the study area. Based on these results, the Proponent has proposed the following measures:

- Transportation Demand Management Program
- Signage and striping improvements along Water Street
- Pedestrian enhancements adjacent to the site

Overall, VHB concludes that the proposed project will have minimal impact on the local roadway network and implementation of the above-mentioned mitigation measures will be a benefit of the project.