

# Tisbury S&S Redevelopment Traffic Presentation



PRESENTED TO: **Martha's Vineyard Commission**

**November 21, 2013**

PRESENTED BY

 **Vanasse Hangen Brustlin, Inc.**

# Traffic Study (Update Since Last Hearing)

- Submitted an updated traffic memorandum on November 8, 2013
  - Focused discussion to gain consensus on important aspects of traffic work:
    - Traffic Projections
    - Intersection Operational Analyses
    - Measured Traffic Impacts
  - Once we have consensus on this we can focus discussion on access, circulation, and mitigation necessary to support the project

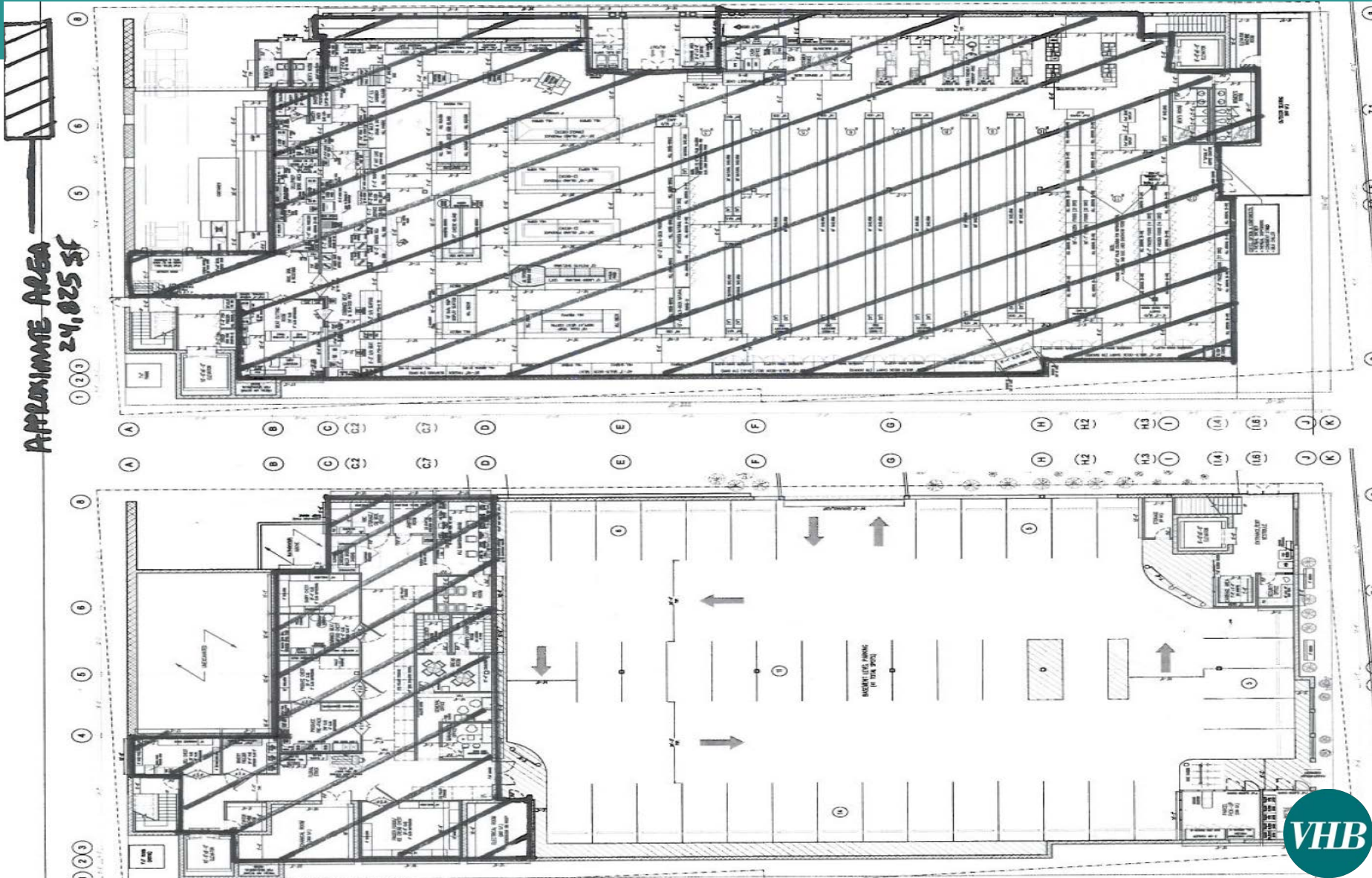
# Presentation Focus

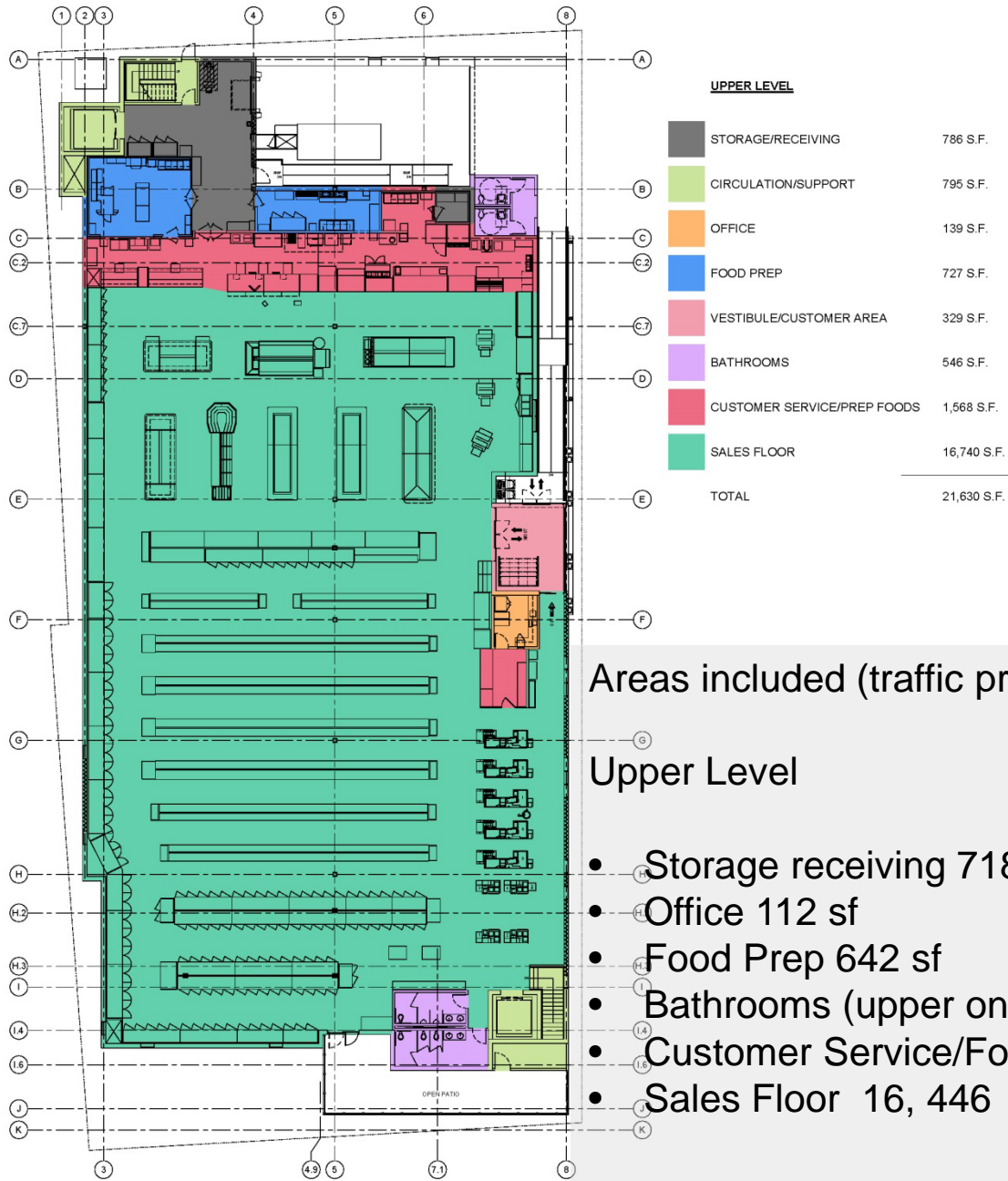
- Project Traffic Projections (new building program)
- Traffic Increase at key study area intersections
  - Measured Change in operations
  - Existing Mitigation Initiatives

# Proposed Layout Plan



# Building Area for Traffic Projection





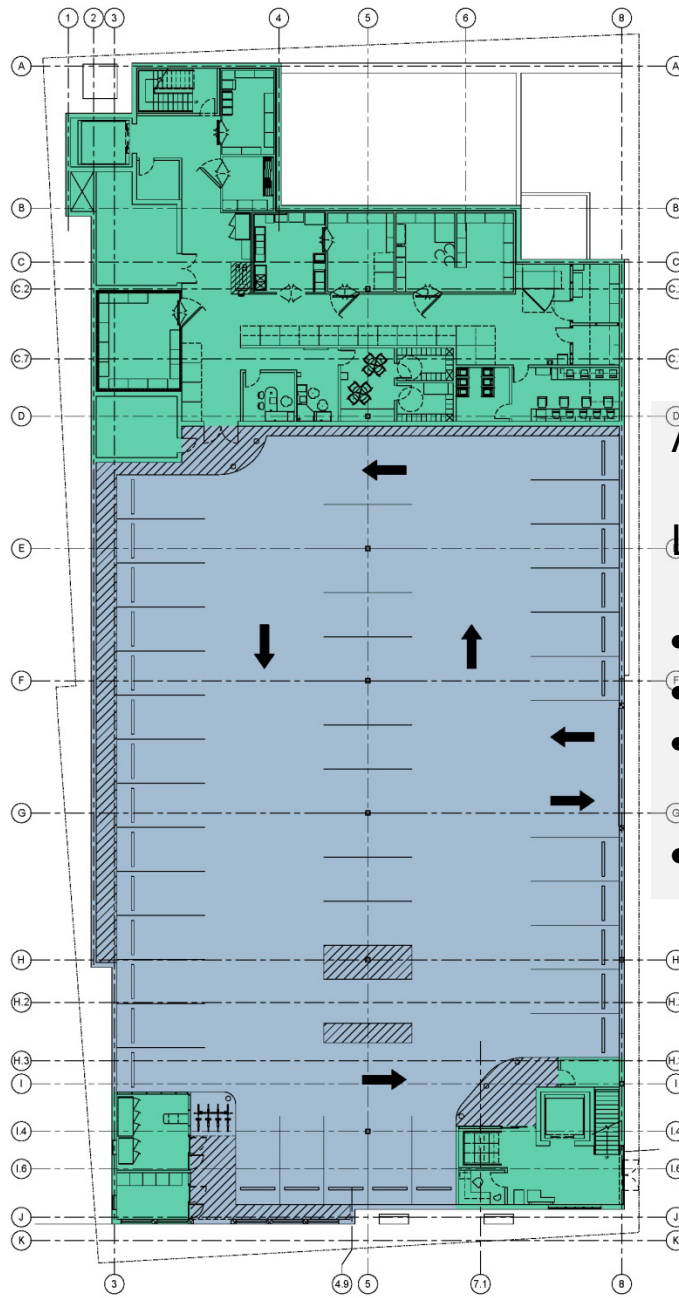
Areas included (traffic projection):

Upper Level

- Storage receiving 718sf
- Office 112 sf
- Food Prep 642 sf
- Bathrooms (upper only) 225sf
- Customer Service/Food Prep 1,472
- Sales Floor 16, 446

Lower Level

- Total Approximately 19,615 sf



**LOWER LEVEL**

ENCLOSED BUILDING AREA	7,204 S.F.
PARKING GARAGE	15,963 S.F.
<b>TOTAL</b>	<b>23,167 S.F.</b>

Areas included (traffic projection):

Lower Level

- Storage receiving 3,054sf
- Office 1,042sf
- Food Prep 235 sf
- Total Approximately 4,335sf

Total Upper + Lower

- Upper 19, 615 sf
- Lower 4,335 sf
- Approximately 24,000 sf

**Lower Level**

# Revised Traffic Generation

Table 3 Proposed Project Trip Generation Breakdown

Time Period	Direction	Total Trips <sup>a</sup>	Pass-by Trips <sup>b</sup>	New Trips
Weekday Evening Peak Hour	Enter	65	18	47
	<u>Exit</u>	<u>79</u>	<u>18</u>	<u>61</u>
	Total	144	36	108
Saturday Midday Peak Hour	Enter	72	18	54
	<u>Exit</u>	<u>75</u>	<u>18</u>	<u>57</u>
	Total	147	36	111

a Values taken from Table 3

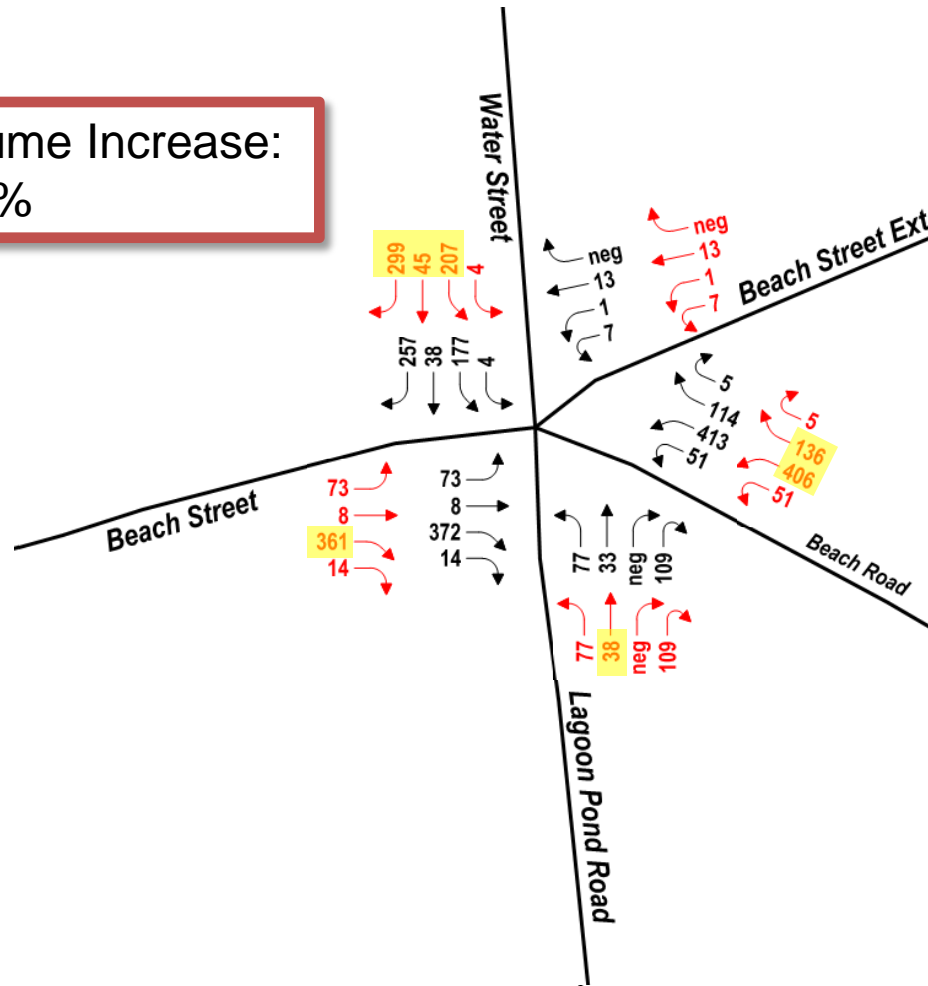
b Assumes a Pass-By Rate of 25 percent for the Stop & Shop Supermarket.



# Traffic Volume Increase Weekday Evening Peak Hour

2015 Volumes with Project (No Build)

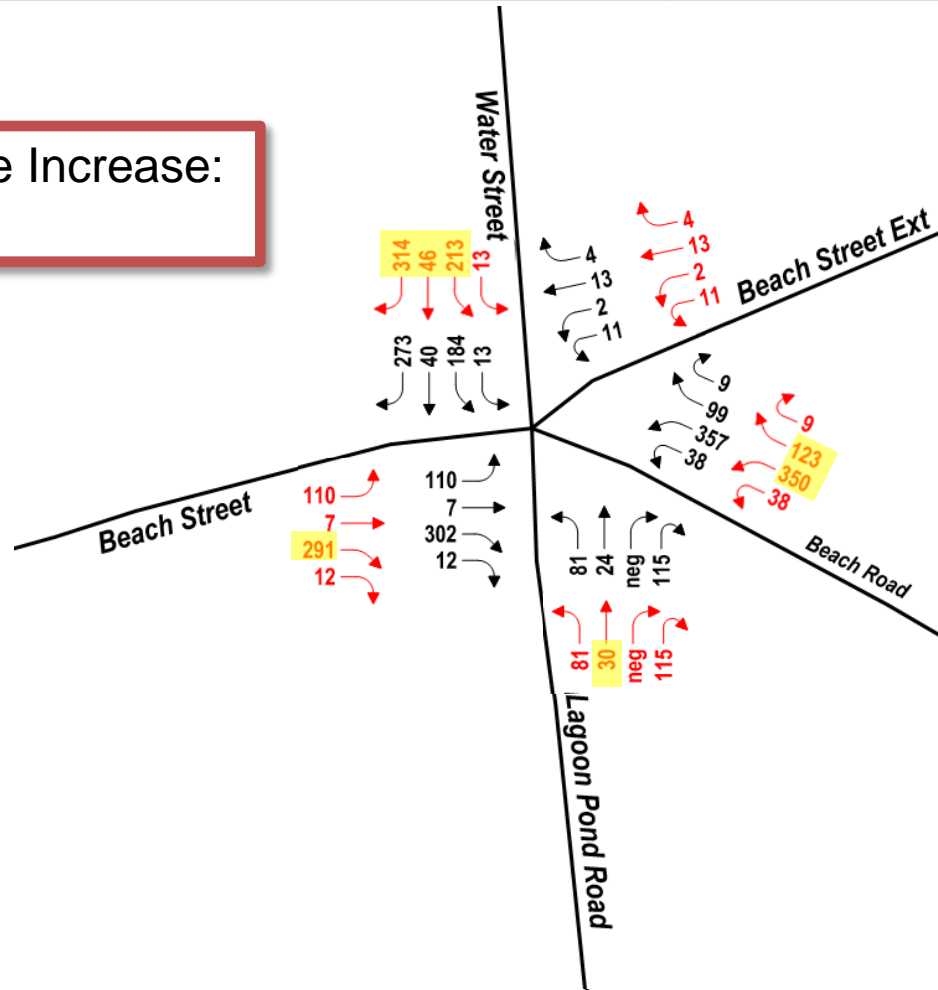
Cumulative Volume Increase:  
5.0%



# Traffic Volume Increase Saturday Midday Peak Hour

2015 Volume with Project (No Build)

Cumulative Volume Increase:  
5.2%



# Operational Analyses

- **SYNCHRO** is standard used for signalized and unsignalized locations in Massachusetts and beyond and has been utilized for all study area intersections.
- **VISSIM** is a modeling software that was utilized as a supplement
- Both platforms have been utilized but both have difficulties and accurately reflecting existing and future conditions at the Five Corner location due to:
  - Five-legged Intersection (not common)
  - 20-30 Minute Biased Police Control for SSA
  - Analysis period is 60 minutes and no way to account for the SSA police control period and aftermath (system recovery)

# Operational Analyses

- Because of the unique nature of the geometric and control at Five Corners, VHB analyzed this intersection as a Police Officer Controlled intersection (signalized type operation) under No-Build and Build Condition assuming optimization of operations for full 60 minute peak period
- This approach allows numerical evaluation of project impacts in terms of LOS, Delay, and Vehicle Queueing (measurement of incremental project traffic increase)
- Reasonable to assume that the **change** anticipated based on this set of analyses is similar to real in field conditions regardless of delay and queue experienced.

# Traffic Operational Analyses

## Five Corner Intersection (incremental change in operations expected based on SYNCHRO)

### PM Peak Hour

- Delay 7seconds (overall intersection)
- Volume to Capacity Ratio v/c 0.05 vehicles per hour  
(critical approach)
  - Queue average of .8 vehicles/approach

### SAT MIDDAY Peak Hour

- Delay 9 seconds (overall intersection)
- Volume to Capacity Ratio v/c 0.05 vehicles per hour  
(critical approach)
  - Queue average of 1.4 vehicles/approach

# Traffic Operational Analyses

## Five Corner Intersection (incremental change in operations expected based on July 31, VISSIM Analysis)

### PM Peak Hour

- Delay 4 seconds (overall intersection)
- Queue average of .31 vehicles/approach

### SAT MIDDAY Peak Hour

- Delay 3 seconds (overall intersection)
- Queue average of 0.8 vehicles/approach

# Traffic Operational Analyses

## Project Impacts:

- As outlined in Table 6 and Table 7 of the November 8, 2013 VHB Memorandum, project impacts at all study area intersections is minor.
- Based on the project volume increases identified and comparative intersection analysis provided (Five Corners), the project impacts at this location will also be minor and commensurate with the volume increases that are expected.
- Addition of police control for optimization purposed during extended peak hours will likely result in better operational change than that outlined as we cannot model effect of SSA limited (biased) police control

# Traffic Mitigation Measures Proposed

- Restripe and Up-date signage along Water Street between the turn around and Five Corners
- Provide expanded Police control of Steamship Egress and north Municipal Parking Lot Driveway
  - This will be supplemental to the existing control that is in place by the SSA.
  - In addition, if desired, the Proponent will work with the Town, the MVC, VTA and the Steamship Authority to develop protocols for police officer control at this location so that priorities can be established and movement of VTA vehicles can be enhanced along this corridor.
  - Expanded Police Control will be to optimize all operations
- Implement a Transportation Demand Management (TDM) program for employees of the site. This will include incentives for employees who park at the Park n Ride and take transit to get to the site.
- Conduct an Roadway Safety Audit (RSA) including Five Corners and the Water Street corridor.



# Traffic Mitigation Measures Proposed

## Continued:

- Provide the MVC and Town with traffic data and vehicle tracking necessary for use in the larger Downtown Transportation Study that is desired. This data has already been collected by the Proponent at substantial cost, before the project is approved.
- In addition to respond to requests, the Proponent will provide a mitigation payment of to be used as the Town sees fit for transportation initiatives in this area.
- Proponent is willing to upgrade the municipal parking lot if the Town desires to improve circulation and landscaping.
- Proponent is providing restrooms that will be available to the public next to the loading dock. These restrooms will be accessible from the street.
- Enhance Pedestrian sidewalks along Water Street and Norton Lane.

# Delivery Truck Activity

- 1 Tractor Trailer Per Day (usually arrives on 1<sup>st</sup> ferry of the day)
- Protocols of today will apply; attendant from store will monitor and assist to ensure safe ingress and egress by drivers
- 10-15 Vendor Trucks per day
- Vendor Trucks all arrive between 6- 9AM;
- Only one Vendor Truck can use loading dock area when Tractor Trailer is present. All others will use municipal lot similar to existing conditions when parking activity is lite (6-9AM)





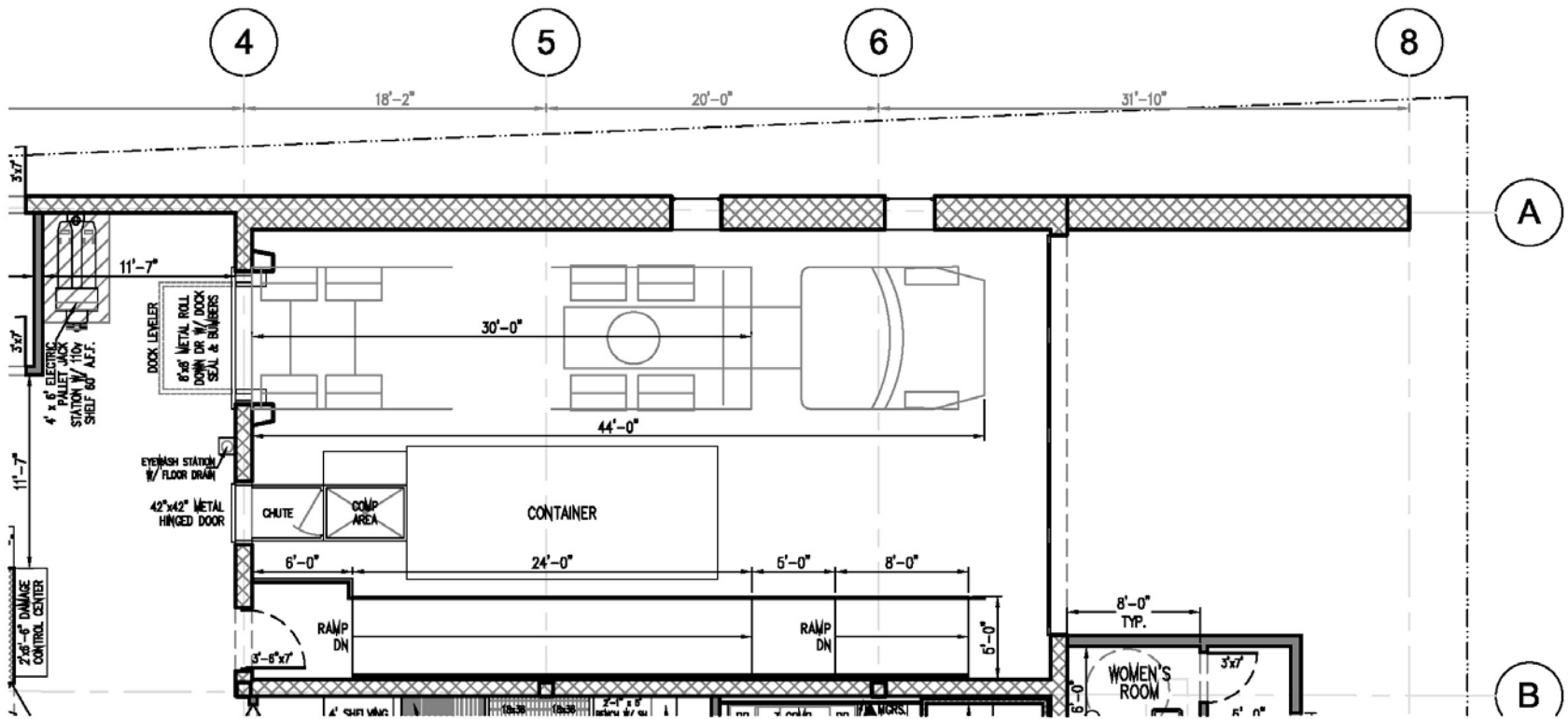
**Perspective from Steamship Authority**

# Proposed Loading Dock



# Appendix





First Floor-Loading Dock