Planning Department

Memo

To: Planning Board

From: Greg Cutler

cc: Bob Galvin, Village Planner; Dan Gray, Building Inspector

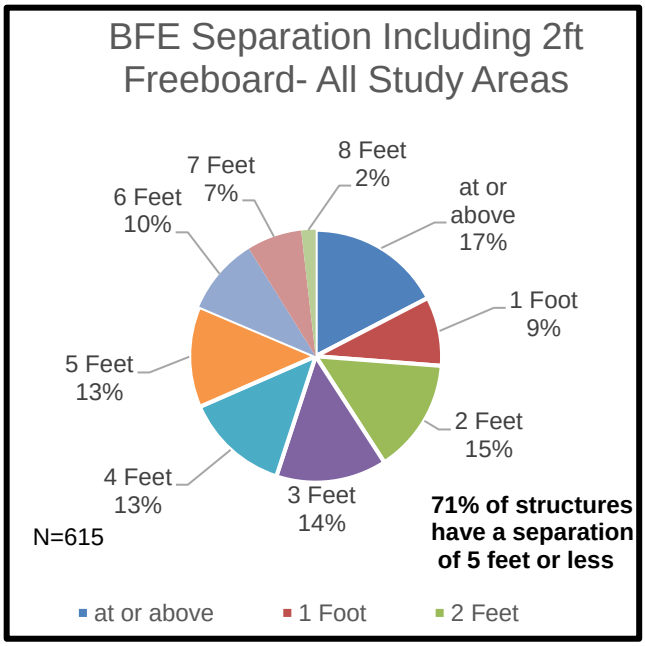
Date: July 19, 2016

Re: Additional analysis regarding building height measurement in SFHA

At the meeting on July 13th the Planning Board discussed options for measuring height within special flood hazard areas within the Village. The board had expressed concern regarding the possibility that the separation between the existing grade and the base flood elevation plus two feet of freeboard may lead to structures that are inconsistent with the height of neighboring buildings. To follow up on that discussion the Planning Board requested the Planning Department conduct further analysis on the level of separation between existing grade and base flood elevation. Furthermore, the Planning Department has provided the Planning Board with examples of design requirements utilized by New York City that help to mitigate the visual impacts of elevated homes. Lastly, the Planning Department has added some additional information related to sea level rise and the possible impacts it may have on flood zones throughout the Village.

The Planning Department's additional analysis has yielded several major conclusions the Planning Board may consider in their discussion:

- There are a total of 1,452 parcels that are located within the special flood hazard area, this equates to approximately 28% of the properties within the Village. Nearly every zone (with the exception being the R-6) has sections that are within the special flood hazard areas.



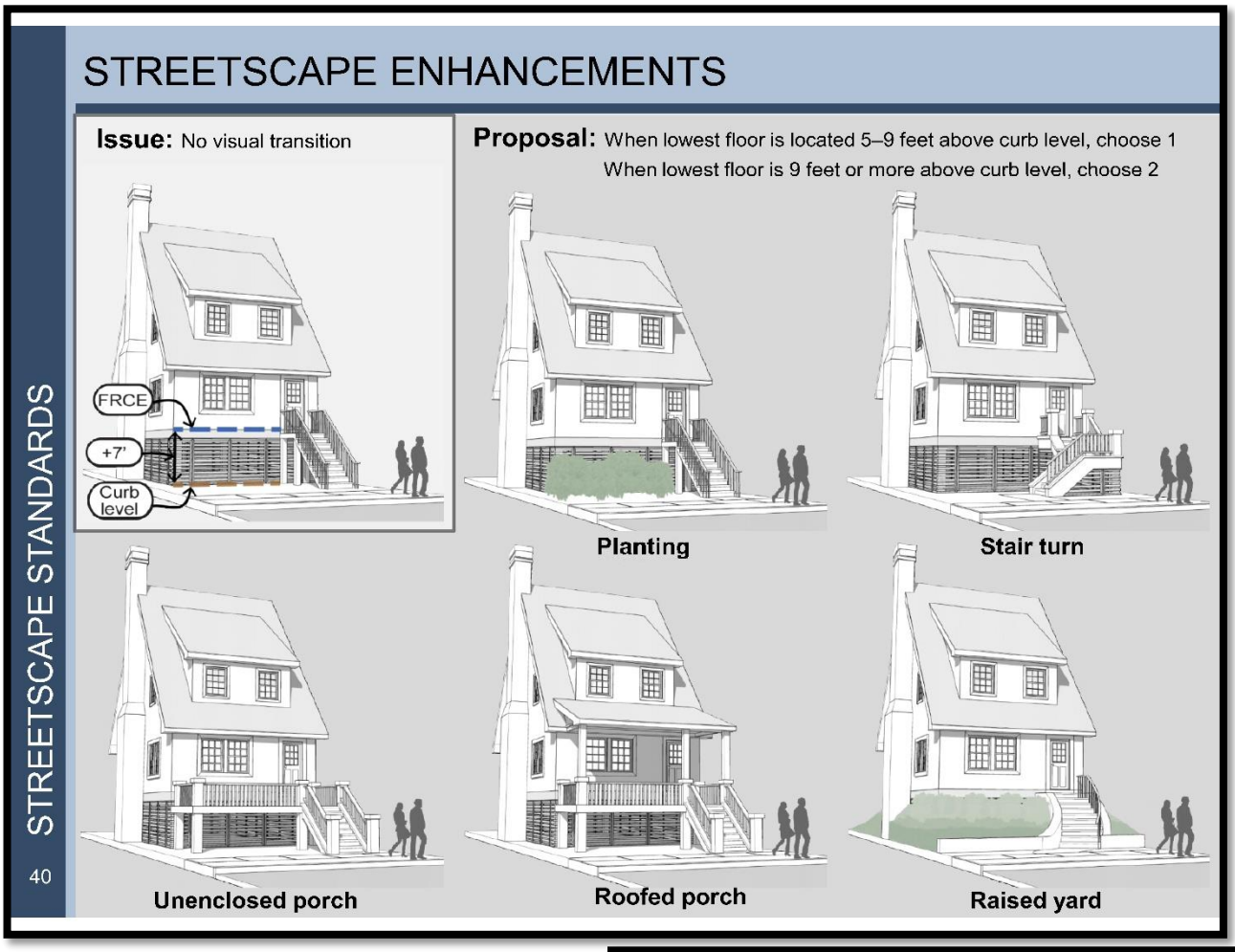
- Of the special flood hazard areas studied 71% of structures have a separation distance, including 2 feet of freeboard, of 5 feet or less. See attached charts for more localized data- the largest flood zone was chosen for each neighborhood in which the samples were taken from.

- The highest separation distance found was 8 feet, including 2 feet of freeboard. However only 2% of the properties surveyed share this characteristic.

Given the conclusions of the analysis and the concerns raised by the PB, the Planning Department recommends that building height be measured from BFE + freeboard, but not to exceed a height of 40 feet, which is five feet above the current maximum height of 35 feet. This would effectively capture approximately 71% (based upon 615 samples) of structures within the flood areas, while still mitigating the visual impacts of elevating homes.

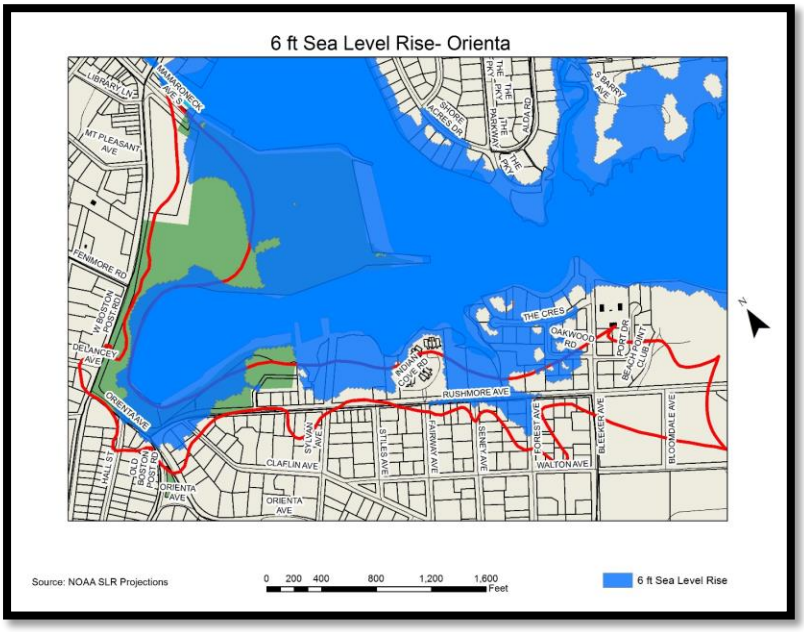
To further mitigate the visual impacts of elevating structures the Planning Board may consider recommending that applicants must provide mitigating design interventions. This concept comes from a review of the New York City flood resiliency text amendment in which applicants are required to choose from five design interventions that are intended to mitigate visual impacts. In New York City if the application is to elevate (or build a new home) between 5 and 9 feet from the curb level the applicant must introduce one of the design interventions, if the application is for more than 9 feet from the curb level the applicant must introduce two design interventions. The PB may consider recommending a

simpler version of this policy, such as requiring at least two interventions on all structures with 5 feet or more in separation (regardless of height).



Credit: NYC Department of City Planning

Future sea level rise is expected to increase the size of the special flood hazard areas. Most recent conservative estimates by NOAA indicate the possibility of up to a 6 foot increase in sea level by 2100. Allowing and encouraging the elevation of homes now is the precisely the type of long-term adaption planning necessary to reduce and ease the impact of sea



level rise in the Village's coastal areas. Sea level rise by its nature is a slow moving process that requires forward planning, without such planning these coastal areas may eventually become uninhabitable.

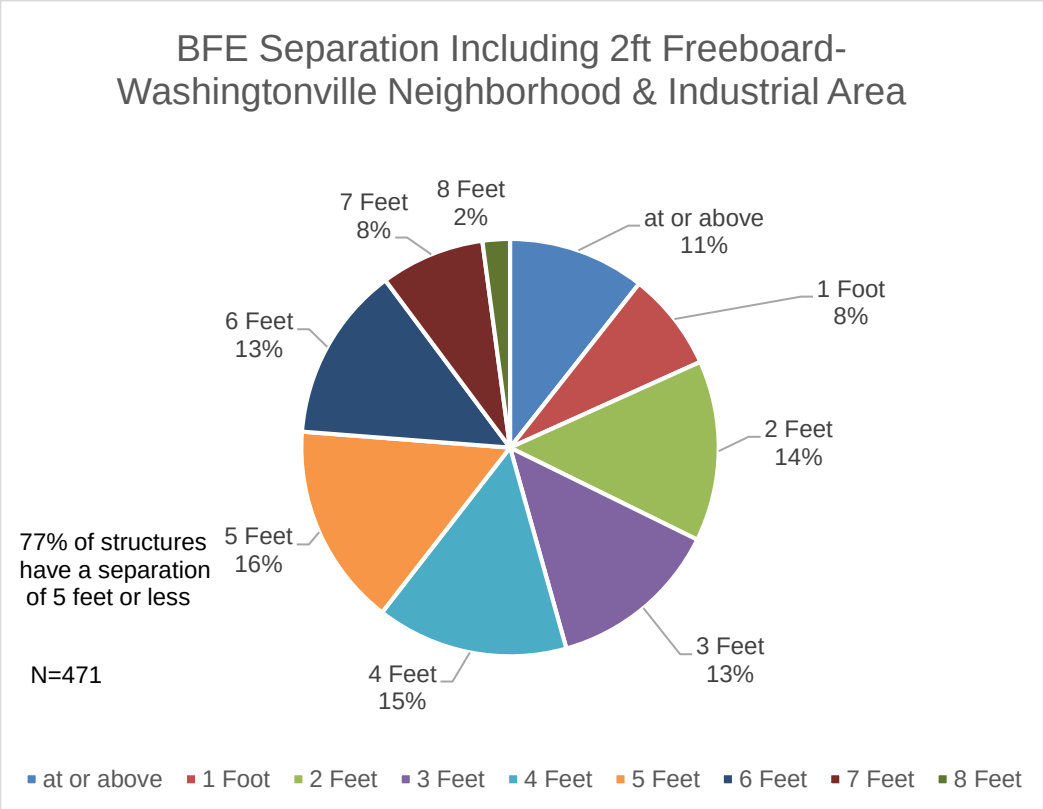
In summary, the benefits of allowing raised homes within special flood hazards areas within the Village include:

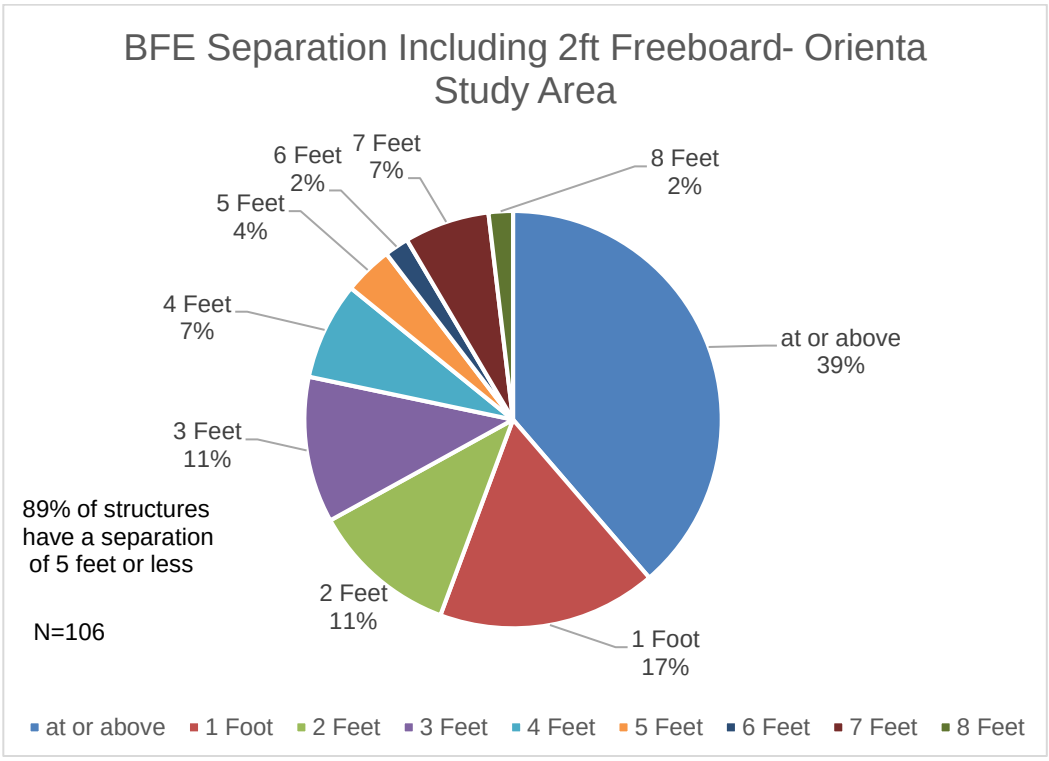
- An expected increase in the flood compliant structures that will reduce the risks to public welfare, safety, and property.
- An expected reduction or elimination of flood insurance premiums for individual property owners.
- An expected reduction in flood insurance premiums village-wide as a result of increased points via FEMA's community rating system. Every 500 points earned equates to a 5% reduction in insurance premium for policy-holders within the special flood hazard areas.
- Potential investment and reinvestment in properties that have become vacant due to damage associated with flooding. Many of these properties presently have little recourse.
- Forward planning that recognizes the imminent risks associated with sea level rise and aims to start mitigation now to reduce future impacts.

Although there are numerous benefits of encouraging the elevating of homes by measuring from BFE+ freeboard, there are nonetheless concerns related to visual impacts, particularly with homogeneity of height within the Village, and the visual impacts to streetscape. With proper mitigating policies like those outlined above the visual impacts to the street can be better addressed. The impact on increased height is unavoidable but by creating a “not to exceed” height ensures the visual impacts will remain as minimal as functionally possible. Furthermore there are no guarantees that by simply allowing the elevating of homes will result in the actual elevating of homes, but it would at the very least create options for property owners both now and in the future.

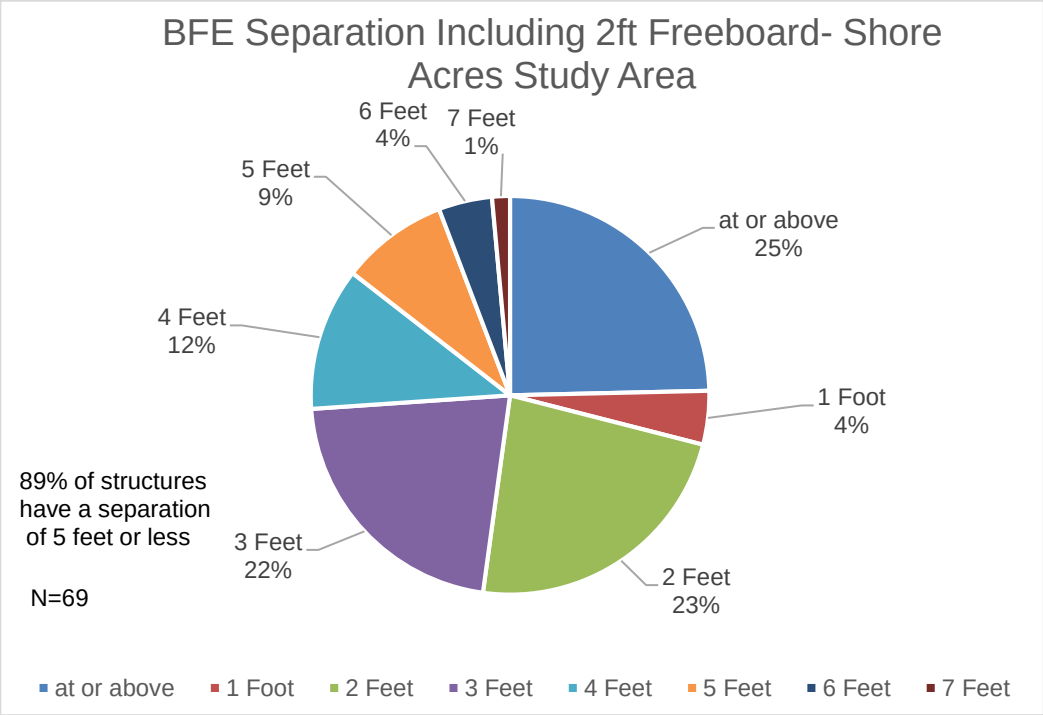
Please see the full separation analysis below. All elevations were derived from Westchester County GIS building footprint layer. The building footprint elevations are based on lidar data and do not constitute a survey. The data may be used as a general guide but may contain nominal data collection and classification errors.

Analysis of BFE Separation by Neighborhood

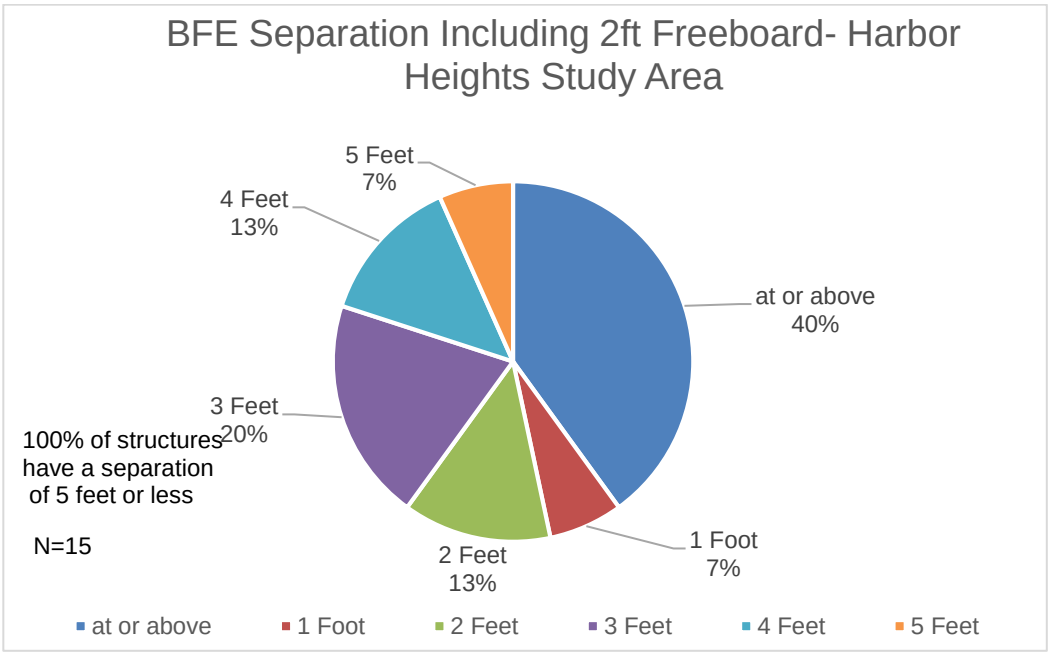


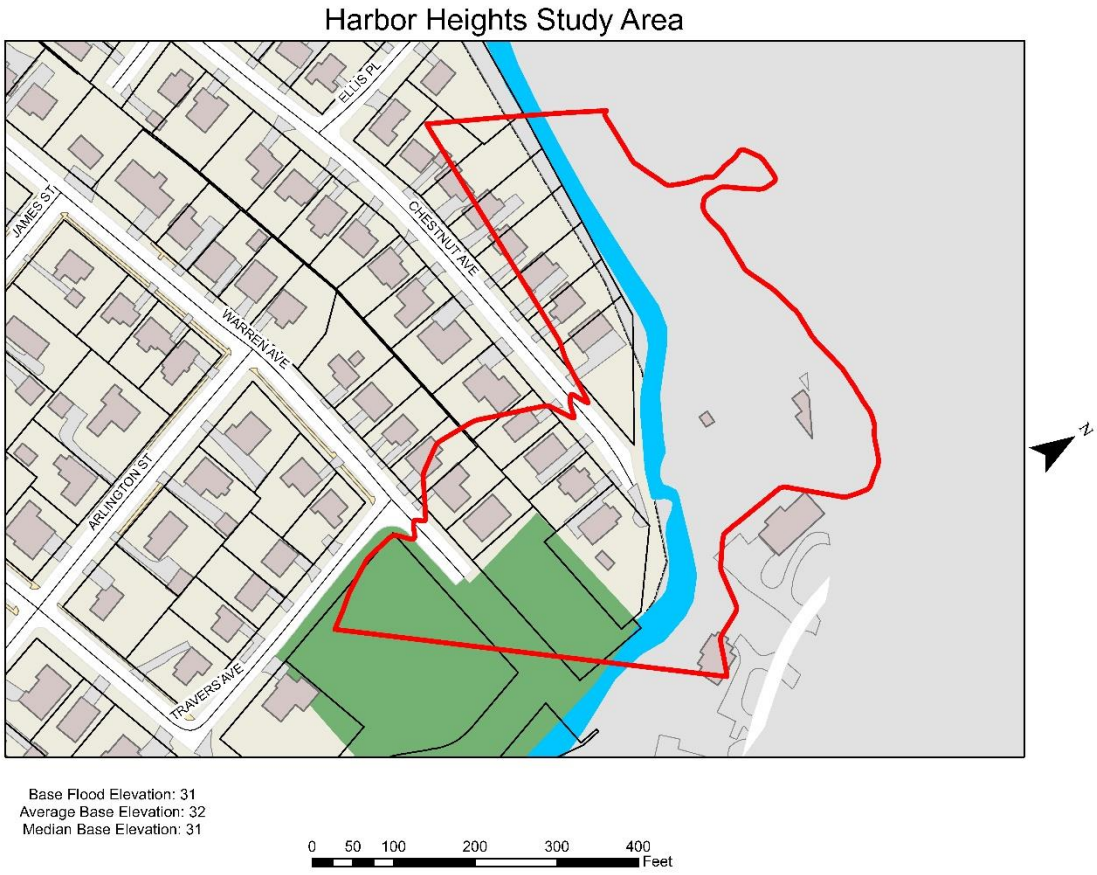

BFE Separation Including 2ft Freeboard- Orienta Study Area
6 Feet 2%
7 Feet 7%
8 Feet 2%
5 Feet 4%
4 Feet 7%
at or above 39%
3 Feet 11%
89% of structures have a separation of 5 feet or less
2 Feet 11%
1 Foot 17%
N=106
at or above
1 Foot
2 Feet
3 Feet
4 Feet
5 Feet
6 Feet
7 Feet
8 Feet


Orienta Study Area
LIBRARY LN
MAMARONECK AVE S
MT PLEASANT AVE
FENIMORE RD
W BOSTON POST RD
DELANCEY AVE
ORIENTA AVE
HALL ST
OLD BOSTON POST RD
ORIENTA AVE
ORIENTA AVE
CLAFLIN AVE
SYLVAN AVE
STILES AVE
FAIRWAY AVE
SENEY AVE
FOREST AVE
WALTON AVE
BLEEKER AVE
BLOOMDALE AVE
RUSHMORE AVE
INDIAN COVE RD
THE CRES
OAKWOOD RD
PORT DR
BEACH POINT CLUB
SHORE ACRES DR
THE PKY
THE PKY
THE PARKWAY
THE PKY
ALDA RD
S BARRY AVE
N
Base Flood Elevation: 12
Average Base Elevation: 13 (above BFE)
Median Base Elevation: 13
0 200 400 800 1,200 1,600
Feet


BFE Separation Including 2ft Freeboard- Shore Acres Study Area
6 Feet 4%
7 Feet 1%
5 Feet 9%
at or above 25%
4 Feet 12%
1 Foot 4%
89% of structures have a separation of 5 feet or less
3 Feet 22%
2 Feet 23%
N=69
at or above
1 Foot
2 Feet
3 Feet
4 Feet
5 Feet
6 Feet
7 Feet


Shore Acres Study Area
SHORE ACRES DR
OAKHURST RD
THE PKY
THE PARKWAY
ALDA RD
S BARRY AVE
SOUNDVIEW DR
CREEK RD
TAYLORS LN
SHADOW LN
COLONIAL CT
BARRYMORE LN
E BOSTON POST RD
STUART AVE
SOPHIA ST
HARRISON AVE
KEELER AVE
JENSEN AVE
FRANK AVE
WAGNER AVE
CARROLL AVE
N BARRY AVE
LAWN TER
HARBOR HILL LN
GUILFORD PL
N
Base Flood Elevation: 12
Average Base Elevation: 12
Median Base Elevation: 12
0 195 390 780 1,170 1,560
Feet


BFE Separation Including 2ft Freeboard- Harbor Heights Study Area
5 Feet 7%
4 Feet 13%
at or above 40%
3 Feet 20%
1 Foot 7%
2 Feet 13%
100% of structures have a separation of 5 feet or less
N=15
at or above
1 Foot
2 Feet
3 Feet
4 Feet
5 Feet


Harbor Heights Study Area
ELLIS PL
JAMES ST
CHESTNUT AVE
WARREN AVE
ARLINGTON ST
TRAVERS AVE
N
Base Flood Elevation: 31
Average Base Elevation: 32
Median Base Elevation: 31
0 50 100 200 300 400
Feet