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BOROUGH OF
KEYPORT
NEW JERSEY

STRATEGIC RECOVERY PLANNING REPORT

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Community Affairs Post Sandy
Recovery Planning Assistance Program



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Purpose

The New Jersey Department of Community Affairs (NJCA) has established a Post Sandy Planning Assistance Grant Program. The purpose of this program is to support long range planning for community redevelopment in the municipalities and counties sustaining damage from Superstorm Sandy. The Program provides grants to municipalities and counties to hire American Institute of Certified Planners/New Jersey Board of Professional Planners (AICP/PP) licensed planners to assess conditions created or exacerbated by the storm, identify approaches to recovery that will be more resistant to damage from future storm events, and encourage sustainable economic growth.

The first step in the grant process is the preparation of a Strategic Recovery Planning Report (SRPR). A SRPR must be completed for municipalities and counties to be eligible for additional Post Sandy planning assistance. The purpose of the SRPR is to evaluate the impacts of the disaster on relevant community features. The evaluation can be broad or narrow but should focus on planning goals, strategies, and priorities leading to actions that are most urgently needed for public safety and economic recovery. The SRPR should serve as a guide for actions to be taken going forward not only to recover from the effects of Superstorm Sandy but also to reduce vulnerabilities to future disasters. The following document serves as the SRPR for Keyport Borough in Monmouth County, NJ.

Impact and Needs Assessment

The first step in developing a strategic action plan for Post Disaster Recovery is to assess the impact of Superstorm Sandy on the Borough of Keyport and to identify specific needs for long term recovery that can be translated into specific types of projects (planning, infrastructure, mitigation & preparedness). The Community Profile that follows takes the form of a Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis as it relates to long term recovery from the impact of Superstorm Sandy.

Community Profile

Overview

The Borough of Keyport has a population of 7,240 based on the 2010 Census. According to the Master Plan Reexamination Report of 2012, the Borough experienced a loss of 4% in both population (-328 persons) and housing units (-178 units) in the ten years since the 2000 Census. It is noted that the decline in population was the second consecutive between Decennial Census periods, as the Borough's population in 1990 was 7,586, which is 346 persons more than in 2010.

The Borough's population has become more diverse between 2000 and 2010, with the percentage of "White" residents decreasing from 85% in 2000 to 80% in 2010, while the percentage of "Black" residents held steady at 7%. The increase came in Hispanic residents (increase from 11% to 18%) and Asian/Other residents (increase from 8% to 13%). The population also grew older, with the median age increasing slightly from 38.1 years of age in 2000 to 40.5 years of age in 2010. Also, in addition to losing 178 units from the housing stock, the percentage of vacant housing units increased from 4% in 2000 to 6% in 2010. In absolute numbers, there were 136 vacant housing units in 2000 and 205 vacant units in 2010.

Strengths

The Borough has a number of strengths that were highlighted in recent community engagement efforts, including "Renewing Keyport's Waterfront and Downtown - A Citizen's Plan for Re-Development", the PowerPoint presentation of which was provided by the Borough for use in the preparation of this SRPR. The effort was part of a "smart growth" planning effort in 2004 that included a "Place-Making Workshop". The presentation highlights the following strengths:

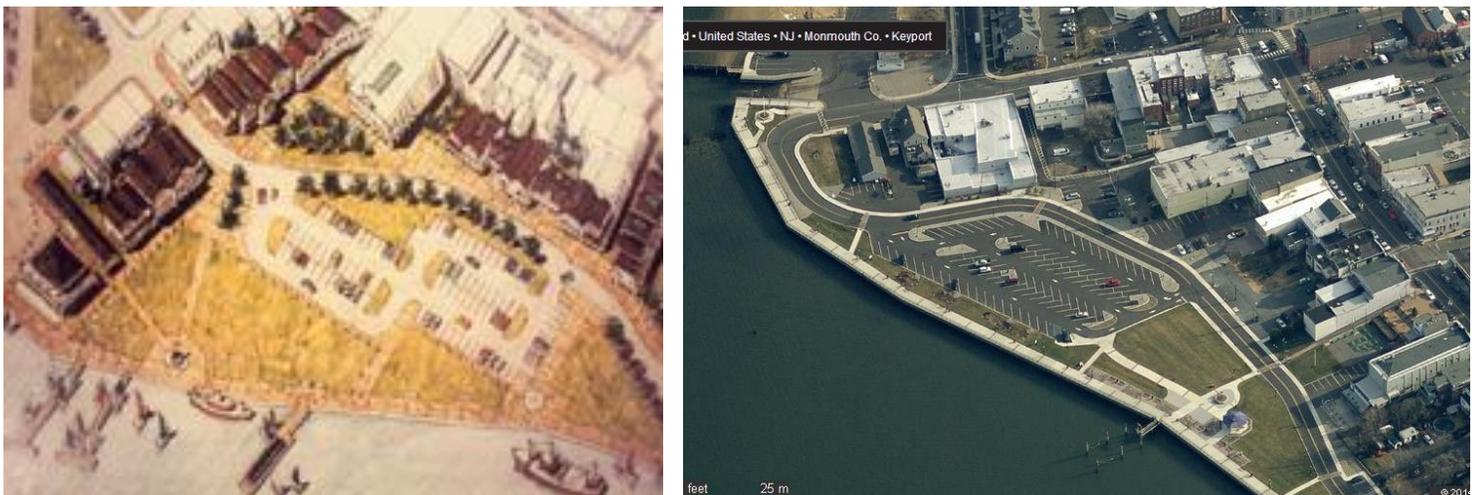


Figure 1: Left: Rendering of concept for public open space development for Keyport shown in "Citizen's Plan for Re-Development"; Right: Bing overhead view of Keyport waterfront as constructed – pre Sandy.

- Outstanding waterfront, including harbor, beaches and wetlands
- Remarkable architecture
- The only undeveloped public waterfront on the Bayshore
- A downtown with amazing potential
- Potential for commuter ferry service and/or water taxi
- Vision for an outstanding public waterfront open space

Weaknesses

While the Citizen’s Plan for Re-Development presentation did not include a SWOT analysis, the Bayshore Region Strategic Plan, adopted in May of 2006, included the following strategies in its “Planning Implementation Agenda” (PIA):

- Need to create a node at Route 36 and Broad Street
- Need to create a “Downtown Keyport Waterfront Initiative”

Opportunities

The Bayshore Plan also proposed several action items in its PIA that present opportunities for improving the Borough’s quality of life:

- Proposed Bikeway along the Bay shoreline and on Beers Street
- Proposed pedestrian path along the bay front
- Proposed “Bayshore Drive” along First Street and West Front Street

Threats

The trend of declining population between 1990 and 2010, as well as the decline in the number of housing units, combined with an increase in vacant housing units between 2000 and 2010 may represent a threat to long term recovery from Sandy, as it suggests a continued lack of interest in investing in new residential construction in Keyport. The damage from Superstorm Sandy, combined with a soft housing market could accelerate the decline in population and housing development.

Impact Assessment

The topographic characteristics of Keyport played a large part in minimizing the overall damage wrought by Superstorm Sandy. As with several other Bayshore communities, Keyport’s topography slopes down to the waterfront, with most of the Borough’s property being on ground that was out of the reach of Sandy’s surge. In towns with flatter topography, such as Keansburg and Union Beach, or with more abrupt changes in elevation between the upper and lower sections, such as Highlands, the loss of property from Sandy was more severe. Nevertheless there are quantifiable impacts of



Figure 2: Sandy aftermath – Permanent loss of landmarks such as Ye Cottage Inn (top) and Steamboat Dock Museum (bottom) Images from nj.com and bing.com

Sandy on Keyport, aside from the sentimental loss of such landmarks as the Ye Cottage Inn and the Steamboat Dock Museum (Figure 2).

Based on reported damages to the Borough, 61 residential properties were impacted with 48 reporting damage from water intrusion. Many of the reports indicated water of from 4 to 6 feet in depth. One property of 15 townhouses at 45 Beers Street had 6 feet of flood water on the first floor and remains vacant more than a year after Sandy hit.



Figure 3: The 15 unit townhouse development at 45 Beers Street (upper left) remains vacant after taking 6 feet of water from Sandy's surge. The ten story Keyport Legion Apartments at 30 Beers Street across the street (lower left) had 4 feet of water on the ground floor. The tidal marsh from the Luppataong Creek is visible directly behind the high-rise building. The image at the upper right shows flooding during a moon-tide in January of 2014, caused by the creek backing up through the stormwater drainage system into the street. The image at lower right is the same area during a major event (Nor'easter of 92). *Images at upper right and lower right courtesy of Michael Lane.*

In addition to the impact on residential properties, the Borough suffered reported impacts to 38 businesses. Most of the hardest hit businesses were in the low lying areas along East Front Street at Division Street, and at West Front Street where the Luppataong Creek winds its way to its confluence with Matawan Creek at Keyport Harbor. Where the Luppataong Creek crosses under West Front Street is where the Ye Cottage Inn reported 8 feet of water and structural damage that ultimately resulted in its demolition. It is also where the Pedersen's Marina



Figure 4: The site of the former Ye Cottage Inn has been cleared and posted for sale.

reported 6 feet of water, extensive building, dock and bulkhead damage and a heavy loss of boats.

The businesses along the downhill (north) side of Front Street had varied impacts from the Sandy surge, as the water moved up the hill from the promenade and stopped just short of Front Street. Businesses such as Burlew's Restaurant and Family Dollar suffered damage to the rear (downhill) portions of their buildings. Comments received from the public revealed that flooding in this area of town (low elevations at Division Street near Front Street) has occurred during the Nor'easter of December, 1992 and Tropical Storm Irene and is exacerbated by a collapsed stormwater outfall in Beach Park that repeatedly silts in and has to be cleaned out.



Figure 5: In the image above, boats are left hanging from the bridge at the Matawan Creek after Sandy's surge subsided. The marine businesses, such as the Keyport Marine Basin and Pederson's Marina suffered heavy damage to facilities and loss of boats from 6 to 10 feet of floodwater (*image from bing.com*)



Figure 6: The two upper images above show the clogged and collapsed outfall pipe in Beach Park. The Google Street View image below shows the former concrete bulkhead at end of Walnut Street that were destroyed by Sandy. Restoring this access is a key goal of the Borough.

The upper images in Figure 6 were provided Keyport resident, Michael Lane, and illustrate the condition of the outfall pipe in Beach Park described above. The clogged condition of the outfall is reportedly a cause of flooding during heavy rainfall events in the area around Division Street and East Front Street. The repair of the pipe and its supporting cradle is a mitigation project recommended in this SRPR. During Sandy, the flood waters impacted the backs of the homes on Osborne Street, according to Borough residents. They described impacts that reached stores on the backside of Broad Street up to Third Street and a couple of blocks of Front Street. Ten businesses in this area of town reported damages, according to public comment, but it is believed that some businesses that experienced damages did not report them.



Figure 7: Top left image is view from Front Street through the block sloping down to waterfront. Top right is view back up to Front Street. The surge reached about two-thirds up the hill and damaged the rear levels of several buildings. Bottom left is the Bayside Bar & Grill at foot of Broad Street, which suffered structural damage. Bottom right is the view of the foot of Broad Street from the end of the promenade where significant damage occurred in the lower part of the block.

Vulnerability of Land Uses

Figure 12 is a map that combines topography at two foot contours and Federal Emergency Management Agency (FEMA) mapping layer showing the extent of the storm surge from Superstorm Sandy. In addition Maser Consulting mapped the recorded damages to residential properties (outlined in yellow) and businesses (outlined in red). The map portrays areas of vulnerability in low-lying areas of the Borough that correspond to the areas described above where the most extensive damage was experienced. These areas include: the lower half of the downhill side of the Front Street Block, the area near the Luppataong and Matawan Creeks along West Front Street and Beers Streets, the residential properties along the bulkhead along First Street, and the residential properties in the lower-lying areas along the Chingarora Creek, which forms the easterly border of the Borough.

Figure 12 shows that while the brunt of Sandy's surge penetrated the lower edge of the downtown area, the surge extended up the three creeks (Matawan, Luppataong and Chingarora), with the greatest vulnerability at the confluence points of these creeks with Keyport Harbor in the Raritan Bay.

Figure 13 shows the FEMA Advisory Base Flood elevations. Figure 14 shows the Preliminary Flood Hazard (FIRM) map released by FEMA in February 2014. As could be expected the areas subject to inundation are fairly consistent on all three maps (Figures 12, 13 and 14).

Vulnerability of Residential Land Uses

The areas where residential properties were impacted substantially, based on reported damages in Table 1, were in the area of the west end of First Street, Beers Street, Division Street near Front Street and the east end of First Street. The properties along the west end of First Street near the downtown are part of the bulkheaded waterfront. The east end of First Street is a low-lying area, also bounded by Oak and Spring Streets and extending to the east end of Second and Third Streets, with properties that do not front the bay but were flooded by the surge that came up the Chingarora Creek. The properties in the blocks along Division Street between W. 3rd and Front Street are subject to periodic flooding due to poor drainage and were also impacted by the surge from Sandy. Public comments received during the preparation of this SRPR indicated that additional residential properties were damaged along the waterfront between Atlantic Street and Walnut Street and on Osborn Street where it meets the low-lying area along Division Street described above.

Input from Borough residents included a historic overview of a property along the west end of First Street that showed the raising of the bulkhead height after major storms leading up to Sandy and then the response to Sandy. The images show a dramatic change in the bulkhead height with grading behind it, shown below.



Figure 8 (Left): Bulkhead photo at 51-53 First Street after Hurricane Belle destroyed the garage at 51 First Street. The bulkhead at this time (9/1976) was ~ 2.5 feet in height above the beach. **(Right):** Bulkhead photo at 51 First Street after the 1992 December Northeaster, which pushed water up to the basement door sill (elevation 11.5 ft). The bulkhead at this time (12/1992) was ~ 5 feet in height above the beach. *Courtesy of Michael Lane, Keyport, NJ*



Figure 9: (Left): Bulkhead photo at 51 First Street after Superstorm Sandy, which pushed water to an elevation of ~ 14 ft. The new bulkhead is ~9 feet in height above the beach, which gives it a flood elevation of ~ 13 feet. *Courtesy of Michael Lane, Keyport, NJ* **(Right)** Damage to bulkheads along First Street facing west from Keyport Yacht Club in April, 2013 *Courtesy of Maser Consulting, PA*

Table 1: Reported Damages to Residential Properties

Damaged Homes					
Site No.	Block	Lot	Address	Owner	Damage
1	39	24	23 Beers	Masia, Angelo	Water
2	49	30	259 Beers	Miele, Eileen C	Siding
3	39	12	45 Beers	Alaric Properties	6' Water (15 Units)
4	39	20	25 Beers St	Chillemi, Delores	Water
5	39	21	27 Beers St	Ackerman, Deborah A & Hal K	Water
6	94	4	30 First St	Corbett, Robert J & Linda M	Garage Destroyed, Basement Flooded
7	94	5	37 First	Mangione, Vincent	Water- Rear Wall Collapse
8	94	6	42 First	Reedy, Michael & Ann Marie	Water
9	138	19	39 Oak	Poling, Robert M. & Gail E.	Water
10	138	20	37 Oak Street	Tormay, D & G Morris%J Hagman	Water
11	138	21	35 Oak	Topoleski, Theodore	Water
12	138	23	25 Oak	Terhune, William R Iii & Carrie	Water
13	137	14	60 Walnut	Seckinger, Rowland S & Marjorie L	Bulkhead Damage
14	108	6	Broad St.	Bethany Manor	Brick Veneer Collapse
15	79	8	26 Osborn	Brinkley, Diane	Water
16	138	3	299 First	Morris, Richard H & Ginlia P	Water, Foundation Damage, Boiler
17	138	4	305 First	Harbison, Francis J. & Elizabeth	Basement Flooded Hwh, Furnace
18	138	5	309 First	Garcia, Fangio & Ana Milena	Water, Boilers, Hwh, Siding
19	138	6	313 First	Albertson, Kelly	Water
20	138	7	319 First	Dressler, John	5' Water, Boiler, Hwh, Wiring
21	138	8	325 First	Stonerock, Lawrence C & Wendy C	Water
22	138	10	329 First St	Ziegenbalg, Jacqueline	Water
23	138	11	333 First & Walnut	Atkinson, Carl R & Ruth E	4' Water (10 Units)
24	138	12	10 Walnut	Doughty, Thompson & Freda	5' Water- Foundation
25	138	13	12 Walnut	Jones, Edward F & Laura J	4' Water- Basement, 1st Fl
26	138	14	14-16 Walnut St	Kutschman, Andrew, Sr.	Water
27	138	15	47 Oak	Lafata, Teresa P	Water
28	138	16	45 Oak St	Snyder, Gloria & Squier, Gerald M	Water- Vacant
29	138	17	43 Oak	Morgan, Raymond & Brunelli Barbara	Water
30	137	12	46 Walnut	Grabowski, Thomas & Carole L.	Bulkhead Damage, Erosion
31	21	7	7 Broadway	Zuback, Ronald & Jane	Erosion
32	22	32	Beers	Keyport Legion Apt. Inc.	4' Water Generator Room
33	22.07	5	4 Oyster Creek	Larko, Michael	Collapse Chimney
34	22.02	11	11 Gull Way	Mahoney, Janet	Water
35	22.02	12	12 Gull Way	Inguaggiato, Jos & Campbell, Heather	Water
36	94	15	89 First	Ruiz, Brenda J	Water, Bulkhead Destroyed
37	22.03	16	16 Gull Way	Gregg, Jeannette M & Jennifer A M	Water
38	22.03	17	17 Gull Way	Hilt, Irene	Water
39	22.03	18	18 Gull Way	Meade, Lori	Water
40	22.03	19	19 Gull Way	Knoblauch, Celia	Water
41	22.03	20	20 Gull Way	Foulks, Kenneth R.	Water
42	22.03	13	13 Gull Way	Williams, Barbara	Water
43	22.03	14	14 Gull Way	Jacovino, Deborah	Water
44	22.03	15	15 Gull Way	Hand, Mary Margaret	Water
45	134	15.01	224 Second	Lovallo, Anne	Water
46	134	15.02	236 Second	Smith, John B	Water
47	135	16	334 First	Sarath, Alan & Joan & Bruce Deys	East Side Foundation Wall
48	135	17	336 First	Keeran, Paul S & Diedre Ann	Structural Damage- Rear Wall
49	134	7	186 Second	Plump, Michael	Porch Supports
50	135	22	227 Second Street	Brown Cristopher & Felicia	Water
51	135	21.01	233 Second Street	Tamburello, Joseph	Water
52	136	22	40 Oak	Rausch, Claire V	Water
53	136	31	2 Spring St	Lear, David	5' Water, Boiler, Hwh, Wiring
54	94	8	51 First St	Lane, Michael S	Water
55	94	9	53 First St	Zieman, William H Jr	Water & bulkhead ,damage
56	94	10	55 First St	Dounelis, Athas	Water, Bulkhead & retaining wall destroyed
57	94	11	69 First St	Florentine, Barbara	Water & Bulkhead destroyed
58	94	12	75 First St	75 First St LLC	Water & hill erosion
59	94	13	79 First St	Schafer, Carol H	Hill erosions
60	94	14	85 First St	Azzolino, Agnes	Hill erosions & damaged deck
61	94	18	93 First St	Kosobucki, Lynne C.	Retaining wall destroyed & hill erosion

The other impacted areas of residential vulnerability along the low-lying portion of Beers Street near Front Street and the east end of First Street would be more comparable to issues in coastal towns where the long term recovery action would be to elevate lowest habitable floors to or above the finally established Base Flood Elevation.

Vulnerability of Non-residential Land Uses

The area of vulnerability for business uses corresponds to the damages listed in Table 2 and shown in red outlined parcels on the map in Figure 12. The two areas for long term planning can be identified as the lower portion of the downhill block of Front Street and Broad Street to Division Street in the downtown, which are mostly traditional retail sites, and the marine commercial uses along the Matawan Creek, Luppatawong Creek and the tip of Keyport Harbor. Most of these areas are bulkheaded and the recovery response is likely to be raising bulkheads and adding bulkheads where there are gaps, as well as raising areas behind elevated bulkheads such as the parking lot for the First Street Firehouse. However, given the history of increasing bulkhead heights with each severe storm event, the Borough will need to closely monitor the Army Corps of Engineer mitigation projects in neighboring Union Beach and Keansburg, inclusive of the construction of wave breaks and levees, to ensure that they will not affect the elevations used to design the height of bulkheads and other mitigation measures in Keyport.

Short term action projects can be focused on addressing existing conditions of stormwater infrastructure that contributes to the severity of flooding, such as the repair or replacement of the damaged outfall pipe and its support cradle in Beach Park discussed in the previous section and stormwater improvements in the flood prone area around Division Street. Public comment received during the preparation of this SRPR indicated that there were unreported damages to business properties in the Division Street area.

The long term action projects will also need to address more isolated water-dependent commercial uses such as the Keyport Yacht Club and Olsen's Boat Yard along the eastern bay front to determine appropriate recovery strategies. Maser Consulting, PA performed inspections of the Keyport Yacht Club (KYC) pier on several occasions beginning on November 30, 2012 and developed plans for rehabilitation of the pier. The construction of the rehabilitation work was done in April of 2013. A review of the Maser Engineering Inspection and Investigation Report, dated February 11, 2013, provided some insights on strategies for reducing potential damage in future events. For example, the report states: *"KYC club members observed various floating docks ranging in sizes from 30 foot to 40 foot in length by 4 foot to 8 foot in width hitting and banging against the pile bent timber pilings. Based on KYC club members comments, these floats did not belong to KYC and apparently broke loose from other marine facilities during the hurricane. KYC club members secured these floats to KYC mooring piles located away from the pier pile bents after the storm to prevent further damage to the KYC pier pilings"*¹. This observation suggests that a strategy for preparedness should include better provisions for securing floating docks, gangways, buoys, boats, boatlifts, etc. to prevent them from breaking loose and increasing damage to shoreline structures. Another strategy may be a regulatory response to the reconstruction of buildings and structures on piers, as the small (7' x 10') building that



Figure 10: This slab at the KYC was undermined by erosion and the rip-rap projection was compromised by storm surge erosion and settlement, with some scattering of smaller rock by Sandy.

¹ Engineering Inspection and Investigation Report, Maser Consulting, PA, February 11, 2013, page 6.

served as the launch operator’s quarters at the waterward (T-section) end of pier was swept off the pier by Sandy’s surge and never recovered (Figure 11).²

Other damage attributed to Sandy learned from the Maser report on the Keyport Yacht Club suggests that traditional engineering solutions such as rip-rap may not be fully effective. The report observes that the concrete slab at the end of Atlantic Street suffered severe erosion despite the rip-rap around it and the area surrounding the rip-rap exhibited settlement, making the slab more vulnerable to future damage (Figure 10).³

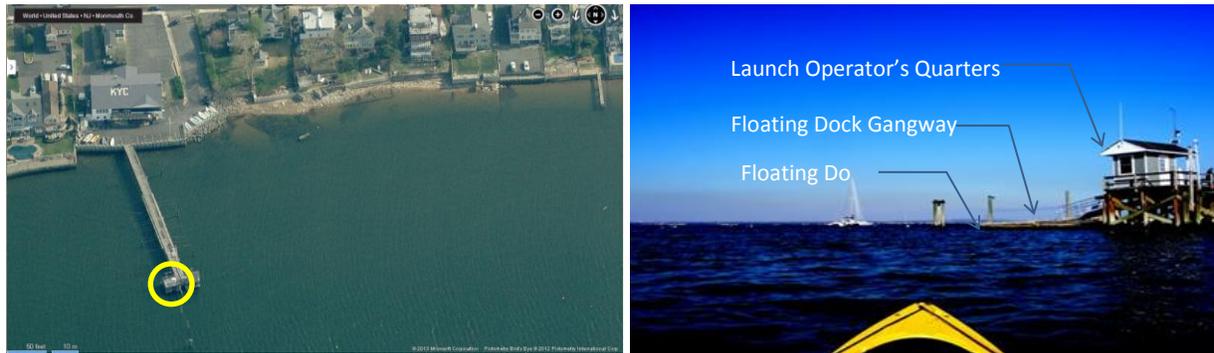


Figure 11: View of First Street waterfront properties, including the Keyport Yacht Club with launch operator’s quarters building (yellow circle) shown on the right side of the "T" end of the pier in image at right. The building was swept away during Sandy, as were the floating dock and gangway attached to the pier (see image at right). Compare the concrete bulkheads behind the residential properties to the right with the ground photo in Figures 8 and 9 showing the damage to those same bulkheads.

Table 2: Reported Damages to Businesses

Damaged Businesses						
Site No.	Block	Lot	Address	Owner	Business	Damage
1	62	17	17 E Third St	Block 1223 Forest Avenue LLC	Delaura's Landscaping	6' Water
2	62	18	30 Division	Sophia Cohen Rlty. Inc./C/O J.Cohen	Max's Auto Detailing	6' Water
3	20	13	357 W Front	357 West Front St.LLC	Cottrell's Restaurant	Collapse Rear Wall
4	20	14	353 West Front St	357 West Front St. LLC	Brown's Point Marina	Bld Off Foundation, Main Bld Water Damage, Dock & Boat Damage
5	20	12.01	337 West Front St	Demetris, Stanley & Patty H&W	Vacant Bld	Water Damage
6	9	69	70 Hwy 35 North	Petner, James S & Sandra	Peterson & Staeger	8' Water
7	94	2	First St	Borough Of Keyport	Keyport Boat Ramp	Trailer Destroyed
8	9	73	340 W Front St to Hwy 35	Keyport Marine Basin Inc	Keyport Marine	6' Water Boat Damage, Dock Damage Lost Bulk
9	9	74	350 W Front St	Vestri Corp	Up The Creek	12' Water Off Foundation
10	79	13	53 Division St.	Jehovah's Witness	Jehovah's Witness	3' Water- Electrical Panel
11	79	1	28 E. Front	Planet Food	Drew's Bayside Bistro	6' Water
12	79	3	34 East Front St	Leong, Fat & Min Quen	Garibaldi's Restaurant	6' Water- Structural
13	8.01	12	Hwy 35 & Maple Pl	Dbmc LLC		Roof Damage
14	21.01	53	10-16 Broad	10-16 Broad Street, LLC	Bayshore Appliance	Complete Collapse
15	21.01	36	43 W Front	39-43 West Front Street LLC	Hr Connect	8' Water- Rear Wall Damage
16	21	12	165 W Front	Pedersen, Hans & Sons Inc	Pederson's Marina	2 Story Boat House Lost, Main Bld Damage 25%, 8-10' Water, Boat Damage
17	21	15	149 W Front	Hilas, George & Mihail D	Ye Cottage Inn	8' Water- Structural Damage
18	21.01	23	103 W Front	Aversa, Augustino & Agnes	Mike's Sub's	Partial Collapse- Off Foundation
19	21.01	27	81 West Front St	American Legion Post 23	American Legion	4' Water- Damaged Rear Wall
20	21.01	32	59 West Front St	Magic Touch Construction Company	Burlew's Restaurant	Water Rear Lower Level
21	33	56	82 Highway 35	Who Z LLC	Certified Auto Exh	4" Water
22	9	67	Hwy 35	Ventura, John J.	Gallery Bicycle	4' Water- Electrical
23	22	28	110 W Front St & Beers	Caddle, Jack	Apollo Plumbing	4' Water
24	21.01	52	6 Broad St	6 Broad Street, LLC	Bayside Bar & Grill	Structural Collapse
25	21.01	51.01	4 Broad Street	Borough Of Keyport	Steamboat Dock Museum	Structural Collapse
26	61	10	Broad & Front	2 West Front, LLC % World Jeep	Mcdonough's Pub	Transformer Fire/ Elec Serv
27	94	19	Atlantic & Bay	Keyport Yacht Club	Keyport Yacht Club	Lower Bar Flood, Hwh
28	94	44	E. Front & Prospect	Olsen, John O. & Arthur G., Trustees	Olsen's Boat Yard	Bulkhead Collapse, Garage
29	22	21	150 W Front St	Keyport Fishery, LLC	Keyport Fishery	8' Water
30	22	24	124 West Front St.	Veres, Robert & Melody, H&W	Hot Dog Bob's	Structural Collapse
31	21.01	45	17-21 W Front	17-21 West Front Street%Schwartz	Family Dollar	Undermind Rear Wall
32	21.01	47	13 W Front	Deprima, Marie & Cona, John	Deprima's	Undermind Rear Wall
33	79	18	19 Division Street	19 Division Street, LLC	Tnt Rebuilders	4' Water
34	79	21	7 Division	7 Division Street, LLC	Dawn's Auto Body	6' Water
35	80	1.02	25 E Front Street	Keyport Professional Plaza, LLC	New Life Counseling	2' Water
36	80	17	43 E. Front	Pagano, Theodore	Spanish/American Club	6' Water
37	80	18	51 East Front Street	Musson, Terry B & Theresa A	Musson's	Water- Basement
38	129	5	162 Second	2nd Street Associates LLC, %Wang, G.	Vacant Bld	Roof Blown Off

² IBID, page 7.

³ IBID, page 7.

Comparison to Vulnerability Assessment - 2009 Multi-jurisdictional Natural Hazard Mitigation Plan

The Borough of Keyport participated with the Monmouth County Office of Emergency Management in the 2009 Multi-jurisdictional Natural Hazard Mitigation Plan (HMP). The 2009 HMP is currently in the process of being updated, which is a process that started before the event of Superstorm Sandy. As a result, a comparison of the risk assessment for Keyport in the 2009 HMP to the impacts of Sandy are particularly useful for this SRPR.

The 2009 HMP contains a thorough analysis of vulnerability for the participating municipalities in Monmouth County and measures vulnerability from several angles. The table below shows the number of “critical facilities” (schools, fire stations, public works yards, power facilities, etc.) that would be vulnerable to a series of hazards, including flood, wave action, storm surge and coastal erosion. Keyport’s committee at the time listed a fire house and senior care facility as being located in a Special Flood Hazard Area and seven critical facilities as vulnerable to storm surge, including four schools/child care facilities.

RISK ASSESSMENT SECTION 3C: VULNERABILITY ASSESSMENT

**Table 3c.23
Exposure of Georeferenced Critical Facility Types by Jurisdiction**

Facility Type by Jurisdiction	Number of Exposed Critical Facilities by Hazard Area							
	Flood (A/AE/V)	Wave Action (VE)	Storm Surge (Cat 1-4)	Coastal Erosion	Dam Failure	Landslide (High)	Wildfire (Low/Mod)	Wildfire (High/Ext)
Highlands, Borough of								
Airports/Ferry Ports	2	0	0	1	0	0	0	0
Emergency Centers/Fire Stations/Police Stations	1	0	1	0	0	0	0	0
Public Works Buildings/Wastewater Treatment Facilities	1	0	1	0	0	0	0	0
Schools/Child Care Facilities	2	0	2	0	0	2	0	0
Senior Care Facilities	1	0	1	0	0	0	0	0
Total	7	0	5	1	0	2	0	0
Holmdel, Township of								
Airports/Ferry Ports	0	0	0	0	0	0	1	0
Public Works Buildings/Wastewater Treatment Facilities	0	0	0	0	0	0	1	0
Schools/Child Care Facilities	0	0	0	0	0	0	2	0
Senior Care Facilities	0	0	0	0	0	0	2	0
Total	0	0	0	0	0	0	6	0
Howell, Township of								
Airports/Ferry Ports	0	0	0	0	0	0	1	0
Emergency Centers/Fire Stations/Police Stations	0	0	0	0	1	0	0	0
Schools/Child Care Facilities	0	0	0	0	3	0	13	0
Senior Care Facilities	1	0	0	0	0	0	2	1
Total	1	0	0	0	4	0	16	1
Interlaken, Borough of								
Emergency Centers/Fire Stations/Police Stations	0	0	1	0	0	0	1	0
Public Works Buildings/Wastewater Treatment Facilities	1	0	0	0	0	0	0	0
Total	1	0	1	0	0	0	1	0
Keansburg, Borough of								
Emergency Centers/Fire Stations/Police Stations	1	0	1	0	0	0	0	0
Public Works Buildings/Wastewater Treatment Facilities	0	0	1	0	0	0	0	0
Schools/Child Care Facilities	1	0	12	0	0	0	0	0
Senior Care Facilities	1	0	5	0	0	0	0	0
Total	3	0	19	0	0	0	0	0
Keyport, Borough of								
Emergency Centers/Fire Stations/Police Stations	1	0	2	0	0	0	0	0
Schools/Child Care Facilities	0	0	4	0	0	0	0	0
Senior Care Facilities	1	0	1	0	0	0	0	0
Total	2	0	7	0	0	0	0	0

Another measure of vulnerability used in the 2009 HMP is the assessed value of property at-risk to various hazards. The table below from the HMP shows that Keyport estimated the assessed value of property at risk to flooding at \$19,268,400 and from storm surge at \$109,451,100.

RISK ASSESSMENT SECTION 3C: VULNERABILITY ASSESSMENT

Table 3c.25
Assessed Building Value At-Risk by Hazard by Jurisdiction

Jurisdiction	Extreme Temps, Tornado, Hurricane, Extreme Wind, Lightning, Nor'easter, Earthquake, and Winter Storm*	Coastal Erosion	Dam Failure	Drought**	Flood	Storm Surge	Wave Action	Landslide	Wildfire
Aberdeen, Township of	\$515,957,370	\$628,000	\$0	Not Available	\$17,619,300	\$17,203,250	\$1,868,400	\$0	\$48,650,020
Allenhurst, Borough of	\$100,652,200	\$4,619,700	\$0	Not Available	\$15,701,800	\$68,906,300	\$4,079,600	\$0	\$3,400,900
Allentown, Borough of	\$77,448,700	\$0	\$0	Not Available	\$2,056,000	\$0	\$0	\$0	\$12,517,900
Asbury Park, City of	\$320,791,800	\$4,000,000	\$0	Not Available	\$47,575,400	\$240,662,300	\$14,568,700	\$0	\$34,909,300
Atlantic Highlands, Borough of	\$445,377,200	\$21,194,800	\$0	Not Available	\$32,379,300	\$109,635,800	\$11,609,200	\$143,022,400	\$37,639,500
Avon-By-The-Sea, Borough of	\$127,812,100	\$1,263,700	\$0	Not Available	\$30,977,100	\$125,480,200	\$0	\$0	\$2,028,700
Belmar, Borough of	\$432,498,600	\$6,769,900	\$0	Not Available	\$49,035,400	\$431,351,100	\$3,943,200	\$0	\$9,506,100
Bradley Beach, Borough of	\$198,617,900	\$265,400	\$0	Not Available	\$5,199,100	\$178,237,700	\$0	\$0	\$3,109,200
Brielle, Borough of	\$270,948,535	\$724,700	\$0	Not Available	\$17,392,900	\$131,058,900	\$0	\$0	\$8,930,700
Colts Neck, Township of	\$620,440,600	\$0	\$0	Not Available	\$18,245,800	\$0	\$0	\$0	\$524,233,700
Deal, Borough of	\$402,837,700	\$26,175,900	\$0	Not Available	\$32,456,500	\$100,081,900	\$13,492,400	\$0	\$126,400,100
Eatontown, Borough of	\$1,176,943,200	\$0	\$0	Not Available	\$28,126,300	\$171,591,700	\$0	\$0	\$438,121,400
Englishtown, Borough of	\$50,184,400	\$0	\$0	Not Available	\$5,045,600	\$0	\$0	\$0	\$10,152,700
Fair Haven, Borough of	\$516,903,700	\$2,160,500	\$0	Not Available	\$16,849,400	\$109,633,100	\$0	\$101,547,400	\$66,651,700
Farmingdale, Borough of	\$47,555,700	\$0	\$0	Not Available	\$4,761,700	\$0	\$0	\$0	\$4,039,300
Freehold, Borough of	\$438,446,925	\$0	\$0	Not Available	\$166,400	\$0	\$0	\$0	\$33,020,025
Freehold, Township of	\$2,033,417,200	\$0	\$0	Not Available	\$14,937,000	\$0	\$0	\$0	\$99,298,700
Hazlet, Township of	\$693,335,000	\$0	\$0	Not Available	\$58,536,000	\$198,831,700	\$0	\$0	\$71,543,200
Highlands, Borough of	\$318,826,200	\$28,506,900	\$0	Not Available	\$159,026,400	\$158,587,900	\$552,100	\$131,722,900	\$40,069,800
Holmdel, Township of	\$1,995,955,600	\$0	\$0	Not Available	\$8,647,000	\$6,055,000	\$0	\$0	\$1,088,434,900
Howell, Township of	\$1,914,832,390	\$0	\$40,073,300	Not Available	\$18,657,100	\$74,100	\$0	\$0	\$687,612,050
Interlaken, Borough of	\$88,855,300	\$0	\$0	Not Available	\$12,364,400	\$69,889,600	\$0	\$0	\$5,639,400
Keansburg, Borough of	\$199,892,700	\$0	\$0	Not Available	\$55,784,600	\$199,892,700	\$0	\$0	\$7,628,600
Keyport, Borough of	\$219,673,450	\$2,837,200	\$0	Not Available	\$19,268,400	\$109,451,100	\$749,000	\$0	\$3,428,200
Lake Como, Borough of	\$65,026,800	\$0	\$0	Not Available	\$2,606,000	\$62,840,100	\$0	\$0	\$761,400
Little Silver, Borough of	\$622,615,400	\$55,524,600	\$0	Not Available	\$129,680,200	\$336,027,100	\$22,128,300	\$27,410,000	\$169,669,800
Loch Arbour, Village of	\$28,719,700	\$339,800	\$0	Not Available	\$15,675,800	\$28,719,700	\$199,600	\$0	\$0
Long Branch, City of	\$1,085,212,300	\$83,703,900	\$0	Not Available	\$174,845,100	\$607,702,200	\$5,615,500	\$8,079,000	\$119,202,400
Manalapan, Township of	\$3,229,721,500	\$0	\$0	Not Available	\$69,988,800	\$0	\$0	\$0	\$929,728,600

Preliminary figures of losses in property value in Monmouth County estimated by New Jersey through tax assessment data is shown in the table below. Using the total pre-Sandy valuation for Keyport of \$747, 294,827.00, the combined estimated risk in the table above for flood, wave action and storm surge (\$129,468,500) represents 17.32% of the assessed property value of the Borough.

As to an estimate of loss in property value that actually occurred as a result of Sandy, the table following shows that Keyport reported a loss to 113 properties, totaling \$5,976,300 in property value loss. This figure represents about 5% (0.0461) of the \$129,468,500 in assessed value of property considered in the 2009 HMP to be at risk from flood, wave action and storm surge.

Of the \$5.98 million of reported taxable property value loss in Keyport, the total loss of the Ye Cottage Inn (\$627,700 of assessed improvement value), Bayshore Appliance (\$384,200 of assessed improvement value) and the Bayside Bar & Grill (\$262,100 in assessed improvement value) equal \$1.27 million, or 21% of the property value loss, leaving 79% of the loss attributable primarily to lowered assessments from damages.

Municipality	2012 Pre-Sandy Assessed Values (\$)	% Sandy Reduction	Reduction in Assessed Values Due to Sandy (\$)	Sandy Properties Reduced	Total Loss of Municipal Levy (\$)	Total Loss of School Levy (\$)	Total Loss of County Levy (\$)
ABERDEEN TWP	2,071,781,848	-0.1%	-2,079,700	25	(10,127)	(32,493)	(5,990)
ASBURY PARK CITY	429,608,479	-0.2%	-852,900	19	(27,297)	(13,078)	(7,459)
AVON BY THE SEA BORO	985,761,913	-1.1%	-11,294,300	170	(42,228)	(40,739)	(32,274)
BELMAR BORO	1,032,220,900	-0.9%	-9,526,335	220	(66,930)	(71,786)	(43,050)
BRADLEY BEACH BORO	1,133,446,516	-0.3%	-3,416,000	112	(19,542)	(15,887)	(9,585)
BRIELLE BORO	1,638,097,438	-0.7%	-12,123,300	185	(44,559)	(91,479)	(30,971)
DEAL BORO	2,073,094,493	-0.2%	-3,836,300	12	(9,269)	(3,641)	(13,752)
HIGHLANDS BORO	606,348,709	-4.7%	-28,265,700	941	(291,422)	(334,777)	(92,972)
INTERLAKEN BORO	199,557,942	-0.1%	-133,000	5	(1,202)	(278)	(529)
KEANSBURG BORO	516,416,913	-5.3%	-27,596,000	1,291	(555,208)	(259,299)	(98,634)
KEYPORT BORO	747,294,827	-0.8%	-5,976,300	113	(46,681)	(68,394)	(15,524)
LITTLE SILVER BORO	1,252,914,041	-1.7%	-21,434,900	195	(113,145)	(314,745)	(80,624)
LOCH ARBOUR VILLAGE	157,430,358	-1.6%	-2,464,200	70	(9,949)	(34,241)	(8,271)
LONG BRANCH CITY	4,116,411,347	-0.8%	-32,264,400	718	(281,055)	(249,865)	(101,036)
MANASQUAN BORO	1,606,751,754	-5.1%	-82,482,800	1,409	(303,446)	(704,309)	(310,930)
MIDDLETOWN TWP	9,873,301,487	-0.2%	-19,246,900	565	(96,596)	(251,684)	(57,271)
MONMOUTH BEACH BORO	1,260,536,256	-4.2%	-52,959,000	784	(173,705)	(344,919)	(162,760)
NEPTUNE CITY BORO	434,764,136	-0.2%	-699,100	21	(7,367)	(9,217)	(2,542)
NEPTUNE TWP	2,910,456,833	-0.2%	-5,618,600	124	(47,737)	(66,663)	(19,918)
OCEANPORT BORO	1,050,192,320	-2.5%	-26,474,800	437	(139,787)	(312,971)	(89,482)
RUMSON BORO	2,956,472,184	-1.3%	-38,446,200	283	(131,483)	(333,789)	(128,986)
SEA BRIGHT BORO	518,337,818	-13.4%	-69,658,700	987	(533,379)	(418,147)	(299,849)
SEA GIRT BORO	1,984,696,826	-0.2%	-3,572,900	21	(9,359)	(7,223)	(10,281)
SOUTH BELMAR BORO / LAKE COMO	389,593,400	-0.3%	-1,353,600	24	(7,722)	(10,294)	(3,927)
SPRING LAKE BORO	3,397,248,170	-0.2%	-5,339,000	116	(10,916)	(9,486)	(14,735)
UNION BEACH BORO	445,408,580	-9.5%	-42,500,500	1,536	(614,400)	(620,101)	(173,364)

A third measure of vulnerability is the population at-risk from various hazards. The 2009 HMP provides the table below for Monmouth County, providing estimates of population considered to be vulnerable. For Keyport the entire population was considered to be vulnerable to extreme heat, wind, hurricane/tropical storm, lightning, Nor'easter, tornado, winter storm, drought and earthquake. 2,794 persons were considered to be vulnerable to flood (37% of population), while 7,059 persons were considered to be vulnerable to storm surge (93%).

The actual impact of Superstorm Sandy was not as widespread as suggested in the 2009 HMP, but the significance of storm surge as a threat predicted in the HMP was clearly demonstrated by the storm.

RISK ASSESSMENT SECTION 3C: VULNERABILITY ASSESSMENT

Table 3c.26
Population Exposure by Hazard by Jurisdiction

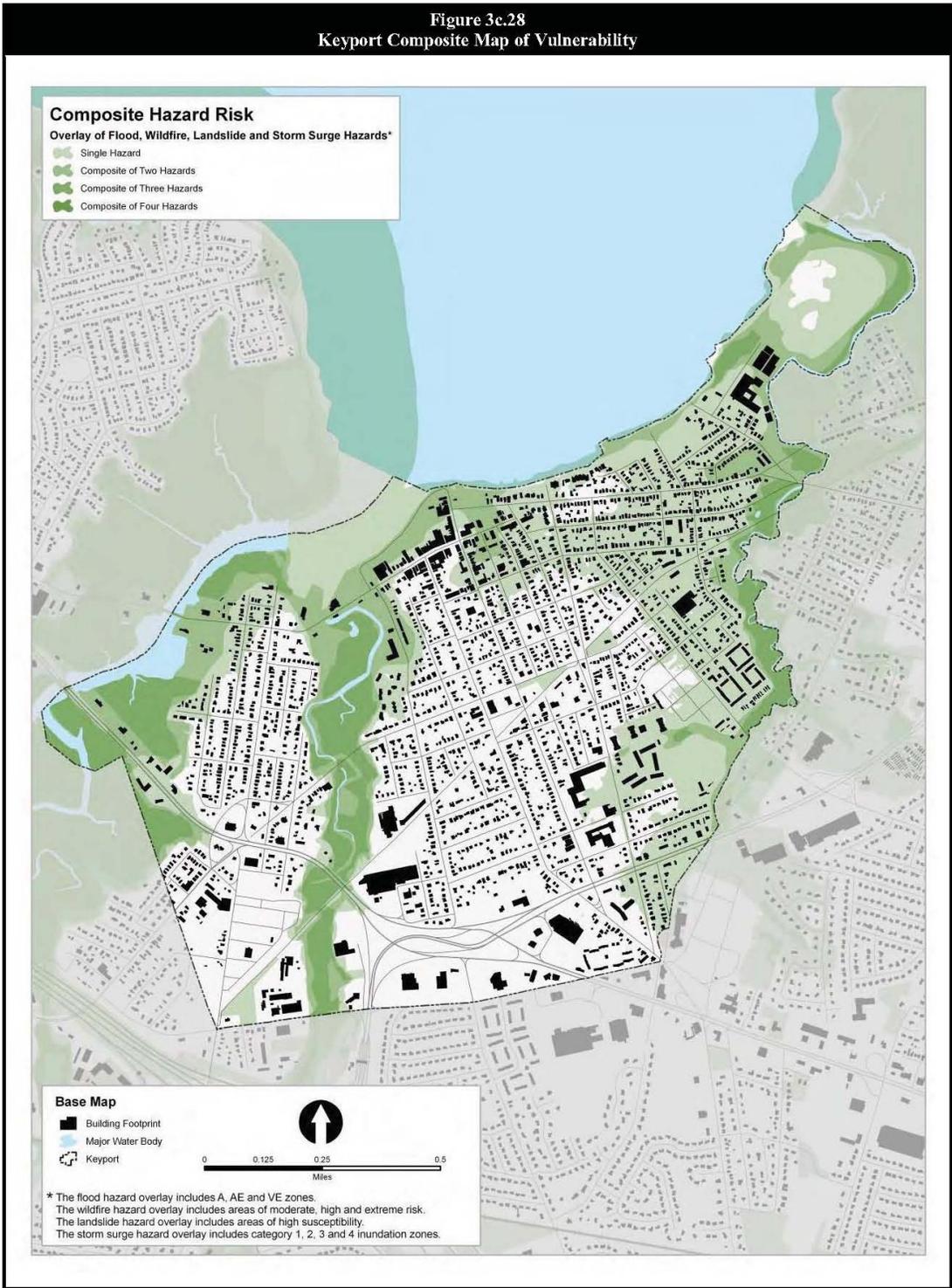
Jurisdiction	Extreme Temps	Extreme Wind	Hurricane & Trop. Storm	Lightning	Nov'easter	Tornado	Winter Storm	Coastal Erosion	Dam Failure	Drought	Flood	Storm Surge	Wave Action	Earthquake	Landslide	Wildfire
Aberdeen, Township of	17,454	17,454	17,454	17,454	17,454	17,454	17,454	179	0	17,454	4,655	5,551	1,160	17,454	0	12,612
Allenhurst, Borough of	599	599	599	599	599	599	599	82	0	599	144	599	70	599	0	86
Allentown, Borough of	1,882	1,882	1,882	1,882	1,882	1,882	1,882	0	0	1,882	1,036	0	0	1,882	0	1,424
Asbury Park, City of	16,930	16,930	16,930	16,930	16,930	16,930	16,930	368	0	16,930	2,890	16,705	454	16,930	0	5,414
Atlantic Highlands, Borough of	4,705	4,705	4,705	4,705	4,705	4,705	4,705	612	0	4,705	841	2,207	393	4,705	1,924	2,028
Avon-By-The-Sea, Borough of	2,244	2,244	2,244	2,244	2,244	2,244	2,244	464	0	2,244	637	2,244	66	2,244	0	369
Belmar, Borough of	6,045	6,045	6,045	6,045	6,045	6,045	6,045	1,557	0	6,045	1,413	6,045	55	6,045	0	2,159
Bradley Beach, Borough of	4,793	4,793	4,793	4,793	4,793	4,793	4,793	854	0	4,793	276	4,793	82	4,793	0	1,042
Brielle, Borough of	4,893	4,893	4,893	4,893	4,893	4,893	4,893	907	0	4,893	1,719	3,671	0	4,893	0	3,147
Coits Neck, Township of	12,331	12,331	12,331	12,331	12,331	12,331	12,331	0	0	12,331	2,884	1,332	0	12,331	0	12,275
Deal, Borough of	1,070	1,070	1,070	1,070	1,070	1,070	1,070	137	0	1,070	314	967	137	1,070	0	736
Eatontown, Borough of	13,964	13,964	13,964	13,964	13,964	13,964	13,964	0	0	13,964	3,573	6,992	0	13,964	0	12,602
Englishtown, Borough of	1,764	1,764	1,764	1,764	1,764	1,764	1,764	0	0	1,764	1,145	0	0	1,764	0	1,518
Fair Haven, Borough of	5,937	5,937	5,937	5,937	5,937	5,937	5,937	810	0	5,937	866	3,683	0	5,937	1,764	3,540
Farmingdale, Borough of	1,587	1,587	1,587	1,587	1,587	1,587	1,587	0	0	1,587	706	0	0	1,587	0	1,309
Freehold, Borough of	10,976	10,976	10,976	10,976	10,976	10,976	10,976	0	0	10,976	0	0	0	10,976	0	5,092
Freehold, Township of	31,537	31,537	31,537	31,537	31,537	31,537	31,537	0	0	31,537	9,232	0	0	31,537	0	25,067
Hazlet, Township of	21,378	21,378	21,378	21,378	21,378	21,378	21,378	0	0	21,378	7,549	13,171	0	21,378	0	12,326
Highlands, Borough of	5,097	5,097	5,097	5,097	5,097	5,097	5,097	1,685	0	5,097	4,033	4,372	147	5,097	2,649	3,408
Holmdel, Township of	15,781	15,781	15,781	15,781	15,781	15,781	15,781	0	0	15,781	2,184	2,250	0	15,781	0	14,947
Howell, Township of	48,903	48,903	48,903	48,903	48,903	48,903	48,903	0	249	48,903	14,019	62	0	48,903	0	42,035
Interiaken, Borough of	900	900	900	900	900	900	900	0	0	900	328	900	0	900	0	249
Keanburg, Borough of	10,426	10,426	10,426	10,426	10,426	10,426	10,426	7	0	10,426	5,408	10,426	83	10,426	0	2,337
Keyport, Borough of	7,568	7,568	7,568	7,568	7,568	7,568	7,568	498	0	7,568	2,974	7,059	289	7,568	0	3,657
Lake Como, Borough of	1,806	1,806	1,806	1,806	1,806	1,806	1,806	0	0	1,806	579	1,806	0	1,806	0	569
Little Silver, Borough of	6,170	6,170	6,170	6,170	6,170	6,170	6,170	1,193	0	6,170	3,052	4,972	283	6,170	206	4,368
Loch Arbour, Village of	399	399	399	399	399	399	399	47	0	399	242	399	47	399	0	25
Long Branch, City of	31,340	31,340	31,340	31,340	31,340	31,340	31,340	5,875	0	31,340	9,387	28,616	3,080	31,340	753	16,897



Finally, when comparing the 2009 HMP assessment of vulnerability to the actual unprecedented experience from Superstorm Sandy, it is interesting to compare the Keyport Composite Map of Vulnerability, shown on the following page, to Figures 12 and 13. The extent of the storm surge shown in Figure 12 closely matches the furthest extent of the composite hazard map from the 2009 HMP. What appears to have been underestimated in the 2009 HMP Composite Map of Vulnerability is the extent of the vulnerability to a composite of three hazards, as the extent of the surge in the lower lying areas of the Borough and along the creeks involved the tidal surge, flooding and wave action.

RISK ASSESSMENT SECTION 3C: VULNERABILITY ASSESSMENT

Figure 3c.28
Keyport Composite Map of Vulnerability



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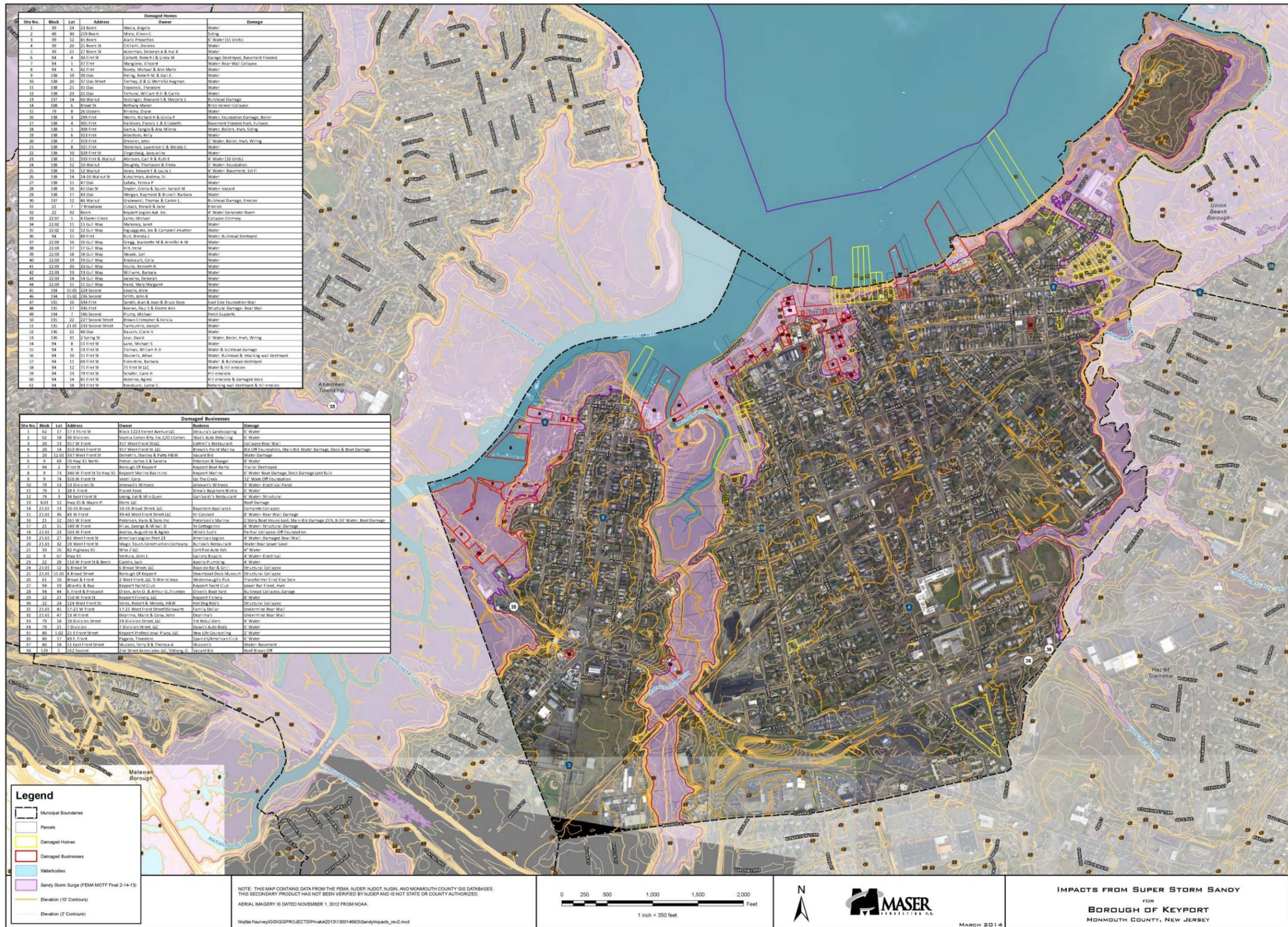


Figure 12: Map of Sandy Surge with Topo and Impacted Properties

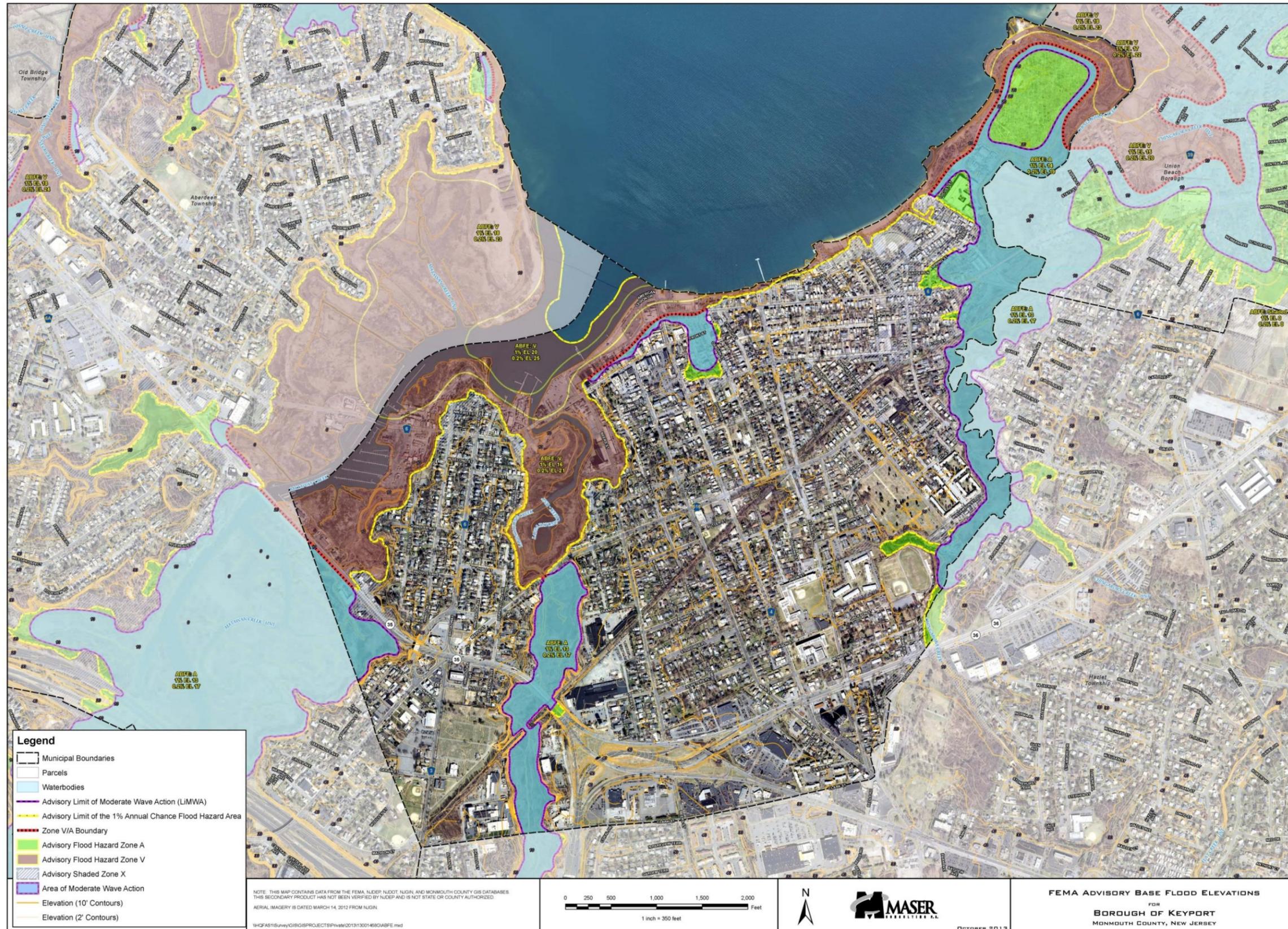


Figure 13: Map of Advisory Base Flood Elevations w. Topo

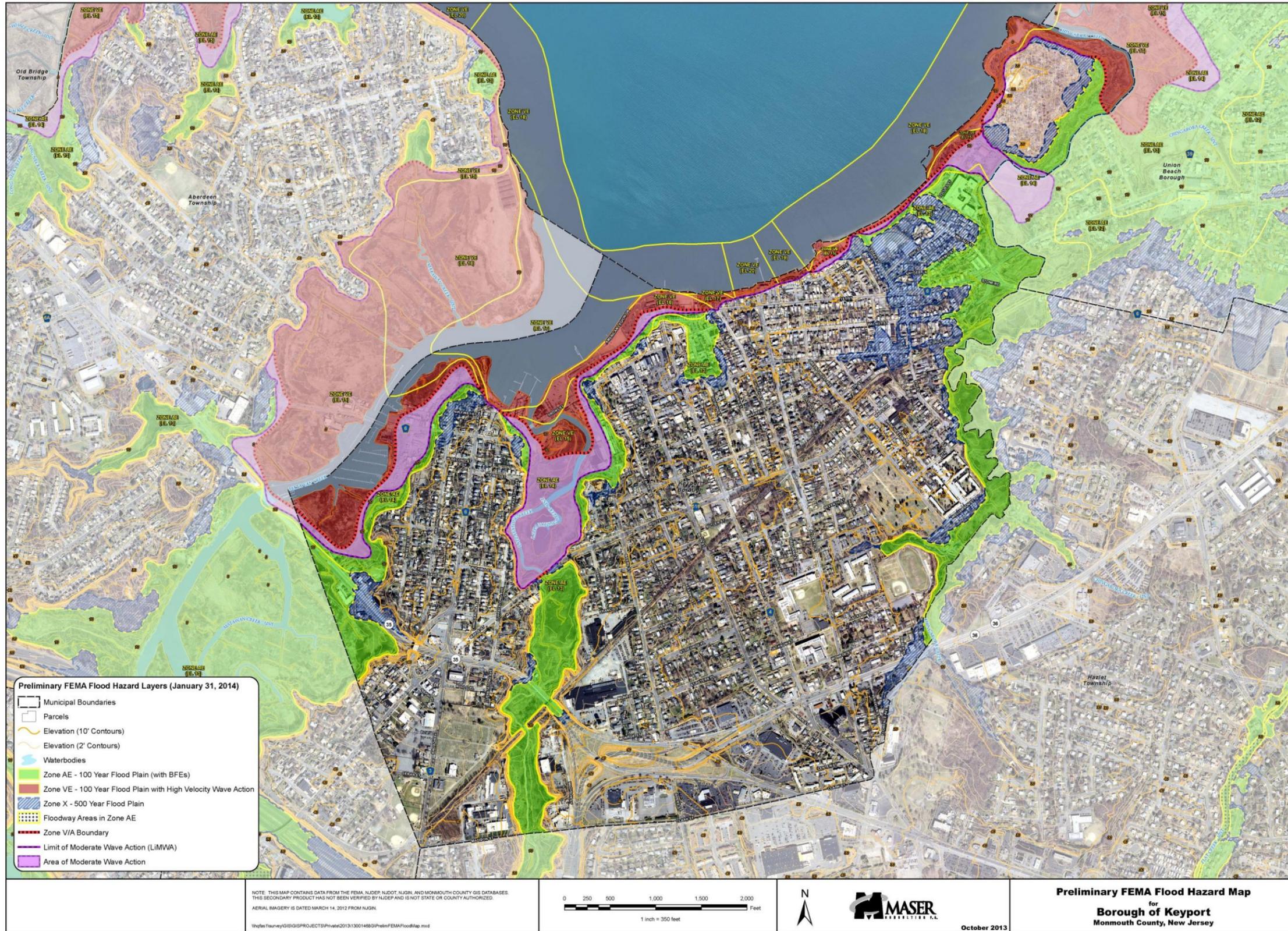


Figure 14: Preliminary Flood Hazard (FIRM) Map released by FEMA, February 2014

Strategic Recovery Action Plan

Background Planning Documents

Master Plan (1989)

The Keyport Master Plan was originally prepared by E. Eugene Cross Associates and was adopted September 28, 1989 by the Keyport Planning Board. The text was reformatted by Thomas Planning Associates in June 2005. The purpose of the Master Plan is to guide the use of lands within the municipality in a manner which protects public health and safety and promotes the general welfare.

The Master Plan includes Goals and Objectives, a Land Use Plan element, a Housing Plan element, an Open Space and Conservation Plan element, a Recycling Plan element, and a statement of consistency with County and local master plans.

The Master Plan notes that Keyport is highly developed where the basic configuration of roadways and the patterns of land development are fixed. Remaining undeveloped land is substantially impacted by NJDEP regulations pertaining to flood hazard boundaries and wetlands. Larger, undeveloped properties not within designated 100-year flood elevation or designated wetlands are adjacent to the Route 35/Route 36/GS Parkway interchange, and currently zoned non-residential use.

The Master Plan Goals and Objectives are as follows:

- *Preserve and protect existing and established residential neighborhoods.*
- *Provide for commercial growth consistent with population and employment growth of the Borough and northern Monmouth County region.*
- *Provide for a diversity of commercial land service uses in scale with adjacent density of residential neighborhood.*
- *Continue a public-private partnership to enhance and expand the marine and, commercial waterfront economic base of Keyport in balance with the public's right of access and enjoyment of the bay.*
- *Preserve and enhance the architectural diversity and historic place and buildings within and/or at designated locations and sites.*

The Land Use Plan recognizes and proposes reinforcement of a Bayfront community of intensive suburban development. The pattern and arrangement of uses is reflective of existing development within the municipality. The theme of the land use plan is to retain, protect and enhance residential amenities of existing neighborhoods and provide for renovation/maintenance of healthy neighborhoods.

The Open Space and Conservation Plan focuses on stream corridors, waterfront access, and the establishment of a planned residential-open space waterfront district at the former landfill-aircraft construction site.

The Master Plan does not include any goals, objectives, or policies that would support municipal planning needs related to future storm mitigation or post storm recovery.

Master Plan Reexamination Report (2001)

The Keyport Planning Board adopted a Master Plan Reexamination Report on December 3, 2001. The Reexamination Report reviewed the 1965 Master Plan and 1989 Master Plan. It addresses major problems and objectives identified in 1989; the extent to which such problems and objectives have been reduced or increased; the extent to which there have been significant changes in the assumptions, policies and objectives; specific changes recommended for the master plan and development regulations; and recommendations concerning the incorporation of redevelopment plans.

The problems identified in the 2001 Master Plan Reexamination related to the downtown, design standards, parking, open space and recreational facilities, preservation of the waterfront, and stream corridor protection. The report also expressed concern for the newly adopted NJDEP Wetlands and CAFRA regulations.

The Reexamination Report recommended that all of the elements of the Master Plan be updated within a single document. Recommended updates included:

- *Land Use Plan: prepare Existing Land Use Map and Land Use Plan Map,*
- *Circulation Plan: address recent road improvements*
- *Utilities Element: prepare analysis of sewer and stormwater infrastructure conditions*
- *Parks & Recreation Plan: prepared Parks and Recreation System Recovery Action Program*
- *Housing Element: update in accordance with recent COAH rules*
- *Conservation Element: identify and inventory all natural resources*
- *Community Facilities Plan: update inventory of community facilities*
- *Economic Element: evaluate economic stability of Keyport, and determine job and/or industry deficiencies*
- *Historic Preservation Element: inventory historic buildings, sites, districts, landscapes and other places, and provide guidelines for historic preservation*

The 2001 Master Plan Reexamination Report does not include any goals, objectives, or policies that would support municipal planning needs related to future storm mitigation or post storm recovery.

Master Plan Reexamination Report (2012)

The Keyport Planning Board adopted a Master Plan Reexamination Report prepared by T&M Associates on December 20, 2012. The Reexamination Report reviewed the 1965 Master Plan and the 1978, 1989 and 2001 Master Plans. It addresses major problems and objectives identified in 2001; the extent to which such problems and objectives have been reduced or increased; the extent to which there have been significant changes in the assumptions, policies and objectives; specific changes recommended for the master plan and development regulations; and recommendations concerning the incorporation of redevelopment plans.

The 2012 Reexamination Report concurred with the problems identified and recommendations made in the 2001 Reexamination Report. In addition, the 2012 report suggested A Green Buildings and Environmental Sustainability Element should be considered for inclusion in the master plan either as a standalone element or during the next comprehensive update of the Borough Master Plan.

The 2012 Master Plan Reexamination Report does not include any goals, objectives, or policies that would support municipal planning needs related to future storm mitigation or post storm recovery.

Keyport Borough Area in Need of Rehabilitation (2007)

Excerpt From Master Plan Reexamination Report:

In January 2007 the entire Borough of Keyport was designated as an “Area in Need of Rehabilitation” pursuant to the NJ Local Housing and Redevelopment Law. The designation is based upon the age of the housing stock in the municipality and the age of the water and sewer infrastructure.

Natural Resource Inventory (2007)

The Keyport Natural Resource Inventory (“NRI”) was prepared in 2007 by CME Associates. The NRI is a compilation of basic environmental information that is an essential supplement to the land use plan, intended to be utilized by the Keyport Environmental Commission, Unified Land Development Review Board, and Borough Council to aid in the identification of significant natural resources and the evaluation of environmental issues in land use planning. The NRI provides information in the form of text, charts and maps relative to the environmental conditions of Keyport. The topics covered include climate, land use, historic sites, geology, hydrology, flood prone area, soils, plants and animals. The NRI is a reference tool and has no regulatory influence.

Suggested Updates from NRI:

- *Expand Climate section to include storm potential, climate change, sea level rise, etc. in Keyport*
- *Update Land Use section with 2007 Land Use/Land Cover version.*
- *Historic Properties – Update with Keyport Historic Districts (First St District, Front St District, Main St District) and Historic Sites from Monmouth County Historic Sites Inventory*
- *Update FEMA/FIRM Map with Advisory Base Map Flood Evaluation (ABFE) mapping*
- *Update Floodprone text to discuss ABFE mapping and trends in sea level rise, bulk heads, etc.*

Monmouth County Bayshore Region Strategic Plan adopted 2006

The Monmouth County Planning Board prepared a regional planning study of the Bayshore area in 2005 and 2006. The study was prepared with input from all of the municipalities in the Bayshore region, stakeholders and citizens. The Plan was adopted in May 2006 and contains a number of action-oriented strategies relating to growth initiatives, preservation strategies, transportation improvements, housing issues and design guidelines.

The Summary (map) of the Planning Implementation Agenda for Keyport in the Plan notes the following:

1. A node at Route 36 and Broad Street;
2. “Reinforce Downtown Commercial Area”;
3. Potential "Bayshore Drive" along First Street and West Front Street;
4. Downtown Keyport Waterfront Initiative;
5. Proposed Bikeway along the Bay shoreline and on Beers Street; and,
6. Proposed pedestrian path along the bay front.

In addition, the Plan recognizes the Aeromarine Redevelopment Area, the Henry Hudson Trail and the existing Borough parks.

The Plan indicated that the top three issues for the Borough at that time were:

- a. Waterfront development
- b. Downtown revitalization; and,
- c. Cleaning up and creating a viable use of the Aeromarine site.

Aeromarine Area Redevelopment Plan (2005)

The originally adopted redevelopment plan for the Aeromarine site at the north end of the Borough (see Figure 14) anticipated residential and recreational uses based on the marketability of the waterfront as follows:

“The primary land uses within the Redevelopment Area shall be residential, recreational and open space uses. Single-family, townhouse, and multiple residences are all permitted. The illustrative conceptual plan in Figure 4 suggests that residential uses be located on a swath of land extending from the bend in the Chingarora Creek in the central portion of the site to point near where the creek empties into the Raritan Bay near the extreme northeast of the site. This plan illustrates how a design could maximize the potential for scenic and dramatic views of both the creek and the bay and avoid the need to remediate the soils on the portion of the site that is currently in industrial use to the high standards required for residential uses.”

The Aeromarine Redevelopment Plan addressed its consistency with the 1989 Master Plan as follows:

“...this redevelopment plan is intended to fulfill and refine the objectives for the site as expressed in the 1989 Keyport Master Plan and the 2001 Reexamination Report. The 1989 Master Plan sets forth the following objectives for the Aeromarine area:

- The property should be rezoned as a planned district requiring development to be based on an overall plan providing for residential development, open space and recreation facilities, provision of on- and off-site traffic and circulation, and submission of an environmental impact statement addressing the landfill.*
- Due to environmental conditions on the site, its overall density should be restricted to the density permitted within the RA District.*
- Regulations should ensure future access and enjoyment of waterfront areas as a function of the development of the land.*

This Redevelopment Plan is generally consistent with these objectives. It creates what is in effect a planned development district requiring residential development, open space and recreation facilities, and provision of traffic and circulation improvements. The landfill and other environmental conditions must be addressed by the redeveloper selected to redevelop the site in accordance with this Plan. The maximum permitted residential density on the site will be 5 units per acre, which is the same as that permitted in the RA District.”



Figure 4: Illustrative Conceptual Plan

Figure 15: The original concept plan in the Aeromarine Redevelopment Plan proposed remediation of the landfill and redevelopment with residential and recreational use.

Aeromarine Area Redevelopment Plan Solar Overlay Amendment (2010)

The Aeromarine Redevelopment Plan was amended in 2010 to provide an alternate method for the redevelopment of the area. The amendment allows for the development of a ground-based solar panel energy facility on the landfill portion of the site.

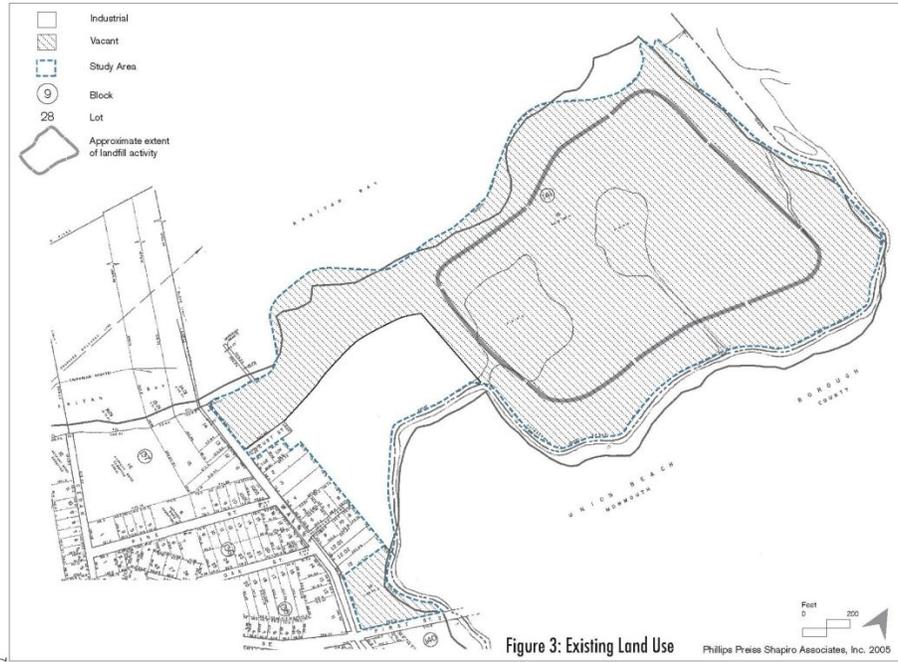


Figure 16: The Existing Land Use map (Figure 3) from the original Aeromarine Redevelopment Plan shows the extent of the landfill portion of the site bounded by the long dashed line. The Solar Overlay would allow the landfill to be used as a solar farm if the clean-up of the landfill is cost prohibitive for residential and/or recreational uses.

With the challenges presented by the landfill on the Aeromarine site that prompted the recognition that its highest and best use might ultimately be for a solar farm, it is worth noting that during the surge from Superstorm Sandy, the site essentially became an island, with the elevated landfill portion being the only portions that were not flooded (see map excerpt below and compare to Figure 16 above).



EXCERPT OF AEROMARINE SITE FROM FIGURE 12.

Routes 35 and 36 Highway Commercial Redevelopment Plan (2010)

The Highway Commercial Redevelopment Plan was adopted in June 2010 and is intended to spur the revitalization of the Borough's highway commercial zone district. The Routes 35 and 36 Redevelopment Area is located outside of the Luppapatong Creek flood hazard area.

Proposal for Redevelopment of Old Boro Hall

Proposal to redevelop the Old Boro Hall building for use as a business on the first floor and residence on the second floor.

Keyport Waterfront and Downtown Improvement Plan

The Steering Committee of the Smart Growth study entitled the Keyport Waterfront and Downtown Improvement Plan led an extensive public outreach effort that yielded the following objectives from their report to the Mayor and Council in a memo dated October 7, 2004:

- Preserve "small town" quality and the role of all of its components (one "walkable" place with business, residential, recreation, and transportation).
- Maintaining Keyport as a "recreational port and place" that values "traditional waterfront uses" (fishing, crabbing, swimming, boating, nature watching), beach parks, marinas, and new opportunities for waterfront recreation and business.
- Preserve historic character of our buildings, both commercial and residential.
- The revitalization and optimization of the waterfront is the key to Keyport's future—a new waterfront park should become a vibrant public space and a "town square." This includes support from both residents and business for the permanent re-routing of American Legion Drive to maximize parkland.
- Reinventing the waterfront as a "multi-activity" area, integrating open space recreation with business opportunities with family-friendly events and traditional waterfront activities.
- Public accessibility to the waterfront, beaches, and creeks.
- Harmony with the natural environment, preservation of wetlands (including Matawan, Luppapatong, and Chingarora Creeks and Brown's Point) and creation of new, eco-friendly ways to explore the environment.
- Multi-mode transportation linkages within Keyport and to transportation hubs in neighboring towns, such as Hazlet (bus and train), Matawan (train), and Belford (ferry). Providing a variety of transportation options is desirable.
- The crucial role of creating a thriving downtown that retains Keyport's "small town" character.
- The importance of an attractive "100% corner" at the intersection of Broad and W. Front —a vibrant entrance to downtown and the "gateway" to the waterfront.
- Responsibly manage Keyport's existing character as a single family home small town, while providing new residential opportunities in the downtown through a new mixed use zone and a townhome "GC residential buffer" zone.
- Low density development with design standards that echo current Keyport architectural gems.

- Maximum respect for the property rights of private property owners.
- Owner-occupied residential properties should not be acquired through eminent domain outside the scope of the common law.

Excerpt from Master Plan Reexamination Report (2012):

From The Borough of Keyport received a grant from NJDEP for preparation of a detailed waterfront and downtown improvement plan. This plan has been completed by other consultants and filed with the community. Review of the final report shows general consistency of actions by the Borough over the past several years and the recommendations set forth in the waterfront-downtown improvement program. The plan and program set forth in the Final Report prepared by Kopple, Sheward & Day is incorporated herein.

The Borough is actively seeking grant funding sources from the State and Federal Government to implement circulation, off street parking and pedestrian access proposals set forth in the downtown-waterfront plan. The next phase of the program implementation is preparation of detailed design plans for waterfront amenities conceptually illustrated in the downtown-waterfront plan. Such plan should be given priority in order that a comprehensive and detailed program is established.

The downtown-waterfront plan has been reviewed as to the scale of the proposed development and the feasibility of public improvements proposed as part of the development. The scale of development (intensity of land use) is consistent with the Borough's character and the limitations of movement of vehicles and people within the downtown district. The former statement is made in context with the proposed circulation improvements which are an integral part of the plan. The planned public improvements will require grant funds and cooperation and assistance from other levels of government. The Borough is eligible for grant funds. The proposals are clearly feasible of implementation.

Keyport Waterfront Committee Report (2004)

The Waterfront Committee was established to provide public input to the Keyport Waterfront and Downtown Improvement Plan. Committee members mapped elements of the waterfront areas, took photographs, made observations, and identified strengths and weaknesses of the downtown public areas and waterfront public parks. The committee reached a consensus on the following goals and guiding principles that it believes will promote water access and enhance the future of Keyport:

- Planning should benefit the Keyport community before outside interests
- Preserve/maintain marine businesses
- Water access to and along beach and or creeks should be required
- Design with integration of nature/eco-tourism element in mind
- Maximize open space for recreation: less space for parking more for recreation
- Redevelopment does not mean crowding.
- Textures and vistas should be attractive and use inviting design elements.
- Design ring road with mixed activities in mind i.e. rear store access, kid/family friendly and public events, marine related fishing/boating.
- No acquisition through eminent domain for transfer to private redevelopment

The report also notes that the beginning of First St by the park is a flood zone during storms or high tide and is often blocked off from traffic.

Background Land Use Regulatory Documents

Chapter XXV, Land Use Regulations

The Land Use Regulations do not include any goals, objectives, or policies that would support municipal planning needs related to future storm mitigation or post storm recovery.

Chapter 291, Land Subdivision and Site Plan Ordinance

The Land Subdivision and Site Plan Regulations do not include any goals, objectives, or policies that would support municipal planning needs related to future storm mitigation or post storm recovery.

Ordinance #5-13 – Flood Prevention Ordinance

Amends the Flood Prevention Ordinance to incorporate a definition for “Advisory Flood Hazard Map”, revised the definition for “Base Flood Elevation”, among others and adopted the Advisory Base Flood Elevations and Advisory Flood Hazard Maps as the basis for establishing areas of special flood hazard.

Ordinance #14-13 – Building Height in Areas of Special Flood Hazard

Amends Flood Prevention Ordinance to revise definition of building height to read as follows:

“Building height shall mean the vertical distance measured from the greater of (1) the mean level of the ground surrounding the building, or (2), for a property in an Area of Special Flood Hazard, the applicable minimum elevation requirement under Ordinance 15-5.2, to a point midway between the highest and lowest point of the roof, but not including chimneys, spires, towers, elevator penthouses, tanks and similar projections. The latter shall only apply to structures being raised, constructed or reconstructed to conform with said minimum elevation requirement.”

The amendment was intended to prevent the use of the base elevation for measuring height unless linked to compliance with the new base flood elevations.

Identification of Projects

Keyport identified two projects in the 2009 HMP (shown in Appendix D) as follows:

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PRIORITIZATION OF ACTIONS

(Name of Jurisdiction) Borough of Keyport

Action	“-” = cost (unfavorable)							“0” = neutral or not applicable “+” = benefit (favorable)			(high, medium, or low)		
	S	T	A	P	L	E	E	Can be implemented easily	Achieves multiple objectives	Can be implemented quickly	Overall Benefits	Overall Costs	Priority
Fireman’s Park Bulkhead Extension from Bulkhead (Elevation 8.1) to Monmouth County Bridge on W. Front Street	+	+	0	+	-	0	+	-	+	-	High	Medium	High
Raising of Green Grove Avenue at Chingarora Creek culvert crossing to alleviate storm flooding	0	+	0	+	+	+	-	-	+	0	High	Low	High

Please attach additional pages as needed.

With the hard lessons from Superstorm Sandy, the Borough has identified a number of additional projects as part of the current update to the Monmouth County All Hazard Mitigation Plan. Additional issues and projects have been identified through stakeholder engagement. These projects are summarized below.

Projects Identified for Update to Monmouth County All Hazard Mitigation Plan

1. Maple Place Pump Station Improvements – elevate electrical panels above ABFE, emergency backup generator, etc.
2. Cedar Street Pump Station Improvements – elevate electrical above ABFE, water tightness, emergency backup generator, etc.
3. Division Street Stormwater Improvements – improve stormwater drainage system between Front and Third Streets - improve capacity and control backwater from Raritan Bay.

Stakeholder Recommendations

1. Maple Place Culvert – Members of the Harbor Commission identified the Luppataatong culvert at Maple Place as a potential project for mitigation.
2. Homeowners are fearful of flood insurance rate increases imposed by mortgage holders that require higher flood insurance for any property that is even partially in a flood high hazard zone.
3. Address the repetitive flooding in the Division Street neighborhood.

4. Repair the outfall at Beach Park and make other improvements to existing stormwater management facilities to improve capacity and prevent backwater flooding from Raritan Bay.
5. Harbor Commission recommended dredging of the silted channels of the Luppataong Creek, advancement of the Army Corps recommendations for a levee and/or wave break, replacing damaged bulkheads at the ends of streets like Walnut Street. Acquisition of the Ye Cottage Inn with Blue Acres funding for expansion of the recreational waterfront was also recommended, potentially with enhanced transient boater facilities and water taxis covered by a Boaters Infrastructure Grant (BIG).

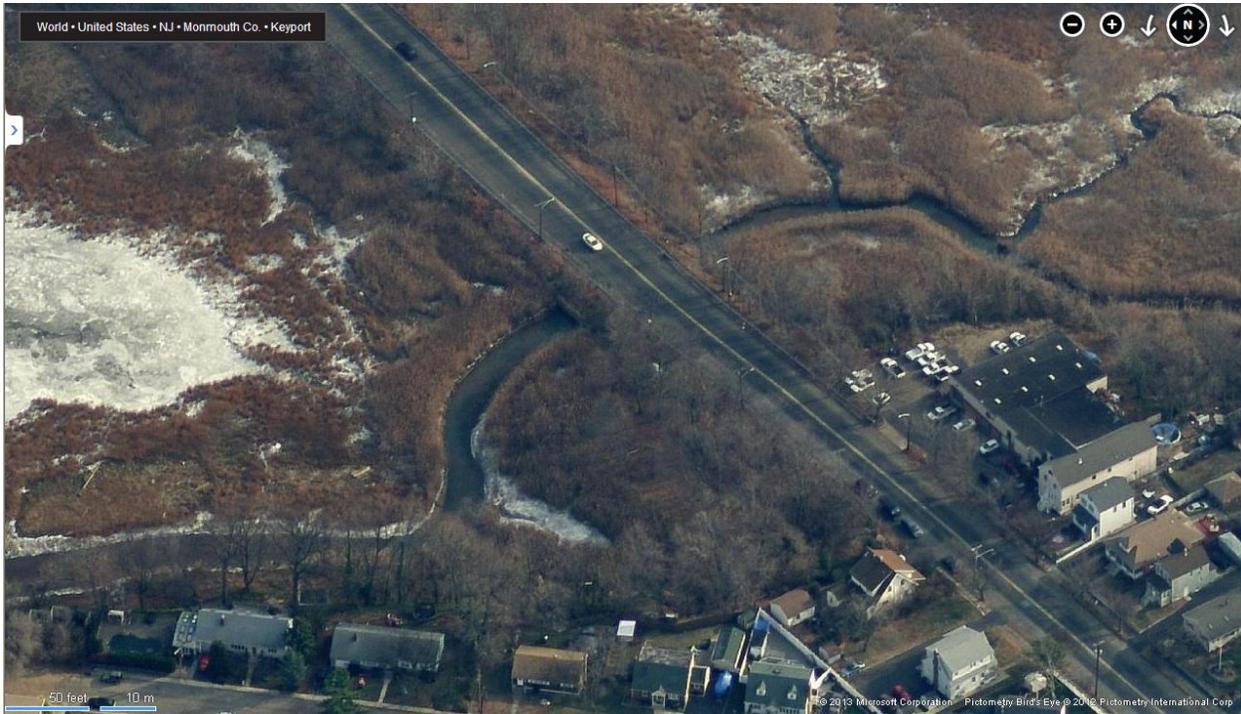


Figure 17: The culvert over the Luppataong Creek at Maple Place was identified by members of the Keyport Harbor Commission as a potential project. It is believed that the road has been gradually sinking, causing sediment to build up on the south (right) side of the road and that the road acts as a dam causing tidal flooding to back up onto Beers Street and adjacent neighborhoods.

Based on the Needs Assessment and Vulnerability Analysis, this SRPR is recommending a much more extensive series of projects, which are organized into three categories: Stormwater Management (infrastructure); Hazard Mitigation; and Preparedness.

Stormwater Management

1. Elevate Green Grove Avenue (2009 HMP Project – scheduled for construction in 2014)
 - a. Was identified as a mitigation project in the 2009 Monmouth County Natural Hazard Mitigation Plan.
 - b. Is a key connector between downtown Keyport



Figure 18: Google Street view of bridge at Green Grove Avenue

and Route 36 and a potential evacuation route.

2. Division Street Stormwater Management Improvements
 - a. Replace damaged outfall pipe in Beach Park and installation of backflow preventer.
 - b. Elevate First Street Firehouse parking lot to the Base Flood Elevation.
 - c. Expand capacity of stormwater system along Division Street between Third Street and Front Street
3. Beers Street Stormwater Management Improvements - Elevate low lying section of Beers Street near Front Street and rehabilitate stormwater management system to prevent backflow from Luppataong Creek during moon high tide and heavy rainfall events.
4. Elevate Maple Place over Luppataong Creek to increase capacity of culvert or convert culvert to a bridge (Environmental Impact Statement likely to be required).
5. Elevate First Street over Chingarora Creek to improve stormwater drainage and prevent blockage during storm events.

Hazard Mitigation

6. Raise Bulkheads along First Street & Raise Abutting Land
 - a. History of rising surges with past storms leading up to Sandy and expectation of continued need for higher bulkheads with sea level rise.
 - b. May need to be combined with elevation of occupied structures.
 - c. Land behind elevated bulkheads must be filled so that bulkheads can be capped in accordance with NJDEP requirements
7. Elevate Occupied Structures - Necessary for occupied properties in special flood hazard areas where bulkheading is not an option or is not practical to achieve resiliency.
8. Replace or combine rip-rap with bulkheading in areas of extreme coastal erosion - Conventional rip-rap was insufficient to withstand erosion and scouring from Sandy's surge. Concrete bulkheads of insufficient height and/or design were also broken up by the surge. Rip-rap should either be replaced or used in combination with bulkheading.
9. Bulkhead extension at Fireman's Park - Was identified as a mitigation project in the 2009 Monmouth County Natural Hazard Mitigation Plan.
10. Army Corps of Engineers Study Recommendations - Alternative #7 of Study proposes the combination of elevated bulkheading and flood prone properties such as the parking lot of the First Street Firehouse to create the effect of a levee with an elevation of 12.5 feet. Other alternatives included a wave break in the harbor. These recommendations should be revisited with the ACE in light of the ACE's post-Sandy projects in Union Beach and Keansburg.
11. Acquire key properties for open space expansion – Ye Cottage Inn site is the priority, but other key properties identified by the NY/NJ Baykeeper are the Aeromarine Site, Luppataong Creek flood plain corridor along Beers Street, and the Pedersen's and Brown's Point Marinas.
12. Restoration of Walnut Street bulkhead and beach access.

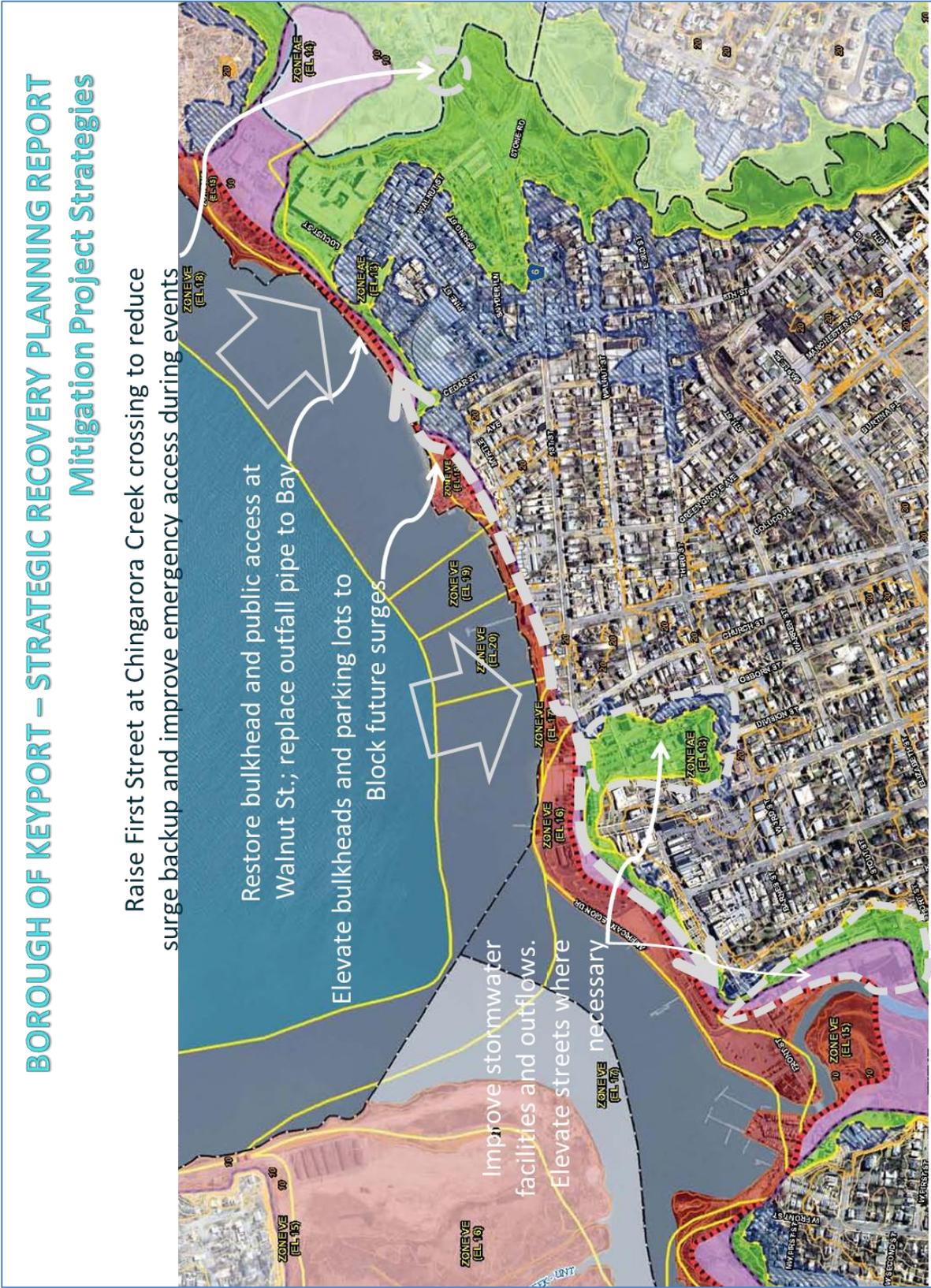


Figure 19: Graphic diagram of mitigation strategies aimed at impacts from surge flooding, moon high tides and storm runoff.

Preparedness

13. Ordinance requiring securing of floating docks, gangways, etc.
 - a. Supplement Flood Prevention Ordinance or add regulations to Borough Code requiring removal or securing of boats, floating docks, gangways, etc. from Keyport Harbor within a specified period from the issuance of an order from Emergency Management personnel. Establish penalties for owners of floating objects removed by the Borough due to compliance issues in order to prevent property damage during storm events.
 - b. Amend Flood Prevention Ordinance or add regulations to Borough Code prohibiting the construction of occupied structures seaward of the mean high water line or on piers or platforms except for essential structures for “functionally dependent uses” such as marinas or boatyards.
14. Post Disaster Recovery Capital Improvement Plan
 - a. Develop a five year plan for capital projects directly linked to recovery, mitigation or preparedness.
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.
15. Borough-Specific Hazard Mitigation Plan
 - a. Develop a Hazard Mitigation Plan specifically for Keyport, building on the HMP currently being developed by Monmouth County OEM. Include an analysis of the ACE projects in Union Beach and Keansburg and address any impact on Keyport.
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.
16. Community Resiliency Element – Master Plan
 - a. Update the Borough Master Plan with a Community Resiliency Element that reviews the Land Use Plan Element and development standards against the vulnerability issues outlined in this SRPR and adopt as a Master Plan Element.
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.
17. Update Zoning Regulations
 - a. Review zoning and land use regulations against the vulnerability issues outlined in this SRPR and develop amendments to anticipate necessary changes to height, bulk and setback requirements needed to improve resiliency based on recommendations in the Community Resiliency Element.
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.
18. Neighborhood Plans
 - a. Develop specific strategic plans for neighborhoods most severely impacted by Sandy, including the portion of Beers Street basin, Division Street basin, First Street waterfront and Walnut-Oak Street basin.
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.
19. Permit Process- Quality Improvement

- a. Review existing permitting procedures to determine improvements for fast-tracking/streamlining for expediting projects directly related to recovery or mitigation and that are consistent with adopted Design Standards (Project 13).
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.
20. Design Standards (integrating elevated structures into community design character)
- a. Develop design standards to address the visual impact of mitigation measures such as elevating bulkheads, elevating buildings on foundations or pilings, etc. Such design standards might include requirements for skirting exposed pilings, parking under the lowest habitable floor, using exterior decking to stagger stairways to elevated first floor levels, etc. (see example of home designs in flood zones below).
 - b. Pursue Sandy Recovery Planning Assistance Grant from the NJDCA.



Figure 20: Images above portray examples of architectural design treatments to visually integrate elevated buildings to the ground plane.

21. Command Center – The Borough’s Emergency Management personnel is currently housed on the ground floor of Borough Hall on Front Street. While the Borough Hall is not in a flood hazard area and was not impacted by Sandy, its two story design and constrained rear parking area make it difficult to mobilize and dispatch resources during an emergency event.

22. Hardening of Infrastructure – The Borough’s water and sewer capacity was impacted by either flooding or loss of power. Operating equipment at pump stations needs to be either raised above flood levels or hardened for protection against future events.
23. Backup generators are also needed to keep critical facilities operating during future power loss over extended periods.
24. The long term impacts of future sea level rise should be projected and studied for Raritan Bay Communities. The Borough should request assistance from Rutgers and NOAA, who have conducted similar studies for other areas.

KEYPORT POST DISASTER RECOVERY PROJECT MATRIX – Mitigation (non-planning) Capital Projects

Recovery Project		Responsible Entity	Duration	Recovery Value		
			TYPE	Community Need	Feasible	Sustainable
1.	Elevate Green Grove Road at Chingarora Creek	Monmouth County (09 AHMP), Construct in 2014	Short Term Mitigation	High	High	High
2.	Division Street Stormwater Improvements	Borough, FEMA	Moderate Term Stormwater/ Mitigation	High	Mod	High
3.	Beers Street Stormwater Improvements	Borough, FEMA	Moderate Term Stormwater/ Mitigation	High	Mod	High
4.	Elevate Maple Place Over Luppataong Creek	Monmouth County, FEMA	EIS –Short Term Mitigation	High	Mod	Mod
5.	Elevate First Street at Chingarora Creek	Borough, FEMA	Long Term Stormwater/ Mitigation	High	Mod	High
6.	Raise Bulkheads & Abutting Land	Property owners, Borough, FEMA	Short Term Mitigation	High	Mod	High
7.	Elevate Occupied Structures	Property Owners, FEMA	Short Term Mitigation	Mod	High	High
8.	Extend Bulkhead at Fireman’s Park and Elevate Parking Lot	Monmouth County 09 AHMP, Borough	Short Term Mitigation	High	High	High
9.	Replace or Combine Rip-rap with Bulkheading along Bayfront	Property owners, NJDEP, Borough	Moderate Term Mitigation	Mod	Mod	High
10.	Army Corps Mitigation Recommendations	NJDEP, ACE, FEMA, Borough	Long Term Mitigation	High	Mod	High
11.	Acquire Key Damaged Properties for Open Space (Ye Cottage Inn, Aeromarine, Pederson’s Marina, Brown’s Point Marina, Luppataong Creek flood plain lands, etc.)	NJDCA-Second Allocation of CDGB-DR Funds, Blue Acres	Long Term Mitigation	High	High	High
12.	Walnut Street Bulkhead & Beach Access Restoration	Borough, FEMA, NJDCA	Short Term Mitigation	High	High	High

KEYPORT POST DISASTER RECOVERY PROJECT MATRIX – Preparedness (post disaster planning) Projects

Recovery Project		Responsible Entity	Duration	Recovery Value		
			TYPE	Community Need	Feasible	Sustainable
13	Ordinance Regulating Floating Docks, Gangways, etc.	Borough	Short Term Preparedness	Mod	High	Mod
14.	Post Disaster Recovery Capital Improvement Plan	Borough, NJDCA Grant	Short Term Preparedness	High	High	Mod
			SUPPORTS MITIGATION PROJECTS: 2, 3, 5, 6, 8, 9, 10, 12			
15.	Borough Hazard Mitigation Plan <i>(Inclusive of ACE Project impact analysis from Union Bch & Keansburg)</i>	Borough, NJDCA Grant	Short Term Preparedness	High	High	High
			SUPPORTS MITIGATION PROJECTS: 1- 12			
16.	Community Resiliency Element – Master Plan	Borough, NJDCA Grant	Short Term Preparedness	High	High	High
17.	Update Zoning Regulations	Borough, NJDCA Grant	Short Term Preparedness	High	High	High
18.	Neighborhood Plans	Borough, NJDCA Grant	Short Term Preparedness	High	High	High
			SUPPORTS MITIGATION PROJECTS: 2, 3, 6, 7, 12			
19.	Permit Process –Streamlining	Borough, NJDCA Grant	Short Term Preparedness	Mod	High	Mod
			SUPPORTS MITIGATION PROJECTS: 6, 7			
20.	Design Standards	Borough, NJDCA Grant	Short Term Preparedness	Mod	High	High
			SUPPORTS MITIGATION PROJECTS: 6, 7			
21.	Establish & Equip Command Center	Borough, FEMA, NJDCA	Moderate Term Preparedness	Mod	Mod	Mod
22.	Harden infrastructure	Borough, FEMA	Short Term Preparedness	High	High	High
			SUPPORTS MITIGATION PROJECTS: 1,4,5,8			
23.	Backup Power for Critical Facilities	Borough, FEMA	Short Term Preparedness	High	High	High
			SUPPORTS MITIGATION PROJECTS: 1,4,5,8			
24.	Impact Study of Future Sea Level Rise on Raritan Bay	NOAA/Rutgers	Long Term Preparedness	Mod	High	High
			SUPPORTS MITIGATION PROJECTS: 1-12			