



# **Repetitive Loss Area Analysis Lakes Bay Area Pleasantville, NJ**

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## 1.0 Introduction

The Lakes Bay Area Repetitive Loss analysis was conducted as part of the City's participation in the Community Rating System to better understand the causes of flooding in the Lakes Bay neighborhood and determine ways to address future flooding events. The Community Rating System, administered by the Federal Emergency Management Agency (FEMA), rewards proactive and voluntary floodplain management activities undertaken by the City with discounts on flood insurance premiums. A Repetitive Loss Area Analysis is a creditable activity for the Community Rating System. The repetitive loss area encompasses portions of the Lakes Bay neighborhood in Pleasantville, which is bordered to the east by Lakes Bay and to the north by Ansley Boulevard and the municipal boundary. Like West Atlantic City in adjacent Egg Harbor Township, the Lakes Bay neighborhood is located on primarily low-lying, filled wetlands along Lakes Bay.

When an insured building suffers flood damage with two or more damage claims of more than \$1,000 over a given ten-year period, a property becomes a repetitive loss property. A severe repetitive loss property is one that is covered by the National Flood Insurance Program that has had at least four claim payments over \$5,000 (with a cumulative amount over \$20,000) or had received two separate claim payments for the building with the cumulative amount exceeding the market value of the building. From an actuarial perspective, these buildings are very expensive to insure. Despite comprising less than 1% of all insured properties, severe repetitive loss properties account for over a quarter of flood claims nationwide. Eliminating or mitigating damage to repetitive loss structures is important for ensuring an area's vitality and for reducing the financial burden of flood losses.

Despite the total size of Pleasantville's land area subject to coastal flood hazard, the Lakes Bay area comprises all the City's repetitive loss properties. Due to the concentration of at-risk properties in the neighborhood, the City has mapped this area as a repetitive loss area pursuant to Activity 510 of the Community Rating System. A repetitive loss area includes properties that both are and are not repetitive losses and supports generalized analysis of the neighborhood to protect the confidentiality of individual flood insurance information. A map of the can be found in Appendices 4-7 of this report.

The Repetitive Loss Area Analysis has followed a five-step process as defined by the *Community Rating System Coordinators Manual (2017)*:

- 1.) Notify properties in the repetitive loss area via direct mailing.
- 2.) Analyze plans or studies by outside agencies.
- 3.) Perform a site visit of buildings in the repetitive loss area.
- 4.) Review approaches to mitigating flood risk and protecting properties.
- 5.) Document the findings in a report.

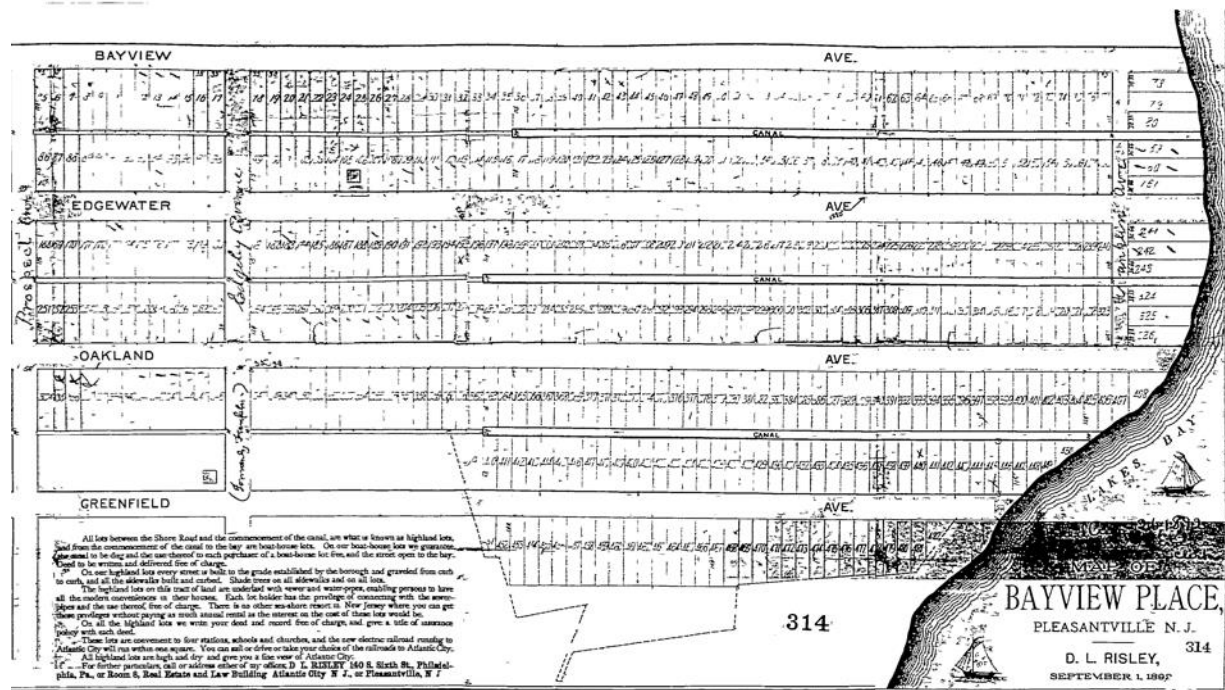
Property identifiers such as addresses and pictures of specific buildings in this study have been excluded from the publicly available copy of the report. Addresses and property-specific information can be requested from the City's building office. In addition, this report

will be revised annually to reflect any changes in the neighborhood and be available for download from the City’s website.

## 2.0 Background

The Lakes Bay Repetitive Loss Area is within a coastal neighborhood in Pleasantville comprising more than 77 acres of land along the west shore of Lakes Bay. Having been one of the initial settlements in Atlantic County (known as Smith’s Landing), the neighborhood was later subdivided and named in 1892, containing more than 450 individual lots across 10 blocks. Houses in the Study Area are what were known as “boat-house” lots, with each owner of such a lot having access to a canal at their rear property line to provide mooring for boats. Aerial photography reviewed for the years between 1930 and the present indicate that the area was never developed as initially platted, with more than half of the boat-house lots never built upon. Several that were already built upon had larger lot widths than as platted.

**Figure 1: Lakes Bay Subdivision, circa 1892**



The neighborhood in the repetitive loss area is primarily low-density residential in nature. The Pleasantville Yacht Club and Randall’s Seafood market are the only commercial/institutional uses in the area. The Yacht Club is located at the eastern terminus of Bayview Avenue and Randall’s Seafood is located at the eastern terminus of Ansley Boulevard along Tunis Basin. The City of Pleasantville owns nearly 40 lots (or approximately 58 percent of the total acreage) in the neighborhood. Most of these properties are vacant and have been acquired through tax lien foreclosure. The city-owned properties are predominantly wetlands and vegetated, though some vacant lots have upland portions. Just under one-fifth of properties in the neighborhood are vacant, several of which had structures

that were recently demolished. Most of land area in the Study Area is vacant, whether in public or private ownership. A map of land use in the repetitive loss area is shown in Appendix 6.

**Figure 2: Property Type/Land Use in Repetitive Loss Area (2017)**

<b>PROPERTY TYPE</b>	<b>NUMBER OF PARCELS</b>	<b>PERCENT OF PARCELS</b>	<b>NUMBER OF ACRES</b>	<b>PERCENT OF ACRES</b>
<b>RESIDENTIAL</b>	95	54.6%	18.2	29.4%
<b>COMMERCIAL</b>	2	1.1%	0.5	0.8%
<b>PUBLIC PROPERTY</b>	44	25.3%	36.0	58.2%
<b>CHURCHES/CHARITABLE</b>	1	0.6%	0.6	1.0%
<b>VACANT</b>	32	18.4%	6.5	10.5%
<b>TOTAL</b>	174		61.8	
<b>SOURCE: 2017 TAX ASSESSMENT DATA</b>				

Most of the residential housing stock in the neighborhood predates the City’s effective Flood Insurance Rate Map (FIRM), indicating that most structures were not built to modern flood protection standards. More than 60 structures, or 72 percent of the total, were built prior to 1930. Only 5.7 percent of the neighborhood’s housing stock has been added since 1980, and the past seven years have seen only construction of two new buildings, according to tax assessment data. With Pleasantville’s initial FIRM adopted in 1983, approximately 79 structures were not required to have been built to the City’s flood protection standards.

The neighborhood has historically been at risk for flooding owing to its low elevation and status as a historic fill site. According to the New Jersey Department of Environmental Protection (NJDEP), the entirety of the neighborhood is built upon artificial fill and almost all the neighborhood is less than five feet in elevation. The base flood elevation for the neighborhood is nine feet, with some VE zones having base flood elevations of 12 and 13 feet present along the shoreline areas (based on the most recent mapping data). The Limit of Moderate Wave Action, which depicts the likely area in which breaking wave action of 1.5 to three feet can occur inland, hugs the developed portion of the City’s shoreline and extends farther into the neighborhood in some locations. Maps of flood hazard for the neighborhood are shown in Appendices 3 and 5 of this report and are based on the most recent pre-FIRM (dated 2015). Almost all the neighborhood lies within the Special Flood Hazard Area (SFHA) subject to flooding in the hundred-year storm. Appendix 7 shows that Superstorm Sandy flood inundation covered much of the land mapped in the Special Flood Hazard Area. In the future, sea levels are forecasted to rise 0.8 feet by 2030, 1.5 feet by 2050, and 3.5 feet by 2100. These changes will result in greater inundation and flood risk to the neighborhood, such as higher base flood elevations and the expansion of areas of flood hazard.

**Figure 3: Decade of Structure Construction in Repetitive Loss Area**

<b>DECADE BUILT</b>	<b>TOTAL</b>	<b>PERCENT</b>
<b>BEFORE 1900</b>	2	2.3%

DECADE BUILT	TOTAL	PERCENT
1900-1909	2	2.3%
1910-1919	25	28.7%
1920-1929	34	39.1%
1930-1939	4	4.6%
1940-1949	5	5.7%
1950-1959	5	5.7%
1960-1969	1	1.1%
1970-1979	0	0.0%
1980-1989	1	1.1%
1990-1999	4	4.6%
2000-2009	2	2.3%
2010 TO PRESENT	<u>2</u>	2.3%
<b>TOTAL</b>	<b>87</b>	

The neighborhood’s vulnerabilities to flooding are evident in the dates of losses of repetitive loss properties in the neighborhood, some of which go as far back as the 1980s and 1990s. During Superstorm Sandy, storm surge covered the entirety of the boat-house portion of the neighborhood. Nine of the City’s 16 repetitive losses experienced losses from Superstorm Sandy, with damages to buildings and contents totaling more than \$430,000.

Recent flooding in the neighborhood can be gauged from closures of the nearby Black Horse Pike, which is located approximately 1,300 feet from the neighborhood Study Area and runs east through West Atlantic City to Atlantic City. From 2014 to September 2017, the Black Horse Pike in adjacent West Atlantic City has been closed fully or partially at least 15 times. From May 2005 to April 2007, portions of the Black Horse Pike between Pleasantville and Atlantic City closed 20 times.

**Figure 4: Flood Base Data for Lakes Bay (NAVD88)**

	Starting Wave Conditions for 1% Annual Storm		Starting Stillwater Elevations (ft. NAVD88) Range of Stillwater Elevations (ft. NAVD88)			
	Significant Wave Height	Peak Wave Period	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Lakes Bay (36)	2.01	2.58	5.8 5.7-7.2	7.6 7.6-8.4	8.3 8.2-9.5	9.8 9.6-12.7
Lakes Bay (37)	2.59	2.62	5.6 5.6-8.1	7.5 7.5-8.5	8.2 8.2-9.6	9.7 9.6-13.3

Source: 2014 Flood Insurance Study, Atlantic County

The Flood Insurance Study for the effective rate maps for Pleasantville was prepared by FEMA in July 1982. The study does not formally address the Lakes Bay area excepting published flood elevations for selected transects in the City, which are reviewed here. In 2014, a new Flood Insurance Study document was prepared for all jurisdictions in Atlantic County, partially utilizing the analyses conducted in the 1982 study. This study included a transect analysis for coastal waterways in the county. The closest transect to Lakes Bay is Transects 36 and 37. The statistics shown in Figure 4 were included in that study for this flood source.

**Figure 5: Pleasantville Flood Insurance Study Elevations (1983)  
(Converted from NGVD 1929)**

	Stillwater Elevation (ft. NGVD29)			
	10% Annual Chance	2% Annual Chance	(1% Annual) Base Flood Elevation	0.2% Annual Chance
Panels 02,04	5.45	7.1	7.9	12.75

Note: Figures are converted to NAVD1988 for comparison purposes. Datum shift is -0.381 meters, or -1.247 feet

Between the 1983 and 2014 flood studies, the predicted stillwater elevation during the 100-year flood event increased by 0.3 to 0.4 feet, and the 50-year storm increased from 7.1 feet to 7.5 and 7.6 feet. In addition, the 10-year storm elevations increased 0.15 feet and 0.35 feet depending on the transect used for measurement. However, the elevation for the 500-year storm decreased by three feet. These changes were likely prompted by sea level rise and the advent of mapping tools that can more accurately measure topography.

### 3.0 Study Methodology, Results, and Analysis

The Repetitive Loss Area Analysis comprises a document review, survey, and survey analysis portion. Tax assessment data, plans and reports from several agencies, and aerial photography were consulted over the course of this analysis. City representatives and staff were contacted for relevant plans affecting the neighborhood, of which none were reported excepting a Concept Development Report by the New Jersey Department of Transportation for the Route 40 project in West Atlantic City and a portion of Pleasantville outside of the repetitive loss area. In addition, Atlantic County released a draft master plan around the time that the Repetitive Loss Area Analysis was conducted. The Lakes Bay neighborhood was not mentioned specifically but fell within the “Back Bay Community” region identified in the draft plan. Moreover, the draft county Open Space and Recreation Plan included the Lakes Bay neighborhood (alongside other back bay communities) in its “Targeted Resiliency Infill Area”, where land acquisitions may be targeted to strengthen the resiliency of the county to

future inundation and connect existing open space resources. According to the NJDEP, the neighborhood is within the Coastal Area Facilities Review Act (CAFRA) planning area, and within the 1-Metropolitan Planning Area of the State Plan. Several New Jersey environmental monitoring system and known contaminated sites are located within the repetitive loss area.

City zoning places the neighborhood mostly within the Lakes Bay Redevelopment Area Zone and a portion of the R-10 zone. A redevelopment plan affecting the former high school site across Lakes Bay and outside of the repetitive loss area was recently approved. An evaluation of potential flooding impacts from this development was not available at the time of this report's publication. Based on the analysis of external materials, Lakes Bay was determined to be an area with regulations enabling it for waterfront/coastal development. In practice, limited sewer service and the presence of wetlands throughout the neighborhood essentially limits major development to areas that are already developed.

Rutala Associates conducted site visits in the repetitive loss area on September 19<sup>th</sup>, 2017 and November 7<sup>th</sup>, 2017. This study consisted of an on-foot survey of neighborhood conditions accompanied by photography of buildings in the neighborhood. The site visits were scheduled to be conducted on days of higher predicted tide levels according to the Pleasantville Lakes Bay harmonic tide station (ID: 8534657). On the day of the September visit, the moon phase was a one percent waning crescent and approximately one day before a new moon was predicted, leading to higher than average tides. On the morning of the visit, the higher high tide was predicted to be at 4.7 feet compared to an average high tide of 4.3 feet for the month of September 2017. At the time of the September analysis, Hurricane Jose, a Category 1 hurricane, was located more than 200 miles off the Jersey Shore and contributed to minor to moderate coastal flooding conditions. As seen in Figure 2 below, Hurricane Jose generated surges approximately one foot above predicted tides at the Atlantic City, New Jersey Tide Station.

The November site visit was conducted on a waning gibbous 93 percent moon during a predicted "king tide", when the alignment of the sun and moon resulted in exceptionally high higher tides due to gravity (as opposed to storm surge). The Pleasantville tide gauge predicted tides of 5.33 feet (MLLW) at the time of the site visit.

### **Figure 6: Atlantic City Tide Station Water Levels on Date of Survey**



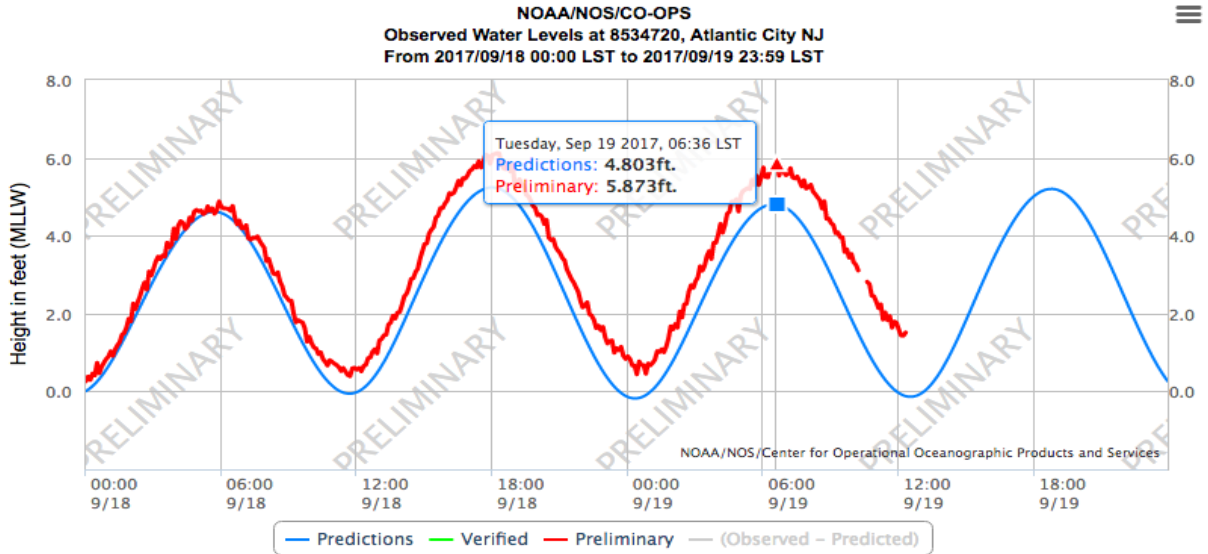
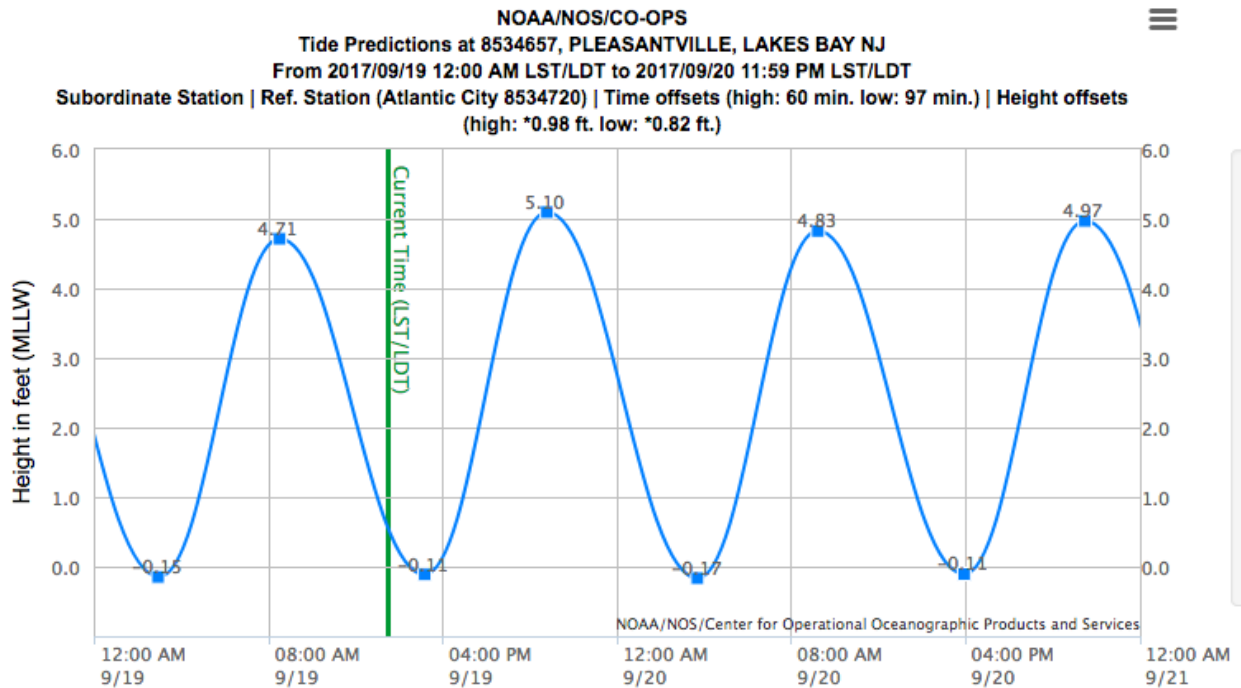


Figure 7: Predicted High Tides in Pleasantville on Date of Survey



Measured water levels indicated tide heights even higher than predicted. The Atlantic City Tide Station actively measures water levels, unlike the Pleasantville Tide Station. A height offset of 0.98 is factored into the prediction of tide heights in Pleasantville, so a predicted tide height of 4.8 feet in Atlantic City results in a predicted tide height of 4.7 feet in Pleasantville. The preliminary one-foot surge observed at the Atlantic

City tide gauge in September resulted in a nearly equivalent surge along Lakes Bay. In total, the observed tide heights along Lakes Bay were approximately 5.7 feet at the start of the September survey and 6.0 feet at the start of the November survey. Surges of one foot or higher above predicted have been recorded at the Atlantic City Tide Station at least two or three times per month since January 2017. Tides of 5.7 feet or higher have been recorded at the Atlantic City Tide Station 36 times from January to August 2017. By comparison, Superstorm Sandy resulted in an 8.9-foot tide height, likely resulting in an 8.7-foot tide height, which is approximately 4.7 feet higher than the predicted high tide height.

A notice to property owners notifying them of the analysis and providing an email address to which to send flood-related comments and observations was mailed on September 13<sup>th</sup>, 2017 and October 31<sup>st</sup>, 2017. Copies of these notices are found in Appendix 1.

### **3.1 Existing Conditions**

The September survey began by visiting the shoreline area of the neighborhood. The shoreline's total length in the neighborhood is approximately 1,800 feet. Streets in the neighborhood run perpendicular to the shoreline, with residential blocks approximately 250 feet wide located between each street. The Municipal Yacht Basin and Yacht Club of Pleasantville comprise approximately 800 feet of bulkheaded shoreline along Lakes Bay, while the remainder is largely natural. Unlined marsh drainage ditches form the rear boundary of lots facing the streets. These ditches are located within a city-owned right-of-way, and the ditches between Bayview Avenue and Oakland Avenue are channeled to a ditch running north-south parallel to the western lot boundary of the Municipal Yacht Basin. The drainage ditches between Oakland Avenue and East Park Avenue are channeled directly to Lakes Bay and run westward for approximately 1,110 square feet.

Arrival at the Study Area coincided with the September morning's high tide. On Edgewater Avenue, an approximately 130-foot-long stretch of the road was flooded approximately 50 feet west of the pedestrian bridge connecting the Yacht Basin to the street's end (seen in Appendix 13). The water covered City-owned wetlands on the south side of the street and a vacant lot across the street. The eastern end of East Greenfield Avenue was covered by water and was approximately 150 feet inland from Lakes Bay's current shoreline. The water depth on East Greenfield Avenue was likely between three and four inches deep.

On the date of the November site visit, water levels appeared lower than those in the September site visit. However, the site visit occurred approximately one hour after the predicted high tide. Flooding was visible along Bayview Avenue in yards, but no roadway flooding was present in the northern portion of the Study Area. Water levels in Tunis Basin appeared to be elevated, with water levels in storm drains approximately one foot below grade.

Pleasantville is a community that was especially impacted by both Superstorm Sandy and the regional economic downturn experienced in the late 2000s and early 2010s. The City has a high rate of foreclosures and abandoned dwelling units because of both conditions. In

addition to long-abandoned structures that were demolished by the time of the survey, the survey also noted the presence of at least a half-dozen buildings that were abandoned in place after suffering apparent flood damage. This was indicated by severely overgrown vegetation, damaged structural members, or notices posted on the front door or on windows.

Based on observed conditions and historic damages, sources of flooding in the neighborhood due to the factors listed below. Additional, unlisted factors may contribute to flooding but have not been verified through observation or by engineering analysis:

- Tidal inundation from Lakes Bay
- Exceptionally low-lying topography
- Poor drainage conditions
- Lack of storm sewers
- Surge inundation from Lakes Bay
- Wind conditions that detain floodwaters in the neighborhood
- Storm surge in back drainage canals
- Lack of bulkheads along water bodies

#### *Current Infrastructure Mitigation Projects*

Letters of Intent submitted to FEMA in the wake of Superstorm Sandy included the following items pertinent to the Lakes Bay neighborhood:

- 36 structure elevations (\$16 million)
- 22 property acquisitions/demolitions (\$1.4 million)
- Edgewater Avenue and Lakes Bay road elevations (\$3.1 million)

In addition, both Pleasantville and Egg Harbor Township are continuing to seek funding for a bulkhead that would protect an estimated 126 structures in Pleasantville from tidal flooding. However, the bulkhead would likely have limited effect on the Lakes Bay neighborhood due to its location along Tunis Basin. Much of the flooding in this area can be attributed to the rear drainage ditches and inundation from low-lying lands east of Jokers Field.

A sewer pump station located at the intersection of Bayview Avenue and Hampden Court appears to have been elevated and provided with an elevated generator after Superstorm Sandy. This increases the resilience of sewer service in this neighborhood to ensure continuity of sewer operations.

### **3.2 Current Private Mitigation Projects**

The site visit was partially undertaken to determine the extent of properties that have been mitigated. Because the site visit was undertaken from the public right-of-way, only basic details about the structure could be ascertained. In some cases, whether a property had a

flood vent or not and what type of foundation was not discernible. The determinations made here are based on the site visit and may not reflect exact conditions because the properties were not inspected up-close. This data has not been separately verified on a property-by-property basis besides the initial survey. Individual property data has been excluded from the public portion of this report but can be requested from the City’s Construction Office. This was done to protect the privacy of property owners and prevent any potentially inaccurate data from being redistributed.

Elevation mitigation was determined by using the estimated ground elevation and BFE Finder tool on [www.region2coastal.com](http://www.region2coastal.com) and comparing those figures to the recorded height of the apparent habitable floor space of the building. A figure of seven inches per step was used for structures that were elevated above grade. If the sum of the estimated elevation of the building’s land elevation (NAVD88) and the estimated height of the first habitable floor space was less than the BFE, the structure was deemed “not elevated” for this analysis. Pleasantville’s floodplain management ordinance (last updated in 2015) requires one foot of freeboard (the vertical distance between the first habitable floor and the base flood elevation) in new construction or substantially improved structures, and “non-elevated structures” were not consistent with the City’s floodplain management standards. For the flood vent analysis, the survey examined whether the property had flood vents, which included both foundation vents and engineered flood vents.

In total, 92 structures were visited to determine their flood resiliency. Six properties appeared to have been demolished since the tax records were last updated, leaving the total number of structures surveyed at 86. Most of the structures (70, or 81 percent) were not elevated to one foot above the base flood elevation. In addition, most structures (64, or 75 percent) did not have flood or foundation vents. One structure had a foundation that was visually obscured and for which the presence of flood vents could not be determined, while seven structures (or eight percent) were open to the passage of flood waters below the habitable floor space.

**Figure 8: Elevation Survey Results**

	Number	Percent
Elevated to +1 BFE	16	18.6%
Not Elevated to +1 BFE	70	81.4%
Source: Field Visits		

**Figure 9: Foundation Survey Results**

	Number	Percent
With flood/foundation vents	14	16.5%
Without flood/foundation vents	64	72.3%

Open below habitable floor space	7	8.2%
<b>Total</b>	<b>85</b>	<b>100%</b>
Source: Field Visits		

Several property owners in the neighborhood have elected to undertake private flood mitigation measures. A majority of the existing housing stock in Lakes Bay was built prior to the adoption of flood insurance rate maps. This indicates that structures could be at significant risk of flood damage if they were not built to withstand flooding. Current development regulations in the City require building structures to the base flood elevation plus one foot, and the State of New Jersey also requires an additional one foot of freeboard. Owners of some of these structures received grants to elevate their properties following Superstorm Sandy, and the City has also requested funds for buyouts. Without going through the buyout process, several property owners have opted to demolish their homes anyway. Several “For Sale” signs were seen on newly vacant lots. Property sales data analyzed for the neighborhood indicated that nearly all the recent property sales are for lots with existing structures, rather than vacant lots.

In addition to the property flood protection measures described above, some property owners have resorted to more ad-hoc flood protection measures. A household in one low-lying home on Bayview Avenue constructed a small berm (approximately one-foot high) in its backyard to protect the house structure from inundation from the rear drainage ditch. This is seen in Appendix 15 at a house on Lakes Bay.

Another phenomenon noted during the survey visit was encroaching wetlands on structures and in yards of properties. Standing water was visible underneath several structures that were built at or slightly above grade. Several vacant structures showed Phragmites growing on or near the structure on the property. Due to rising sea levels and poor drainage conditions, it is likely that new wetlands have formed on previously barren or developed land. Moreover, wetland conditions will continue to persist absent any major drainage projects or berms and will likely expand in the area as more land becomes vacant and inundated with water.

#### **4.0 Resident Feedback**

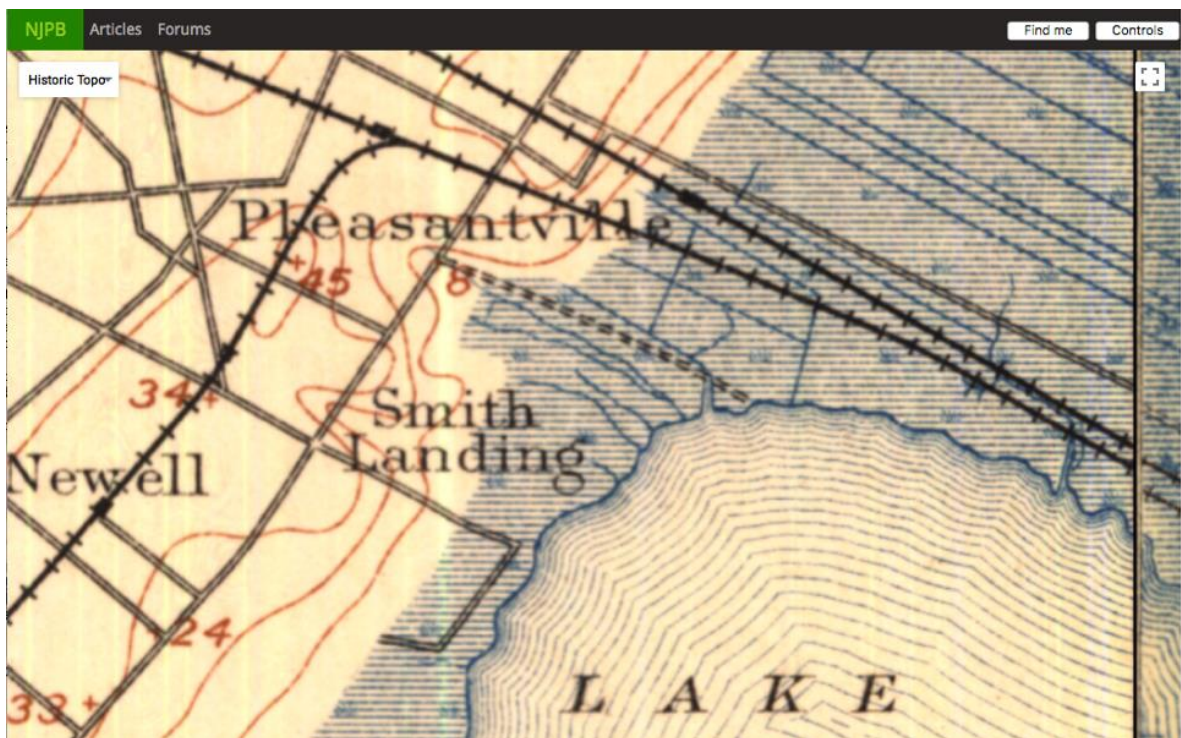
In response to the notice sent to property owners in the Lakes Bay neighborhood, several residents volunteered feedback and materials to assist in the development of this analysis. In Pleasantville’s Letter of Intent submitted following Superstorm Sandy, the City requested \$1.4 million for 22 property acquisitions and demolitions as well as drainage improvements/road elevations to mitigate damage from underground streams. Feedback submitted indicated that this grant request to FEMA was not approved.

Following the FEMA application, property owners submitted applications to the NJDEP Blue Acres buy-out program. NJDEP Blue Acres distributes funds from state open space funding rounds for acquisition of properties in floodways. A coastal Blue Acres program allocates

funds to properties in the Coastal Area Facilities Review Act planning area. According to resident feedback, NJDEP contested the application by indicating that applicant properties were not contiguous to each other.

In 2009, the roadway near the 200 block of Edgewater Avenue was dug up to provide water to a fire hydrant. According to a February 2013 email from a city official and other documents submitted, one or more underground streams were found under Edgewater Avenue that contribute to flooding conditions in the area. Though evidence of these streams was not found on the site visit, the evidence of such streams may be likely based on historic topographic mapping such as that found below.

**Figure 10: Historic Topographic Map of Repetitive Loss Area**



Source: [maps.njpinebarrens.com](http://maps.njpinebarrens.com)

The preceding map indicates the presence of several tidal creeks flowing west from the mainland towards Lakes Bay. These streams may have formed the basis for tidal canals that were part of the initial Lakes Bay development, though it is possible that some of these waterways were buried and filled during development. The topographic contours to the left of the words “Smith Landing” in the preceding image is a “V” shape that indicates the presence of a creek or drainage ditch. It is possible that this former creek may be one of the underground waterways referred to in the documentation submitted for this analysis.

Resident contributions to this analysis included the following observations:

- Flooding in the neighborhood worsened following the installation of the rock gabion in West Atlantic City (Egg Harbor Township).
- City water service is no longer provided to the eastern end of Oakland Avenue, forcing residents to install their own wells and expensive water filters.
- The eastern end of Oakland Avenue becomes inundated with a few inches of water during high tide events.
- Flooding on some streets is so severe and frequent that residents will park several hundred feet from their residence and may not be able to travel on foot to their house, opting to spend the night in their cars or away from their house.

## 5.0 Recommendations, Alternatives, and Updates

Historic damage from flooding and the state of the structures within the repetitive loss area indicate the need for a comprehensive effort to address flooding in the neighborhood. Appendix 10 describes the categories of floodplain management activities that can be undertaken to mitigate flood damage. The following measures are proposed for the Lakes Bay neighborhood in Pleasantville:

### Preventive Activities

- The City of Pleasantville will continue to review and strengthen its flood protection ordinance (Chapter 139); and
- Pleasantville will continue to accept fee simple donations of land in the neighborhood, thereby preserving open space and floodplain.

### Property Protection Measures

- Support the demolition of abandoned and severely damaged, non-flood-resistant buildings in the neighborhood;
- Elevate remaining buildings and utilities above the base flood elevation;
- Install flood vents in elevated homes on foundations;
- Install sewer backup preventers; and
- Leverage programmatic support and expertise to support voluntary Blue Acres buy-outs for interested parties.

### Natural Resource Protection

- On recently-demolished properties, perform vegetation management on invasive and non-native species (e.g. Phragmites) to support healthy floodplain ecosystems;
- Leverage opportunities to perform ecological uplift, restoring natural shorelines and habitat; and
- Ensure that environmentally compromised/contaminated sites in the area retain remediation features.

### Emergency Services

- Ensure utility/phone access to remaining houses in the neighborhood;

- Deploy flood-resistant rescue vehicles to evacuate residents during flooding events; and
- Develop a warning system coordinated with a water level gauge that activates an alert once a certain level is reached.

#### Structural Projects

- Construct a berm or other natural shoreline protection structure such as a gabion along the existing shoreline to provide ecological uplift and drainage protection;
- Maintain stormwater channels or provide flood gates for the drainage ditches;
- Determine whether the dredging of the tidal drainage channels would increase flood storage, and whether dredged material could be beneficially reused to protect properties;
- Study whether the West Atlantic City gabion has contributed to flooding in the neighborhood and address remedies; and
- Elevate low-lying roads to continue providing vehicle/pedestrian access to waterfront structures.

#### Public Information

- Continue to provide accurate flood-mapping services for neighborhood residents; and
- Inform residents of flood risks, providing technical assistance to those undertaking projects in the neighborhood.

This Repetitive Loss Area Analysis will be evaluated on an annual basis, and more thoroughly reexamined and reviewed every three years, or prior to a Community Rating System verification visit. The annual evaluation will consist of an analysis evaluation for progress on recommended actions and to what extent mitigation or building demolition activities have occurred and will be publicly available. The re-analysis will occur prior to a CRS cycle visit and entail a thorough re-analysis and survey of conditions in the neighborhood.



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