



# NEIGHBORHOOD PLAN



## *Princeton-Midstreams Brick Township, New Jersey*



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POST SANDY RECOVERY PHASE II PLANNING

# Neighborhood Plan

**Princeton-Midstreams, Brick Township, New Jersey**

## INTRODUCTION

In a Resolution #15-00739 on February 18, 2014, the Township Council of the Township of Brick, County of Ocean and State of New Jersey approved the preparation and submission of Post-“Sandy” Planning Studies and Reports, which allowed for the four Brick Neighborhood Plans. The Princeton-Midstreams Neighborhood Plan is included in these Planning Studies and is intended to look at a number of factors which will affect the future viability of this area, from the present state of the infrastructure and the ongoing re-building efforts, to methods of providing a sense of unity and community.

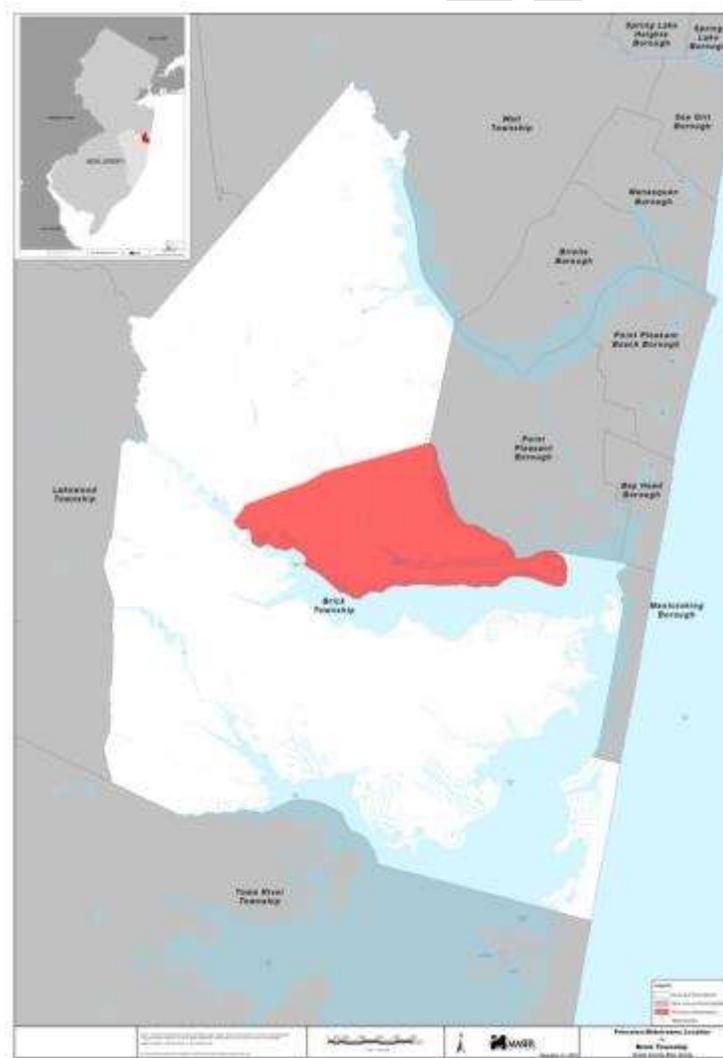
The Princeton-Midstreams Plan area extends from Bay Head Harbor at the head of Barnegat Bay in the east along the north side of the Metedeconk River to New Jersey State Route 88 and northeast to the municipal boundary with the Borough of Point Pleasant of Toms River Township along the southerly side of Beaver Dam Creek. The Neighborhood Plan has been prepared in conjunction with three other Brick Neighborhood Plans and is also intended to complement the Hazard Mitigation Plan (HMP) and Floodplain Management Plan (FMP) prepared by Tetra Tech, Inc. in conjunction with other Post-Sandy Phase II planning projects by the Township.

This Neighborhood Plan provides an overview of the neighborhood, an analysis of the development pattern within the Princeton-Midstreams Neighborhood and its associated bulk standards to determine specific recommendations for changes that would make the neighborhood more resilient to future storm events comparable to Superstorm Sandy. As noted in the project scope, the Plan uses the sustainable development principles of the Leadership in Energy and Environmental Design (LEED) rating systems; specifically LEED for Homes (LEED-Home) and LEED for Neighborhood Development (LEED-ND). The LEED-Home standards are applicable for homeowners who are renovating as well as those considering a complete demolition and rebuild. The LEED-ND standards apply to the neighborhood as a whole and relate to maintaining and enhancing connectivity (and thereby “walkability”) within the neighborhood for pedestrians and bicyclists, sustainable stormwater management, and enhancing neighborhood goods and services, parks and open space and schools within walking distance of the homes (1/4 mile or less). The subsequent section of the Neighborhood Plan provides design standards to assist homeowners with renovating and rebuilding.



## NEIGHBORHOOD DESCRIPTION

The Princeton-Midstreams neighborhood is located in the eastern central portion of Brick Township, Ocean County, New Jersey. The neighborhood borders the Metedeconk River to the south, Bricktown to the west, and Point Pleasant Borough to the north and east, separated by the North Branch Beaver Dam Creek. The moniker Princeton-Midstreams is used to describe the entire geographic area, whereas Princeton and Midstreams both specifically refer to the individual sub-neighborhoods with their own distinct social and physical geographies, as well as the major access roads (Princeton Avenue and Midstreams Road) that connect them.



Map 1: Location of the Princeton-Midstreams neighborhood within Brick Township



This neighborhood is generally accessible by three major roads. Midstreams Road and Jordan Road lead from Route 88 to the north into the Midstreams sub-neighborhood and intersect and cross Beaver Dam Creek south into Princeton. Princeton Avenue and some smaller neighborhood streets extend into Princeton from the west where Route 70 and 88 meet and run east into the sub-neighborhood. Beaver Dam Road crosses Beaver Dam Creek into Princeton from Point Pleasant Borough to the north. The sub-neighborhoods are very much disconnected because of Beaver Dam Creek, which runs centrally between them. The Midstreams Road Bridge and Route 88 are the only roads connecting the Princeton peninsula to Midstreams.

Despite the decidedly suburban form and sprawling planned communities, from a larger perspective Princeton-Midstreams expanded in an ad hoc nature with very little concern for connectivity. With the sub-neighborhoods laid out over several periods in a variety of patterns, they are often disconnected and have their own character. Whether purposeful or not, some of the streets that do connect form different sized blocks of various developments. There is also a network of sidewalks in both of the sub-neighborhoods, both along major corridors, such as Princeton Avenue and Midstreams Road, and some of the newer residential streets, as well as crosswalks at signalized intersections. Sidewalks are inconsistent and do not always connect, nor are they always on both sides of the road. Additionally, there is a designated/marked bike lane along the shoulder of both the eastbound and westbound sides of Princeton Avenue. There are also few recognizable signs indicating the neighborhood connectivity or identity, again with exception to a couple of the newer planned communities.

Princeton-Midstreams is unique as a neighborhood compared to Shore Acres, Cherry Quay-Bay Harbor, and the Barrier Island due to its sheer size. It encompasses the entire area southeast of New Jersey State Highway 88 from the border of the Borough of Point Pleasant to the east to where it meets Route 70 to the west. The sub-neighborhoods represent several homeowners and neighborhood associations, as well as distinct physical geographies and cover an approximate total of 16,331.9 acres, or 25.5 square miles, of densely populated land in the designated area. As of the 2010 U.S. Census, there were 4,133 housing units and a population of 9,468, resulting in approximately 162 units per square mile and 371 persons per square mile.<sup>1</sup> The neighborhood, primarily in Princeton, experiences some population increase during the summer with part-time residents with second homes and renters, although not significant.

The neighborhood is almost entirely residential, but is surrounded by convenience and highway commercial business and retail centers on the outer rim of the neighborhood along N.J. Route 88 and Route 70. A few restaurants, gas stations/auto service centers, neighborhood retail/deli, and marine-related or marina services, are also located along various parts of the main arterial roads, such as Princeton Avenue. There are a few public services, such as Midstreams Elementary School located on Midstreams Road.

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<sup>1</sup> U.S. Census Bureau, 2010.



In addition to the developed areas, there are some existing and proposed natural conservation areas in and surrounding the neighborhood, including the marshes along the Beaver Dam Creek and Metedeconk River and some wooded areas in Midstreams. While there are a large number of private clubs, pools, and boat launch areas, the Township also provides several public recreational facilities and amenities throughout the neighborhood. Some of the public facilities include Windward Beach Park and playground in Princeton; and Norman J. Sherman Park, Crescent Woods Park, Midstreams Park, and the recreational fields at Midstreams Elementary School in the Midstreams sub-neighborhood.

Princeton-Midstreams is more similar to the Cherry Quay-Bay Harbor neighborhood than it is to the Barrier Island or Shore Acres neighborhoods, such that the sub-neighborhoods are primarily defined by their natural peninsulas rather than man-made canals. Much of the neighborhood has frontage on the water, whether the Metedeconk River, Bay Head Harbor, or one of the branches of Beaver Dam Creek. However, there are a few areas with man-made lagoons, particularly the eastern end of Princeton Avenue at North and South Drive, Island Drive, and Lenape Trail in Princeton; and a few streets on the North Branch Beaver Dam Creek. The South Branch Beaver Dam Creek has some unusual man-made lagoons formed by a series of small barrier islands, which also help to protect the neighborhood from flooding and wave action. Other than those small islands, there is minimal natural or man-made buffer to absorb water from a rise in sea level.

Much of the neighborhood along the Beaver Dam Creek and Metedeconk River waterfront was built on former coastal wetlands or marshes. Large swaths of wetlands were dredged to widen the rivers and to create lagoons that allow private boat traffic and mooring for neighborhood residents, although it was not as prevalent in Princeton-Midstreams as in other coastal neighborhoods. The dredged silt was likely used to build up the land on which the riverside homes and roads were placed. Therefore, some formerly interior parts of the neighborhood are now accessible by boat, but are also subject to habitual flooding due to the proximity to the water, low elevation, and foundation built on naturally absorbent wetlands. Some protected wetlands ecosystems still exist to a limited extent within the interior riverine sections of the neighborhood and provide valuable habitat and flood protection.

The barrier island to the east, which is essentially a long strand of naturally forming sand dunes that has been heavily developed, protects the mainland neighborhood of Princeton-Midstreams from the direct impact of the Atlantic Ocean. Bay Head Harbor, an estuarine extension of Barnegat Bay, separates the community from the barrier island. The Bay is part of the eastern Intercoastal Waterway, which extends from Bay Head, New Jersey in the north to Island Beach State Park, New Jersey in the south.

Most of the mainland to the north, west, and south is also densely developed in a suburban character, but interspersed with a varied topography of rivers, wetlands, marshes, and forest areas. The Metedeconk River forms the southern boundary of the neighborhood, while the North Branch of Beaver Dam Creek forms the northern boundary, and the South Branch of Beaver Dam Creek forms the central



boundary between the sub-neighborhoods. Together, these three rivers form the two peninsulas and the identity of the Princeton-Midstreams neighborhood.

However, as was the case during Superstorm Sandy in 2012, heavy rain and rising flood levels can easily overwhelm the surrounding streams, rivers, and marshes in the low-lying area. The unpredicted breach of the barrier island by the ocean near the Mantoloking Bridge directly to the east, also allowed water to be pushed inland by several high tides and strong southerly winds. This combination of factors raised the level in Barnegat Bay even more quickly and the remaining marshes and storm drains could no longer absorb any more water. As a result, the already flood-prone streets and properties in the neighborhood were inundated because the water could not filter out and the neighborhood endured significant devastation from both flooding and wind during the storm. Although it was an extremely rare event, Princeton-Midstreams is especially vulnerable to flooding with its position at the junction of the mouths of two rivers and the head of Barnegat Bay, and with the potential of the barrier island being breached.

Like other neighborhoods in the area, sections of Princeton-Midstreams are still continuing to rebuild, as well as implementing new adaptive and mitigation measures for future storms and sea level rise. Since Superstorm Sandy, some homes have either been renovated or demolished and rebuilt, and many homes, new and old, have been raised to meet BFE requirements in order to qualify for flood insurance or FEMA grant money. This process has been somewhat haphazard, rapid, and costly, causing some additional unforeseen issues with the developable land and bulk standards as homes are being raised exceptionally high or taking up more lot coverage to justify the loss of developable ground floor or to receive more funding.

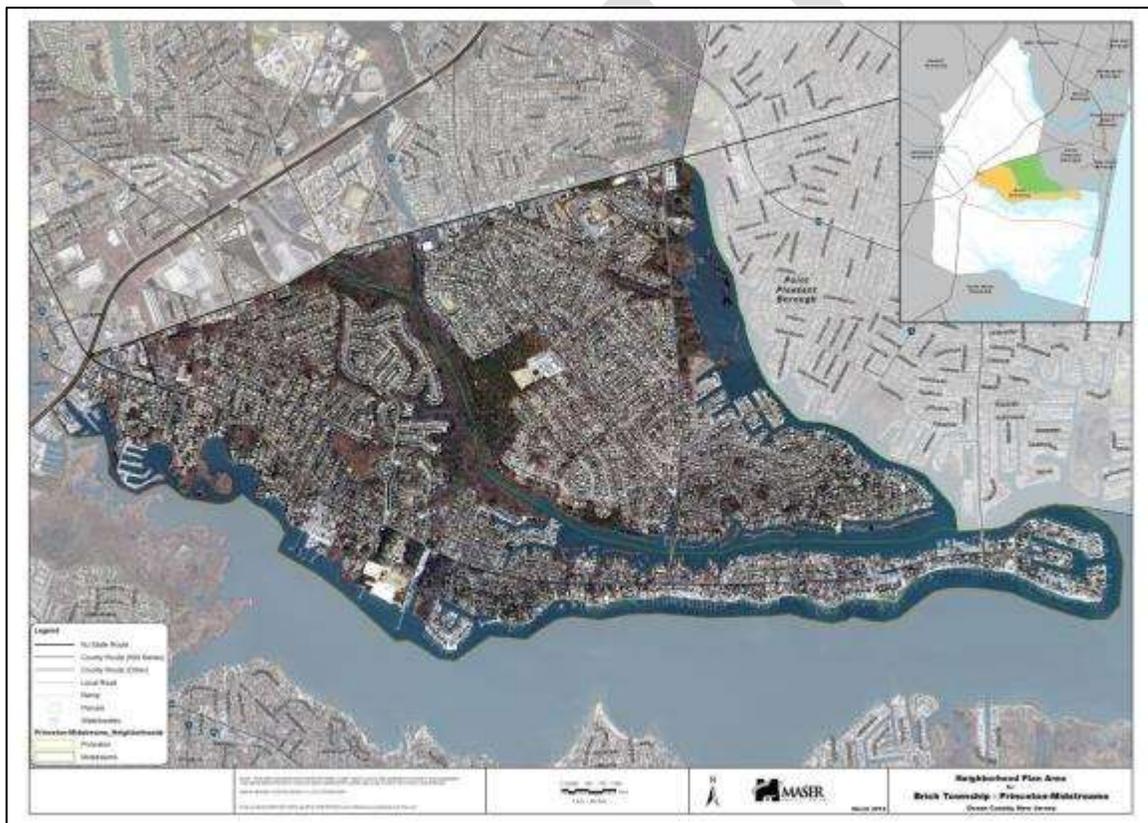
In this neighborhood, 288 properties suffered substantial damage from Superstorm Sandy in 2012, which were nearly all located in areas directly on the lagoons and on the eastern ends of both peninsulas. The average year that structures on such substantially damaged properties were built is 1969, whereas the average year that homes were built in this neighborhood is also 1969. Newer properties, especially those built after the first Base Flood Elevation requirements, were more likely to already comply with height and lot requirements and generally experienced less damage.

The geography of the neighborhood, while attractive, poses a hazard for residents. There are very few major access/emergency evacuation routes on the peninsulas and, in the case of the lagoon neighborhood in eastern Princeton, residents are entirely cut off from Princeton Avenue and the surrounding bridges during major flooding. Additionally, the length, narrowness and suburban nature of the sub-neighborhoods simultaneously increases and restricts traffic on the three major roads, which can be an issue for emergency vehicles.

The location of the densely developed and largely impervious neighborhood on wetlands at the intersection of the bay and river makes it particularly vulnerable to water damage from storm events and increased flood levels, as well as wave and wind erosion from Barnegat Bay. Drainage issues, impact on

wetlands, low-lying/flood-prone properties, and a lack of public neighborhood spaces and design standards could prove to be the biggest issues that this community faces. The ability of these two sub-neighborhoods to act together to protect and improve natural ecosystems, public spaces, infrastructure, connectivity, neighborhood development standards, and storm preparedness, in addition to the actions that are taken by the communities on the barrier island and the Township as a whole, will have a direct impact on the community’s resiliency in the future.

Map 2 below shows a close-up aerial image of the neighborhood, while the sub-neighborhoods are listed below in the Existing Conditions section and shown on Map 3.



Map 2: Princeton-Midstreams Neighborhood Plan Area

**PLAN INTEGRATION, COORDINATION, AND BUILDING BLOCK APPROACH**

**PLANNING COORDINATION AND PROCESS**



This Neighborhood Plan is part of the a larger initiative taken on by the Township of Brick to better integrate planning processes with community development, local decision-making, and hazard mitigation efforts. This effort included the concurrent development of a series of township-specific working documents that create a framework for reducing vulnerabilities to hazards, increasing safety, and limiting damages to both public and private property. Each plan leverages the findings and analysis of the other planning efforts and fulfills a unique component of a comprehensive approach to hazard mitigation and community resilience. The following documents were developed concurrently with cross-utilization of experts and stakeholders:

- Township of Brick Neighborhood Plans
- Township of Brick Master Plan: Hazard Mitigation Plan Element
- Township of Brick Floodplain Management Plan
- Township of Brick Repetitive Loss Area Analysis
- Township of Brick Capital Improvement Plan
- Township of Brick Master Plan: Green Buildings and Sustainability Element

The development of the Neighborhood Plan was led by the Township’s Master Plan Sub-committee consisting of four members of the Planning Commission and supported by a public engagement process that included an open public meeting and presentation. As a result, this plan incorporates a wealth of local knowledge and ensures that recommendations align with the goals and preferences of the community.

The methodology and associated tasks incorporated into the development of the Neighborhood Plan Element are outlined below.

- Review of existing plans and studies, including but not limited to:
  - 2007 Township of Brick Master Plan, inclusive of all Master Plan elements
  - 2014 Township of Brick Strategic Recovery Planning Report
  - 2014 Township of Brick “Getting to Resilience” Recommendations Report
  - Ocean County Long Term Community Recovery Plan
- Existing conditions analysis to document trends and the current status of the community, including:
  - Population/Demographics
  - Land Use and Development
  - Regulations and Ordinances
- Public outreach and engagement efforts to incorporate local knowledge and values into the planning process. Public engagement included:
  - Open Houses
  - Meetings
  - Surveys



- Site visits and meetings with local officials.

## NEIGHBORHOOD PLAN GOALS AND OBJECTIVES

The planning principles employed in this Neighborhood Plan are based on evaluations by the Township professional staff and interaction with property owners and residents of Princeton-Midstreams through public meetings and surveys.

- To empower the Princeton-Midstreams neighborhood, in partnership with the Township, to implement thoughtful, innovative, and resilient projects that will advance the visual and functional “branding” of Princeton-Midstreams as a cohesive riverfront community.
- To provide practical and affordable recommendations to make Princeton-Midstreams more resilient to future threats while improving quality of life, access to parks and open space and safety for pedestrians and bicyclists.
- To fully engage stakeholders about the impacts of climate change and to develop pathways to resilience based on sound science.
- To leverage investments to help the community implement the recommendations of this Neighborhood Plan.

**PUBLIC OPINION**

An open public meeting for the Princeton-Midstreams neighborhood was held on June 11, 2015 at Midstreams Elementary School on Midstreams Road. The meeting was intended for residents of the neighborhood and was fairly attended by both Princeton and Midstreams residents, although it was also open to the general public of the Township.

Township officials and consultants from Maser Consulting, P.A. and Tetra Tech, Inc. were present to share observations of the neighborhood conditions and impact from storm damage, as well as provide brainstorming materials, and gather feedback. Residents were invited to take part in discussion about the present state, existing conditions, storm damage, and ideas for the future of the neighborhood and wrote comments on poster boards and comment sheets. Below are the visuals that were created and distributed at this meeting.

Figure 1, Figure 2, and Figure 3 were poster boards that were presented with the intention of getting comments from residents as to their opinions on various design approaches, neighborhood threats, and parks and green spaces concepts. Figure 4 and Figure 5 were presented as visuals to give context and ideas for the comment sheets and boards that were also provided.

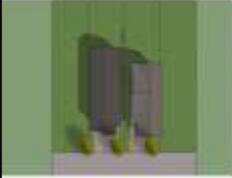
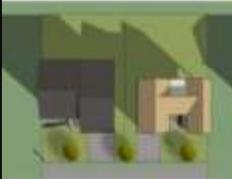
(1) Building Design Approaches				Like (green) Dislike (red) No Opinion (yellow)
Plan View	Street View	Context	Approach to Building Elevation	
		Starting of porings and conversion of space for parking Recessed front entry to absorb part of the straight run stairway into side yard Street tree plantings of trees with bare or columnar habit	Control over-building with regulation that limits sq. Ft based on Lot Size Control overbuilding by maintaining required setbacks between buildings. Use of stone or brick facing on elevated basements in excess of four feet above grade.	
		Narrow Lots (25 to 50 ft. wide)	Orientation of entry stairs parallel to the street rather than perpendicular Limit size of garage space and encourage decks and porches Encourage creative grading and landscaping to mask views under porches Street tree plantings of trees with spreading habit	
		Larger Lots (50 ft to 200 feet wide)	Control over-building with regulation that limits sq. Ft based on Lot Size Control overbuilding by maintaining required setbacks between buildings	

Figure 1: Building Design Approaches comment board presented at June 11, 2015 meeting



(2) Identification of Neighborhood Threats		
Content	Description	Enforce Codes (green) Aspirin/Provide Assistance (red) No Opinion (yellow)
	<b>Vacant Buildings</b> Properties that have been abandoned or where property owners have not taken action.	
	<b>Vacant Lots</b> Vacant lots within neighborhood where either the home was destroyed by Sandy and has been demolished but where no further action has occurred and the lot has become an eyesore in the neighborhood.	
	<b>Flood Prone Properties</b> Properties that have deteriorated or have become an eyesore in the neighborhood because they are prone to repetitive losses from periodic flooding.	

Figure 2: Identification of Neighborhood Threats comment board presented at June 11, 2015 meeting

(3) Parks & Green Space - Flood Storage		
Content	Description and Purpose	Agree (green)/ Disagree (red) No Opinion (yellow)
	<b>Use Salt Marsh for Stormwater Management</b> Where possible, use existing freshwater wetlands and tidal marshland to absorb stormwater to reduce reliance on pipes and outfalls.	
	<b>Allow parks to act as floodplains for excessive flood events (Metedeosk)</b> Investigate potential for increased flood water retention in existing parks and open spaces.	
	<b>Use Green Infrastructure (rain gardens, bioswales, rain barrels, etc.) to absorb stormwater.</b> Incorporate Green Infrastructure into capital improvements such as streetscapes, stormwater management practices and homeowner landscaping to encourage rain gardens, bioswales and the capture of roof runoff for both stormwater absorption and improved water quality in Beaver Dam Creek, Metedeosk River & Barnegat Bay.	

Figure 3: Parks & Green Space – Flood Storage comment board presented at June 11, 2015 meeting



### Neighborhood Visual Character – Elevated Homes

<p><b>Changes in Visual Character:</b></p> <ol style="list-style-type: none"> <li>1. Raised foundations</li> <li>2. Rebuilds of larger homes</li> <li>3. More drastic contrasts in height</li> </ol>	<ol style="list-style-type: none"> <li>4. Newer homes are larger and closer together.</li> <li>5. &amp; 6. Some rebuilds dwarf existing homes.</li> </ol>	<p><b>Design approaches :</b></p> <ol style="list-style-type: none"> <li>7. Skirted pilings</li> <li>8. Parking underneath w. terraced steps.</li> <li>9. Split directional stairway</li> </ol>
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Figure 4: Neighborhood Visual Character – Elevated Homes poster board presented at June 11, 2015

### Visual Preferences – Parks & Open Space

<p><b>Neighborhood Parks</b></p> <ol style="list-style-type: none"> <li>10 – Waterfront Access?</li> <li>11 – Landscaped Spaces?</li> <li>12 – Active Recreation?</li> </ol>	<p><b>Water's Edge Spaces</b></p> <ol style="list-style-type: none"> <li>13 – Street Ends</li> <li>14 – Coves &amp; Lagoons</li> <li>15 – Vegetated Strips</li> </ol>	<p><b>Open Areas</b></p> <ol style="list-style-type: none"> <li>16 – Vacant Lots</li> <li>17 – Naturalized Areas</li> <li>18 – Common Areas</li> </ol>
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Figure 5: Visual Preferences – Parks & Open Space poster board presented at June 11, 2015 meeting



## NOTES FROM THE SHORE ACRES PUBLIC MEETING

Comments during the meeting at Midstreams Elementary School on June 11, 2015 were synthesized and can be found in Appendix I. These comments have helped to inform the Neighborhood Plan below.

The major issues in the neighborhood that were discussed most often include: overbuilding of narrow lots – too many variances granted; do not want to be over-regulated; if flood-prone properties become an eyesore, codes should be enforced or properties condemned; stormwater/catch basin overflow; road flooding; the neighborhood east of the bridges is isolated in major flooding with no emergency access; there is no clear evacuation route; runoff from unpaved driveways undermines the road; and there is limited stormwater management.

Some of the general ideas that came out of the public open house included: building up the islands in Beaver Dam Creek to create a “living breakwater” to buffer the developed areas on the other side; installing permeable pavement in Township parks; installing check valves on pipes into creek; and creating a No-Wake Zone in Beaver Dam Creek to prevent coastal erosion.



## EXISTING CONDITIONS ANALYSIS

The initial assessment for the Neighborhood Plan involved several site visits of the area with local representatives and an analysis of the information gathered by Township Planners, investigations, historic documents, and U.S. Census and American Community Survey data. From this baseline information, the following facts and observations were identified:

### NEIGHBORHOOD PROFILE

Princeton-Midstreams encompasses a total of 16,331.9 acres, or 25.5 square miles, which is the largest of the Brick neighborhoods in land area and population. The neighborhood is located on the mainland due west of the barrier island chain, which extends along the eastern coast of the United States, creating the protected channel known as the Intracoastal Waterway.

The Brick Township neighborhood occupies a riverine peninsula with two sub-peninsulas surrounded by water, with the Metedeconk River to the south, Bay Head Harbor to the east, Beaver Dam Creek North Branch to the north, and Beaver Dam Creek South Branch through the center of the larger peninsula. The two sub-peninsulas are the defining physical boundaries of each sub-neighborhood.

The neighborhood's strategic location with direct river and bay access and proximity to the Brick beaches via the Beaver Dam Road into Point Pleasant Borough, nearby nature preserves, and to major retail centers, has attracted both year-round and seasonal residents over the past century. This location provides residents and visitors alike with plentiful opportunities for recreation, housing, and employment.

Due to the dense, yet sprawling development of the neighborhood, there are very few remaining ecologically diverse areas within its boundaries. However, what does remain is mostly protected wetlands and forested area that leaves little space for expansion of the populated neighborhood, with the exception of rebuilding existing lots. Additionally, the remaining wetlands and flood-prone land make further development impractical.

The river neighborhood is one of the most accessible neighborhoods due to its location near the center of town and the main commercial area. N.J. Route 88 connects the neighborhood to other areas of the Township and other municipalities, while Princeton Avenue, Midstreams Road, and Jordan Road are the primary connecting roads through the neighborhood. Public transportation by bus is located in the vicinity, although personal automobile is the most common mode of transportation. The most sidewalks of any of the Neighborhood Plan neighborhoods are found in Princeton-Midstreams, although severely lacking in connectivity and extent. Princeton also has one of the few bicycle lanes in Brick Township.



Boats are a popular mode of transportation and recreation for residents and visitors during the summer and are abundant due to the large number of marinas, yacht clubs, and private docks along the river.

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## SUB-NEIGHBORHOODS

The Princeton-Midstreams Neighborhood Plan Area is composed of the two sub-neighborhoods which give it its name, Princeton and Midstreams. Individually, the sub-neighborhoods are equal to or larger than any of the other Brick Township Neighborhood Plan Areas. The overall neighborhood boundary is an estimate based on the delineation of development and guidance from Township officials.

The sub-neighborhoods are separated from one another by the south branch of Beaver Dam Creek. They are only connected by way of the Midstreams Road Bridge and Route 88. While much of the south branch is open and navigable, providing boat access to most waterfront properties, the inland part is still densely vegetated. This is one of the only locations where there exists large open space in Princeton-Midstreams.

Much of both Princeton and Midstreams contain relatively new development in comparison to the other Neighborhood Plan Areas. However, the sub-neighborhoods themselves contain several distinct areas due to various self-identified as homeowners, condominium, or neighborhood associations, development typologies, and physical geography.



Map 3: Princeton-Midstreams Sub-Neighborhoods

## PRINCETON

The peninsula between the Metedeconk River to the south, Beaver Dam Creek south branch to the north, and Route 88 to the west comprises the sub-neighborhood of Princeton. The peninsula ends at the confluence of the Metedeconk River and Beaver Dam Creek in Bay Head Harbor. Princeton Avenue is the main artery of the sub-neighborhood and extends the entire length of the neighborhood.

While it is large in width (nearly the width of Midstreams) towards Route 88, the landmass significantly narrows at the head of Beaver Dam Creek to the end of the peninsula. The neighborhood is nearly one and one-quarter mile across at the western end and less than 400 feet in width in some areas at the eastern end. The length of the peninsula, roughly following Princeton Avenue, is approximately 3.75 miles.

Princeton is mostly residential in land use, with some commercial establishments, such as restaurants and marinas, interspersed but mainly toward the western and eastern boundaries and in the center. The sub-neighborhood is better known for its large single-family estate-like lots along the eastern end of Princeton Avenue. The very eastern end of Princeton is one of the few areas in the neighborhood with the typical man-made lagoons, similar to those in Shore Acres and the Barrier Island.

There are several different districts within the sub-neighborhood, which include: Wardells Neck; Cedarcroft; Laurelton Heights; Princeton Commons; and Pinewood Mobile Home Park; as well as several unnamed areas that are distinct. Additionally, the area where N.J. Route 88 and Princeton Avenue meet serves as the neighborhood’s “business district” to a limited extent. There are also three separate “marina districts” where the majority of the marinas, yacht clubs, and marine services are located.



Figure 6: “Business District”, Princeton Ave. & Route 88, Princeton (Google Maps)



Figure 8: Pinewood Mobile Home Park district, Princeton (Google Maps)

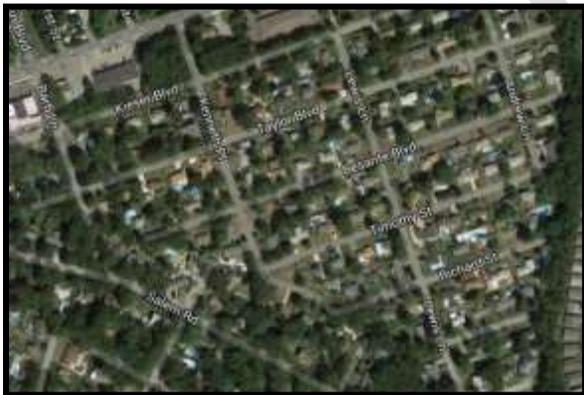


Figure 7: Laurelton Heights district, Princeton (Google Maps)



Figure 9: Cedarcroft district in central Princeton (Google Maps)



Figure 10: Princeton Commons district, Princeton (Google Maps)



Figure 11: Unnamed "estate district" in central-eastern Princeton (Google Maps)

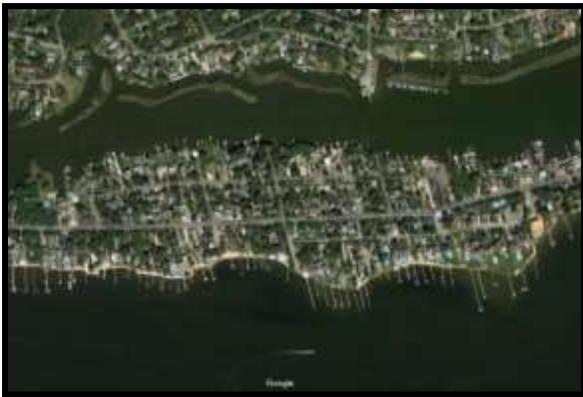


Figure 12: Wardells Neck district in eastern Princeton (Google Maps)



Figure 13: Man-made lagoons in Princeton (Google Maps)

## MIDSTREAMS

The Midstreams sub-neighborhood, which actually comprises a much larger area than the so-named neighborhood association area within its borders, is also a peninsula. The neighborhood lies between the north and south branches of Beaver Dam Creek and Route 88 to the west. The peninsula ends where Beaver Dam Creek North and South converge.

The sub-neighborhood is primarily accessible by way of either Midstreams or Jordan Road from Route 88 or Midstreams Road Bridge from Princeton Avenue in Princeton. The two roads converge at Midstreams Road Bridge before crossing into Princeton. These are the main arteries of the sub-neighborhood and also physically define much of the development.

Midstreams is entirely single-family residential in land use, with the exception of some highway commercial along Route 88. Midstreams Elementary School also occupies a large area in the center of

the sub-neighborhood along Midstreams Road. Most residential lots in Midstreams are noticeably smaller than those in Princeton, although still quite large.

There are some man-made lagoons in Midstreams, a few of which are akin to those in Princeton and other neighborhoods, and some of which are markedly different than those found anywhere else. They have been carved out of the wetlands, but rather than building homes on either side, narrow strips of land were left as small islands along the southern side of the peninsula in Beaver Dam Creek. These islands form a protective buffer and allow boat mooring and traffic in the inner lagoons up to private residences.

Midstreams also has a few distinct districts that are identifiable by their density and arrangement, but are unnamed. Midstreams primarily refers to the area east of Jordan Road, which was the first to develop, but now connotes the entire peninsula. In addition to the mostly residential districts, N.J. Route 88, in some ways, serves as the neighborhood’s “business district”.

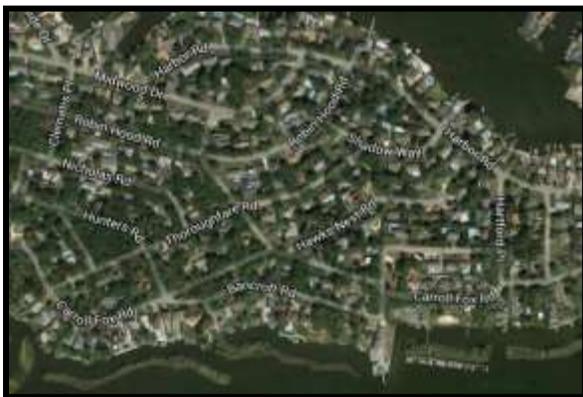


Figure 14: Historic Midstreams district east of Jordan Rd., Midstreams (Google Maps)



Figure 15: Characteristic inner neighborhood development – Midstreams Rd. & Jordan Rd., Midstreams (Google Maps)



Figure 16: Beaver Dam Creek North lagoon community, Midstreams (Google Maps)



Figure 18: Newer subdivision in northwest area, Midstreams (Google Maps)



Figure 17: Beaver Dam Creek South lagoon neighborhood, Midstreams (Google Maps)

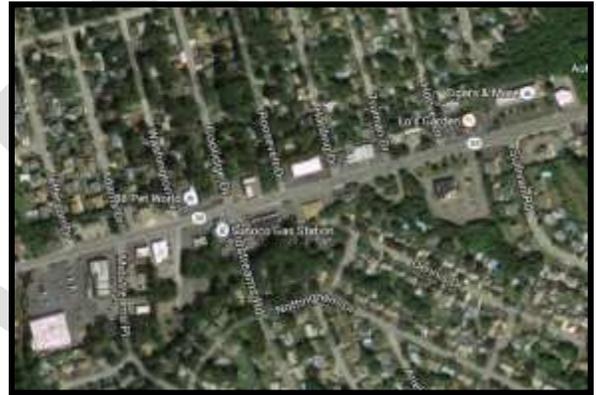


Figure 19: "Business District" along Rt. 88, Midstreams (Google Maps)

## NEIGHBORHOOD HISTORY

The development of Princeton-Midstreams is somewhat indicative of regional and national growth and changes, as well as a mix of other factors occurring around the same time. Although these large-scale external historical factors cannot be fully comprehended, the history of Princeton-Midstreams can be visualized and explained at the neighborhood level using a series of historic aerial photographs that were obtained from online sources, such as [www.historicaerials.com](http://www.historicaerials.com) and Google Maps. The aerial photographs have been analyzed to determine changes that took place within the Neighborhood Plan Area over the course of the past century. The first available photography dates from 1931 in intervals of roughly 5 to 10 years through 2013.

Based on the first aerial image from the year 1931, very little would have occurred prior to that year that would be critical for the development of this Plan. However, it is somewhat unusual to note that the



lagoons at the eastern end of Princeton had already been formed into their present shape prior to 1931. Such developments have not been noted in the other neighborhoods until at least the mid-1940s.

One can infer through the aerial images that the subject neighborhood has changed drastically since 1931. Princeton was the first sub-neighborhood to begin to develop, but was largely farmland, as well as a small community in Wardells Neck. Midstreams remained mostly in a state of undisturbed natural land and wetlands until about 1940.

Prior to development, Princeton-Midstreams likely resembled a cross between the forested area of the Township Open Space Plan Area, the wetlands area of Swan Point State Natural Area/Forsythe National Wildlife Refuge that exists today in Metedeconk Neck across the Metedeconk River, Cattus Island in Toms River Township, and Hartshorne Woods Park in Rumson. These are protected natural areas and parks that would have had similar features, although Princeton-Midstreams is unique in its geographic form and is slightly more protected from the elements.

Princeton-Midstreams developed rapidly and intensively in a short period of time during the massive suburbanization movement of the twentieth century. Without proper conservation and zoning measures, much of the original forest and coastal wetlands area was permanently lost to development and dredging. A lack of regulation allowed for



Figure 20: Example of how Princeton-Midstreams may have looked – Hartshorne Park (Melissa Wahl Rose, <http://www.trover.com/d/ybGA-hartshorne-park-middletown-new-jersey>)



Figure 21: Example of how Princeton-Midstreams may have looked – Cattus Island (William Hall, Sept. 26, 2013)

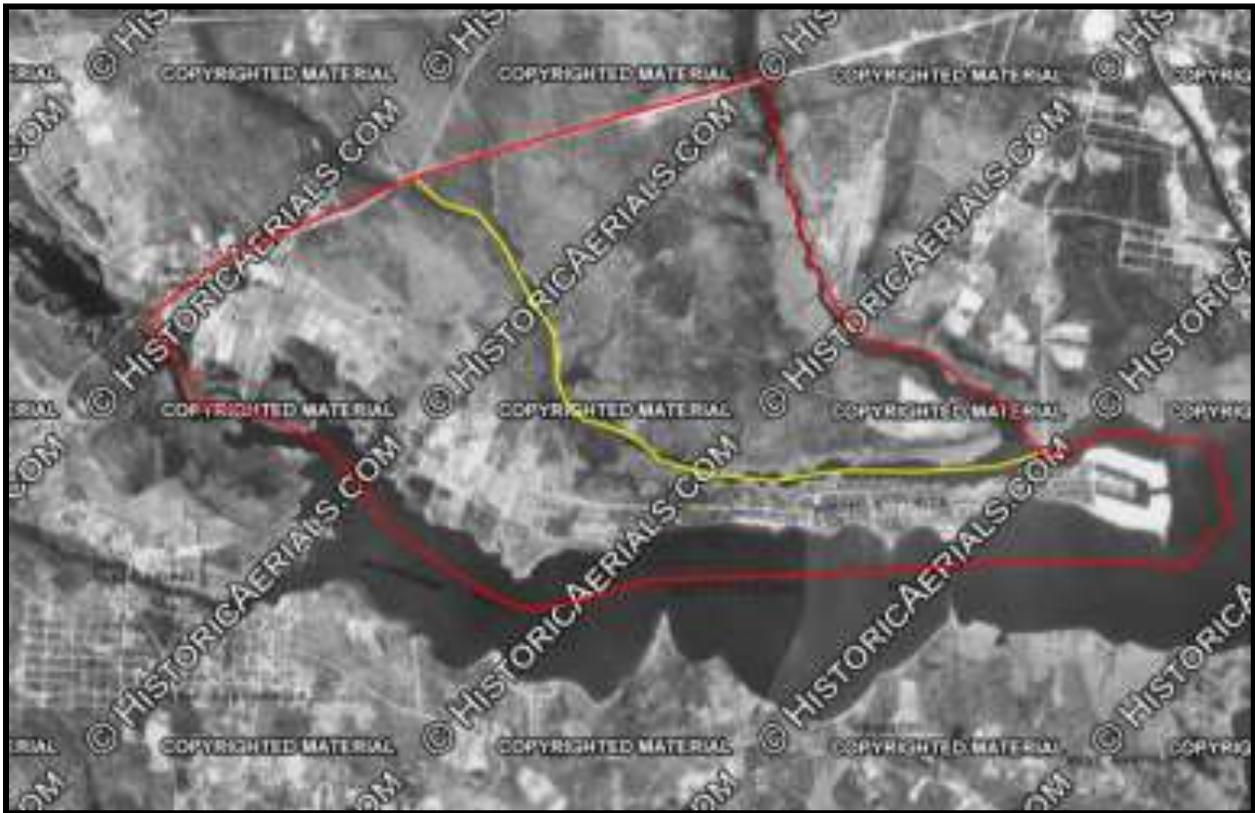
overpopulation and overdevelopment, in addition to putting the neighborhood at risk of severe flooding and storm damage.

By the 1980s, nearly the entire neighborhood had been developed to its maximum extent, displacing hundreds of acres of natural lands. The neighborhood has generally remained the same since that time, with the exception of major damage caused by Superstorm Sandy in 2012 and the subsequent rebuilding. As a result of the proximity to all that the Metedeconk

River, Barnegat Bay, and Atlantic Ocean have to offer, the Princeton-Midstreams neighborhood has continued to be a popular residential area. Unlike the Barrier Island and Shore Acres, Princeton-Midstreams is mostly occupied by year-round residents. Due to the popularity of the area, the year-

round residents, and suburbanization trends, the neighborhood experienced growth with large residential subdivisions of homes much more rapidly, but also continued to fill in much later than the Barrier Island due to a greater extent of space.

The development of the neighborhood can be traced through the series of images below, which show the neighborhood outlined in red, with the sub-neighborhoods divided by a yellow line.



Map 4: 1931 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

In 1931 ([Map 4](#)), the Brick Township neighborhood appeared very different from the way that it appears today. Most of the study area had little to no development. Midstreams was still in a mostly undisturbed, natural state, while Princeton had some large farms along the north bank of the Metedeconk River to the west, a small street grid in Wardells Neck, and the lagoons in the east already built. Roads in Midstreams are unnoticeable, if there are any, although Princeton Avenue can be seen clearly and ran the length of the Princeton peninsula.

Large expanses of intact marshes followed the entire perimeter of Midstreams along both branches of Beaver Dam Creek, as well as inland forest. With the wetlands, Midstreams appeared much wider and Beaver Dam Creek was much narrower.



Map 5: 1940 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

Almost a decade later, in 1940 ([Map 5](#)), a street grid in the Wardells Neck of Princeton had become much more defined and the first lagoon neighborhood was beginning to fill in, while the farms and estates in western Princeton remained. Additionally, Midstreams Road appeared from what is now Route 88 to the end of the peninsula where newly dredged lagoons and barrier islands replaced some of the former wetlands. Midstreams Road Bridge into Princeton was also built by 1940, as well as the Beaver Dam Bridge from Princeton into Point Pleasant Borough and the adjacent marina. Very little development had occurred in Midstreams by this point and most of the other wetland areas in Beaver Dam Creek were still intact.

Below is an image comparison of the area around Midstreams Road Bridge between 1931 and 1940. This was one of the most drastic changes in a short period of time. Most of the wetlands around the dredged lagoons in the 1940 image no longer exist, but it is evident from subsequent imagery that they may have been intended to be developed for more lagoon communities.

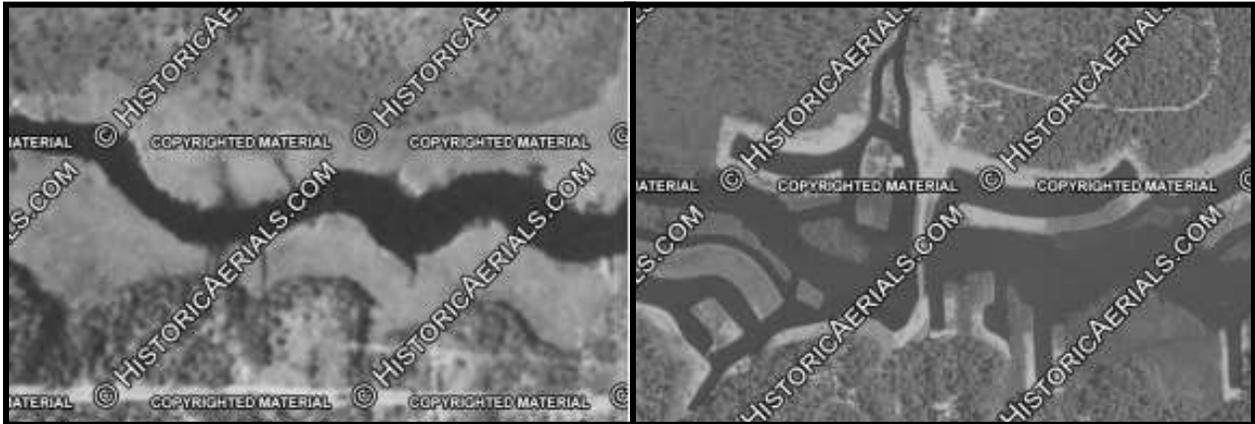


Figure 22: South Branch Beaver Dam Creek in natural state in 1931 (left) and dredged into lagoons in 1940 (right)  
([www.historicaerials.com](http://www.historicaerials.com))

In 1947 (Map 6), the most significant change was the development of a street grid and some new homes in the lower Midstreams peninsula. It appears that a large estate that existed prior to that time may have begun subdividing and selling off surrounding parcels of land to a developer (see Figure 21). The lagoon neighborhood in Princeton was filling in slowly with more homes, several more side streets were built in Wardells Neck, and another marina was built to the west of Beaver Dam Road Bridge.



Map 6: 1947 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))



Figure 23: Midstreams subdivision between 1931 (left), 1940 (center), and 1947 (right) ([www.historicaerials.com](http://www.historicaerials.com))

Development had hastened between 1947 and 1953 (Map 7). The eastern Midstreams peninsula filled in with more roads and homes and also saw the addition of Jordan Road and a modern Midstreams Road, which were more linear (Figure 22). The area along N.J. Route 88 and north was experiencing tremendous growth. The majority of the original wetlands, or some semblance of them, still remained in 1953, but it is evident that development was encroaching toward them as another lagoon neighborhood was beginning to be built in central Princeton along Beaver Dam Creek South Branch. The eastern



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Princeton lagoon was almost completely filled in with houses. In central/western Princeton, space for Windward Beach Park was being cleared for the public, replacing some private properties.



Map 7: 1953 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))



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Figure 24: Addition of Midstreams Road and Jordan Road in Midstreams between 1947 and 1953 ([www.historicaerials.com](http://www.historicaerials.com))

In 1956, a large area of central and western Midstreams, as well as parts of western Princeton had been subdivided for residential development. Some of the original farmland in western Princeton still remained, although they were also increasingly sold off or being encroached upon by other developments. Another small lagoon neighborhood on Island Drive was created on former wetlands in central Princeton along the Metedeconk River.

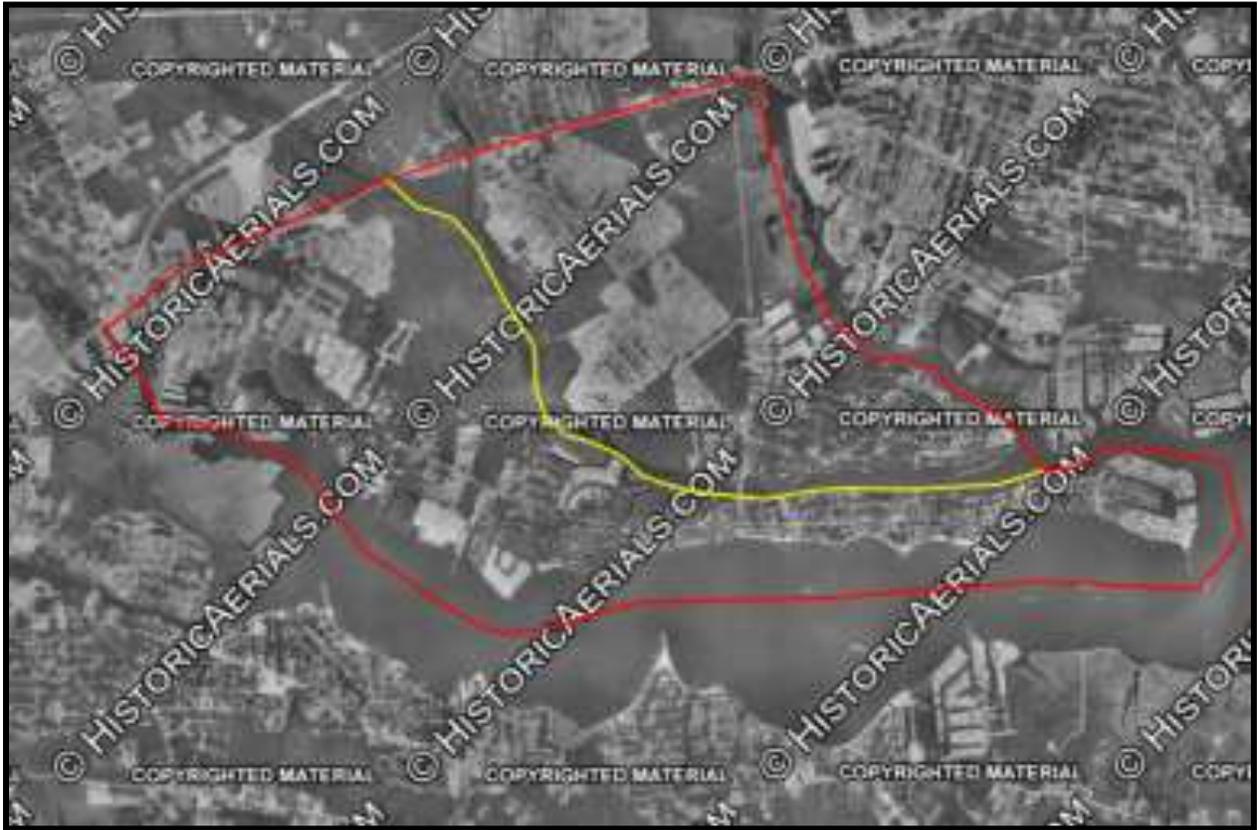


Map 8: 1956 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

Figure 21 below shows the changes in density and other development on the eastern end of the Princeton peninsula between 1931, 1940, and 1956.



Figure 25: Changes to the eastern end of Princeton in 1931 (left), 1940 (center), and 1956 (right) ([www.historicaerials.com](http://www.historicaerials.com))



Map 9: 1963 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

Analogous to other Brick neighborhoods, Princeton-Midstreams was almost entirely unrecognizable from its original appearance (in 1931) by 1963 ([Map 9](#)). Except for retaining the same general form, the majority of the neighborhood had completely transformed. The major natural wetlands system was compromised beyond recovery, replaced by new streets, marinas, and subdivisions, although some of the homes had not yet been built. The lagoons abstractly resembled the narrow streams that once ran through the marshes, but completely transformed the coastline and allowed for unrestricted boat access through the critical habitat. This can be seen once again in the Beaver Dam Creek North Branch and near the Route 88 Bridge. Additionally, the natural sand bar that once ran south of the Princeton lagoon into the Metedeconk was either dredged or submerged.

The other major change in the neighborhood in 1963 was the continued growth of subdivisions in central and western Midstreams and Princeton. Laurelton Heights, off of Route 88 in Princeton, seemed to completely disregard the existing street grid in favor of a new, private, and disconnected street grid. With the major new subdivisions in Midstreams, Midstreams Elementary School was built on Midstreams Road to serve the growing population.



Map 10: 1970 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

By 1970, the majority of the extensive growth in the Princeton-Midstreams neighborhood had occurred, although subdivisions continued to fill in with new homes and new large scale shopping centers began popping up along Route 88 around the western limit of the neighborhood. All of the farms, except one, that had previously occupied western Princeton had also been subdivided and built upon. The surrounding wetlands continued to be compromised and shrink, despite the attempts to continue building, especially in Princeton. In western Princeton, a road can be seen extending from Robbins Street to the wetlands to the east where there were also boat slips. However, looking further in time into the 1990s, it is clear that the attempt was abandoned as the available land disappeared into the river.

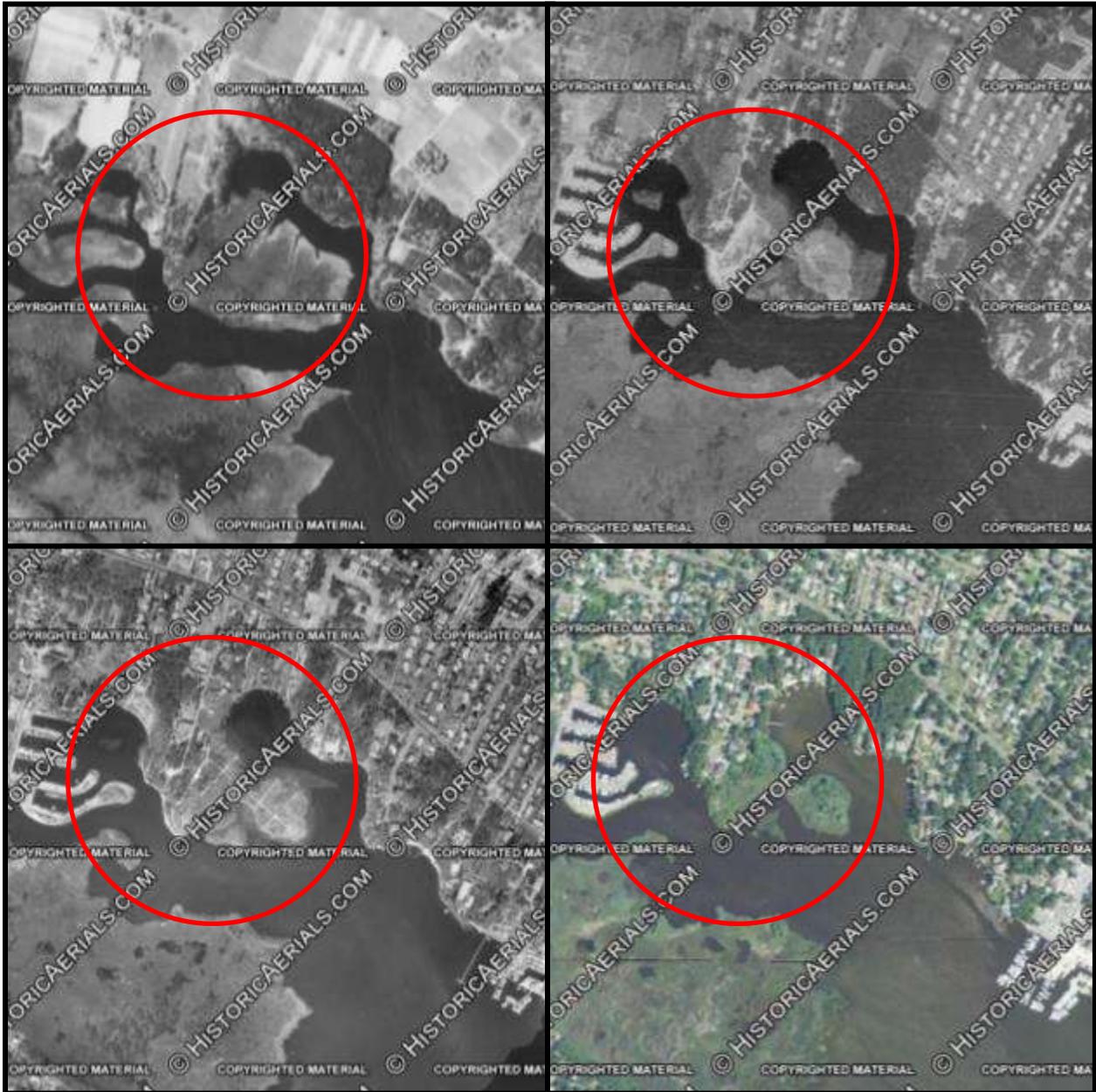


Figure 26: Changes to the wetlands around Robbins Street (left to right, top to bottom) in 1931, 1963, 1986, and 2013  
([www.historicaerials.com](http://www.historicaerials.com))

In 1986 ([Map 11](#)), the neighborhood subdivisions had filled in close to their fullest extent and the outer shopping areas on Route 88 continued to grow, becoming the age of the strip shopping mall. A utility easement is also visible extending from near Midstreams Road Bridge along Beaver Dam Creek South Branch to Route 88.

A couple more streets and lagoons had been created along the riverfront, but sat empty for the time. From this point, all of the remaining wetlands would remain untouched by development, following the 1977 Clean Water Act, Section 404: Protection of Wetlands Executive Order No. 11990 by the United States Environmental Protection Agency. However, despite the environmental regulations, most of the wetlands had already been displaced or irreparably damaged and would continue to be inundated, nonetheless.



Map 11: 1986 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

The Princeton-Midstreams neighborhood as a whole was built-out to its current extent and essentially at its maximum capacity by 1995 ([Map 12](#)) as the final houses filled subdivisions. Princeton Commons, in the northwestern part of Princeton, was the last major development to occur in the neighborhood and replaced a large area of forest between the two neighborhoods along Beaver Dam Creek South Branch. This semi-private community, like Laurelton Heights, was built with only one connection to any public streets, but has typical suburban winding streets and cul-de-sacs, rather than a street grid.

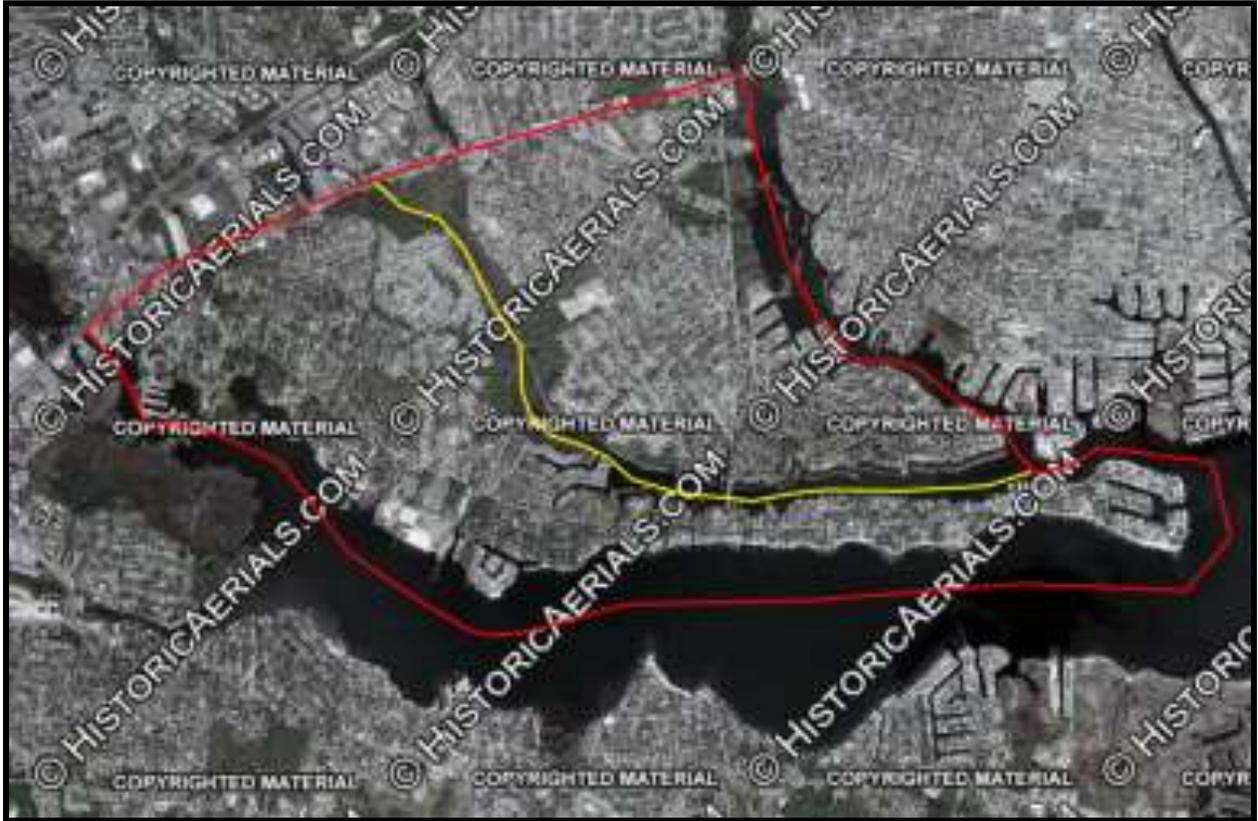


Map 12: 1995 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

Between 1995 and 2002 ([Map 13](#)), the neighborhood remained largely the same as the sub-neighborhoods were physically well-established and built-out, with the exception of some individual homes that may have been rebuilt. [Map 14](#) illustrates this continuity into 2010.



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Map 13: 2002 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

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**BRICK, NJ**



Map 14: 2010 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

Although not much changed within the neighborhood in terms of development between 2010 and 2013, Superstorm Sandy made landfall in Princeton-Midstreams in October 2012 and wreaked havoc on the neighborhood. The community sustained damage and loss of structures and shoreline that can be seen in aerial photographs. In 2013 (Map 15), many homes were torn down, lots were vacant, and bulkheads and docks were washed away.



Map 15: 2013 Historic Aerial ([www.historicaerials.com](http://www.historicaerials.com))

The peninsular neighborhood has changed dramatically between the 1930s and 2013, as demonstrated by the aerial photographs above. Most of the change has been man-made, but the environment has also clearly had an effect. Princeton-Midstreams began to be developed prior to 1931 (year of the first photograph). The Princeton sub-neighborhood was the first to be inhabited and developed, while Midstreams was slower to develop. The rate and density of development in Midstreams caught up with and then exceeded Princeton by approximately the year 1956. By 1995, both Princeton and Midstreams essentially reached their peak development, which generally occupies the same footprint that exists today. The final phase of development occurred much later in Princeton-Midstreams than in most of the three other Neighborhood Plan Areas due to the large amount of land in the neighborhood.

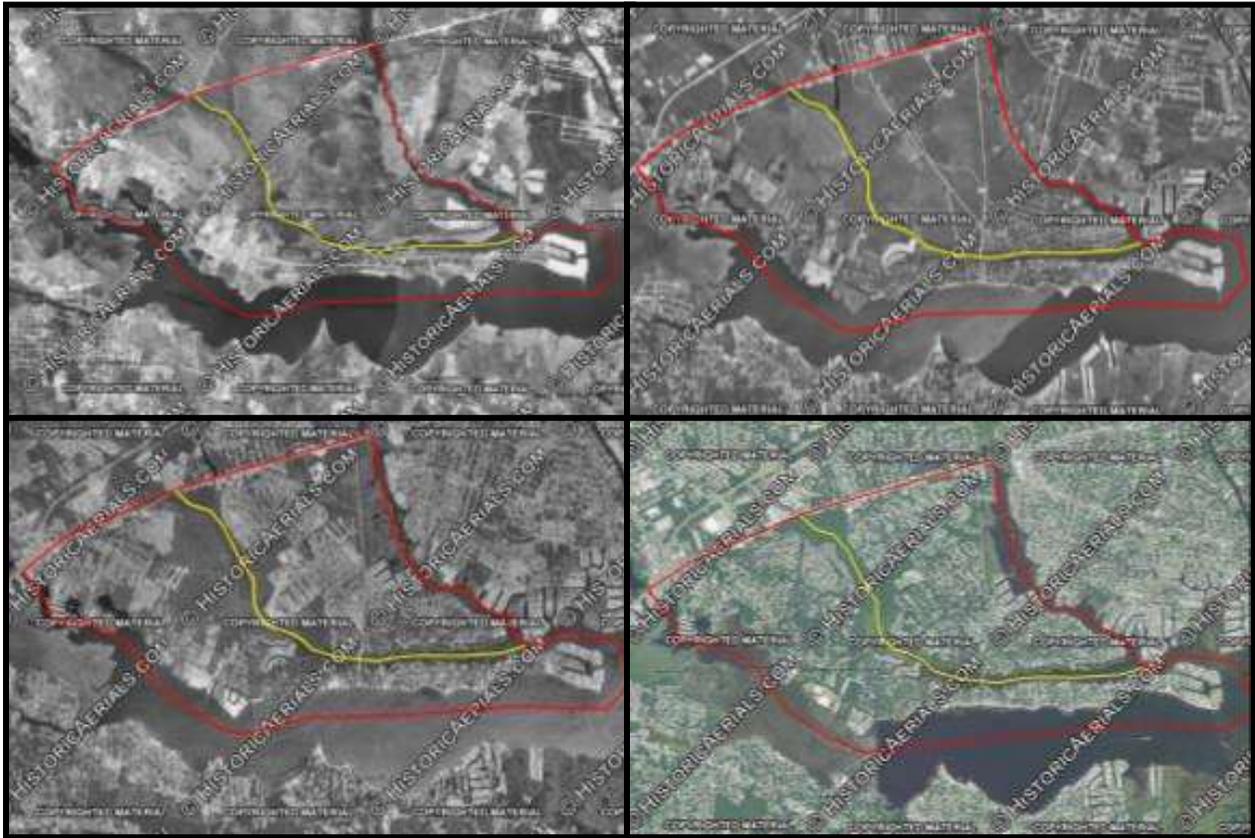


Figure 27: Changes in the development of the neighborhood (left to right, top to bottom) 1931, 1953, 1970, and 2013  
([www.historicaerials.com](http://www.historicaerials.com))

Similar to many neighborhoods, however, the period between 1953 and 1972 saw the most profound structural and ecological transformation in the neighborhood and was the period in which most of the subdivisions, street network, and lagoons were created. Although there were fewer lagoons dredged in Princeton-Midstreams than in other neighborhoods in the area, some of the first lagoons appeared here.

While not all of the natural space had yet been developed, trends in other areas signified a major shift that it could ultimately become that way. However, many of the wetlands in the neighborhood were either unbuildable or already protected by the time that development was accelerating. Due to constraints on available land along the Bay, development intensified in the inland Midstreams sub-neighborhood until the 1990s. Although homes have historically been small structures on small, single-family lots, they have continued to increase in size while simultaneously occupying smaller lots to accommodate more growth. With the exception of damage from Superstorm Sandy, overall the neighborhood appears the same as it did in 1995.

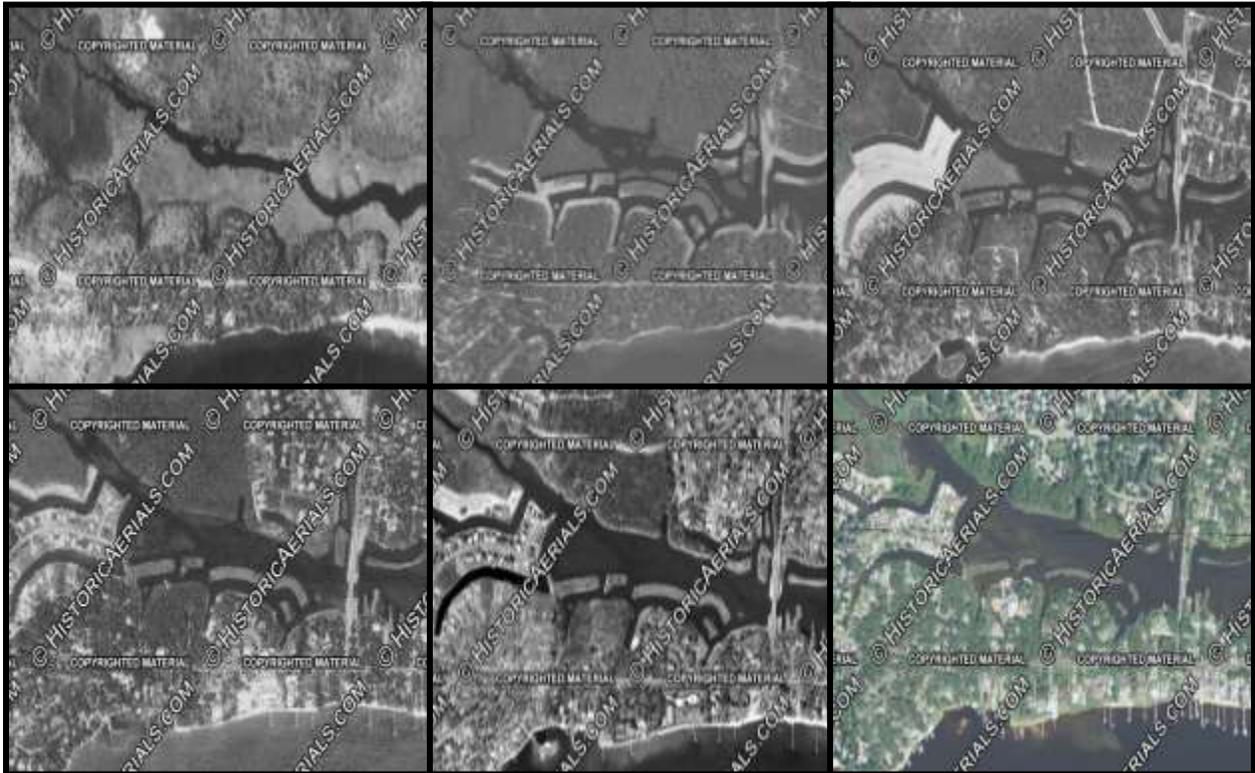


Figure 28: Changes in wetlands and development along Beaver Dam Creek South Branch (upper) and Metedeconk (lower) near Midstreams Road Bridge (left to right, top to bottom) 1931, 1940, 1953, 1970, 1986, and 2013 ([www.historicaerials.com](http://www.historicaerials.com))

The images above in Figure 28 illustrate the progression of development and destruction of wetlands between 1931 and 2013, focusing specifically on the central neighborhood area along Beaver Dam Creek South Branch. The depicted area is between Princeton and Midstreams near the Midstreams Road Bridge and also shows the Metedeconk River to the south. One can see the fullness of the wetlands in 1931 that occupy the rivers, which are reduced to remnants by 2013. The Cayuga Lane Conservation Area can also be seen in the bottom part of the image, but slowly begins to submerge throughout the years until it is nearly invisible by 2013.

Similarly, the series of images below in Figure 29 show the degradation of wetlands in Beaver Dam Creek North Branch from expansive to nearly nothing by 2013.

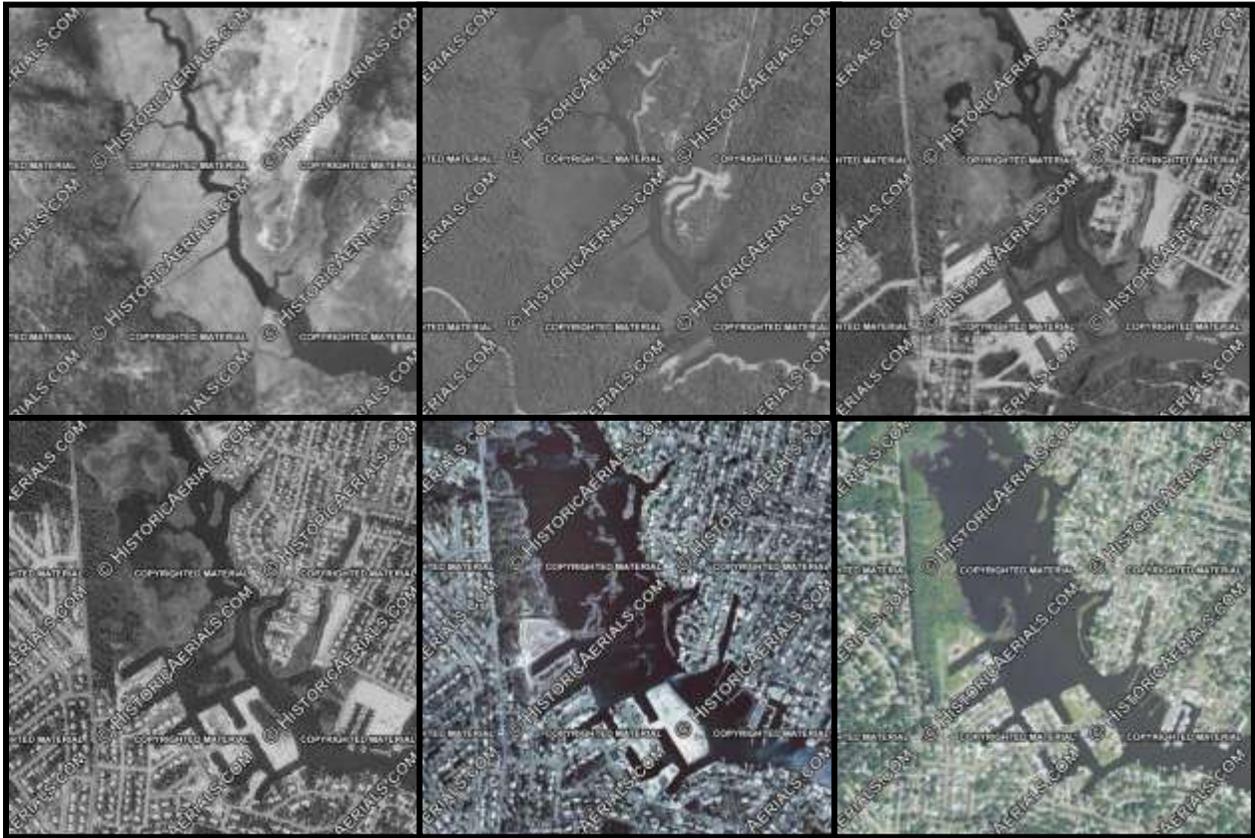


Figure 29: Changes in wetlands and development along Beaver Dam Creek North Branch (left to right, top to bottom) 1931, 1940, 1963, 1986, 1995, and 2013 ([www.historicaerials.com](http://www.historicaerials.com))

In addition to the changes to wetlands and development coverage, the historic aerials also indicate the substantial damage from Superstorm Sandy. The 2007 aerial image was taken only five years prior to the storm and 2013 was only one year after the storm. Despite being taken one year later, much of the recovery process also took place in 2013 and beyond due to the timing and magnitude of the storm. The amount of damage to the neighborhood is still evident. It is clear in the images that many homes were either destroyed, removed, are missing roofs or docks, or have been rebuilt. This is particularly true for properties along Barnegat Bay, Kettle Creek, and other waterfront, where the storm surge and winds caused flooding and inflicted the most damage upon the community.

## DEMOGRAPHICS

According to the latest U.S. Census in 2010, the Princeton-Midstreams neighborhood of Brick Township had a population of 9,468, based on the aggregated census tracts<sup>2</sup>. This was an increase of 441 persons,

<sup>2</sup> U.S. Census Bureau, 2010. Tract 7135, 7136, 7137.



or 4.6 percent, from the 2000 Census<sup>3</sup>. However, the data from 2009 shows an enormous jump to 10,159 persons, or 6.7 percent within nine years and then decreased in 2010. Although the overall trend of population decline continued from 2010 to 2014 (see Figure 30), some of the change be attributed to the damage caused by Superstorm Sandy in 2012, which forced many people out of their homes for up to a few years or forced abandonment of homes. As of the most recent data in 2014, the population has lost 692 people (6.8%) from its peak in 2009, and 52 people (0.5%) over the past twenty-three years.

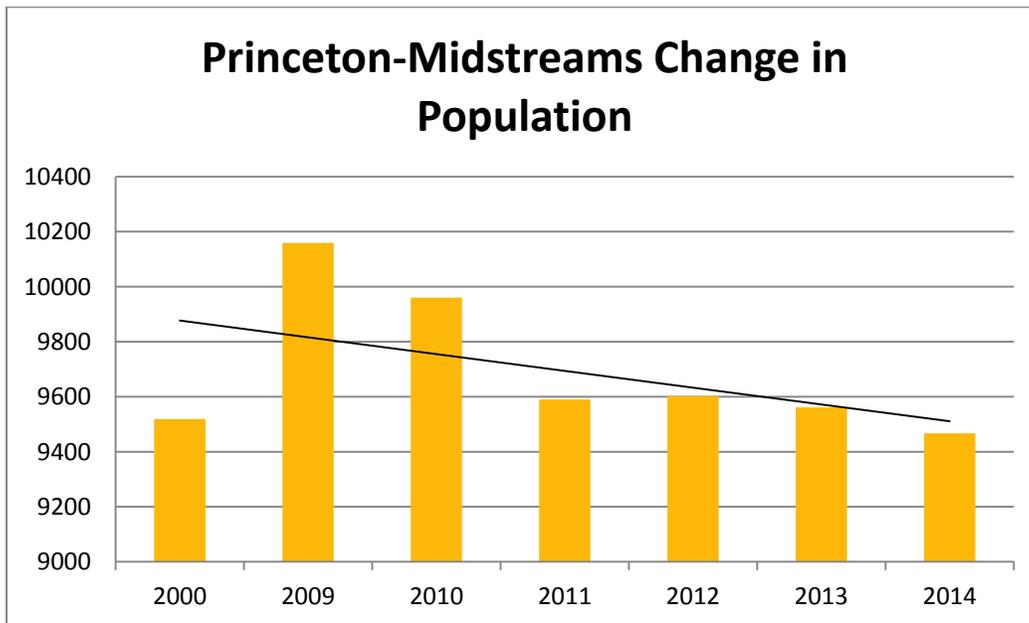


Figure 30: Princeton-Midstreams, Change in Population 2000-2014

Meanwhile, Brick Township as a whole has also been losing some population. Each decade since 1950 through 2000 saw between 10,000 and 20,000 people added to the total population. After rapidly increasing in population for half a century, it began to plateau in 2000 at 76,119. Only another couple thousand people were added to the population by 2000, and by the following year the population lost over 3,000 people. The cause of the sudden decrease in population has not been determined. Since then, the population has hovered around 75,000 (see [Figure 31](#)). The population density of Brick Township in 2000-2005 was estimated to be 2,979 persons per square mile, according to the Township of Brick 2007 Master Plan<sup>4</sup>.

<sup>3</sup> U.S. Census Bureau, 2000. Tract 7135, 7136, 7137.

<sup>4</sup> Township of Brick, Division of Land Use and Planning. "Township of Brick Master Plan". June 6, 2007.

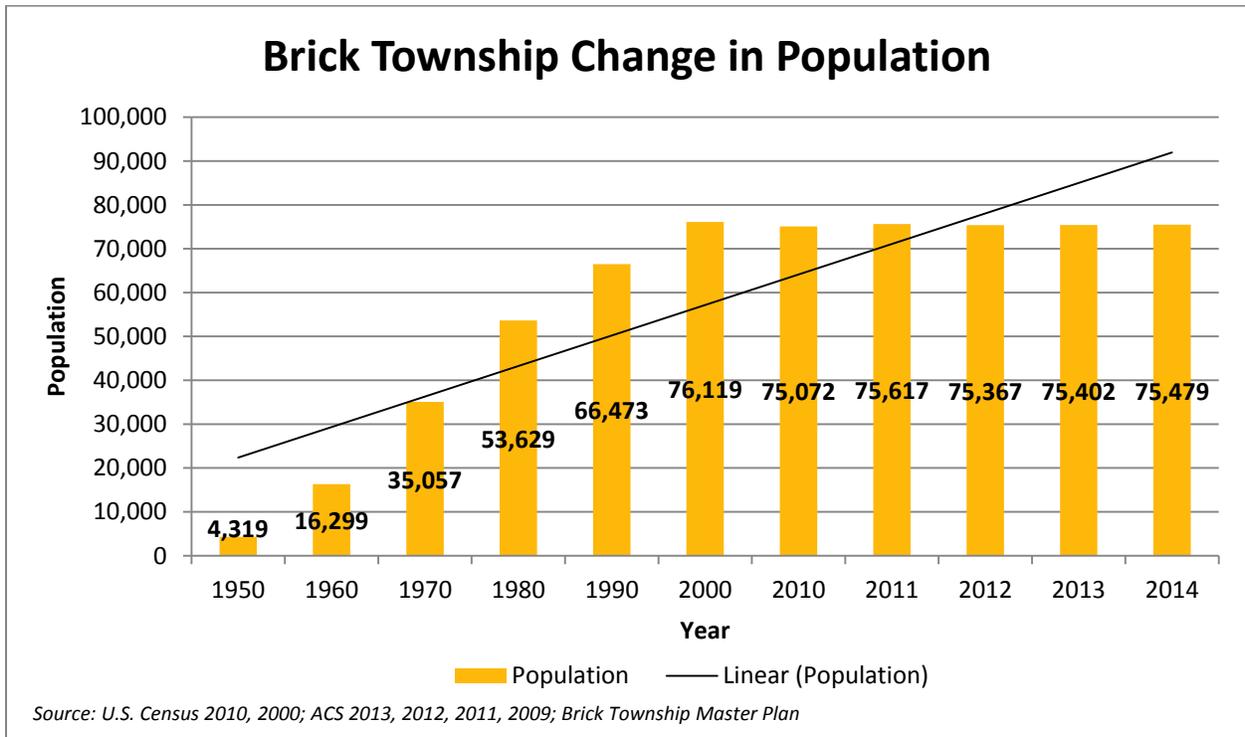


Figure 31: Brick Township, Change in Population 1950-2000

According to the 2010 U.S. Census, the median age of the total population that lived in the Princeton-Midstreams neighborhood was 48.1 years – 2.6 years older than Shore Acres and 14.4 years younger than that of the Barrier Island neighborhood<sup>5</sup>. Although the age of the population could not be bracketed evenly by decades, each age segment is relatively well represented within the total population. The entire population 44 years and younger and the population 45 and older each comprise approximately 50 percent of the population (50.8% and 49.2%, respectively).

However, an approximated age breakdown shows a diverse neighborhood with a general aging trend in the Princeton-Midstreams population. Ages 20 and under represented 23.7 percent of the population, while ages 20 to 44 represented 27.1 percent, and ages 45 to 64 represented 28.2 percent. Ages 65 and up represented 30 percent of the Princeton-Midstreams population. By contrast, according to the 2010 U.S. Census, more than 75 percent of the Barrier Island neighborhood population is older than 50 years, 17.9 percent of the total Brick population is over 65 years old, and only 13.8 percent of the Shore Acres population is over 65 years old.

<sup>5</sup> U.S. Census 2010, U.S. Census Bureau

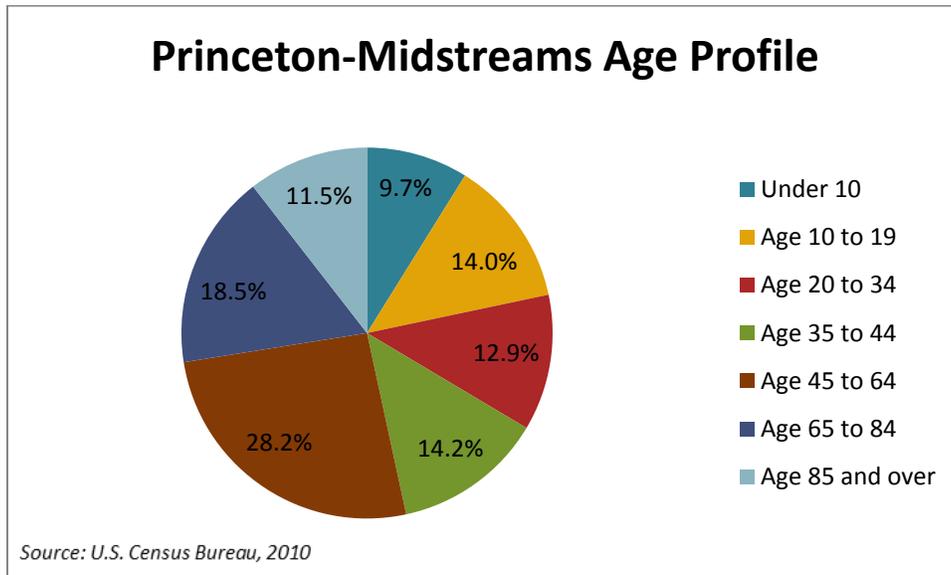


Figure 32: Percentage of Total Neighborhood Population by Age (2010)

Out of the total Princeton-Midstreams population in 2010, 4,878 were male (49.0%) and 5,082 were female (51.0%). Additionally, 9,893 people (99.3%) are of one race and 67 (0.7%) are of two or more races. Of those that are one race, 94.9 percent, or 9,449 people, identified as White alone (not Hispanic or Latino/a); whereas 12 people (0.1%) identified as American Indian and Alaskan; 207 people (2.1%) identified as Asian; and 252 (2.5%) identified as Hispanic or Latino/a (of any origin). Black or African American, Native Hawaiian, and other races were not represented. This data indicates an almost entirely racially homogenous neighborhood population.

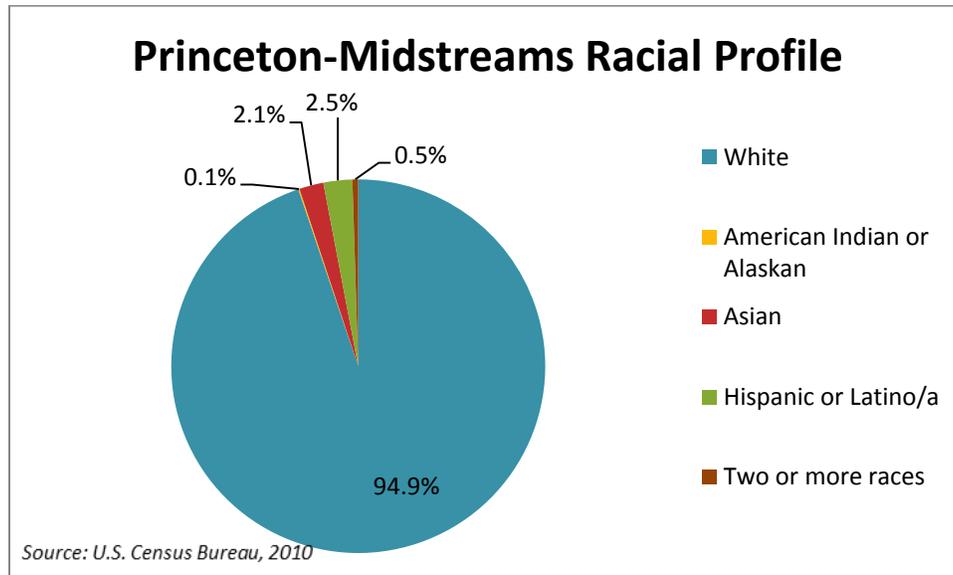


Figure 33: Percentage of Total Neighborhood Population by Race (2010)

## HOUSING

In 2010, there were 4,133 total housing units in the Princeton-Midstreams neighborhood<sup>6</sup>. Of those units, 3,784 (91.5%) were occupied housing units, while 349 (8.4%) were vacant. Some of these vacancies may have represented units for seasonal or recreational use or rentals. Out of 3,463 owner-occupied units, 2,181 had a mortgage (63%) and 1,282 did not have a mortgage (37%). Additionally, approximately 80 percent of residents were home-owners and 20 percent were renters, equating to 321 renter-occupied units.

Out of all owner-occupied units, the median home value was approximately \$358,300. This varied greatly between the census tracts, with eastern Princeton at \$475,900 and western Midstreams at a median of \$324,800. 1,598 units (~46%) were valued between \$300,000 and \$499,999 and 816 units (~24%) were valued at \$500,000 or greater. However, the majority of higher valued properties were in Princeton, particularly at the end of the peninsula, whereas only 7% of units in Census Tract 7136 (western Midstreams) were valued at \$500,000 or greater.

Following the population trends and devastating impact by Superstorm Sandy, by the time of the 2012 American Community Survey, there was a total of 4,078 housing units with 3,690 (90.5%) occupied and

<sup>6</sup> U.S. Census 2010, U.S. Census Bureau, Tract 7135, 7136, 7137



388 (9.5%) vacant units<sup>7</sup>, reflecting a slight decrease in units and increase in vacancies. There was also a 20.7% rental vacancy rate in Census Tract 7137, eastern Princeton.

The median value of the 3,421 owner-occupied units throughout Princeton-Midstreams had fallen to approximately \$329,900, and only 685 units (20%) were valued at \$500,000 or more, with the biggest loss to properties \$1,000,000 or more in Census Tract 3137 (eastern Princeton). This was a decrease of \$28,400 in total median value and 16 percent fewer units valued over \$500,000. However, the greatest decrease in median value occurred in Tract 3136 (western Midstreams) with a loss of over \$35,000.

According to the 2014 American Community Survey for these three Census Tracts, two years following Superstorm Sandy, there was a total of 4,103 housing units – roughly half way between the 2010 and 2012 totals. Of these units, 3,677 (90%) were occupied and 426 (10%) were vacant, representing a slight increase in vacancies, which were mostly rentals.<sup>8</sup> By this point in time, many of the destroyed homes were either in the process of being restored or removed and replaced, although some properties remained vacant or abandoned.

The median value of all Princeton-Midstreams properties dropped further to approximately \$297,000, with decreases in all three Census Tracts. However, whereas the median value in western Midstreams was \$279,700, the median value in eastern Princeton was still \$457,500. There were fewer owner-occupied units that were valued at \$500,000 or more, totaling 564, or 17 percent, of all owner-occupied units. Some of these likely consisted of newer construction or restored homes, but was a slight decrease since 2012. Despite these dramatic decreases in values in such a short period of time, the overall damage in Princeton-Midstreams was less than some other neighborhoods and the redevelopment of the neighborhood appears to have occurred very rapidly.

The average year that all structures within the Princeton-Midstreams neighborhood was built is 1969, although there are many structures that were built long before or afterward. The oldest neighborhood is Princeton, where the average year that homes were built is 1967. Although the most recent and one of the largest subdivisions was also built in Princeton in the mid-1990s, the average year that all structures were built in Midstreams was slightly later in 1971. Many of the homes that were built prior to the 1980s suffered substantial damage during Superstorm Sandy, including the lagoon neighborhoods and many properties in the eastern portions of the Princeton and Midstreams peninsulas.

**Table 1: Average Year Built of Structures by Sub-Neighborhood**

Sub-Neighborhood	Avg. Year Built
------------------	-----------------

<sup>7</sup> U.S. Census Bureau 2012, 5-Year American Community Survey, Tract 7135, 7136, 7137

<sup>8</sup> Source: U.S. Census Bureau, 2009-2013 5-Year American Community Survey, Tract 7135, 7136, 7137



Princeton	1967
Midstreams	1971
<b>Princeton-Midstreams (Total)</b>	<b>1969</b>

## IMPACT OF SUPERSTORM SANDY

On October 29, 2012, Superstorm Sandy hit the New Jersey shore. A State of Emergency was declared for the entire State and destruction from the storm was witnessed as far inland as central Pennsylvania. Coastal flooding, wave action, and heavy wind caused the most severe damage at points directly along the coastline, waterways, and where the storm surge inundated the lowest elevations. The storm has had a long lasting effect on the environment, economy, and psyche of the State of New Jersey,

During Superstorm Sandy, Barnegat Bay was breached and opened up to the Atlantic Ocean in several places, allowing water to flow inland, in addition to being high tide and a full moon, which created especially high tide cycles. The excessive amount of water overwhelmed the wetlands, and eventually the bulkheads, roads, storm drains, and properties.

Built along three rivers, a bay, and former wetlands, most of the neighborhood is at a very low elevation and built immediately up to the water's edge with only the rear yard setbacks from the bulkheads required by the Township zoning ordinance. The storm surge from the catastrophic weather event was slightly over 10 feet and therefore covered most coastal areas of the neighborhood (see Map 16). Nearly the entire Princeton peninsula east of Point Avenue, as well as any remaining wetlands, was inundated. In fact, the eastern peninsula was left without an evacuation route and the bridge out of the neighborhood was also underwater. The northwest and interior sections of the peninsulas in the neighborhood experienced the least damage, where the land is naturally elevated and was originally non-wetlands forest.

The removal and impermeable development of the wetlands in the past has drastically reduced natural protective elements and flood control. Fortunately, there are some remaining wetlands within and surrounding the neighborhood, which prevented further damage. These, too, continue to be compromised by rising sea level and by ocean breaches to the Barrier Island to the east.

While it appears from a review of FEMA storm surge boundaries on [Map 16](#) below that only the bayside neighborhoods experienced storm surge, the diagram in Figure 34 shows what the region experienced during Sandy when the brunt of the wind driven surge hit the ocean side of the island. The only surge was from the Atlantic Ocean and there was not a second surge from the Barnegat Bay, as previously thought.

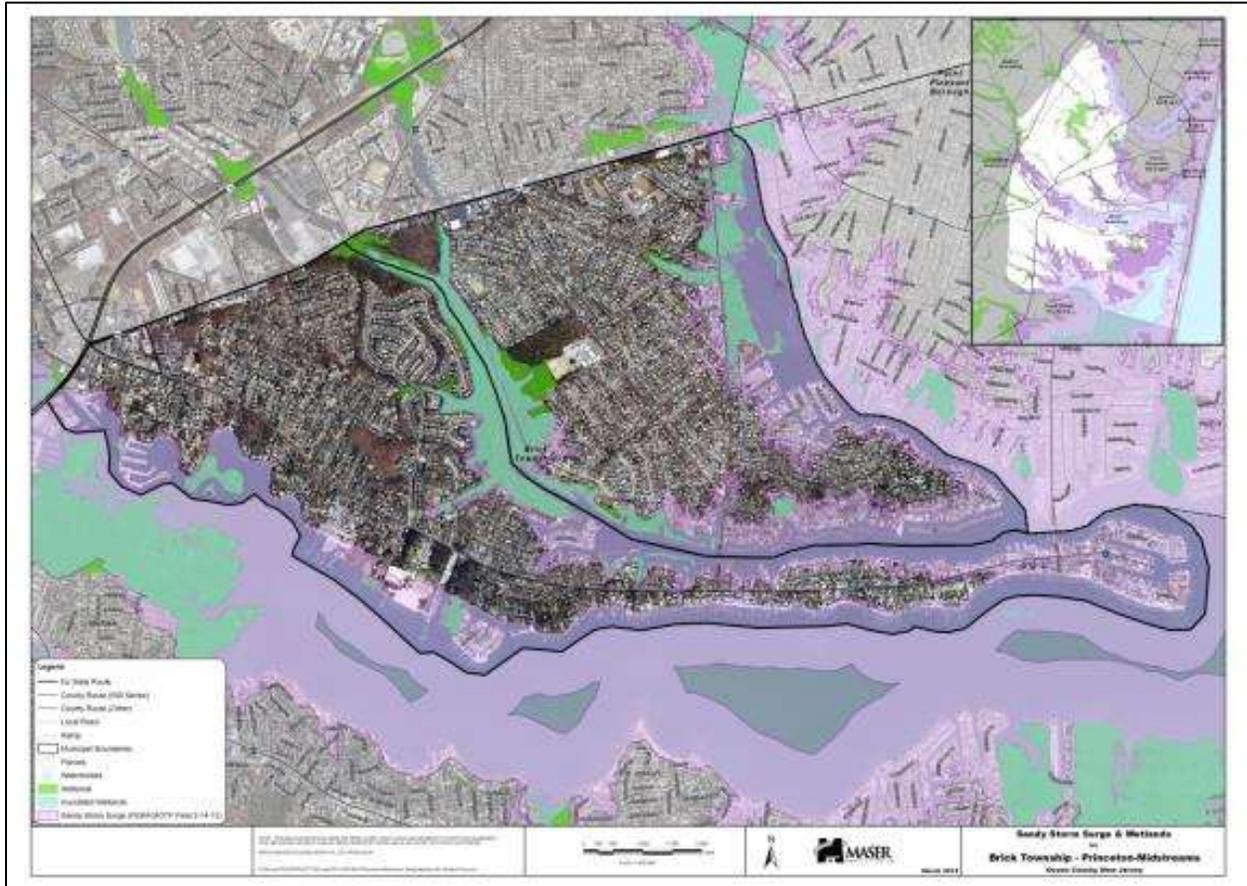


Figure 34: Diagram of Wind Surge on Barnegat Bay ([www.professorsak.com](http://www.professorsak.com))

However, research found on a blog by “Professor Sak”, a researcher with Rutgers University in partnership with the National Estuarine Research Reserve System (a sub-group of NOAA), provides some insight to the perceived phenomenon of the “reverse surge” from Barnegat Bay. On a June 6, 2013 blog post, data from a weather station in Brick Township that survived and provided data through Sandy was analyzed and described a shift in wind direction that had water rising in the Barnegat Bay through the inlet and driven north by SSE winds from wider areas of the bay to narrower areas during the same period that the ocean surge hit the barrier islands. While the ocean surge did the damage as it swept across to the bay, the funneled wind-driven water in the bay swelled up and exacerbated the flooding of bayfront properties on both the barrier island and the mainland.<sup>9</sup>

Low-lying areas in the eastern sections of the neighborhood closest to Barnegat Bay and riverfront properties suffered tremendous loss. However, unlike the other three Neighborhood Plan Areas in Brick Township, Princeton-Midstreams largely avoided storm surge due to a slightly higher elevation and its interior location on the mainland, protected from Barnegat Bay and the Atlantic Ocean. In addition to the Atlantic barrier island, the Princeton peninsula acts as a secondary natural barrier for Midstreams. The remaining wetlands around the neighborhood were also able to absorb some of the damaging floodwater in some areas.

<sup>9</sup> Blog entitled “Barrier Islands in Cross Section and How it Plays Out During Storm Surge Events”, posted on June 6, 2013 at <http://professorsak.com>.



Map 16: Impact of Storm Surge from Superstorm Sandy on Neighborhood and Wetlands

Figure 35 below shows a detailed comparison, using aerial imagery, of the lagoon neighborhood at the eastern end of the Princeton sub-neighborhood near the convergence of Beaver Dam Creek and the Metedeconk River in Bay Head Harbor. This was an especially hard-hit and vulnerable area of Princeton-Midstreams due to its low elevation, high-density, and its location at the mouth of two rivers and head of Barnegat Bay.

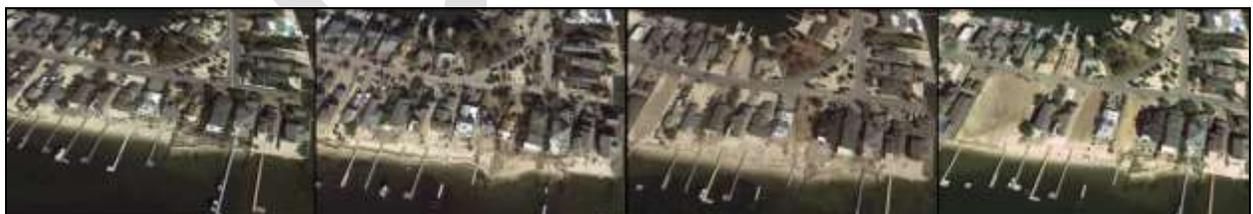


Figure 35: Princeton Focus Area Comparison of Pre-Sandy 9/20/2010 (left) and Post-Sandy 11/3/2012 (center left), 4/25/2013 (center right), and 9/6/2013 (right) (Google Earth)

From left to right, the images show the same section Pre-Sandy on September 20, 2010; Post-Sandy November 3, 2012; April 25, 2013; and September 6, 2013. The 2010 image was taken two years prior to the storm and shows the neighborhood fully built-out and in very good condition. The second photo from 2012 was taken only a few days after the storm. Most of the houses appear to have remained in place, whereas many were washed away entirely in other neighborhoods. Although one cannot see into the houses at street level, severe damage is evident as the streets and yards are piled with debris and the missing docks are also a key indicator. The following image from April 2013 shows the neighborhood as the recovery process began ramping up. Several properties were cleared entirely, proving the structural damage that the storm caused. Leading up to the one year anniversary of the storm, the September 2013 image shows much of the neighborhood cleaned up, but several more lots were also cleared out. Some lots have been rebuilt with new houses, while some remain vacant. The process to clear the lots has taken several years due to both the high demand and due to absent property owners, which is the reason for which lots did not appear cleared until nearly a year later.



Figure 36: Damaged/Gutted home, Post-Sandy (Google Streetview)



Figure 37: Damaged/Gutted home, Post-Sandy (Google Streetview)

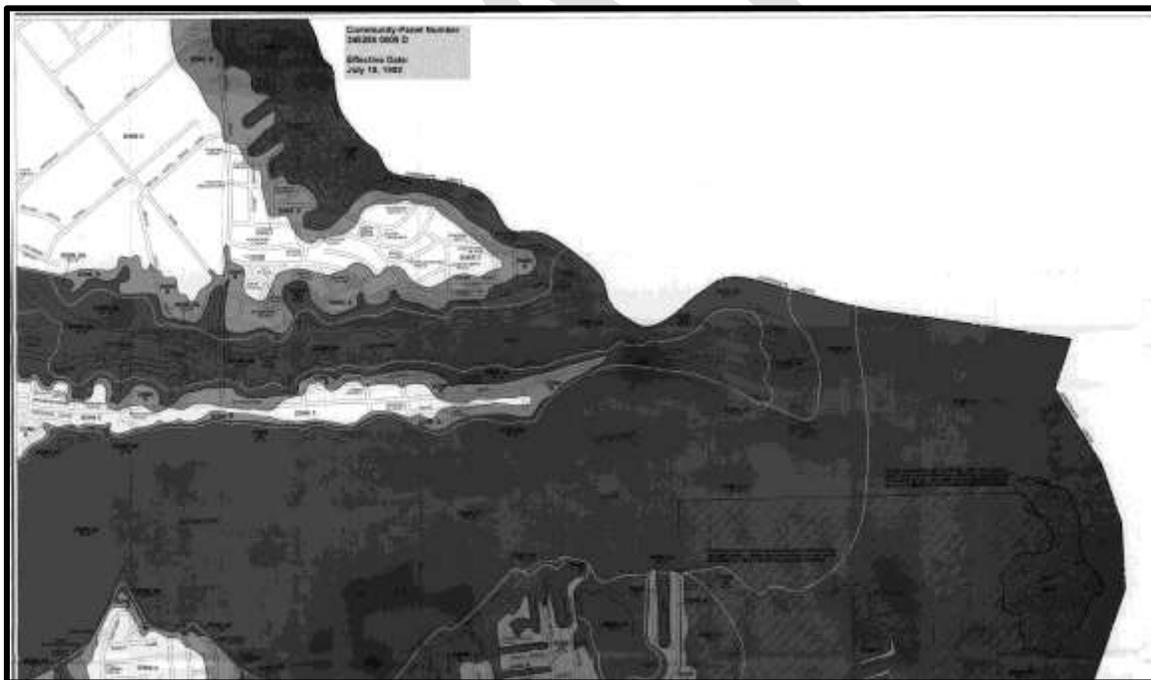
Outside of the Barrier Island and Shore Acres, this was one of the hardest hit areas of Brick Township during Superstorm Sandy. Some homes in the neighborhood were nearly washed away, leveled, or completely gutted by the storm surge and high winds. The debris from the storm can be seen in the aerial images. Although a lot of progress toward recovery has been made, certain parts of the neighborhood, including dense areas such as this one, have been slow to recover.

At least 288 properties were substantially damaged in the Princeton-Midstreams neighborhood alone through 2015, which accounts for about 7 percent of the 2012 Princeton-Midstreams housing stock. This number includes, but is not limited to those properties damaged by Superstorm Sandy. Substantial damage is defined in the Township Ordinance as “Damage of any origin sustained by a structure whereby the cost of restoring the structure to its condition before damage would equal or exceed 50% of the

market value of the structure before the damage occurred.”<sup>10</sup> Princeton-Midstreams, and Midstreams sub-neighborhood in particular, had fewer substantially damaged properties than the Barrier Island or Shore Acres, likely owed to its somewhat protected location from the Atlantic Ocean and Barnegat Bay.

Nearly all substantially damaged properties from Superstorm Sandy in 2012 are located in areas directly on the lagoons and on the eastern ends of the two peninsulas where the storm surge was most severe. These include homes on Island Road, Lenape Trail, South Drive, North Drive, eastern Princeton Avenue and Parker Avenue in the Princeton sub-neighborhood; and Harbor Road, Bancroft Road, Carroll Fox Road, and Bella Vista Road in Midstreams.

The age of structures, or the year in which they were built, also has a strong correlation to the amount of damage that properties were likely to receive. The Base Flood Elevation (BFE) level requirement, which was first implemented in the Township in 1972, allows homes which are elevated to regulation to qualify for flood insurance. Homes that sit on higher ground or that have been elevated, whether by regulation or by personal decision, are naturally less likely to receive as much flood damage as older homes built before the requirement. Additionally, the BFE has been updated several times and generally increased the requirements in 1984, 1992, 1998, 2006, and 2015 respectively. Two BFE maps from 1998 for Princeton-Midstreams can be seen below on Map 17 and Map 18.



Map 17: 1998 Princeton-Midstreams (east) FEMA BFE Map

<sup>10</sup> Township of Brick, New Jersey. *Chapter 196. Flood Damage Prevention Ordinance*. Thursday, May 28, 2015.



Map 18: 1998 Princeton-Midstreams (west) FEMA BFE Map

The average year that all properties within Princeton-Midstreams were built was 1969 – a few years earlier than the average for other mainland waterfront neighborhoods. The Princeton sub-neighborhood has the oldest average housing stock, built in 1967, while Midstreams, as a sub-neighborhood, averages 1971. Congruently, the average built year of all structures that have suffered significant damage is 1969, and most due to Superstorm Sandy. Accordingly, the most significant damage overall occurred in the oldest waterfront areas of the neighborhood – eastern Princeton and eastern Midstreams – while slightly newer low-lying lagoon communities built prior to the 1972 BFE regulations were also critically damaged, such as Island Drive, Lenape Trail, and Northeast Drive. The more western, inland, elevated properties of the neighborhood did not experience as much damage.

By number of substantially damaged properties, Princeton had the most with \_\_\_\_, followed by Midstreams with \_\_\_\_\_. Nearly all of the properties that were substantially damaged are entirely below 10 feet above sea level and within the FEMA Advisory Zone V (see [Map 19](#)) and/or were built prior to 1972. In general, it is unusual that newer properties incur more damage than older properties; however, Brick Township experienced some waterfront and lagoon development during the late 1960s through the early 1980s, prior to the more advanced Base Flood Elevation requirements. The Township's first BFE requirements in 1972 were much less stringent than they are today and flooding and major storms that affect the low-lying Bay neighborhoods have become more frequent over the years.



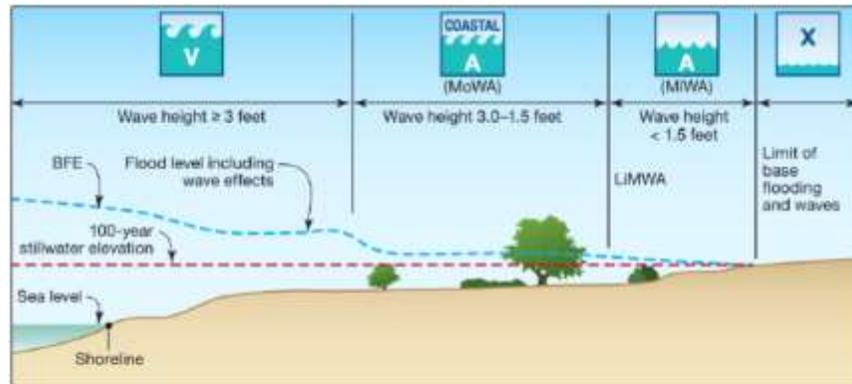
Table 2: Substantially Damaged Properties by Sub-Neighborhood

Sub-Neighborhood	# of Properties Substantially Damaged	Avg. Year Built of Substantially Damaged Properties	Average Year Built of All Properties
Princeton			1967
Midstreams			1971
<b>Princeton-Midstreams (Total)</b>	<b>288</b>	<b>1969</b>	<b>1969</b>

After Superstorm Sandy, many residents were unable to access their neighborhood for several weeks and unable to move back into their homes for months, if not years, due to the widespread damage. Some residents are continuing to rebuild their homes in 2016. Although access was not as restricted as it was to the Barrier Island neighborhoods, the destruction was vast along the riverfront and has taken years to cleanup and rebuild back to a somewhat normal condition. Not every coastal property was damaged; however, properties that were slightly more inland and elevated were much more likely to be spared from flooding and wave action.

Following the storm, the Federal Emergency Management Agency (FEMA) revised the base flood elevation levels and advisory flood levels to reflect the approximate levels during Superstorm Sandy. The levels that Sandy reached were closer to what had been considered the 500 Year Flood Plain, but is now used as the 100 Year Flood Plain as major storms are predicted to become more frequent.

Coastal flooding is a result of the storm surge where local sea level rises, often resulting in weakened or destroyed coastal structures. Hurricanes and tropical storms, severe storms, and Nor'easters cause most of the coastal flooding in New Jersey. Much of the damage in Princeton-Midstreams was attributed to storm surge and wind-driven wave action due the large size of Barnegat Bay. Superstorm Sandy was also a unique situation in that the Barrier Island was breached between the ocean and the Bay in several locations, including one directly to the southeast of Princeton-Midstreams by the Herbert Street Bridge in Mantoloking. With the culmination of the barrier island breach by the ocean, wind-driven Bay water being pushed to the north, overflowing rivers from rainfall, and unusually high tides, Princeton-Midstreams was at a juncture that put it at a critical disadvantage.



Source: FEMA 2011  
BFE Base Flood Elevation  
LIMWA limit of moderate wave action  
MIWA Minimal Wave Action area  
MoWA Moderate Wave Action area

Figure 38: Transect Schematic of Zone V, Coastal A-Zone, and Zone A

Figure 38 illustrates the effects of water energy dissipation and regeneration of a wave as it moves inland through the V-zone, Coastal A-zone, and A-zone. Similarly, [Map 19](#) below depicts the elevation, 1% Annual Chance Flood Hazard Area, Advisory Zones A, V, and X, and the Limit of Moderate Wave Action (LiMWA) in the Princeton-Midstreams Neighborhood Plan Area. Although these zone boundaries have been altered over the years, this is the most recent version provided by FEMA in 2015.

Approximately one-quarter of Princeton-Midstreams is located within a flood zone, according to the new boundaries. The most interior and western parts of the peninsulas are located outside of a flood zone, but the zone intensities, or vulnerability, increases toward the waterfront, especially to the south and east where the Metedeconk River, Beaver Dam Creeks, and Bay Head Harbor converge. The areas located directly along the riverfront and in the eastern Princeton lagoons are in the most vulnerable zone, Advisory Zone V – 100 Year Flood Plain with High Velocity Wave Action, which is the same zone assigned to the ocean side of the Barrier Island.





grounds for local fauna, and help to absorb floodwater. To the neighborhood's benefit, most of the remaining wetlands are protected and continue surround and permeate the neighborhood.

The neighborhood, like other suburban areas, was built in a way which intends it to be accessed primarily by individual automobiles, although the lagoons also permit boat access to many of the private residences. Boat access, however, is not a primary means of transportation in order to reach a destination, despite the fact that many homeowners also have boats. The arrangement of the neighborhood over time has resulted in streets that are oriented specifically toward those who live in that community – often entirely residential; with cul-de-sacs or without outlet; without sidewalks or public transportation; and very low speed limit. Residents tend to enjoy the private nature of the neighborhood, while the restriction on thru traffic and speed creates a safer environment in some areas. However, dead-end streets, especially those separated by flood-prone wetlands and that are far-removed from emergency evacuation routes, are a particular safety hazard to residents. The lack of connected sidewalks also discourages walking and impacts the safety of pedestrians.

In addition to limited pedestrian and bicycle amenities, there is virtually no public transportation available within or in proximity to the neighborhood. Such limited transportation options further restricts access to the neighborhood and any public lands therein, particularly for those residents who may be disabled, elderly, youth, or who do not own a vehicle. While sidewalks and bike paths or shared lanes are not necessarily conducive for getting everyone to every destination, they do provide a considerably safer alternative for pedestrians and cyclists to move around locally, rather than on the shoulder of a road.

Connectivity and accessibility are therefore major issues of concern. Some additional public amenities and design options may improve safety and the overall experience for residents on their own street and throughout the neighborhood.

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## SIDEWALKS

Pedestrians are rarely seen walking throughout Princeton-Midstreams, which is likely due to its size and lack of pedestrian infrastructure, but certainly does not lack in population, destinations, or willingness to travel by foot.

There are no consistent design standards for streetscape treatments and pedestrian sidewalks throughout the Princeton-Midstreams neighborhood. Only a few disparate segments of sidewalk exist within the neighborhood, and those that do are somewhat scattered, substandard, and/or inconsistent.



Figure 39: New existing sidewalk on residential side street, Davos Rd. (Google Streetview)



Figure 42: Sidewalk ends abruptly 200 feet after Midstreams Rd. Bridge (Google Streetview)



Figure 40: Existing ADA sidewalks at Windward Beach Park – no crosswalks, Princeton Ave. (Google Streetview)



Figure 43: Decorative, but substandard sidewalk, Princeton Ave. (Google Streetview)



Figure 41: Sidewalk at Windward Beach Park ends abruptly at business area 300 feet away (Google Streetview)



Figure 44: Busy road without sidewalks, Princeton Ave. (Google Streetview)



Figure 45: Busy intersection without sidewalks or crosswalks, Midstreams Rd. & Jordan Rd. (Google Streetview)



Figure 46: Busy commercial area without sidewalks, Princeton Ave., Princeton (Google Streetview)

Substandard and inconsistent sidewalks include those which are attached to the curb (5-7' wide); sidewalks with a curb strip; no sidewalk at all; no curbing at all; stone without edging; lack of handicap accessible ramps; et cetera. People are often seen walking and running in the streets and some sidewalks are too narrow or inaccessible for handicapped people. There is a need for a standardization of sidewalk and curb treatments that can be modified to fit various applications. For example, the neighborhood could feature one sidewalk pattern with variations for the smaller and broader crossing streets.

Existing sidewalks are found primarily within the newest communities and private subdivisions, as well as some along N.J. Route 88 and Princeton Avenue, as shown in [Map 20](#). These are grouped closely enough that a connected network could easily be created.



Map 20: Overview of existing sidewalks in Princeton-Midstreams neighborhood

The existing sidewalks are located in the following areas, as shown on [Map 20](#) above and figures below:

1. South side of Rockefeller Memorial Hwy. (Rt. 70) between Forge Pond Rd. and Princeton Ave.;
2. South side of Rt. 88 between Princeton Ave. and Post Rd.;
3. South side of Rt. 88 from Post Rd. east one lot;
4. South side of Rt. 88 from mid-block between Post Rd. and Bruce Street east to Barb Ln.;
5. South side of Rt. 88 from Kenneth Pl. east to the boundary of block 869.05;
6. South side of Rt. 88 from Old Squan Rd. east to mid-lot of 1989 NJ-88;
7. South side of Rt. 88 fronting 2039 NJ-88;
8. South side of Rt. 88 between Midstreams Rd. and Roosevelt Dr.;
9. South side of Rt. 88 between Harding Dr. and Sullivan Rd.;
10. South side of Rt. 88 between Sullivan Rd. and opposite 2170 NJ-88;
11. South side of Rt. 88 opposite 2190 NJ-88 eastward to 2213 NJ-88;
12. South side of Rt. 88 from 2225 NJ-88 eastward to Jordan Rd.;
13. South side of Princeton Ave. from Rockefeller Memorial Highway (Rt. 70) east to Division St.;
14. North side of Princeton Ave. from Rockefeller Memorial Highway (Rt. 70) east to Post Rd.;
15. South side of Princeton Ave. from Princeton Pines Pl. westward one lot;
16. North side of Princeton Ave. between Post Rd. and Pinewood Dr.;
17. South side of Princeton Ave. from Princeton Pines Pl. east to mid-block between Princeton Pines Pl. and Sturdy St.;
18. Both sides of Princeton Pines Pl., entire street;
19. South side of Princeton Ave. from Robbins St. westward one lot;



20. West side of Robbins St. from Princeton St. southward two lots;
21. East side of Robbins St. fronting 15 through 19 Robbins St.;
22. Both sides of Robbins St. from 17 and 34 Robbins St. south to and including the cul-de-sac;
23. South side of Princeton Ave. opposite Laurelhurst Dr.;
24. South side of Princeton Ave. between Diane Dr. and Fairview Ave.;
25. North side of Princeton Ave. between Diane Dr. and Edgewood Dr.;
26. West side of Fairview Ave. from Princeton Ave. south to 18 Fairview Ave. and including the cul-de-sac;
27. South side of Princeton Ave. mid-block between Fairview Ave. (W) and Fairview Ave. (E);
28. South side of Princeton Ave. from Lawrence Dr. west one lot;
29. South side of Princeton Ave. from Lawrence Dr. east to mid-block;
30. Both sides of Lawrence Dr., entire street;
31. North side of Princeton Ave. from Elizabeth Ave. west to mid-block;
32. North side of Princeton Ave. between Elizabeth Ave. and Davids Rd.;
33. South side of Princeton Ave. between Elizabeth Ave. and Stoneham Dr.;
34. North side of Princeton Ave. between Stoneham Dr. west one lot;
35. West side of Johnson St., 32 through 44 Johnson St.;
36. South side of Princeton Ave. between Johnson St. and Stoneham Dr.;
37. North side of Princeton Ave. from Midstreams Rd. west one lot;
38. North side of Princeton Ave. at 534 Princeton Ave.;
39. Both sides of Point Ave. from 641 and 644 Point Ave. east to and including the cul-de-sac;
40. South side of Princeton Ave. from 697 east to 703 Princeton Ave.;
41. West side of Beaver Dam Rd. from Princeton Ave. north across the sound;
42. West side of Midstreams Rd. from Princeton Ave. north across the sound;
43. Both sides of Stoneheam Drive, entire street;
44. Both sides of Buston Ct., entire street;
45. East side of Bushy Neck Ct. between Princeton Ave. and bulb of cul-de-sac;
46. West side of Brushy Neck Dr. between Princeton Ave. and Raccoon Ct.;
47. Both sides of Raccoon Ct., entire street;
48. Both sides of Deer Run Ln., entire street;
49. Both sides of Chipmunk Dr., entire street;
50. Both sides of Sweetbriar Ln., entire street;
51. Both sides of Mallard Dr., entire street;
52. Both sides of Brushy Neck Dr. between and Raccoon Ct. and Woodchuck Ln. (N);
53. Both sides of Woodchuck Ln., entire street;
54. Both sides of Springhill Dr., entire street;
55. Both sides of Golden Road Ct., entire street;
56. Both sides of Beaver Hollow Dr., entire street;



57. Both sides of Sleepy Hollow Dr., entire street;
58. Both sides of Mayapple Dr., entire street;
59. Both sides of Cottontail Dr., entire street;
60. Both sides of Brant Dr., entire street, excluding crown of cul-de-sac;
61. Both sides of Orchard Ct., entire street;
62. Both sides of Tanglewood Rd., entire street;
63. Both sides of Walden Rd., entire street;
64. Both sides of Ellen Dr., entire street;
65. Both sides of Cottage Pl., entire street;
66. Both sides of Bonnie Ct., entire street;
67. Both sides of Bonnie Ln., entire street;
68. North side of Glen Ridge Ct. between Fieldcrest Ln. and cul-de-sac;
69. South side of Glen Ridge Ct. from 179 Glen Ridge Ct. east to the cul-de-sac;
70. South side of Glen Ridge Ct. between Wayside Dr. and Fieldcrest Ln.;
71. East side of Fieldcrest Ln. from Glen Ridge Ct. south one lot;
72. West side of Fieldcrest Ln. from Glen Ridge Ct. south one lot;
73. West side of Harmony Dr. from Bonnie Ln. south to 30 Harmony Ln.;
74. East side of Harmony Dr. from Bonnie Ln. south to 31 Harmony Ln.;
75. West side of Edgewood Dr. from Princeton Ave. north to 34 Edgewood Dr.;
76. Both sides of Diane Dr., entire street;
77. East side of Kenneth Pl. between Rt. 88 and Kieser Blvd.;
78. Both sides of Barb Ln., between Rt. 88 and Kieser Blvd.;
79. Both sides of Robbins St. between Princeton Ave. and Salem Rd.;
80. Both sides of Robbins Ct., entire street;
81. North side of Salem Rd. from Robbins St. east to 78 Salem Rd.;
82. North side of Salem Rd. from Robbins St. east to 81 Salem Rd.;
83. East side of Post Rd. from Rt. 88 south one lot;
84. East side of Midstreams Rd. from Rt. 88 south one lot;
85. Both sides of Dennis Dr., entire street;
86. Both sides of Marcy Pl., from Dennis Dr., south to mid-block;
87. Both sides of Lorraine Pl., from Dennis Dr., south to mid-block;
88. West side of Lorraine Pl., from Dennis Dr., north to dead end;
89. East side of Lorraine Pl., from Dennis Dr., north to dead end, excluding a portion at 405 Lorraine Pl.;
90. Both sides of Sullivan Rd., entire street;
91. North side of Wiscasset Trail, entire street;
92. Both sides of Daybreak Ct., entire street;
93. Both sides of Freeport Rd., entire street;



94. Both sides of Duchess Ln., entire street;
95. Both sides of S. Hampton Pl., entire street;
96. South side of Waters Edge Ct., from Jordan Rd. to crown of cul-de-sac;
97. East side of Jordan Rd., from Rt. 88 south through frontage of 201 Jordan Rd.;
98. West side of Jordan Rd., from Rt. 88 south for one lot;
99. West side of Jordan Rd., from Duchess Ln. north through 190 Jordan Rd.;
100. West side of Jordan Rd., from Duchess Ln. south through 182 Jordan Rd.;
101. West side of Jordan Rd., from Meridian Dr. north through 162 Jordan Rd.;
102. North side of Meridian Dr. between Jordan Rd. and Natick Trail;
103. South side of Meridian Dr. from Natick trail east to Berkeley Dr.;
104. South side of Meridian Dr. from Berkeley Dr. east one lot;
105. Both sides of Berkeley Dr., entire street excluding the crown of the cul-de-sac;
106. Both sides of Harriet Dr., entire street;
107. Both sides of Natick Tr. between cul-de-sac and Coral Dr.;
108. Northeast side of Natick Tr. from Coral Dr. south to 135 Natick Tr.;
109. Southwest side of Natick Tr. from Coral Dr. south one lot;
110. North side of Coral Dr. from Natick Tr. west one lot;
111. South side of Coral Dr. from Natick Tr. west one lot;
112. Northeast side of Colonial Dr. from Oriole Tr. south to 241 Colonial Dr.;
113. Southwest side of Colonial Dr. from 218 Colonial Dr. south to 246 Colonial Dr.;
114. Both sides of Orion Dr. between cul-de-sac and Meridian Dr.;
115. Northeast side of Midstreams Rd. between Colonial Dr. and Meridian Dr.;
116. Southwest side of Midstreams Rd. from Meridian Dr. northeast to parking lot driveway;
117. Southwest side of River Park Dr., entire street;
118. Northeast side of River Park Dr., from Midstreams Rd. east to 509 River Park Dr.;
119. South side of Sanctuary Ct., fronting 157 Sanctuary Ct.;
120. South side of Sanctuary Ct., fronting 153 Sanctuary Ct.;
121. East side of Leone Dr. from Arnie's Point south one lot;
122. South side of Arnie's Point from Leone Dr. east to 155 Arnie's Point;
123. East side of Arnie's Point at crown of cul-de-sac (158, 159, and 160 Arnie's Point);
124. Both sides of Northeast Dr., entire street;
125. Both sides of Joie Pl., from Arjo Dr. south to cul-de-sac;
126. South side of Arjo Dr. from Northeast Dr. southwest to side yard of 118 Joie Pl.;
127. North side of Arjo Dr. from Northeast Dr. southwest to side yard of 122 Northeast Dr.;
128. Both sides of Clematis Pl., entire street;
129. North side of Midwood Dr. between Manorside Dr. and Harbor Rd.;
130. West side of Harbor Rd. from Midwood Dr. north one lot;
131. East side of Charleson Rd. between Oakland Dr. and Midstreams Rd.;



THE TOWNSHIP OF  
**BRICK, NJ**

132. West side of Charleston Rd. from Oakland Dr. south to 74 Charleson Rd.;
133. North side of Midstreams Rd. from Charleson Rd. east one lot;
134. North side of Oakland Dr. front 77 and 81 Oakland Dr.;
135. South side of Oakland Dr. from Charleson Rd. west to mid-lot of 86 Oakland Dr.;
136. West side of Jordan Rd. from 100 Jordan Rd. south to 68 Jordan Rd.;
137. Both sides of River Park Dr. between Jordan Rd. and Charleson Rd.;
138. South side of River Park Dr. from Charleson Rd. west to 65 River Park Dr.;
139. North side of River Park Dr. from Charleson Rd. west to 94 Charleson Rd. (rear);
140. Both sides of Marlin Ct., entire street;
141. Both sides of Mako Ct., entire street;
142. Both sides of Bluefin Dr., entire street;
143. Both sides of Rainbow Dr., between Bella Vista Rd. and Bluefin Dr.;
144. Both sides of Rainbow Dr., from Bluefin Dr. west one lot;
145. Both sides of Solar Dr. between Rainbow Dr. and Bluefin Dr.;
146. West side of Solar Dr. from Bluefin Dr. one lot west;
147. East side of Solar Dr. from Bluefin Dr. west to 116 Solar Dr.;
148. West side of Canis Dr. from Rainbow Dr. north to 115 Canis Dr.;
149. East side of Canis Dr. from Rainbow Dr. north to 119 Bluefin Dr. side yard.



Figure 47: Detail of Existing Sidewalks (western Princeton sub-neighborhood)



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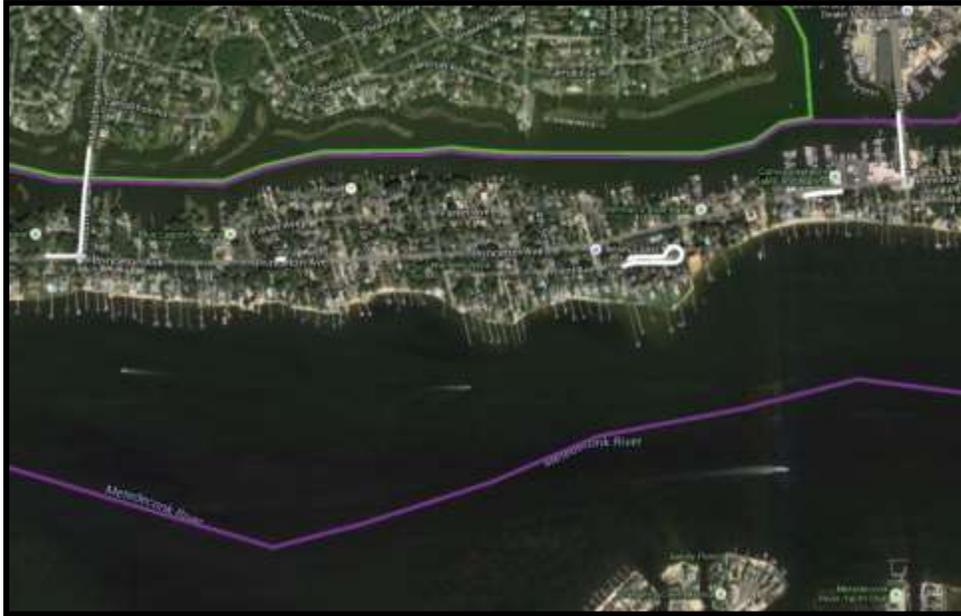


Figure 48: Detail of Existing Sidewalks (eastern Princeton sub-neighborhood)

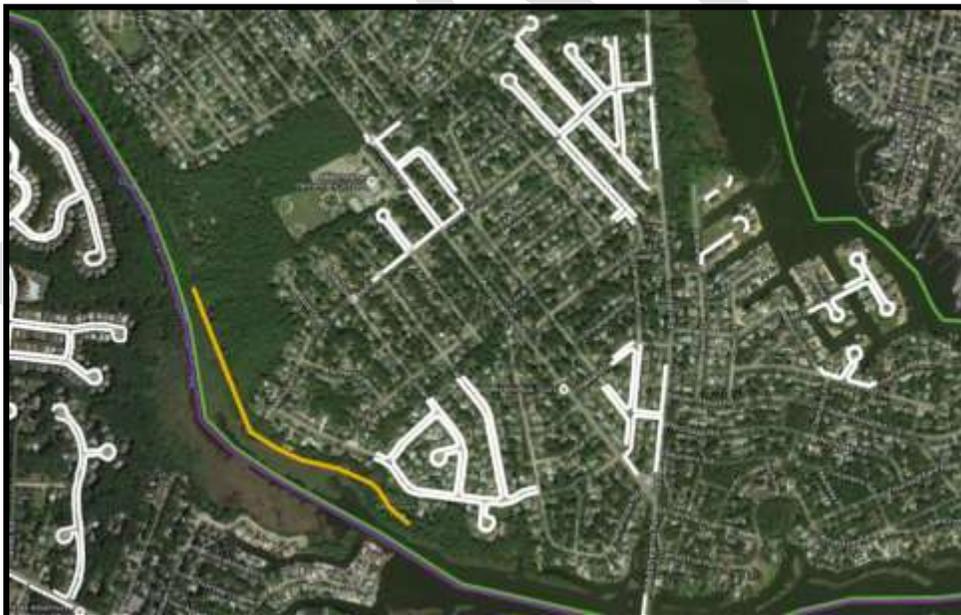


Figure 49: Detail of Existing Sidewalks (eastern Midstreams sub-neighborhood)