Aerial view looking west to Hoboken

# 2.0 PURPOSE AND NEED

The purpose and need for the Project was developed through a comprehensive process that began with the development of the original proposal submitted to U.S. Department of Housing and Urban Development (HUD) for funding for a flood risk reduction project and continued through the scoping process and concept and alternative development for the Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS). Key stakeholders including elected officials, agencies with regulatory authority, community leaders, and the general public were involved at each stage. The stakeholder involvement is detailed in Section 7.0 (Consultation and Coordination) of this FEIS.

## 2.1 Purpose

The Study Area, comprising the entire City of Hoboken and adjacent areas of Weehawken and Jersey City (see **Section 1.1**), is vulnerable to flooding from both coastal storm surge and inland rainfall events. The purpose of the Project is to reduce the flood risk within the Study Area. The Project intends to minimize the impacts from surge and rainfall flood events on the community including adverse impacts to public health and safety, as well as economic vitality, while providing benefits that will enhance the urban condition, recognizing the unique challenges that exist within a highly developed urban area.

## 2.2 Need

The historic flooding and the high likelihood of future flood events from both rainfall and coastal surge flooding has a tremendous impact on the lives of Study Area residents from a health, safety and economic perspective. When critical infrastructure including fire stations, hospitals, and a wastewater treatment plant (see **Figure 2.1**) are impacted, it affects the welfare of the entire community. The economic livelihood of the community is diminished by the business disruptions caused by flooding and continual costs to repair and restore homes and businesses, with costs often exceeding the average National Flood Insurance claim award. The potential for future flooding is significant based on the Study Area's topography and the need for a project that minimizes flooding is critical to Hoboken and its affected neighbors in Weehawken and Jersey City.

The Study Area is a very dense urban area of Hudson County that is situated along the Hudson River directly west of Manhattan, New York. The Study Area is vulnerable to two interconnected types of flooding: coastal flooding from storm surge and high tide, as well as systemic inland (rainfall) flooding from medium (generally a 5-year, 24-hour) to high (generally over 10-year, 24 hour) rainfall events. Coastal flooding happens with much less frequency than rainfall flooding events, but can devastate widespread areas of the Study Area and cause significant economic damage and safety concerns. Rainfall-


**Figure 2.1** Critical Infrastructure

induced flooding occurs with significantly greater frequency than coastal flooding, but causes less severe economic damage and safety concerns (see **Photograph 2.1**).

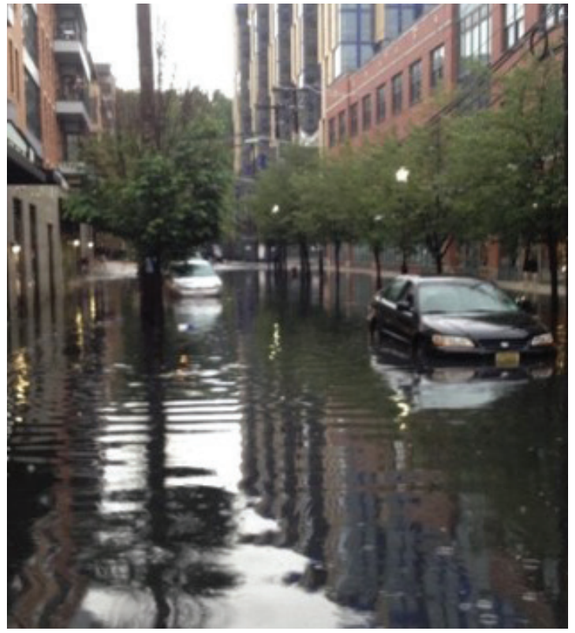
The coastal surge flooding and rainfall-induced flooding can be attributed to several factors including naturally low topography and proximity to waterways; significant areas of impervious ground coverage, which causes surface runoff; existing combined storm sewer infrastructure that cannot handle the volume of water during significant rainfall events; and insufficient storm sewer discharge capability, particularly during high tide (see **Photograph 2.2**).

The topography of the Study Area is highest along the east-central portion near the coastline of the Hudson River close to Castle Point. From here, the land slopes gently downward to the north (towards Weehawken Cove), south (towards the Hoboken Terminal and Jersey City), and to the west (towards the foot of the Palisades). This topography reflects the Study Area's history; when originally settled, Castle Point was an island surrounded to the north, south and west by wetlands (see **Photograph 2.3**). These wetlands were gradually filled in as the area was developed. Today, these areas – in particular those to the west – are still extremely low-lying, in some places no more than three feet above sea level.

The City of Hoboken's exposure to flood hazard risks is evident by the number of properties included in the FEMA National Flood Insurance Program (NFIP). The NFIP is intended to reduce the financial and recurring impact of flooding on private and public structures by providing affordable insurance to property owners and encouraging adoption of floodplain management regulations. Mortgage lenders for properties within the Special Flood Hazard Area (SFHA) (areas with a one percent annual chance of flooding, also referred to as the base floodplain or the 100-year floodplain) require owners to obtain flood insurance from the NFIP. In addition, property owners receiving awards following presidentially-declared disasters (such as Superstorm Sandy) are also often required to obtain NFIP insurance. According to NFIP statistics (https://www.fema.gov/policy-claim-statistics-flood-insurance), as of August 31, 2016, the City of Hoboken had 9,446 NFIP policies in place (the highest in Hudson County), with premiums totaling $7,213,754 (the highest in Hudson County and fifth highest in New Jersey). In addition, the overall liability to the NFIP from property owners in Hoboken was over $2 billion (the third highest in New Jersey) with an average claim amount of $26,733.

## 2.3 Goals and Objectives

The Project is intended to create a resilient community that is able to resist and rapidly recover from disasters or other shocks with minimal outside assistance. The Project is a comprehensive urban water strategy whose overall purpose is to reduce flood hazard risks and seeks to leverage resiliency investment to enhance the urban condition. The ability to meet this purpose will be measured in terms of Goals and Objectives. Goals are overarching principles that



**Photograph 2.1** Flooding from Rainfall Event May 31, 2015

**Photograph 2.2** Typical Stormwater outfall, note water level stain at top of pipe.


**Photograph 2.3** View of Northwest Hoboken, circa 1880

guide decision-making and are measured in terms of Objectives, which are measurable steps to meet the Goal. The Goals and Objectives for the Project include the following.

**Goal:** Contribute to Community Resiliency
**Objective:** The Project will seek to integrate flood hazard risk reduction strategies with emergency, civic, and cultural assets. The Project will reduce flood risks within the Study Area, leading to improved resiliency and the protection of accessibility and ongoing operations of services (including protecting physical infrastructure such as hospitals, fire stations, and police department buildings, as well as roadways and transit resources). This would allow these key assets to support emergency preparedness and community resiliency during and after flood events.

**Goal:** Reduce Risks to Public Health
**Objective:** In addition to providing protection to critical health care infrastructure (such as local hospitals and emergency preparedness services), the Project will aim to reduce the adverse health impacts that result from combined sewage backups onto streets and within businesses and residences through a reduction in storm water infiltration into the existing combined sewer collection system.

**Goal:** Contribute to Ongoing Community Efforts to Reduce FEMA Flood Insurance Rates
**Objective:** The City of Hoboken's exposure to flood risks has resulted in some of the highest insurance premiums in the state. The City has long had a goal of reducing those rates through a number of comprehensive flood risk reduction programs, such as those identified in the City's Green Infrastructure Plan. The NFIP's Community Rating System (CRS) allows municipalities to reduce their flood insurance rates through implementation of comprehensive floodplain management. The Project will propose concepts and alternatives that are consistent with Hoboken's overall effort of reducing FEMA Flood Insurance Rates.

**Goal:** Delivery of Co-Benefits
**Objective:** Where possible, the Project will seek to integrate the flood hazard risk reduction strategy with civic, cultural, and recreational values. The Project will aim to incorporate active and passive recreational uses, multi-use facilities, and other design elements that integrate the Project into the fabric of the community. In this way, the Project will complement local strategies for future growth.

**Goal:** Connectivity to the Waterfront
**Objective:** The Study Area's waterfront is currently the location of a vast length of interconnected parks and public walkways that contribute to the vibrancy of the community. The Project will aim to incorporate features that do not restrict access to the waterfront. Where feasible, the Project will build on and enhance existing waterfront access points, while providing flood risk reduction.

**Goal:** Activation of Public Space
**Objective:** The Project will develop concepts that reduce risks to private and public property from flood impacts, while also incorporating design elements that activate public and recreational spaces, thereby enhancing quality of life for the community.

**Goal:** Consider Impacts from Climate Change
**Objective:** The Project will take into account the projected impacts from climate change, particularly as it relates to sea-level rise and its impacts on the frequency and degree of flooding.

*The NFIP's Community Rating System (CRS) allows municipalities to reduce their flood insurance rates through implementation of comprehensive floodplain management.*

Guidance Document : Reducing Flood Risk to Residential Buildings That Cannot Be Elevated FEMA P-1037 / September 2015, fema.gov