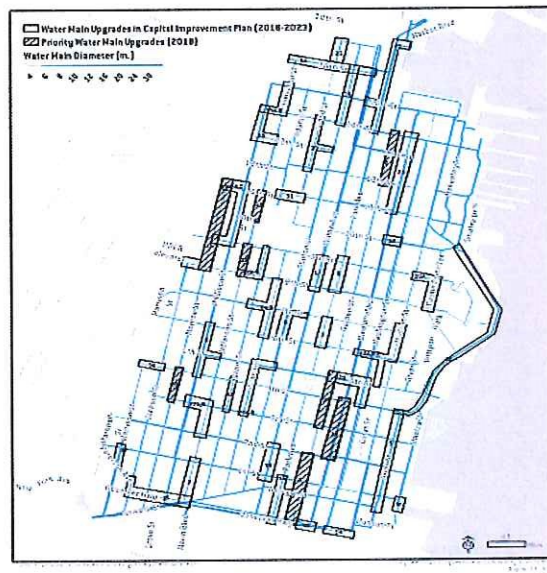


Report

City of Hoboken Hoboken Water System Renewal Program



H HOBOKEN WATER SYSTEM RENEWAL

Project Planning Report Level 1
NJDEP/NJEIT Financing Program

NJDEP/NJEIT Project No. 0905001-002

Project Applicant:
City of Hoboken
94 Washington Street
Hoboken, New Jersey 07030
Hudson County

November 2017

**CDM
Smith**



75 State Street, Suite 701
Boston, Massachusetts 02109
tel: 617 452-6000

November 9, 2017

Sent Via FedEx and H2Loans

Mr. Eugene Chebra, Acting Assistant Director
Municipal Finance and Construction Element
New Jersey Department of Environmental Protection
Division of Water Quality
Mail Code 401-03D
401 East State Street
Trenton, New Jersey 08625-0420

New Jersey Environmental Infrastructure Trust (uploaded to H2Loans only)

Subject: Project Number - 0905001-002
Project Name - Hoboken Water System Renewal Program
Project Sponsor - City of Hoboken
County - Hudson

New Jersey Environmental Infrastructure Financing Program
Project Planning Report Level 1

Dear Mr. Chebra:

On behalf of the City of Hoboken, CDM Smith is submitting three (3) hard copies of the Project Planning Report, and we have uploaded the report file into H2Loans, related to the proposed Hoboken Water System Renewal Program for the Department's review.

The water main upgrades program addresses the City of Hoboken's aging water distribution system, is located throughout the City and serves the entire local community. The primary purpose of this program is to replace old and failing water lines that have exceeded their useful life, thus restoring water distribution reliability.





Mr. Eugene Chebra

November 9, 2017

Page 2

If you should have any further questions or need additional information, please contact me at (518) 782-4500 or Ms. Patricia Forgang at (732) 590-4622.

Sincerely,

Patricia Forgang

for

Gary R. Stuart, P.E., BCEE
Project Manager
CDM Smith Inc.

xc: J. Gonzalez, Hoboken
P. Forgang, CDM Smith
File 250543-220418



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Appendix C Soils and Waste Handling

Section 1

Project Intent, Need and Scope

1.1 Project Intent

Drinking water for the City of Hoboken (City) is purchased from the Jersey City Municipal Utilities Authority (JCMUA). The City of Hoboken owns the drinking water distribution system and holds a contract for public/private partnership and operation, maintenance and management services of the municipal water system with SUEZ. The majority of the distribution system mains range in age from 100 years and older to sections installed in 2016, and the pipe sizes range from 4" to 30." SUEZ contracted CDM Smith to conduct an evaluation of the Hoboken system in 2016. The evaluation developed a risk-based prioritization of system improvement projects, considering historical main breaks, age, hydraulic criticality, and fire flows, among other factors. CDM Smith's evaluation, prepared for SUEZ, did not consider ongoing and planned redevelopment activities (i.e., approved or proposed redevelopment plans), or local utility improvement activities (i.e., PSE&G upgrades, roadway improvements). Subsequently, the City contracted with Louis Berger to balance the findings of the CDM Smith evaluation with more recent water main break data, development information, and local utility improvements obtained from the City and relevant external agencies. The City utilized both studies to produce a priority list of locations for water system renewal.

The Hoboken Water System Renewal Program consists of upgrading the water mains that have been identified by CDM Smith under contract to SUEZ as well as Louis Berger under contract to the City of Hoboken. The intent of the City's Water System Renewal Program is to upgrade the existing water mains at these prioritized segments to meet current regulatory standards over an extended timeframe. Existing 6-inch diameter water mains will be increased to 8-inch diameter, and existing service lines and valve boxes from the distribution main to the curb stop will be upgraded and replaced.

This proposed program will not involve any changes to the flow capacity of the existing drinking water system, and no adjustments to the permitted capacity under the City's existing drinking water supply contract with Jersey City will be necessary. The NJDEP Water Allocation Permit issued to Jersey City Municipal Utilities Authority (5268) number is WAP130001.

1.2 Project Need

Due to the age of much of the water main distribution system, a large percentage being 100 years and older, the majority of the system has reached the end of its useful life. The City and its residents have endured numerous water main breaks over the years, and they continue to occur from time-to-time. CDM Smith conducted a comprehensive water system evaluation and provided a "road map" or program that will allow the City and SUEZ to implement a pipeline renewal program that addresses potential priority areas of concern while Louis Berger and the City provided a strategy to coordinate these pipeline replacements with such items as the City's roadway re-paving program, street improvement program such as right-of-way bioswales to

better manage stormwater, other unrelated proposed developments and other utility company improvements.

This City's Water System Renewal Program is needed to provide more reliable operation of the City's water distribution system and drinking water supply to its residents.

1.3 Project Scope

In the past two plus decades, only \$350,000 per year was invested in the system and as a result only 5% of the system has been upgraded. The \$7 million water main replacement currently underway on Washington Street will upgrade an additional 3% of the system. The City's plan for its water distribution system provides a financially sustainable strategy to make continued investments in water infrastructure over the next 6 years.

The proposed program will entail replacing and upgrading the existing water mains to meet current standards, including the expansion of any 6" mains to 8" mains, and upgrading the service lines and valve boxes from the water mains to the curb stops. The City's plan includes 67 discrete locations for water main replacement to upgrade 20% of the system, 11 of which are under design to be upgraded in 2018. To that end, the City Council approved Bond Ordinance 16-449, Z-426 and Bond Ordinance 17-340, Z-497 (see Appendix A) and will seek a low-interest loan from the New Jersey Environmental Infrastructure Trust (NJEIT) to fund the first phase of this program. The City will invest \$30 million over six years at \$5 million per year; this will be in addition to the \$7 million water main replacement on Washington Street that is currently underway, and \$5.2 million already authorized for additional improvements in priority areas in 2018.

A summary of the 67 water main replacement locations is shown in Section 2 of this report; this initial phase of the City's program includes the following 11 of the 67 water main replacement locations.

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2018 projects:					
CDM Smith Priority No.	CDM Smith Ref. No. (order of priority)	Location	Pipe Material	Pipe Diameter (in)	Length of pipe (approx. ft)
2	10	Jefferson St. between 8th St. and 9th St.	Cast Iron - Unlined	6	450
2	16	Bloomfield St. between 2nd St. and 4th St.	Unknown	6	1,000
2	33	Garden St. between 3rd St. and 5th St.	Cast Iron - Unlined	6	850
2	39	Monroe St. between 3rd St. and 4th St.	Unknown	8	950
2	11A	Monroe St. between 8th St. and 11th St.	Unknown	8	1,400
New Project	43	Jefferson St. between 10th St. and 11th St.	Unknown	6	450
1	2	Garden St. between 12th St. and 14th St.	Cast Iron - Unlined	6	810
1	4	Garden St. between Observer Hwy and 2nd St.	Cast Iron - Unlined	6/8	1,125
2	26A	Madison Ave. between 9th St. and 11th St.	Cast Iron - Unlined	16	900
2	26B	11th St. west of Madison Ave. to municipal border	Cast Iron - Unlined	6	300
2	26C	9th St. between Madison Ave. and Monroe St.	Cast Iron - Unlined	8	275

In addition, although not included within NJEIT drinking water funding for water main replacements, following the water infrastructure upgrades, roadways will be resurfaced from curb to curb with roadway improvements to meet current standards and the City's complete streets policy. In addition, co-located right-of-way bioswales, also referred to as discharge, storage and delay (DSD) or green infrastructure (GI) rain gardens, will also be constructed at several of the water main replacement locations. The City plans to apply for separate NJEIT clean water state revolving loan funding for the GI improvements.

Section 2

Planning Area Description

2.1 Planning Area

The City of Hoboken owns the drinking water distribution system and holds a contract for public/private partnership and operation, maintenance and management services of the municipal water system with SUEZ.

According to the City's NJEIT *Level 2 environmental planning document for its Washington Street Water Main*, the City is 1.27 square miles in area and has a July 1, 2016 population of 54,379 (based on <https://www.census.gov/quickfacts/fact/table/hobokencitynewjersey/PST045216>).

Figure 1 includes a roadmap that show each of the water main replacement locations included in the Hoboken Water System Renewal Program.

Figure 2 is a site location map based on USGS Weehawken and Jersey City, NJ USGS Quadrangle 7.5-Minute Series topographic mapping. The water service area includes the entire City of Hoboken as shown in this figure.

2.2 Planning Area Environmental Description

The City is located on the western bank of the Hudson River in Hudson County, New Jersey. Bordering communities include Jersey City, Union City and Weehawken.

In general, based on Weehawken and Jersey City, NJ USGS Quadrangle 7.5-Minute Series topographic maps, the topography is highest along the east-central portion of the City near the Hudson River at Castle Point. From that high point, topography slopes gently to the north, south and west which are filled tidal marshes that are at relatively low ground elevations.

The City is a dense urban area that is mostly paved, except for local parks and a handful of county parks. There are no farmlands or critical environmental areas on or near the water main program locations. Additional environmental mapping and more detailed discussion are included in Section 4 of this report.



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Section 3

Stormwater Management Considerations

Regarding stormwater management, these proposed water main system upgrades of existing infrastructure are located within existing paved roadways and are all located below ground surface. This work will not result in new impervious surface in excess of one-quarter acre, however total land disturbance (of paved roadways) of one acre or more is likely in each phase of the program. Therefore, each phase of this program could be considered a “major development” under N.J.A.C. 7:8, the NJDEP Stormwater Management rules. However, linear development projects are exempt from the groundwater recharge, stormwater runoff quantity, and stormwater runoff quality requirements at N.J.A.C. 7:8-5.4 and 5.5 that involve construction of underground utility lines, provided that the disturbed areas are restored upon completion. As part of this program, disturbance to existing paved areas will include re-surfacing and re-paving at all locations that will be disturbed.

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Section 4

Environmental/Cultural Resource Considerations

4.1 Introduction

A pre-application telephone conference to discuss the City's Water System Renewal Program with NJDEP and NJ Environmental Infrastructure Trust (NJEIT) staff, the City of Hoboken, and CDM Smith was held on August 17, 2017.

Since these proposed upgrades are of existing water mains within paved roadways, minimal resultant environmental or permanent land disturbance, and a low number of water main replacements per year to minimize temporary impacts to residents and businesses, a "Level 1" environmental review is appropriate for this program. The need for any cultural resources study services is being reviewed by NJDEP staff, and further direction on this subject will be provided.

4.2 Project/Program Location

As shown in Figure 2, the 67 water main replacement program locations are throughout the City of Hoboken, in Hudson County, New Jersey.

4.3 Environmental Impacts

Since there will be no new permanent land disturbance activities associated with this proposed program, and the proposed upgrades of existing drinking water infrastructure within an urban location underneath existing pavement, the potential environmental impacts on environmentally-critical areas associated with the proposed construction activities are expected to be minimal.

CDM Smith has evaluated the 67 water main replacement locations and pertinent environmental data utilizing NJDEP's GIS database.

4.3.1 Flood Hazard Area/ Floodplain

As shown in Figure 3, most of the City sits within the NJDEP's flood hazard area based on the most recent preliminary Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), dated January 30, 2015. It is noted that Zone AE (Base Flood Elevation) shown on the preliminary FIRM ranges from elevation 10 feet to 12 feet toward the north end of the City.

As a subsurface utility program with no new permanent land disturbance or long-term adverse impacts to the floodplain and no stream crossings or riparian zone disturbances associated with this proposed program, there is not expected to be any need to study or delineate the flood hazard area for this program and the work qualifies for NJDEP's flood hazard area permit-by-rule for underground utility lines beneath existing pavement.

4.3.2 Surface Water Bodies and Wetlands

As shown in Figure 4, and based on the NJDEP's Hudson River Rebuild by Design Final Environmental Impact Statement (RBD FEIS), there are delineated wetlands locations along the Hudson-Bergen Light Rail transportation corridor. However, except for one water main replacement location at the northern end of Grand Street, none of the proposed work is in or near wetlands vegetation or crossing surface water bodies. Therefore, it is not expected that wetland-type vegetation in or near the Hoboken Water System Renewal Program work locations exists or would be potentially affected.

There will be no new permanent land disturbances associated with this project; the land disturbances will be temporary in nature and will take place within existing paved roadways. There is no apparent need to conduct freshwater wetlands delineation for this program; however, the City will evaluate this further at the one water main replacement location at the northern end of Grand Street that is near the light rail line.

4.3.3 Threatened and Endangered Species

Based on NJDEP's GIS database, and as shown in Figure 5, there is no Rank 3 or higher threatened and endangered species habitat shown to be near the Hoboken Water System Renewal Program locations. Additionally, as an existing subsurface infrastructure program within paved roadways, there is not expected to be potential impact to threatened and endangered species habitat even if present.

As an underground utility replacement program conducted in an urban environment beneath existing pavement, any impact on critical environmental resources is minimal. The water main replacements will not disturb vegetation or landscaped areas and no tree removal is anticipated however if tree removal is unavoidable, trees that have to be removed will be replaced.

4.3.4 Tidelands

Based on NJDEP's GIS database, and as shown in Figure 6, roughly one-quarter of the Hoboken Water System Renewal Program locations are within NJDEP tidelands. These tidelands are areas that were formerly flowed by the tide and were filled in over time.

Approval by the NJDEP Bureau of Tidelands Management is required for program activities on mapped, State-owned tidelands that have not been conveyed to public or private parties. The majority of former tideland areas within the City have been granted to private and/or public parties by the State of New Jersey, although some former tidelands may still be owned by the state. To definitively identify ownership, a review of state grants and/or a property title search would be required.

The City will apply for tidelands grants for those water main replacement locations that are shown to be within NJDEP tidelands and where there is no existing tidelands conveyance at the location.

During this initial phase of the program, CDM Smith requested and is reviewing a copy of the state's tidelands claims at the 11 water main replacement locations. Where no claim is found to exist, a NJDEP tidelands instrument will be applied for in accordance with the applicable

tidelands requirements. In subsequent program phases, another state tidelands claim review will be conducted and, as needed, a new tidelands instrument will be applied for during each program phase.

4.3.5 Open Space

Based on NJDEP's GIS database, and as shown in Figure 7, none of the county open space/parks are shown to be near the Hoboken Water System Renewal Program locations. There are water main replacement locations near some of the City's parks, however since no work is expected to take place on park parcels, there is not expected to be any need to address open space issues, such as a Green Acres Program diversion, as part of this program.

4.3.6 Cultural Resources (Historic and Archaeology)

Based on NJDEP's GIS database, and as shown in Figure 8, most of the water main replacement locations are shown to be within historic districts throughout the City. However, no archaeology grid sites were shown within the City; Figure 9. It is noted that additional historical architecture and archaeological area of potential effects mapping from the Rebuild by Design Hudson River program are included in Appendix B for reference purposes.

Elizabeth Davis of NJDEP's staff is reviewing the City's GIS data to ascertain whether any cultural resources work will be necessary as part of this program. There is expected to be low potential impact to archaeological resources due to replacement of existing underground utilities in pre-disturbed locations underneath paved roadways.

4.3.7 Known Contaminated Sites

Based on NJDEP's GIS database, and as shown in Figure 10, known contaminated sites and or groundwater classification exception areas are shown to be in or near most of the water main replacement locations.

The water main replacement program specifications, to be developed, will require the construction contractor to have a NJDEP Licensed Site Remediation Professional (LSRP) under contract to address soil and/or groundwater contamination issues related to the water main upgrade construction activities. In general, all soil that is excavated and groundwater that will be removed during water main upgrade construction activities will be required to be removed to a staging area; these materials will be required to be appropriately sampled, analyzed, reported and characterized, then properly profiled, manifested, transported and disposed of offsite by the construction contractor. None of the excavated soils will be allowed to be reused.

Based on the City's need to address NJDEP requirements for clean fill for the Washington Street water main replacement project, CDM Smith will develop bid specifications for this phase of the program that will be similar to **Section 02150 Waste Disposal Requirements**, a copy included in Appendix C for reference.

4.3.8 Soils Mapping

Based on NJDEP's GIS database, Figure 11 shows soil types within the City. This mapping will be useful in the City's application for a soil erosion and sediment control certification plan to be made to the Hudson-Essex-Passaic Soil Conservation District (HEP SCD).

4.4 Social and Economic Considerations

Social and economic impacts of the proposed program such as noise, odors, aesthetics and inconveniences to residents and businesses will be temporary in nature and may occur during construction activity. These impacts are unavoidable during construction however they will be temporary and localized. The construction contractor will be required to adhere to all noise ordinances and construction work hour restrictions. Following construction, no permanent negative impacts are anticipated.

The long-term benefits of replacing old infrastructure while minimizing the need for emergency repairs due to water main breaks, having similar associated temporary impacts, will be welcome by the community and will result in an improved water distribution system for the entire City.

4.5 Air Quality and Greenhouse Gas Emissions

There are no significant long-term air quality impacts expected because of this underground utility replacement program. No new permanent point sources of air pollution will be created because of this program. While there may be potential short-term impacts on air quality because of construction activities due to either increased construction equipment emissions or the generation of nuisance dust during earth-moving operations, such potential impacts will be temporary in nature and localized. Potential impacts will be minimized by required proper operation and maintenance of equipment by the construction contractor and required dust control measures to be implemented as part of soil erosion and sediment control requirements.

The temporary greenhouse gas emissions because of this water pipeline replacement construction project due to the use of construction equipment during construction are anticipated to be relatively insignificant and are likely to be minimal.

4.6 Environmental Permits and Approvals

Based on the site location and the proposed activities, the following environmental permits are anticipated to be needed for this program:

- NJDEP - Division of Water Supply and Geoscience, Bureau of Water System Engineering (BWSE) - Construct/Modify/ Operate Public Water Works Facilities Permit
- Hudson-Essex-Passaic Soil Conservation District – Soil Erosion and Sediment Control Plan Certification
- NJDEP Division of Land Use Regulation – Flood Hazard Area permit-by-rule for underground utility lines beneath existing pavement; no submittal is required for a permit-by-rule
- NJDEP Division of Land Use Regulation – Review of tidelands claim; apply for tidelands instrument at locations that coincide with NJDEP mapped tidelands and that has no claim
- Hudson County Review – county review and approval will be needed for improvements on county-owned roadways

- City of Hoboken Planning Board – a capital review may be needed if required by the City
- City of Hoboken Council – a presentation before City Council prior to each project going out to bid may be required by the City
- City of Hoboken Historic Commission – approval for portions of the program that lie within the historic districts will be required.

During each phase of water main construction, the City will apply for the permits listed above that apply to the water main locations included in that phase.

For the initial phase, it is anticipated that except for Hudson County review, all other approvals listed above apply.

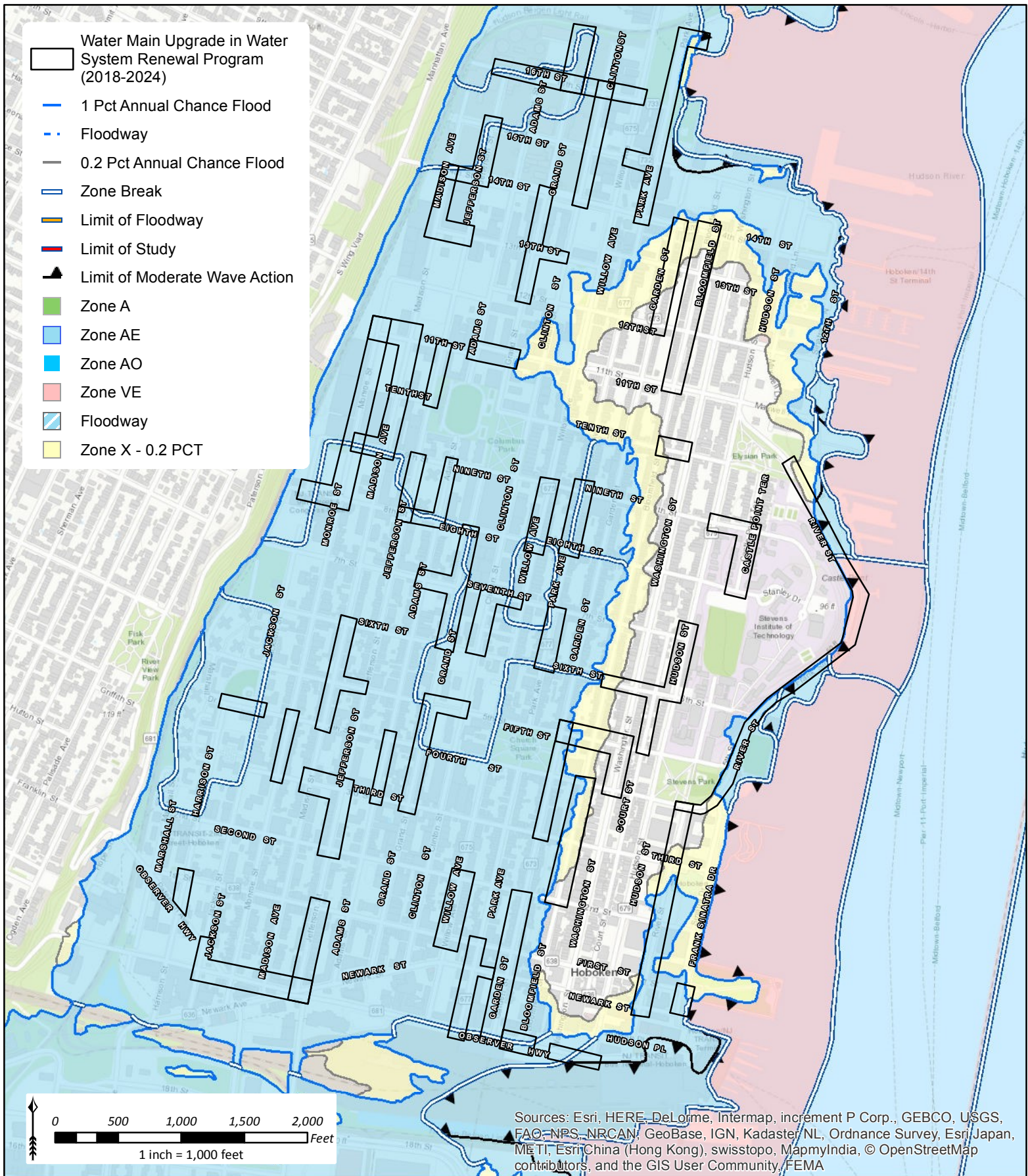


Figure 3
FHA/Floodplain

Based on FEMA FIRM
Preliminary dated 1/30/2015

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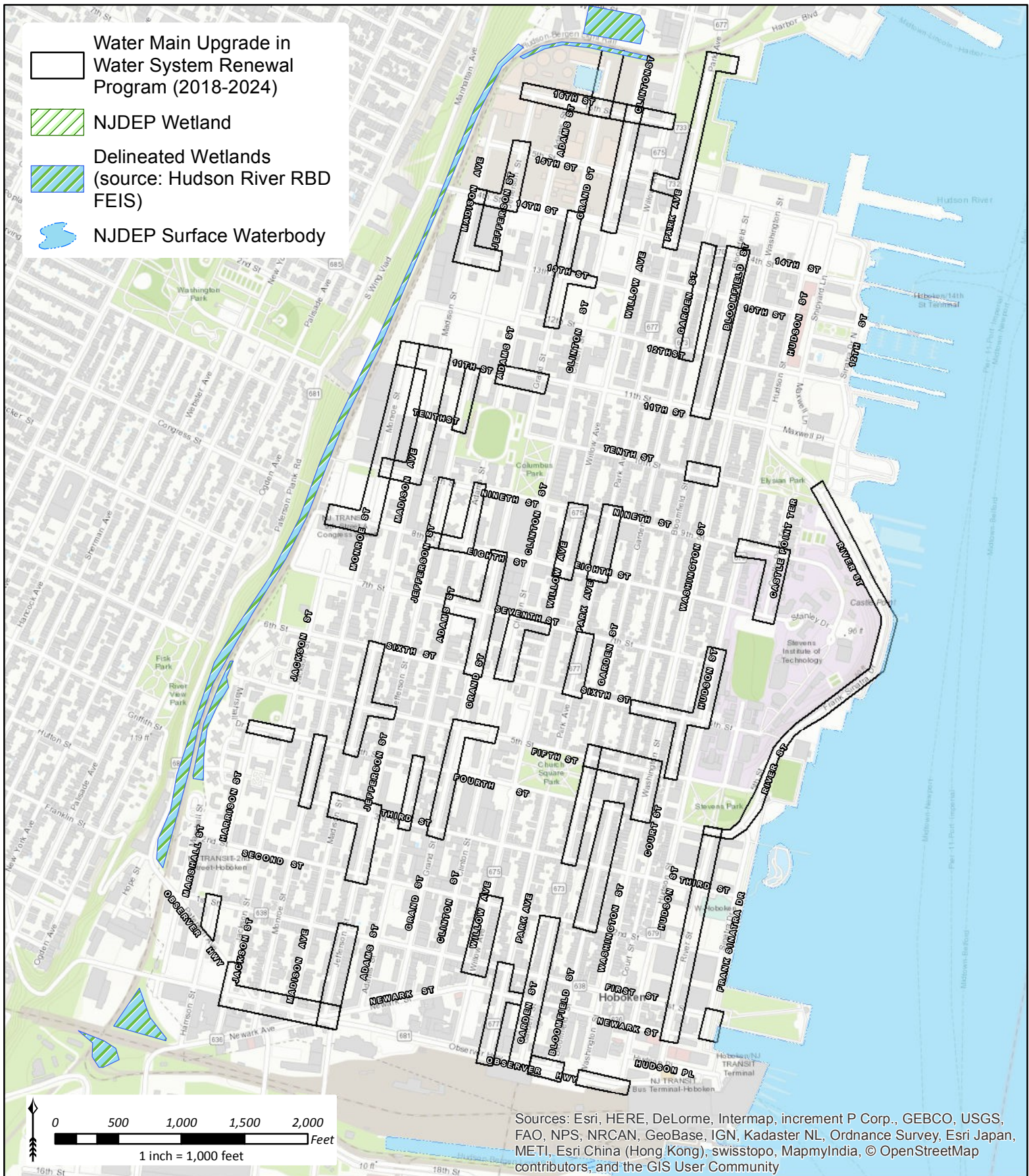


Figure 4
Surface Water Bodies and Wetlands

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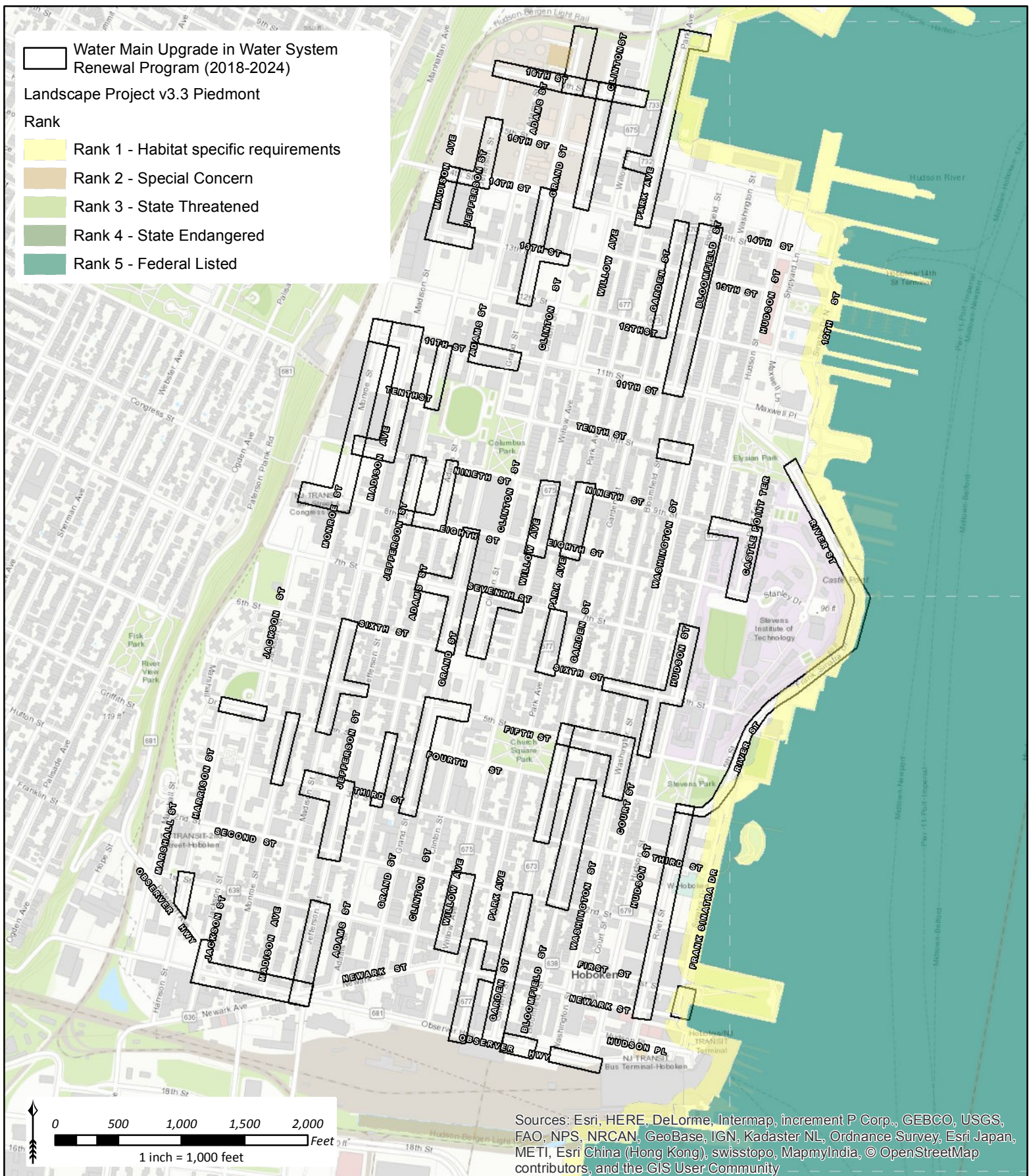
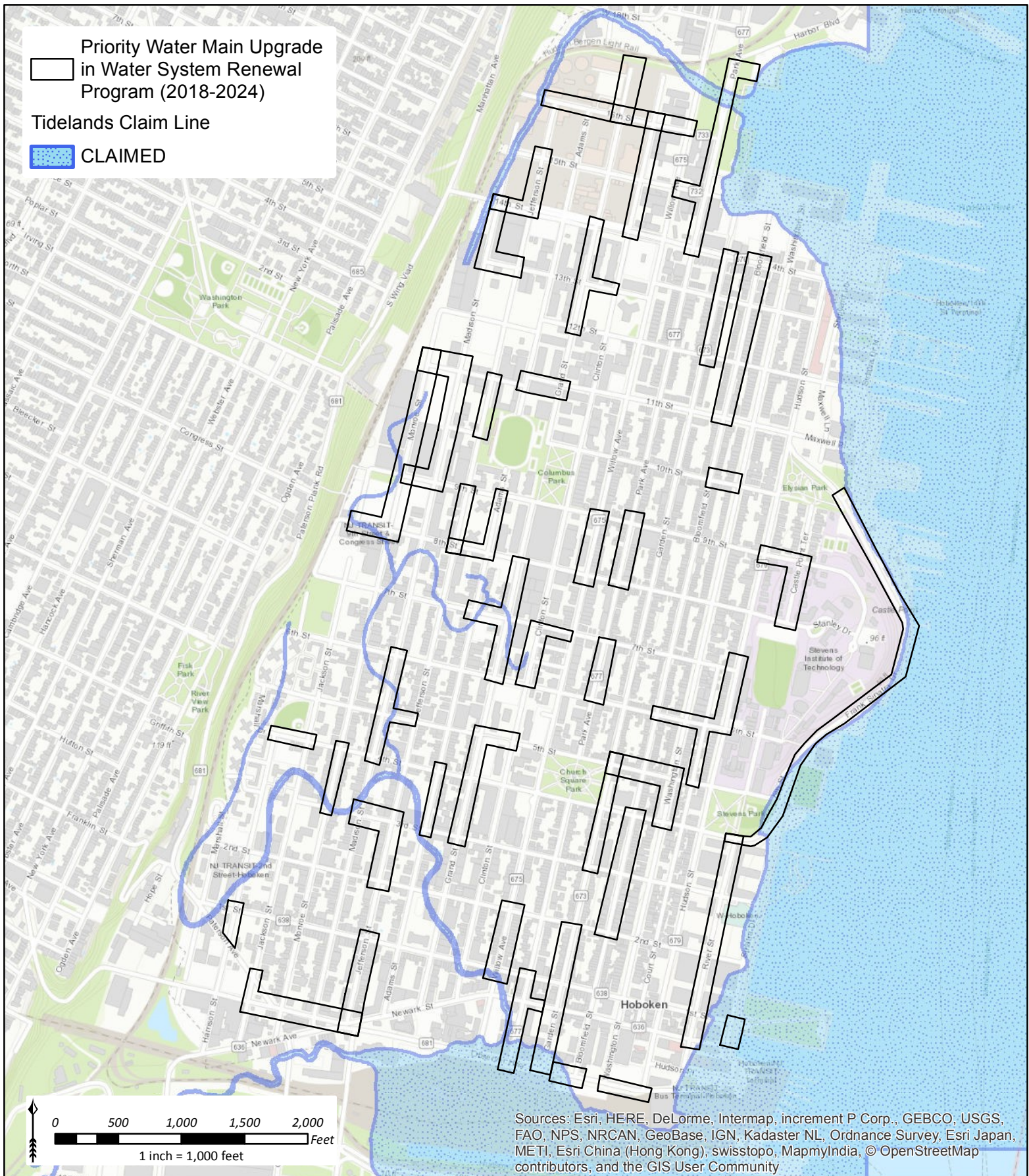


Figure 5
Threatened and Endangered Habitat

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**Figure 6
Tidelands**

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Figure 7
Open Space

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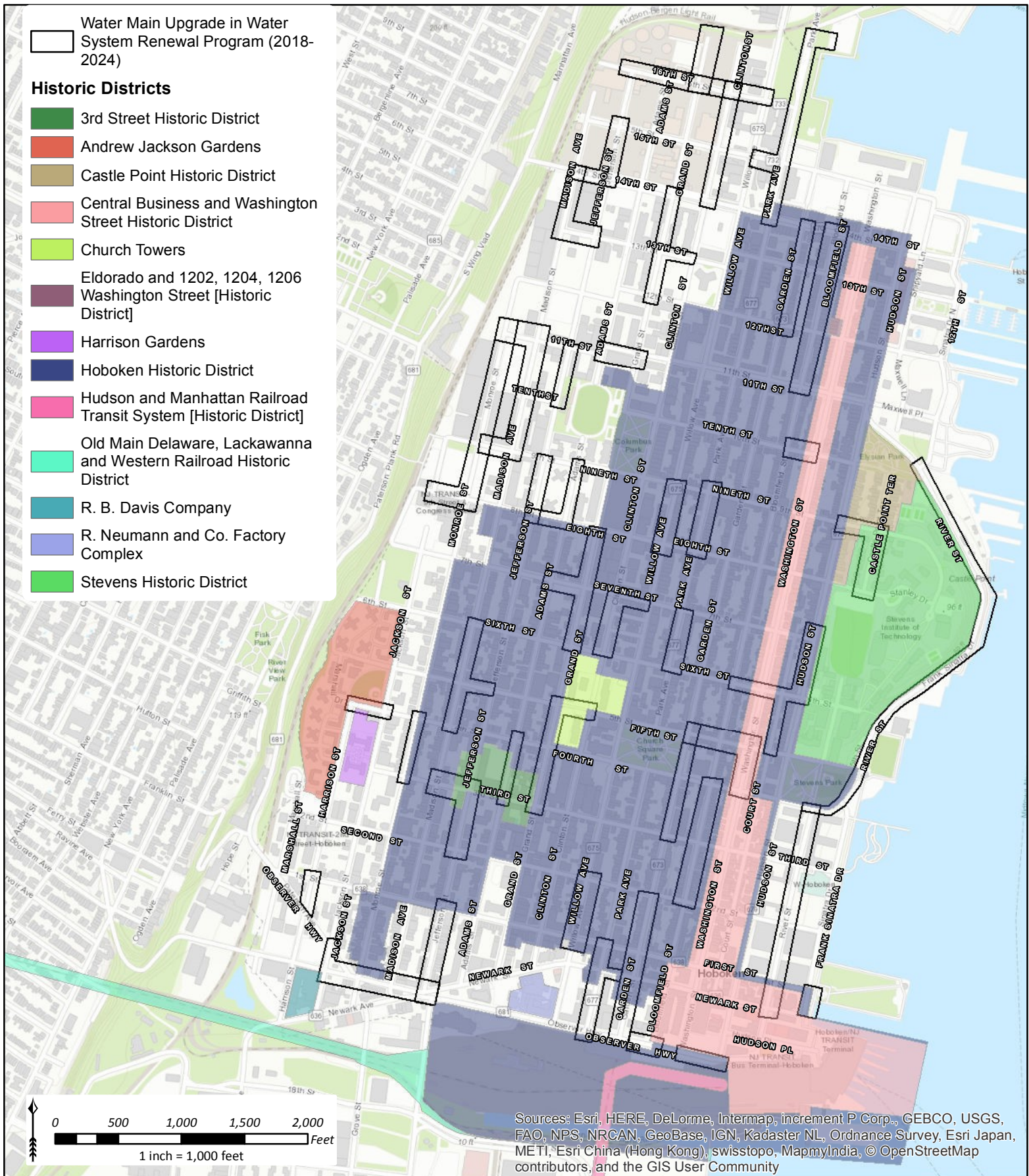


Figure 8
Historic Districts

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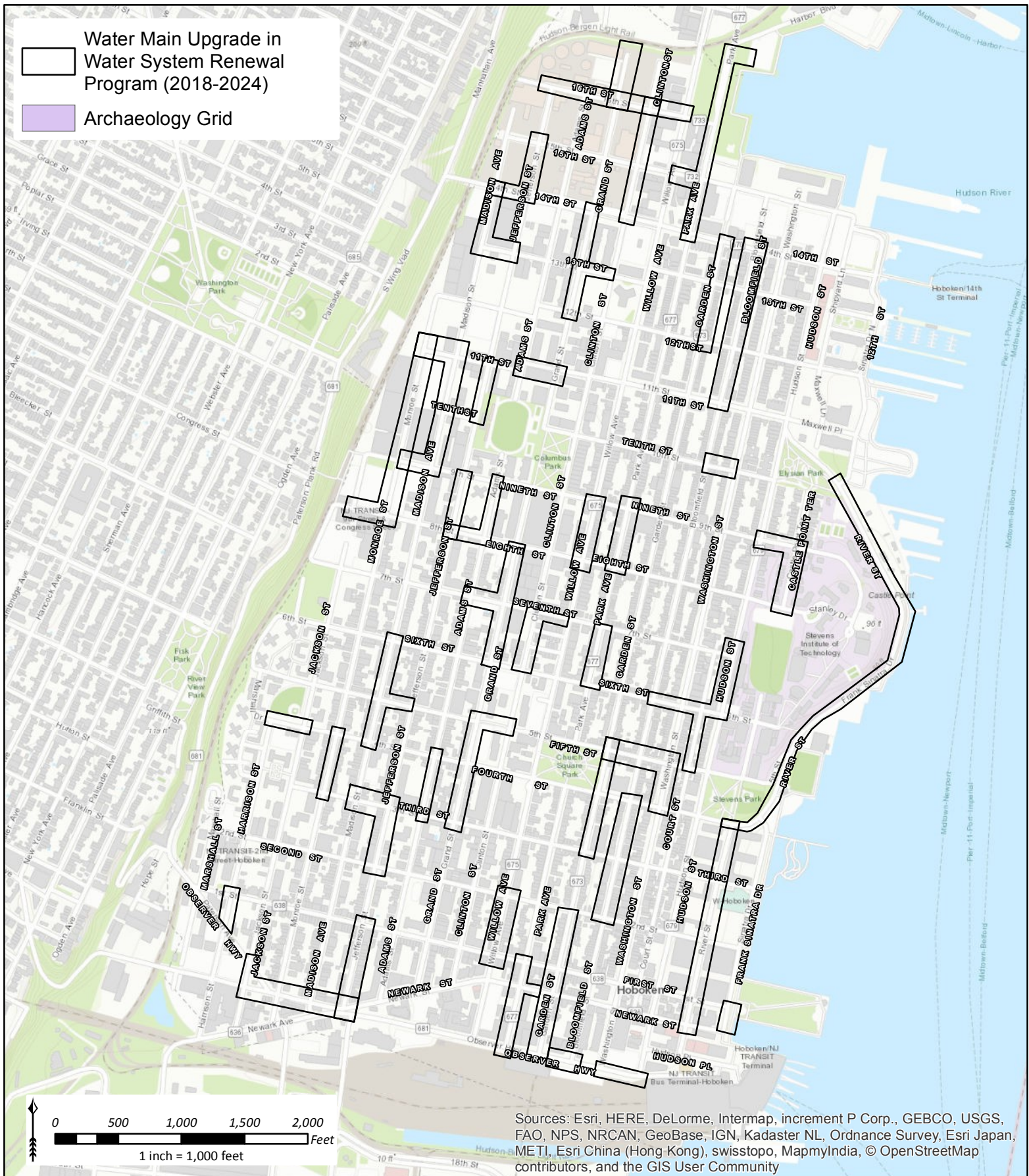


Figure 9
Archaeology

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Figure 10
Known Contaminated Sites

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Section 5

Conceptual Design

The majority of the City's drinking water transmission and distribution system ranges in age from 100 years and older to sections installed as recently as 2016. Pipe sizes within the system range from 4-inch diameter to 30-inch diameter. SUEZ previously had contracted CDM Smith to conduct an evaluation of the Hoboken drinking water transmission and distribution system. This 2016 evaluation developed a risk-based prioritization of water system improvement projects, considering factors such as historical main breaks, age, hydraulic criticality, and fire flows. The evaluation identified 50 water main segments with a total length of over 32,000 linear feet as high priority areas for refurbishment. An additional 17 water main segments were added to this program by the City with support from Louis Berger

Existing 6-inch diameter water mains that have been identified will be increased to 8-inch diameter to meet current standards, and existing water service lines and valve boxes from the distribution main to the curb stop will be upgraded and replaced.

A critical aspect of the design will be to lay out the new water mains in such a way that conflicts with other buried utilities are minimized, or avoided. Ideally, there would be sufficient space for constructing the new water main while the existing main continues to serve residents, and then abandoning the existing water main in place once the new main is tested and approved for service. This is sometimes not achievable in heavily urbanized areas, such as Hoboken, where water, sanitary sewer, storm sewer, gas, electric, telephone, and communications may all be competing for the same limited space. In previous situations like this, CDM Smith has designed the project such that the existing main is removed and new (replacement) main is installed in the exact alignment as the existing main. This requires that a temporary above-ground water distribution and fire protection system be installed before the existing main is removed. CDM Smith will consider this option for Hoboken as needed based on the field investigation for this project, on a location-by-location basis.

The Hoboken Water System Renewal Program includes a total of 67 water main replacement locations; this initial phase of the City's program includes 11 of 67 water main replacement locations. Following this initial phase, the City will implement subsequent phases of water main replacement locations annually. The number of replacements will be limited by City funding amounts and will be planned such that work locations are distributed throughout the City. In deciding which streets to replace the water mains, the City will also consider projects by other utilities including sewer, gas, and electrical along with its own complete streets and annual paving projects.

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Section 6

Evaluation of Project Alternatives

6.1 No Action

As was discussed in the *City's NJEIT Level 2 Environmental Planning Document for the Washington Street Water Main*, under the no action alternative, the City's aging water distribution system would eventually deteriorate with time as the aged infrastructure degrades. Any future and emergency water main break repairs would impact the future street repaving and improvement plan significantly with additional repair costs negatively impacting the City's budget. The no action alternative would result in continued water system breaks, roadway damage, potential flooding and further infrastructure damage within flooded areas of the City. All of these factors are similar to the remainder of the City's water distribution system that is the subject of this planning report. For these many reasons, no action is not the selected alternative for this program.

6.2 Continuation of Cleaning and Repairs

The majority of the City's drinking water distribution system ranges in age from 100 years and older to sections installed in 2016, and the pipe sizes range from 4-inch to 30-inch. SUEZ contracted CDM Smith to conduct an evaluation of the Hoboken system in 2016. The evaluation developed a risk-based prioritization of system improvement projects, considering historical main breaks, age, hydraulic criticality, and fire flows, among other factors.

For many decades, the City has authorized the cleaning and repairs of the aging water distribution. However, it is apparent that due to the age of the infrastructure that it is at the end of its useful life at prioritized locations, the continuation of repairs is no longer economically feasible. For these reasons, continuing to perform repairs at the prioritized locations is not the selected alternative for this program.

In addition, pipe lining of small water service mains (i.e., up to 8-inches), is unsuitable for small pipelines. The existing multiple service lines that connect to the water service mains also are a factor which contributes to pipe-lining being unsuitable.

6.3 Replacement of Prioritized Water Main System Segments

This alternative consists of upgrading the water mains that have been identified by CDM Smith for SUEZ, as well as those additional locations identified by the City with support from Louis Berger, by replacement of the aged pipelines and appurtenances that have reached the end of their useful life with new infrastructure. The intent of this program is to upgrade the existing water mains in these prioritized segments to meet current regulatory standards. Existing 6-inch diameter water mains will be increased to 8-inch diameter to meet current standards, and existing service lines and valve boxes from the distribution main to the curb stop will be upgraded and replaced. This is the selected alternative.

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Section 7

Public Participation

In accordance with the Level 1 environmental review requirements, specifically N.J.A.C. 7:22-10.4(d)1, when the New Jersey Department of Environmental Protection (NJDEP) has prepared and issued a Level 1 decision statement, the City of Hoboken will publish a notice in a newspaper of general circulation in the planning area within two weeks of the date of the Department's decision statement. The notice will describe the proposed action, indicate the decision by the Department to approve the project, and advise the public that the project sponsor shall, upon written request, make available for public review both the planning documents and the Department's decision statement.

This Project Planning Report supports Level 1 environmental review qualifying criteria as follows:

1. The project is not expected to have a permanent adverse or a significant temporary adverse effect on the human environment;
2. The project is not expected to have a permanent adverse or a significant temporary adverse direct or indirect impact on cultural resources, endangered or threatened species or designated habitats, wetlands, vernal habitats, floodplains, important farmlands or other environmentally critical areas;
3. The user cost for the project does not significantly exceed 1.75 percent of the median annual household income; and
4. The project is not expected to result in significant adverse public comment.

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Section 8

Selected Plan Description

Table 8-1 summarizes the selected plan items and a breakdown of the estimated planning level capital costs for the recommended Hoboken Water System Renewal Program and are based on recent public bids for similar work in Hoboken and the surrounding area. The budget cost estimates include materials cost, equipment cost, labor cost, general conditions, Contractor's overhead and profit, construction contingency, escalation, and other incidental costs to the construction of water main and associated appurtenances such as hydrants, isolation valves, and water service lines. The cost estimate does not include permitting fees, finance/funding fees, hazardous material abatement, design contingency, engineering and implementation or any land acquisition costs. Table 8-1 is a planning level capital cost estimate summary for the City's water main program.

Figure 12 shows the Hoboken Water System Renewal Program locations and associated water main sizes throughout the City.

Table 8-1
Planning-Level Capital Cost Estimate Summary

2018 projects:

CDM Smith Priority No.	CDM Smith Ref. No. (order of priority)	Location	Pipe Material	Pipe Diameter (in)	Length of pipe (approx. ft)	Water Main Replacement Costs (approx. \$)	# Service Lines	Service Lines Replacement Costs (approx. \$)	Resurfacing Curb-to-Curb Cost (approx. \$) [Not part of DW funding]	Total Estimated project cost (approx. \$)
2	10	Jefferson St. between 8th St. and 9th St.	Cast Iron - Unlined	6	450	\$180,000	6	\$21,000	\$65,000	\$266,000
2	16	Bloomfield St. between 2nd St. and 4th St.	Unknown	6	1,000	\$400,000	88	\$308,000	\$130,000	\$838,000
2	33	Garden St. between 3rd St. and 5th St.	Cast Iron - Unlined	6	850	\$340,000	38	\$133,000	\$130,000	\$603,000
2	39	Monroe St. between 3rd St. and 4th St.	Unknown	8	950	\$380,000	58	\$203,000	\$65,000	\$648,000
2	11A	Monroe St. between 8th St. and 11th St.	Unknown	8	1,400	\$560,000	4	\$14,000	\$195,000	\$769,000
New Project	43	Jefferson St. between 10th St. and 11th St.	Unknown	6	450	\$180,000	9	\$31,500	\$65,000	\$276,500
1	2	Garden St. between 12th St. and 14th St.	Cast Iron - Unlined	6	810	\$324,000	69	\$241,500	\$130,000	\$695,500
1	4	Garden St. between Observer Hwy and 2nd St.	Cast Iron - Unlined	6/8	1,125	\$450,000	74	\$259,000	\$162,500	\$871,500
2	26A	Madison Ave. between 9th St. and 11th St.	Cast Iron - Unlined	16	900	\$495,000	15	\$52,500	\$130,000	\$677,500
2	26B	11th St. west of Madison Ave. to municipal border	Cast Iron - Unlined	6	300	\$120,000	0	\$0	\$50,000	\$170,000
2	26C	9th St. between Madison Ave. and Monroe St.	Cast Iron - Unlined	8	275	\$110,000	0	\$0	\$50,000	\$160,000
CAPITAL						\$3,539,000	361	\$1,263,500	\$1,172,500	\$5,975,000
CAPITAL DW ONLY; LESS RESURFACING COSTS										\$4,802,500

Table 8-1
Planning-Level Capital Cost Estimate Summary

CDM Smith Priority No.	CDM Smith Ref. No. (order of priority)	Location	Pipe Material	Pipe Diameter (in)	Length of pipe (approx. ft)	Water Main Replacement Costs (approx. \$)	# Service Lines	Service Lines Replacement Costs (approx. \$)	Resurfacing Curb-to-Curb Cost (approx. \$) [Not part of DW funding]	Total Estimated project cost (approx. \$)
Remaining projects:										
1	1	Park Ave. between 6th St. and 7th St.	Cast Iron - Unlined	6	930	\$372,000	40	\$140,000	\$65,000	\$577,000
1	3A	Madison St. between 4th St. and 5th St.	Cast Iron - Unlined	6/8	485	\$194,000	29	\$101,500	\$65,000	\$360,500
Extension	3A	5th St. between Madison St. and Jefferson St.		6	271	\$108,400	1	\$3,500	\$50,000	\$161,900
1	3B	Madison Ave. between 5th St. and 6th St.	Cast Iron - Unlined	6/8	365	\$146,000	31	\$108,500	\$65,000	\$319,500
1	5	River St. between 1st St. and 4th St.	Cast Iron - Unlined	12	1,400	\$665,000	22	\$77,000	\$18,000	\$760,000
Extension	5	River St. between 1st St. and Newark St.		12	224	\$106,400	6	\$21,000	\$65,000	\$192,400
1	6	Clinton St. between 6th St. and 7th St.	Cast Iron - Unlined	8	450	\$180,000	29	\$101,500	\$65,000	\$346,500
Extension	6	7th St. between Willow Ave. and Clinton St.		8	263	\$105,200	0	\$0	\$50,000	\$155,200
1	7	Jefferson St. between Newark Ave. and 1st St.	Cast Iron - Unlined	6	700	\$280,000	45	\$157,500	\$65,000	\$502,500
1	8A	Grand St. between 6th St. and 7th St.	Cast Iron - Unlined	6/8	950	\$380,000	25	\$87,500	\$65,000	\$532,500
1	8B	7th St. between Adams St. and Grand St.	Cast Iron - Unlined	16	300	\$165,000	0	\$0	\$50,000	\$215,000
2	9	Park Ave. between 8th St. and 9th St.	Cast Iron - Unlined	6	500	\$200,000	42	\$147,000	\$65,000	\$412,000
2	11B	8th St. between Monroe St. and Jackson St.	Cast Iron - Unlined	6	250	\$100,000	0	\$0	\$50,000	\$150,000
2	12	16th St. between Willow Ave. and Jefferson St.	Cast Iron - Unlined	8	1,200	\$480,000	5	\$17,500	\$200,000	\$697,500
2	13	Park Ave. between Observer Hwy and 1st St.	Unknown	8	700	\$280,000	12	\$42,000	\$97,500	\$419,500
Extension	13	Newark St. between Garden St. and Park Ave.		12	263	\$124,925	5	\$17,500	\$50,000	\$192,425
2	14	Observer Hwy between Washington St. and Hudson St.	Unknown	8	400	\$160,000	0	\$0	\$75,000	\$235,000
2	15	Observer Hwy between Jefferson St. and Jackson St.	Unknown	6	800	\$320,000	20	\$70,000	\$225,000	\$615,000
Extension	15	Jackson between Observer Hwy and Paterson Plank Rd.		8	180	\$72,000	0	\$0	\$32,500	\$104,500
2	17	Willow Ave. between 8th St. and 9th St.	Unknown	12	500	\$237,500	41	\$143,500	\$65,000	\$446,000
2	18A	Adams St. between 8th St. and 9th St.	Unknown	8	500	\$200,000	9	\$31,500	\$65,000	\$296,500
2	18B	8th St. between Adams St. and Jefferson St.	Cast Iron - Unlined	6	250	\$100,000	0	\$0	\$50,000	\$150,000
2	19A	Jefferson St. between 14th St. and 15th St.	Unknown	8	450	\$180,000	0	\$0	\$65,000	\$245,000
2	19B	14th St. between Jefferson St. and Madison Ave.	Cast Iron - Unlined	8	250	\$100,000	0	\$0	\$50,000	\$150,000
2	20A	9th St. between Hudson St. and Castle Point Ter.	Unknown	6	300	\$120,000	20	\$70,000	\$50,000	\$240,000
2	20B	Castle Point Ter. between 9th St. and 8th St.	Unknown	6	500	\$200,000	0	\$0	\$65,000	\$265,000

Table 8-1
Planning-Level Capital Cost Estimate Summary

CDM Smith Priority No.	CDM Smith Ref. No. (order of priority)	Location	Pipe Material	Pipe Diameter (in)	Length of pipe (approx. ft)	Water Main Replacement Costs (approx. \$)	# Service Lines	Service Lines Replacement Costs (approx. \$)	Resurfacing Curb-to-Curb Cost (approx. \$) [Not part of DW funding]	Total Estimated project cost (approx. \$)
2	21	5th St. between Washington St. and Garden St.	Unknown	6	500	\$200,000	10	\$35,000	\$50,000	\$285,000
2	22A	Hudson St. between 6th St. and 7th St.	Cast Iron - Unlined	6	500	\$200,000	34	\$119,000	\$65,000	\$384,000
Extension	22A	Hudson St. between 5th St. and 6th St.		6	250	\$100,000	30	\$105,000	\$65,000	\$270,000
2	22B	6th St. between Washington St. and Hudson St.	Unknown	6	300	\$120,000	1	\$3,500	\$50,000	\$173,500
Extension	22B	6th St. between Washington St. and Bloomfield St.		12	225	\$106,875	2	\$7,000	\$50,000	\$163,875
2	22C	Court St. between 5th St. and 6th St.	Cast Iron - Cement Lined	4	500	\$200,000	5	\$17,500	\$65,000	\$282,500
2	23A	Grand St. between 3rd St. and 5th St.	Cast Iron - Unlined	8	850	\$340,000	48	\$168,000	\$130,000	\$638,000
2	23B	5th St. between Grand St. and Clinton St.	Cast Iron - Unlined	12	300	\$142,500	0	\$0	\$50,000	\$192,500
Extension	24	Bloomfield St. between 13th St. and 14th St.		16	320	\$176,000	9	\$31,500	\$65,000	\$272,500
2	24	Bloomfield St. between 11th St. and 13th St.	Cast Iron - Unlined	6	950	\$380,000	87	\$304,500	\$130,000	\$814,500
2	25	Grand St. north of 16th St. to municipal border	Cast Iron - Unlined	8	450	\$180,000	0	\$0	\$65,000	\$245,000
2	27A	Jefferson St. between 2nd St. and 3rd St.	Unknown	6	500	\$200,000	26	\$91,000	\$65,000	\$356,000
2	27B	3rd St. between Madison Ave. and Jefferson St.	Cast Iron - Unlined	12	300	\$142,500	2	\$7,000	\$50,000	\$199,500
Extension	28	Madison St. between 12th St. and 13th St.		16	200	\$110,000	1	\$3,500	\$65,000	\$178,500
2	28	13th St. between Madison Ave. and Jefferson St.	Unknown	6	300	\$120,000	0	\$0	\$50,000	\$170,000
2	29	Clinton St. between 14th St. and 16th St.	Cast Iron - Cement Lined	8	900	\$360,000	9	\$31,500	\$130,000	\$521,500
Extension	30	13th St. between Clinton St. and Grand St.		8	260	\$104,000	0	\$0	\$50,000	\$154,000
Extension	30	Grand St. between 14th St. and 15th St.		8	405	\$162,000	8	\$28,000	\$65,000	\$255,000
2	30	Grand St. between 12th St. and 14th St.	Unknown	8	850	\$340,000	15	\$52,500	\$130,000	\$522,500
2	31	11th St. between Adams St. and Grand St.	Cast Iron - Unlined	6	350	\$140,000	2	\$7,000	\$50,000	\$197,000
2	32	10th St. between Bloomfield St. and Washington St.	Cast Iron - Unlined	6	250	\$100,000	0	\$0	\$50,000	\$150,000
2	34	Willow Ave. between 1st St. and 2nd St.	Cast Iron - Cement Lined	12	500	\$237,500	35	\$122,500	\$65,000	\$425,000
2	35	Observer Hwy between Garden St. and Bloomfield St.	Cast Iron - Unlined	16	250	\$137,500	0	\$0	\$75,000	\$212,500
2	36	Sinatra Dr. between Newark St. and 1st St.	Cast Iron - Unlined	6/8	200	\$95,000	2	\$7,000	\$65,000	\$167,000
2	37	Harrison St. between Observer Hwy and 1st St.	Unknown	6	300	\$120,000	4	\$14,000	\$65,000	\$199,000
2	38	4th St. between Harrison St. and Jackson St.	Unknown	6	300	\$120,000	1	\$3,500	\$50,000	\$173,500
2	40	Sinatra Dr. between Marine View Plaza and Sinatra Dr. N.	Unknown	12	3,600	\$1,710,000	0	\$0	\$390,000	\$2,100,000
Extension	41	15th St. between Park Ave. and Willow Ave.		16	250	\$137,500	0	\$0	\$50,000	\$187,500
2	41	Park Ave. north of 14th St. to municipal border	Unknown	12	1,550	\$736,250	3	\$10,500	\$130,000	\$876,750
New Project	42	Adams St. between 3rd St. and 4th St.		8	485	\$194,000	20	\$70,000	\$65,000	\$329,000
TOTAL					30,276	\$12,988,050	736	\$2,576,000	\$4,273,000	\$19,837,050
CAPITAL						\$12,988,050	736	\$2,576,000	\$4,273,000	\$19,837,050
CAPITAL DW ONLY; LESS RESURFACING COSTS										\$15,564,050
TOTAL, WATER MAINS										\$20,366,550



Source: Suez Water, CDM Smith, Louis Berger, City of Hoboken, Esri

City of Hoboken Department of Community Development
August 23, 2017
DRAFT



HOBOKEN WATER SYSTEM RENEWAL

Section 9

Cost Estimate and Preliminary Design of Selected Plan

9.1 Cost Estimate

As presented in Section 8, the total water main program capital cost is budgeted at \$20,366,550.

For the initial phase of this program that is focused on 11 of the 67 locations. The City seeks funding for the initial phase of the program. The initial phase project costs are summarized as follows:

■ Capital cost budget	=	\$4,802,500
■ Contingencies (5%)	=	\$ 240,125
■ Construction Administrative (10%)	=	\$ 480,250
■ Engineering, Planning and Design	=	\$ 343,603
• INITIAL PHASE TOTAL	=	\$5,866,478

Further details are provided in Table 9-1.

9.2 Preliminary Design of Selected Plan

Refer to Section 5 for a description of the preliminary design of the proposed water main system improvements.

Table 9-1
Planning-Level Cost Estimate Summary (Initial Phase 2018)

2018 projects:

CDM Smith Priority No.	CDM Smith Ref. No. (order of priority)	Location	Pipe Material	Pipe Diameter (in)	Length of pipe (approx. ft)	Water Main Replacement Costs (approx. \$)	# Service Lines	Service Lines Replacement Costs (approx. \$)	Resurfacing Curb-to-Curb Cost (approx. \$) [Not part of DW funding]	Total Estimated project cost (approx. \$)
2	10	Jefferson St. between 8th St. and 9th St.	Cast Iron - Unlined	6	450	\$180,000	6	\$21,000	\$65,000	\$266,000
2	16	Bloomfield St. between 2nd St. and 4th St.	Unknown	6	1,000	\$400,000	88	\$308,000	\$130,000	\$838,000
2	33	Garden St. between 3rd St. and 5th St.	Cast Iron - Unlined	6	850	\$340,000	38	\$133,000	\$130,000	\$603,000
2	39	Monroe St. between 3rd St. and 4th St.	Unknown	8	950	\$380,000	58	\$203,000	\$65,000	\$648,000
2	11A	Monroe St. between 8th St. and 11th St.	Unknown	8	1,400	\$560,000	4	\$14,000	\$195,000	\$769,000
New Project	43	Jefferson St. between 10th St. and 11th St.	Unknown	6	450	\$180,000	9	\$31,500	\$65,000	\$276,500
1	2	Garden St. between 12th St. and 14th St.	Cast Iron - Unlined	6	810	\$324,000	69	\$241,500	\$130,000	\$695,500
1	4	Garden St. between Observer Hwy and 2nd St.	Cast Iron - Unlined	6/8	1,125	\$450,000	74	\$259,000	\$162,500	\$871,500
2	26A	Madison Ave. between 9th St. and 11th St.	Cast Iron - Unlined	16	900	\$495,000	15	\$52,500	\$130,000	\$677,500
2	26B	11th St. west of Madison Ave. to municipal border	Cast Iron - Unlined	6	300	\$120,000	0	\$0	\$50,000	\$170,000
2	26C	9th St. between Madison Ave. and Monroe St.	Cast Iron - Unlined	8	275	\$110,000	0	\$0	\$50,000	\$160,000
CAPITAL						\$3,539,000	361	\$1,263,500	\$1,172,500	\$5,975,000
CAPITAL DW ONLY; LESS RESURFACING COSTS										\$4,802,500
DESIGN COST, WATER MAINS										\$343,603
ESTIMATED CONSTRUCTION ADMIN COST (10%), WATER MAINS										\$480,250
CONTINGENCY (5%), WATER MAINS										\$240,125
TOTAL, WATER MAINS										\$5,866,478

Section 10

Financial & Institutional Arrangements

The City of Hoboken proposes to finance this project in the typical fashion for a municipality borrowing through the New Jersey Environmental Infrastructure Trust.

The City of Hoboken has issued a \$5.2 M bond and \$5 M bond (see Appendix A), and plan to issue annual bonds to finance this program. The \$7 million water main replacement currently underway on Washington Street will upgrade an additional 3% of the system. The City of Hoboken, with contributions from Suez, CDM Smith, and Louis Berger, has developed a Capital Improvement Plan (CIP) for the City's water distribution system which provides a financially sustainable strategy to make continued investments in water infrastructure over the next 6 years. The CIP includes 67 discrete locations for water main replacement to upgrade 20% of the system, 11 of which are under design to be upgraded in 2018. The City will invest \$30 million through the CIP which includes \$5 million per year, in addition to the \$7 million water main replacement on Washington Street that is currently underway, and \$5.2 million already authorized for additional improvements in priority areas in 2018. Based on this, the Hoboken Water System Renewal Program will not directly result in any user cost increase.

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Section 11

Sewer Use Ordinance/User Charge System

The City of Hoboken does not have a water user charge system resolution. SUEZ charges rates based on the posted rates from Jersey City Municipal Utilities Authority.

11.1 Present and Proposed User Cost

The present user cost is \$4.377 per 100 cubic feet of water consumed. As discussed in Section 10, the proposed user cost as a result of this program is expected to be the same.

11.2 Median Household Income

Based on the project planning data, the Median Household Income for the City of Hoboken is \$114,381.

[Source: From H2LOans project information; U.S. Census Bureau Quick Facts, <https://www.census.gov/quickfacts/fact/table/hobokencitynewjersey,NJ/INC110215#viewtop>]

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Section 12

Project Schedule and References

12.1 Project Schedule

The anticipated schedule for the first phase of this program is as follows:

- | | | |
|----|----------------------------|----------------|
| A. | Advertisement | March 2018 |
| B. | Award | June 2018 |
| C. | Notice to Proceed | June/July 2018 |
| D. | Completion of Construction | November 2019 |

The subsequent phases of the Hoboken Water System Renewal Program will be implemented on an annual basis depending on City funding levels.

12.2 References

References utilized to prepare this planning report include the following:

City of Hoboken. September 2017. *Capital Improvement Program Budget*. Hoboken, New Jersey

City of Hoboken. February 2017. *NJEIT Level 2 Environmental Planning Document, Washington Street Water Main and Green Infrastructure Design*. Hoboken, New Jersey

New Jersey Department of Environmental Protection. June 2017. *Rebuild by Design Hudson River, Final Environmental Impact Statement*. Hoboken, New Jersey

New Jersey Department of Environmental Protection – Bureau of GIS: GIS data and NJ-GeoWeb.

CDM Smith. October 7, 2016. *Suez Water Hoboken – Develop an Asset Refurbishment Program with Risk-Based Prioritization Results memorandum*

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