

# **APPENDICES**

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# **APPENDIX A**

## **PROJECT IMPLEMENTATION AGENDA**

## Planning and Implementation Agenda: Hoboken Green Infrastructure Strategic Plan

DRAFT - 4/3/14

This table prioritizes the recommendations put forth in the Green Infrastructure Strategic Plan. Successful implementation of plans requires strong local support and action, as well as assistance and funding from Hudson County, the State of New Jersey, and other agencies or nonprofit organizations. These actions are illustrated in the Planning and Implementation Agenda.

Priority	Category	Program/Improvement/Activity	Detail	Time Frame	Possible Funding Sources	Stakeholders & State/County Assistance
Priority 1: Develop Regulatory Mechanisms	Zoning Ordinance and Incentives	Incorporate Best Management Practices (BMPs) into ordinances, redevelopment/rehabilitation plans considering land use context of recommended sewersheds	Amend Municipal Code, Chapter 196: Zoning, Appendix A & B and future redevelopment plans	Short	HUD Community Development Block Grant Program - Disaster Recovery (CDBG-DR)	Hudson County, NHSA, Property owners and Private Developers, HUD, Department of Community Affairs (DCA)
		Work with Hudson County and North Hudson Sewerage Authority to develop compatible standards	Authority Resolutions 12-117, 12-118	Short	NHSA, Hoboken Operating Budget	NHSA, Hudson County, Property owners and Private Developers
		Implement a Stormwater Trust fund for Redevelopment Areas, and work with the State to get authorization for a stormwater utility or PILOT program	Northwest Redevelopment Area	Short	Sustainable Jersey Small Grants Program	Hudson County, Property owners and Private Developers, NJ Economic Development Authority (NJ EDA), NJ Redevelopment Authority (NJRA), NJEIT, EPA, City of Hoboken
			DPW Redevelopment Area			
			Western Edge Redevelopment Area			
			NJ TRANSIT Boundary Redevelopment Area			
			North End Rehabilitation Area			
		Southwest Redevelopment Area				
Study potential financial incentive programs (i.e. Stormwater Management Tax Credit, Rebates and Installation Financing)	Review costs, benefits and regulatory requirements for financial incentives	Short	Academic Institutions (e.g., Stevens Institute, Rutgers University), non-profit organizations (e.g. NJ Future)	Hudson County, Property owners and Private Developers		
Implement Performance/Incentive Zoning for new projects	Establish performance standards for impervious surface area reduction	Short	Sustainable Jersey Small Grants Program, Hoboken Operating Budget	Hudson County, Property owners and Private Developers		
Provide zoning incentives especially in areas with highest contribution to flooding	Modify FAR, Height, Density requirements for impervious surface area reduction	Short	Sustainable Jersey Small Grants Program, Hoboken Operating Budget	Hudson County, Property owners and Private Developers		

Priority 2: Implement Gray and Green Infrastructure Solutions	Gray Infrastructure Sewer System Improvements	NHTSA Project: Install Wet Weather Pump Stations (with collective capacity to pump 281 mgd during wet weather events)	H3/H4/HIS, Sinatra Dr. near 4th St.	Short	NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, Clean Water State Revolving Fund (CWSRF) Green Project Reserve (GPR)	City of Hoboken, Hudson County, NJ DEP, EPA, NJEIT			
			H5, Sinatra Dr. N near 11th St. / Maxwell Place	Medium					
			H6/7, Hudson St. near 15th St.	Long					
		NHTSA Project: Study the interconnections among sewersheds and analyze potential for disconnecting or intercepting flow between those interconnections	Potential interception of flow from H3 to H1	Short	NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, Clean Water State Revolving Fund (CWSRF) Green Project Reserve (GPR)	City of Hoboken, Hudson County, NJ DEP, EPA, NJEIT			
			Potential interception of flow from H5 to H4 and H7	Short					
	Gray denotes projects led by NHTSA, which require NHTSA Review								
	Property Acquisition for Green Infrastructure Implementation	Acquire and develop open space that can be utilized for parks and recreation as well as stormwater management through green infrastructure	Block 12 Park (Block 12 Lots 1-8 and 11-18)	Short	State of New Jersey Hazard Mitigation Grant Program, Hudson County Open Space Trust Fund, NJ Green Acres Program	NHTSA, Hudson County, NJ DEP, NJ OEM, NJEIT			
			Pino Site Park (Block 74 Lots 3-20)	Medium					
			BASF Park (Block 103 Lots 7-26; Blocks 107 and 107 All Lots; Block 113 Lots 1-6 and 7-32)	Medium					
	Streets (e.g., daylighting areas, sidewalks, bike lanes and parking lanes)		Washington Street*	Short	NJ Environmental Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, CWSRF GPR, Shade Tree Commission Budget (for stormwater tree pits), FHWA Transportation Enhancement Program, HUD CDBG, North Jersey Transportation Planning Authority (NJTPA) - Transportation Improvement Program (TIP), Congestion Management and Air Quality (CMAQ)	Hudson County, City of Hoboken, NJ DOT, NJ DEP, Hoboken Shade Tree Commission, Adjacent Property Owners, Hoboken Fire Department, Hoboken Quality of Life Coalition, NJEIT, Hoboken Green Team, Fund for a Better Waterfront, Hoboken Quality of Life Coalition			
			Newark Street**	Short					
			Adams Street	Medium					
			Clinton Street	Medium					
			Jackson Street	Long					
			Jefferson Street	Long					
9th Street*			Short						
Madison Street			Short						
Parks				BASF (potential future park)			Long	Hudson County Open Space Trust Fund, DEP Green Acres Program, HUD CDBG	Hudson County, NJ DEP Green Acres, NJ DCA, HUD, Hoboken Shade Tree Commission, Hoboken Quality of Life Coalition, Hoboken Green Team, Fund for a Better Waterfront, Hoboken Quality of Life Coalition
				Block 12 (future park)			Medium		
				Pino Site (potential future park)			Long		
				Existing Parks			Medium		

Green Infrastructure Implementation Schedule for Major Public Facilities	Housing Authority property and facilities <sup>9</sup>	Andrew Jackson Gardens North and South / Harrison Gardens	Medium	NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, CWSRF GPR, HUD CDBG	Hudson County, HUD, NJ DEP, Hoboken Housing Authority, NJEIT	
		Christopher Columbus Gardens	Long			
		Fox Hill Gardens	Long			
		Church Towers	Short			
	Board of Education property and facilities <sup>9</sup>	Hoboken High School	Medium	NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, CWSRF GPR	Hudson County, NJ DEP, Board of Education, Parent Teachers Associations, NJEIT, NJDOE	
		Joseph F. Brandt Primary School	Short			
		AJ Demarest Middle School	Short			
		Thomas G. Connors Elementary School	Short			
		Wallace Elementary School	Medium			
	Other City-owned land/facilities	City Hall	Short	NJ Hazard Mitigation Grant Program, NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, CWSRF GPR	Hudson County, Rutgers School of Biological and Environmental Sciences, NJ OEM, NJ DEP, NJEIT	
		Multiservices Community Center	Short	NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure, CWSRF GPR, HUD CDBG	Hudson County, NJ DEP, NJ DCA, HUD, NJEIT	
	NJ TRANSIT Projects	Hoboken Terminal Area	Medium	NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure	Hudson County, NJ DEP, City of Hoboken, NJEIT, NJT, NJSA, NJ DEP Infrastructure Trust, Sandy Resiliency Funding for Infrastructure	
		NJ TRANSIT Redevelopment Area	Medium			
		9th Street HBLR station Area	Short			
2nd Street HBLR Station Area		Short				
Priority 3: Strengthen Communication and Local Partnerships	Education and Awareness	Create a guidance document for City/County public improvements, operations & maintenance	Create municipal handbook for City departments / agencies	Short	HUD CDBG-Disaster Relief	NHSA, Hudson County, NJ DCA, HUD
		Create a stormwater management guidebook informing Homeowners and Business Owners about Best Management Practice implementation	Create a residential handbook for homeowners, renters, and businesses	Short	Sustainable Jersey Small Grants Program, U.S. Forest Service National Urban and Community Forestry Challenge Grant Program, Stevens Institute	NHSA, Hudson County, Hoboken Green Team, HOPES, Fund for a Better Waterfront, Hoboken Quality of Life Coalition
		Develop a public awareness community education campaign about flood mitigation, water conservation and green infrastructure benefits	Expands upon 5% Initiative Project proposed by the City through the NJ HMGP	Short	State of New Jersey Hazard Mitigation Grant Program, EPA CARE Program, Stevens Institute	NHSA, Hudson County, NJ OEM, Hoboken Green Team, HOPES, Fund for a Better Waterfront, Hoboken Quality of Life Coalition
	Partnerships	Establish partnership between City of Hoboken, NHSA, NJ DEP, NJ Transit and Stevens Institute of Technology in order to further the priorities from the Green Infrastructure Strategic Plan	Schedule regular working meetings, provide status updates and benchmark progress	Short	EPA CARE Program	NHSA, NJ DEP, Stevens Institute of Technology, NJ TRANSIT

**Time Frame Legend** SHORT: 3-6 months, MEDIUM: 6-18 months, LONG: 18-36 months

Gray denotes projects led by NHSA, which require NHSA Review

<sup>9</sup>Board of Education and Housing Authority priority sites are to be coordinated with the Housing Authority or school district

## **APPENDIX B**

**DATA GATHERED THROUGH TOGETHER NORTH JERSEY'S  
FAIR HOUSING AND EQUITY ASSESSMENT**

Hoboken Green Infrastructure Plan: Comparative Profile of Traditionally Disadvantaged Populations

Variable	Hoboken City	Hudson County	Together North Jersey Region
Population <sup>1</sup>	50,005	634,266	6,579,907
Households <sup>2</sup>	23,145	237,726	2,365,263
Households in Poverty <sup>2</sup>	2,336	35,467	209,488
<i>Percent Households in Poverty</i>	10.1%	14.9%	8.9%
Racially Concentrated Areas in Poverty (RCAPs) <sup>1,2</sup>	1	30	155
Persons Living in RCAPs	4,614	109,475	564,916
<i>Percent Living in RCAPs</i>	9.2%	17.3%	8.6%
Minority Population <sup>1</sup>	13,398	438,756	2,800,362
<i>Percent Minority</i>	26.8%	69.2%	42.6%
Non-Hispanic Minority Population	5,796	170,903	1,515,462
<i>Percent Non-Hispanic Minority</i>	11.6%	26.9%	23.0%
Hispanic Population	7,602	267,853	1,284,900
<i>Percent Hispanic</i>	15.2%	42.2%	19.5%
Families in Poverty with Children <sup>2</sup>	550	14,217	82,452
<i>Percent Families in Poverty with Children</i>	6.3%	9.8%	5.0%
Female Heads of Household with Childrer <sup>2</sup>	826	20,713	153,224
<i>Percent Female Heads of Household with Childrer</i>	3.6%	8.7%	6.4%
Persons with Limited English Proficiency (5 Years+) <sup>2</sup>	3,783	146,864	837,019
<i>Percent Persons with Limited English Proficiency</i>	8.5%	25.3%	13.7%
Carless Households <sup>2</sup>	8,448	80,464	295,271
<i>Percent Carless Households</i>	36.5%	33.8%	12.5%
Elderly Persons (75 Years+) <sup>1</sup>	1,509	29,972	431,770
<i>Percent Elderly Persons</i>	3.0%	4.7%	6.6%
Persons with Disabilities <sup>3</sup>	3,117	58,753	606,368
<i>Percent Persons with Disabilities</i>	6.3%	9.3%	9.3%
HUD-Subsidized Housing Units <sup>4</sup>	2,324	17,650	84,907
<i>Units/1,000 Population</i>	46	3	13
Public Housing Units	1,357	8,285	31,069
<i>Units/1,000 Population</i>	27	13	5
Multi-Family Housing Units	813	7,507	38,689
<i>Units/1,000 Population</i>	16	12	6
Low-Income Housing Tax Credit Units	154	1,858	15,149
<i>Units/1,000 Population</i>	3	3	2

Sources:

<sup>1</sup> U.S. Census Bureau, 2010 Census; <sup>2</sup> U.S. Census Bureau, 2006-2010 American Community Survey; <sup>3</sup> U.S. Census Bureau 2008-2012 American Community Survey; <sup>4</sup> U.S. Department of Housing and Urban Development, A Picture of Subsidized Households, 2012, Using 2010 Census Geography

Hoboken Green Infrastructure Plan: Comparative Profile of Race Distribution

Variable	Hoboken City	Hudson County	Together North Jersey Region
<b>Total Population</b>	<b>50,005</b>	<b>634,266</b>	<b>6,579,907</b>
<b>Minority</b>	<b>13,398</b>	<b>438,756</b>	<b>2,800,362</b>
<i>Percent Minority</i>	<i>26.8%</i>	<i>69.2%</i>	<i>42.6%</i>
<b>Total Population</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>White</b>	<b>82.2%</b>	<b>54.0%</b>	<b>68.1%</b>
<i>Non-Hispanic</i>	<i>73.2%</i>	<i>30.8%</i>	<i>57.4%</i>
<i>Hispanic</i>	<i>9.0%</i>	<i>23.2%</i>	<i>10.6%</i>
<b>Black</b>	<b>3.5%</b>	<b>13.2%</b>	<b>12.7%</b>
<i>Non-Hispanic</i>	<i>2.6%</i>	<i>11.2%</i>	<i>11.8%</i>
<i>Hispanic</i>	<i>1.0%</i>	<i>2.0%</i>	<i>0.9%</i>
<b>American Indian and Alaska Native</b>	<b>0.1%</b>	<b>0.6%</b>	<b>0.3%</b>
<i>Non-Hispanic</i>	<i>0.1%</i>	<i>0.1%</i>	<i>0.1%</i>
<i>Hispanic</i>	<i>0.1%</i>	<i>0.5%</i>	<i>0.2%</i>
<b>Asian</b>	<b>7.1%</b>	<b>13.4%</b>	<b>9.4%</b>
<i>Non-Hispanic</i>	<i>7.0%</i>	<i>13.2%</i>	<i>9.3%</i>
<i>Hispanic</i>	<i>0.1%</i>	<i>0.2%</i>	<i>0.1%</i>
<b>Native Hawaiian and Other Pacific Islander</b>	<b>0.0%</b>	<b>0.1%</b>	<b>0.0%</b>
<i>Non-Hispanic</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Hispanic</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<b>Some other race</b>	<b>4.3%</b>	<b>14.2%</b>	<b>6.8%</b>
<i>Non-Hispanic</i>	<i>0.2%</i>	<i>0.7%</i>	<i>0.4%</i>
<i>Hispanic</i>	<i>4.1%</i>	<i>13.6%</i>	<i>6.4%</i>
<b>Two or more races</b>	<b>2.6%</b>	<b>4.4%</b>	<b>2.7%</b>
<i>Non-Hispanic</i>	<i>1.7%</i>	<i>1.6%</i>	<i>1.4%</i>
<i>Hispanic</i>	<i>1.0%</i>	<i>2.7%</i>	<i>1.3%</i>
<b>Hispanic (any race)</b>	<b>15.2%</b>	<b>42.2%</b>	<b>19.5%</b>

Source: U.S. Census Bureau, 2010 Census

### Hoboken Green Infrastructure Plan: Comparative Profile of Foreign-Born Population

Variable	Hoboken City	Hudson County	Together North Jersey Region
<b>Total population</b>	<b>47,384</b>	<b>622,123</b>	<b>6,518,190</b>
Native	40,240	369,456	4,988,460
<b>Foreign-Born</b>	<b>7,144</b>	<b>252,667</b>	<b>1,529,730</b>
<i>Percent Foreign-Born</i>	<i>15.1%</i>	<i>40.6%</i>	<i>23.5%</i>
<b>Origin of Foreign-Born Population</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Europe</b>	<b>31.4%</b>	<b>9.3%</b>	<b>17.9%</b>
<i>Northern Europe</i>	<i>7.5%</i>	<i>1.0%</i>	<i>2.1%</i>
<i>Western Europe</i>	<i>8.3%</i>	<i>1.2%</i>	<i>2.1%</i>
<i>Southern Europe</i>	<i>6.6%</i>	<i>3.7%</i>	<i>5.8%</i>
<i>Eastern Europe</i>	<i>9.0%</i>	<i>3.3%</i>	<i>7.8%</i>
<i>Europe, n.e.c.</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<b>Asia</b>	<b>34.8%</b>	<b>25.5%</b>	<b>30.7%</b>
<i>Eastern Asia</i>	<i>13.9%</i>	<i>4.6%</i>	<i>9.2%</i>
<i>South Central Asia</i>	<i>10.8%</i>	<i>11.9%</i>	<i>12.9%</i>
<i>South Eastern Asia</i>	<i>6.0%</i>	<i>7.7%</i>	<i>6.2%</i>
<i>Western Asia</i>	<i>4.1%</i>	<i>1.2%</i>	<i>2.4%</i>
<i>Asia, n.e.c.</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.1%</i>
<b>Africa</b>	<b>2.8%</b>	<b>4.6%</b>	<b>4.2%</b>
<i>Eastern Africa</i>	<i>0.0%</i>	<i>0.4%</i>	<i>0.4%</i>
<i>Middle Africa</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.1%</i>
<i>Northern Africa</i>	<i>1.1%</i>	<i>3.0%</i>	<i>1.5%</i>
<i>Southern Africa</i>	<i>1.0%</i>	<i>0.1%</i>	<i>0.2%</i>
<i>Western Africa</i>	<i>0.4%</i>	<i>0.9%</i>	<i>1.7%</i>
<i>Africa, n.e.c.</i>	<i>0.2%</i>	<i>0.0%</i>	<i>0.2%</i>
<b>Oceania</b>	<b>2.0%</b>	<b>0.2%</b>	<b>0.1%</b>
<i>Australia and New Zealand Subregion</i>	<i>2.0%</i>	<i>0.2%</i>	<i>0.1%</i>
<i>Fiji</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Oceania, n.e.c.</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<b>Americas</b>	<b>29.0%</b>	<b>60.4%</b>	<b>47.0%</b>
<i>Latin America</i>	<i>27.2%</i>	<i>60.0%</i>	<i>46.1%</i>
<i>Caribbean</i>	<i>9.2%</i>	<i>21.5%</i>	<i>15.1%</i>
<i>Central America</i>	<i>4.6%</i>	<i>14.9%</i>	<i>13.0%</i>
<i>South America</i>	<i>13.5%</i>	<i>23.5%</i>	<i>18.0%</i>
<i>Northern America</i>	<i>1.8%</i>	<i>0.4%</i>	<i>0.9%</i>
<i>Canada</i>	<i>1.8%</i>	<i>0.4%</i>	<i>0.9%</i>
<i>Other Northern America</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>

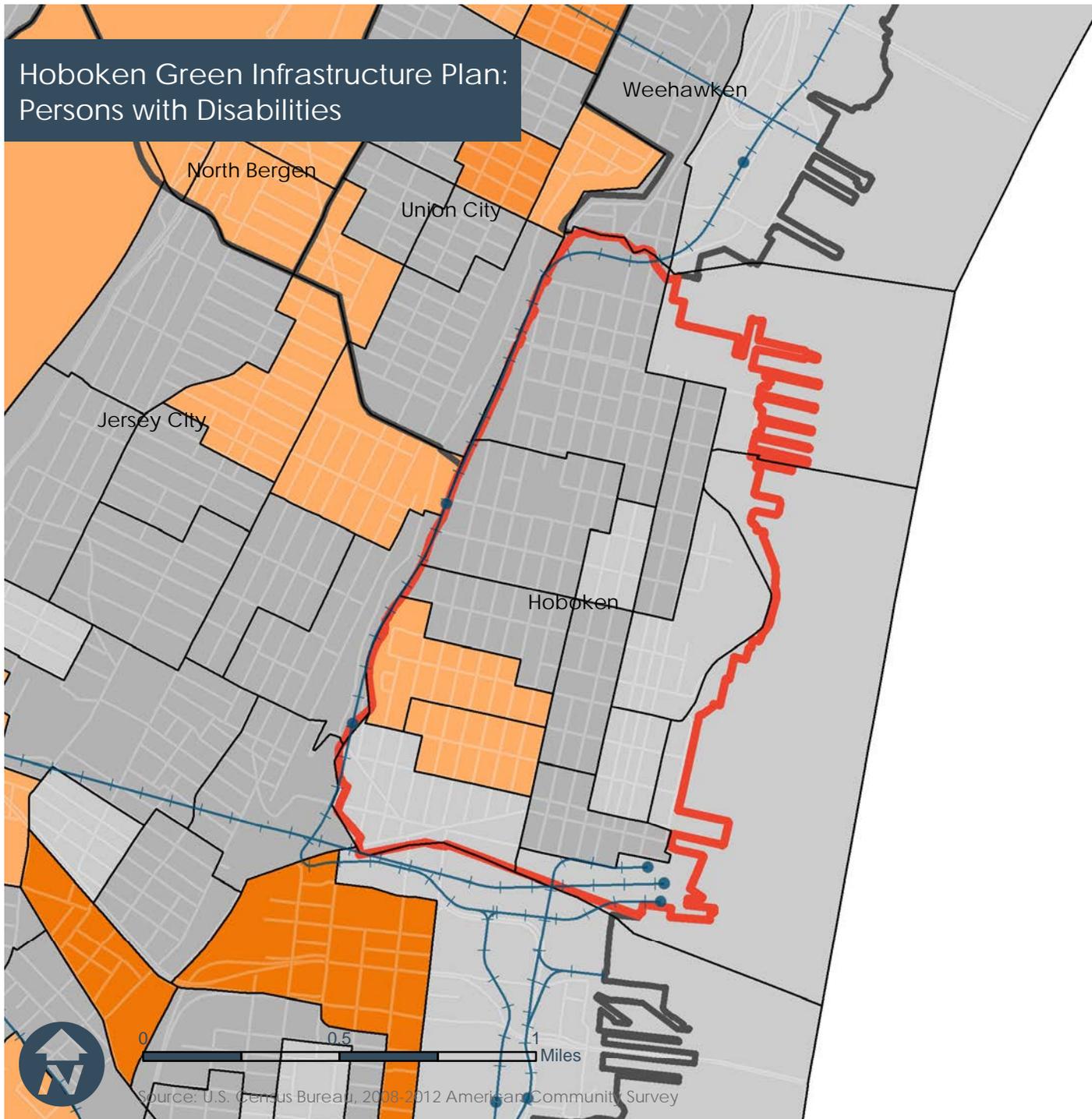
Source: U.S. Census Bureau, 2006-2010 American Community Survey

**Hoboken Green Infrastructure Plan: Comparative Profile of Language Spoken at Home for LEP Population**

<b>Variable</b>	<b>Hoboken City</b>	<b>Hudson County</b>	<b>Together North Jersey Region</b>
<b>Population 5 years and over</b>	<b>44,309</b>	<b>580,675</b>	<b>6,105,461</b>
Speak only English	34,903	244,188	4,121,832
<b>Speak English less than "very well"</b>	<b>3,783</b>	<b>146,864</b>	<b>837,019</b>
<i>Percent Limited English Proficiency (LEP)</i>	<b>8.5%</b>	<b>25.3%</b>	<b>13.7%</b>
<b>Language Spoken at Home for LEP Population</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<i>Spanish or Spanish Creole</i>	<i>61.2%</i>	<i>70.7%</i>	<i>57.2%</i>
<i>Italian</i>	<i>9.1%</i>	<i>1.6%</i>	<i>2.6%</i>
<i>Chinese</i>	<i>7.7%</i>	<i>2.7%</i>	<i>4.8%</i>
<i>Hindi</i>	<i>5.7%</i>	<i>2.8%</i>	<i>1.4%</i>
<i>French (incl. Patois, Cajun)</i>	<i>5.2%</i>	<i>0.4%</i>	<i>0.8%</i>
<i>Serbo-Croatian</i>	<i>4.2%</i>	<i>0.2%</i>	<i>0.4%</i>
<i>Korean</i>	<i>2.0%</i>	<i>1.3%</i>	<i>4.3%</i>
<i>Japanese</i>	<i>1.7%</i>	<i>0.4%</i>	<i>0.6%</i>
<i>Russian</i>	<i>1.4%</i>	<i>0.6%</i>	<i>1.9%</i>
<i>German</i>	<i>0.7%</i>	<i>0.1%</i>	<i>0.5%</i>
<i>Thai</i>	<i>0.6%</i>	<i>0.1%</i>	<i>0.1%</i>
<i>Arabic</i>	<i>0.4%</i>	<i>3.1%</i>	<i>1.9%</i>
<i>Portuguese or Portuguese Creole</i>	<i>0.3%</i>	<i>2.6%</i>	<i>4.7%</i>
<i>French Creole</i>	<i>0.0%</i>	<i>0.7%</i>	<i>1.9%</i>
<i>Yiddish</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.1%</i>
<i>Other West Germanic languages</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Scandinavian languages</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Greek</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.6%</i>
<i>Polish</i>	<i>0.0%</i>	<i>1.5%</i>	<i>2.9%</i>
<i>Other Slavic languages</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.8%</i>
<i>Armenian</i>	<i>0.0%</i>	<i>0.2%</i>	<i>0.2%</i>
<i>Persian</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.2%</i>
<i>Gujarati</i>	<i>0.0%</i>	<i>2.7%</i>	<i>3.0%</i>
<i>Urdu</i>	<i>0.0%</i>	<i>1.2%</i>	<i>0.7%</i>
<i>Other Indic languages</i>	<i>0.0%</i>	<i>0.7%</i>	<i>1.5%</i>
<i>Other Indo-European languages</i>	<i>0.0%</i>	<i>0.3%</i>	<i>0.7%</i>
<i>Mon-Khmer, Cambodian</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Hmong</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Laotian</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Vietnamese</i>	<i>0.0%</i>	<i>1.0%</i>	<i>0.7%</i>
<i>Other Asian languages</i>	<i>0.0%</i>	<i>1.0%</i>	<i>1.7%</i>
<i>Tagalog</i>	<i>0.0%</i>	<i>2.9%</i>	<i>2.1%</i>
<i>Other Pacific Island languages</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.1%</i>
<i>Navajo</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Other Native North American languages</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
<i>Hungarian</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.3%</i>
<i>Hebrew</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.3%</i>
<i>African languages</i>	<i>0.0%</i>	<i>0.4%</i>	<i>0.7%</i>
<i>Other and unspecified languages</i>	<i>0.0%</i>	<i>0.1%</i>	<i>0.1%</i>

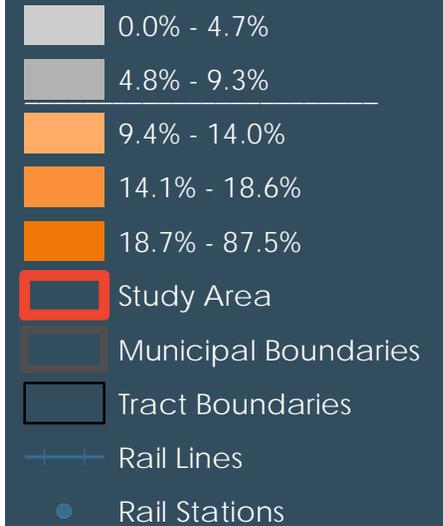
Source: U.S. Census Bureau, 2006-2010 American Community Survey

# Hoboken Green Infrastructure Plan: Persons with Disabilities

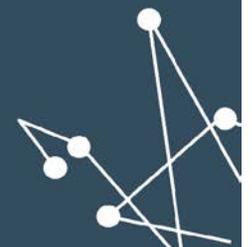


TOGETHER  
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JERSEY.**

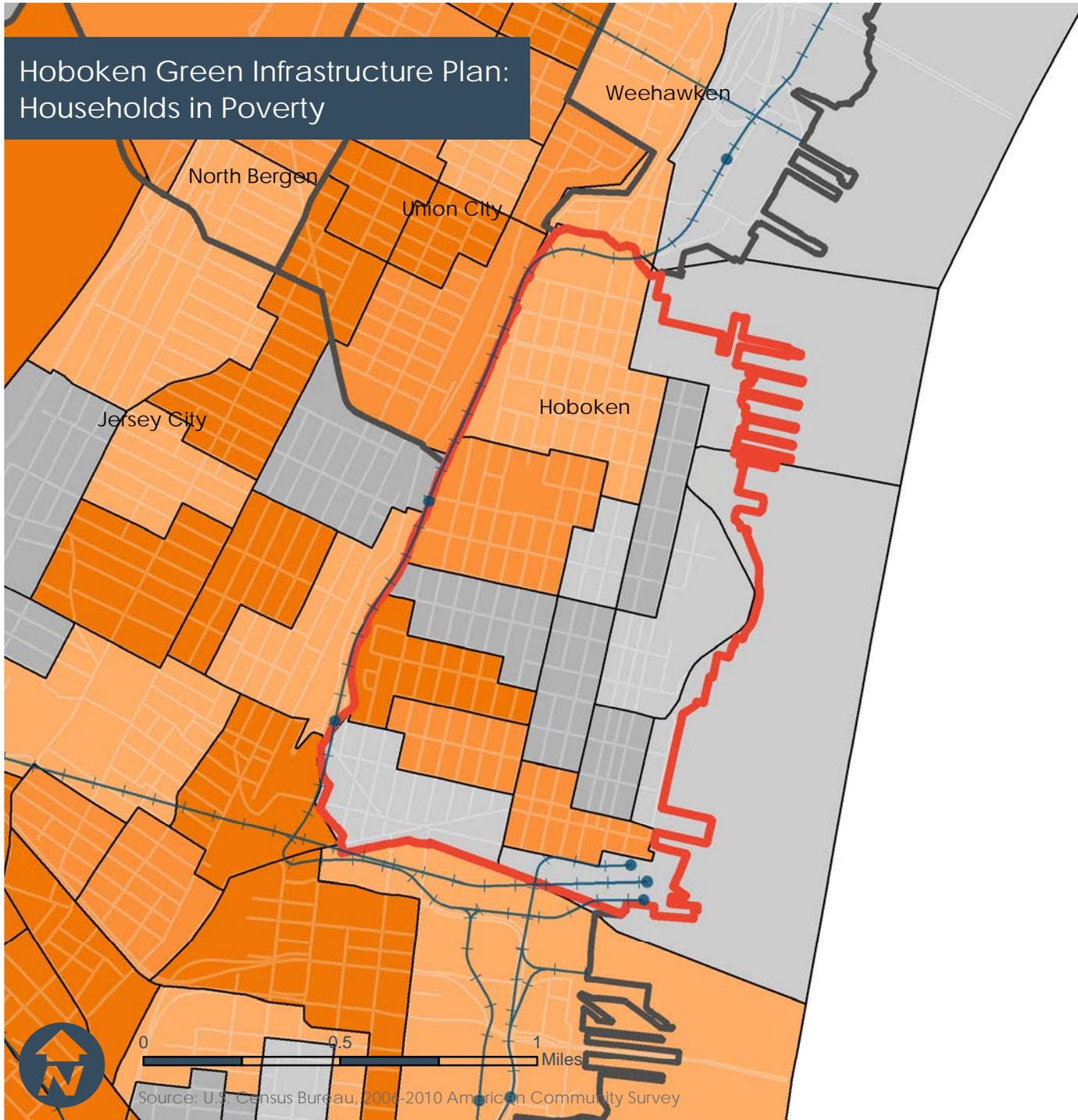
Percent of Population  
by Census Tract (2012)



Regional Threshold: 9.3%

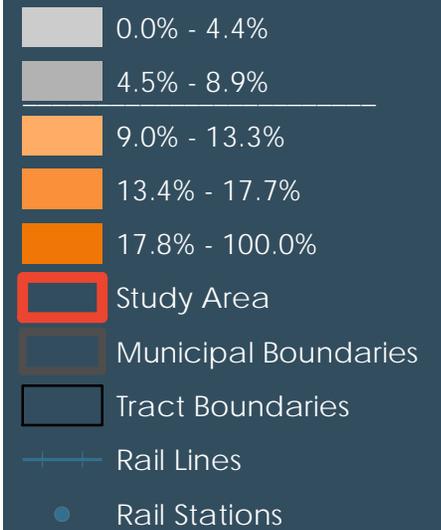


# Hoboken Green Infrastructure Plan: Households in Poverty

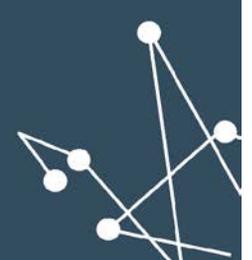


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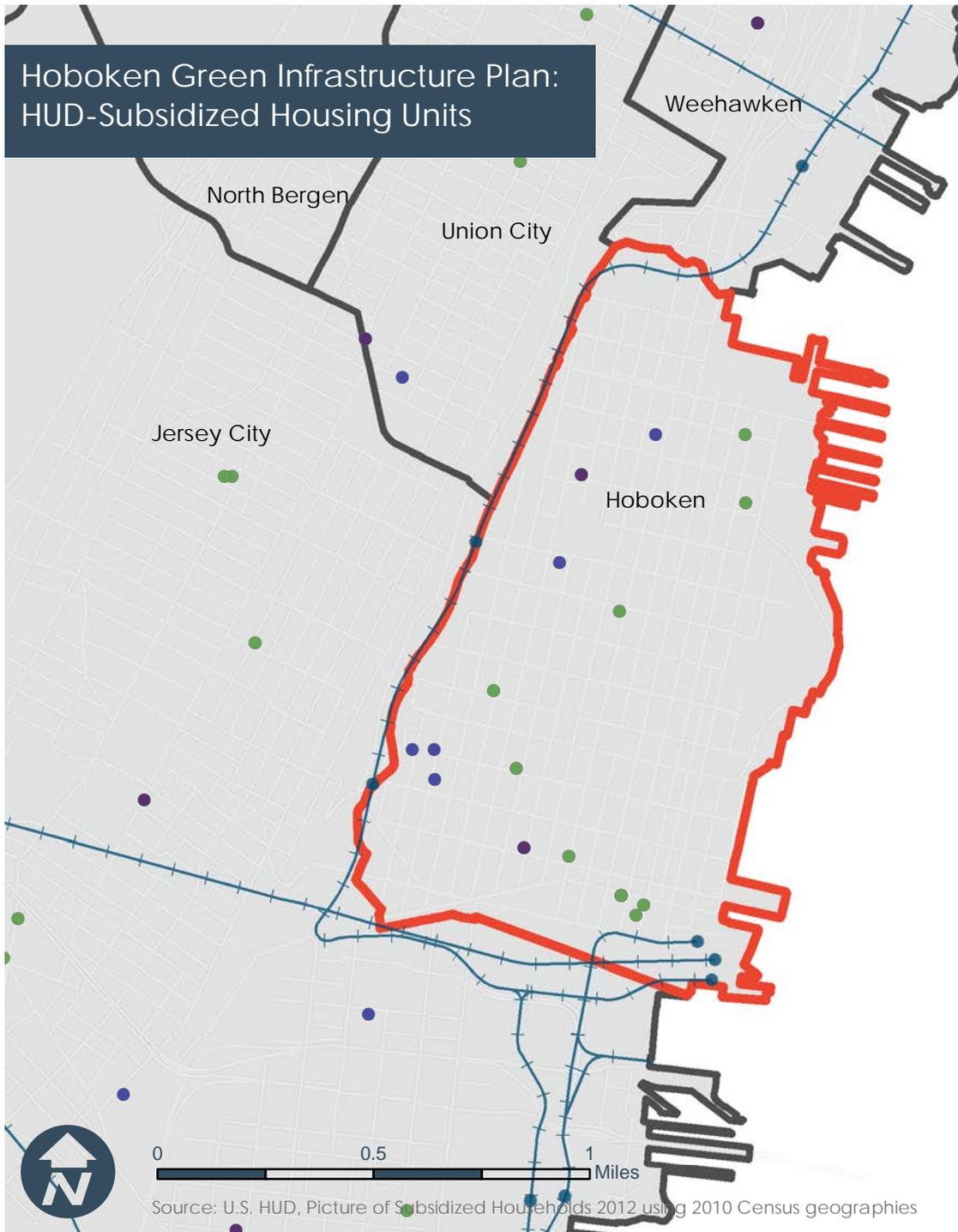
## Percent of Households by Tract (2010)



Regional Threshold: 8.9%



# Hoboken Green Infrastructure Plan: HUD-Subsidized Housing Units

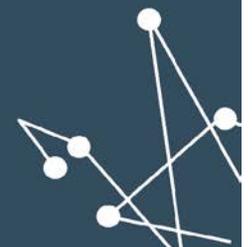


Source: U.S. HUD, Picture of Subsidized Households 2012 using 2010 Census geographies

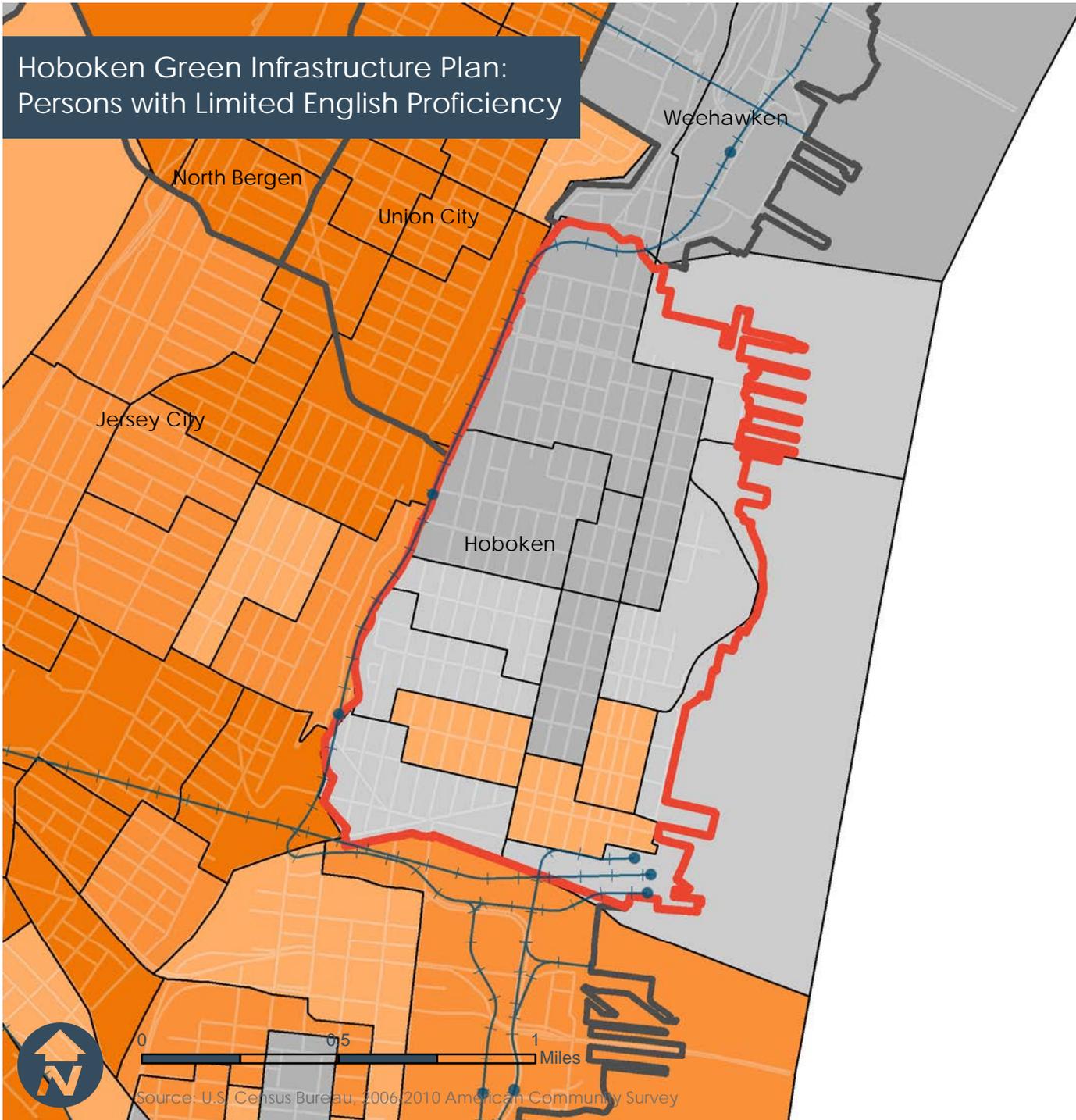
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## HUD-Subsidized Housing Units (2012)

-  Study Area
-  Municipal Boundaries
-  Rail Lines
-  Rail Stations
-  Low-Income Housing Tax Credit Units
-  Multi-Family
-  Public Housing



# Hoboken Green Infrastructure Plan: Persons with Limited English Proficiency



Source: U.S. Census Bureau, 2006-2010 American Community Survey

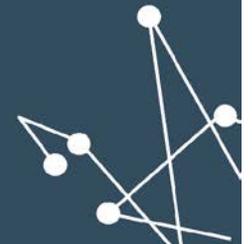
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Percent of Population\*  
by Census Tract (2010)

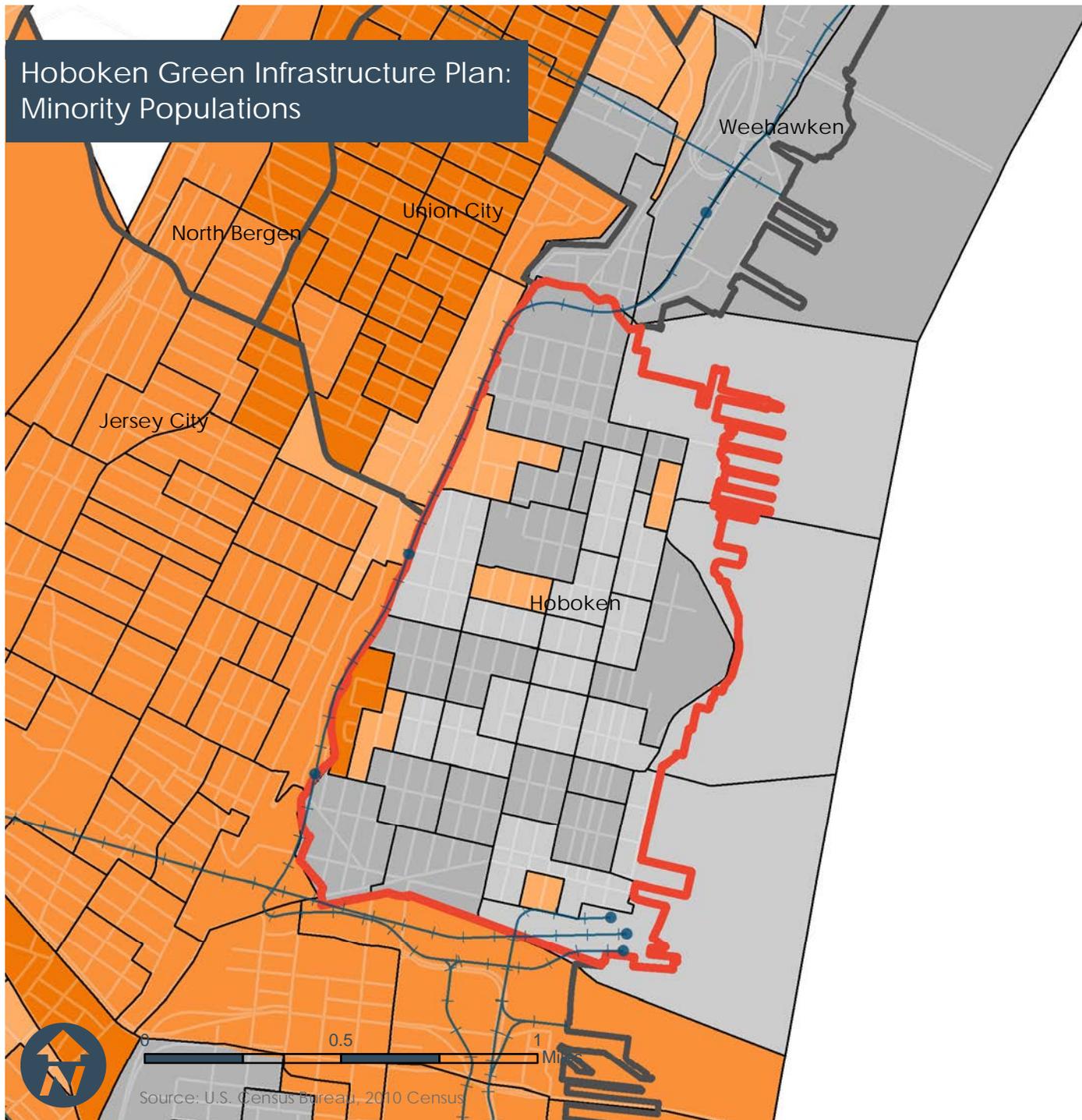
- 0.0% - 6.9%
- 7.0% - 13.7%
- 13.8% - 20.6%
- 20.7% - 27.4%
- 27.5% - 73.3%
- Study Area
- Municipal Boundaries
- Tract Boundaries
- Rail Lines
- Rail Stations

Regional Threshold: 13.7%

*\*Five years and older*



# Hoboken Green Infrastructure Plan: Minority Populations



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## Percent of Population by Block Group (2010)

- 0.0% - 21.3%
  - 21.4% - 42.6%
  - 42.7% - 63.8%
  - 63.9% - 85.1%
  - 85.2% - 100.0%
  - Hoboken
  - Municipal Boundaries
  - Block Group Boundaries
  - Rail Lines
  - Rail Stations
- Regional Threshold: 42.6%



Source: U.S. Census Bureau, 2010 Census



## **APPENDIX C**

**APRIL 18, 2013 STAKEHOLDER PRESENTATION**

DRAFT

April 18, 2013

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# Hoboken

## Green Infrastructure Strategic Plan

# What is Together North Jersey?

- Voluntary partnership of jurisdictions, agencies, organizations and other stakeholders in the 13-county North Jersey planning region

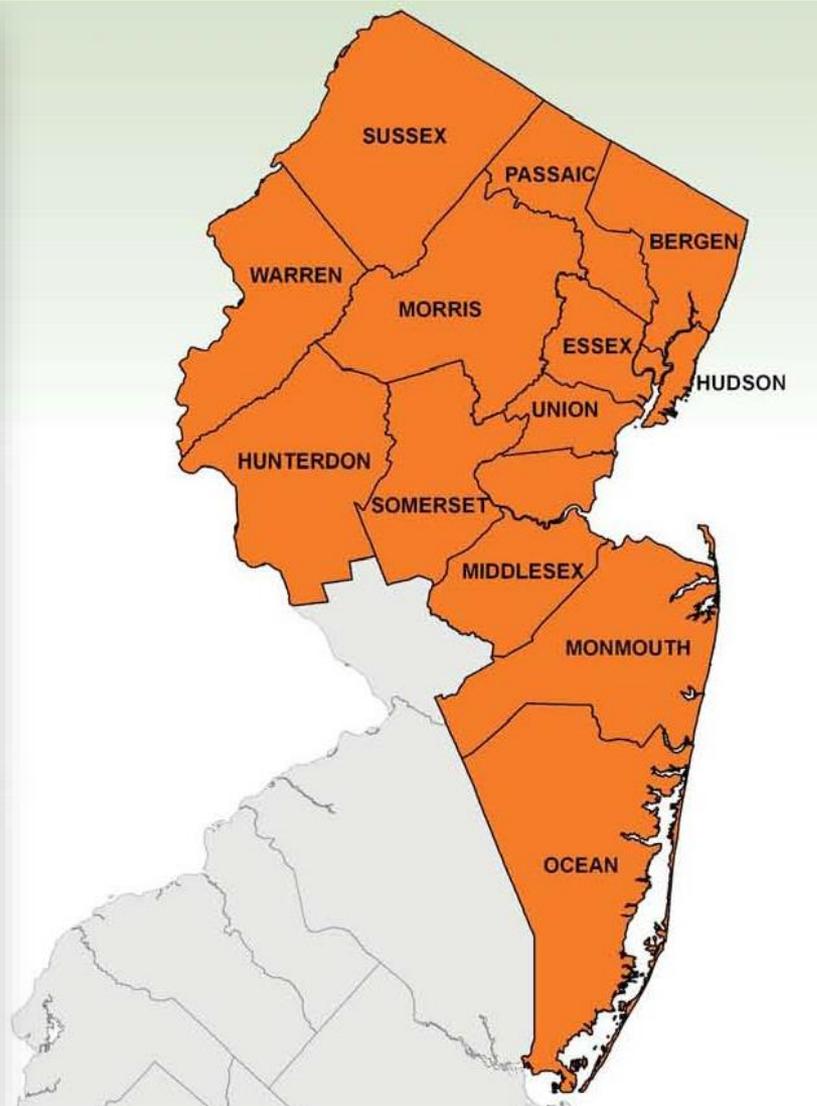
- Provides a collaborative framework for regional planning as part of Sustainable Communities Regional Planning Grant
- Together North Jersey members sign an MOU agreeing to work together

- Primary Work Products

- Regional Plan for Sustainable Development (RPSD)
- 15 Local Demonstration Projects
- Capacity-building, education and technical assistance



# Together North Jersey Region



## 13 Counties

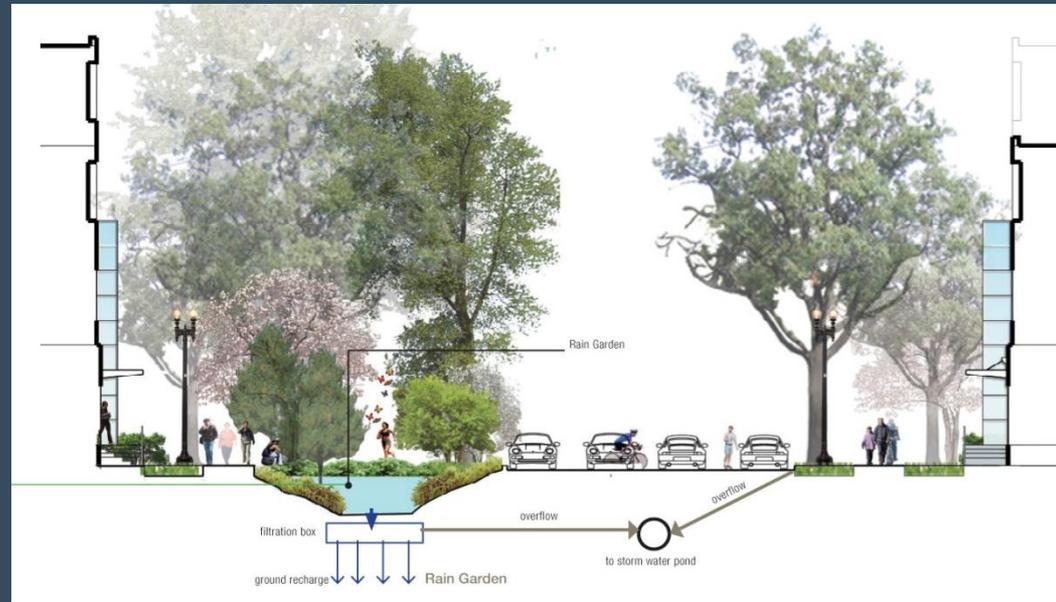
Bergen  
Essex  
Hudson  
Hunterdon  
Middlesex  
Monmouth  
Morris  
Ocean  
Passaic  
Somerset  
Sussex  
Union  
Warren

## 5 Cities

Elizabeth  
Jersey City  
Newark  
New Brunswick  
Paterson

## Local Demonstration Projects - Goals

- **Collaborative** and **comprehensive** approaches to planning at the **local level**
- Inform ongoing development of Together North Jersey (TNJ)
- Create **'On-the-Ground'** success stories
- Cultivate a network of local Regional Plan for Sustainable Development champions to foster a supportive **implementation framework**



# Local Demonstration Projects - Issues



## Up to 18 Projects from 2012-2015

### Projects so far:

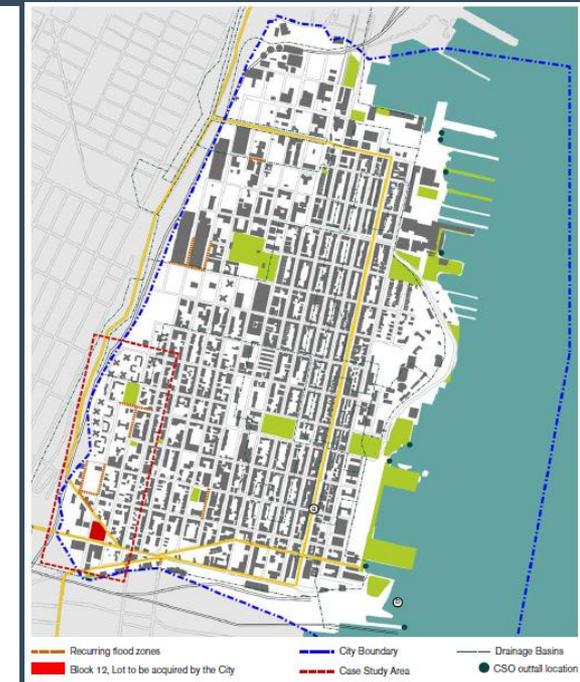
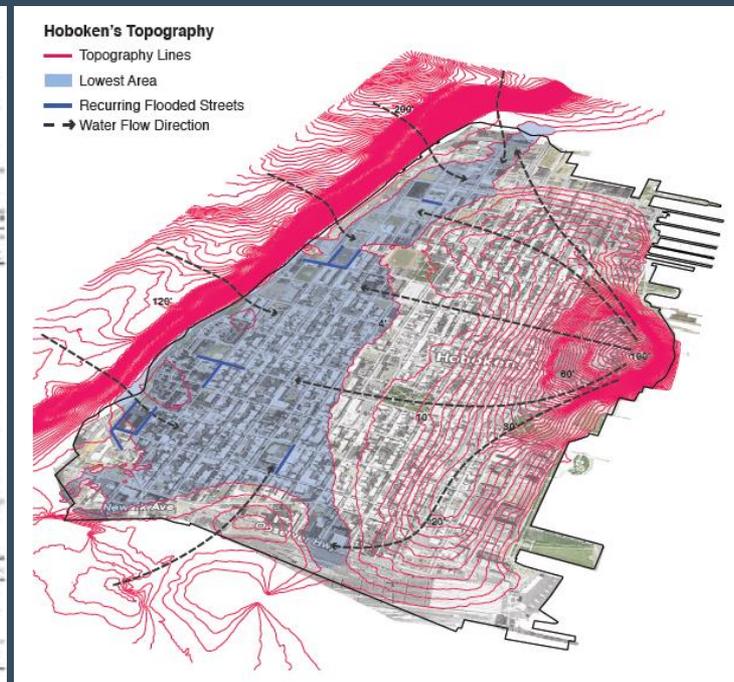
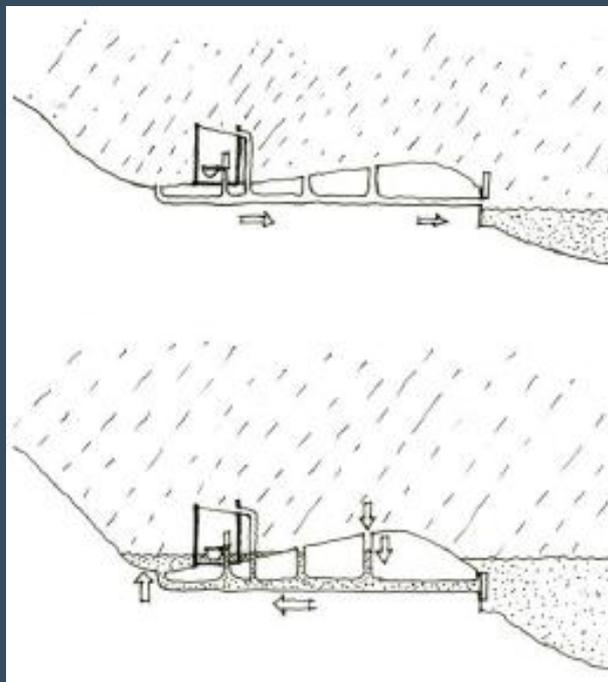
1. Asbury Park/ Neptune/ Bradley Beach
2. Route 202 Corridor: Hunterdon and Somerset Counties
3. Inner M&E Corridor: Orange, East Orange, Newark Broad Street
4. Hoboken
5. Jersey City
6. Newark



# Hoboken Green Infrastructure Strategic Plan

## Project Goals

- Develop place-based storm water management and flood control strategies
- Develop a framework for green infrastructure including cost-effective, long-term solutions



## Project Partners

- City of Hoboken
- North Hudson Sewerage Authority (NHSA)
- Hudson County
- Stevens Institute of Technology (SIT)
- Hoboken Quality of Life Coalition (WLC)
- HOPES Community Action Partnership, Inc.

## Project Team

- EE&K, a Perkins Eastman Company – Project Lead, Overall Strategy and Engagement
- The Louis Berger Group – Civil Engineering
- Clarke Caton Hintz – Regulatory and Policy Recommendations, Landscape Architecture

## Project Schedule

Mid-April: Project Kick-off, data gathering

April to May: Analysis

May to June: Vision

Mid July: Final Presentation



# Upcoming Together North Jersey Events

May 1<sup>st</sup> – Hudson County Regional Planning Workshop  
6pm-8:30pm

Hudson County Community College  
North Hudson Higher Education Center  
4800 John F Kennedy Boulevard West  
Union City, NJ 07087

For more info see:

[www.togethernorthjersey.com](http://www.togethernorthjersey.com)

# **APPENDIX D**

**JUNE 28, 2013 STEERING COMMITTEE PRESENTATION**

DRAFT

# Hoboken Green Infrastructure Strategic Plan

June 28, 2013

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JERSEY.**

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# Today's Agenda

Presentation of the Analysis

Public Engagement Discussion

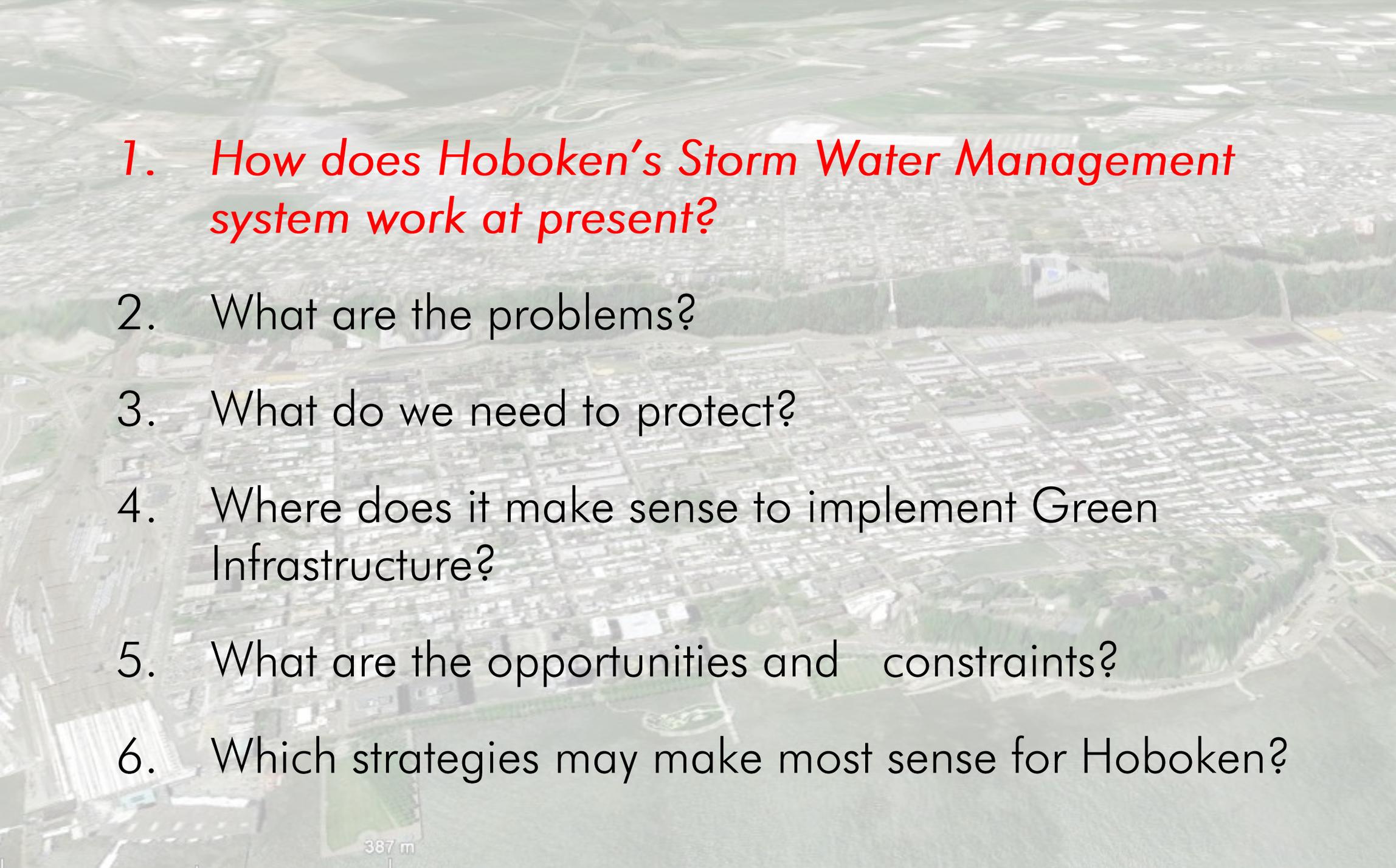
Next Steps

# Local Demonstration Grant Program

## Objectives:

- Develop implementable place-based stormwater management strategies in support of climate adaptation action steps.
- Develop a framework for green infrastructure, including cost-effective, long-term solutions to update the aging system and integrate source controls into the design and construction of public improvement, private development, open space and right-of-way projects, including a focus on how these measures can improve the resilience of Hoboken's transit infrastructure.
- Create a more resilient transit system and transit-based community.



- 
1. *How does Hoboken's Storm Water Management system work at present?*
  2. What are the problems?
  3. What do we need to protect?
  4. Where does it make sense to implement Green Infrastructure?
  5. What are the opportunities and constraints?
  6. Which strategies may make most sense for Hoboken?

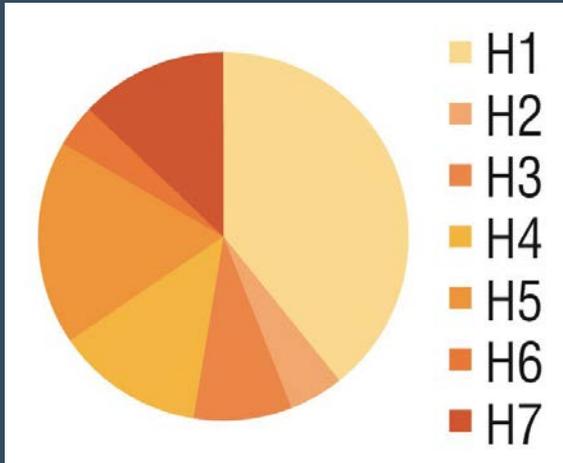
## Flooding events

- 26 dates from July 2002-2012 with greater than 2 inches of precipitation and tides of 4 feet or higher (data unavailable after July 2012)
- 16 dates were storm events identified by NOAA (National Climate Data Center)
- 6 Nixle Flood Alerts or Advisories from 2012-2013

Month	Date	Year	Daily Rainfall	High Tide	Type of Storm Event
April	22	2012	2.49	5.83	
September	6	2011	3.08	5.75	
August	14	2011	6.4	5.89	
August	27	2011	2.58	6.69	Flood
August	28	2011	6.34	9.64	Tropical Storm (Irene)
May	18	2011	2.26	7.66	
October	1	2010	2.36	5.67	Flood
March	13	2010	3.98	8.86	Coastal Flood
July	29	2009	2.97	5.53	Flash Flood
April	20	2009	2.1	5.71	
September	6	2008	3.75	5.29	Tropical Storm (Hanna)
June	14	2008	2.15	5.58	
August	8	2007	3.12	5.66	Flash Flood
July	23	2007	2.5	5.66	
April	15	2007	6.09	7.7	Flood
April	27	2007	2.36	4.81	Flash Flood
November	8	2006	4.35	6.79	
July	21	2006	3.22	5.58	Flash Flood
October	8	2005	4.24	5.86	Flood
October	12	2005	3.28	7.46	
March	28	2005	2.31	5.94	Heavy Rain
September	8	2004	2.08	4.77	Flash Flood (Hurricane Frances)
September	28	2004	2.97	6.23	Flash Flood (Hurricane Jeane)
August	4	2003	2.48	5.58	Flash Flood
June	4	2003	2.85	5.16	
October	11	2002	2.58	6.35	Heavy Rain

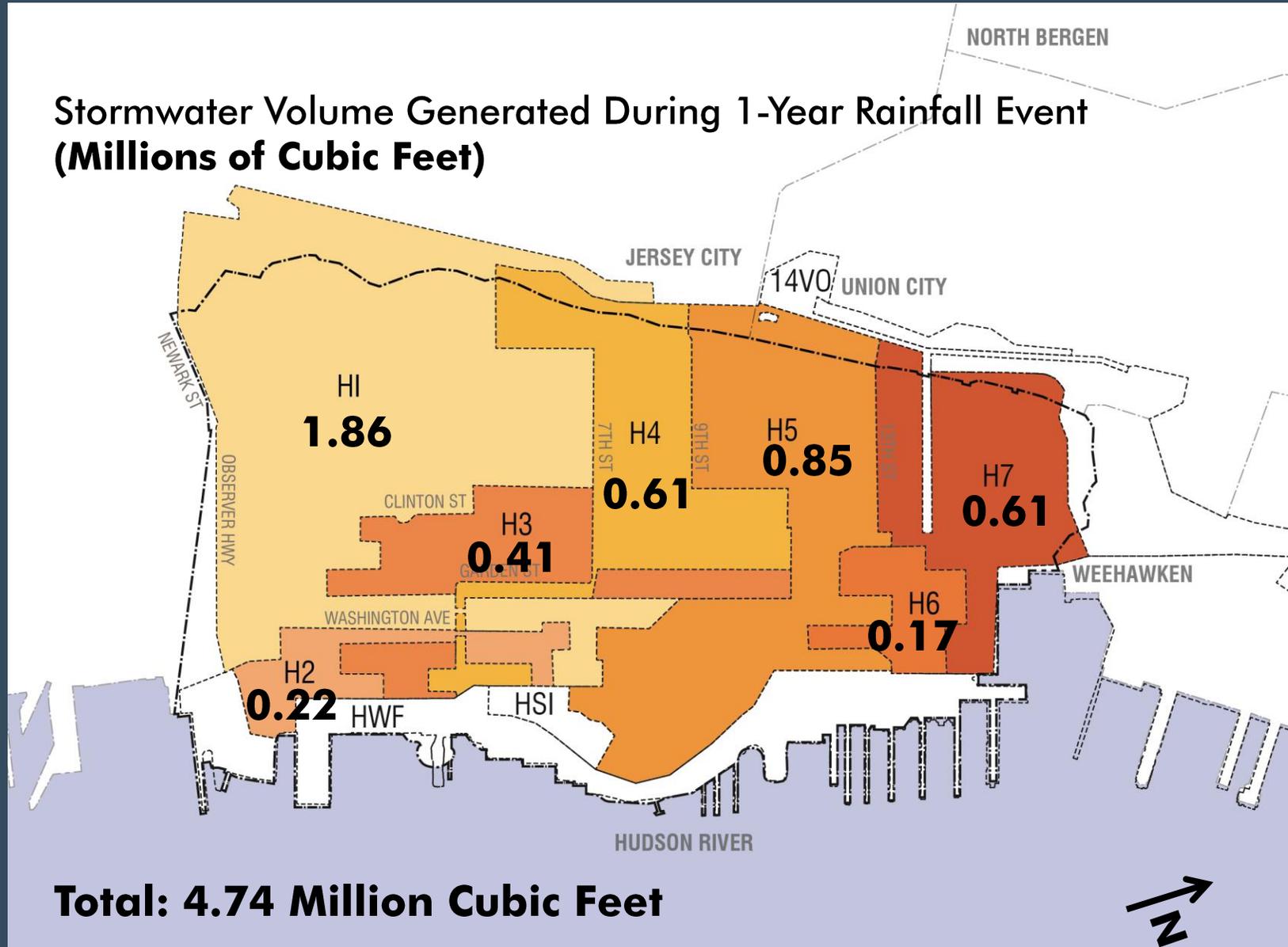
# Defining the Problems: *Hoboken's Seven Main Sewersheds*

Stormwater Volume  
Generated During  
1-Year Rainfall Event



- Hoboken's combined sewer system service area is organized into seven main sewersheds
- Of these, H1 handles almost **40% of the total volume** in the City

Stormwater Volume Generated During 1-Year Rainfall Event  
(Millions of Cubic Feet)



# Hoboken's Combined Sewer System

## Dry Weather

Stormwater and sanitary sewers combine into 'Combined Sewer System'

Stormwater runoff, sewage, and wastewater are transported to the North Hudson Sewage Treatment plant (at Adams Street)

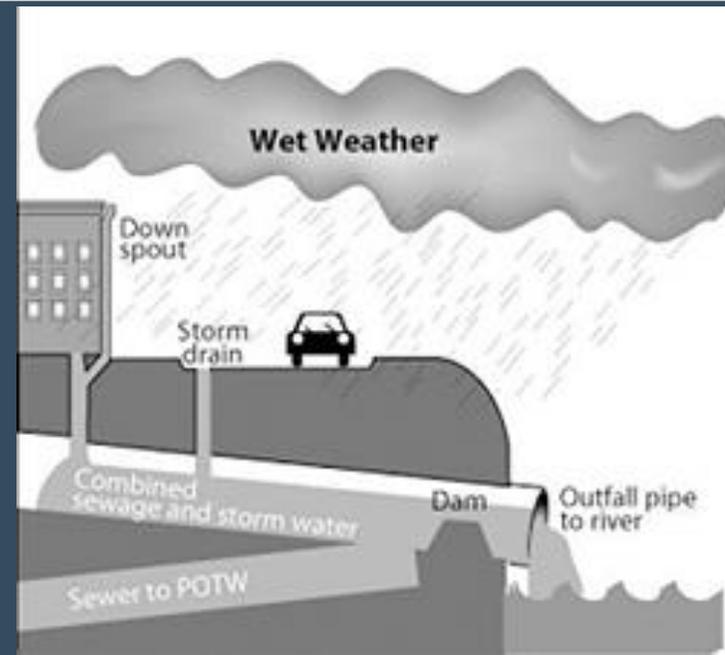
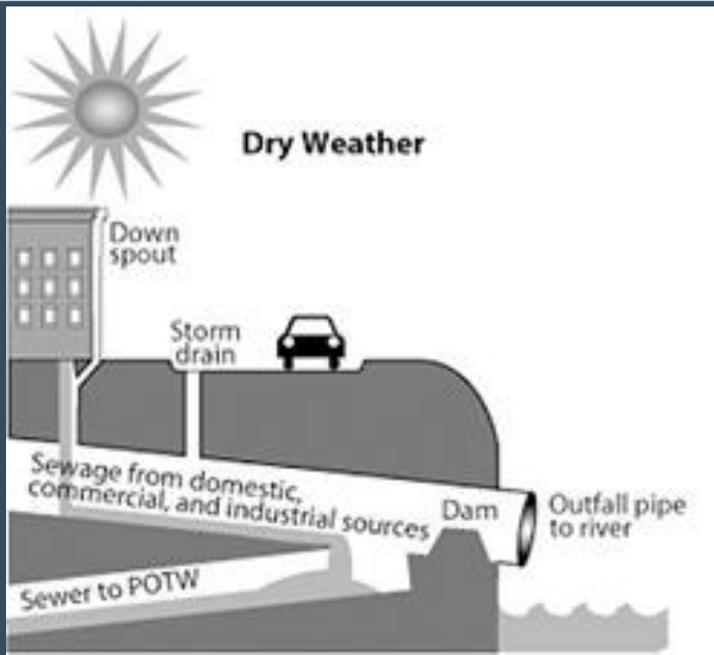
Water is treated and then discharged into the Hudson River

## Wet Weather

Heavy rainfall / snowmelt: CSO and/or treatment plant is overwhelmed

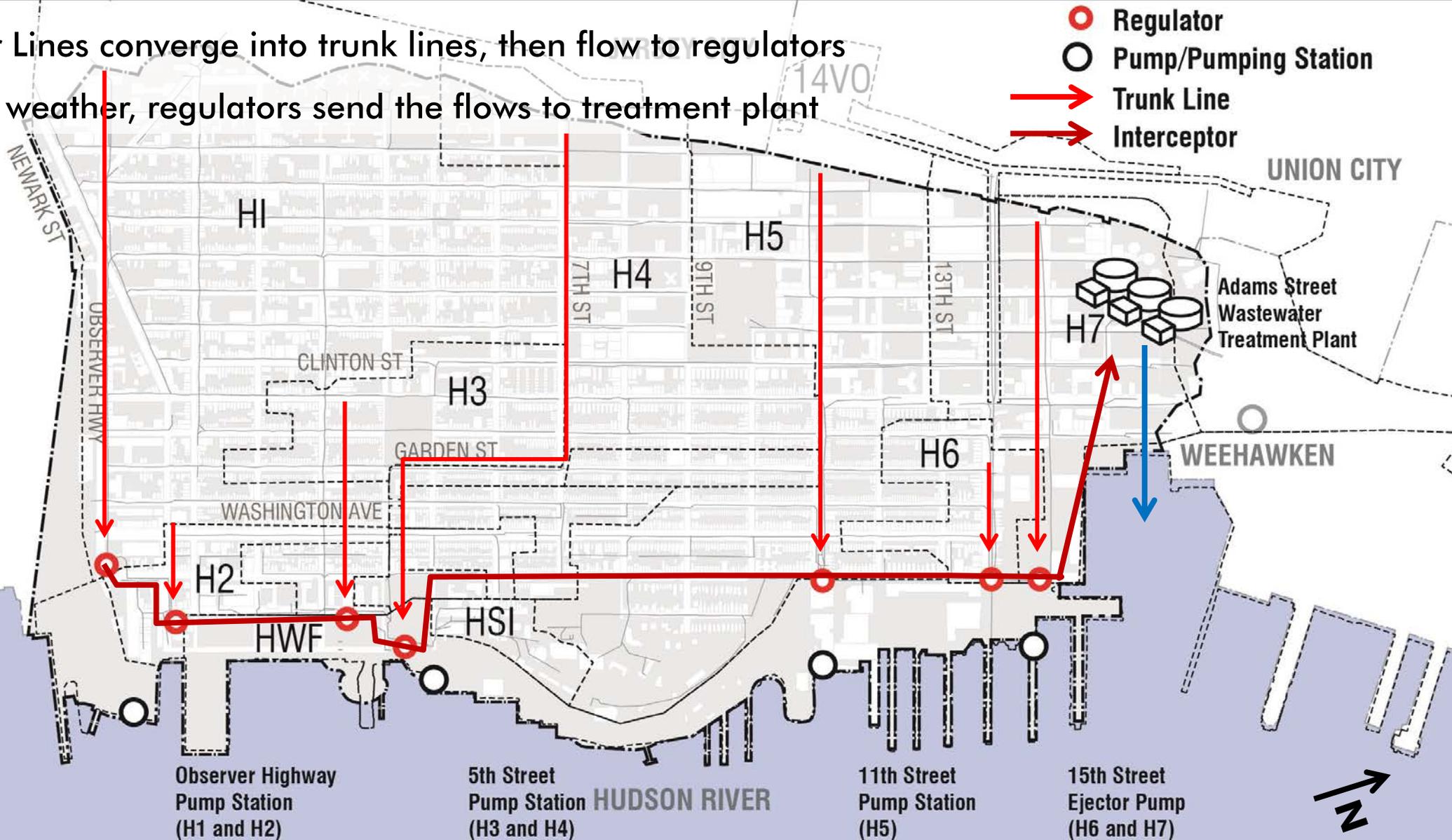
Excess wastewater overflows into the Hudson River at seven outflows

At high tide, excess flow backs up, causing flooding in the lowest lying areas or basements



# Defining the Problems: *the Sewer System during Dry Weather*

- Sewer Lines converge into trunk lines, then flow to regulators
- In dry weather, regulators send the flows to treatment plant

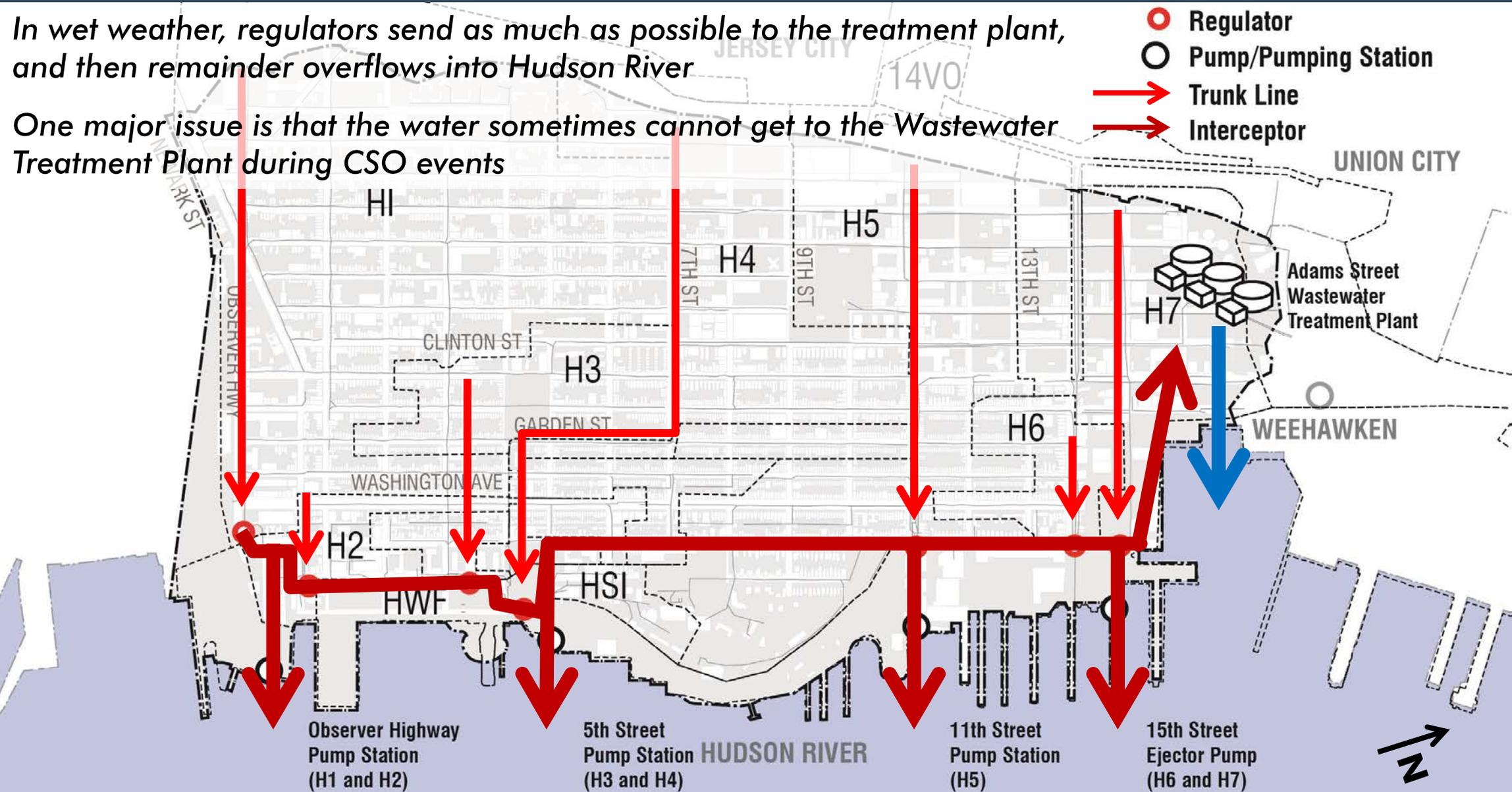


# Defining the Problems: *The Sewer System during Wet Weather (CSO Events)*

*In wet weather, regulators send as much as possible to the treatment plant, and then remainder overflows into Hudson River*

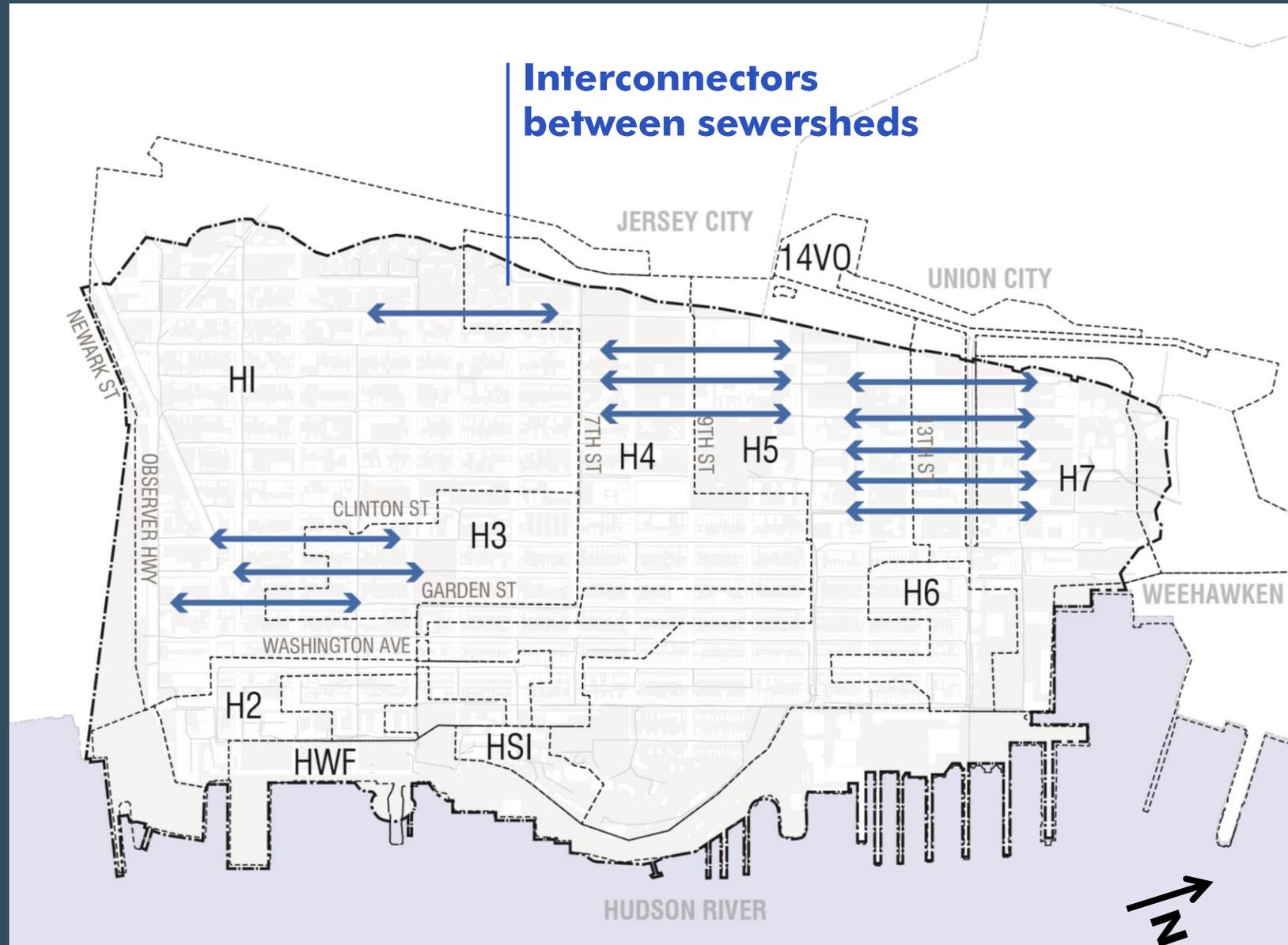
*One major issue is that the water sometimes cannot get to the Wastewater Treatment Plant during CSO events*

- Regulator
- Pump/Pumping Station
- Trunk Line
- Interceptor



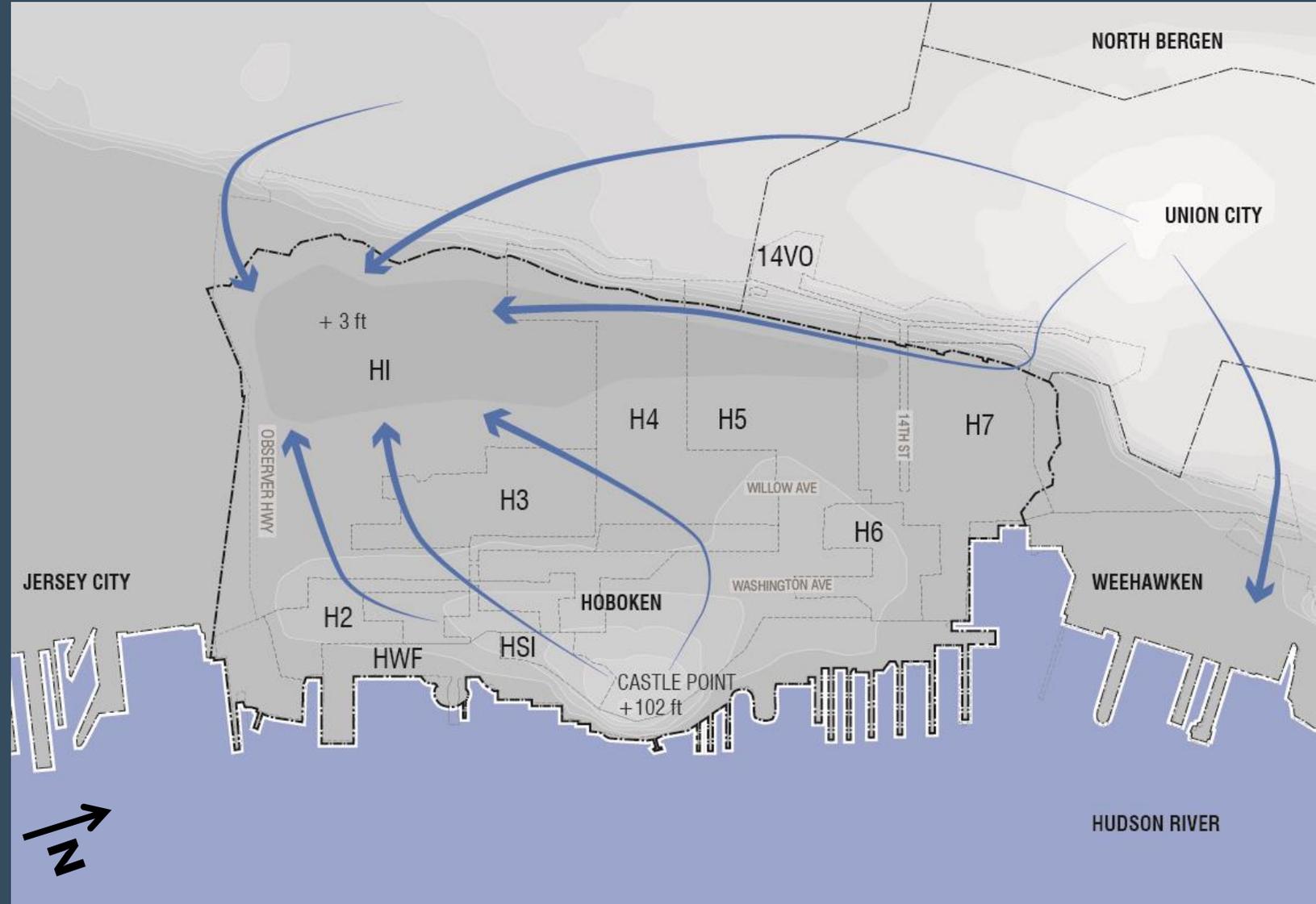
## Defining the Problems: Combined Sewer Flow Interconnections between Sewersheds

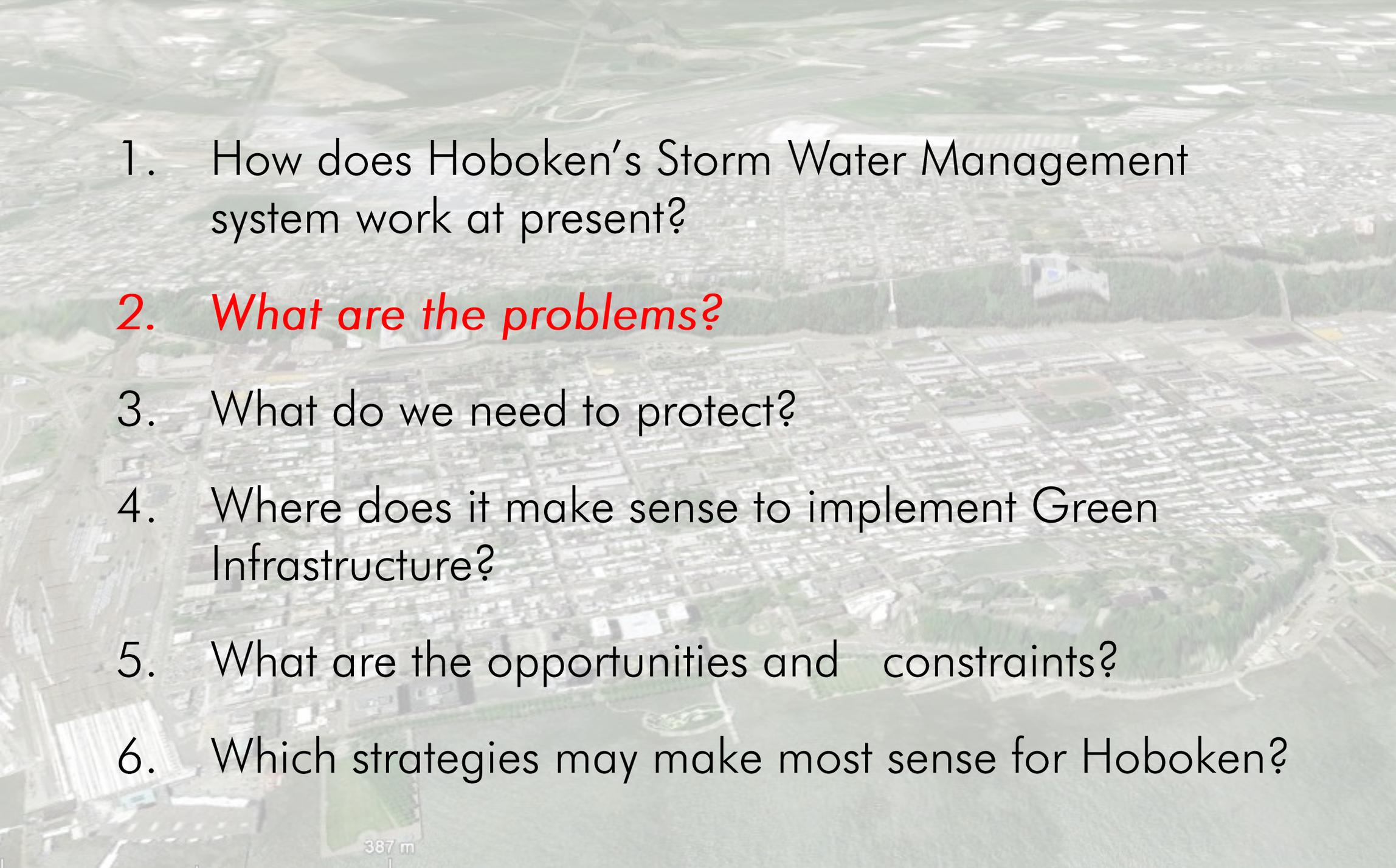
- Combined Sewer Flow Interconnections allow wastewater to flow from one sewershed to another.
- Stormwater captured in one sewershed may be exacerbating flooding in another sewershed.
- Stormwater can be intercepted at key points.
- Potential severing of interconnections would need further study.



# Surface Stormwater Flow

- Hoboken was built over a former wetland and river (west side).
- Lowest areas of the city (in southwest) located just under three feet above sea level.
- High point is located along the eastern cliff face at Castle Point.
- Surface stormwater flow generally follows the topography, and additional flows come from Jersey City.





1. How does Hoboken's Storm Water Management system work at present?

2. *What are the problems?*

3. What do we need to protect?

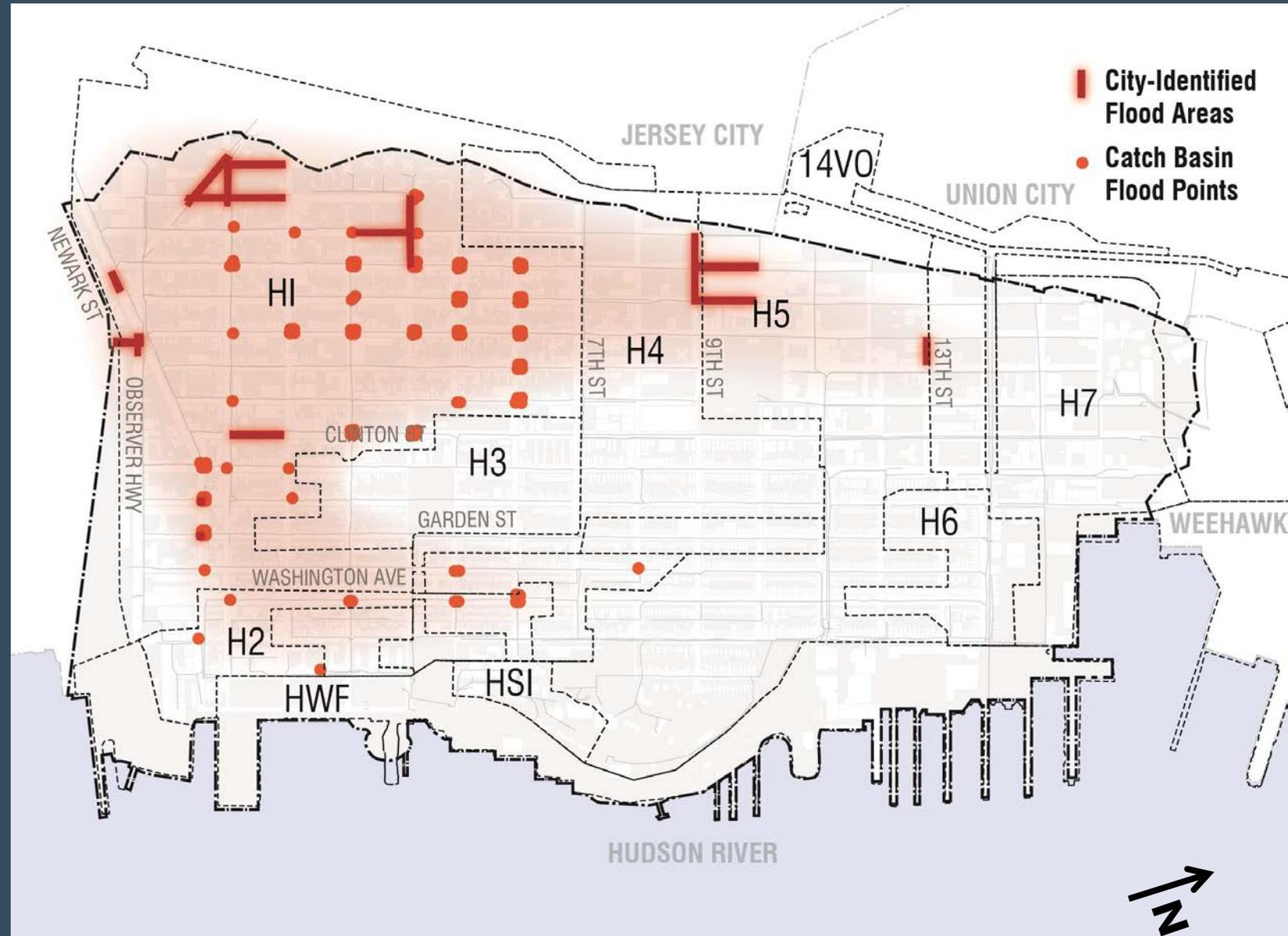
4. Where does it make sense to implement Green Infrastructure?

5. What are the opportunities and constraints?

6. Which strategies may make most sense for Hoboken?

# Defining the Problems: Stormwater Management Problem Areas

- City of Hoboken identified several floodprone streets and intersections
- 2011 EmNet report, also sponsored by the City of Hoboken, illustrates typical detected flooding locations during medium and large storm events

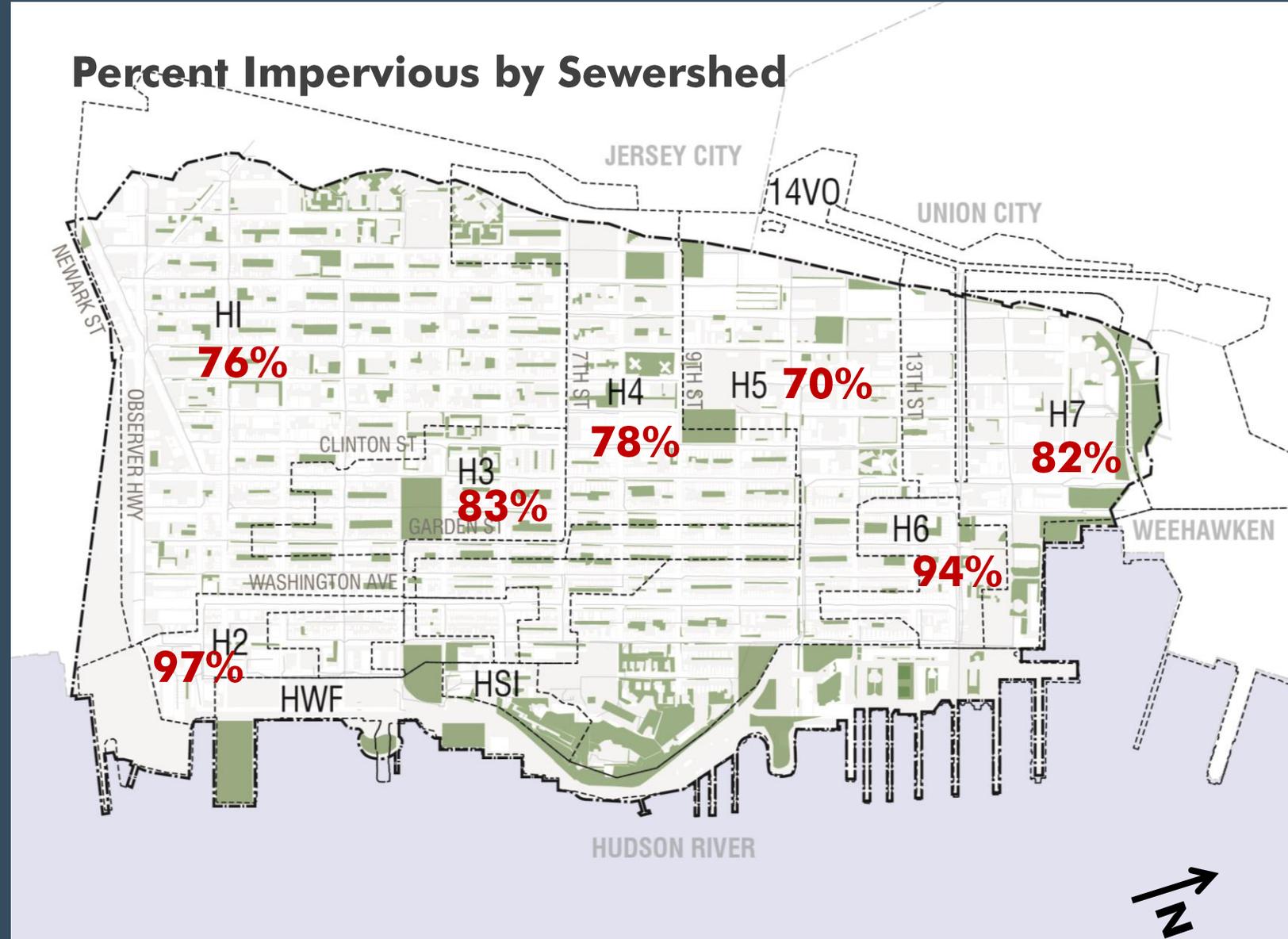


# Defining the Problems: *Impervious Coverage*

- Hoboken is **almost 80%** (77.79%) impervious coverage
- Lack of pervious coverage creates higher demand on the storm sewer system.

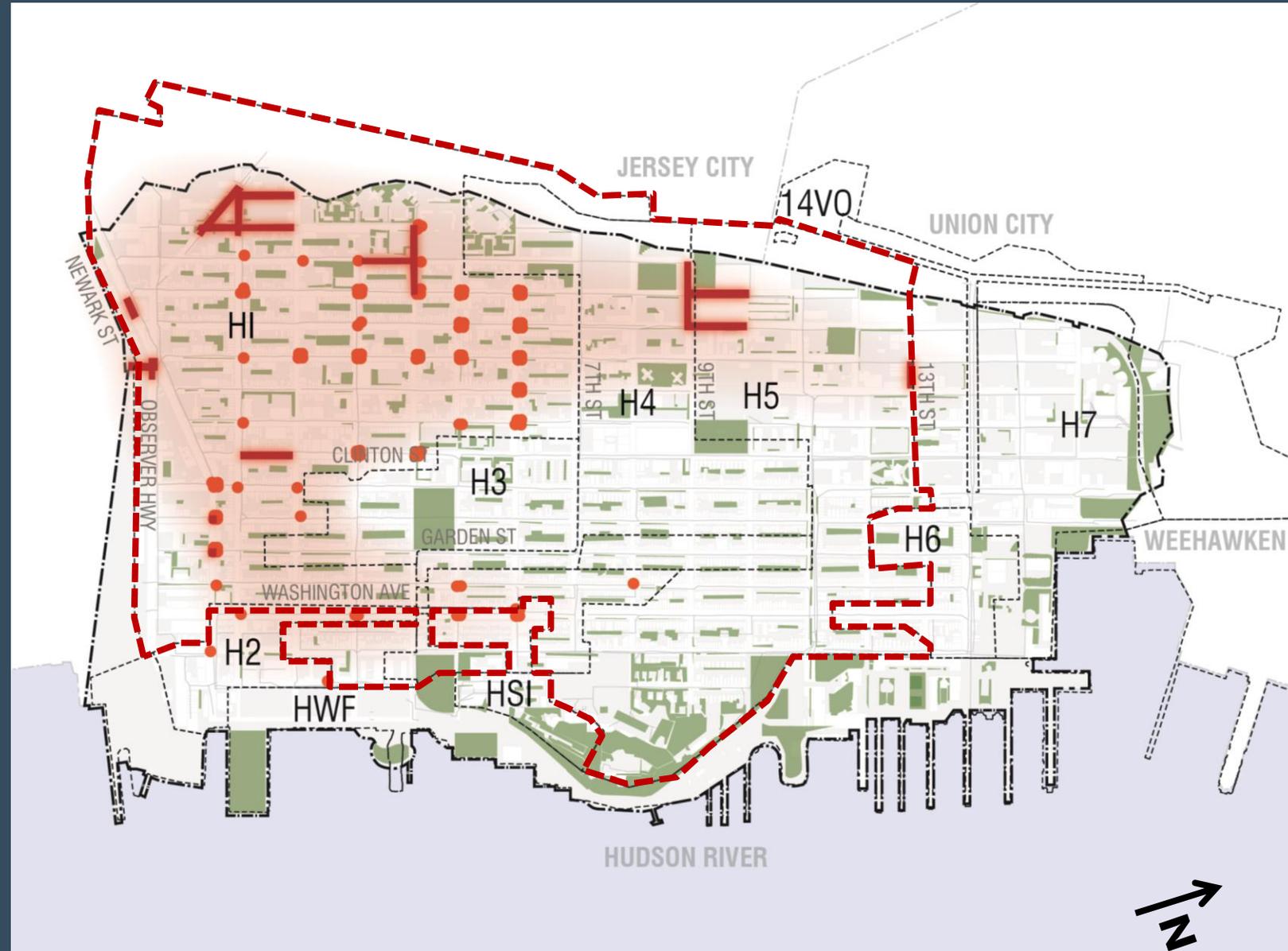
Impervious surfaces are those that stormwater cannot infiltrate (e.g. roads, sidewalks, buildings, parking lots)

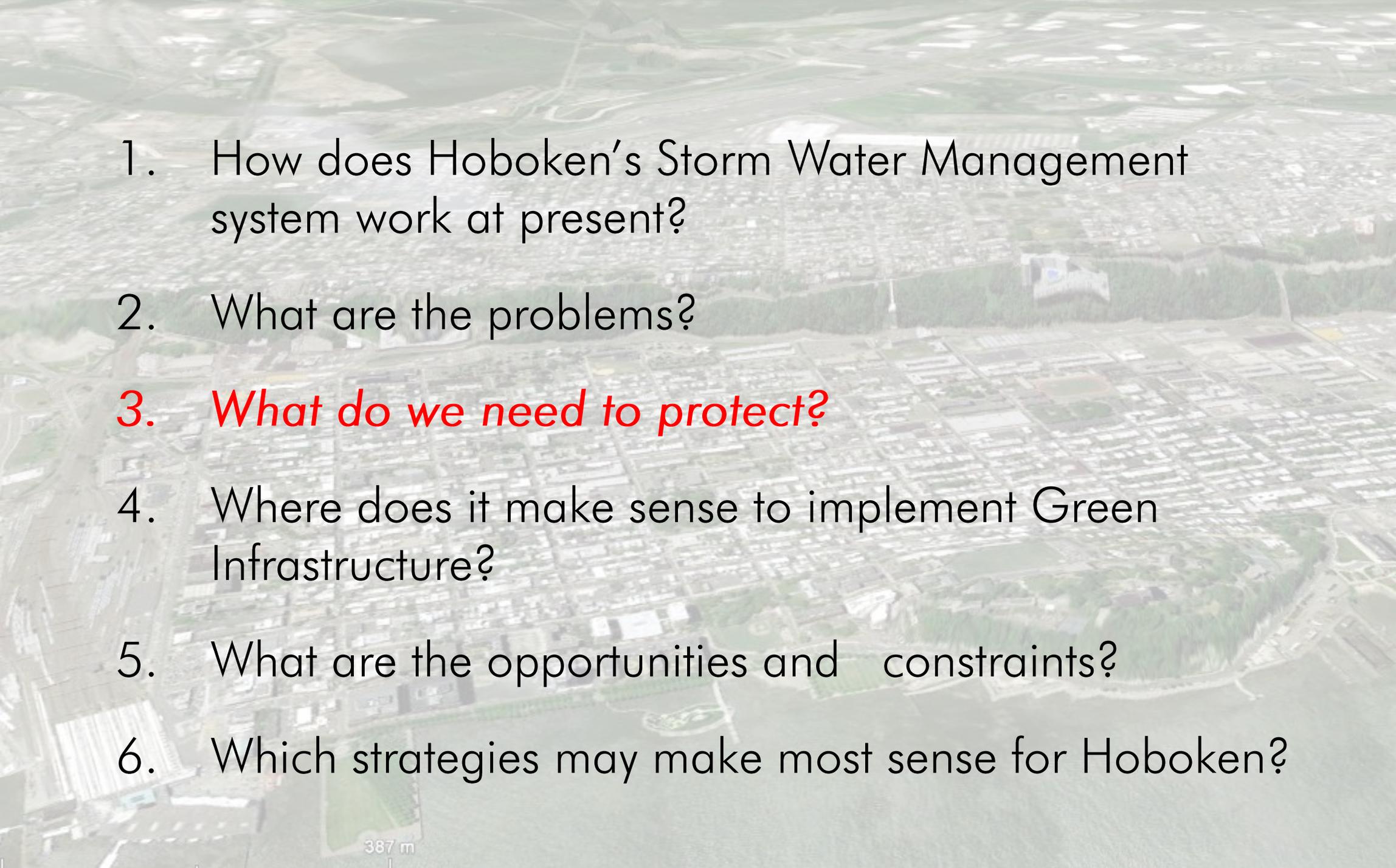
Pervious surfaces (e.g. grass, native plantings, soils, shade trees) absorb, slowly infiltrate, and treat stormwater before it enters the sewer system.



# Defining the Problems: *Impervious Coverage in Problem Areas*

- Increasing pervious coverage near flooded areas can capture more stormwater, easing burden on stormwater system.
- This slows the rate of stormwater flow and reduce sheetflow (unimpeded flow of water).
- One of our key goals is where and how to increase pervious coverage in Hoboken.



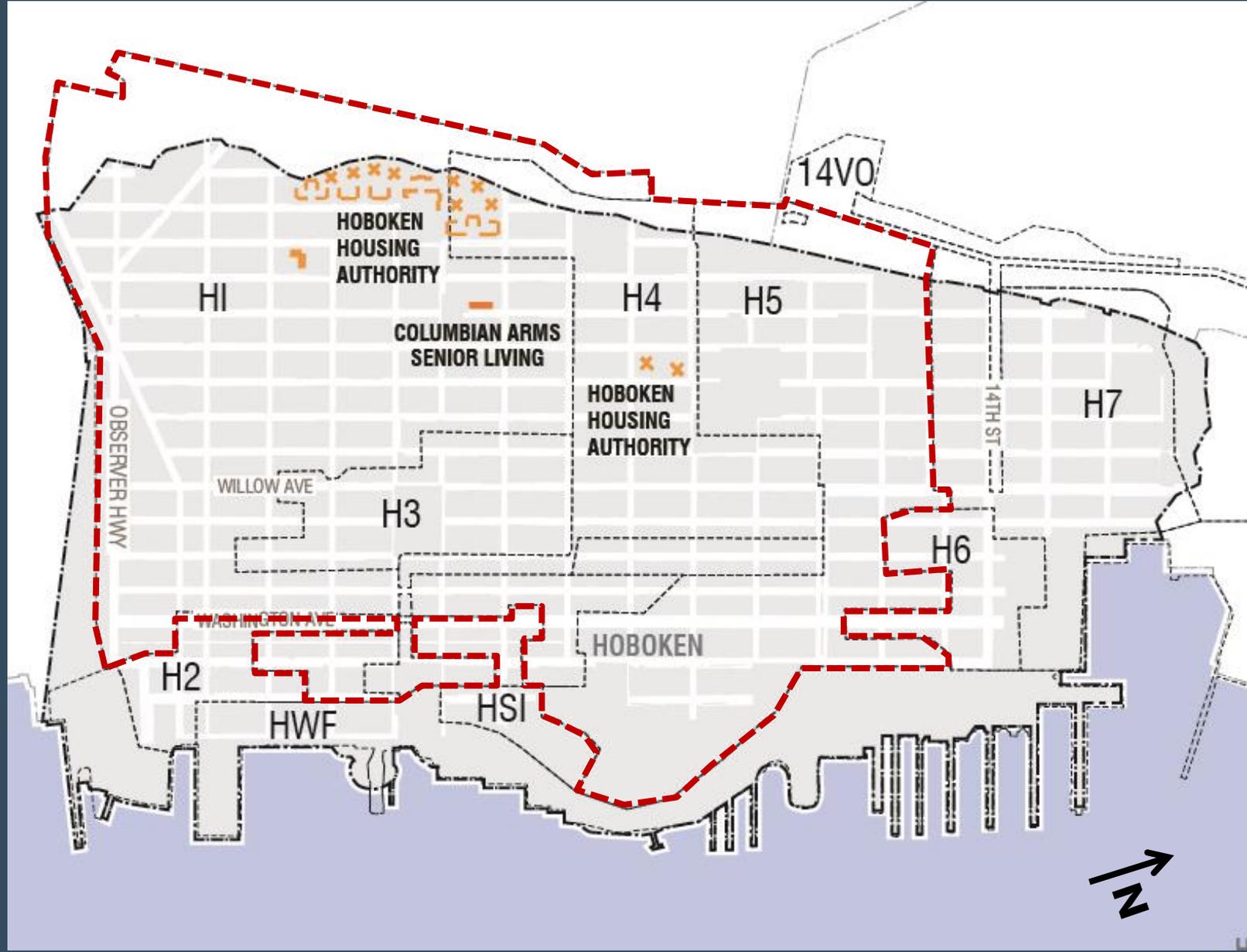
- 
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# What do we need to protect?: *Vulnerable Communities*

Vulnerable populations are concentrated in H1 and H4



*Jubilee Center and Hoboken Housing Authority*

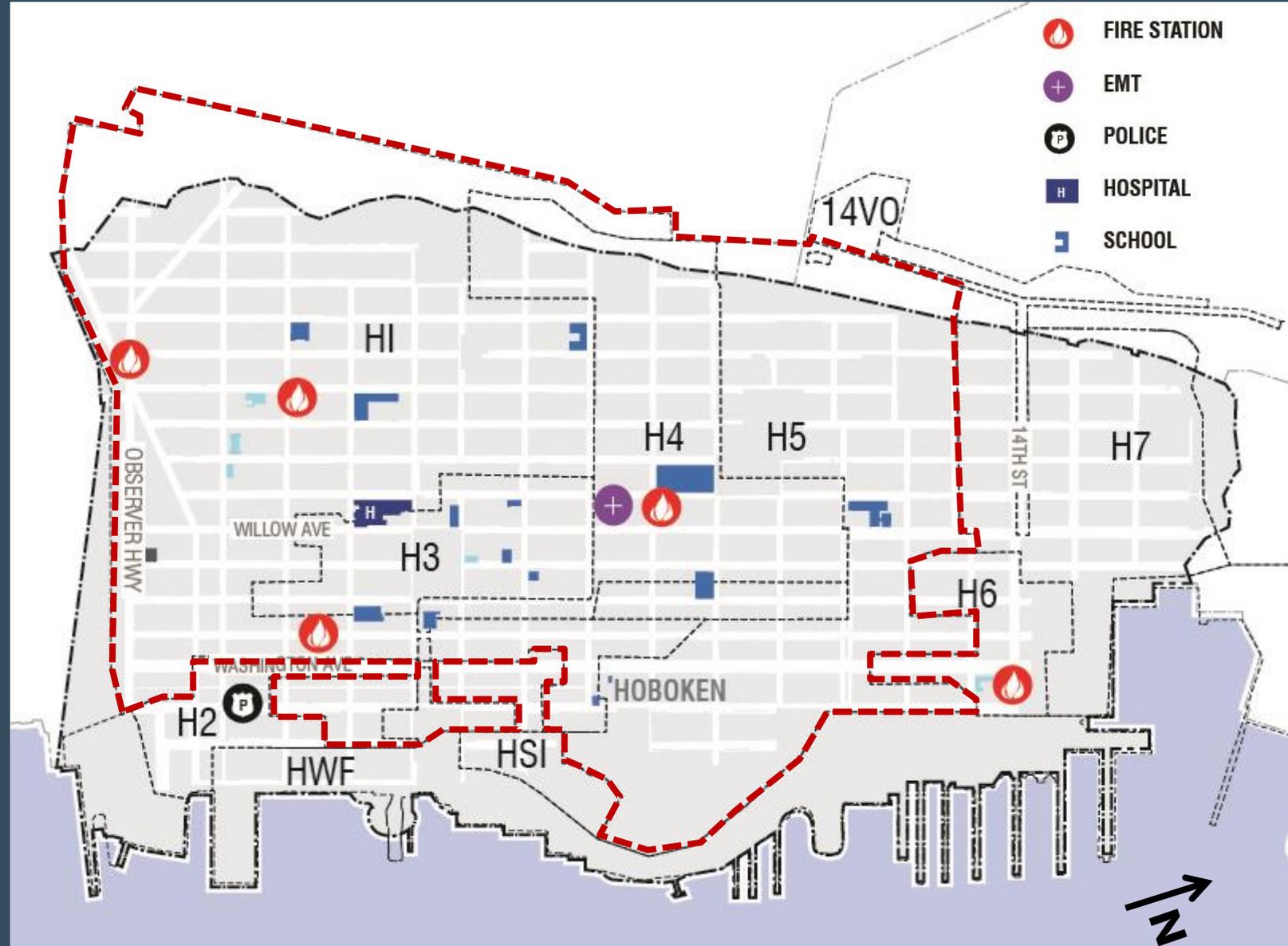


# What do we need to protect?: *Critical Facilities*

Critical Facilities are concentrated in H1, H3, and H4



*Hoboken Fire Department Ladder Company 2 /  
Engine Company 1 and Hoboken University  
Medical Center*



# What do we need to protect?: *Public Infrastructure*

Critical Transit infrastructure is concentrated at the borders of H1, H2, H4, H5, and H7



HBLR Light Rail and Academy Bus

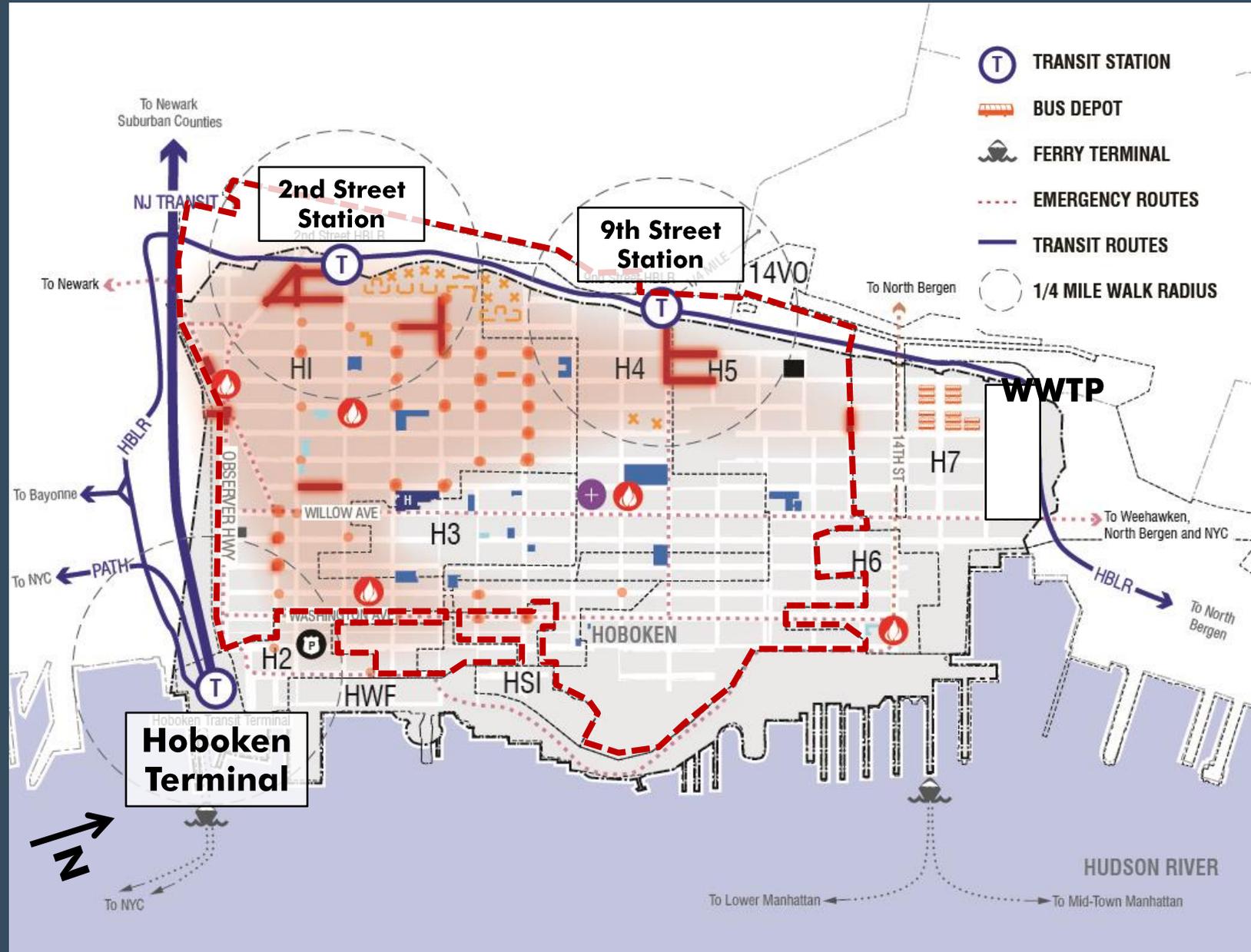


# What do we need to protect?

The services that face the highest flood risk are in sewershed H1



PSEG Substation

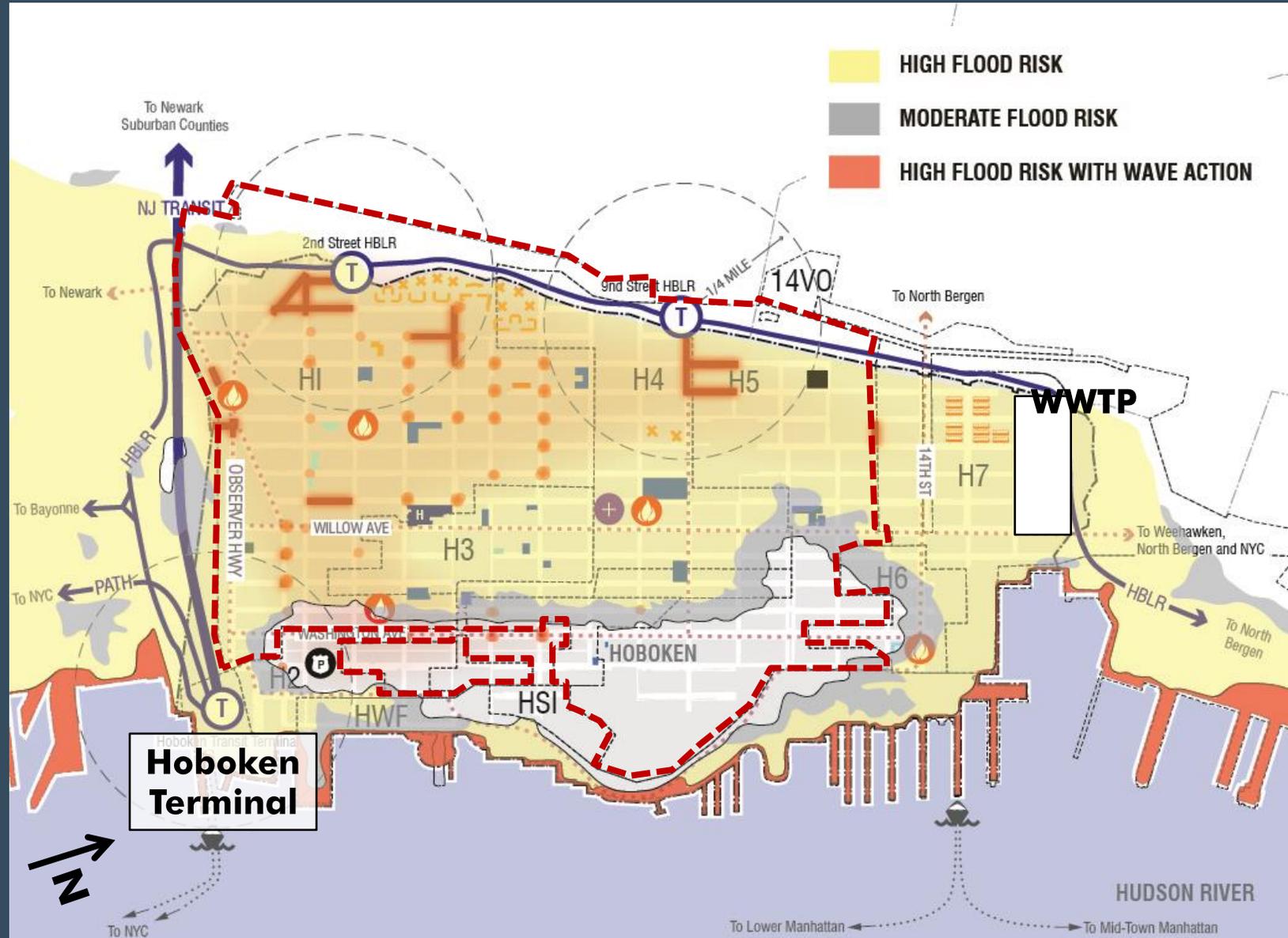
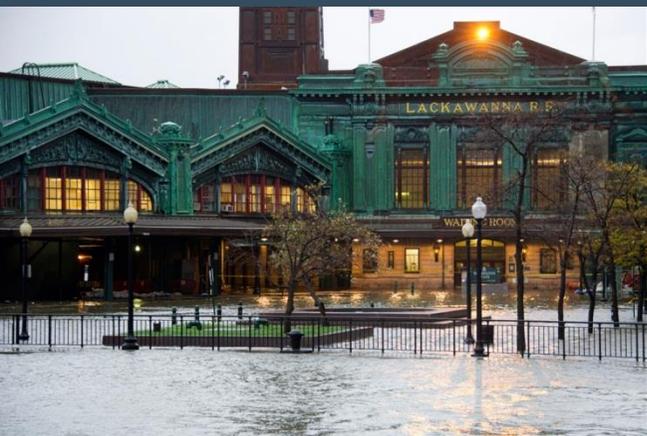


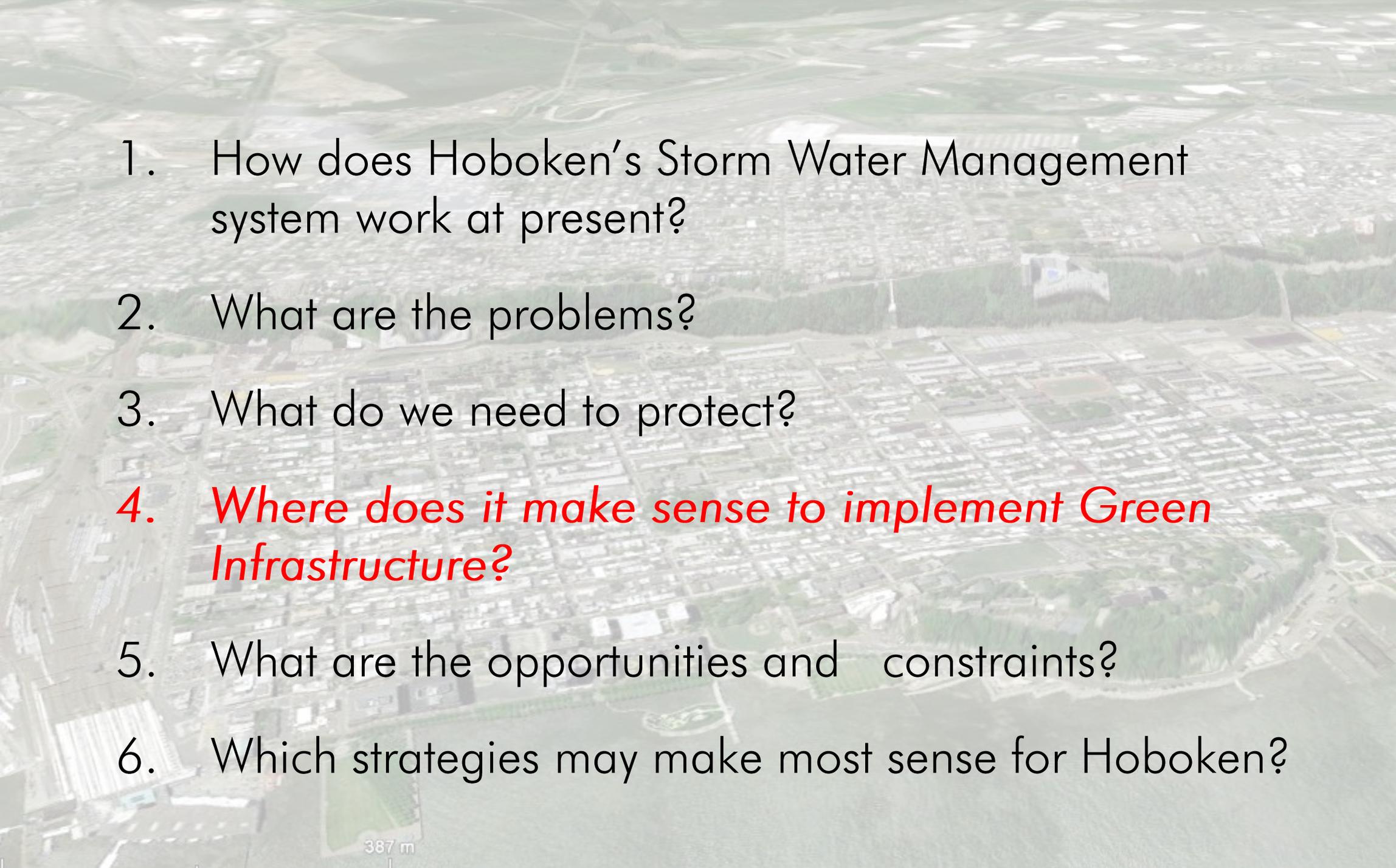
# What do we need to protect?

The majority of sewersheds H1, H3, H4, and H5 are within the High Risk FEMA Flood Zone



Hoboken Terminal



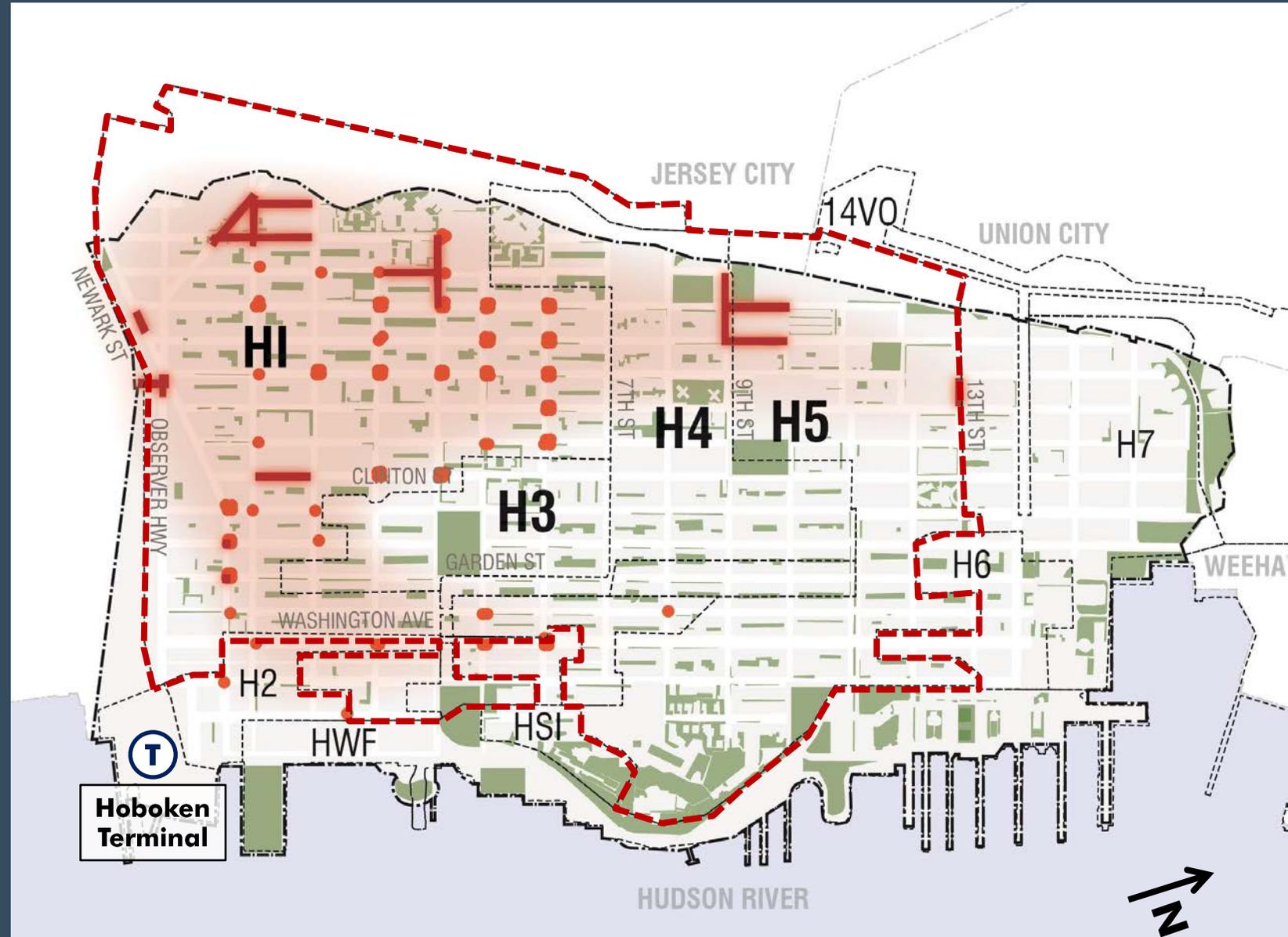
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1. How does Hoboken's Storm Water Management system work at present?
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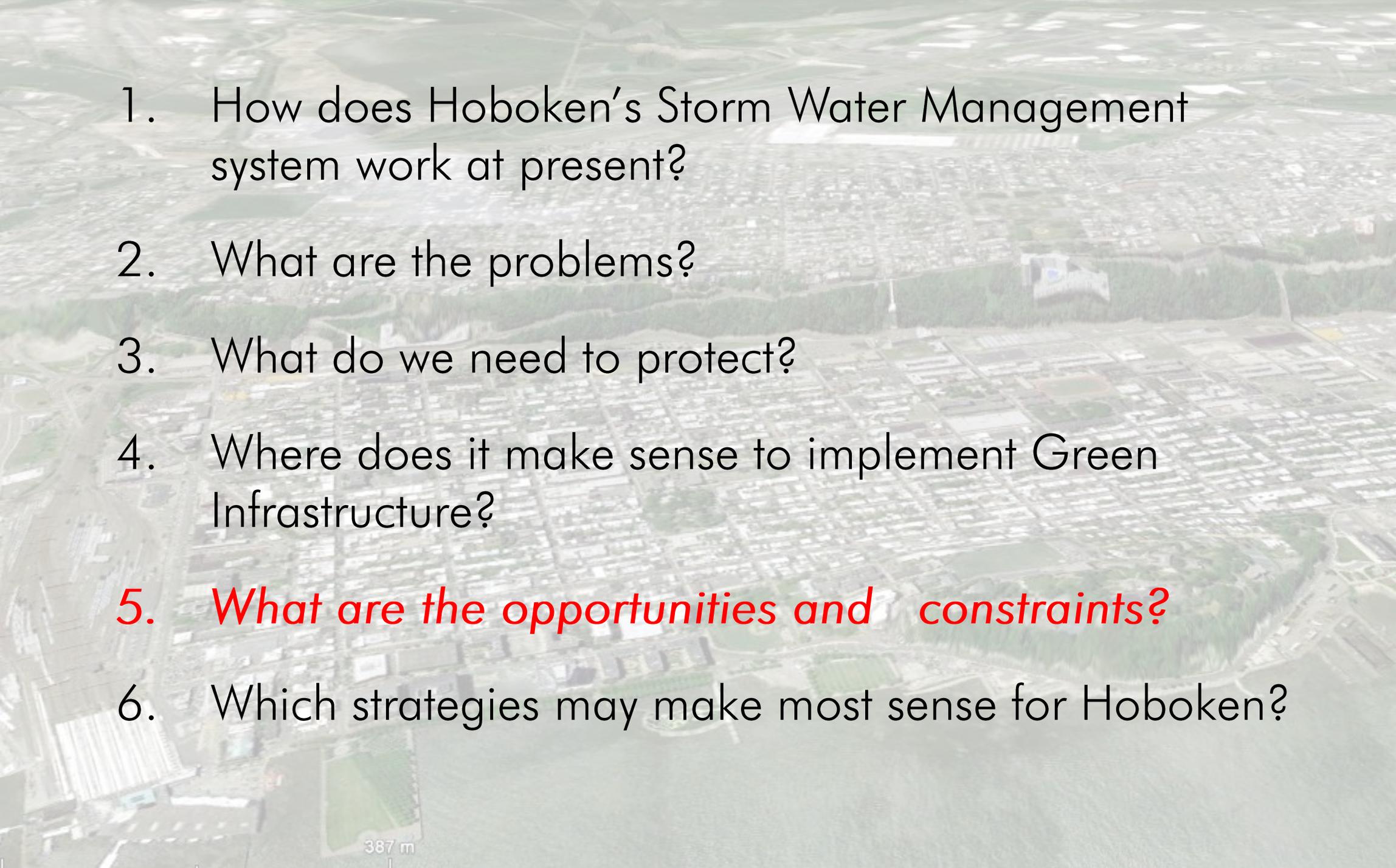
# Analysis of Stormwater Management System

- Findings and recommendations are based on review and analysis of existing available data collected and received to date.
- Understanding that a comprehensive, City-wide hydrodynamic model that simultaneously analyzes surface runoff contributions/patterns and sewer system flow dynamics has yet to be developed, we acknowledge that further refinement of the Green Infrastructure implementation strategy may be necessary.
- The Green Infrastructure implementation strategy seeks to intercept and minimize stormwater runoff contributions to the City's combined sewer system.
  - The goal here is to minimize flooding/water quality impacts during more frequent storm events, and
  - Control/mitigation of the widespread, regional flooding that occurs when tidal flood surges enter the City would be the subject of other larger-scale flood control facility design efforts.

## Targeting Solutions: *Every little bit helps... BUT in some places more than others*

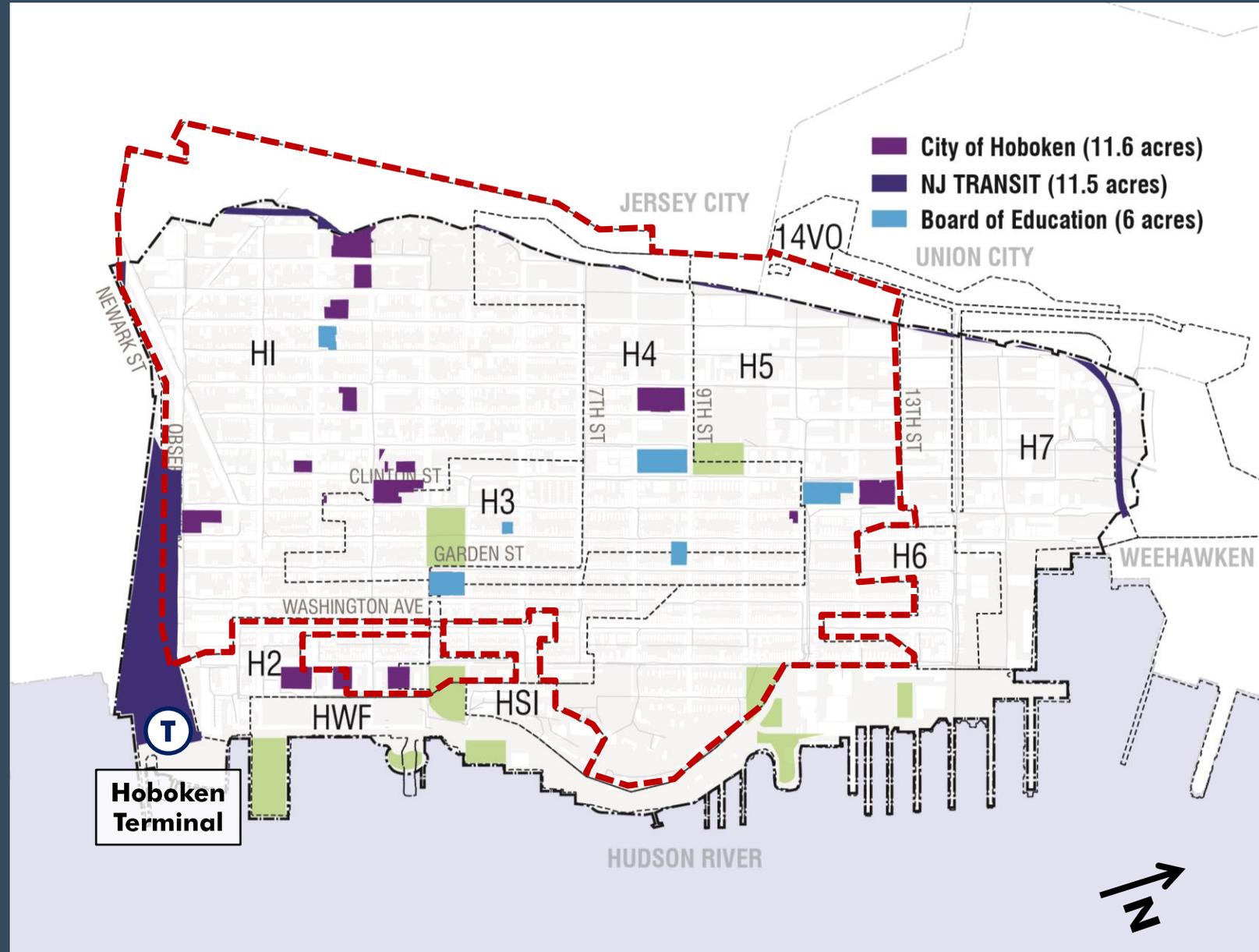
- Primary sewersheds where Green Infrastructure Installations would appear to be most beneficial: H1, H3, H4 and H5
- Based on hydrologic estimates, review of available modeling data and historical flooding reports, and current understanding of the interrelationships between the various sewersheds



- 
1. How does Hoboken's Storm Water Management system work at present?
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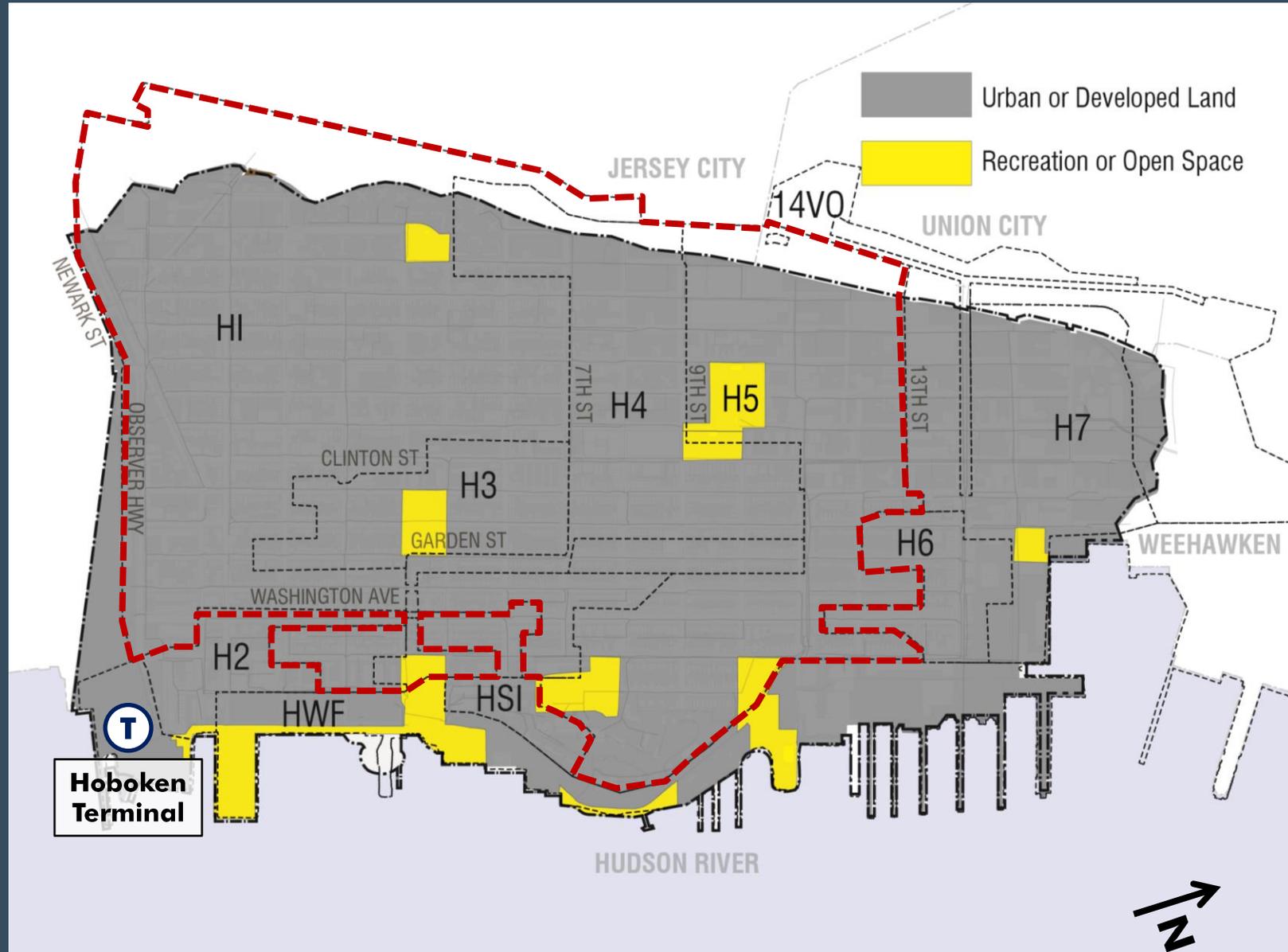
# Opportunities: *Properties under Public Ownership*

- Public sector entities control 29.1 acres in Hoboken, largely concentrated within the four key sewersheds (H1, H3, H4, and H5)



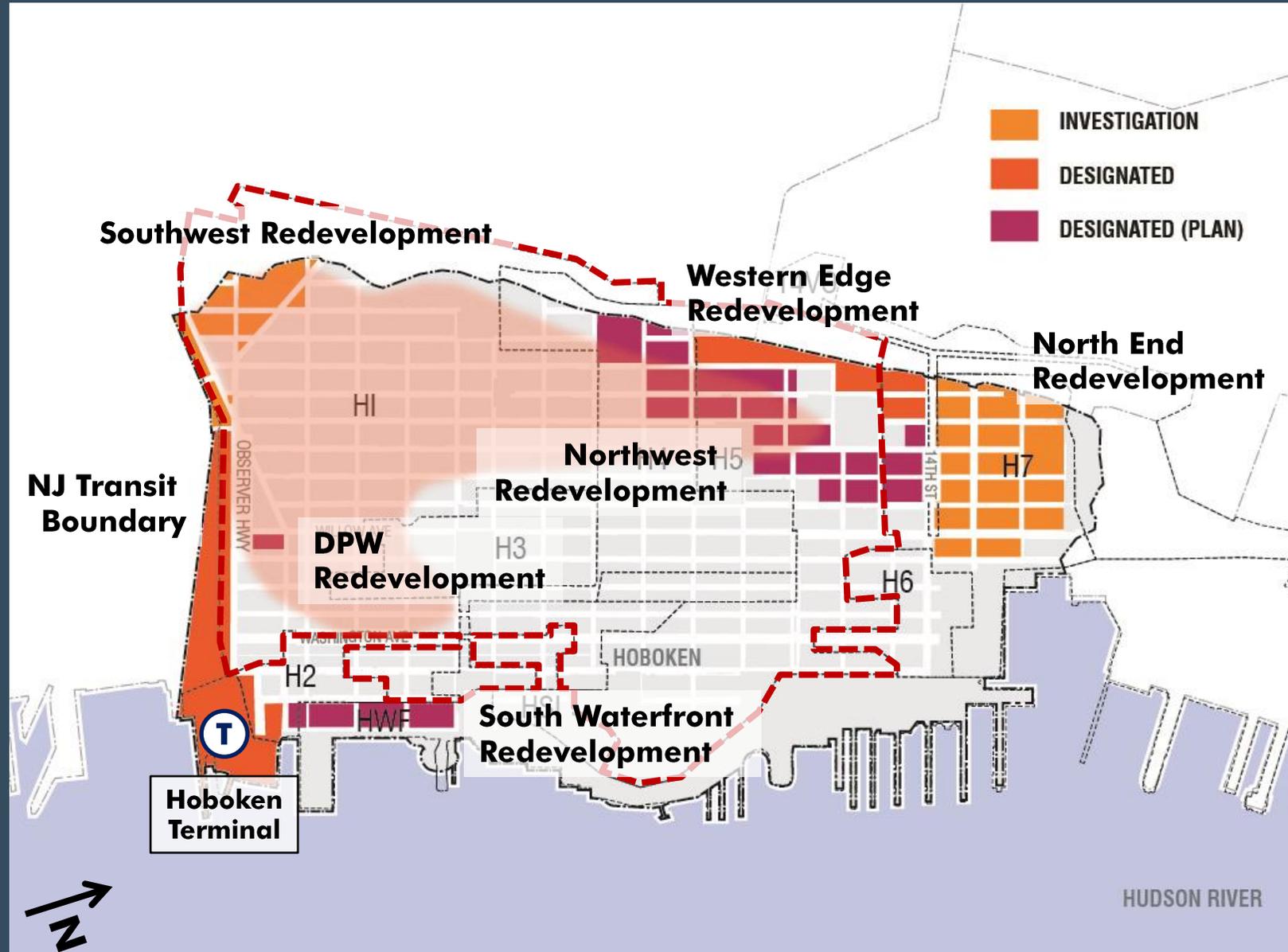
# Opportunities: *Developed vs Open Space Coverage*

- Hoboken is largely developed, which shapes the discussion of which BMPs to employ
- Some BMPs (e.g., swales) may not be suited for urban environments, while others (e.g., stormwater infiltration planters) may be ideal for Hoboken.



# Opportunities: *Future Land Use Changes*

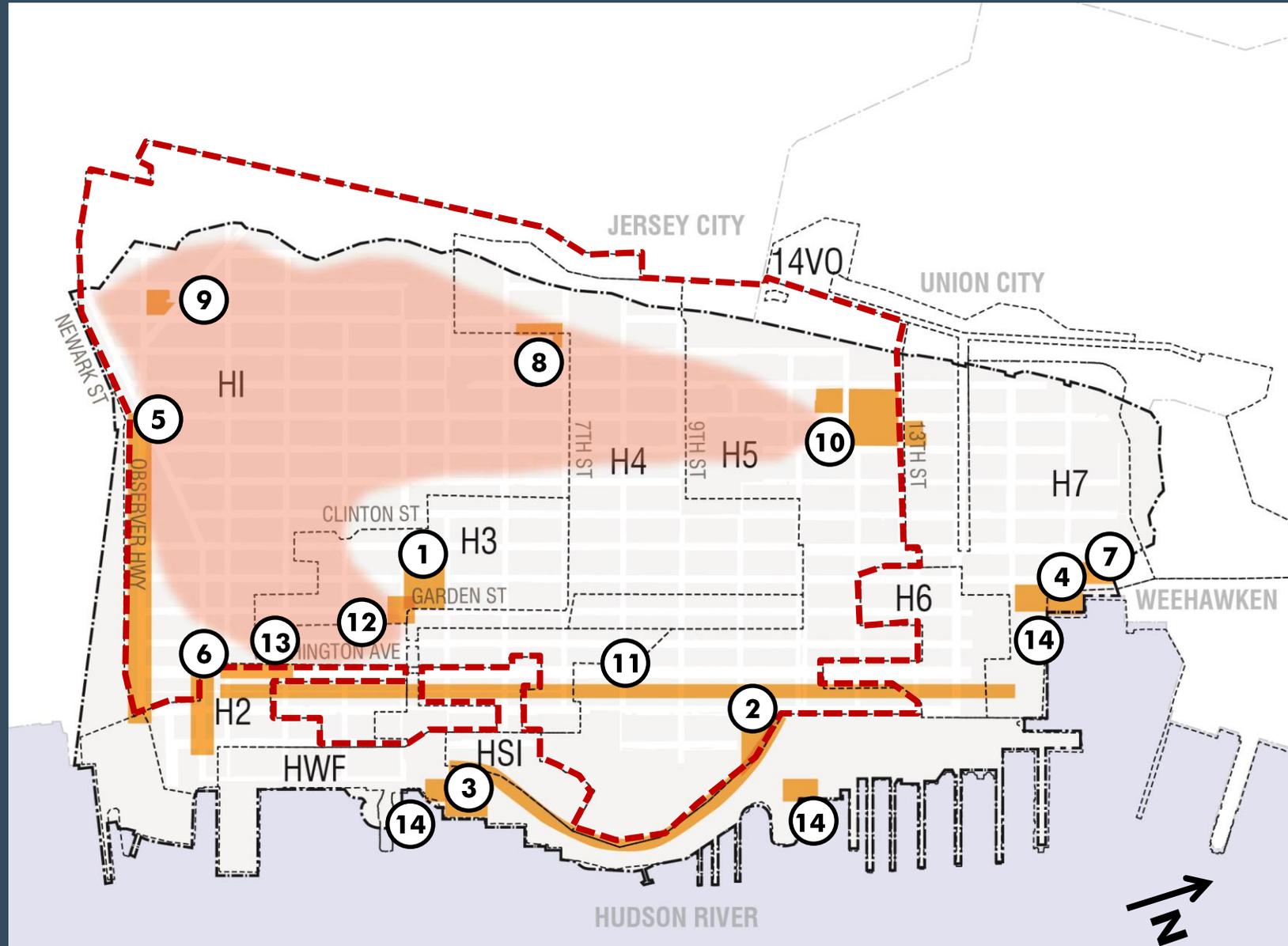
- Designated Redevelopment Areas offer larger scale opportunities to implement Green Infrastructure
- Four of these areas are in the four key sewersheds:
  - Southwest Redevelopment (H1)
  - DPW Redevelopment (H1)
  - Western Edge Redevelopment (H5)
  - Northwest Redevelopment (H4)



# Opportunities: *Planned and Proposed Improvements*

## Capital Improvements:

1. Church Square Park
2. Elysian Park
3. Stevens Park
4. Hoboken Cove
5. Observer Highway/Blvd
6. Newark Street
7. 1600 Park
8. Pino Site Park
9. Block 12 Park
10. BASF Park
11. Washington Street Redesign/Construction
12. Rain Gardens
13. Tree Pit Demonstration
14. Pump Stations



# Opportunities: *Planned and Proposed Improvements*

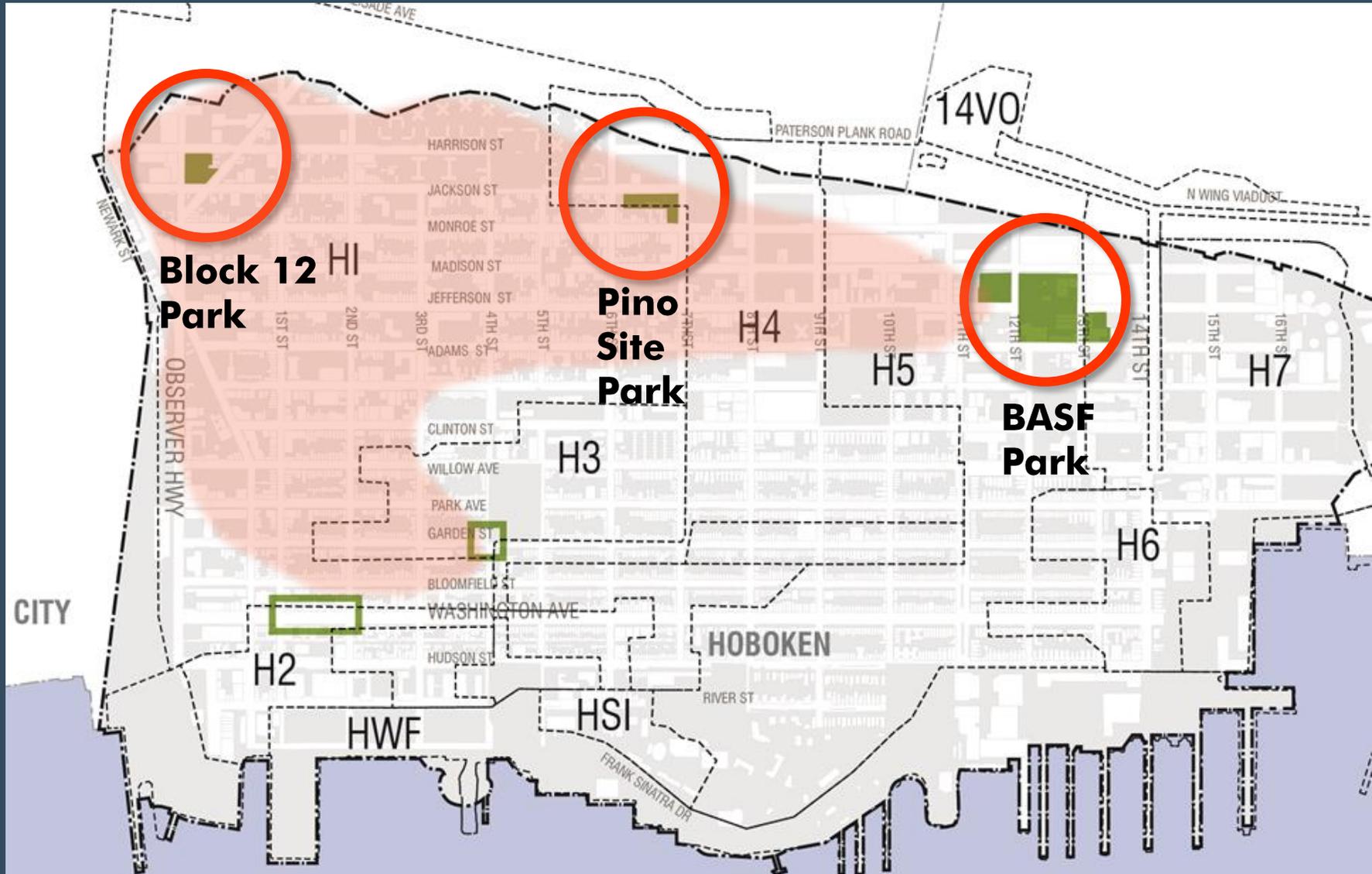
## Pino Site Park



## Block 12 Park



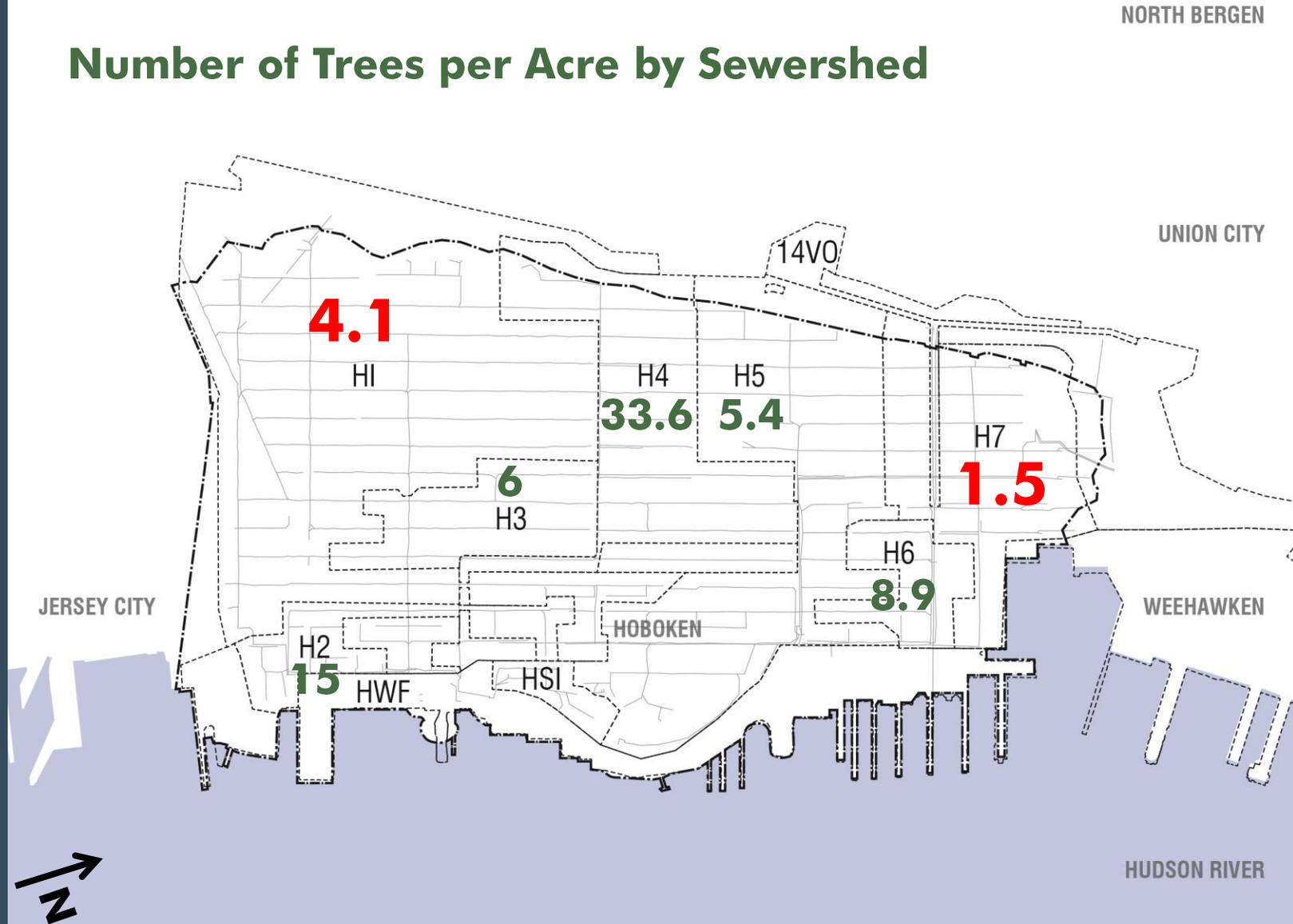
## BASF Park



# Opportunities: Shade Trees

- Shade trees have great stormwater retention benefits
- A single tree may store 100 gallons or more after about one to two inches of rainfall.
- Urban trees can reduce annual runoff by 2 – 7 %
- H1 and H7 have the lowest density of Shade Trees

## Number of Trees per Acre by Sewershed



## Defining the Problems:

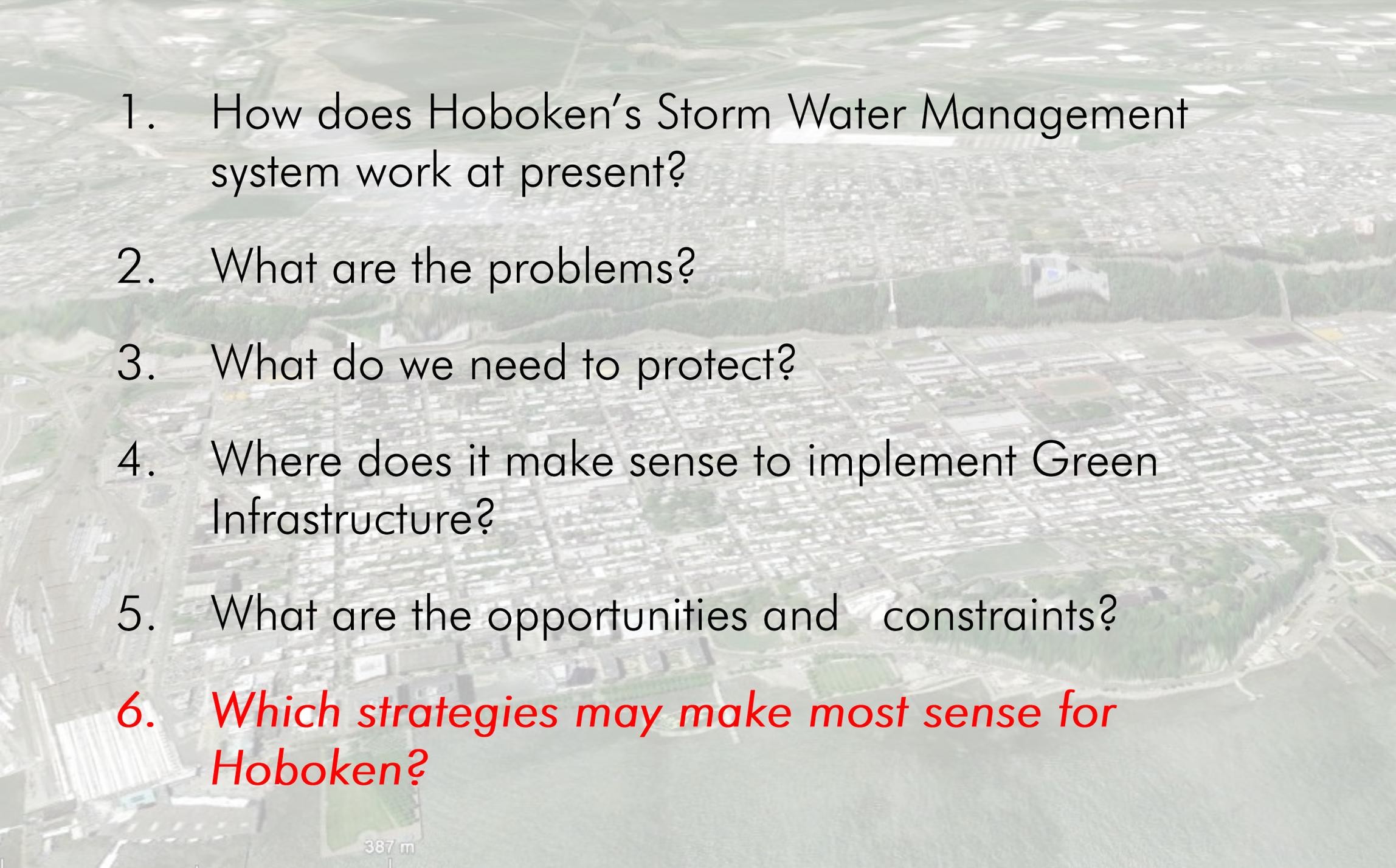
- Hoboken's combined sewer system is overtaxed during storm events, resulting in CSO events and system backups that produce flooding in the lowest areas of the city.
- Hoboken is almost **80 % impervious**, which exacerbates stormwater flows into to the system.
- Interrelationships between the system's sewersheds may aggravate flooding, as sewershed H1, where the majority of stormwater management problem areas are located, handles almost **40% of the total stormwater volume** in the City.

## Targeting Green Infrastructure Solutions:

- Green infrastructure can increase pervious coverage and reduce stormwater flows into Hoboken's combined sewer system.
- Every little bit counts, but focused implementation of Green Infrastructure BMPs within sewersheds H1, H3, H4 and H5 would form a strategic approach to produce the greatest benefit.

## Assessing Opportunities:

- **29.1 acres of publicly owned land** in Hoboken present smaller scale opportunities to implement green infrastructure, specifically at parks, public buildings, transit facilities, and roadways.
- **Five designated redevelopment areas** provide larger scale opportunities to integrate green infrastructure for significant stormwater retention.

- 
1. How does Hoboken's Storm Water Management system work at present?
  2. What are the problems?
  3. What do we need to protect?
  4. Where does it make sense to implement Green Infrastructure?
  5. What are the opportunities and constraints?
  6. *Which strategies may make most sense for Hoboken?*

# Current Policies and Regulations

## Existing Documents:

- 2004 Master Plan
- 2010 Master Plan Reexamination Report
- 2006 Stormwater Management Plan
- 2007 Stormwater Control Ordinance
- Current City Zoning Ordinance
- Hudson County Land Development Regulations
- North Hudson Sewerage Authority Permit Requirements

## Current policies in place supporting regulatory revisions:

- Emphasis on stormwater management
- Increase public open space
- Utilize redevelopment/rehab sites
- Incentives for mitigation techniques

## Current regulations in place:

- City Zoning Ordinance
- Hudson County Regulations
- North Hudson Sewerage Authority Requirements

# Policy and Regulatory Opportunities

## Opportunity A:

- Incorporation of BMP's into ordinances, redevelopment/rehabilitation plans with City fabric in mind

## Opportunity B:

- Work with Hudson County and North Hudson Sewerage Authority to develop compatible standards

## Opportunity C:

- Create a guidance document for City/County public improvements

## Opportunity D:

- Provide economic incentives especially in areas with highest contribution to flooding

## Opportunity E:

- Research alternative funding mechanisms for implementation of BMP's



# Model Green Infrastructure Strategies across the U.S.

City	Long-term Green Infrastructure Strategy	Stormwater Retention standard	Require Green Infrastructure BMPs for reducing impervious coverage
Philadelphia, PA	✓	✓	✓
Milwaukee, WI		✓	✓
New York, NY	✓		✓
Portland, OR		✓	✓
Syracuse, NY	✓		✓
Washington, D.C.		✓	✓
Aurora, IL	✓	✓	
Chicago, IL		✓	
Nashville, TN	✓		

# Benefits of Green Infrastructure

## Water Quality

- Urban
- Riverine

## Flooding Mitigation

- Slower Flow Rates
- Volume Reduction

## Open / Green Space

- Recreation
- Beautification
- Wildlife habitat

## Public Health

- Air Quality
- Heat Island Effect Mitigation
- Drinking Water Supply

## Lower maintenance / capital costs

## Transportation Access

## Business Access

# Urban Green Infrastructure BMPs: *GI Toolkit*

- Basins or ponds
- Constructed wetlands
- Reducing impervious surfaces
- Swales
- Trees planted near pavement
- Rain Gardens
- Subsurface infiltration or storage
- Rainwater harvest and reuse
- Stormwater infiltration planters
- Permeable pavements
- Green Roofs
- Green Streets





# Targeting Solutions: *Where should we strategically implement Green Infrastructure BMPs?*

	Drainage Areas			
BMP	H1	H3	H4	H5
Basins or Ponds	✓			✓
Constructed Wetlands	✓			✓
Reducing Impervious Surfaces	✓	✓	✓	✓
Swales	✓			✓
Trees Planted Near Pavement	✓	✓	✓	✓
Rain Gardens		✓	✓	✓
Subsurface Infiltration or Storage	✓	✓	✓	✓
Rainwater Harvest & Reuse		✓	✓	✓
Stormwater Infiltration Planters		✓	✓	✓
Permeable Pavements		✓	✓	✓
Green Roofs	✓	✓	✓	✓
Green Streets		✓	✓	✓



# Targeting Solutions: *What are our opportunities to strategically implement Green Infrastructure BMPs?*

	Planned and Proposed Improvements				
BMP	Roadways/ Sidewalks	Parks	Public Buildings	Light Rail	Redevelopment areas
Basins or Ponds					✓
Constructed Wetlands		✓			✓
Reducing Impervious Surfaces		✓	✓		✓
Swales	✓			✓	✓
Trees Planted Near Pavement	✓	✓	✓	✓	✓
Rain Gardens		✓	✓		✓
Subsurface Infiltration or Storage		✓	✓		✓
Rainwater Harvest & Reuse		✓	✓		✓
Stormwater Infiltration Planters	✓	✓	✓	✓	✓
Permeable Pavements	✓	✓	✓	✓	✓
Green Roofs			✓		✓
Green Streets	✓				✓

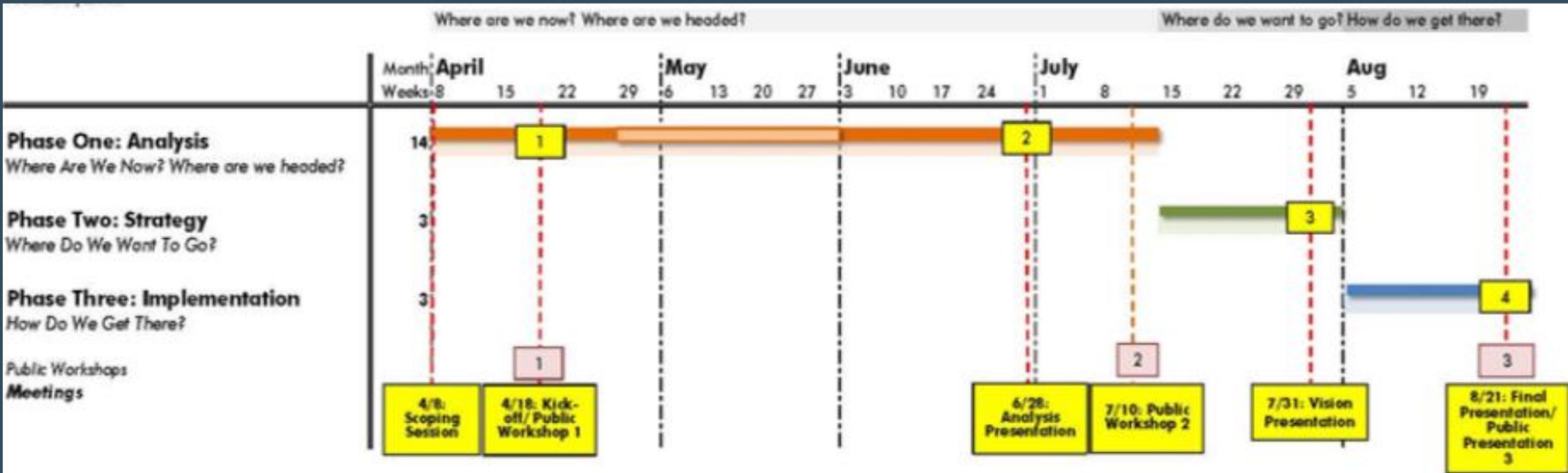


# Public Engagement Discussion

Survey – online and in the field

Potential Survey Questions

# Next Steps



# **APPENDIX E**

**SEPTEMBER 19, 2013 STEERING COMMITTEE PRESENTATION**

RETENTION

DRAFT



DETENTION



GREEN ROOFS



RAINWATER HARVESTING

BASF SITE

# HOBOKEN GREEN INFRASTRUCTURE STRATEGIC PLAN

## FINAL PRESENTATION SEPTEMBER 19, 2013

BLOCK 12  
SITE

INFILTRATION



BIOSWALES



STORMWATER PLANTERS

TOGETHER  
**NORTH  
JERSEY.**



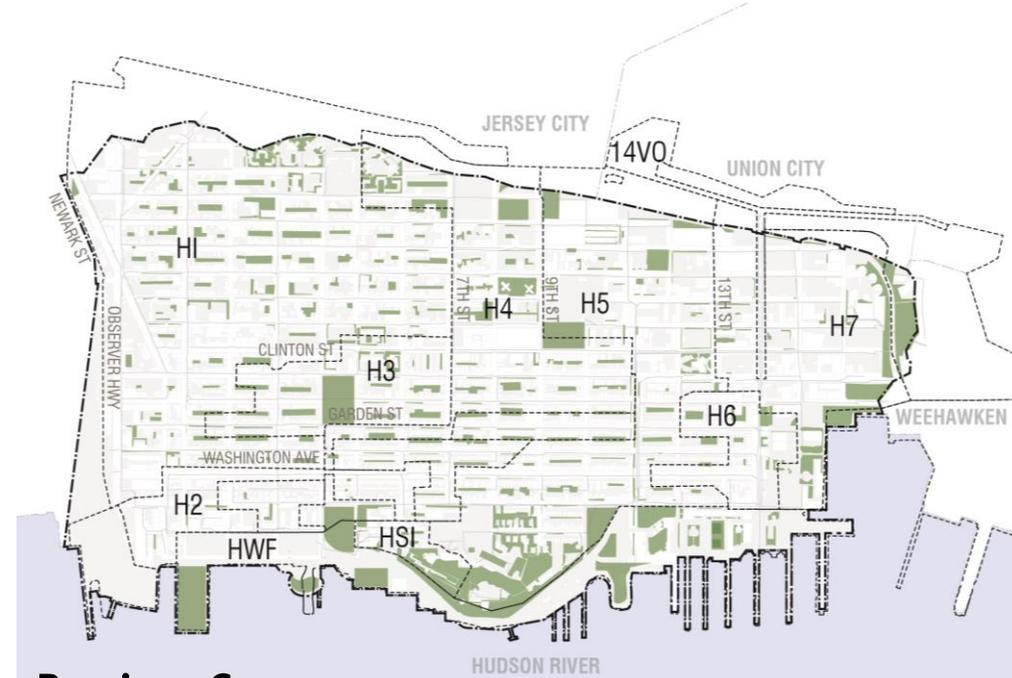
Clarke Caton Hintz ● ● ●

# Agenda

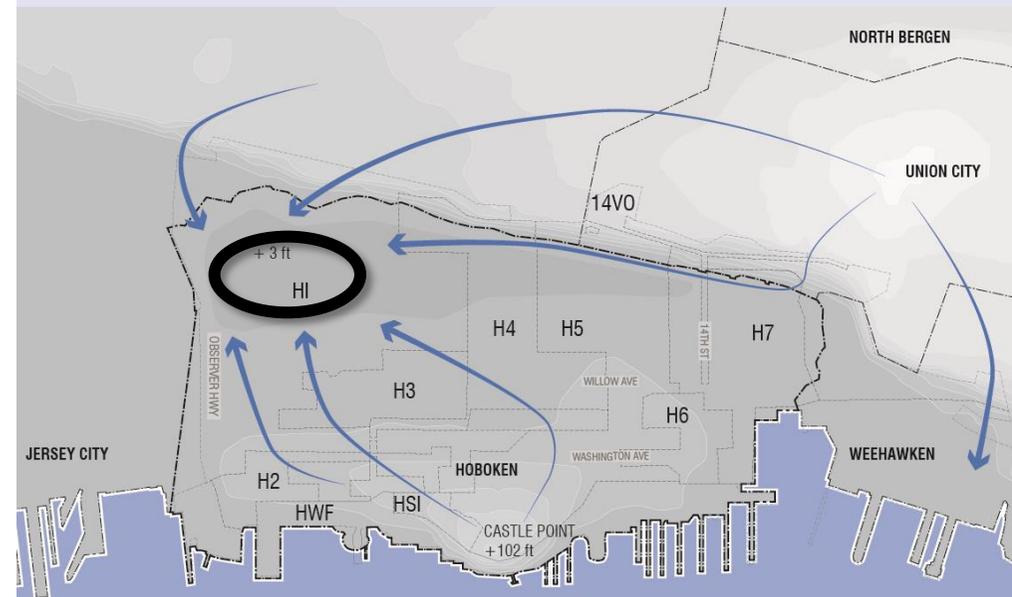
1. Recap of Analysis
2. Conceptual Framework
3. Green Infrastructure Recommendations
4. Policy and Regulatory Recommendations
5. Next Steps and Priorities

# Takeaways from the Strategic Analysis: *the Problems*

- Hoboken's **combined sewer system is overtaxed during storm events**, resulting in CSO events and system backups that produce flooding in the lowest areas of the city.
- Hoboken is almost **80% impervious**, which exacerbates stormwater flows into the system.
- Interrelationships between the system's sewersheds may aggravate flooding. Sewershed H1, where the majority of stormwater management problem areas are located, handles almost **40% of the total stormwater volume** in the City.



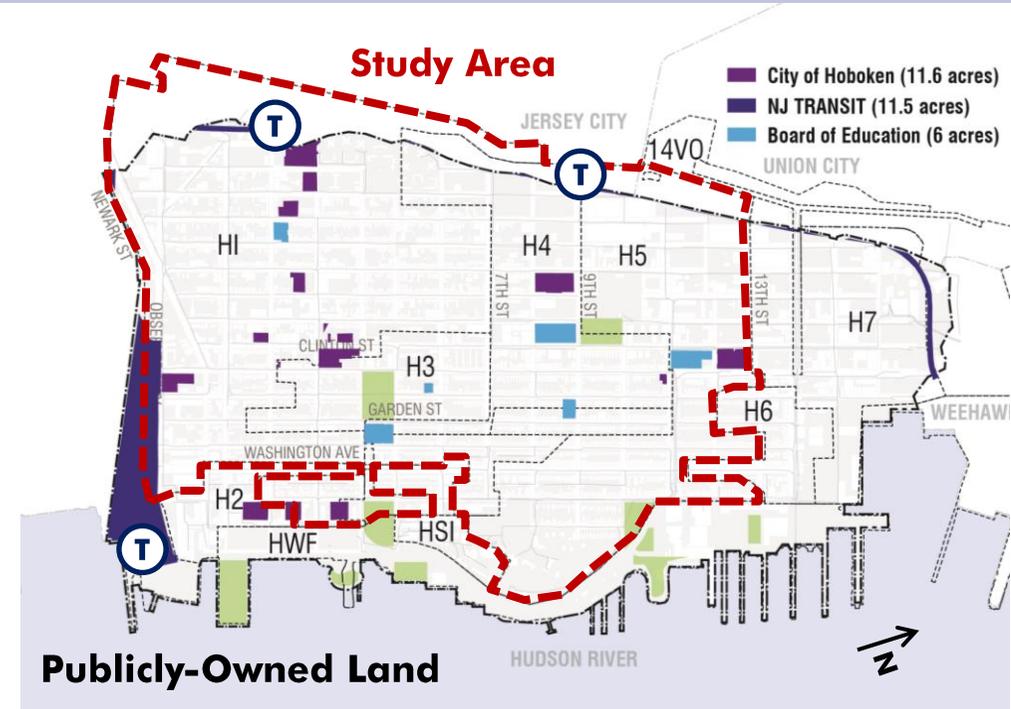
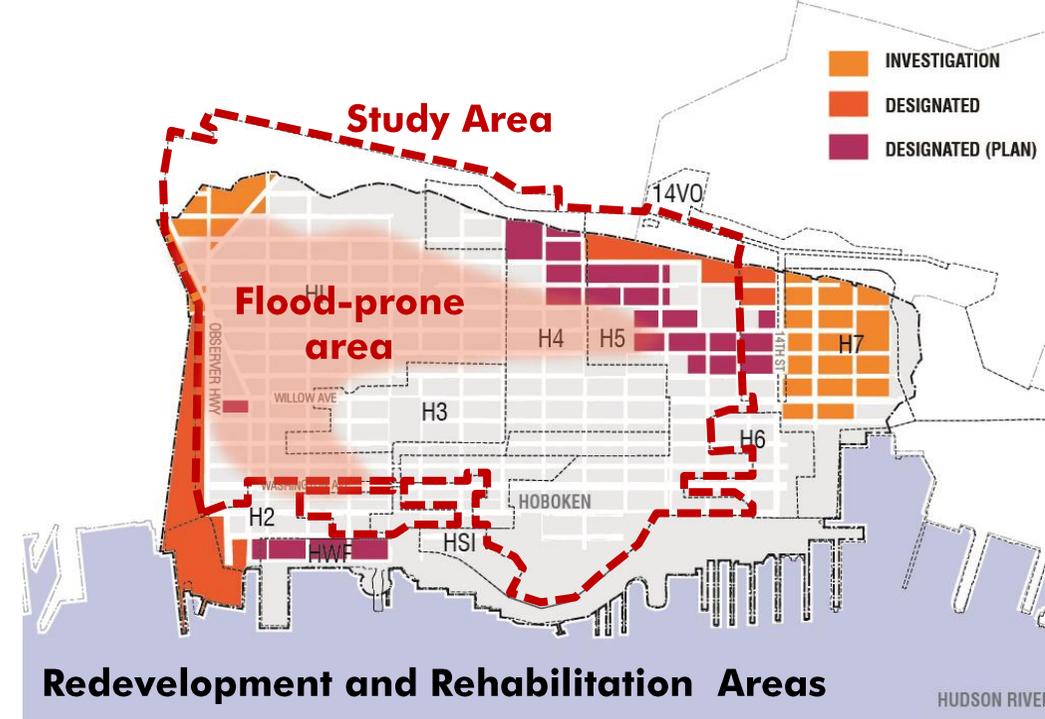
**Pervious Coverage**



**Topography and Surface runoff**

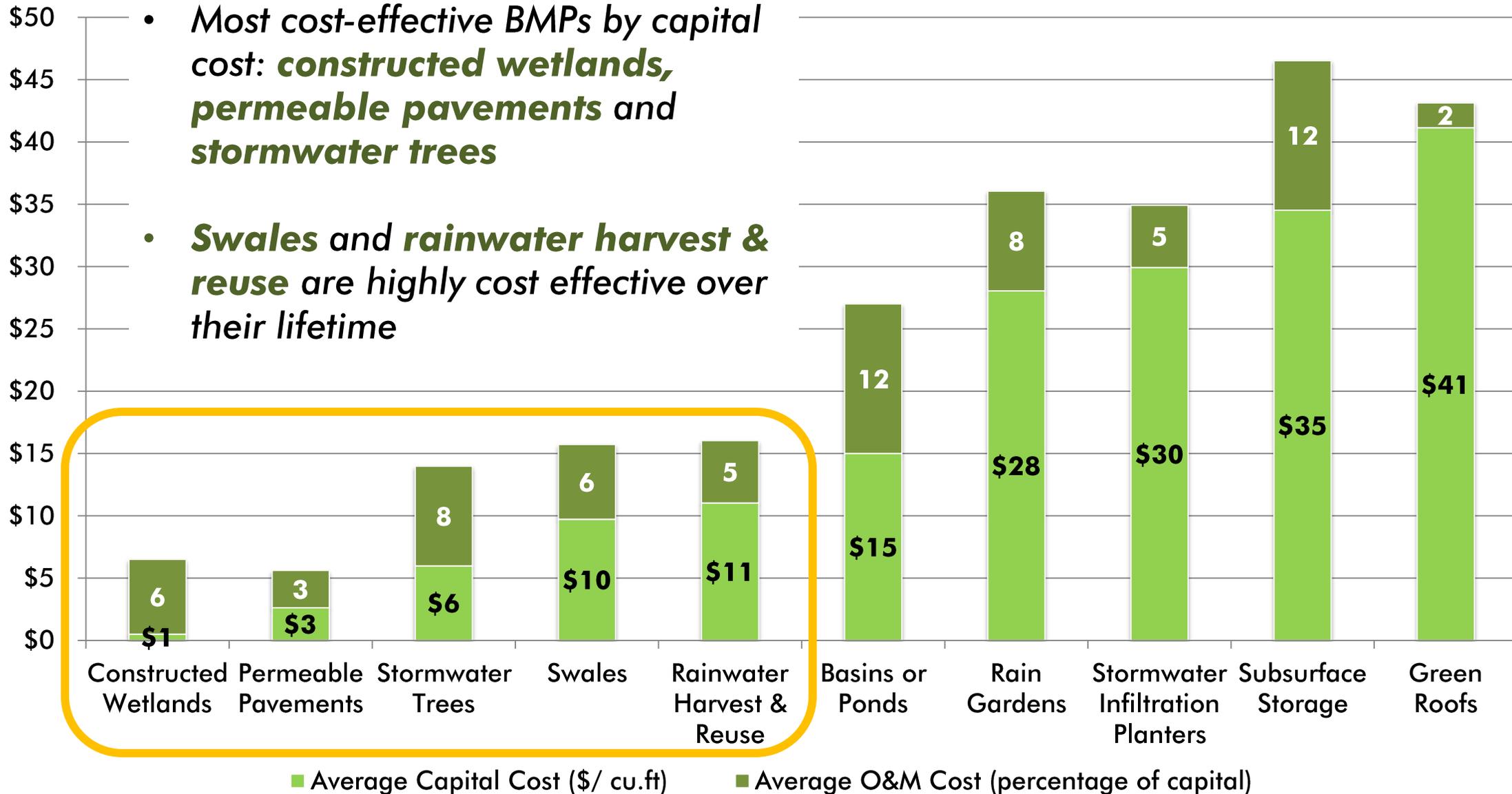
# Takeaways from the Strategic Analysis: *the Opportunities*

- **Redevelopment and Rehabilitation areas** provide larger scale opportunities to integrate green infrastructure for significant stormwater retention.
- **29.1 acres of publicly owned land** in Hoboken present smaller scale opportunities to implement green infrastructure, specifically at parks, public buildings, transit facilities, and roadways.
- **Critical Transit infrastructure** is concentrated at the borders of H1, H2, H4, H5, and H7



# BMP Cost-Effectiveness

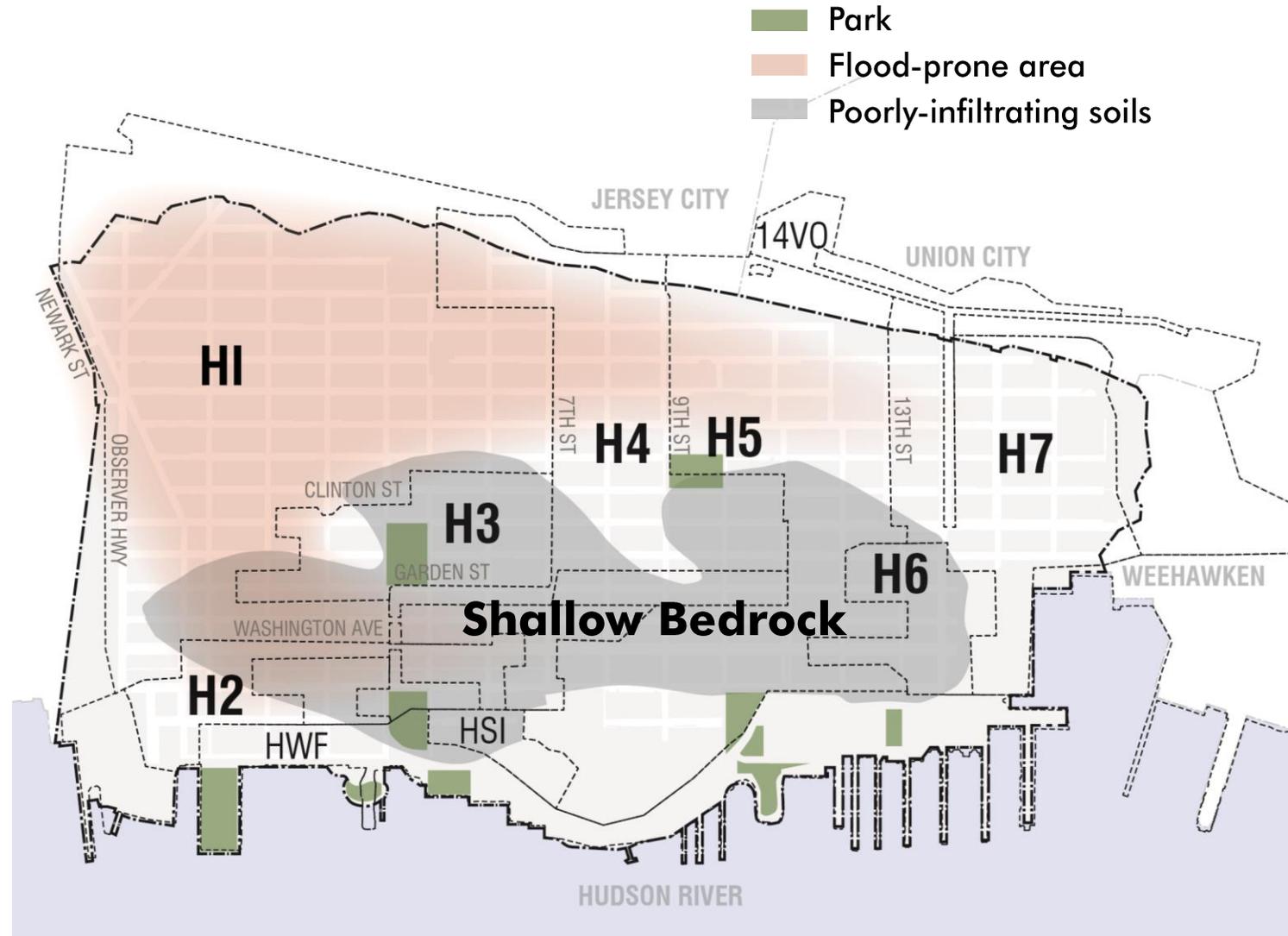
- Most cost-effective BMPs by capital cost: **constructed wetlands, permeable pavements and stormwater trees**
- **Swales and rainwater harvest & reuse** are highly cost effective over their lifetime



# BMP Siting Constraints

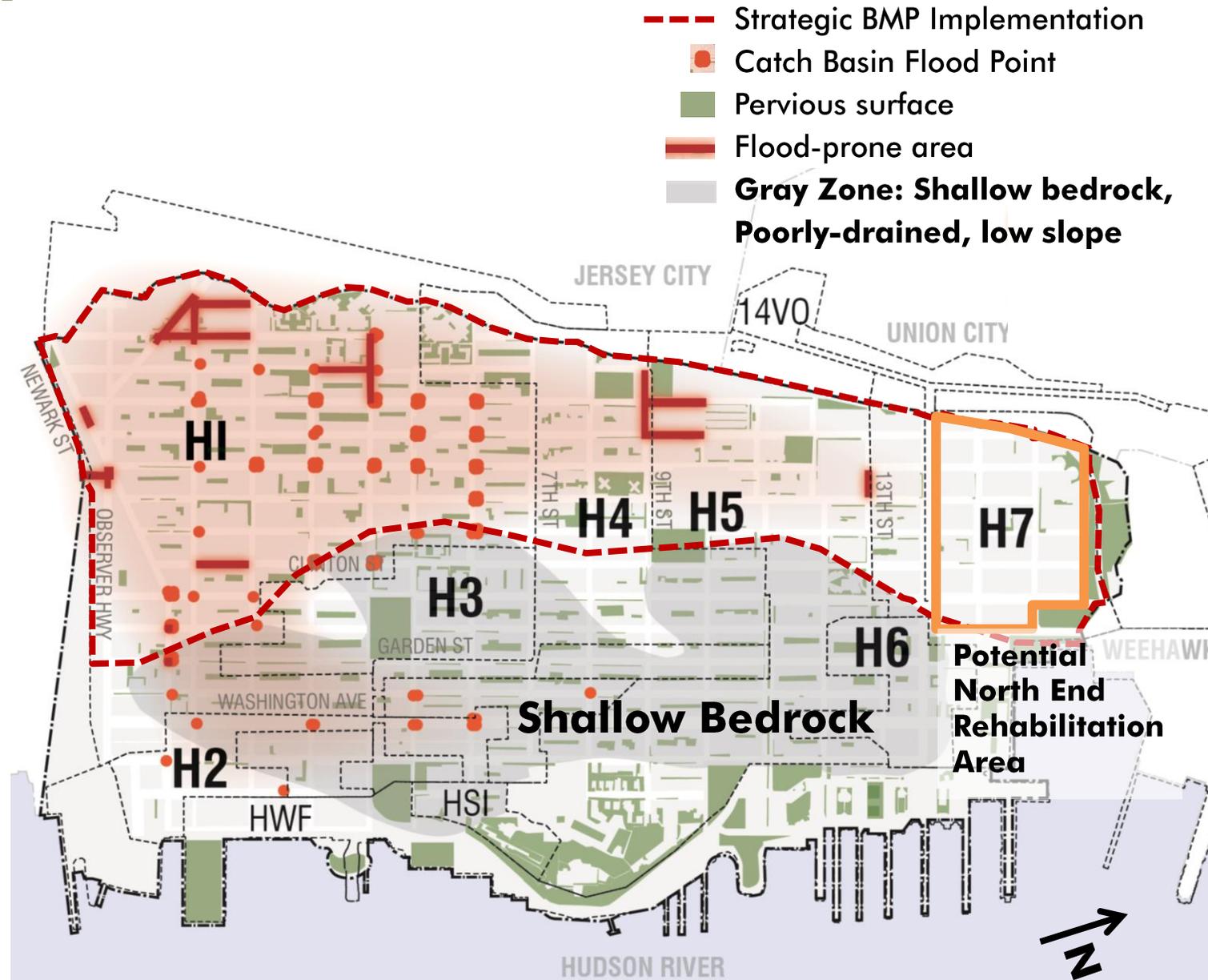
- Slope
- Vertical Constraints:
  - Utility Locations
  - Bedrock Depth
  - Seasonal High Groundwater Table
- Soils:
  - Permeability / Infiltration rate
  - Composition

→ **“Gray Zone”**:  
shallow bedrock, poorly  
drained, low slope



# Strategic Direction

- **Almost all of H2, H3 and H6 are on shallow bedrock (“Gray Zone”), preventing stormwater from infiltrating effectively**
- Because of its geological features and potential redevelopment opportunities in the north end of the City, **H7 presents the greatest opportunity for targeted green infrastructure installation**
- **H1, H4 and H5 are recommended for strategic Best Management Practice (BMP) implementation.**



# Policy and Regulatory Opportunities

- A** Incorporate **Best Management Practices (BMPs)** into ordinances, redevelopment/rehabilitation plans with City fabric in mind
- B** Work with Hudson County and North Hudson Sewerage Authority to **develop compatible standards**
- C** Create a **guidance document** for City/County public improvements
- D** **Provide economic incentives** (FAR, Height, Density), especially in areas with highest contribution to flooding
- E** Research **alternative funding mechanisms** for implementation of BMP's

# RETENTION

# DETENTION



CONSTRUCTED WETLANDS



SUBSURFACE STORAGE

BASF SITE

PINO SITE

BLOCK 12 SITE



GREEN ROOFS



RAINWATER HARVESTING

# Conceptual Framework

# INFILTRATION



BIOSWALES



STORMWATER PLANTERS

# Gray Zone

## Detention

Detain stormwater through above-ground BMPs (rainwater harvesting and green/blue roofs) and subsurface storage)

Smaller-scale BMPs for long term incremental benefit:

- Daylighting areas
- Commercial Property Retrofits
- Public property including parks and schools

Hudson River

# DETENTION



GREEN ROOFS



RAINWATER HARVESTING

Jersey City

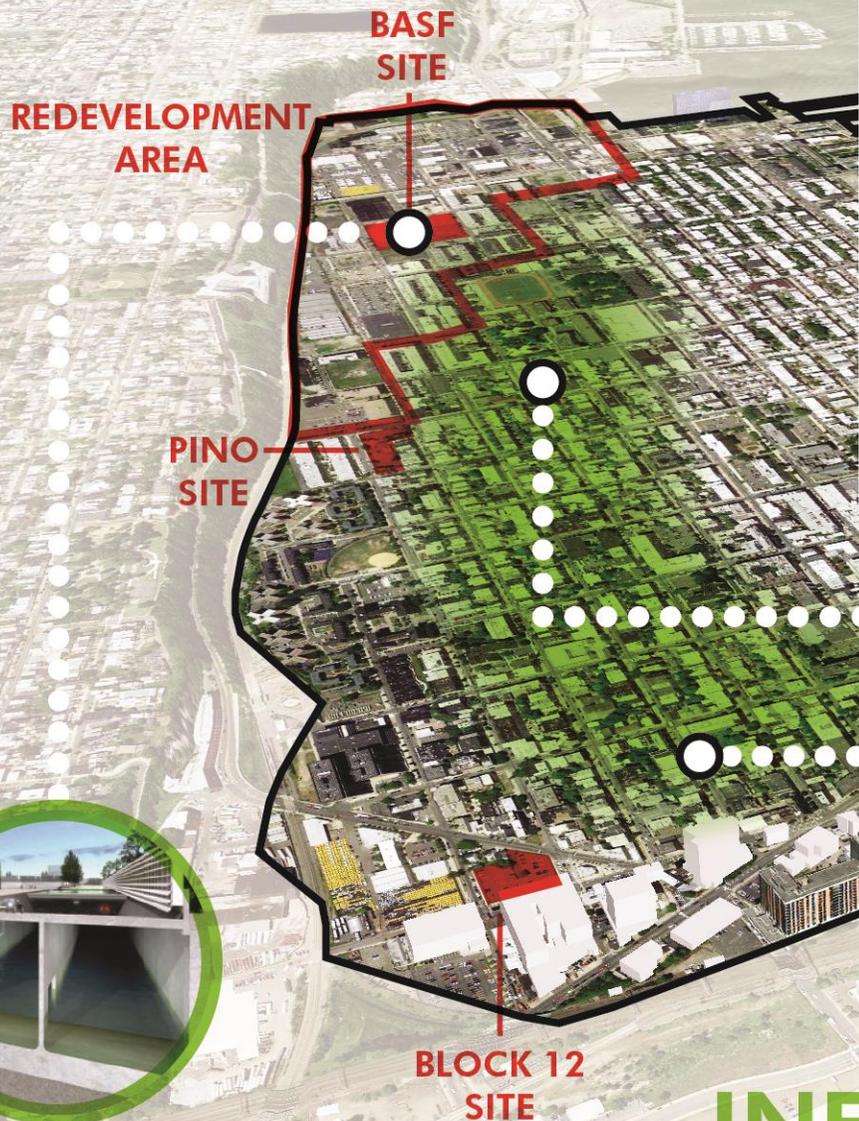
# Green Zone

## Infiltration

Infiltrate stormwater using vegetated BMPs, eg. rain gardens, swales, stormwater trees, infiltration planters and permeable pavements

Large-Scale BMPs for more immediate Impact:

- Subsurface Storage under the Pino Site Park;
- Constructed wetlands or basin in the Northwest, Western Edge and Potential North End Rehabilitation Areas



UNDERGROUND PARKING/STORAGE



BIOSWALES



STORMWATER PLANTERS

# INFILTRATION

# RETENTION



CONSTRUCTED WETLANDS



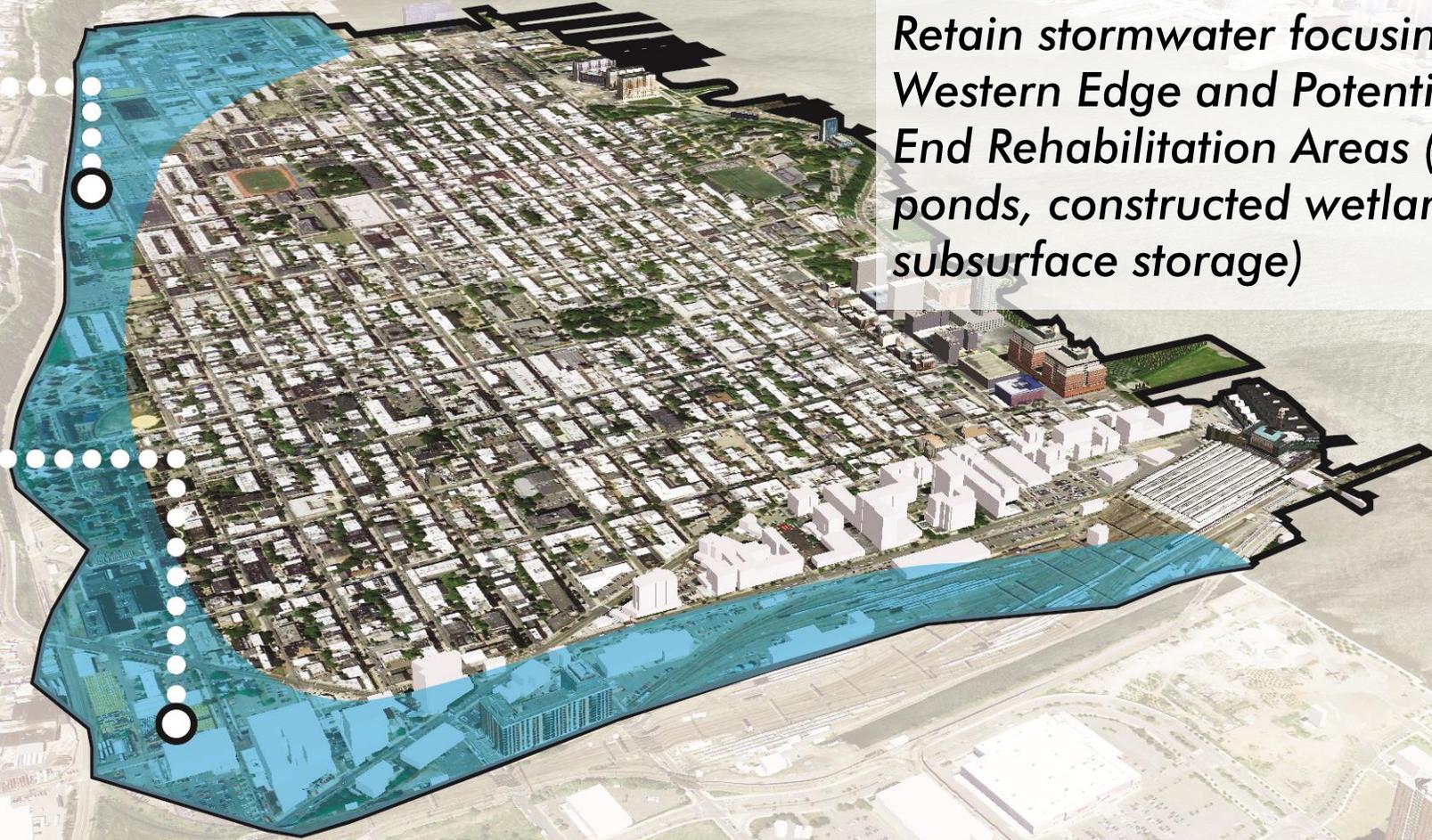
SUBSURFACE STORAGE

Hudson River

## Blue Zone

### Retention

Retain stormwater focusing on the Western Edge and Potential North End Rehabilitation Areas (basins or ponds, constructed wetlands, subsurface storage)



Jersey City

# RETENTION

# DETENTION



CONSTRUCTED WETLANDS



SUBSURFACE STORAGE

BASF SITE

PINO SITE

BLOCK 12 SITE



GREEN ROOFS



RAINWATER HARVESTING

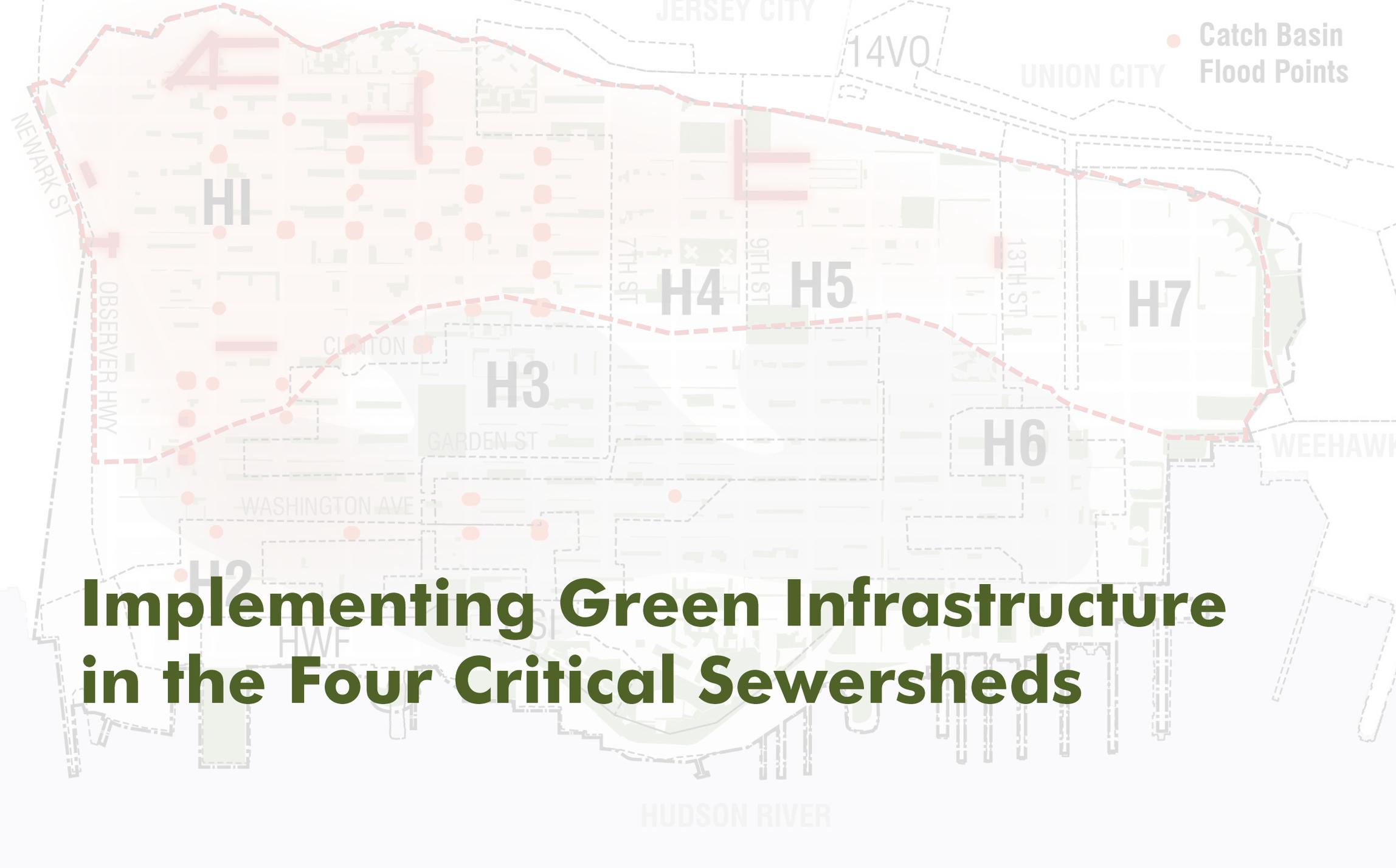


BIOSWALES



STORMWATER PLANTERS

# INFILTRATION

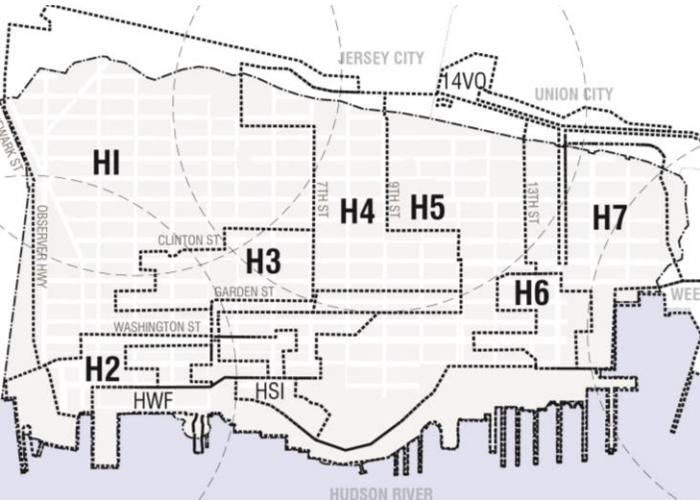


# Implementing Green Infrastructure in the Four Critical Sewersheds

# Potential Stormwater that be captured using Green Infrastructure

Potential Amount of Stormwater captured by BMPs by sewershed (cu. ft) during a 1-inch storm event

- **H1, H4, H5 and H7** present the biggest potential opportunities to capture stormwater using Green Infrastructure BMPs



BMP	H1	H2	H3	H4	H5	H6	H7
Basins or Ponds	574,096				297,338		218,041
Constructed Wetlands	172,229				89,201		65,412
Swales	114,819	5,179		28,681	59,468		43,608
Stormwater Tree Pits	57,410	1,726	6,871	9,560	29,734	1,926	21,804
Rain Gardens	229,639	10,359		76,482	118,935		87,216
Subsurface Storage	172,229	12,949	154,586	57,361	89,201	43,337	65,412
Stormwater Planters	344,458	10,359		57,361	89,201		65,412
Permeable Pavements		2,762		15,296	23,787		17,443
Rainwater Harvest & Reuse	12,968	634	3,547	5,006	9,984	1,810	4,780
Green Roofs	25,936	2,535	14,189	20,024	19,968	7,240	9,561
<b>TOTAL</b>	<b>1,703,784</b>	<b>46,504</b>	<b>179,193</b>	<b>269,771</b>	<b>826,817</b>	<b>54,313</b>	<b>598,690</b>

Gray signifies that a BMP is not recommended in a given Sewershed

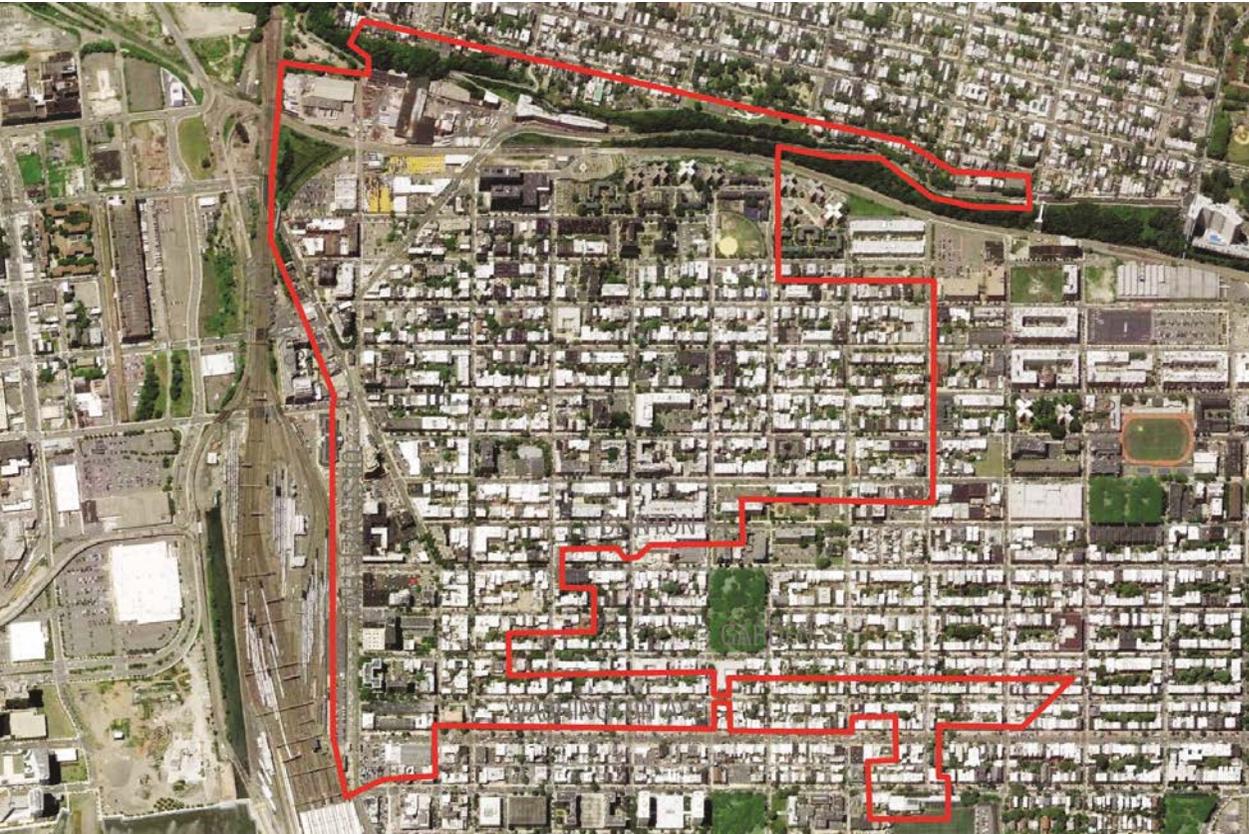
# H1/Southwest

## Land Use Context:

- Center City Neighborhoods and Business Districts

## Constraints:

- Low point in the City, flood prone, water has nowhere to go



# H1/Southwest

- Total potential amount of stormwater that can be captured using Green Infrastructure: **6.8 million cu.ft.**
- BMPs with the highest potential:
  - **Basins/ponds** **2.3 million cu.ft.**
  - **Stormwater Infiltration Planters** **1.4 million cu.ft.**
  - **Rain Gardens** **918,000 cu.ft.**
- Almost **90%** of impervious coverage is outside of the “gray zone,” meaning that a significant amount of infiltration is possible



Basin



Stormwater Infiltration Planter



Rain Garden

# H1: Southwest

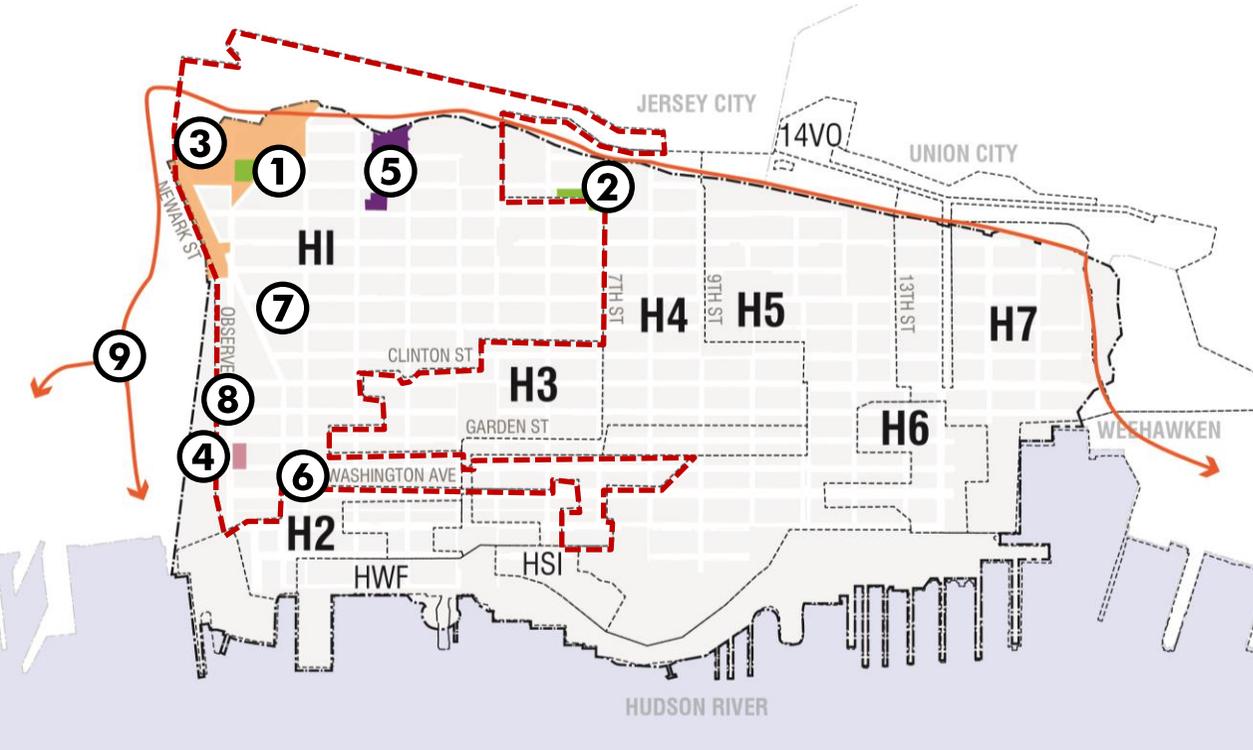


Pino Site Park

Block 12 Park

Columbian Arms

City Hall



## Opportunities:

1. Block 12 Park
2. Pino Site Park (H1/H4)
3. Southwest Redevelopment Area
4. DPW Redevelopment Area
5. Hoboken Housing Authority and Columbian Arms
6. City Hall
7. Multi-Services Center
8. DPW and Municipal Parking Garage
9. NJ Transit Light Rail

# H1/Southwest: Block 12 Park

- **Opportunities:**
  - Shallow slopes, deeper bedrock
  - Nearby daylighting areas
- **Constraints:**
  - Shallow water table,
  - Somewhat poorly drained soils
- Baseline annual rainfall retained is **17%**
- **This can be improved to 47%** using 50% impervious coverage



# H4/Midtown

## Land Use Context:

- Central City Neighborhoods

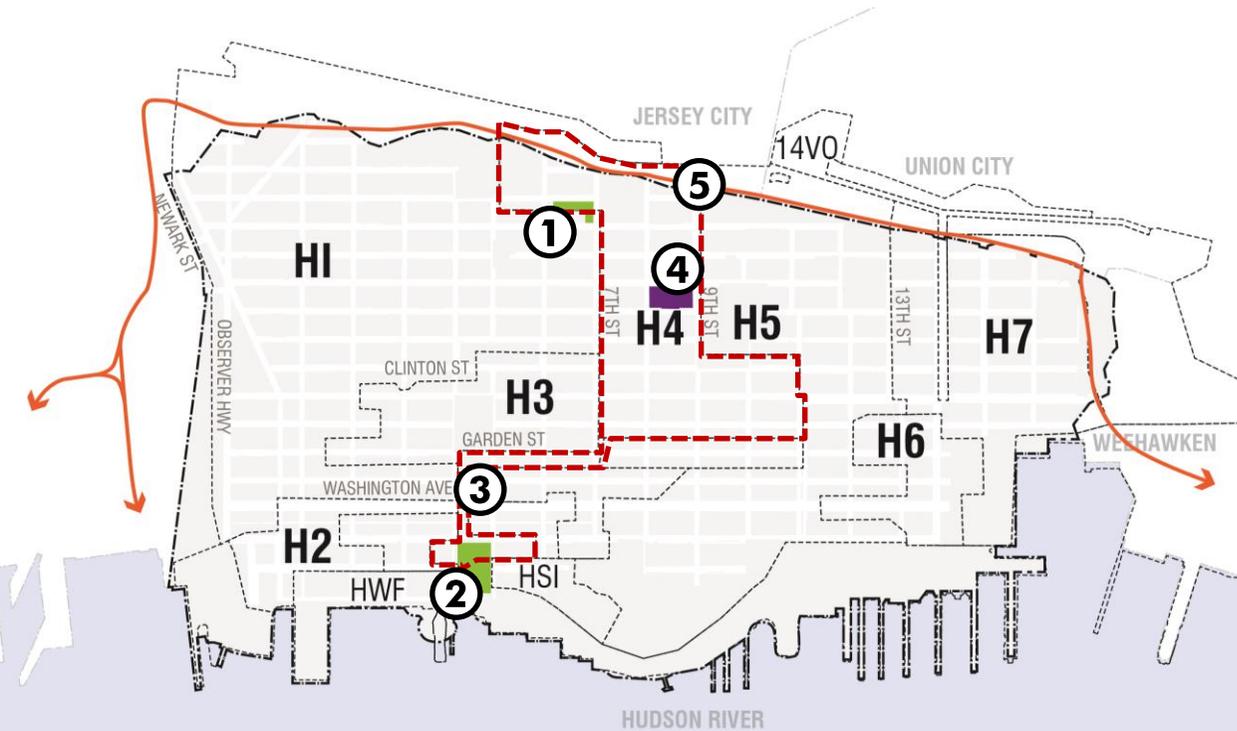
## Constraints:

- Shallow bedrock depth (in eastern portion)
- Somewhat poorly and poorly drained soils



# H4/Midtown: Opportunities

1. Pino Site Park (H1/H4)
2. Stevens Park
3. Rain Gardens Demonstration
4. Hoboken Housing Authority
5. NJ Transit Light Rail



Hoboken Housing Authority



Stevens Park

# H4/Midtown: Key Takeaways

- **BMPs with the highest potential:**
  - **Rain Gardens** **51,000 cu.ft.**
  - **Stormwater Infiltration Planters** **38,200 cu.ft.**
  - **Subsurface Infiltration/Storage** **38,200 cu.ft.**
- Only **38%** of Impervious Coverage is outside of “gray zone”, as such, a narrower range of BMPs will be effective



# H4/Midtown Pino Site Park

- **Opportunities:**
  - Shallow slopes,
  - Deeper Bedrock
- **Constraints:**
  - Shallow Water table
  - Somewhat poorly drained soils
- Baseline annual rainfall retained is **10%**
- **This can be increased to 56%** using BMPs (50% impervious)



Pino Site

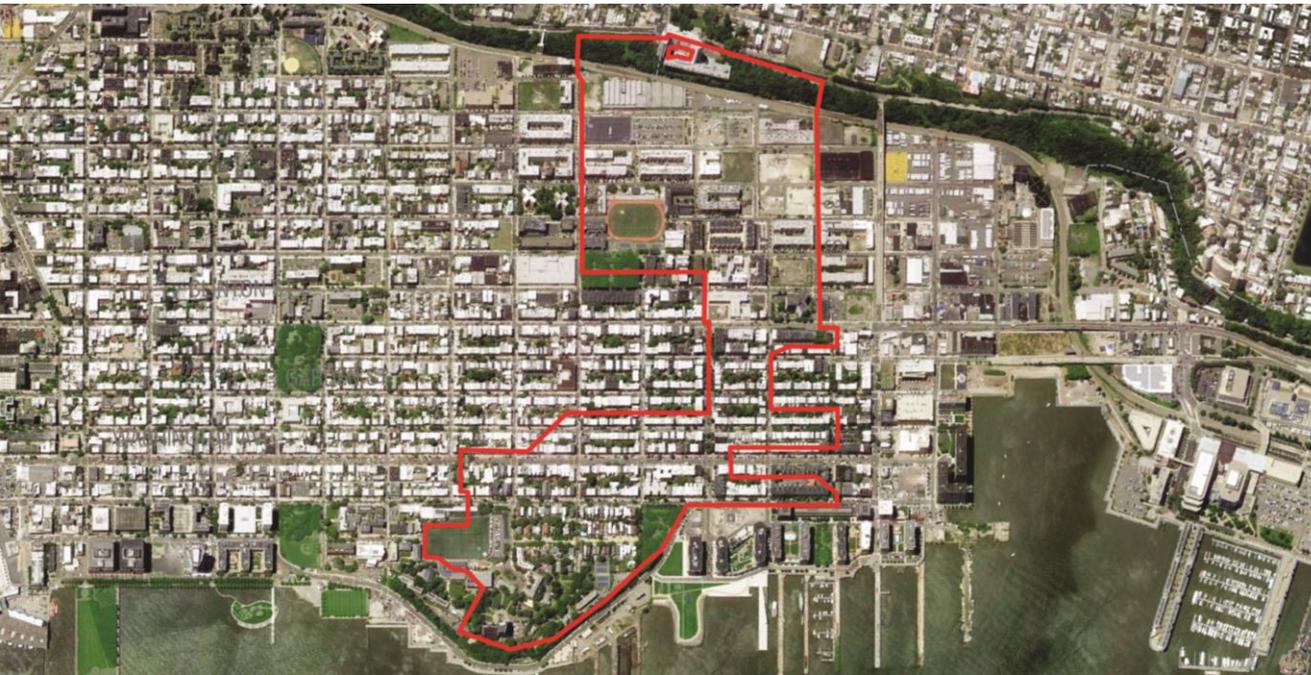
# H5/Northwest

## Land Use Context:

- Central City Neighborhoods, Business Districts, and West Side/Northwest Redevelopment Area

## Constraints:

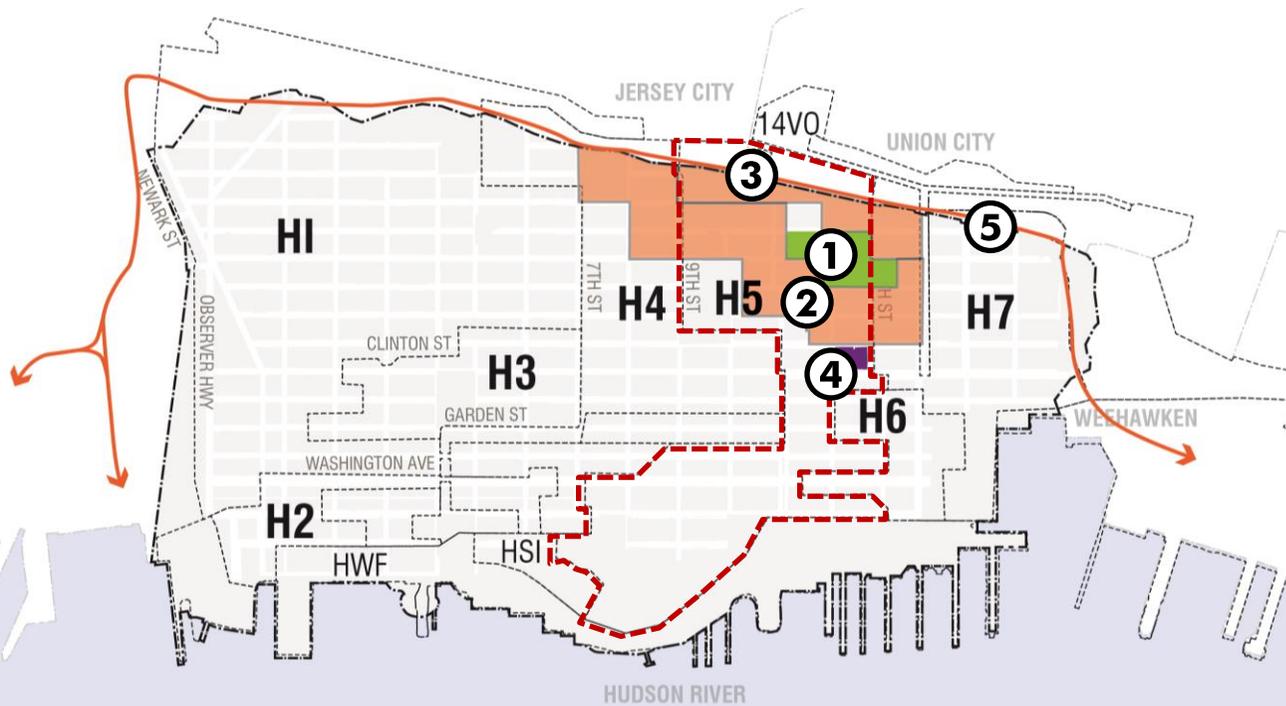
- Shallow Bedrock depth (in eastern portion)
- Somewhat poorly drained soils
- Steep slopes at Castle Point



# H5: Northwest

## Opportunities:

1. BASF / Cogins Site Park
2. Northwest Redevelopment Area
3. Western Edge Redevelopment Area
4. Hoboken Housing Authority
5. HBLR



# H5/Northwest

- **BMPs with the highest potential:**
  - Basins/ponds 343,000 cu.ft.
  - Rain gardens 137,000 cu.ft.
- Relatively little publicly owned land is available in H5
- **60%** of Impervious Coverage is outside of "gray zone."
- As such, a large range of BMPs can be effectively employed in H5



# H5: BASF Park

- **Opportunities:** Well drained soils, flat, bedrock, water table depth
- **Constraints:** Contamination
- Baseline annual rainfall retained: **46%**
- After capping (50% impervious), **this can be increased to 77%** with BMPs such as Wet Ponds, Rainwater Harvest & Reuse and Green Roof
- After remediating (30% impervious) **this can be increased to 93%**



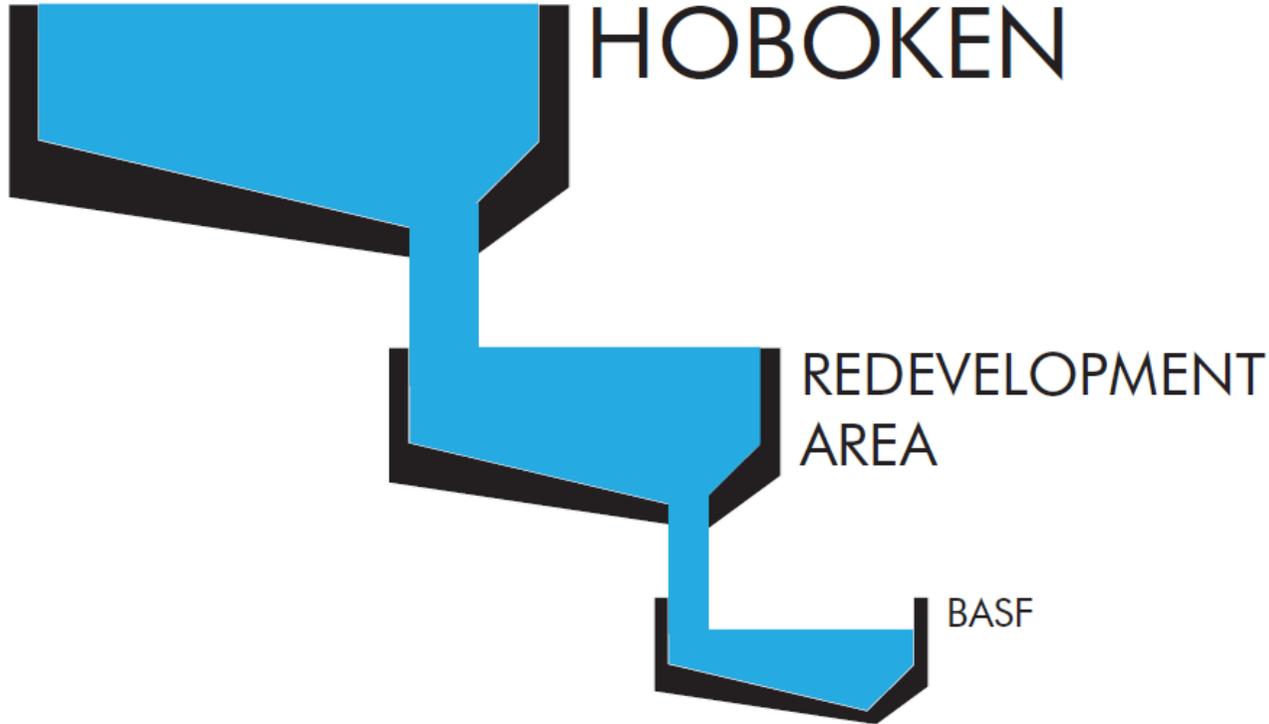
Well-drained soils



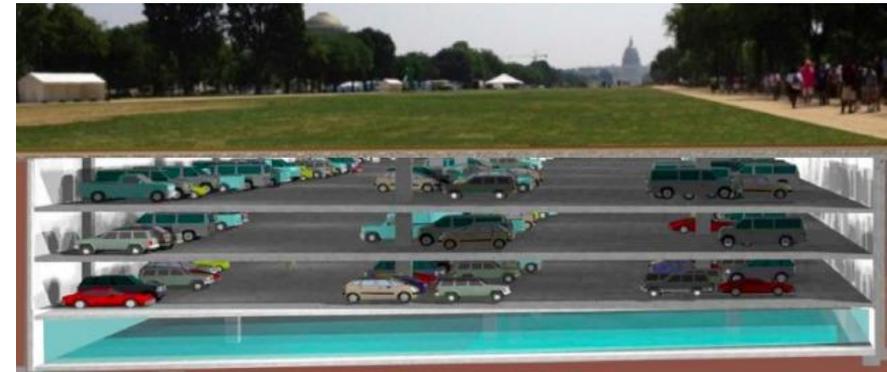
# H5: BASF Park



- **BASF could function as a district-wide parking and stormwater management facility**



Combined underground parking and storage



# H7: Northwest

## Land Use Context:

- Industrial, surface parking lots
- West Side/Northwest Redevelopment Area

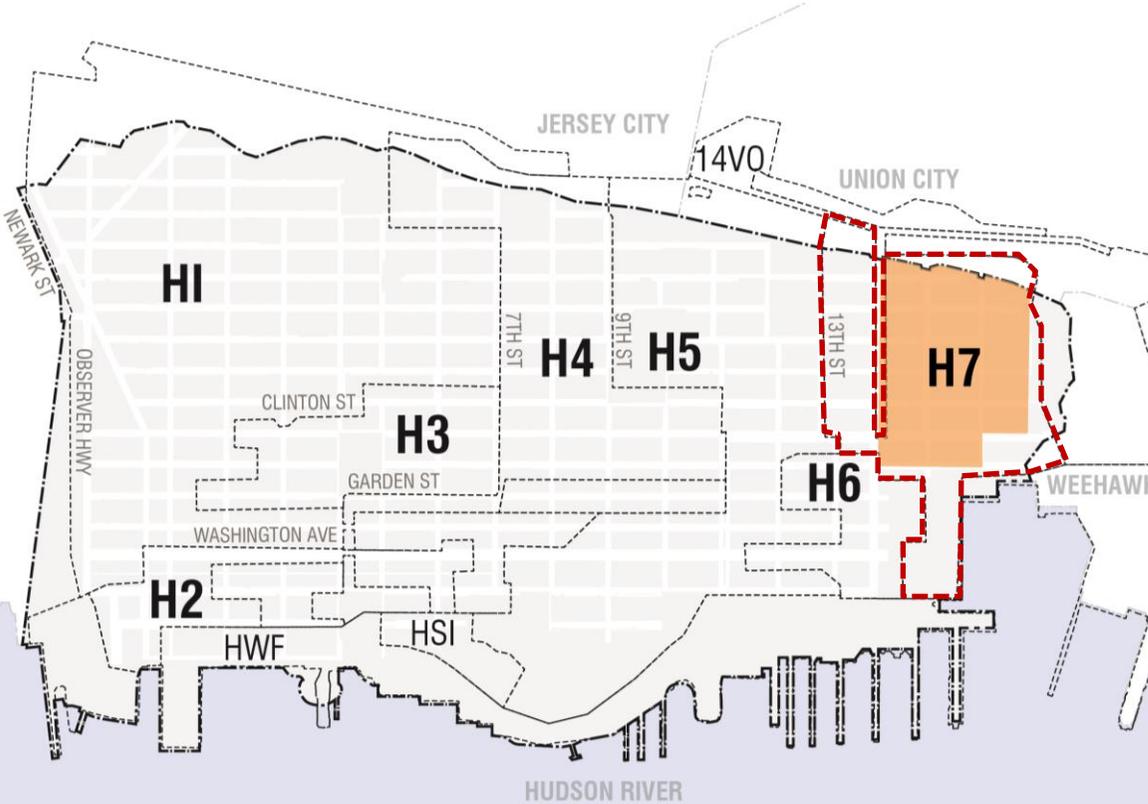
## Constraints:

- Somewhat poorly-drained soils



# H7/Northwest: Opportunities

Redeveloping impervious areas in the Potential North End Rehabilitation Area



# H7/Northwest: Key Takeaways

- **BMPs with the Highest Potential**
  - **Basins or Ponds**                    **2.7 Million cu.ft.**
  - **Rain Gardens**                        **1.1 million cu.ft.**
- **91%** of Impervious Coverage is outside of “gray zone,” presenting the opportunity to employ a wide range of BMPs
- **Potential North End Rehabilitation Area** occupies nearly all of Sewer Shed H7, presenting the opportunity to implement a district-wide strategy



Potential North End Rehabilitation Area



Basin



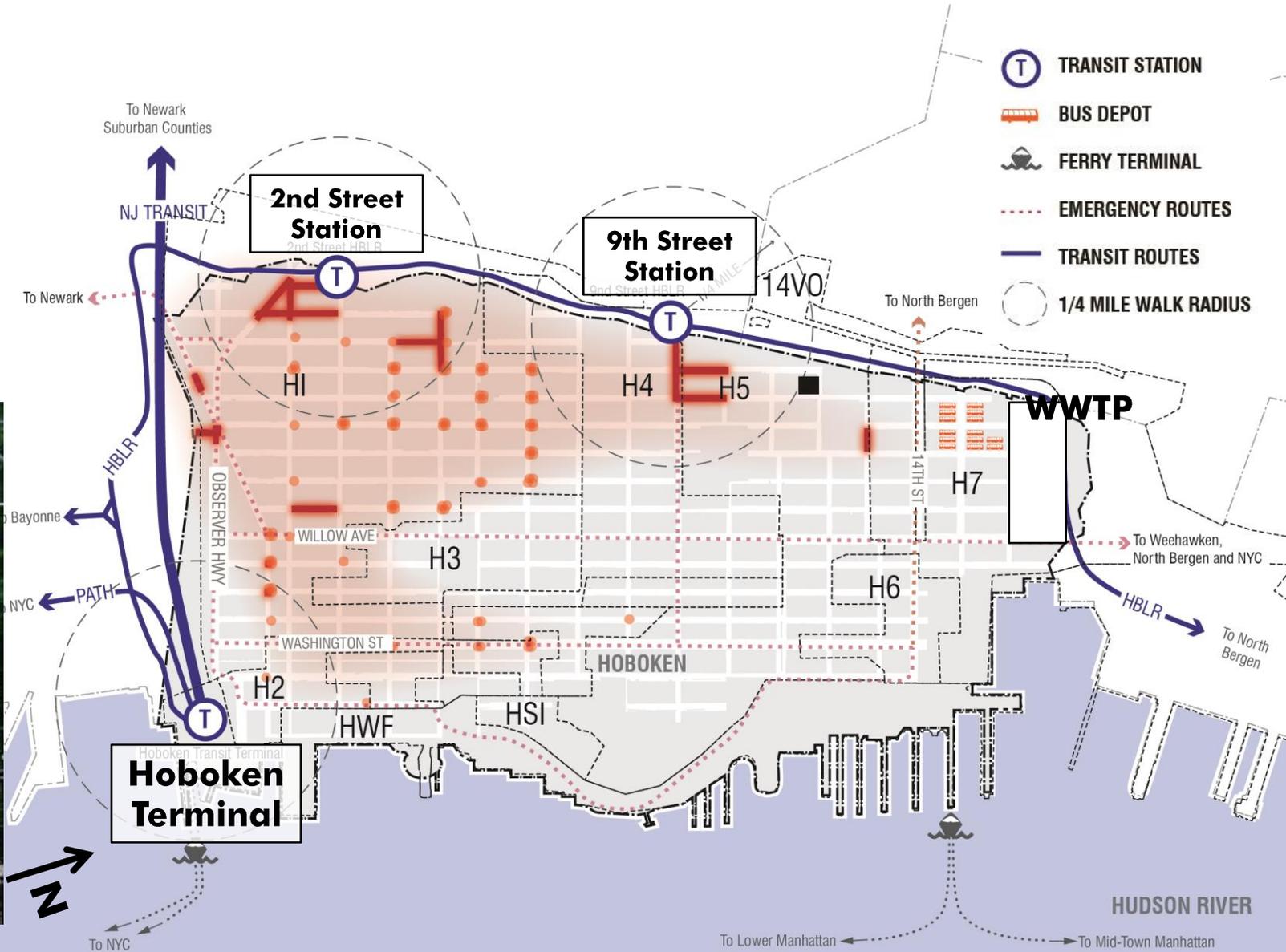
Rain Garden

# Making Transit More Resilient

Critical Transit infrastructure is concentrated at the borders of H1, H2, H4, H5, and H7



9th Street HBLR Station

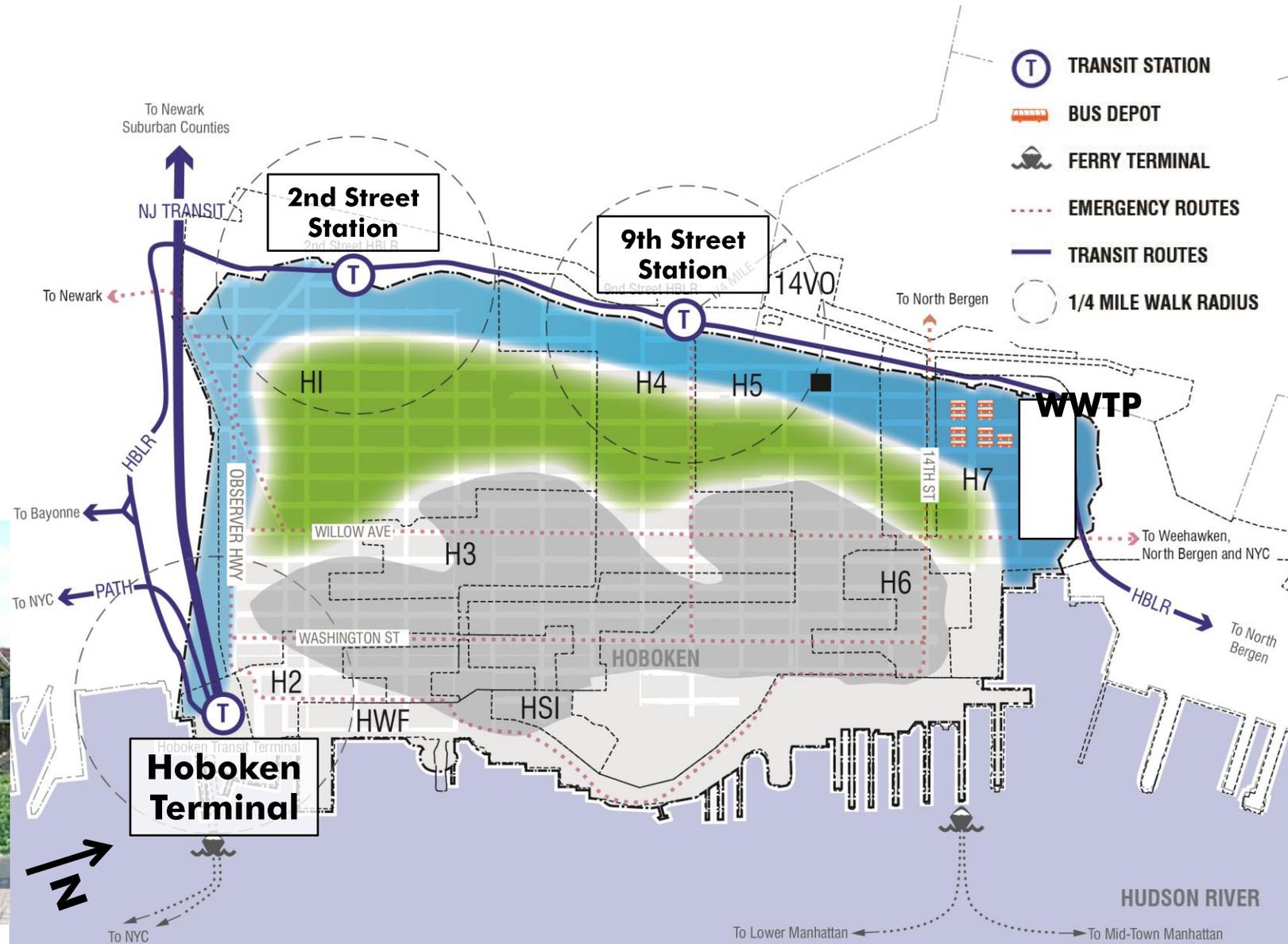


# Making Transit More Resilient

Transit runs along the “blue zone,” which presents opportunities for protecting transit while furthering stormwater management goals



2nd Street HBLR Station



# Current Policies and Regulations

## Policies

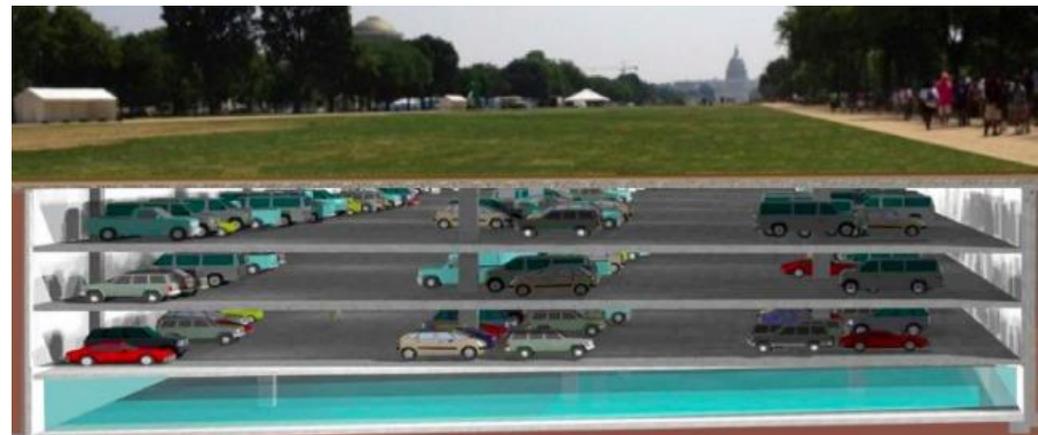
- Emphasis on Stormwater Management
- Increase Open Space
- Utilize Redevelopment Areas

## Regulations

- Zoning Ordinance
  - Building Coverage
  - Stormwater Regulations
- NJDEP Stormwater Regulations
  - County
  - North Hudson Sewerage Authority



**Rotterdam Museumplein: Underground parking and stormwater storage**



**Plan for underground parking and stormwater management under the National Mall in Washington, DC**

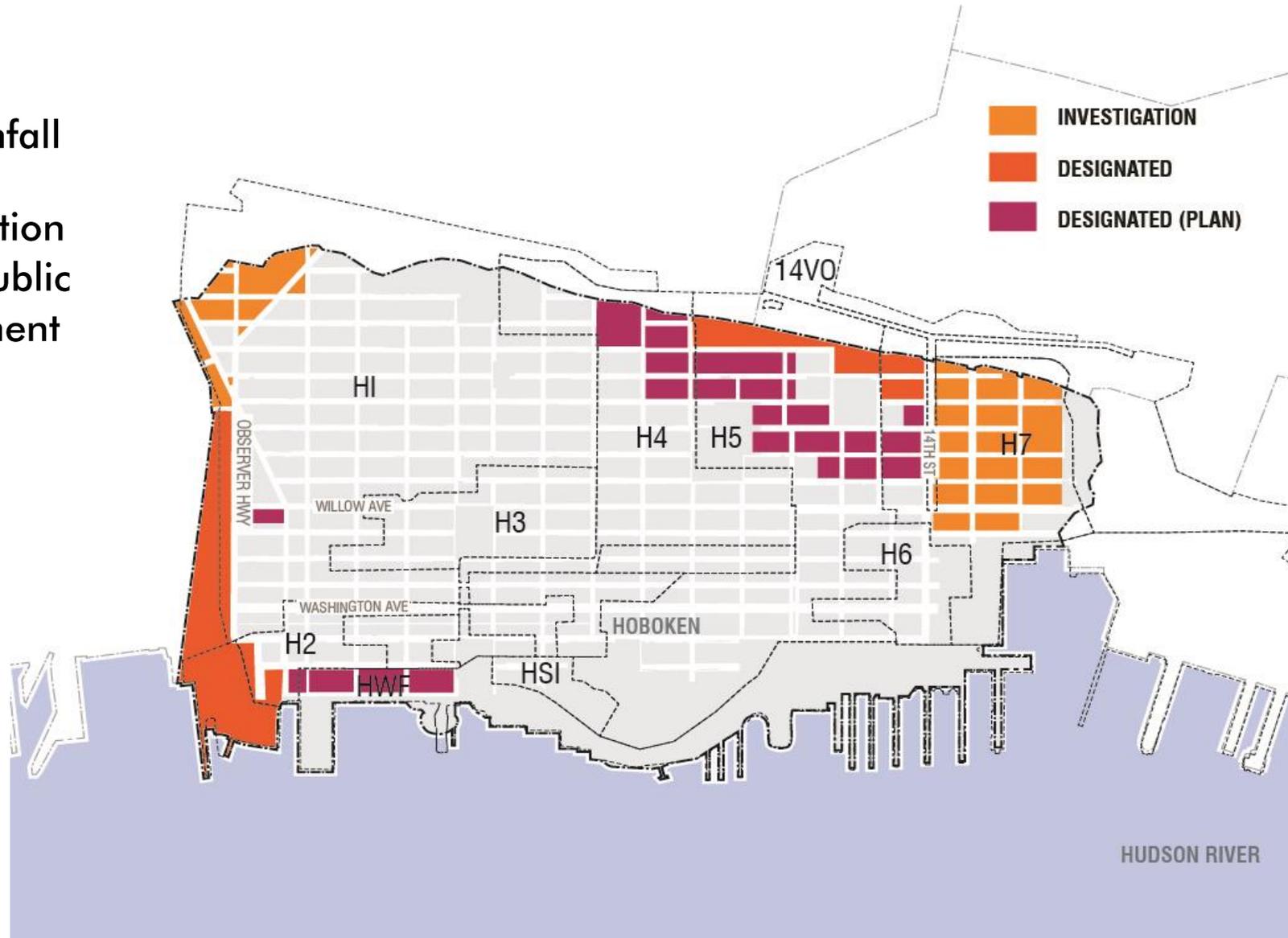
# Redevelopment Area Opportunities and Challenges

## Opportunities

- Realize significant rainfall retention/treatment
- Ripe for immediate action
- Reduced cost to the public
- Incremental development supported
- Integrated Green Infrastructure

## Challenges

- BMP Cost
- BMP Site Suitability
- BMP Implementation
- BMP Effectiveness



# Recommended Regulation Options

## Performance/Incentive Zoning

- Regulate: On-Site Rainfall Retained
- Incentives: FAR, Height, Density
- Factors:
  - % of Pervious Coverage
  - % of Impervious Surface treated by BMP

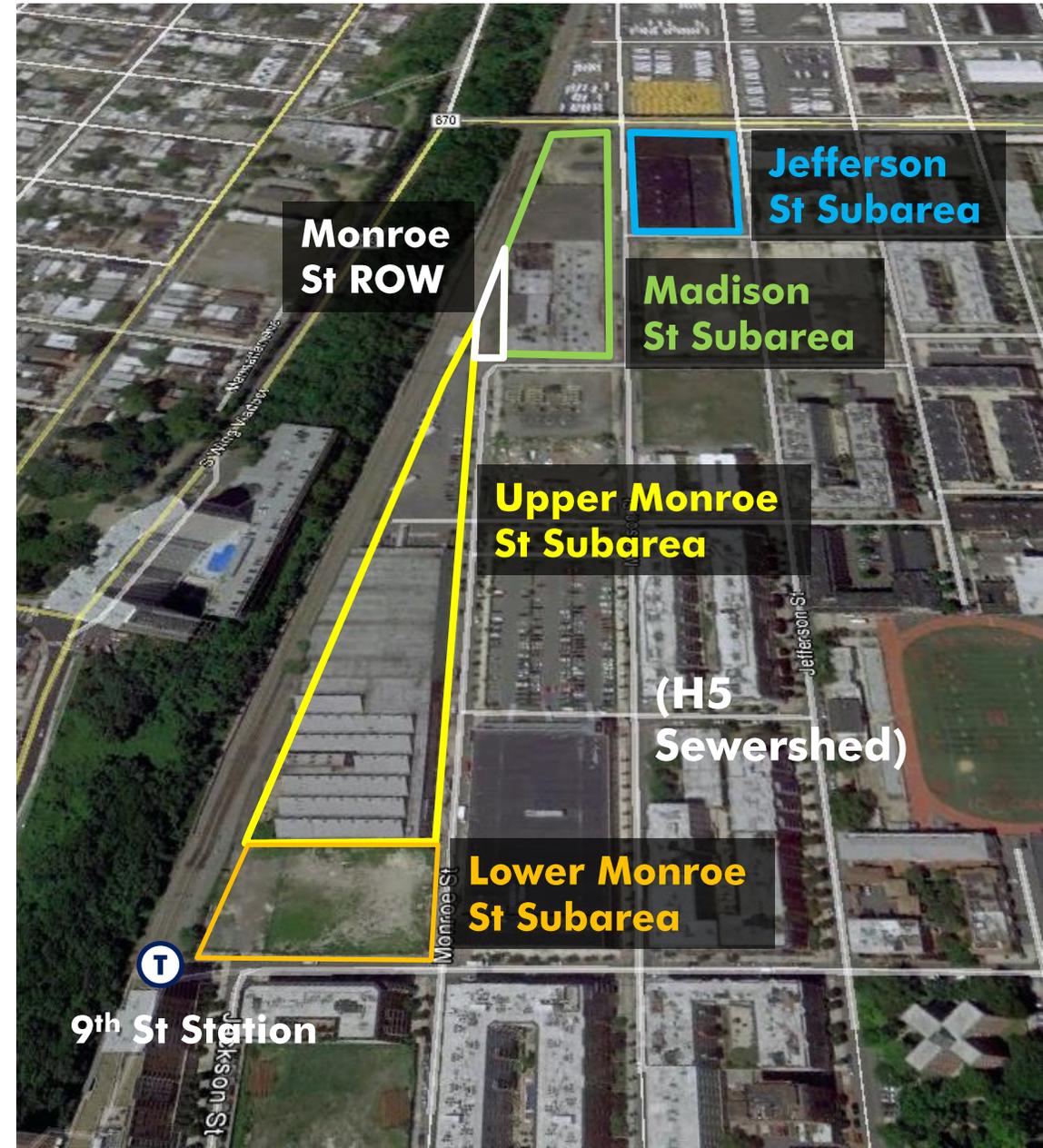
## Stormwater Trust Fund

- District Wide Approach
- Site constraints/cost limit BMP
- Contribution of funds
- Funds used for BMP in public realm

Regulation	Rainfall Retained		
	1-25%	25-50%	51%+
FAR	1.0	3.2	4.0
Height	2 story	8 story	12 story
Density	28 DU/ Acre	55 DU/ Acre	90 DU/ Acre

## Redevelopment Area Case Study: Western Edge Upper Monroe Street

- H5 Sewershed: generates the second-highest volume of stormwater
- Identified as **high flood risk area**
- Protection of public infrastructure: **9<sup>th</sup> Street NJ Transit Station**
- Designated with a **Redevelopment Plan**
- **Capacity to retain rainfall** based upon soils and depth to bedrock
- Connectivity to **open space network**



# Performance Zoning

## Scenario A: No BMPs

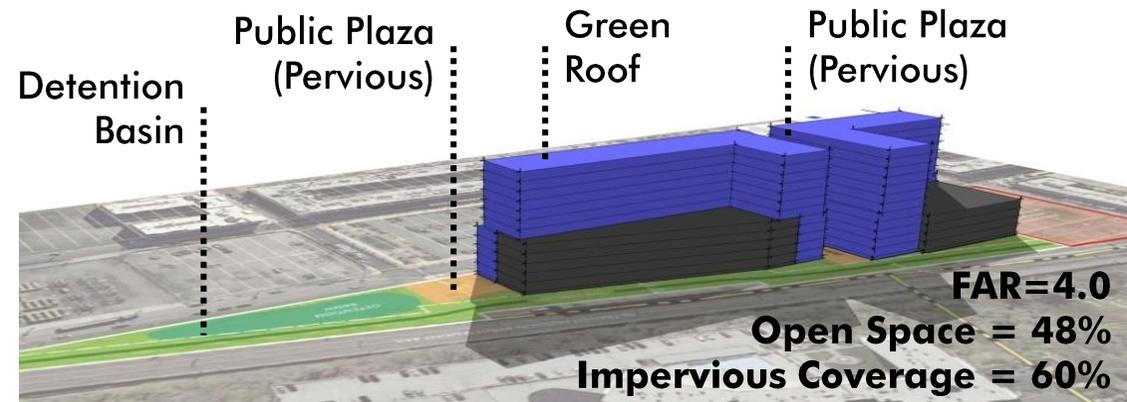
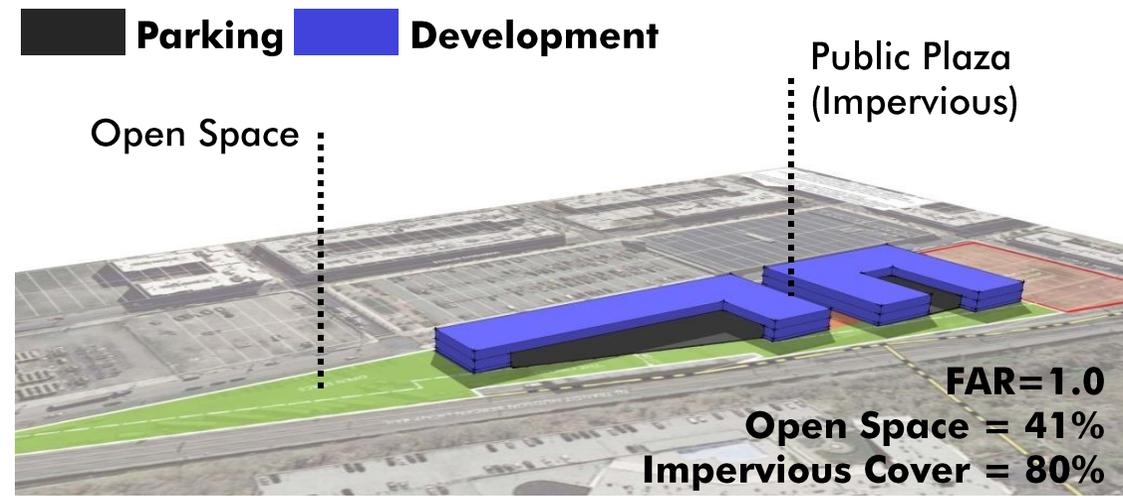
- Rainfall retained w/o BMPs **24%**

## Scenario B: Existing Redevelopment Zoning

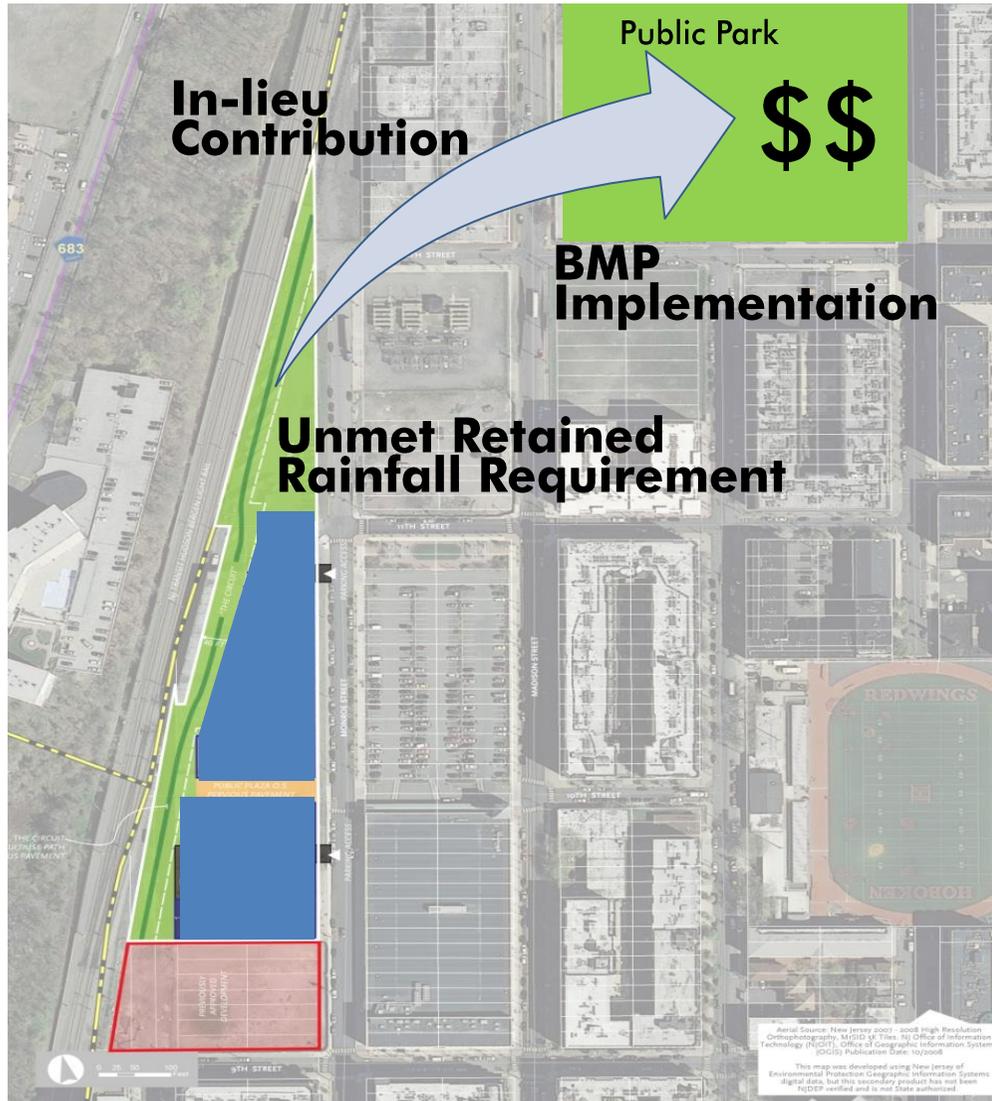
- Rainfall retained without BMPs **30%**
- Rainfall retained with BMPs **50%**  
Impervious Area Treated by BMP = **50%**  
(**25% Planter, 25% Porous Pavement**)

## Scenario C: Incentive Zoning

- Rainfall retained without BMPs **35%**
- Rainfall retained with BMPs **57%**  
Impervious Area Treated by BMP = **90%**  
(**25% Porous Pavement, 20% Basin, 20% Green Roof, 25% Planter**)



# Stormwater Infrastructure Trust Fund Performance Zoning



## Flexible

- Individual site characteristics to determine BMP use

## Cost Effective

- Best Bang For the Buck

## Results Oriented

- Performance Based

## District Wide Results

- Obligation is transferable

# Next Steps and Implementation

## Public Areas Road Department

- Coordination with County – roads
- Parks Department
- Housing Authority
- Board of Education
- Coordination with Regional and State Entities (NJ Transit)
- Funding: NJDEP – Infrastructure Trust / HUD

## Homeowners and Business Owners

- Guidebook
- Financial Incentives
  - Stormwater Management Tax Credit: Currently proposed

## Development Community

- Incorporation of BMP's into ordinances
  - Redevelopment Plans
    - Performance Based Zoning
    - Stormwater Infrastructure Trust Fund
  - Zoning Ordinance
    - Impervious Coverage
    - Stormwater Regulations
- Coordination with County and Sewerage Authority



# RETENTION

## Connecting the Dots

# DETENTION

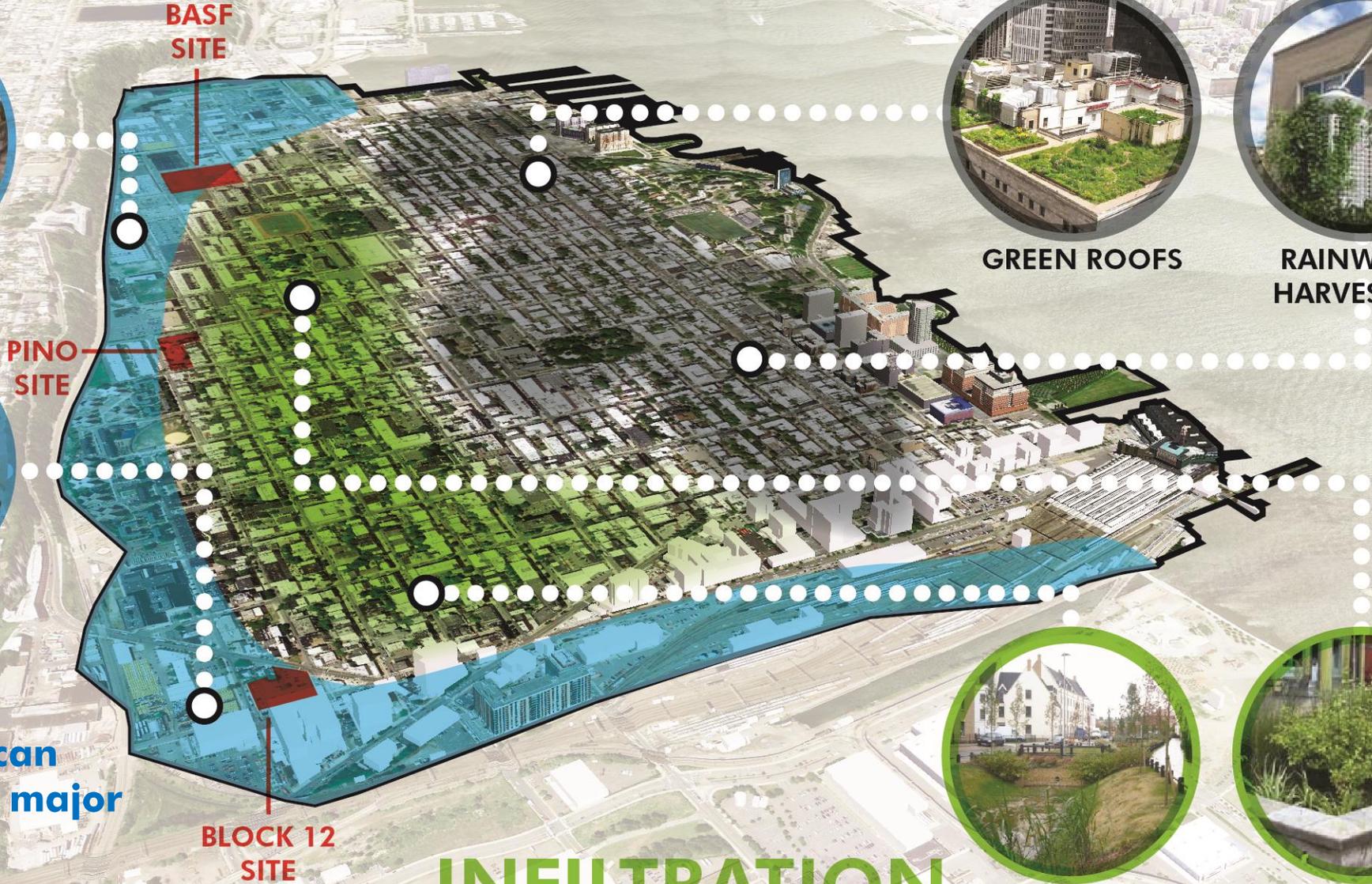


CONSTRUCTED WETLANDS



SUBSURFACE STORAGE

Blue zone can support all major BMPs



GREEN ROOFS



RAINWATER HARVESTING



BIOSWALES

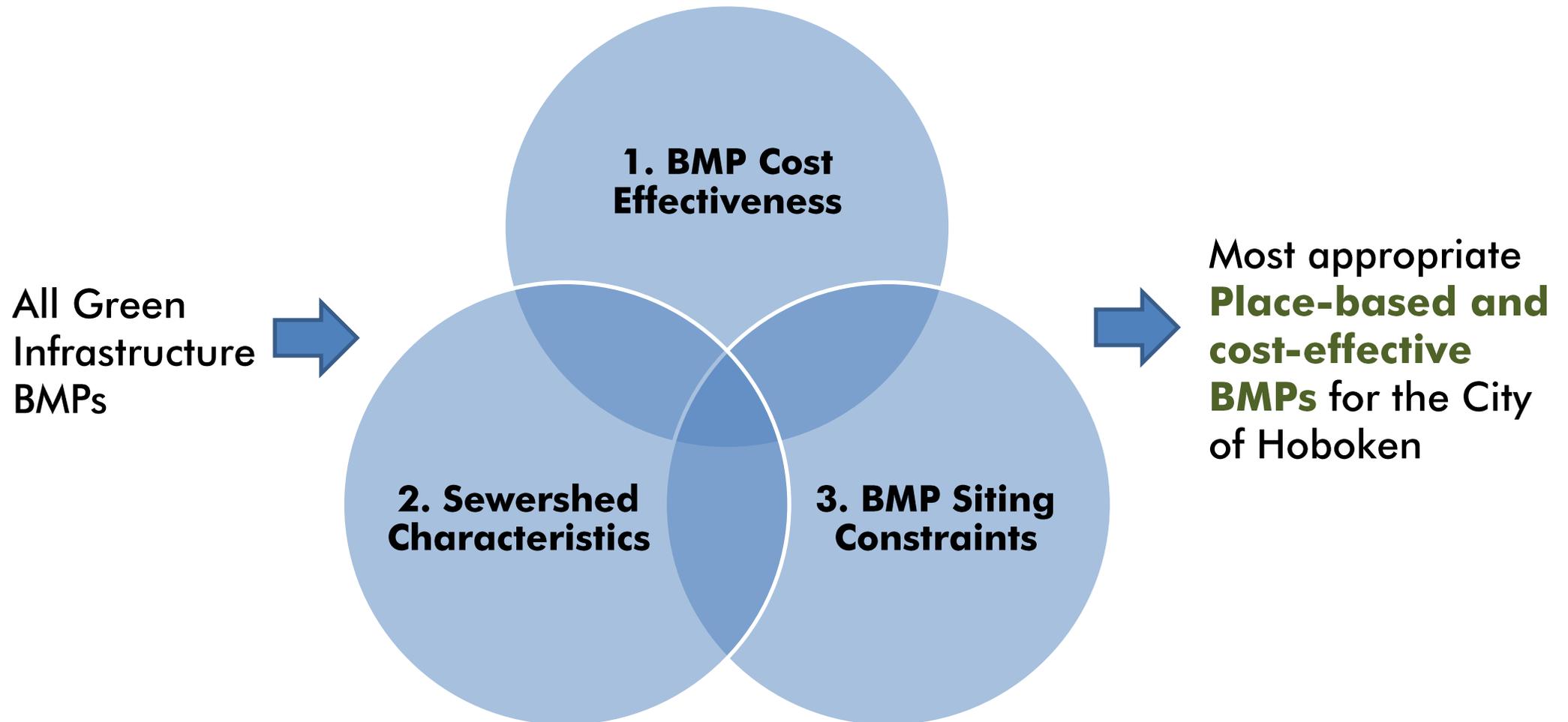


STORMWATER PLANTERS

# INFILTRATION

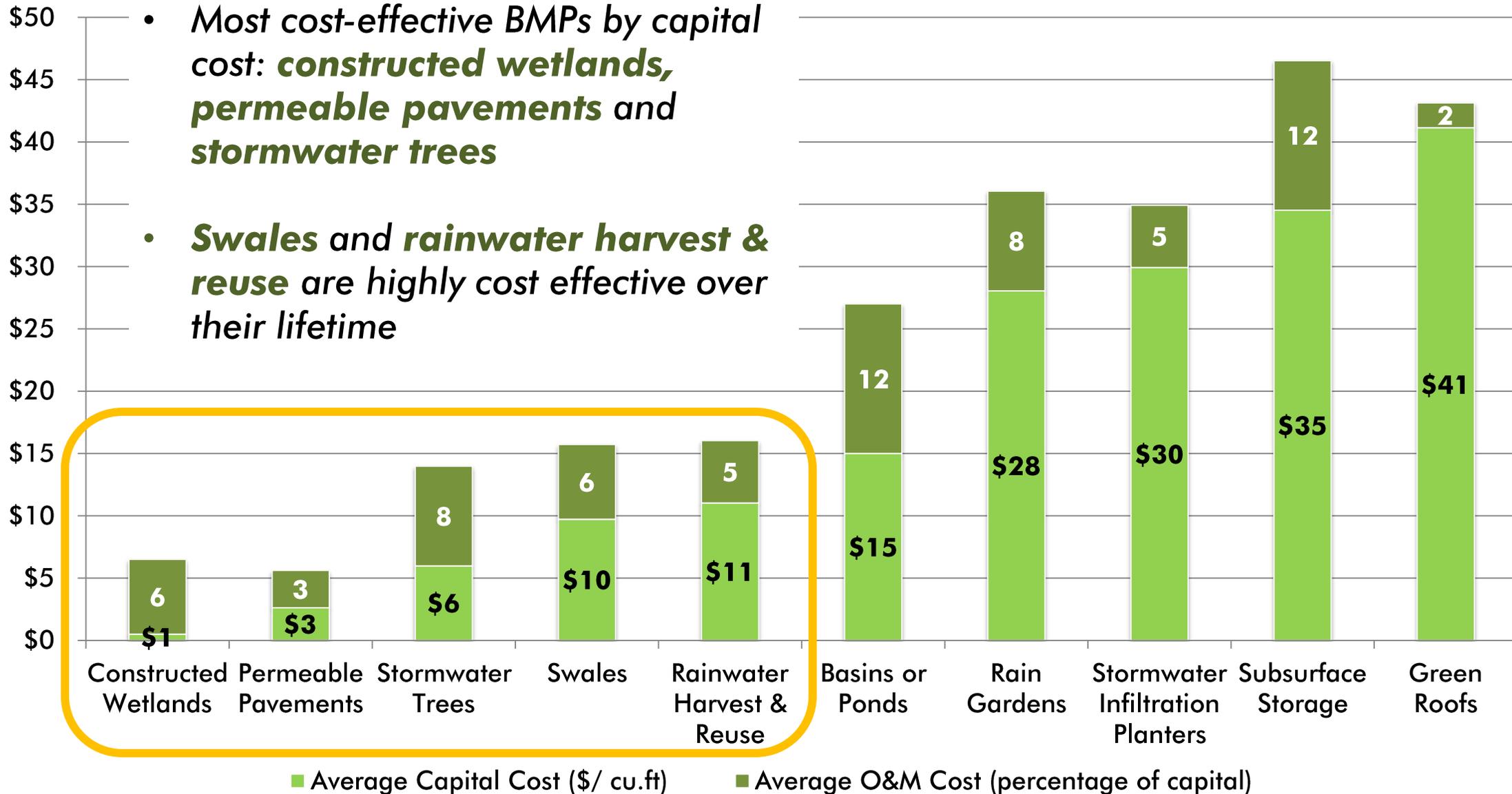
# Appendix

# Narrowing the Scope: Methodology



# BMP Cost-Effectiveness

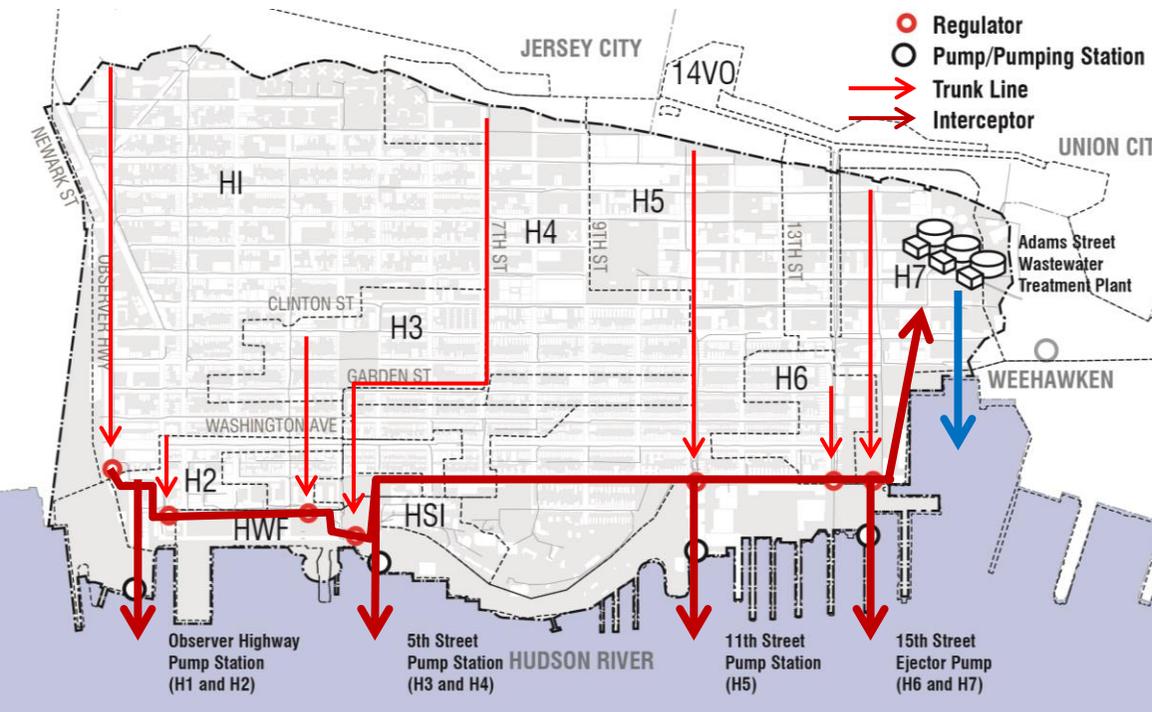
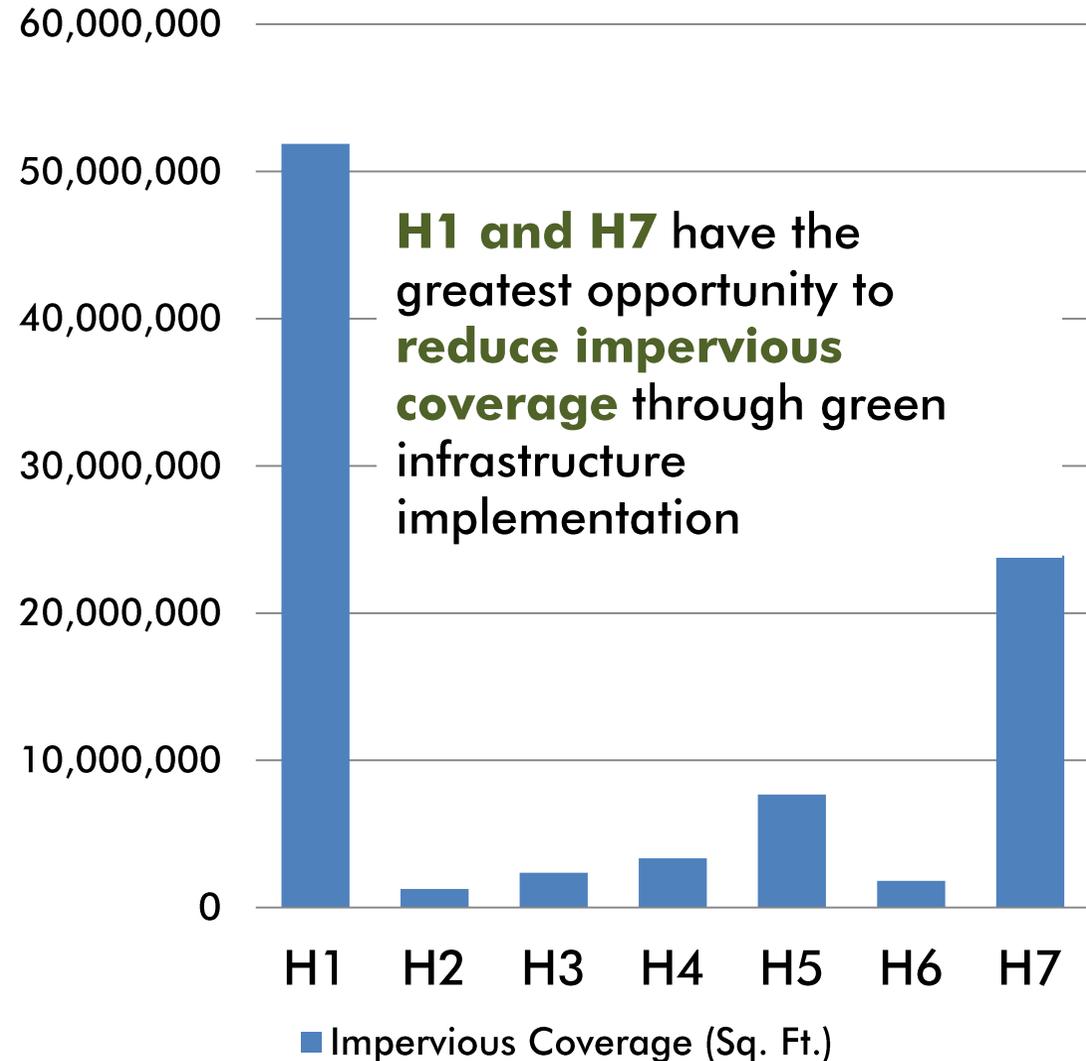
- Most cost-effective BMPs by capital cost: **constructed wetlands, permeable pavements and stormwater trees**
- **Swales and rainwater harvest & reuse** are highly cost effective over their lifetime



# Sewershed characteristics

1. Sewer System Analysis
2. Impervious Coverage
3. Land Use Context
4. Opportunities and Constraints

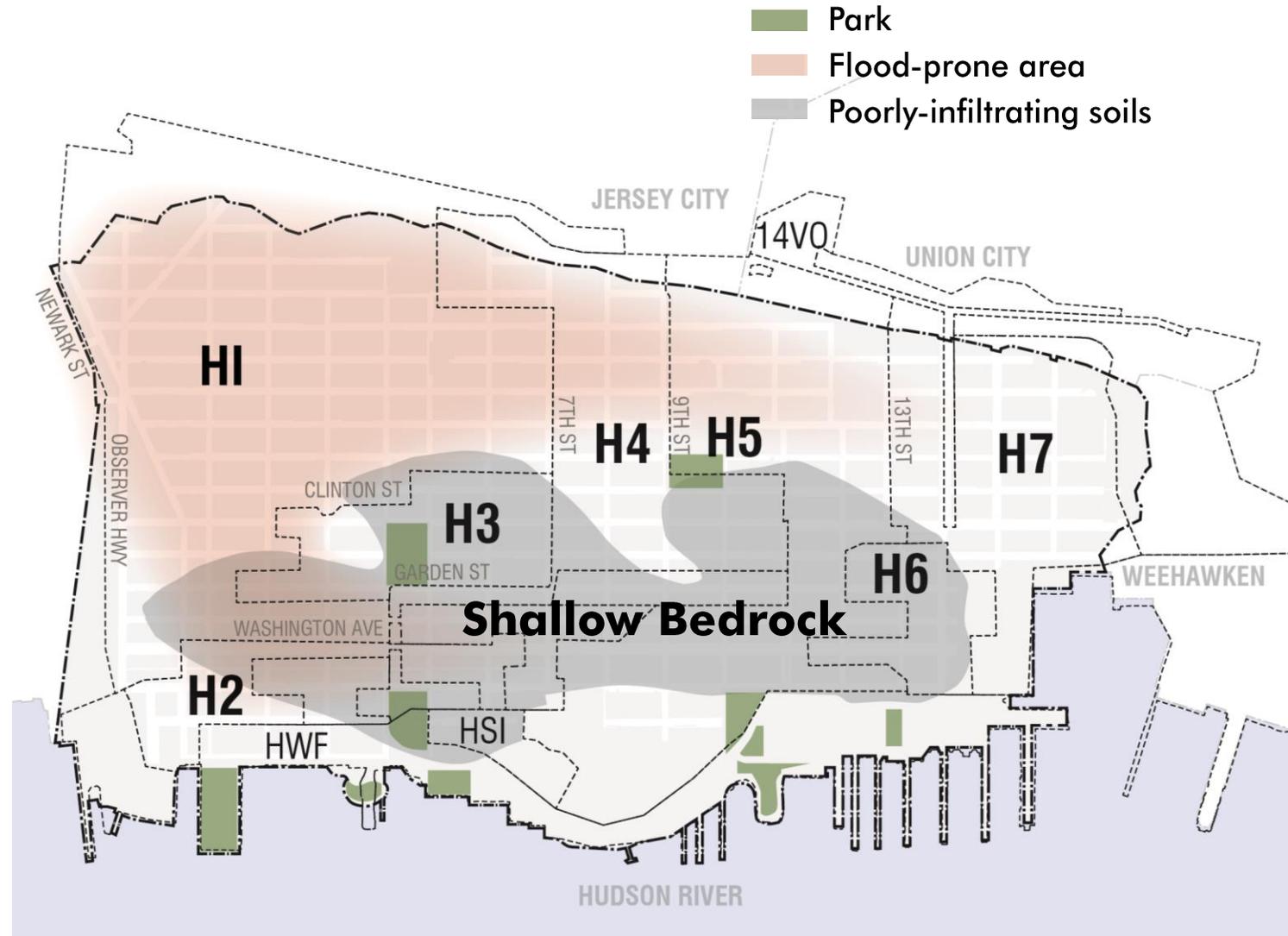
## Impervious Coverage by Sewershed



# BMP Siting Constraints

- Slope
- Vertical Constraints:
  - Utility Locations
  - Bedrock Depth
  - Seasonal High Groundwater Table
- Soils:
  - Permeability / Infiltration rate
  - Composition

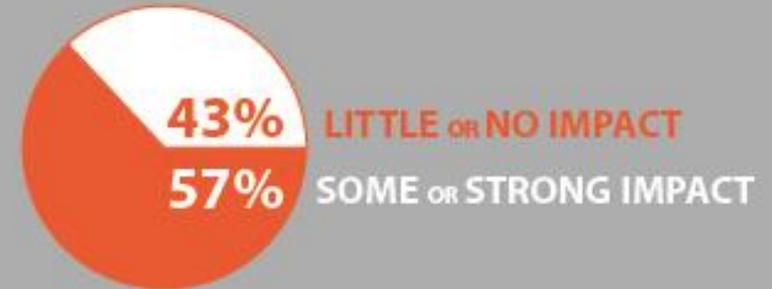
→ **“Gray Zone”**:  
shallow bedrock, poorly  
drained, low slope



# Outreach

- **57%** said flooding has either **some or a strong impact** on their everyday lives
- Outreach **confirmed areas of most significant flooding**
- Most respondents would prefer paying for stormwater costs through either **City bonds or local taxes / stormwater fees**
- **196** respondents total
- **Online survey** from July 16-August 5<sup>th</sup>, as well as **in-person surveying** on July 24<sup>th</sup>, in both Spanish and English

## FLOODING IMPACT



## HOW WILL WE PAY FOR IT?



# **APPENDIX F**

## **HOBOKEN SURVEY IN ENGLISH**



## Hoboken Green Infrastructure Strategic Plan

Survey

### Project Introduction:

The Hoboken Green Infrastructure Strategic Plan is one of a series of Local Demonstration Projects undertaken as part of Together North Jersey’s Regional Plan for Sustainable Development. The City of Hoboken submitted an application for this project in order to better understand and develop a strategic approach to resolving the frequency of flooding in the City. Even the impact of extreme events, such as Superstorm Sandy, could be lessened if the stormwater management system is made more resilient to inundation. Whereas typical stormwater infrastructure uses pipes to dispose of rainwater, this project focuses more on green infrastructure, which uses vegetation and soil to manage rainwater where it falls.

The goals of the project are:

- to develop stormwater management tools that prepare Hoboken for the effects of climate change;
- to develop a green infrastructure plan with cost-effective short- and long-term solutions; and
- to demonstrate how such strategies can help create a more resilient transit system and transit-oriented community.

### Background Info (3 Questions)

1. Is Hoboken your place of residence or employment?

- a. Residence
- b. Employment

Please list your place of work (Optional) \_\_\_\_\_

c. I both live and work in Hoboken.

Please list your place of work (Optional) \_\_\_\_\_

d. Other

Please describe \_\_\_\_\_

2. Residential Information

If you live in Hoboken, do you rent or own your place of residence?

- a. Rent
- b. Own
- c. I do not live in Hoboken

So that we can be sure we have a representative sample of Hoboken residents, please provide your address and/or cross-streets, which will be used for research purposes only:

\_\_\_\_\_

3. Which modes of transportation do you use most often? Please rank the following items, with “1” indicating the most often used and “8” indicating the least often used.



- Walk
- Bike
- Drive / Carpool
- Bus
- Light Rail
- NJ TRANSIT Train
- PATH Train
- Ferry

**Personal Impact of Flooding (4 Questions)**

4. Apart from extreme events such as Superstorm Sandy, how much does flooding in Hoboken impact your daily life?
- a. No impact
  - b. Little impact
  - c. Some impact
  - d. Strong impact
5. In what ways does this flooding impact your life? Please rank all that apply, with "1" indicating the most impact, and "8" indicating the least impact.

- Unpleasant odor
- Having to move your car
- Inability to access daily local services (e.g., businesses)
- Inability to access critical services (e.g., hospitals)
- Inability to access public transportation
- Property damage to your residential / commercial property
- Utility service interruption (e.g., power goes out)
- Flooding does not impact my life
- Other. Please describe \_\_\_\_\_

6. Do you receive warnings of potential flooding?
- a. Yes
  - b. No, I do not receive warnings.
7. How do you receive warnings of potential flooding? Please rank all that apply, with "1" representing the most frequent manner warnings are received, and "7" representing the least frequent.

- National Weather Service (NWS) Alerts

\_\_\_ City of Hoboken Nixie Alerts

\_\_\_ Twitter

\_\_\_ Facebook

\_\_\_ Other Smartphone Alerts / Apps

If so, which one(s)? \_\_\_\_\_

\_\_\_ Local News (Print or television)

\_\_\_ I do not receive warnings.

\_\_\_ Other. Please write in your answer: \_\_\_\_\_

8. Do you take any measures to prepare for flooding?

a. No                      b. Yes

If yes, please list and / or describe measures taken:

\_\_\_\_\_  
\_\_\_\_\_

### Flooding in Your Neighborhood (6 Questions)

9. Please describe what you consider to be the boundaries of your neighborhood, using street names and / or landmarks. If you do not live in Hoboken, please describe the boundaries of where you spend the most time in Hoboken.

\_\_\_\_\_

10. Please describe your definition of flooding:

\_\_\_\_\_

11. Using your definition of flooding in the previous question, how many times would you say your neighborhood has flooded in the past 12 months?

- a. No flooding in past 12 months
- b. 1-3 times
- c. 4-10 times
- d. 10-20 times
- e. More than 20 times

If your neighborhood flooded at least once in last 12 months, briefly describe what you consider flooding:

\_\_\_\_\_

12. Under what conditions has your neighborhood flooded in the past 12 months? Please circle all that apply.

- a. During or after light rain

- b. During or after moderate rain
- c. During or after heavy rain
- d. During or after a thunderstorm
- e. During or after a hurricane or extreme event (e.g., Sandy)
- f. My neighborhood has not flooded in the past 12 months
- g. I do not know

13. If/when it floods in your neighborhood, how long does it typically take for floodwaters to subside?

- a. Less than 1 hour
- b. 1-6 hours
- c. 6 hours to one day
- d. More than one day
- e. My neighborhood does not typically flood
- f. I do not know

14. Within your neighborhood, what specific sites / intersections flood most frequently?

---

15. Apart from those in your neighborhood, what are other specific sites or intersections in Hoboken that flood most frequently?

---

**Funding for Flood Reduction Measures (2 Questions)**

16. How should the city of Hoboken finance flooding expenses?

- a. Local tax
- b. Stormwater fee on utility bill
- c. Bonding/Long-term loan
- d. Hoboken should not finance flood reduction efforts
- e. Other \_\_\_\_\_

17. How much would you be willing to pay to reduce the frequency/degree of flooding in your neighborhood?

- a. \$0
- b. \$5 per year
- c. \$10 per year
- d. \$100 per year
- e. \$200 per year
- f. Other \_\_\_\_\_

## **APPENDIX G**

### **HOBOKEN SURVEY IN SPANISH**



## Plan Estratégico de Infraestructura Verde de Hoboken

Encuesta

### Introducción del proyecto:

El Plan Estratégico de Infraestructura Verde de Hoboken es parte de una serie de proyectos locales de demostración realizada como parte del plan regional de *Together North Jersey* para el desarrollo sostenible. La ciudad de Hoboken presentó una solicitud para este proyecto con el fin de entender mejor y desarrollar una estrategia para resolver la frecuencia de inundaciones en la ciudad. Incluso, el impacto de fenómenos extremos como la supertormenta Sandy también podría reducirse si la gestión de las aguas pluviales se hace más resistente a inundaciones. Mientras que la reutilización de aguas grises típica usa tubos para disponer del agua de lluvia, este proyecto se centra más en la infraestructura verde, que utiliza la vegetación y la tierra para manejar el agua de lluvia donde cae.

Los objetivos del proyecto son:

- desarrollar la gestión de las aguas pluviales que prepare Hoboken para los efectos del cambio de clima;
- desarrollar un plan de infraestructura verde con soluciones rentables a corto y largo plazo; y
- demostrar cómo estas estrategias pueden ayudar a crear un sistema de tránsito más resistente y una comunidad más orientada al tránsito.

### Información de fondo (3 preguntas)

1. ¿Es Hoboken su lugar de residencia o empleo?

a. Residencia

b. Empleo. Por favor, indique su lugar de trabajo en el espacio de abajo (opcional)

\_\_\_\_\_

c. Vivo y trabajo en Hoboken. Por favor, indique su lugar de trabajo en el espacio de abajo (opcional) \_\_\_\_\_

d. Otro. \_\_\_\_\_

2. Si usted vive en Hoboken, ¿alquila o es dueño de su lugar de residencia?

a. Alquilo

b. Soy dueño

c. No vivo en Hoboken

Para estar seguros de que tenemos una muestra representativa de los residentes de Hoboken, por favor indique su dirección y/o cruces de calle en el espacio de abajo, que será utilizada sólo con fines de estudios:

\_\_\_\_\_

3. ¿Cuáles medios de transporte utiliza más a menudo? Por favor clasifique las opciones de abajo en orden del uno (1) al ocho (8), "1" indicando el que utiliza más a menudo y "8" indicando el que utiliza menos.



- |   |  |
|---|--|
| <input type="checkbox"/> A pie                    | <input type="checkbox"/> Tren ligero     |
| <input type="checkbox"/> Bicicleta                | <input type="checkbox"/> NJ TRANSIT Tren |
| <input type="checkbox"/> Coche / coche compartido | <input type="checkbox"/> PATH tren       |
| <input type="checkbox"/> Autobús                  | <input type="checkbox"/> Ferry           |

**Impacto personal de inundaciones (4 preguntas)**

4. Aparte de eventos extremos como Supertormenta Sandy, ¿qué tanto afectan su vida diaria las inundaciones en Hoboken?

- |                 |                   |
|-----------------|-------------------|
| a. Sin impacto  | c. Algún impacto  |
| b. Poco impacto | d. Fuerte impacto |

5. ¿De qué manera afectan su vida las inundaciones? Por favor clasifique las opciones en orden del uno (1) al ocho (8), "1" indicando un mayor impacto y "8" indicando el menor impacto.

- Olor desagradable
- Tener que mover su coche
- Incapacidad de acceder a servicios locales diarios (p.ej., empresas)
- Incapacidad para acceder a servicios críticos (p.ej., hospitales)
- Incapacidad de acceder a transporte público
- Daños a su propiedad residencial / comercial
- Interrupción de servicios públicos (p.ej, se va la luz)
- Las inundaciones no afectan mi vida
- Otro. Por favor describa: \_\_\_\_\_

6. ¿Recibe advertencias de posibles inundaciones?

- a. Sí.    b. No recibo advertencias.

7. ¿Cómo recibe advertencias de posibles inundaciones? Por favor seleccione todo lo que aplique y clasifique las opciones en orden del uno (1) al siete (7), "1" representando la forma más frecuente que recibe advertencias y "7" representando la menos frecuente.

\_\_\_ Alerta del National Weather Service (NWS)

\_\_\_ Alerta Nixie de la Ciudad de Hoboken

\_\_\_ Alerta de Smartphone / aplicaciones

¿Si es así, cuál(es)? \_\_\_\_\_

\_\_\_ Twitter

\_\_\_ Facebook

\_\_\_ Noticias locales

\_\_\_ No recibo advertencias.

\_\_\_ Otro. Por favor escriba: \_\_\_\_\_

8. ¿Toma medidas preparativas para las inundaciones?

a. No    b. Sí. Por favor enumere y describa: \_\_\_\_\_

\_\_\_\_\_

### Las inundaciones en su vecindario (6 preguntas)

9. Por favor, describa lo que considera los límites de su vecindario, con nombres de calles y /o puntos de referencia. Si no vives en Hoboken, por favor describa los límites de donde pasa más tiempo.

\_\_\_\_\_

10. Por favor describa su definición de una inundación.

\_\_\_\_\_

11. Usando su definición de la pregunta anterior, ¿Cuántas veces usted diría que su vecindario se ha inundado en los últimos 12 meses?

- a. No se ha inundado en los últimos 12 meses
- b. 1-3 veces
- c. 4-10 veces
- d. 10-20 veces
- e. Más de 20 veces



12. ¿Bajo qué condiciones se ha inundado su barrio en los últimos 12 meses? Por favor seleccione todo lo que aplique.
- a. Durante o después de lluvia ligera
  - b. Durante o después de lluvia moderada
  - c. Durante o después de lluvias torrenciales o una tormenta eléctrica
  - e. Durante o después de un huracán o un evento extremo como Supertormenta Sandy
  - f. Mi barrio no ha inundado en los últimos 12 meses
  - g. No sé

13. Si/Cuando su vecindario se inunda, ¿cuánto tiempo toma normalmente para que la inundación baje?
- a. Menos de una hora
  - b. 1-6 horas
  - c. 6 horas a 1 día
  - d. Más de un día
  - e. Mi barrio no suele inundar
  - f. No sé

14. ¿En su vecindario, cuales sitios específicos / intersecciones suelen inundar con mayor frecuencia?

---

15. Aparte de su vecindario, ¿qué otros sitios específicos / intersecciones en Hoboken suelen inundar con mayor frecuencia?

---

**Financiamiento para la reducción de inundación (2 preguntas)**

16. ¿Cómo debe la ciudad de Hoboken financiar los gastos de inundaciones?
- a. Impuesto local
  - b. Cargo de aguas pluviales en la factura de servicios
  - c. Bonos / préstamo a largo plazo
  - d. Hoboken no debe financiar esfuerzos de reducción de inundación
  - e. Otro \_\_\_\_\_

17. Cuánto estaría dispuesto a pagar para reducir la frecuencia/ el grado de inundaciones en su vecindario?
- a. \$0
  - b. \$5 por año
  - c. \$10 por año
  - d. \$100 por año
  - e. \$200 por año



f. Otro \_\_\_\_\_

## **APPENDIX H**

**RFP FOR POST SANDY PLANNING DISASTER RECOVERY PLAN**

**CITY OF HOBOKEN, NEW JERSEY**  
**Office of the Business Administrator**

**On Behalf Of**  
**Department of Administration**



**Request for Proposals (RFP):**  
**Professional Services –**  
**Professional Planning and Engineering for**  
**Post Hurricane Sandy Disaster Recovery Plan**

**Term: November 18, 2013 through November 17, 2014**

**Proposal Submission Date:**  
**October 24, 2013**  
**11:00 a.m. E.S.T.**

**City of Hoboken**  
**c/o Law Department**  
**94 Washington Street**  
**Hoboken, N.J. 07030**

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**CITY OF HOBOKEN**  
**NOTICE TO VENDORS**

**NOTICE IS HEREBY GIVEN** that sealed proposals will be received by the Law Department, for the City of Hoboken, Hudson County, State of New Jersey on Thursday, **October 24, 2013 at 11:00 a.m.** prevailing time at Hoboken City Hall, 94 Washington Street, NJ 07030:

**DESCRIPTION: RFP – Professional Services – Professional Planning and Engineering for Post Hurricane Sandy Planning & Disaster Recovery Plan – Term: November 18, 2013 through November 17, 2014**

The City of Hoboken is requesting proposals from qualified individuals, firms or multidisciplinary teams to provide professional services for neighborhood planning, urban design, community development, municipal engineering, hazard mitigation and disaster preparedness in accordance with the specifications or City approved equivalent.

Specification and other RFP information may be obtained at the Law Department, Hoboken City Hall, 94 Washington Street, Hoboken, NJ 07030, during regular business hours (9:00 am to 4:00 pm), or by contacting Purchasing at 201-420-2011 or [adineros@hobokennj.org](mailto:adineros@hobokennj.org). Vendors are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27-1 et seq.

Email: [adineros@hobokennj.org](mailto:adineros@hobokennj.org)

ATTEST:

---

Al Dineros  
QPA

## **INSTRUCTIONS TO VENDORS AND STATUTORY REQUIREMENTS**

### **SUBMISSION OF PROPOSALS**

1. Sealed proposals shall be received by the contracting unit, hereinafter referred to as "City," in accordance with public advertisement as required by law, with a copy of the notice being attached hereto and made a part of these specifications.
2. Sealed proposals will be received by the designated representative at the time and location as stated in the Notice to Vendors.
3. The proposal(s) shall be submitted in a sealed envelope: (1) addressed to the City, (2) bearing the name and address of the Vendor written on the face of the envelope, and (3) clearly marked "PROPOSAL" with the contract title and/or RFP # of the contract being proposed. There shall be one (1) original, one (1) electronic copy, and three (3) paper copies of the proposal submitted.
4. It is the Vendor's responsibility that proposals are presented to the City at the time and at the place designated. Proposals may be hand delivered or mailed; however, the City disclaims any responsibility for proposals forwarded by regular or overnight mail. If the proposal is sent by express mail service, the designation in sub-section 3, above, must also appear on the outside of the express mail envelope. Proposals received after the designated time and date will be returned unopened.
5. Sealed proposals forwarded to the City before the time of opening of proposals may be withdrawn upon written application of the Vendor who shall be required to produce evidence showing that the individual is or represents the principal or principals involved in the proposal. Once proposals have been opened, they shall remain firm for a period of sixty (60) calendar days.
6. The entire proposal section of the RFP package is to be returned completed. All proposals must be made upon the RFP forms attached hereto, and should give the unit price in figures and the total price for the work, both in words and in figures, and must be signed and acknowledged by the Vendor, in accordance with the directions in this RFP package. All prices and amounts must be written in ink or preferably machine-printed on the forms provided only. Proposals containing any conditions, omissions, unexplained erasures or alterations, items not called for in the RFP form, attachment of additive information not required by the specifications, or irregularities of any kind, may be rejected by the City. Any changes, whiteouts, strikeouts, etc. in the proposal must be initialed in ink by the person signing the proposal.
7. Each proposal form must give the full business address, business phone, fax, e-mail if available, the contact person of the Vendor, and be signed by an authorized representative as follows:
  - Proposals by partnerships must furnish the full name of all partners and must be signed in the partnership name by one of the members of the partnership or by an authorized representative, followed by the signature and designation of the person signing.
  - Proposals by corporations must be signed in the legal name of the corporation, followed by the name of the State in which incorporated and must contain the signature and

designation of the president, secretary or other person authorized to bind the corporation in the matter.

- Proposals by sole-proprietorship shall be signed by the proprietor.
  - When requested, satisfactory evidence of the authority of the officer signing shall be furnished.
8. Vendor should be aware of the following statutes that represent “Truth in Contracting” laws:
- N.J.S.A. 2C:21-34, et seq. governs false claims and representations by Vendors. It is a serious crime for the Vendor to knowingly submit a false claim and/or knowingly make material misrepresentation.
  - N.J.S.A. 2C:27-10 provides that a person commits a crime if said person offers a benefit to a public servant for an official act performed or to be performed by a public servant, which is a violation of official duty.
  - N.J.S.A. 2C:27-11 provides that a Vendor commits a crime if said person, directly or indirectly, confers or agrees to confer any benefit not allowed by law to a public servant.
  - Vendor should consult the statutes or independent legal counsel for further information.

## **INTERPRETATION AND ADDENDA**

1. The Vendor understands and agrees that its proposal is submitted on the basis of the specifications prepared by the City. The Vendor accepts the obligation to become familiar with these specifications.
2. Vendors are expected to examine the specifications and related RFP documents with care and observe all their requirements. Ambiguities, errors or omissions noted by Vendors should be promptly reported in writing to the appropriate official. Any prospective Vendor who wishes to challenge a RFP specification shall file such challenges in writing with the contracting agent no less than three (3) business days prior to the opening of the proposals. Challenges filed after that time shall be considered void and having no impact on the contracting unit or the award of a contract pursuant to N.J.S.A. 40A:11-13. In the event the Vendor fails to notify the City of such ambiguities, errors or omissions, the Vendor shall be bound by the requirements of the specifications and the Vendor’s submitted proposal.
3. No oral interpretation and or clarification of the meaning of the specifications for any goods and services will be made to any Vendor. Such request shall be in writing, addressed to the City’s representative stipulated in the specification. In order to be given consideration, a written request must be received at least seven (7) business days prior to the date fixed for the opening of the proposal for goods and services.

All interpretations, clarifications and any supplemental instructions will be in the form of written addenda to the specifications, and will be distributed to all prospective Vendors. All addenda so issued shall become part of the specification and RFP documents, and shall be acknowledged by the Vendor in the proposal. The City’s interpretations or corrections thereof shall be final.

When issuing addenda, the City shall provide required notice prior to the official receipt of proposals to any person who has submitted a proposal or who has received an RFP package pursuant to N.J.S.A. 40A:11-23c.1.

#### 4. Discrepancies in Proposals

- If the amount shown in words and its equivalent in figures do not agree, the written words shall be binding. Ditto marks are not considered writing or printing and shall not be used.
- In the event that there is a discrepancy between the unit prices and the extended totals, the unit prices shall prevail. In the event there is an error of the summation of the extended totals, the computation by the City of the extended totals shall govern.

#### **BRAND NAMES, STANDARDS OF QUALITY AND PERFORMANCE**

1. Brand names and/or descriptions used in these specifications are to acquaint Vendors with the types of goods and services desired and will be used as a standard by which goods and services offered as equivalent will be evaluated.
2. Variations between the goods and services described and the goods and services offered are to be fully identified and described by the Vendor on the "Exceptions to Specifications" sheet and submitted with the proposal form. Competitive items must be equal to the standard described and be of the same reputation for quality and workmanship. Vendor literature WILL NOT suffice in explaining exceptions to these specifications. In the absence of any exceptions by the Vendor, it will be presumed and required that the goods and services as described in the RFP specification be provided or performed.
3. It is the responsibility of the Vendor to document and/or demonstrate the equivalency of the goods and services offered. The City reserves the right to evaluate the equivalency of the goods and services.
4. In submitting its proposal, the Vendor certifies that the goods and services to be furnished will not infringe upon any valid patent or trademark and that the successful Vendor shall, at its own expense, defend any and all actions or suits charging such infringement, and will save the City harmless from any damages resulting from such infringement.
5. Only manufactured and farm products of the United States, wherever available, shall be used pursuant to N.J.S.A. 40A:11-18.
6. The Vendor shall guarantee any or all goods and services supplied under these specifications for a period of one year from date of delivery unless otherwise specified herein. Defective or inferior goods shall be replaced at the expense of the Vendor. The Vendor will be responsible for return freight or restocking charges.

#### **INSURANCE AND INDEMNIFICATION**

**The Vendor shall be required to have the following insurance coverage. Said coverage shall be applicable to this RFP and either (1) applicable certificates shall be provided and be made a part of the proposal documents, or (2) a certification from an authorized**

**agent of the entity will have all certificates provided to the City upon receipt of the Notice of Award and prior to the execution of the contract:**

## INSURANCE REQUIREMENTS

### √ Worker's Compensation Insurance

Workers Compensation insurance shall be maintained in full force during the life of the contract, covering all employees engaged in performance of the contract pursuant to N.J.S.A. 34:15-12(a) and N.J.A.C. 12:235-1.6.

### √ General Liability Insurance

The Vendor shall furnish evidence to the City prior to the work he/she or any of his/her subcontractors perform and will provide Standard Vendor's Liability for any operations to be performed by vendor or subcontractors as follows:

General liability insurance shall be provided with limits of not less than \$1,000,000 for any occurrence and \$1,000,000 aggregate for bodily injury and property damage, coverage shall be maintained in full force during the life of the contract.

### √ Automotive Liability Insurance

Automotive liability insurance covering Vendor for claims arising from owned, hired and non-owned vehicles with limits of not less than \$1,000,000 for any one occurrence and \$1,000,000 aggregate for bodily injury and property damage, coverage shall be maintained in full force during the life of the contract.

### √ Professional Liability Insurance

Professional liability insurance covering Vendor for claims arising from its representation of the municipality with limits of not less than \$1,000,000 for any one occurrence, which shall be claim based, and coverage shall be maintained in full force during the life of the contract.

## CERTIFICATES OF THE REQUIRED INSURANCE

Certificates of Insurance for those policies required shall be with an insurance company authorized to do business in the State of New Jersey and shall name the City as an additional insured.

Self-insured Vendors shall submit an affidavit attesting to their self-insured coverage and shall name the City as an additional insured.

## INDEMNIFICATION

The Vendor shall indemnify, defend, and save harmless the City, at the vendors own cost and expense, from and against all losses and all claims, demands, payments, suits, actions, recoveries and judgments of every nature and description brought or recovered against him,

by reason of any act or omission of the said Vendor, his agents or employees, in the delivery of goods, execution of the work, or in the guarding of it.

The Vendor shall, and is hereby authorized to, obtain and pay for such insurance, naming as one of the assured, the City of Hoboken, as will protect the City from its contingent liability under this contract, and the City's right to enforce against the Vendor any provision of this article shall be contingent upon full compliance by the City with the terms of such insurance policy or policies, a copy of which shall be deposited with the City.

## **PRICING INFORMATION FOR PREPARATION OF PROPOSALS**

1. The City is exempt from any local, state or federal sales, use or excise tax.
2. The prices shall remain firm for the contract period(s). The prices shall include the delivery and furnishing of all materials, travel time, travel expenses, and the performance of all labor and services necessary for proper completion of the work, except such as may be otherwise expressly provided in the Contract Documents.
3. Vendor shall be responsible for obtaining any applicable permits or licenses from any government entity that has jurisdiction to require the same. All proposals submitted shall have included this cost.
4. Vendors shall insert prices for furnishing goods and services required by these specifications. Prices shall be net, including any charges for shipping, handling, copying, compiling, packing, etc. All transportation charges shall be fully prepaid by the Vendor. The City shall not be responsible for delivery costs or travel costs of any type.

## **STATUTORY AND OTHER REQUIREMENTS**

**Where applicable, the following are mandatory requirements of this RFP and contract.**

### **1. MANDATORY AFFIRMATIVE ACTION CERTIFICATION**

No firm may be issued a contract unless it complies with the affirmative action provisions of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27-1 et seq. The following information summarizes the full, required regulatory text, which is included as Appendix A of this RFP specification.

- Goods and Services (including professional services) Contracts

Each Vendor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

- i. A photocopy of a valid letter that the Vendor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter); or
- ii. A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4; or

iii. A photocopy of an Employee Information Report (Form AA 302) provided by the Division and distributed to the public agency to be completed by the Vendor in accordance with N.J.A.C. 17:27-4.

- Maintenance/Construction Contracts

After notification of award, but prior to signing the contract, the Vendor shall submit to the public agency compliance officer and the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division) an initial project workforce report (Form AA201) provided to the public agency by the Division for distribution to and completion by the Vendor, in accordance with N.J.A.C. 17:27-7.

The Vendor shall also submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of the contract to the Division and to the public agency compliance officer. The Vendor shall also cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the job and/or off-the-job programs for outreach and training of minorities and women.

## 2. AMERICANS WITH DISABILITIES ACT OF 1990

Discrimination on the basis of disability in contracting for the purchase of goods and services is prohibited. Vendors are required to read Americans with Disabilities language that is included as Appendix B of this specification and agree that the provisions of Title II of the Act are made a part of the contract. The Vendor is obligated to comply with the Act and to hold the City harmless.

## 3. STOCKHOLDER DISCLOSURE

N.J.S.A. 52:25-24.2 provides that no corporation or partnership shall be awarded any contract for the performance of any work or the furnishing of any goods and services, unless, prior to the receipt of the proposal or accompanying the proposal of said corporation or partnership, Vendors shall submit a statement setting forth the names and addresses of all stockholders in the corporation or partnership who own ten percent or more of its stock of any class, or of all individual partners in the partnership who own a ten percent or greater interest therein. The included Statement of Ownership shall be completed and attached to the proposal. This requirement applies to all forms of corporations and partnerships, including, but not limited to, limited partnerships, limited liability corporations, limited liability partnerships and Subchapter S corporations. Failure to submit a stockholder disclosure document shall result in rejection of the proposal.

## 4. PROOF OF BUSINESS REGISTRATION

N.J.S.A. 52:32-44 requires that each Vendor (Vendor) submit proof of business registration with the proposal. Proof of registration shall be a copy of the Vendor's Business Registration Certificate (BRC). A BRC is obtained from the New Jersey Division of Revenue. Information on obtaining a BRC is available on the internet at [www.nj.gov/njbgs](http://www.nj.gov/njbgs) or by phone at (609) 292-1730. N.J.S.A. 52:32-44 imposes the following requirements on Vendors and all subcontractors that **knowingly** provide goods or perform services for a Vendor fulfilling this contract:

- The Vendor shall provide written notice to its subcontractors and suppliers to submit proof of business registration to the Vendor;
- Prior to receipt of final payment from a contracting agency, a Vendor must submit to the contracting agency an accurate list of all subcontractors or attest that none was used;
- During the term of this contract, the Vendor and its affiliates shall collect and remit, and shall notify all subcontractors and their affiliates that they must collect and remit to the Director, New Jersey Division of Taxation, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into this State.

A Vendor, subcontractor or supplier who fails to provide proof of business registration or provides false business registration information shall be liable to a penalty of \$25 for each day of violation, not to exceed \$50,000 for each business registration not properly provided or maintained under a contract with a contracting agency. Information on the law and its requirements is available by calling (609) 292-1730.

Failure to submit proof of registration with the proposal submittal requires mandatory rejection of a proposal as a non-waivable defect.

#### 5. NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW ACT

Where applicable: The manufacturer or supplier of chemical substances or mixtures shall label them in accordance with the N.J. Worker and Community Right to Know Law (N.J.S.A. 34:5A-1 et seq., and N.J.A.C 8:59-2 et seq.). Containers that the law and rules require to be labeled shall show the Chemical Abstracts Service number of all the components and the chemical name. Further, all applicable Material Safety Data Sheets (MSDS) - hazardous substance fact sheet - must be furnished.

#### 6. PREVAILING WAGE ACT

Where applicable: Pursuant to N.J.S.A. 34:11-56.25 et seq., vendors on projects for public work shall adhere to all requirements of the New Jersey Prevailing Wage Act. The vendor shall be required to submit a certified payroll record to the City within ten (10) days of the payment of the wages. The vendor is also responsible for obtaining and submitting all subcontractors' certified payroll records within the aforementioned time period. The vendor shall submit said certified payrolls in the form set forth in N.J.A.C. 12:60-6.1(c). It is the vendor's responsibility to obtain any additional copies of the certified payroll form to be submitted by contacting the New Jersey Department of Labor and Workforce Development, Division of Workplace Standards. Additional information is available at [www.state.nj.us/labor/lsse/lspubcon.html](http://www.state.nj.us/labor/lsse/lspubcon.html).

In the event it is found that any workman, employed by the Vendor or any Subcontractors covered by the contract, has been paid a rate of wages less than the prevailing wage required to be paid by the Vendor, the City may terminate the Vendor's or Subcontractor's right to proceed with the work, or such part of the work, as to which there has been failure to pay required wages and to prosecute the work to completion or otherwise. The Vendor and his sureties shall be liable to the City for any excess costs occasioned thereby.

The Vendor or Subcontractor is required to do the following:

- Pay to all workmen engaging in the performance of services directly upon a public work, the prevailing rate of wages specified in this contract.
- Keep an accurate record showing name, craft, trade and actual hourly rate of wages paid to each workman employed by him in connection with any public work. Records shall be preserved for two years from date of payment.
- Post the prevailing wage rates for each craft and classification involved, as determined by the Commissioner of Labor and Industry, including the effective date of any changes thereof, in prominent and easily accessible places at the site of the work and at such place or places as are used by them to pay workmen their wages; and
- File written statements with the City Treasurer or Director of Finance certifying to the amounts then due and owing to any and all workmen for wages due on the account to the public work. The statements shall set forth the names of the persons whose wages are unpaid and amount due to each. The statements should be verified by the oaths of the vendor or subcontractor, as the case may be.

## 7. DAVIS BACON ACT

Where applicable: If this project is being funded with Federal Funds received from the U.S. Department of Housing and Urban Development (HUD) as part of the Community Development Block Grant (CDBG), the vendor shall be subject to the provisions of the Federal Labor Standards (Davis Bacon), which shall be conditions of the contract. Additional information may be obtained at <http://www.wdol.gov/>.

## 8. THE PUBLIC WORKS VENDOR REGISTRATION ACT

Where applicable: N.J.S.A. 34:11-56.48 et seq. requires that a general or prime vendor and any listed subcontractors named in the vendor's proposal shall possess a certificate *at the time the proposal is submitted*. After proposals are received and prior to award of contract, the successful vendor shall submit a copy of the vendor's certification along with those of all listed subcontractors. All non-listed subcontractors and lower tier sub-subcontractors shall be registered prior to starting work on the project. It is the general vendor's responsibility that all non-listed sub-vendors at any tier have their certificate prior to starting work on the job.

Under the law a "vendor" is "a person, partnership, association, joint stock company, trust, corporation or other legal business entity or successor thereof who enters into a contract" which is subject to the provisions of the New Jersey Prevailing Wage Act [N.J.S.A. 34:11-56.25, et seq.] It applies to vendors based in New Jersey or in another state.

The law defines "public works projects" as contracts for "public work" as defined in the Prevailing Wage statute [N.J.S.A. 34:11-56.26(5)]. The term means:

- "Construction, reconstruction, demolition, alteration, or repair work, or maintenance work, including painting and decorating, done under contract and paid for in whole or in part out of the funds of a public body, except work performed under a rehabilitation program.
- "Public work" shall also mean construction, reconstruction, demolition, alteration, or repair work, done on any property or premises, whether or not the work is paid for from public funds..."

- “Maintenance work” means the repair of existing facilities when the size, type or extent of such facilities is not thereby changed or increased. While “maintenance” includes painting and decorating and is covered under the law, it does not include work such as routine landscape maintenance or janitorial services.

To register, a vendor must provide the State Department of Labor with a full and accurately completed application form. The form is available online at [www.state.nj.us/labor/lsse/lspubcon.html](http://www.state.nj.us/labor/lsse/lspubcon.html).

N.J.S.A. 34:11-56.55 specifically prohibits accepting applications for registration as a substitute for a certificate of registration.

## 9. NON-COLLUSION AFFIDAVIT

The Affidavit shall be properly executed and submitted with the proposal.

## 10. PAY TO PLAY

Starting in January, 2007, business entities are advised of their responsibility to file an annual disclosure statement of political contributions with the New Jersey Election Law Enforcement Commission (ELEC) pursuant to N.J.S.A. 19:44A-20.27 if they receive contracts in excess of \$50,000 from public entities in a calendar year.

Business entities are responsible for determining if filing is necessary. Additional information on this requirement is available from ELEC at 888-313-3532 or at [www.elec.state.nj.us](http://www.elec.state.nj.us).

Businesses are further required to comply with all local ordinances regarding contribution limits for publicly contracted entities. Business entities are obligated to become familiar with their obligations under the local ordinances prior to submitting proposals for public contracts to the City of Hoboken.

## 11. NUCLEAR-FREE HOBOKEN ORDINANCE

The Form shall be read and properly executed, and submitted as part of the proposal.

## 12. IRANIAN INVESTMENT ACTIVITY FORM

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification to attest, under penalty of perjury, that the person or entity, or one of the person or entity's parents, subsidiaries, or affiliates, is not identified on a list created and maintained by the Department of the Treasury as a person or entity engaging in investment activities in Iran. If the Director finds a person or entity to be in violation of the principles which are the subject of this law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party, in default and seeking debarment or suspension of the person or entity.

## **METHOD OF CONTRACT AWARD**

1. The City and the successful Vendor, in accordance with N.J.S.A.40A:11-24 (b), shall execute said contract within twenty-one (21) days, Sundays and holidays excluded after Notice of Award. The parties however may agree to extend the twenty-one (21) day period in the event the contract cannot be signed in a timely manner. Failure or neglect of the Vendor to execute said contract or to contact the City to request an extension to execute said contract shall constitute a breach and the City can award the contract to the next lowest Vendor. Pursuant to requirements of N.J.A.C. 5:30-5.1 et seq., any contract resulting from this RFP shall be subject to the availability and appropriation of sufficient funds annually.
2. The form of contract shall be submitted by the City to the successful Vendor. Terms of the specifications/RFP package prevail. Vendor exceptions must be formally accepted by the City. Vendor exceptions must be listed on the vendor's submitted proposal in order to be considered by the City.
3. The City reserves the right to waive immaterial formalities. The City reserves the right to procure these items under State Contracts or inter-local agreements, if so desired.
4. The acceptance of a Proposal shall bind the successful Vendor to execute the contract or to be responsible for liquidated damages in the amount of ten percent (10%) of the proposed costs if the vendor fails to enter into the contract or perform services there under.

## **CAUSES FOR REJECTING PROPOSALS**

Proposals may be rejected for any of the following reasons:

1. All proposals pursuant to N.J.S.A. 40A:11-13.2;
2. If more than one (1) proposal is received from an individual, firm or partnership, corporation or association under the same name;
3. Multiple proposals from an agent representing competing Vendors;
4. The proposal is inappropriately unbalanced;
5. The Vendor is determined to possess, pursuant to N.J.S.A. 40A:11-4b, Prior Negative Experience; or,
6. If the successful Vendor fails to enter into a contract within twenty one (21) days, Sundays and holidays excepted, or as otherwise agreed upon by the parties to the contract. In this case at its option, the City may accept the proposal of the next lowest responsible Vendor. (N.J.S.A. 40A:11-24b)
7. Any other legally authorized reason which is in the best interest of the City.

## **TERMINATION OF CONTRACT**

1. If, through any cause, the Vendor shall fail to fulfill in a timely and proper manner obligations under the contract or if the Vendor shall violate any of the requirements of the contract, the City shall there upon have the right to terminate the contract by giving written notice to the Vendor of such termination and specifying the effective date of termination. Such termination shall relieve the City of any obligation for balances to the Vendor of any sum or sums set forth in the contract. City will pay only for goods and services accepted prior to termination.
2. Notwithstanding the above, the vendor shall not be relieved of liability to the City for damages sustained by the City by virtue of any breach of the contract by the Vendor and the City may withhold any payments to the Vendor for the purpose of compensation until such time as the exact amount of the damage due the City from the Vendor is determined.
3. The Vendor agrees to indemnify and hold the City harmless from any liability to Subcontractors/suppliers concerning payment for work performed or goods supplied arising out of the lawful termination of the contract by the City under this provision.
4. In case of default by the Vendor, the City may procure the goods or services from other sources and hold the Vendor responsible for any excess cost.
5. Continuation of the terms of the contract beyond the fiscal year is contingent on availability of funds in the following year's budget. In the event of unavailability of such funds, the City reserves the right to cancel the contract.
6. **ACQUISITION, MERGER, SALE AND/OR TRANSFER OF BUSINESS, ETC.**  
It is understood by all parties that if, during the life of the contract, the Vendor disposes of his/her business concern by acquisition, merger, sale and or/transfer or by any means convey his/her interest(s) to another party, all obligations are transferred to that new party. In this event, the new owner(s) will be required to submit all documentation/legal instruments that were required in the original proposal/contract. Any change must be approved by the City.
7. The Vendor will not assign any interest in the contract and shall not transfer any interest in the same without the prior written consent of the City.
8. The City may terminate the contract for convenience by providing 60 calendar days advance written notice to the Vendor.
9. If the successful Vendor and/or any of its employees and/or agents are required to be licensed and/or registered in order to perform the services which are the subject of this or any agreement thereof, then the agreement shall be terminated in the event that the appropriate governmental entity with jurisdiction has instituted an action to have the vendor's license and/or registration suspended or revoked, or in the event that such entity has revoked or suspended said license or denied such registration. Notice of termination pursuant to this subparagraph shall be effective immediately upon the giving of said notice.

**APPENDIX A**  
N.J.S.A. 10:5-31 and N.J.A.C. 17:27  
**MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE**  
**(Mandatory Affirmative Action Language)**

**FOR GOODS, PROFESSIONAL SERVICES AND GENERAL SERVICE CONTRACTS:**

During the performance of this contract, the Vendor agrees as follows:

The Vendor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Except with respect to affectional or sexual orientation, the Vendor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Vendor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting for the provisions of this nondiscrimination clause.

The Vendor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Vendor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex.

The Vendor or subcontractor, where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the Vendor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The Vendor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

The Vendor or subcontractor agrees to make good faith efforts to employ minority and women workers consistent with the applicable county employment goals established in accordance with N.J.A.C. 17:27-5.2 or a binding determination of the applicable county employment goals determined by the Division, pursuant to N.J.A.C. 17:27-5.2.

The Vendor or subcontractor agrees to inform in writing its appropriate recruitment agencies including, but not limited to, employment agencies, placement bureaus, colleges, universities, labor unions, that it does not discriminate on the basis of age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex, and that it will discontinue the use of any recruitment agency which engages in direct or indirect discriminatory practices.

The Vendor or subcontractor agrees to revise any of its testing procedures, if necessary, to assure that all personnel testing conforms with the principles of job-related testing, as established by the statutes and court decisions of the State of New Jersey and as established by applicable Federal law and applicable Federal court decisions.

In conforming with the applicable employment goals, the Vendor or subcontractor agrees to review all procedures relating to transfer, upgrading, downgrading and layoff to ensure that all such actions are taken without regard to age, creed, color, national origin, ancestry, marital status, affectional or sexual orientation or sex, consistent with the statutes and court decisions of the State of New Jersey, and applicable Federal law and applicable Federal court decisions.

The Vendor shall submit to the public agency, after notification of award but prior to execution of a goods and services contract, one of the following three documents:

Letter of Federal Affirmative Action Plan Approval  
Certificate of Employee Information Report  
Employee Information Report Form AA302

The Vendor and its subcontractors shall furnish such reports or other documents to the Division of Contract Compliance and EEO as may be requested by the Division from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Division of Contract Compliance & EEO for conducting a compliance investigation pursuant to **Subchapter 10 of the Administrative Code at N.J.A.C. 17:27.**

### **FOR CONSTRUCTION CONTRACTS:**

During the performance of this contract, the Vendor agrees as follows:

The Vendor or Subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation. The Vendor will take affirmative action to ensure that such applicants are recruited and employed, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation. Such action shall include, but not be limited to the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Vendor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The Vendor or Subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the Vendor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, sex, affectional or sexual orientation.

The Vendor or Subcontractor where applicable, will send to each labor union or representative or workers with which it has a collective bargaining agreement or other contract or understanding, a notice, to be provided by the agency contracting officer advising the labor

union or workers; representative of the Vendor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The Vendor or Subcontractor, where applicable, agrees to comply with the regulations promulgated by the Treasurer pursuant to P.L. 1975, c. 127, as amended and supplemented from time to time and Americans with Disabilities Act.

When hiring workers in each construction trade, the vendor or subcontractor agrees to attempt in good faith to employ minority and female workers in each construction trade consistent with the applicable employment goal prescribed by N.J.A.C. 17:27-7.3; provided, however, that the Affirmative Action Office may, in its discretion, exempt a vendor or subcontractor from compliance with the good faith procedures prescribed by the following provisions A, B, and C, as long as the Affirmative Action Office is satisfied that the vendor is employing workers provided by a union which provides evidence, in accordance with the standards prescribed by the Affirmative Action Office, that its percentage of active "card carrying" members who are a minority and female workers is equal to or greater than the applicable employment goal prescribed by N.J.A.C. 17:27-7.3, promulgated by the Treasurer pursuant to P.L. 1975, c 127, as amended and supplemented from time to time. The vendor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

- A) If the vendor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the vendor or subcontractor shall within three (3) days of the contract award, seek assurances from the union that it will cooperate with the vendor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to P.L. 1975, c. 127, as supplemented and amended from time to time. If the vendor or subcontractor is unable to obtain said assurances from the construction trade union at least five (5) days prior to the commencement of construction work, the vendor or subcontractor agrees directly to attempt to hire minority and female workers consistent with the applicable employment goal. If the vendors or subcontractors prior experience with the construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and female workers consistent with the applicable employment goal, the vendor or subcontractor agrees to prepare to hire minority and female workers directly, consistent with the applicable employment goal, by complying with the hiring procedures prescribed under (B) below; and the vendor or subcontractor further agrees to immediately take said action if it determines or is so notified by the Affirmative Action Office that the union is not referring minority or female workers consistent with the applicable employment goal.
- B) If the hiring of workforce consistent with the employment goal has not or cannot be achieved for each construction trade by adhering to the procedures of (A) above, or if the vendor does not have referral agreement or arrangement with a union for a construction trade, the vendor or subcontractor agrees to take the following action consistent with the applicable county employment goals:
  - 1. To notify the Public Agency Compliance Officer, Affirmative Action Office, and at least one approved minority referral organization of its manpower needs and request referral of minority and female workers;

2. To notify any minority and female workers who have been listed with it as awaiting available vacancies.
3. Prior to commencement of work, to request the local construction trade union, if the vendor or subcontractor has a referral agreement or arrangement with a union for the construction trade, to refer minority and female workers to fill job openings;
4. To leave standing request for additional referral to minority and female workers with the local construction trade union, if the vendor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State training and employment service and other approved referral sources in the area until such time as the workforce is consistent with the employment goal;
5. If it is necessary to lay off some of the workers in a given trade on the construction site, to assure, consistent with the applicable State and Federal statutes and court decisions, that sufficient minority and female employees remain on the site consistent with the employment goal; and to employ any minority and female workers so laid off by the vendor or any other construction site in the area on which its workforce composition is not consistent with an employment goal established pursuant to rules implementing P.L. 1975. C. 127;

To adhere to the following procedure when minority and female workers apply or are referred to the vendor or subcontractor:

- i) If said individuals have never previously received any document or certifications signifying a level of qualification lower than required, the vendor or subcontractor shall determine the qualifications of such individuals and if the vendors or subcontractors workforce in each construction trade is not consistent with the applicable employment goal, it shall employ such persons which satisfy appropriate qualification standards; provided however, that a vendor or subcontractor shall determine that the individual at least possesses the skills and experience recognized by any worker skills and experience classification determination which may have been made by a Public Agency Compliance Officer, union, apprentice program or a referral agency, provided the referral agency, is acceptable to the Affirmative Action Office and provided further, that, if necessary, the vendor or subcontractor shall hire minority and female workers who qualify as trainees pursuant to these rules. All of the requirements of this paragraph, however, are limited by the provisions of (C) below.
  - ii) If the vendors or subcontractors workforce is consistent with the applicable employment goal, the name of said female or minority group individual shall be maintained on a waiting list for the first considerations in the event the vendors or subcontractors workforce is no longer consistent with the applicable employment goal.
  - iii) If, for any reason, said vendor or subcontractor determines that a minority individual or a female is not qualified or if the individual qualifies as an advance trainee or apprentice, the vendor or subcontractor shall inform the individual in writing with the reasons for the determination, maintain a copy in its files, and send a copy of the Public Agency Compliance Officer and to the Affirmative Action Office.
7. To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Affirmative Action Office and shall be submitted promptly to that office upon request.

C) The vendor or subcontractor agrees that nothing contained in (B) preceding provision shall preclude the vendor or subcontractor from complying with the hiring hall or apprenticeship

provision in any applicable collective bargaining agreement or hiring hall arrangement, and, where, required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement: provided, however, that where the practices of a union or apprenticeship program will result in the exclusion of minorities and females or the failure to refer minorities and females consistent with the county employment goal, the vendor or subcontractor shall consider for employment persons referred pursuant to said provisions (B) without regard to such agreement or arrangement; provided further, however, that the vendor or subcontractor shall not be required to employ female and minority advanced trainees and trainees in numbers which results in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or on the absence of a collective bargaining agreement, exceeds the ratio established by practice in the area for said construction trade. Also, the vendor or subcontractor agrees that, in implementing the procedures of the proceeding provisions (B) it shall, where applicable, employ minority and female workers residing within the geographical jurisdiction of the union.

- D) The vendor agrees to complete an Initial Project Manning Report on forms provided by the Affirmative Action Office or in the form prescribed by the Affirmative Action Office and submit a copy of said form no later than three days after signing a construction contract; provided, however, that the public agency may extend in a particular case the allowable time for submitting the form to no more than fourteen days; and to submit a copy of the monthly Project Manning Report once a month (by the seventh work day of each month) thereafter for the duration of this contract to the Affirmative Action Office and to the Public Agency Compliance Officer. The vendor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job programs for outreach and training of minority and female trainees employed on construction projects.
- E) The vendor and its subcontractors shall furnish such reports or other documents to the Affirmative Action Office as may be requested by the office from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the affirmative action office for conducting a compliance investigation pursuant to Subchapter 10 of the Administrative Code (NJAC 17:27).

**APPENDIX B**  
**AMERICANS WITH DISABILITIES ACT OF 1990**  
**Equal Opportunity for Individuals with Disability**

The Vendor and the City of Hoboken, (hereafter "City") do hereby agree that the provisions of Title 11 of the Americans With Disabilities Act of 1990 (the "Act") (42 U.S.C. S121 01 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the City pursuant to this contract, the Vendor agrees that the performance shall be in strict compliance with the Act. In the event that the Vendor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the Vendor shall defend the City in any action or administrative proceeding commenced pursuant to this Act. The Vendor shall indemnify, protect, and save harmless the City, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The Vendor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the City's grievance procedure, the Vendor agrees to a proposal by any decision of the City which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the City, or if the City incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the Vendor shall satisfy and discharge the same at its own expense.

The City shall, as soon as practicable after a claim has been made against it, give written notice thereof to the Vendor along with full and complete particulars of the claim, If any action or administrative proceeding is brought against the City or any of its agents, servants, and employees, the *City shall* expeditiously forward or have forwarded to the Vendor every demand, complaint, notice, summons, pleading, or other process received by the City or its representatives.

It is expressly agreed and understood that any approval by the City of the services provided by the Vendor pursuant to this contract will not relieve the Vendor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the City pursuant to this paragraph.

It is further agreed and understood that the City assumes no obligation to indemnify or save harmless the Vendor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the Vendor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the Vendor's obligations assumed in this Agreement, nor shall they be construed to relieve the Vendor from any liability, nor preclude the City from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

**SPECIFICATIONS FOR RFP**  
**Professional Services – Professional Planning and Engineering**  
**Post Hurricane Sandy Planning & Disaster Recovery Plan**  
**Term: November 18, 2013 through November 17, 2014**

**NATURE OF SERVICES**

The City of Hoboken (“City”) is a municipality governed according to the Optional Municipal Charter Law, N.J.S.A. 40:69A-1 to -210. Pursuant to Ordinance #Z-89, the City seeks proposals from qualified individuals, firms or multidisciplinary teams who wish to provide professional planning and engineering services to the City.

On October 29, 2012 the City of Hoboken was flooded by the storm surge from Hurricane Sandy. Nearly 80% of the city is within a Special Flood Hazard Area as determined by the Federal Emergency Management Administration (“FEMA”). An estimated 500 million gallons of brackish water from the Hudson River breached Hoboken’s waterfront and flooded over 1,750 ground level units, destroyed over 1,000 automobiles, knocked out all three electrical substations and flooded critical municipal facilities, including the city’s Fire Headquarters, two fire stations, the Department of Public Works (“DPW”) Garage, the Multi-service (Community) Center, the Ambulance Corps, the Public Library, the Hospital and the Mid-town parking garage. In all, the storm caused over \$100 million in private damage according to FEMA’s Individual Assistance (“IA”) program and over \$25 million in damage to public facilities according to FEMA’s Public Assistance (“PA”) program.

The City of Hoboken is anticipating \$200,000.00 in federal Community Development Block Grant funds for Disaster Recovery (“CDBG/DR”) to prepare and adopt a variety of related municipal planning and engineering plans, studies, reports and ordinances. Planning grant assistance is available in order to guide long-term recovery, resiliency and redevelopment. The purpose of the program is to help local governments address conditions that were created or exacerbated by Superstorm Sandy, to identify adaptive approaches to rebuilding that will be more resistant to damage from future storm events and to encourage sustainable economic growth.

The City seeks technical and cost proposals from qualified individuals, firms or multidisciplinary teams for neighborhood planning, urban design, community development, municipal engineering, hazard mitigation and disaster preparedness services. The successful vendor shall have significant experience in providing professional planning and engineering services to municipalities, counties or other public agencies in the State of New Jersey. While professional planning (“P.P.”) state licensure and national certification by the American Institute of Certified Planners (“AICP”) is a prerequisite, preference may be given to respondents who employ and directly assign Certified Floodplain Manager(s) (“CFM”) by the Association of State Floodplain Managers (“ASFPM”), Certified Municipal Engineer(s) (“CME”) by the New Jersey Municipal Engineering Institute, or Accredited Professional(s) by the U.S. Green Building Council’s (“USGBC”) Green Building Certification Institute (“GBCI”).

The successful vendor shall:

1. Coordinate and attend regular or monthly meetings with city officials and/or stakeholders involved in planning, zoning, building/construction code,

- floodplain management, health, public safety, emergency management, transportation and finance;
2. Coordinate and attend public meetings, design charrettes and community preference surveys to engage the general public with the update and modernization of design guidelines for urban form and character;
  3. Attend and present their findings and recommendations to municipal and neighborhood boards and agencies, including, but not limited to the municipal council, planning board, historic preservation commission, environmental commission/green team, and community organizations;
  4. Analyze and evaluate the city's zoning code, master plan documents, flood protection ordinance, stormwater management plan and ordinance, capital plan and emergency operations plan in relation to the city's policies and procedures to make the documents consistent and complimentary with each other;
  5. Prepare and review project schedule with input from all team members and insure that all information is current;
  6. Compare work progress with planned schedule;
  7. Prepare and submit monthly invoices for payment;
  8. Prepare a draft final report with corresponding documents no less than 90 days before expiration of the contract;
  9. Prepare a final report after all comments and recommendations have been received within 30 days of expiration of contract;
  10. Comply with any/all applicable federal, state and local regulations; and
  11. Other activities that may be necessary for the successful and timely completion of the project, as directed by the Business Administrator or Mayor.

Deliverables:

1. Design Standards: Specific to flood hazard areas that would set standards for flood resiliency at the street level for public, residential, commercial, industrial and mixed use buildings. Resilient design standards shall reconcile ADA handicapped accessible requirements with flood hazard regulations. Design standards shall address installation of sanitary sewer check-valves and back-flow preventers. Design standards shall address emergency back-up energy systems, including guidelines for generators, photo-voltaic equipment, combined heat and power, fuel storage, batteries and fuel cells. Design standards shall include guidelines for resilient (tele)communications systems, including cellular phone antennae and arrays and wireless "wifi" hotspots. Design standards shall address resilient building mechanical systems for elevators, fire suppression systems, hallways, stairwells and common areas. Design standards shall be both illustrated and annotated.
2. Capital Improvement Plan: A five-year Capital Improvement Plan that focuses municipal capital investment on resilient and floodproof public facilities, fleets and equipment. The Capital Improvement Plan shall include a space and needs analysis of municipal operations and assess current and proposed municipal facilities, especially those sites within a special flood hazard area.
3. Municipal Hazard Mitigation Plan: A community/neighborhood based plan compliant with the federal Disaster Mitigation Act of 2000 (pursuant to 44 CFR § 201.6.c.4.i) and consistent with the 2008 Hudson County Multi-jurisdictional All Hazards Mitigation Plan. The HMP shall analyze and evaluate the risks and consequences of natural and man-made hazards within the city and recommend

both structural and non-structural policies, projects and programs to mitigate risks. The consultant shall prepare quantitative FEMA benefit-cost analyses (BCA's) for selected projects. As part of the Hazard Mitigation Plan process, the consultant shall update the municipal Emergency Operations Plan ("EOP") and prepare a Continuity of Operations/Continuity of Government ("COOP/COG") plan with Emergency Support Functions. The consultant shall enhance the HMP to maximize Community Rating System points. The HMP shall have strong linkages or "crosswalks" to other municipal policies, plans and procedures. The HMP shall update, amend and revise as necessary mutual aid agreements with neighboring municipalities.

4. Development of Codes, Ordinances, Standards and Regulations: A new, updated and revised municipal stormwater management plan and stormwater management ordinance which in turn shall have strong linkages with the municipal master plan, reexamination report, green infrastructure strategic plan, green building environmental sustainability element and flood damage prevention ordinance. The consultant shall incorporate green infrastructure best management practices into city ordinances. The consultant shall work with city, county and sewerage authority officials to develop compatible standards. The consultant shall create a guidance document for municipal improvement projects. The consultant shall research and develop economic incentives for builders, developers and property owners to incorporate green infrastructure into their projects. The consultant shall research and recommend alternate funding mechanisms for implementation of green infrastructure best management practices. The consultant shall also develop regulations related to the abatement of mold in buildings after flooding events.
5. An Open Space, Recreation and Historic Preservation Plan: In the context of flood hazard mitigation and municipal resiliency, the consultant shall prepare a plan which identifies parks, playgrounds, open spaces and recreational facilities where green infrastructure can be installed for stormwater detention, retention and management. The consultant shall analyze and evaluate the city's stock of historic sites and buildings for update of the city's historic preservation plan and recommend methods to preserve and floodproof historic sites in the flood hazard area. The consultant shall analyze and evaluate the city's Recreation and Open Space Inventory ("ROSI") to make sure that the approved ROSI is consistent with N.J. Department of Environmental Protection's administrative code and regulations. The consultant shall be responsible for preparing and submitting the municipal open space plan to the NJ DEP for its consideration and approval to enhance future planning incentive program funding opportunities.
6. Cross Reference Guide: The consultant shall prepare a stand-alone cross reference summary document which shall graphically illustrate the interrelationships and cross-connections between each newly prepared plan element and the related municipal code and ordinances.

## **SCHEDULE**

All grant activities shall be completed within 12 months of grant execution.

## **SEPARATE TECHNICAL AND COST PROPOSALS**

The City is employing a modified "Brooks Method" of proposal evaluation. Respondents shall submit a technical proposal in a sealed envelope marked "TECHNICAL PROPOSAL".

The technical proposal shall outline the individual, firm or multidisciplinary team's understanding of the scope of work and related objectives, past performance of like projects, use of innovative technology and techniques, history and experience in performing similar work, availability of personnel, facilities, equipment, etc., qualification and experience of assigned personnel, proof of licensures and certifications, and a schedule with the names and hours of assigned personnel by task. Once the technical proposals are evaluated in accordance with the evaluation criteria, the top three scoring respondents may be interviewed. The City may choose from among the top three proposals based upon a combination of technical qualifications and cost.

In a separate sealed envelope marked "COST PROPOSAL" respondents shall provide a not-to-exceed cost proposal for all work to be completed, including all "out of pocket expenses". The City will not consider cost proposals which exceed the anticipated funding of \$200,000.00.

### **PROPOSAL REQUIREMENTS**

- Provide all required and requested documentation and forms as indicated in this RFP.
- Professional Information and Qualifications
  - Name of Firm;
  - Address of principal place of business and all other offices and corresponding telephone and fax numbers. Please note specifically which professionals will be assigned to work with the City;
  - For planner(s), engineer(s), and other licensed professionals assigned to conduct this work, a description of the professional's education, experience, qualifications, certifications and licenses, and number of years with the firm and a description of their experience with projects similar to those described above;
  - Experience related to providing neighborhood planning, urban design, community development, municipal engineering, hazard mitigation, disaster preparedness and community rating system (CRS) services for other municipalities, counties or public entities;
  - At least five (5) references, three (3) of which must have knowledge of your service to public entities;
  - No less than three (3) examples of your record of success (or significant achievements) serving public entities with similar neighborhood planning, urban design, community development, municipal engineering, hazard mitigation and disaster preparedness services;
  - The firm's ability to provide the services in a timely fashion (including staffing, familiarity and location of key staff);
  - A complete and detailed schedule of hourly rates;
  - A copy of all required professional federal and/or state licenses to perform the required activities; and
  - Any other information that the interested firm deems relevant;
  - Provide all required and requested documentation and forms as indicated in this RFP; and
  - At the request of the City, give an oral demonstration/presentation at City Hall, of their services and equipment prior to award. Vendor will not be compensated for making the presentation.

## **ORGANIZATION REQUESTING PROPOSAL**

City of Hoboken  
94 Washington Street  
Hoboken, New Jersey 07030

## **CONTACT PERSON**

To obtain copies of RFP and for technical questions please contact Purchasing at 201-420-2011 or [adineros@hobokennj.org](mailto:adineros@hobokennj.org).

## **PERIOD OF CONTRACT**

The professional service contract shall be for a period of one (1) year from date of contract award; but shall be subject to a non-appropriation contingency clause for the CY2014 period of the term which shall allow the City to terminate the contract without resulting damages if proper funds cannot be appropriated for the CY2014 period of the contract.

## **COST PROPOSAL/PRICING**

A cost proposal in a separately sealed envelope marked "COST PROPOSAL" shall specify in detail the hourly rates charged for professional and support staff with the total not-to-exceed amount. Any additional fees or costs that the firm wishes to charge back to the City should be included in the proposal with numerical costs included, where available. The City reserves the right to include a non-appropriation contingency clause in any contract executed for professional services.

## **QUALIFICATIONS**

The Vendor must have the ability to satisfactorily perform the required work by reasons of: experience in performing work of a similar nature; demonstrated competence in the services to be provided; strength and stability of the firm; staffing capability; work load; record of meeting schedules on similar projects; and supportive client references. Vendor shall complete the Firm Qualifications form as well as providing the following information:

- Provide a general description of the firm's financial condition and identify any conditions (e.g., bankruptcy, pending litigation, planned office closures, impending merger) that may impede Vendor's ability to complete the project. The firm shall provide proof of a minimum of three consecutive years of demonstrated profitability as referenced by audited financial statements by an independent, certified public accounting firm, the latest of which is dated not earlier than the previous twelve months from the date of submission of this proposal.
- Provide whether the firm or its principals are now or have ever been included in any bankruptcy, or re-organization proceedings, or have operated under a different name. If so, explain.
- Provide a minimum of five (5) references from clients for whom similar projects have been completed. Include the following information for each project:
- Project name and description
- Name of contracting company or government agency

- Contact person's name, position, and current telephone number
- Dates, cost and scope of service
- Status and comments
- If the proposer wishes to be considered favorably based on any of the professional licenses listed as preferential in the Nature of Services section, provide evidence of each and every license as well as evidence that said license is in good standing.

## **EXAMINATION OF PROPOSAL DOCUMENTS**

By submitting a proposal, the Vendor represents that they have thoroughly examined and become familiar with the work required under this RFP and that they are capable of performing quality work to achieve the City's objectives.

## **PROPOSAL EVALUATION**

The City will select the most advantageous proposal based on a point system evaluation of all of the factors as set forth in this RFP (see evaluation form). However, cost is important to the City. The City will make the award that is in the best interest of the City based on cost and other considerations.

Each proposal must satisfy the objectives and requirements detailed in this RFP. The features of the proposal, considered together with its economic and other benefits, will form the basis for the evaluation process as shown on the evaluation form.

The City reserves the right to:

1. Not select any of the proposals.
2. Select any, all, or none of the individuals or firms submitting proposals.
3. Select only portions of a particular Vendor proposal for further consideration and negotiation (however, Vendor may specify portions of the proposal that they consider "bundled").
4. Request the Vendor(s) to demonstrate by oral, in-person presentation any services described in their proposal prior to award. Vendor will not be compensated for making the presentation.

## **Questions/Inquiries Regarding this RFP:**

Any questions or inquiries regarding this RFP must be made in writing to Division of Purchasing at 201-420-2011, or via e-mail to [adineros@hobokennj.org](mailto:adineros@hobokennj.org). Deadline for all questions/inquiries three (3) days before the submission deadline. Questions/inquiries after the deadline will not be answered, vendors are advised to use their best judgments.

**BASIS OF AWARD**  
**EVALUATION CRITERIA**

**Professional Services – Professional Planning and Engineering**  
**Post Hurricane Sandy Planning & Disaster Recovery Plan**  
**Term: November 18, 2013 through November 17, 2014**

The following is the criteria for evaluation of the proposal. Points shall be awarded based on the information contained in the proposal for each category as listed below on a scale of 1-10, or 1-15 respectively, with a high score of 10/10 or 15/15 meeting all required criteria and 1 not meeting the required criteria. The highest total score shall be the basis for the contract award.

<b>EVALUATION CRITERIA</b>	<b>POSSIBLE POINTS</b>	<b>ACTUAL SCORE</b>
<b>TECHNICAL CRITERIA</b>		
Vendor's proposal demonstrates a clear understanding of the scope of work and related objectives	<b>15</b>	
Vendor's proposal is complete and responsive to the technical/RFP requirements	<b>10</b>	
Vendor's past performance of like projects	<b>15</b>	
Vendor's use of innovative technology and techniques	<b>10</b>	
<b>MANAGEMENT CRITERIA</b>		
History and experience in performing similar work	<b>15</b>	
Availability of personnel, facilities, equipment, etc.	<b>10</b>	
Qualification and experience of assigned personnel	<b>15</b>	
Proof of related licenses and certifications	<b>10</b>	
<b>POINT TOTALS</b>	<b>100</b>	

**CITY OF HOBOKEN**  
**PROPOSAL DOCUMENT CHECKLIST**  
Professional Services – Professional Planning and Engineering  
Post Hurricane Sandy Planning & Disaster Recovery Plan  
Term: November 18, 2013 through November 17, 2014

REQUIRED	SUBMISSION REQUIREMENT	READ AND/OR SUBMITTED
✓	Three original and three electric copies of submission on compact disk (“CD”) or USB key (“thumbdrive”)	
✓	Proposal Forms	
✓	Stockholder Disclosure Certificate	
✓	Non-Collusion Affidavit	
✓	New Jersey Business Registration Certificate	
✓	Mandatory Affirmative Action Language	
✓	Americans With Disabilities Act of 1990 Language	
✓	Insurance Certificate or certification of agent	
-	Prevailing Wages	
-	Public Works Vendor Registration Act	
✓	Nuclear-Free Hoboken Ordinance	
✓	Iranian Investments Form	

# EXCEPTIONS and ADDENDUM TO SPECIFICATIONS

Professional Services – Professional Planning and Engineering

Post Hurricane Sandy Planning & Disaster Recovery Plan

Term: November 18, 2013 through November 17, 2014



COMPANY NAME \_\_\_\_\_

Addendum:

1.

Exceptions:

1.

# FIRM QUALIFICATIONS

(Attach additional sheets if necessary)

COMPANY NAME \_\_\_\_\_

COMPANY LOCATIONS (if more than one, list principal location first)

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COMPANY OVERVIEW, PRINCIPAL ACTIVITIES, ETC.

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NUMBER OF EMPLOYEES \_\_\_\_\_

JOB CLASSIFICATION(S) OF EMPLOYEES (Include resumes of Managers and Supervisors as well as those who will be assigned to provide services)

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YEAR COMPANY WAS ESTABLISHED \_\_\_\_\_

**AFFIRMATIVE ACTION COMPLIANCE NOTICE**  
**N.J.S.A. 10:5-31 and N.J.A.C. 17:27**

**GOODS AND SERVICES CONTRACTS**  
**(INCLUDING PROFESSIONAL SERVICES)**

This form is a summary of the successful Vendor's requirement to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

The successful Vendor shall submit to the public agency, after notification of award but prior to execution of this contract, one of the following three documents as forms of evidence:

(a) A photocopy of a valid letter that the vendor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter);

OR

(b) A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4;

OR

(c) A photocopy of an Employee Information Report (Form AA302) provided by the Division and distributed to the public agency to be completed by the vendor in accordance with N.J.A.C. 17:27-4.

The successful vendor may obtain the Affirmative Action Employee Information Report (AA302) from the contracting unit during normal business hours.

The successful vendor(s) must submit the copies of the AA302 Report to the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division). The Public Agency copy is submitted to the public agency, and the vendor copy is retained by the vendor.

The undersigned vendor certifies that he/she is aware of the commitment to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27.1 et seq. and agrees to furnish the required forms of evidence.

The undersigned vendor further understands that his/her proposal shall be rejected as non-responsive if said vendor fails to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

COMPANY: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

## STOCKHOLDER DISCLOSURE CERTIFICATION STOCKHOLDER DISCLOSURE FORM

**Name of Business:**

I certify that the list below contains the names and home addresses of all stockholders holding 10% or more of the issued and outstanding stock of the undersigned.

**OR**

I certify that no one stockholder owns 10% or more of the issued and outstanding stock of the undersigned.

**Check the box that represents the type of business organization:**

Partnership       Corporation       Sole Proprietorship       Limited Partnership

Limited Liability Corp.       Limited Liability Partnership       Subchapter S Corporation

**Sign and notarize the form below, and, if necessary, complete the stockholder list below.**

Stockholders:

Name:	Name:
Home Address:	Home Address:
Name:	Name:
Home Address:	Home Address:
Name:	Name:
Home Address:	Home Address:

Subscribed and sworn before me this ____ day of _____, 2 ____.	_____ (Affiant)
(Notary Public)	_____ (Print name & title of affiant)
My Commission expires:	

**AMERICANS WITH DISABILITIES ACT OF 1990  
ACKNOWLEDGEMENT FORM**

This form is an agreement of the successful Vendor's obligations to comply with the requirements of 42 U.S.C. §121.01 et seq., referred to as the Americans Disability Act of 1990.

The undersigned Vendor hereby acknowledges receipt of the Americans With Disabilities Act of 1990 found at Appendix B of this packet.

The undersigned Vendor hereby certifies that he/she is aware of the commitment to comply with the requirements of 42 U.S.C. §121.01 et seq. and agrees to furnish any required forms as evidence of compliance.

The undersigned Vendor further certifies that he/she understands that his/her proposal shall be rejected as non-responsive, and any contract entered into shall be void and of no effect if said Vendor fails to comply with the requirements of 42 U.S.C. §121.01 et seq.

COMPANY: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

**THE NUCLEAR-FREE HOBOKEN ORDINANCE**

(1) FINDINGS: The People of the City of Hoboken hereby find that:

- (a) Nuclear weapons production, in the United States and in other countries, is draining the world's resources and presenting humanity with an ever-increasing threat of nuclear war.
- (b) Any participation in the nuclear war industry, locally, federally, or otherwise, directly condones the possible annihilation of our civilization. We see this as a crime against the sacredness of our humanity.
- (c) The emphatic expression of our community, along with communities throughout the world, can help initiate steps by the United States, the Soviet Union, and other nuclear weapons powers to end the arms race and the proliferation of all nuclear weapon systems.

(2) POLICY: Hoboken shall be established as a Nuclear Free Zone.

A Nuclear Free Zone shall be defined by these requirements:

- (a) No nuclear weapons, delivery systems for such weapons, or components expressly intended to contribute to the operation, guidance or delivery of a nuclear weapon shall be produced or stored within the City of its' port.
- (b) No waste from the production of nuclear weapons, their components, or commercial nuclear power shall be stored within the City of its' port.
- (c) No research furthering nuclear weapons, their components, or commercial nuclear power shall be stored within the City of its' port.
- (d) The Mayor and Council of the City of Hoboken shall request the United States Department of Transportation and the New Jersey Department of Transportation to provide the City with advance notification of any radioactive waste shipment through the City limits. Upon such notification, the Mayor and Council shall act to prevent transportation of radioactive waste through the City by seeking an exemption for preemption by Department of Transportation regulations or using other legal means at their disposal.
- (e) The Mayor and Council of the City of Hoboken shall not do business or award any municipal contract to any person, firm, or organization engaged in the production of nuclear weapons or components.

(3) This ordinance expresses the policy of the City of Hoboken. It is not intended to make violations subject to forfeiture and nothing in this ordinance shall be construed to prohibit or regulate any activity not specifically described in Subsection (2).

(4) SEVERABILITY: If any portion of this Ordinance is hereafter declared invalid, all remaining portions shall remain in full force and effect, and to this extent, the provisions of this Ordinance are severable.

\*\*\*\*\*

CERTIFICATION: I hereby certify that \_\_\_\_\_ **does / does not** engage in the production of nuclear weapons or components. (Name of Vendor)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**NON-COLLUSION AFFIDAVIT**

State of \_\_\_\_\_

County of \_\_\_\_\_

I, \_\_\_\_\_ residing in \_\_\_\_\_  
(name of affiant) (name of municipality)

in the County of \_\_\_\_\_ and State of \_\_\_\_\_ of full  
age, being duly sworn according to law on my oath depose and say that:

I am \_\_\_\_\_ of the firm of \_\_\_\_\_  
(title or position) (name of firm)

\_\_\_\_\_ the Vendor making this Proposal for the proposal  
entitled \_\_\_\_\_, and that I executed the said proposal  
(title of proposal)

with full authority to do so that said Vendor has not, directly or indirectly entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive contracting in connection with the above name project; and that all statements contained in the said proposal and in this affidavit are true and correct, and made with full knowledge that the **City of Hoboken** relies upon the truth of the statements contained in said Proposal and in the statements contained in this affidavit in awarding the contract for the said project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage, or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by \_\_\_\_\_  
(name of Vendor)

Subscribed and sworn to  
before me this day \_\_\_\_\_ 20 \_\_\_\_\_

\_\_\_\_\_  
(Type or print name of affiant under signature)

\_\_\_\_\_  
Notary Public of \_\_\_\_\_

My Commission expires \_\_\_\_\_ 20 \_\_\_\_\_  
\_\_\_\_\_

# DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

City of Hoboken

## PART 1: CERTIFICATION

**BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX.**

**FAILURE TO CHECK EITHER BOX WILL RENDER THE PROPOSAL NON-RESPONSIVE.**

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at <http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf>. Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a bidder's proposal non-responsive.** If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

**PLEASE CHECK EITHER BOX:**

I certify, pursuant to Public Law 2012, c. 25, that neither the person/entity listed above nor any of the entity's parents, subsidiaries, or affiliates is **listed** on the N.J. Department of the Treasury's list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. **I will skip Part 2 and sign and complete the Certification**

**OR**

I am unable to certify as above because I or the bidding entity and/or one or more of its parents, subsidiaries, or affiliates is **listed** on the Department's Chapter 25 list. **I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below.** Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

## **Part 2**

**PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN**

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

**PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, USE ADDITIONAL PAGES**

Name: \_\_\_\_\_

Relationship to Bidder/Vendor: \_\_\_\_\_

Description of Activities:

---

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Duration of Engagement: \_\_\_\_\_ Anticipated Cessation Date \_\_\_\_\_

Bidder/Vendor: \_\_\_\_\_

Contact Name: \_\_\_\_\_ Contact Phone Number: \_\_\_\_\_

Certification: I, being duly sworn upon my oath, hereby represent and state that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I attest that I am authorized to execute this certification on behalf of the below-referenced person or entity. I acknowledge that the City of Hoboken is relying on the information contained herein and thereby acknowledge that I am under a continuing obligation from the date of this certification through the completion of contracts with the City to notify the City in writing of any changes to the answers of information contained herein. I acknowledge that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I recognize that I am subject to criminal prosecution under the law and that it will also constitute a material breach of my agreements(s) with the City of Hoboken and that the City at its option may declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): \_\_\_\_\_ Signature: \_\_\_\_\_

Title: \_\_\_\_\_ Date: \_\_\_\_\_

Bidder/Vendor: \_\_\_\_\_

# **APPENDIX I**

## **NOAA PRECIPITATION FREQUENCY DATA**



**NOAA Atlas 14, Volume 2, Version 3**  
**Location name: \***  
**Latitude: 40.7372°, Longitude: -74.0630°**  
**Elevation: status error \***  
 \* source: Google Maps



**POINT PRECIPITATION FREQUENCY ESTIMATES**

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aeriels](#)

**PF tabular**

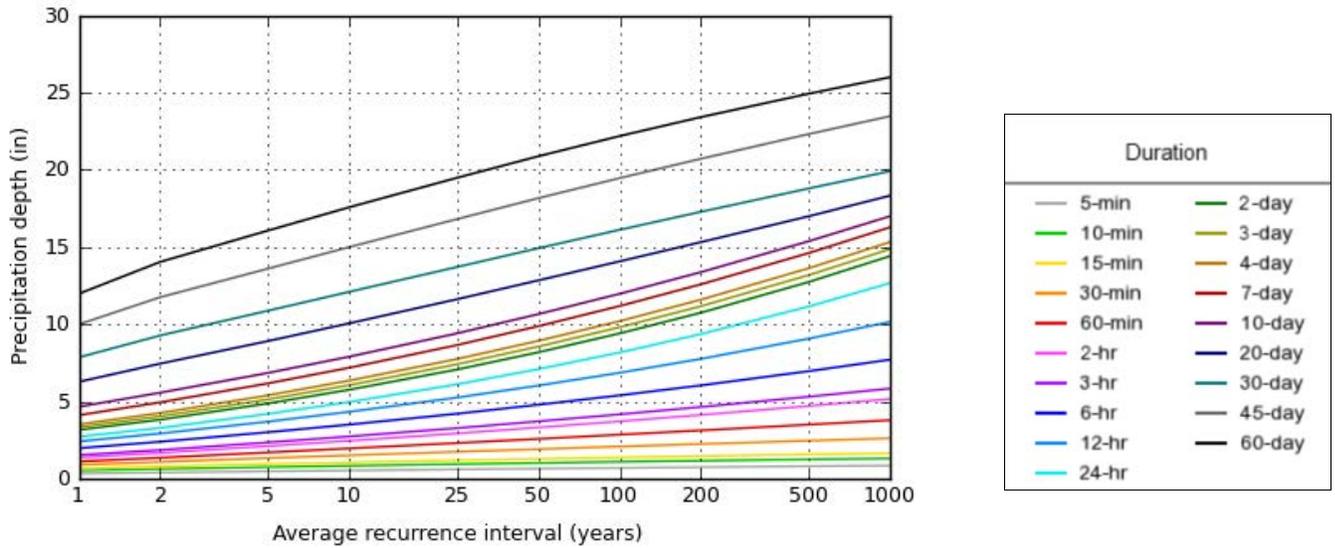
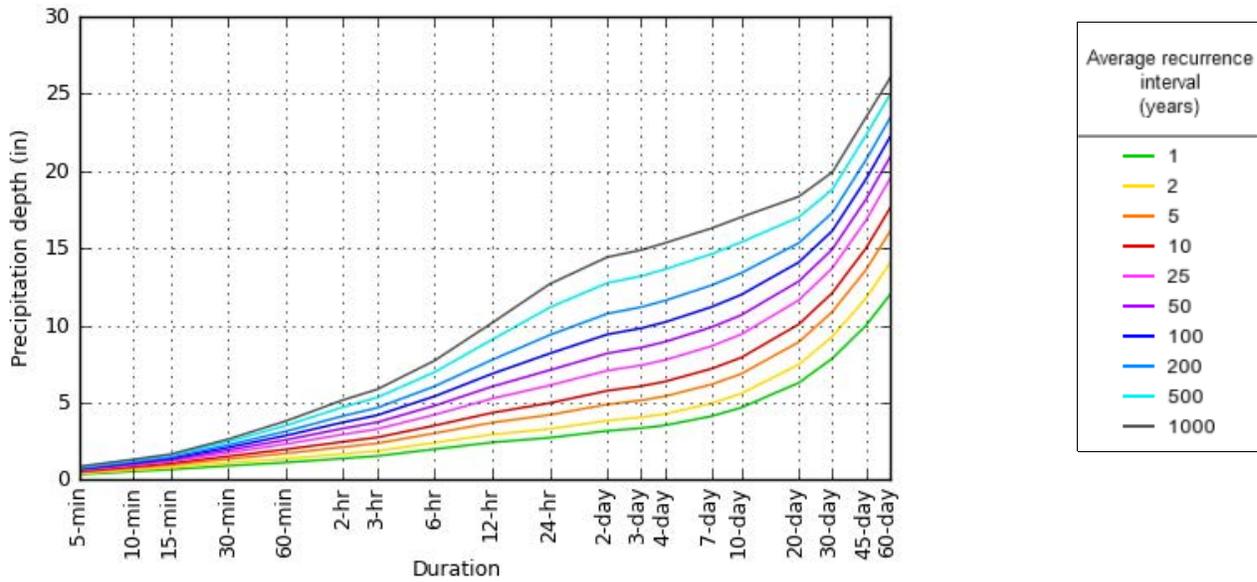
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
<b>Duration</b>	<b>Average recurrence interval (years)</b>									
	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
<b>5-min</b>	<b>0.334</b> (0.306-0.366)	<b>0.399</b> (0.365-0.437)	<b>0.473</b> (0.431-0.519)	<b>0.529</b> (0.482-0.581)	<b>0.598</b> (0.542-0.656)	<b>0.647</b> (0.583-0.710)	<b>0.699</b> (0.626-0.768)	<b>0.744</b> (0.662-0.820)	<b>0.806</b> (0.707-0.893)	<b>0.849</b> (0.739-0.945)
<b>10-min</b>	<b>0.530</b> (0.486-0.581)	<b>0.633</b> (0.580-0.695)	<b>0.752</b> (0.686-0.825)	<b>0.839</b> (0.764-0.920)	<b>0.944</b> (0.856-1.04)	<b>1.02</b> (0.920-1.12)	<b>1.09</b> (0.982-1.20)	<b>1.16</b> (1.03-1.28)	<b>1.25</b> (1.10-1.39)	<b>1.31</b> (1.14-1.46)
<b>15-min</b>	<b>0.659</b> (0.604-0.723)	<b>0.792</b> (0.725-0.869)	<b>0.946</b> (0.863-1.04)	<b>1.05</b> (0.960-1.16)	<b>1.19</b> (1.08-1.30)	<b>1.29</b> (1.16-1.41)	<b>1.38</b> (1.24-1.51)	<b>1.46</b> (1.30-1.61)	<b>1.57</b> (1.38-1.74)	<b>1.65</b> (1.43-1.83)
<b>30-min</b>	<b>0.898</b> (0.822-0.984)	<b>1.09</b> (0.994-1.19)	<b>1.33</b> (1.22-1.46)	<b>1.51</b> (1.38-1.66)	<b>1.74</b> (1.58-1.91)	<b>1.91</b> (1.72-2.10)	<b>2.08</b> (1.87-2.29)	<b>2.25</b> (2.00-2.47)	<b>2.46</b> (2.16-2.73)	<b>2.62</b> (2.28-2.92)
<b>60-min</b>	<b>1.11</b> (1.02-1.22)	<b>1.36</b> (1.24-1.49)	<b>1.70</b> (1.55-1.87)	<b>1.96</b> (1.78-2.15)	<b>2.31</b> (2.09-2.53)	<b>2.58</b> (2.32-2.83)	<b>2.85</b> (2.56-3.13)	<b>3.13</b> (2.78-3.44)	<b>3.50</b> (3.08-3.88)	<b>3.79</b> (3.30-4.22)
<b>2-hr</b>	<b>1.38</b> (1.25-1.52)	<b>1.67</b> (1.52-1.85)	<b>2.11</b> (1.92-2.33)	<b>2.45</b> (2.23-2.71)	<b>2.93</b> (2.64-3.23)	<b>3.32</b> (2.97-3.66)	<b>3.71</b> (3.30-4.10)	<b>4.13</b> (3.64-4.57)	<b>4.71</b> (4.10-5.22)	<b>5.16</b> (4.44-5.75)
<b>3-hr</b>	<b>1.53</b> (1.40-1.69)	<b>1.86</b> (1.70-2.05)	<b>2.35</b> (2.14-2.60)	<b>2.73</b> (2.48-3.02)	<b>3.27</b> (2.95-3.61)	<b>3.71</b> (3.33-4.09)	<b>4.17</b> (3.71-4.59)	<b>4.65</b> (4.09-5.13)	<b>5.31</b> (4.61-5.88)	<b>5.84</b> (5.01-6.49)
<b>6-hr</b>	<b>1.97</b> (1.80-2.17)	<b>2.39</b> (2.19-2.63)	<b>3.01</b> (2.75-3.30)	<b>3.50</b> (3.19-3.84)	<b>4.21</b> (3.80-4.61)	<b>4.79</b> (4.29-5.24)	<b>5.40</b> (4.80-5.91)	<b>6.04</b> (5.32-6.64)	<b>6.96</b> (6.04-7.68)	<b>7.71</b> (6.61-8.53)
<b>12-hr</b>	<b>2.41</b> (2.21-2.65)	<b>2.92</b> (2.67-3.21)	<b>3.69</b> (3.37-4.05)	<b>4.33</b> (3.94-4.74)	<b>5.25</b> (4.73-5.73)	<b>6.03</b> (5.39-6.57)	<b>6.86</b> (6.07-7.48)	<b>7.76</b> (6.79-8.48)	<b>9.07</b> (7.79-9.94)	<b>10.2</b> (8.60-11.2)
<b>24-hr</b>	<b>2.72</b> (2.51-2.96)	<b>3.29</b> (3.04-3.58)	<b>4.20</b> (3.87-4.56)	<b>4.96</b> (4.57-5.39)	<b>6.11</b> (5.58-6.62)	<b>7.09</b> (6.43-7.67)	<b>8.17</b> (7.34-8.84)	<b>9.37</b> (8.33-10.1)	<b>11.2</b> (9.76-12.1)	<b>12.7</b> (10.9-13.8)
<b>2-day</b>	<b>3.16</b> (2.91-3.45)	<b>3.82</b> (3.52-4.18)	<b>4.87</b> (4.47-5.33)	<b>5.76</b> (5.27-6.28)	<b>7.07</b> (6.42-7.70)	<b>8.18</b> (7.39-8.92)	<b>9.41</b> (8.42-10.3)	<b>10.8</b> (9.53-11.8)	<b>12.7</b> (11.1-14.0)	<b>14.4</b> (12.4-15.9)
<b>3-day</b>	<b>3.34</b> (3.08-3.63)	<b>4.04</b> (3.73-4.40)	<b>5.14</b> (4.73-5.59)	<b>6.06</b> (5.56-6.58)	<b>7.41</b> (6.76-8.04)	<b>8.56</b> (7.75-9.29)	<b>9.81</b> (8.82-10.7)	<b>11.2</b> (9.96-12.2)	<b>13.2</b> (11.6-14.4)	<b>14.9</b> (12.9-16.4)
<b>4-day</b>	<b>3.52</b> (3.25-3.81)	<b>4.25</b> (3.94-4.61)	<b>5.40</b> (4.99-5.85)	<b>6.35</b> (5.86-6.88)	<b>7.75</b> (7.10-8.38)	<b>8.93</b> (8.12-9.66)	<b>10.2</b> (9.21-11.1)	<b>11.6</b> (10.4-12.6)	<b>13.6</b> (12.0-14.9)	<b>15.3</b> (13.3-16.8)
<b>7-day</b>	<b>4.11</b> (3.83-4.43)	<b>4.94</b> (4.60-5.33)	<b>6.17</b> (5.73-6.65)	<b>7.19</b> (6.66-7.73)	<b>8.65</b> (7.97-9.30)	<b>9.88</b> (9.04-10.6)	<b>11.2</b> (10.2-12.1)	<b>12.6</b> (11.3-13.6)	<b>14.6</b> (13.0-15.9)	<b>16.3</b> (14.3-17.8)
<b>10-day</b>	<b>4.66</b> (4.36-5.00)	<b>5.57</b> (5.21-5.98)	<b>6.85</b> (6.40-7.34)	<b>7.90</b> (7.36-8.47)	<b>9.41</b> (8.72-10.1)	<b>10.7</b> (9.82-11.4)	<b>12.0</b> (11.0-12.9)	<b>13.4</b> (12.1-14.4)	<b>15.4</b> (13.8-16.6)	<b>17.0</b> (15.0-18.5)
<b>20-day</b>	<b>6.27</b> (5.90-6.67)	<b>7.45</b> (7.01-7.93)	<b>8.91</b> (8.38-9.47)	<b>10.1</b> (9.44-10.7)	<b>11.6</b> (10.9-12.3)	<b>12.8</b> (12.0-13.6)	<b>14.1</b> (13.0-15.0)	<b>15.3</b> (14.1-16.3)	<b>17.0</b> (15.5-18.2)	<b>18.3</b> (16.6-19.7)
<b>30-day</b>	<b>7.86</b> (7.43-8.31)	<b>9.28</b> (8.77-9.82)	<b>10.9</b> (10.3-11.5)	<b>12.1</b> (11.4-12.8)	<b>13.7</b> (12.9-14.5)	<b>14.9</b> (14.0-15.8)	<b>16.1</b> (15.1-17.1)	<b>17.3</b> (16.1-18.4)	<b>18.8</b> (17.4-20.0)	<b>19.9</b> (18.3-21.3)
<b>45-day</b>	<b>9.99</b> (9.47-10.5)	<b>11.8</b> (11.1-12.4)	<b>13.6</b> (12.9-14.3)	<b>15.0</b> (14.2-15.8)	<b>16.8</b> (15.9-17.7)	<b>18.2</b> (17.1-19.2)	<b>19.5</b> (18.3-20.6)	<b>20.7</b> (19.4-21.9)	<b>22.3</b> (20.8-23.7)	<b>23.5</b> (21.8-25.0)
<b>60-day</b>	<b>12.0</b> (11.4-12.6)	<b>14.0</b> (13.3-14.8)	<b>16.1</b> (15.3-16.9)	<b>17.6</b> (16.7-18.5)	<b>19.5</b> (18.5-20.5)	<b>20.9</b> (19.7-22.0)	<b>22.2</b> (20.9-23.4)	<b>23.4</b> (22.0-24.7)	<b>24.9</b> (23.4-26.4)	<b>26.0</b> (24.3-27.6)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

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**PF graphical**

PDS-based depth-duration-frequency (DDF) curves  
 Latitude: 40.7372°, Longitude: -74.0630°



NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Fri Mar 28 13:49:57 2014

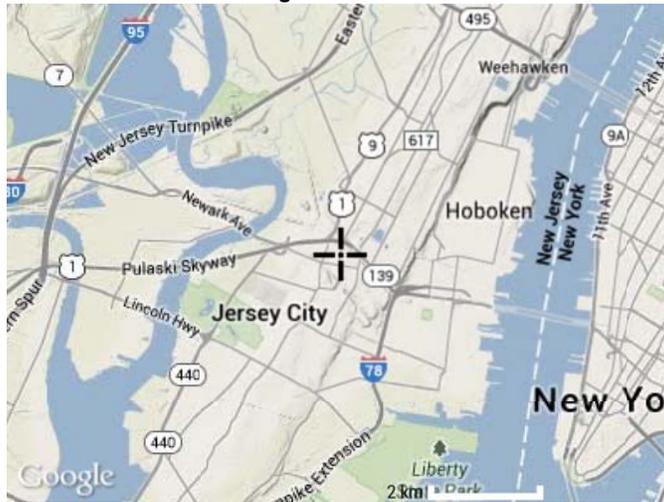
[Back to Top](#)

### Maps & aerials

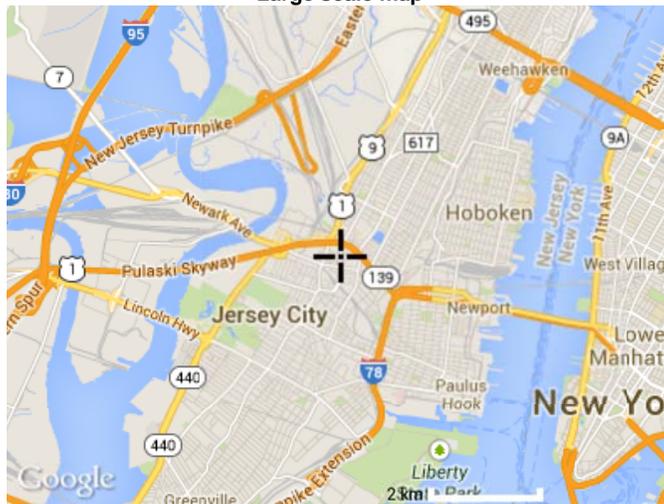
#### Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



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[US Department of Commerce](#)  
[National Oceanic and Atmospheric Administration](#)  
[National Weather Service](#)  
[Office of Hydrologic Development](#)  
1325 East West Highway  
Silver Spring, MD 20910  
Questions?: [HDSC.Questions@noaa.gov](mailto:HDSC.Questions@noaa.gov)

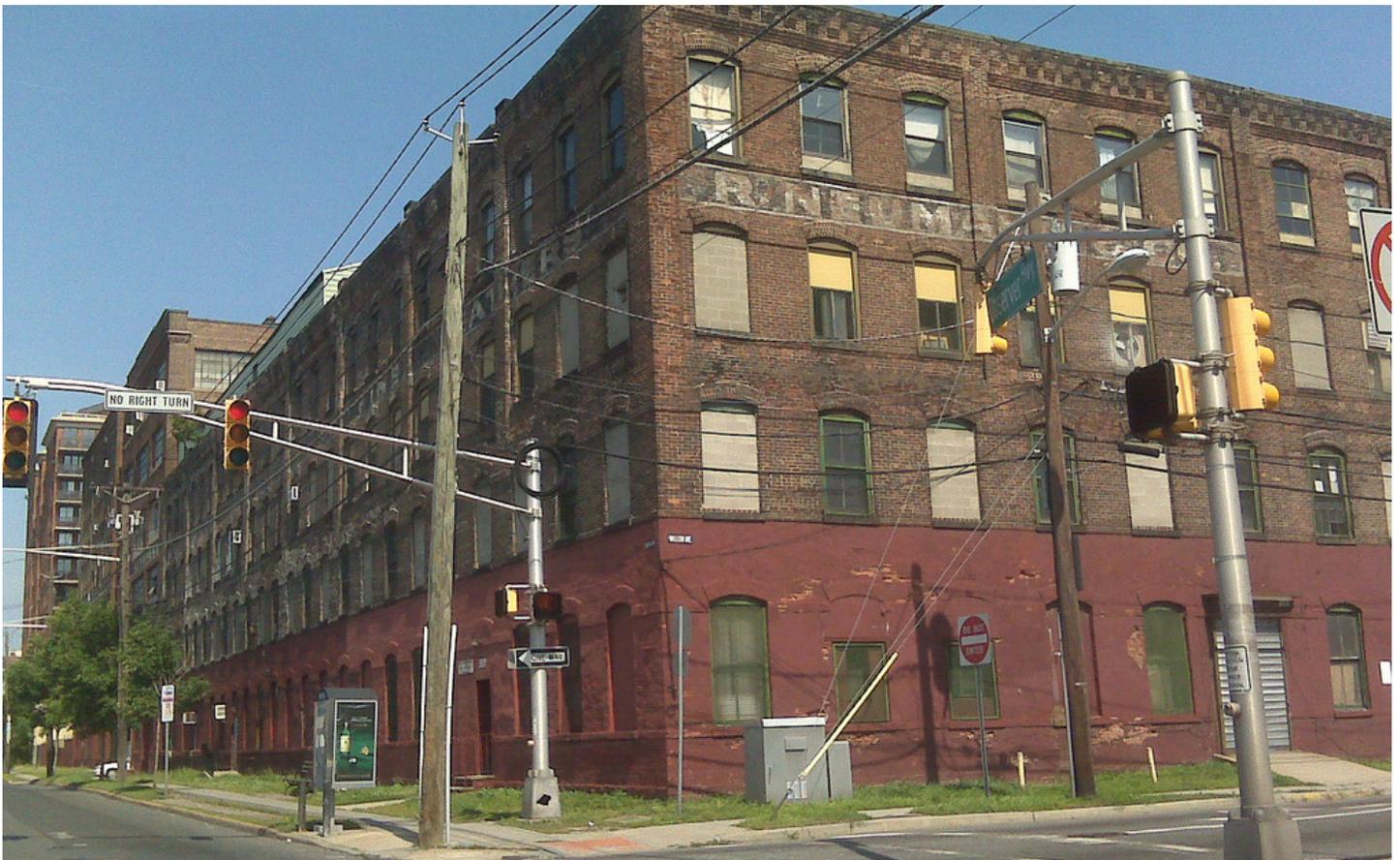
[Disclaimer](#)

# **APPENDIX J**

## **HOBOKEN GLOBAL GREEN INITIATIVE**

# HOBOKEN, NJ

## SUSTAINABLE NEIGHBORHOOD ASSESSMENT



The Neumann Leather Building in Southwest Hoboken

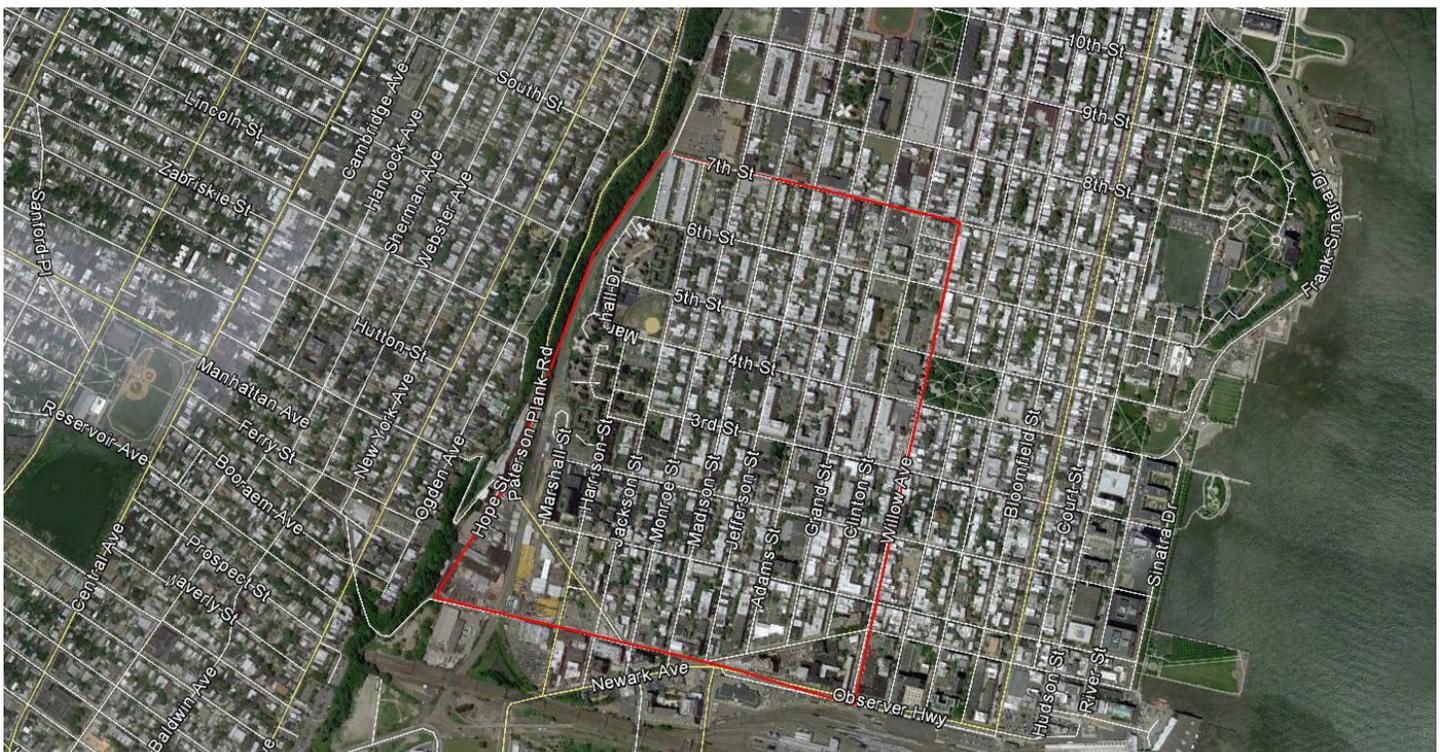


# SUSTAINABLE NEIGHBORHOOD ASSESSMENT USING LEED-ND

Through the Sustainable Neighborhood Assessment Tool developed by Global Green USA, public officials and local government staff are using the LEED for Neighborhood Development (LEED-ND) rating system to determine ways for future development in their communities to achieve high levels of environmental, economic, and social sustainability. LEED-ND integrates the principles of smart growth, new urbanism, and green building into the first national rating system for neighborhood design. Global Green used the tool as a means to evaluate existing conditions in Southwest Hoboken to augment future revitalization efforts and to develop recommendations to increase resiliency in the neighborhood.

## ENVIRONMENTAL PROTECTION AGENCY

Technical Assistance provided by Global Green USA with the US Green Building Council to the City of Hoboken was made possible through funding from the US EPA's Office of Sustainable Communities Building Blocks for Sustainable Communities Grant Program.



Southwest Hoboken study area

## CONTENTS

Assessment Process	P.1
Neighborhood Background & Impacts from Hurricane Sandy	P.2
Flood Preparation & Neighborhood Resiliency	P.3
Housing & Landuse Diversity	P.5
Environmental Performance	P.7
Sustainability Assessment	P.9

## FOCUS AREAS | Related LEED-ND Credits

### Water

#### Category: Smart Location & Linkages

Housing and Jobs Proximity (credit 5)

#### Category: Neighborhood Pattern and Design

Existing Building Reuse (credit 5)

Historic Preservation and Adaptive Reuse (credit 6)

#### Category: Green Infrastructure & Building

Stormwater Management (credit 8)

### Environmental Performance

#### Category: Green Infrastructure & Building

Certified Green Building (prerequisite & credit 1)

Building Energy Efficiency (prerequisite & credit 2)

Building Water Efficiency (prerequisite & credit 3)

Infrastructure Energy Efficiency (credit 13)

Recycled Content in Infrastructure (credit 15)

### Housing

#### Category: Neighborhood Pattern & Design

Compact Development (prerequisite & credit 2)

Mixed-Use Neighborhood Centers (credit 3)

Mixed-Income Diverse Communities (credit 4)

Access to Civic and Public Spaces (credit 9)

Access to Recreation Facilities (credit 10)

Community Outreach and Involvement (credit 12)

Tree-Lined & Shaded Streets (credit 14)

#### Category: Green Infrastructure & Building

Certified Green Building (prerequisite & credit 1)

Building Energy Efficiency (credit 2)

Water Efficient Landscape (credit 4)

Solar Orientation (credit 10)

## NEIGHBORHOOD LOCATION

### NEW JERSEY



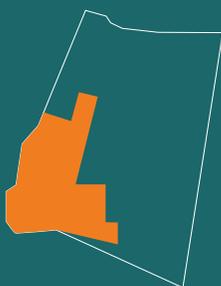
### HUDSON COUNTY



### CITY OF HOBOKEN



### SOUTH WEST HOBOKEN



## SUSTAINABLE NEIGHBORHOOD ASSESSMENT PROCESS

The goal of the Sustainable Neighborhood Assessment process is to identify topical and physical focus areas where policy or planning changes will promote sustainable urban development over the short and long term. These interventions will improve the neighborhood's day-to-day sustainability as well as increase its resiliency during future weather events. To define these focus areas, Global Green USA and its team members utilize the Sustainable Neighborhood Assessment Tool, which is based on the LEED for Neighborhood Development (ND) criteria and checklist.

The site visit to Southwest Hoboken is part of a special effort to respond to Hurricane Sandy affected communities- expanding the scope of the Sustainable Neighborhood Assessment to include resiliency. Resilient neighborhoods are better prepared to withstand, respond to, and recover from extreme weather events associated with global climate change. The assessment provides insight on how neighborhoods can reduce impact risks, facilitate a swift recovery, and increase their adaptive capacity. These attributes are embedded within sustainable neighborhoods, thus establishing a balance for future generations.

Prior to visiting the assessment area, the team conducts a thorough baseline review of existing planning documents, code requirements, flood maps, and stakeholder priorities. An initial assessment is completed, with the credits in each of the three LEED-ND categories (Smart Location & Linkages, Neighborhood Pattern & Design, and Green Infrastructure & Building) marked as "achieved," "not achieved," "unknown," or "not applicable." Each credit is further ranked for the degree that it correlates to regional or local policy priorities, regulatory support, technical feasibility, market support, and stakeholder input.

This initial assessment serves as the point of departure for the Global Green team's three-day site visit and evaluation. During the visit, the team walks each block of the target neighborhood, photographs examples of positive qualities and areas for improvement, and conducts a series of meetings with targeted stakeholders, city staff, and representatives of relevant public agencies. Throughout the process, the preliminary checklist is edited and refined to incorporate the team's visual observations and contextual issues raised by stakeholders. The initial findings of the evaluation are grouped into broad categories noted on the next page in the grey box. These categories are presented and discussed at a community workshop. The dialogue and suggestions which emerge during the community workshop are incorporated into the final version of the checklist and this summary report of the assessment. The final augmented checklist for Southwest Hoboken can be found on pages 9-12.

The assessment process then enables the team to identify a series of recommendations based on LEED-ND credits that are applicable to disaster risk reduction. Recommendations also cover policy, planning, and development changes which aim to realize a more resilient and sustainable future for Southwest Hoboken. Some recommendations can be implemented fairly quickly, while others will require long-term collaboration among public agencies, local institutions, and private sector partners.

The following documents were used by the assessment team to inform their recommendations:

- 2010 City Re-examination Report
- 2011 Sewer Monitoring Program Observations
- Southwest Hoboken Flooding Analysis
- Hoboken Resiliency & Rediness Plan
- Hoboken Southwest Redevelopment Study

## NEIGHBORHOOD BACKGROUND + IMPACTS FROM HURRICANE SANDY

The Southwest Hoboken assessment area is bound by Observer Highway to the south, Willow Avenue to the east, Seventh Street to the north, and the City's municipal boundary to the west. Southwest Hoboken is one of the lowest lying areas within the City of Hoboken and is home to Thomas G. Connors Elementary School, the Hoboken Housing Authority, Mama Johnson Field, the Hoboken Fire Department, and a Hudson-Bergen Light Rail Station.

Developed below sea level, Southwest Hoboken often experiences flooding during instances of heavy rain and high tide. During Hurricane Sandy, the neighborhood's low-lying elevation and high tides in the Hudson River exacerbated the storm's lasting impact. Parts of Southwest Hoboken endured up to seven feet of flood waters; stranding residents in their homes for over 72 hours. Basement level apartments were completely inundated, streets were impassable, and the electric and sewer utilities were not functioning for several days. With prolonged power outages and limited access to food, water, and other essentials, residents were heavily impacted during the week following the Hurricane. Southwest Hoboken is disproportionately populated by low-income households and as such, sustained impacts during and after the Hurricane namely due to the age of the building stock difficult accessibility to higher ground and limited disposable income.

The impacts of Hurricane Sandy were intensified by the infrastructure and ground-water hydrology of the neighborhood, as Southwest Hoboken suffers from short-term flooding multiple times a year, when a large amount of rainfall occurs over short period of time concurrent with a high tide. During these events, sewer outfalls from the Southwest neighborhood become blocked by tidal flow and water is not able to be released into the Hudson River. Eventually, the storage capacity in the drainage system is exhausted and standing water accumulates in the neighborhood. This localized flooding often leads to street closures and traffic disruption. Low-lying basement or first floor spaces also suffer property damage or business closure due to flood waters. The severity of impacts from rain events have been reduced by the North Hudson Sewerage Authority's installation, in 2011, of a pump station near the intersection of Observer Highway and Washington Street. Additionally, the lack of open space in Southwest Hoboken minimizes the neighborhood's capacity to retain runoff, particularly because the water table is relatively high.

Looking forward, the City of Hoboken would like to integrate green infrastructure and low-impact development strategies into future redevelopment projects. Their goal is to reduce the impact of extreme weather events through incremental enhancements to public and private developments. Examples include the construction of curb extensions with bioswales, and rain gardens which will slow the rate at which water enters the combined sewer system and the water table. Multiple small-scale green infrastructure interventions will augment the larger scale grey water infrastructure investments that the City and other public agencies have already made. Just outside of the assessment area, the North Hudson Sewerage Authority has installed a surge pump near the Hudson River to push water from heavy rains and storm surge out from behind the River banks. Although this is helpful in heavy storm events, it is not effective when there is a combination of a high tide and heavy rains, as were the conditions during Hurricane Sandy.

A key parcel in the neighborhood, along Observer Highway, is occupied by the Neumann Leather building. This former industrial building provides an aesthetic connection to Hoboken's past while providing flexible creative, fabrication, media production, and general office space. The rehabilitation plan will explore options for preserving the density and diversity of uses in the Neumann Leather building, as well as neighborhood-wide options to update land use and zoning, establish environmental performance standards, preserve housing diversity, and integrate older structures into the new development.

Potential land use and zoning changes may also provide an opportunity for increased resiliency. A portion of the assessment area has been designated by the City as an "area in need of redevelopment." A designation which allows the collection of a tax increment to be reinvested within its boundaries to create greater opportunity for investment. (See map on next page) With that reinvestment the City can require more attention to resiliency and sustainability in future developments. Based on the team's review of the relevant regulations and plans for the neighborhood, a walking tour, and input from City staff and a number of community stakeholders, three short and long-term recommendations were identified. These recommendations are increasing flood preparation and neighborhood resiliency, maintaining and increasing housing and land use diversity, and improving the neighborhood's environmental performance.

### NEIGHBORHOOD HIGHLIGHTS



TRANSIT OPTIONS



MATURE TREE COVER



COMMUNITY GARDEN



ACTIVE OUTDOOR SPACES



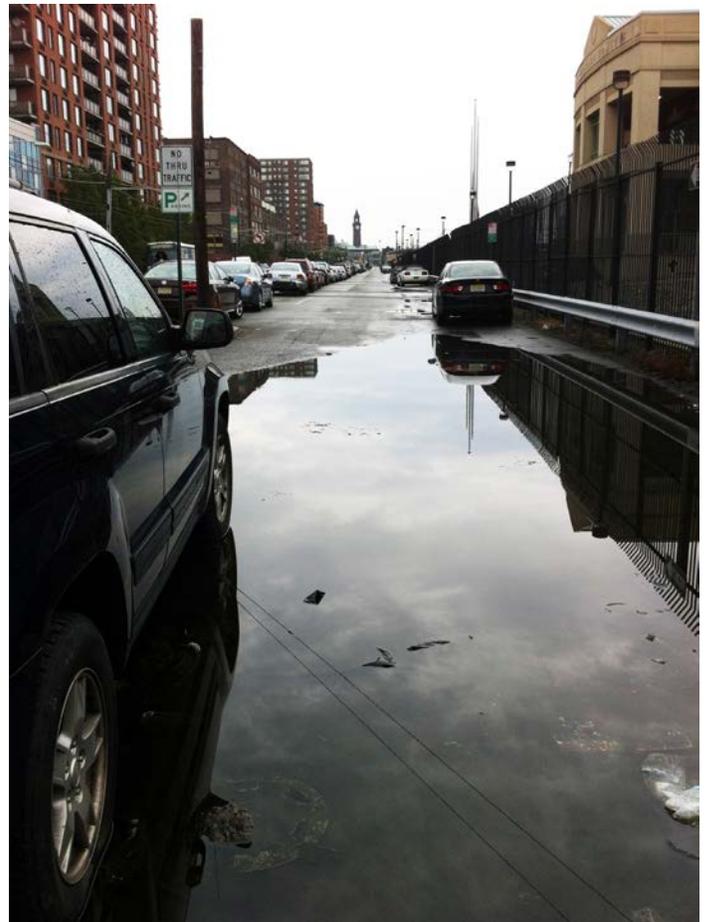
HISTORIC + MIXED USE STRUCTURES

# INCREASE FLOOD PREPARATION AND NEIGHBORHOOD RESILIENCY

## Recommendation 1

LEED-ND discourages new construction from being located in the 100-year floodplain. For existing neighborhoods, any development that is within the 100-year flood zone is required to meet the construction requirements of the National Flood Insurance Program. This typically means placing the first floor of any structure 3 feet above the base flood elevation. While this is possible for new construction, raising existing homes is often infeasible from either a cost or structural standpoint.

To reduce flood related impacts, Hoboken is in the process of adding a Flood Damage Prevention chapter to the municipal code that includes requirements for new construction. There are also exploratory discussions related to restricting residential uses on the ground floor of structures in the flood zone. These efforts will over time reduce property damage and disruption from stormwater related flooding. In the short-term there is an opportunity to adopt adaptive strategies in building use and construction.



Flooding within the study area

### RESPONSIBLE DEPARTMENTS

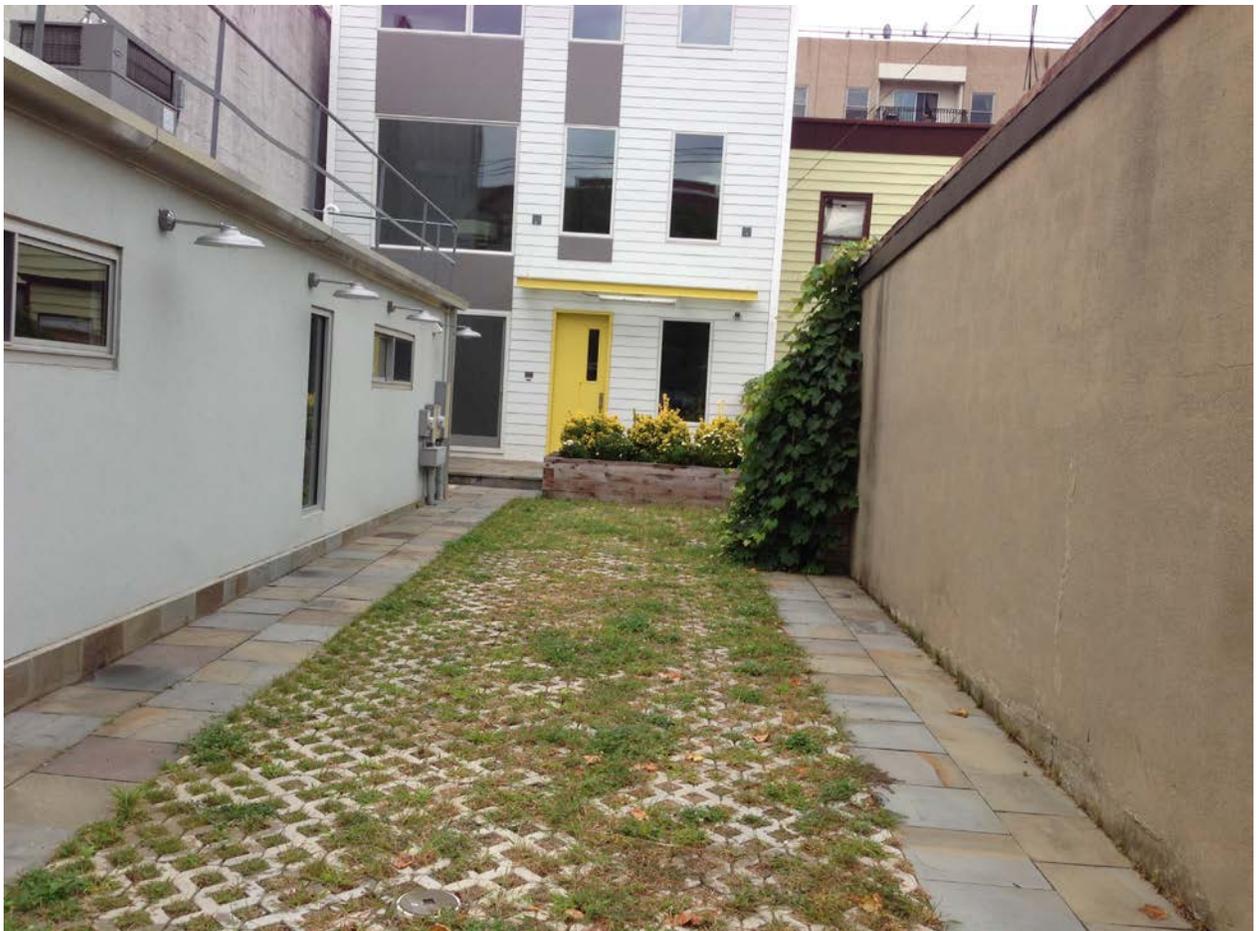
Departments of Public Works, Environmental Services, Planning and Zoning

# INCREASE FLOOD PREPARATION AND NEIGHBORHOOD RESILIENCY

## 1

### Recommendations:

1. Establish a provision in the zoning code that allows for basement level apartments to be used for office uses. This would allow building owners to continue to earn revenue from the basement spaces, while reducing the risk to human life and personal property.
2. Require the use of flood damage-resistant construction materials for any building components that are located below the Base Flood Elevation. These would include elements such as concrete or tile floors and paperless drywall.
3. Promote the removal of impermeable surfaces and the installation of low-impact development (LID) features on residential property by establishing an incentive program with the North Hudson Sewerage Authority and by providing flexible standards for driveway, courtyard, or walkway paving.
4. Add rain gardens and swales along public rights of way and through parkway planting, large tree wells, or the creation of landscaped traffic islands.
5. Develop options to modernize and potentially expand the Neumann Leather building, while preserving the historic character and creative employment and light fabrication job base. Include LID measures in the frontage along Observer Highway.



Permeable paving at a recently constructed house in the study area

# MAINTAIN AND INCREASE THE HOUSING AND LAND USE DIVERSITY OF THE NEIGHBORHOOD

## Recommendation 2

Over-arching objectives of LEED-ND include supporting the social capital, physical health, and mental well-being within a neighborhood by providing a mix of land uses, diversity of housing types, and a variety of open spaces, to facilitate social networking, civic engagement, community cohesion, and physical activity.

As new development and renovations continue in the area, it is important to have development standards in place that preserve the current diversity and address emerging needs. It is also important to plan for residents to be able to either shelter in place or access shelter and emergency services in close proximity to their neighborhood.

LEED-ND encourages the provision of a diversity of housing types – single and multi-family, flats and townhouses, along with maintaining some dwellings for low-income residents. This helps create an economically and socially diverse community and enables people to remain in the neighborhood as their housing needs changes. LEED-ND uses the Simpson Diversity Index to determine the degree to which a neighborhood provides sufficient housing options. LEED-ND also encourages mixed use development, in order to place services in close proximity to residents and thus minimize or reduce vehicle trips. Additional credits are awarded in LEED-ND for communities that provide housing specifically for low-income residents.

In terms of open space and recreation, Madison Park and Mama Johnson Field provide a children’s playground and playing fields. There is not currently an exclusively civic space, although there are several schools, churches, and social clubs that provide facilities for meetings and community events.

Southwest Hoboken currently features a good range of housing types and costs. The steady pace of development in the Southwest Hoboken neighborhood is creating significant changes to the land use pattern and generating new needs on the part of residents. Formerly industrial properties are being redeveloped primarily with multi-family housing. While these new investments are maintaining the neighborhood’s physical attributes such as the street dimensions, block layout and orienting building entrances toward the sidewalk, there is a concurrent need to think holistically about the social, economic, and cultural needs of residents.

RESPONSIBLE  
DEPARTMENTS

Planning and Zoning,  
Parks and Recreation

# MAINTAIN AND INCREASE THE HOUSING AND LAND USE DIVERSITY OF THE NEIGHBORHOOD

## 2

### Recommendations:

1. Conduct a comprehensive evaluation of the housing types, income ranges and number of income-restricted units in the neighborhood, with the goal of preserving existing affordable housing units and encouraging the construction of diverse housing sizes and types to meet current and future housing needs.
2. Provide clear and consistent application of the requirements and incentives for preserving or providing income-restricted units as part of new development.
3. Complete the park planned for Block 12 to increase the amount of open space in the neighborhood. If possible, integrate water capture techniques into the park design to augment the neighborhood flood management and resiliency strategy.
4. Explore opportunities to include a civic space in future renovation or expansion plans for the Neumann Leather building.
5. Provide emergency shelter and critical facilities outside of the 500-year storm event floodplain as defined by FEMA. Ideally, this would be within one-half mile of Southwest Hoboken.



There is a diverse variety of housing types in the neighborhood

# IMPROVE THE NEIGHBORHOOD'S ENVIRONMENTAL PERFORMANCE

## Recommendation 3

Buildings and infrastructure in urbanized areas account for over 40% of energy consumption and represent significant investments in materials and their associated embodied energy. Development also typically changes hydrological patterns and results in higher ambient temperatures as result of the urban heat island effect. Local environmental quality, the vitality of regional ecosystems, and the well being of residents can all be negatively impacted. LEED-ND addresses these issues primarily in the Green Infrastructure and Building category, through credits related to green building, energy and water efficiency, stormwater management, landscape water use reduction, heat island reduction, infrastructure energy and materials efficiency, and solid waste and recycling.

As the State of New Jersey has adopted the IECC 2009 as part of the building code, any new construction will incorporate a baseline of energy performance measures. New buildings should be encouraged to pursue Energy Star and LEED certification. Environmental performance measures should also address existing buildings through weatherization, upgrades to heating and cooling systems, and plumbing fixture replacement. Standards should also be established for the repair and replacement of public infrastructure. When combined, building and infrastructure measures can reduce energy and water use and costs, aid the City's overall efforts to address localized flooding and combined sewer overflow, and augment the existing green attributes of the neighborhood.

### Recommendations:

1. Coordinate efforts between City departments, PSE&G, and neighborhood organizations to urge qualifying property owners to participate in weatherization programs. Target 50% adaptation by qualified property owners.
2. Include energy and other green strategies into the conditions of approval for new construction and major remodeling projects, through reference to field-verified third-party standards such as LEED or Energy Star.
3. Consider providing an FAR bonus to projects that achieve high level energy performance or green building certification (Net Zero, Passive House, LEED Gold or Platinum).
4. Require that new construction and major renovation include on-site stormwater retention features such as rain barrels, drywells, rain gardens, swales, and permeable paving.
5. Develop and implement a citywide standard for street lighting and traffic signal energy efficiency. LEED-ND requires at least a 15% improvement over city baseline energy consumption.
6. Establish standards for recycled content for street paving, sidewalks, and streetscape features. LEED-ND assigns credit if 50% of the total mass of infrastructure is comprised of recycled materials.

RESPONSIBLE  
DEPARTMENTS

Department of  
Community Development

# 3

## IMPROVE THE NEIGHBORHOOD'S ENVIRONMENTAL PERFORMANCE



The canopy provided by mature trees reduces urban heat island effects.

# SUSTAINABILITY ASSESSMENT

# LEED-ND Checklist

The Sustainable Neighborhood Assessment tool includes an annotated LEED-ND checklist created by Global Green. It is a key component of the process used to document and compare the assessment area against the LEED-ND prerequisites and credits. Each credit within the three credit categories (Smart Location & Linkage, Neighborhood Pattern & Design, and Green Infrastructure & Building) is marked as "achieved," "not achieved," "unknown," or "not applicable" under baseline conditions. Additional analysis has been done based on local planning policy, regulatory support, technical feasibility, market support and stakeholder input. The preliminary checklist analysis was edited and augmented during our site visit, stakeholder meetings, and after the community workshop. This information was then translated into an overall assessment of sustainable neighborhood performance.

**LEED for Neighborhood Development: Project Assessment Checklist**  
**SOUTHWEST HOBOKEN**  
**HOBOKEN, NEW JERSEY**

Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input		
						<b>Legend</b> ✓ Achieved ? Unknown X Not Achieved - Does not exist/ NA Green Explicit support/ no technical issues Yellow Lack of explicit support/ minor technical issues Red Opposition/ significant technical issues Grey Not Applicable	
						<b>Smart Location and Linkage</b>	<b>Total Points</b>
✓	-	-	-	-	-	P1 Smart Location	Required
-	-	-	-	-	-	P2 Imperiled Species and Ecological Communities	Required
-	-	-	-	-	-	P3 Wetland and Water Body Conservation	Required
-	-	-	-	-	-	P4 Agricultural Land Conservation	Required
X	-	-	-	-	-	P5 Floodplain Avoidance	Required
✓	-	-	-	-	-	C1 Preferred Locations	
✓	-	-	-	-	-	C2 Brownfield Redevelopment	
✓	-	-	-	-	-	C3 Locations with Reduced Automobile Dependence	
✓	-	-	-	-	-	C4 Bicycle Network	
✓	-	-	-	-	-	C4 Bicycle Storage	
✓	-	-	-	-	-	C5 Housing and Jobs Proximity	
-	-	-	-	-	-	C6 Steep Slope Protection	
-	-	-	-	-	-	C7 Site Design for Habitat or Wetland and Water Body Conservation	
X	-	-	-	-	-	C8 Restoration of Habitat or Wetlands and Water Bodies	
X	-	-	-	-	-	C9 Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	

Hoboken, New Jersey      1      9/18/2013

# SUSTAINABILITY ASSESSMENT

# LEED-ND Checklist

## LEED for Neighborhood Development: Project Assessment Checklist SOUTHWEST HOBOKEN HOBOKEN, NEW JERSEY

Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input
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Legend	
✓	Achieved
?	Unkown
X	Not Achieved
-	Does not exist/ NA
Green	Explicit support/ no technical issues
Yellow	Lack of explicit support/ minor technical issues
Red	Opposition/ significant technical issues
Grey	Not Applicable

### Neighborhood Pattern and Design

Baseline Conditions	Local/Regional Planning Priority	Regulatory Support	Technical feasibility	Market Support	Neighborhood Need/ Stakeholder Input	Item	Requirement
✓	Green	Green	Green	Green	Green	P 1 Walkable Streets- Principal Entries	Required
✓	Green	Green	Green	Green	Green	P 1 Walkable Streets- Building Height to Street Width Ratio	Required
✓	Green	Green	Green	Green	Green	P 1 Walkable Streets-Continuous Sidewalks	Required
X	Green	Yellow	Green	Yellow	Yellow	P 1 Walkable Streets-Garage and Service Bays	Required
✓	Green	Green	Green	Green	Green	P 2 Compact Development	Required
✓	Green	Green	Green	Green	Green	P 3 Connected and Open Community	Required
✓	Green	Green	Green	Green	Green	C 1a Walkable Streets : Facades and Entries	
✓	Green	Green	Green	Yellow	Green	C 1b Walkable Streets: Ground-Level Use and Parking	
✓	Green	Green	Green	Green	Green	C 1c Walkable Streets:Design Speed for Safe Ped and Bike Travel	
X	Green	Yellow	Green	Yellow	Yellow	C 1d Walkable Streets: Sidewalk Intrusions	
✓	Green	Green	Green	Green	Yellow	C 2 Compact Development	
✓	Green	Green	Green	Green	Yellow	C 3 Mixed-Use Neighborhood Centers	
✓	Green	Red	Green	Yellow	Yellow	C 4 Mixed-Income	
✓	Yellow	Green	Green	Green	Yellow	C 4 Diverse Communities	
✓	Green	Green	Green	Green	Green	C 5 Reduced Parking Footprint	
X	Grey	Grey	Grey	Grey	Grey	C 6 Street Network	
X	Red	Yellow	Green	Yellow	Green	C 7 Transit Facilities	
-	Grey	Grey	Grey	Grey	Grey	C 8 Transportation Demand Management	
✓	Green	Green	Green	Green	Green	C 9 Access to Civic and Public Spaces	
✓	Green	Green	Green	Green	Green	C 10 Access to Recreation Facilities	
-	Grey	Grey	Grey	Grey	Yellow	C 11 Visitability and Universal Design	
✓	Green	Green	Green	Green	Yellow	C 12 Community Outreach and Involvement	
✓	Green	Green	Green	Green	Yellow	C 13 Local Food Production	
✓	Green	Yellow	Green	Green	Yellow	C 14 Tree-Lined and Shaded Streets	
✓	Green	Green	Green	Green	Yellow	C 15 Neighborhood Schools	

# SUSTAINABILITY ASSESSMENT

# LEED-ND Checklist

## LEED for Neighborhood Development: Project Assessment Checklist SOUTHWEST HOBOKEN HOBOKEN, NEW JERSEY

Baseline Conditions
Local/Regional Planning Priority
Regulatory Support
Technical feasibility
Market Support
Neighborhood Need/ Stakeholder Input

Legend	
✓	Achieved
?	Unknown
X	Not Achieved
-	Does not exist/ NA
Green	Explicit support/ no technical issues
Yellow	Lack of explicit support/ minor technical issues
Red	Opposition/ significant technical issues
Grey	Not Applicable

### Green Infrastructure and Buildings

Symbol	Color	Code	Description	Requirement
✓	Green	P1	Certified Green Building	Required
X	Yellow	P2	Minimum Building Energy Efficiency	Required
X	Yellow	P3	Minimum Building Water Efficiency	Required
✓	Green	P4	Construction Activity Pollution Prevention	Required
X	Yellow	C1	Certified Green Buildings	
X	Yellow	C2	Building Energy Efficiency	
X	Yellow	C3	Building Water Efficiency	
X	Yellow	C4	Water-Efficient Landscaping	
✓	Green	C5	Existing Building Use	
✓	Green	C6	Historic Resource Preservation and Adaptive Reuse	
-	Grey	C7	Minimized Site Disturbance in Design and Construction	
X	Yellow	C8	Stormwater Management	
X	Yellow	C9	Heat Island Reduction	
✓	Green	C10	Solar Orientation	
✓	Green	C11	On-Site Renewable Energy Sources	
X	Yellow	C12	District Heating and Cooling	
✓	Green	C13	Infrastructure Energy Efficiency	
X	Yellow	C14	Wastewater Management	
?	Yellow	C15	Recycled Content in Infrastructure	
✓	Green	C16	Solid Waste Management Infrastructure	
?	Yellow	C17	Light Pollution Reduction	

# SUSTAINABILITY ASSESSMENT

# LEED-ND Score

Based on the in-field assessment, planning document review, various stakeholder meetings, and the community workshop, the Global Green team estimated which LEED-ND credits were “Likely,” “Possible with Effort,” “Unlikely” to be achieved, or “Not Applicable,” considering existing conditions, technical feasibility, policy readiness, financial burden, and applicability to neighborhood conditions. The bar graph summary identifies the overall level of sustainable neighborhood performance for Southwest Hoboken. A high percentage of credits fall into the “Likely” category, and of the remaining credits, a significant percentage fall within the “Possible with Effort” category, which shows the large potential for improving the sustainability of the neighborhood, specifically by pursuing the high-priority recommendations described in this report.

The summary table below shows the numeric values extrapolated from the percentage of credits identified as “Likely” below. The recommendations listed in the previous pages are largely a response to LEED-ND criteria which achieving was identified as “Possible with Effort” by the assessment team. While these values do not correlate exactly to specific LEED-ND points, they provide an estimate of the neighborhood’s potential level of future achievement. It should be noted that this is a rough measure of performance and not an exact representation of the neighborhood’s level of possible certification. It should also be noted that all the prerequisites need to be achieved if certification will be pursued. While recognizing these constraints, the categories generated through the assessment serve as a useful metric for estimating formal LEED-ND certification. Given the presumption that all those designated as “Likely” would be achieved, providing a baseline point tally of 49, and those listed as “Possible with Effort”, are aggressively pursued and achieved, affording an additional 28 points, the analysis shows that the Southwest Hoboken neighborhood would likely earn a rating of GOLD from the USGBC.

## Site Location and Linkage



## Neighborhood Pattern and Design



## Green Building and Infrastructure



## Legend

- “Likely”
- “Possible with Effort”
- “Unlikely”
- “Not Applicable”

## Point Requirements for LEED-ND Certification

Certified:	40-49
Silver:	50-59
Gold:	60-79
Platinum:	80+

## Hoboken, NJ

### LEED for Neighborhood Development

	Total	Achievable	Possible
Smart Location and Linkage	27	12	8
Neighborhood Pattern and Design	44	27	9
Green Building and Infrastructure	29	9	11
	100	49	28

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# **APPENDIX K**

## **BIBLIOGRAPHY**

## Bibliography

Stormwater Control Ordinance for the City of Hoboken (City of Hoboken, NJ May 25, 2007).

*Grassed Swales*. (2012, July 23). Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=75&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=75&minmeasure=5)

3 Rivers Wet Weather. (n.d.). *Green Roofs*. Retrieved 2013, from 3 Rivers Wet Weather:  
<http://www.3riverswetweather.org/storm-water-green-solutions/stormwater-bmps/green-roofs>

3 Rivers Wet Weather. (n.d.). *Rain Barrels and Rain Gardens*. Retrieved 2013, from 3 Rivers Wet Weather: <http://www.3riverswetweather.org/storm-water-green-solutions/stormwater-bmps/rain-barrels-rain-gardens>

A Joint Report by American Rivers, the Water Environment Federation, the American Society of Landscape Architects and ECONorthwest. (2012, April). *Banking on Green: A Look at How Green Infrastructure Can Save Municipalities Money and Provide Economic Benefits Community-Wide*. Retrieved 2013, from American Rivers: <http://www.americanrivers.org/assets/pdfs/reports-and-publications/banking-on-green-report.pdf>

ACTrees, Alliance for Community Trees. (2011). *Benefits of Trees and Urban Forests: A Research List*. Washington, DC: Alliance for Community Trees.

Agency, U. E. (2012, August 21). *Stormwater Wetland*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES):  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=74&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=74&minmeasure=5).

Alisa Valderrama and Larry Levine, N. R. (2012). *Financing Stormwater Retrofits in Philadelphia and Beyond*. New York, NY: NRDC.

Alisa Valderrama and Lawrence Levine, N. R. (2013). *Creating Clean Water Cash Flows: Developing Private Markets for Green Stormwater Infrastructure in Philadelphia*. New York, NY: Natural Resources Defense Council.

American Rivers in Partnership with Green For All. (n.d.). *Staying Green: Strategies to Improve Operations and Maintenance of Green Infrastructure in the Chesapeake Bay Watershed*. Retrieved 2013, from American Rivers: <http://www.americanrivers.org/assets/pdfs/reports-and-publications/staying-green-strategies-improve-operations-and-maintenance.pdf>

- Amy Rowe, P. R. (2012). *Green Infrastructure Practices: An Introduction to Permeable Pavement, Fact Sheet FS1177*. Rutgers Cooperative Extension of Essex and Passaic Counties.
- Chapter 166. Stormwater Management , Article I. Stormwater Management Plan (16 2013, April).
- Boswell Engineering. (n.d.). *Flood Mitigation Techniques City of Hoboken, Hudson County, NJ*. South Hackensack, NJ: Boswell Engineering, File No. HO-482.
- Burden, D. (2006, Summer). *Urban Street Trees: 22 Benefits Specific Applications*. Retrieved 2013, from Glattig Jackson and Walkable Communities, Inc.:  
[http://www.michigan.gov/documents/dnr/22\\_benefits\\_208084\\_7.pdf](http://www.michigan.gov/documents/dnr/22_benefits_208084_7.pdf)
- Bykowski, J. J. (2013). *Historic Waters: Re-imagining Hoboken's Engineered Landscape*. New Brunswick, NJ.
- Center for Neighborhood Technology. (2009). *Cost Sheet, Green Values National Stormwater Management Calculator* . Retrieved 2013, from Green Values Stormwater Toolbox:  
[http://greenvalues.cnt.org/national/cost\\_detail.php](http://greenvalues.cnt.org/national/cost_detail.php)
- Center for Neighborhood Technology. (2009). *Green Values National Stormwater Management Calculator*. Retrieved 2013, from Green Values Stormwater Toolbox:  
<http://greenvalues.cnt.org/national/calculator.php>
- Charles River Watershed Association. (2008). *Blackstone Town Hall Demonstration Project Evaluation of Low Impact Development (LID) Best management Practices (BMPs) Opportunities*. Charles River Watershed Association.
- Charles River Watershed Association. (2008, April). *Evaluation of Green Street Design Elements and Best Management Practices: Comparison of Conventional and Stormwater Tree Pits*. Retrieved 2013, from Charles River Watershed Association:  
[http://www.crwa.org/projects/docs/everett\\_task2.pdf](http://www.crwa.org/projects/docs/everett_task2.pdf)
- Charles River Watershed Association. (2008, September). *Low Impact Best Management Practice (BMP) Information Sheet: Stormwater Planter*. Retrieved 2008, from Charles River Watershed Association: [http://www.crwa.org/projects/bmpfactsheets/crwa\\_stormwater\\_planter.pdf](http://www.crwa.org/projects/bmpfactsheets/crwa_stormwater_planter.pdf)
- Charles River Watershed Association. (2008, August). *Low Impact Best Management Practice (BMP) Information Sheet: Stormwater Tree Pit*. Retrieved 2013, from Charles River Watershed Association: [http://www.crwa.org/projects/bmpfactsheets/crwa\\_treepit.pdf](http://www.crwa.org/projects/bmpfactsheets/crwa_treepit.pdf)
- City and County of San Francisco. (2009, August). *2030 Sewer System Master Plan, Task 500, Technical Memorandum No. 507, Combined Sewer vs. Separate Sewer and Stormwater Quality*. Retrieved from <http://sfwater.org/modules/showdocument.aspx?documentid=590>
- City of Hoboken, N. (2010). *City of Hoboken Bicycle & Pedestrian Plan*. City of Hoboken, NJ.

City of Hoboken, NJ. (2004-2008). *Community Forestry Management Plan*. City of Hoboken, NJ.

City of Hoboken, NJ. (2006). *Municipal Stormwater Management Plan for the City of Hoboken*. City of Hoboken, NJ.

City of Hoboken, NJ. (2008). *City of Hoboken Emergency Operations Plan, Basic Plan*. City of Hoboken, NJ.

City of Hoboken, NJ. (2010). *City of Hoboken Reexamination Report*. City of Hoboken, NJ.

City of Hoboken, NJ. (2012). *Hoboken Yard Redevelopment Plan*. City of Hoboken, NJ.

City of Hoboken, NJ. (2013, March 22). *State of New Jersey Hazard Mitigation Grant Program Letters of Intent*. Hoboken, NJ.

City of Hoboken, NJ. (2013). State Fiscal Year Capital Budget and Capital Improvement Program. Hoboken, NJ: City of Hoboken, NJ.

City of Milwaukee, Wisconsin. (2013, March). *Green Streets Stormwater Management Plan*. Retrieved 2013, from City of Milwaukee, Wisconsin:  
[http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/2013/Green\\_Streets\\_Stormwater\\_Manag.pdf](http://city.milwaukee.gov/ImageLibrary/Groups/cityGreenTeam/documents/2013/Green_Streets_Stormwater_Manag.pdf)

City of Portland, Oregon. (2008). *Cost Benefit Evaluation of Ecoroofs*. Retrieved 2013, from Environmental Services City of Portland: <http://www.portlandoregon.gov/bes/article/261053>

City of Portland, Oregon. (2010). *Portland ECOROOOF Guide*. Retrieved 2013, from Environmental Services City of Portland: <http://www.portlandoregon.gov/bes/article/331490>

City of Portland, Oregon. (2013). *Effectiveness Evaluation*. Retrieved 2013, from Environmental Services City of Portland: <http://www.portlandoregon.gov/bes/43352>

City of San Francisco, California. (2011, January 16). *Better Streets San Francisco, Chapter 6.0*. Retrieved 2013, from San Francisco Planning: [http://www.sf-planning.org/ftp/BetterStreets/proposals.htm#Final\\_Plan](http://www.sf-planning.org/ftp/BetterStreets/proposals.htm#Final_Plan)

City of Sandy, Oregon. (2011). *Planter Boxes*. Retrieved 2013, from City of Sandy, Oregon:  
[http://www.ci.sandy.or.us/index.asp?Type=B\\_BASIC&SEC=%7BA9D3CDDE-3BA0-42DE-BE30-4E321A155AA8%7D&DE=%7B332FC795-436D-4F16-8F8C-34C70D8A7089%7D](http://www.ci.sandy.or.us/index.asp?Type=B_BASIC&SEC=%7BA9D3CDDE-3BA0-42DE-BE30-4E321A155AA8%7D&DE=%7B332FC795-436D-4F16-8F8C-34C70D8A7089%7D)

County of Passaic, NJ. (2012, October). *Green Streets Chapter*. Retrieved 2013, from Passaic County, NJ:  
<http://www.passaiccountynj.org/DocumentCenter/View/1664>

Day, S. a. (2008). *Managing Stormwater for Urban Sustainability using Trees and Structural Soils*. Blacksburg, VA: Virginia Polytechnic Institute and State University.

- Dunn, A. D. (2010). *Siting Green Infrastructure: Legal and Policy Solutions to Alleviate Urban Poverty and Promote Healthy Communities*. New York, NY: Pace Law Faculty Publications. Paper 559.
- EmNet, L. (2011). *Final Report, City of Hoboken, NJ Sewer Monitoring Program Observations and Data Analysis*.
- Fazio, D. J. (2010). *Tree City USA Bulletin No. 55 How Trees Can Retain Stormwater Runoff*. Nebraska City, NE: Arbor Day Foundation.
- GrowNYC. (2008, August). *Rainwater Harvesting 101*. Retrieved 2013, from GrowNYC: <http://www.grownyc.org/files/osg/RWH.how.to.pdf>
- HUD. (2012). *Promoting Green Infrastructure: Strategies, Case Studies, and Resources*. Retrieved 2013, from <http://nj-passaiccounty.civicplus.com/DocumentCenter/View/1201>
- Hudson County, NJ. (2002). *Hudson County Master Plan, Chapter VIII: Utility Services Plan*. Secaucus, NJ.
- Hudson County, NJ. (2008). *DMA 2000 Hazard Mitigation Plan - Hudson County, NJ*.
- Hudson County, NJ. (2008). *Hudson County Reexamination of the Master Plan*. Secaucus, NJ.
- James J. Houle, R. M. (2013). A Comparison of Maintenance Cost, Labor Demands, and System Performance for LID and Conventional Stormwater Management. *Journal of Environmental Engineering, American Society of Civil Engineers*, 25.
- Julie Hawkins, U.-N. (n.d.). *Constructed Treatment Wetlands*. Retrieved 2013, from Southern Extension Research Activity - Information Exchange: [http://www.sera17.ext.vt.edu/Documents/BMP\\_Constructed\\_Treatment\\_Wetlands.pdf](http://www.sera17.ext.vt.edu/Documents/BMP_Constructed_Treatment_Wetlands.pdf)
- Authorizing the City of Hoboken to Apply for Grant Funding from the Department of Community Affairs for Flood Hazard Planning and Storm Resiliency (City of Hoboken, NJ 10 2013, July).
- Mark Grey, D. S. (2013, February 13). *The Costs of LID: Low-impact-development BMP installation and operation and maintenance costs in Orange County, CA*. Retrieved 2013, from Stormwater, The Journal for Surface Water Quality Professionals: <http://www.stormh2o.com/SW/Articles/20426.aspx?format=2>.
- Marks, S. (2013, July 1). Strategic Recovery Planning Report. Hoboken, NJ: City of Hoboken Office of the Business Administrator.
- Martin County, Florida. (2012, January). *Stormwater Design Toolkit: Sustainable Stormwater Update to the Community Redevelopment Area Stormwater Master Plan*. Retrieved 2013, from Martin County, Florida: [http://www.martin.fl.us/web\\_docs/cdd/web/xx\\_Stormwater\\_Report.pdf](http://www.martin.fl.us/web_docs/cdd/web/xx_Stormwater_Report.pdf)
- McIntyre, L. (2008). Treeconomics. *American Society of Landscape Architects*, 1-4.

- McPherson, E. G. (2003). A Benefit-Cost Analysis of Ten Street Tree Species in Modesto, California, U.S. *Journal of Arboriculture*, 29(1), 1-8.
- Milwaukee Metropolitan Sewerage District (MMSD). (2013). *MMSD Regional Green Infrastructure Plan*. Milwaukee, WI: MMSD.
- Milwaukee Metropolitan Sewerage District (MMSD). (n.d.). *Fresh Coast Green Solutions: Weaving Milwaukee's Green & Grey Infrastructure for a Sustainable Future*. Retrieved 2013, from Milwaukee Metropolitan Sewerage District (MMSD): <http://v3.mmsd.com/assets/client/documents/sustainability/SustainBookletweb1209.pdf>
- Missouri Department of Natural Resources. (2012). *Missouri Guide to Green Infrastructure*. Jefferson City, MO: Missouri Department of Natural Resources.
- National Oceanic and Atmospheric Agency (NOAA). (n.d.). *Precipitation Frequency Data*. Retrieved 2013, from NOAA, Atlas 14, Volume 2, Version 3: <http://hdsc.nws.noaa.gov/hdsc>
- New Jersey Department of Environmental Protection . (2009, September). *NJ Stormwater Best Management Practices Manual*. Retrieved 2013, from NJStormwater.org, Stormwater in New Jersey: [http://www.njstormwater.org/bmp\\_manual2.htm](http://www.njstormwater.org/bmp_manual2.htm)
- New York State Department of Environmental Conservation. (2010). *New York State Stormwater Management Design Manual*. Albany, NY: NY DEC.
- Noah Garrison and Karen Hobbs, N. R. (2011). *Rooftops to Rivers II: Green Strategies for controlling stormwater and combined sewer overflows*. New York, NY: NRDC.
- North Hudson Sewerage Authority. (2013, March 21). *State of New Jersey Hazard Mitigation Grant Program Letters of Intent*. Hoboken, NJ: North Hudson Sewerage Authority.
- North Hudson Sewerage Authority. (2013). *Hoboken Stormwater Pumping Stations FEMA 406 Funding*. Hudson County, NJ.
- NYC Department of Environmental Protection. (2010). *NYC Green Infrastructure Plan: A Sustainable Strategy for Clean Waterways*. New York, NY: NYC DEP.
- NYC Department of Environmental Protection. (2011). *Green Infrastructure Plan Update*. New York, NY: NYC DEP.
- NYC Department of Environmental Protection. (2012). *Green Infrastructure Annual Report*. New York, NY: NYC DEP.
- NYC Department of Environmental Protection. (2012, July). *Guidelines for the Design and Construction of Stormwater Management Systems*. Retrieved 2013, from NYC DEP: [http://www.nyc.gov/html/dep/pdf/green\\_infrastructure/stormwater\\_guidelines\\_2012\\_final.pdf](http://www.nyc.gov/html/dep/pdf/green_infrastructure/stormwater_guidelines_2012_final.pdf)

- NYC Department of Environmental Protection. (2013). *Guidelines for the Design and Construction of Stormwater Management Systems*. Retrieved 2013, from NYC DEP:  
[http://www.nyc.gov/html/dep/html/stormwater/stormwater\\_management\\_construction.shtml](http://www.nyc.gov/html/dep/html/stormwater/stormwater_management_construction.shtml)
- NYC Department of Environmental Protection. (n.d.). *Enhanced Tree Pit at Autumn Avenue*. Retrieved 2013, from NYC DEP:  
[http://www.nyc.gov/html/dep/html/stormwater/green\\_pilot\\_project\\_jbay\\_treeswale.shtml](http://www.nyc.gov/html/dep/html/stormwater/green_pilot_project_jbay_treeswale.shtml)
- Ogrosso, J. D. (2009). *Hoboken Flooding: The Ultimate Solution, CE 424 Civil Engineering Senior Design*. Hoboken, NJ: Stevens Institute of Technology.
- Pennsylvania Department of Environmental Protection Bureau of Watershed Management . (2006). *BMP 6.4.4: Rain Garden/Bioretenion*. Retrieved 2013, from Pennsylvania Stormwater Best Management Practices Manual: <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-68851/363-0300-002.pdf>
- Philadelphia Water Department. (2009). *Green City, Clean Waters: The City of Philadelphia's Program for Combined Sewer Overflow Control*. Philadelphia, PA: Philadelphia Water Department.
- Philadelphia Water Department. (2012). *Green City, Clean Waters Comprehensive Monitoring Plan*. Philadelphia, PA: Philadelphia Water Department.
- Philadelphia Water Department. (n.d.). *Green City, Clean Waters Community Orientation Packet*. Philadelphia, PA: Philadelphia Water Department.
- Philadelphia Water Department. (n.d.). *Green Guide for Property Management*. Retrieved 2013, from Green City, Clean Waters Green Business Program.:  
[http://www.phila.gov/water/stormwater/pdfs/pwd\\_GreenGuide.pdf](http://www.phila.gov/water/stormwater/pdfs/pwd_GreenGuide.pdf)
- Plan Smart NJ. (2001). *The Green Infrastructure Guide: Planning for a Healthy Urban and Community Forest*. Princeton, NJ: The Regional Planning Partnership.
- Regional Plan Association. (2012). *9 Ways to Make Green Infrastructure Work*. New York, NY: Regional Plan Association.
- Rugters Cooperative Extension Water Resources Program and Native Plant Society of New Jersey. (n.d.). *Rain Garden Manual of New Jersey*. Rugters Cooperative Extension Water Resources Program.
- San Mateo Countywide Water Pollution Prevention Program. (2009). *San Mateo County Sustainable Green Streets and Parking Lots Design Guidebook*. San Mateo County, CA: San Mateo Countywide Water Pollution Prevention Program.
- Stein, D. A. (2008). Evaluating the Effectiveness of Best Management Practices Using Dynamic Modeling. *Journal of Environmental Engineering, American Society of Civil Engineers*, 628-639.

- Sustainable Cities Institute at the National League of Cities. (2012). *Green Infrastructure Sustainability Principles: Action Checklist*. Washington, DC: The National League of Cities.
- The Center for Clean Air Policy. (2011). *The Value of Green Infrastructure for Urban Climate Adaptation*. Washington, DC: The Center for Clean Air Policy.
- The City of New York. (2008). *PlaNYC: Sustainable Stormwater Management Plan*. The City of New York, NY.
- The Low Impact Development Center, Inc. (2005, November). *Low Impact Development for Big Box Retailers*. Retrieved 2013, from Low Impact Development:  
[http://www.lowimpactdevelopment.org/bigbox/lid%20articles/bigbox\\_final\\_doc.pdf](http://www.lowimpactdevelopment.org/bigbox/lid%20articles/bigbox_final_doc.pdf)
- University of New Hampshire Stormwater Center. (2010). *Forging the Link: Linking the Economic Benefits of Low Impact Development and Community Decisions*. Retrieved 2013, from Forging the Link:  
<http://www.unh.edu/unhsc/forgingthelink>
- Urban Drainage and Flood Control District. (2008, September). *BMP Monitoring Sites*. Retrieved 2013, from UDFCD.org: [http://www.udfcd.org/sw\\_quality/SQMP.pdf](http://www.udfcd.org/sw_quality/SQMP.pdf)
- Urbonas, B. (2012). *Chapter 7: Assessment of Stormwater Best Management Practice Effectiveness*. Retrieved 2013, from University of Alabama Civil, Constructino and Environmental Engineering:  
<http://rpitt.eng.ua.edu/Publications/BooksandReports/Innovative/achap07.pdf>
- US Environmental Protection Agency. (2012, August 21). *Infiltration Trench*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=70&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=70&minmeasure=5)
- US Environmental Protection Agency. (2006). *Costs and Benefits of Storm Water BMPs*. Retrieved 2013, from US Environmental Protection Agency:  
[http://water.epa.gov/scitech/wastetech/guide/stormwater/upload/2006\\_10\\_31\\_guide\\_stormwater\\_usw\\_d.pdf](http://water.epa.gov/scitech/wastetech/guide/stormwater/upload/2006_10_31_guide_stormwater_usw_d.pdf)
- US Environmental Protection Agency. (2006, May 24). *Dry Detention Ponds*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=67&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=67&minmeasure=5)
- US Environmental Protection Agency. (2006, May 14). *Green Parking*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=89&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=89&minmeasure=5)

- US Environmental Protection Agency. (2008, September 5). *Green Roofs*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=114&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=114&minmeasure=5)
- US Environmental Protection Agency. (2009, August). *Green Streets*. Retrieved 2013, from [www.recovery.gov](http://www.recovery.gov): [www.epa.gov/greeninfrastructure](http://www.epa.gov/greeninfrastructure)
- US Environmental Protection Agency. (2009, September 10). *Permeable Interlocking Concrete Pavement*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=136&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=136&minmeasure=5)
- US Environmental Protection Agency. (2009, September 10). *Pervious Concrete Pavement*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=137&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=137&minmeasure=5)
- US Environmental Protection Agency. (2009, September 10). *Porous Asphalt Pavement*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=135&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=135&minmeasure=5)
- US Environmental Protection Agency. (2011, December). *Evaluation of Urban Soils: Suitability for Green Infrastructure or Urban Agriculture*. Retrieved 2013, from US Environmental Protection Agency: <http://water.epa.gov/infrastructure/greeninfrastructure/upload/Evaluation-of-Urban-Soils.pdf>
- US Environmental Protection Agency. (2012, August 21). *Bioretention (Rain Gardens)*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=72&minmeasure=5>
- US Environmental Protection Agency. (2012, August 21). *On-Lot Treatment*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=81&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=81&minmeasure=5)
- US Environmental Protection Agency. (2012, July 11). *Urban Forestry*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=84&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=84&minmeasure=5)
- US Environmental Protection Agency. (2012, August 21). *Vegetated Filter Strip*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:

[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=76&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=76&minmeasure=5)

US Environmental Protection Agency. (2012, August). *Wet Ponds*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=68](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=68)

US Environmental Protection Agency. (2012, August 21). *Wet Ponds*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=68&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=68&minmeasure=5)

US Environmental Protection Agency. (2013). *Case Studies Analyzing the Economic Benefits of Low Impact Development and Green Infrastructure Programs*. Washington, DC: US EPA.

US Environmental Protection Agency. (2013). *Low Impact Development (LID) and Other Green Design Strategies*. Retrieved 2013, from National Pollutant Discharge Elimination System (NPDES) Menu of BMPs:  
[http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet\\_results&view=specific&bmp=124&minmeasure=5](http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=124&minmeasure=5)

US Environmental Protection Agency. (n.d.). *National Stormwater Calculator*. Retrieved 2013, from US EPA: <http://epa.gov/nrmrl/wswrd/wq/models/swc/>

US Environmental Protection Agency Office of Sustainable Communities. (2013). *Green Street Implementation Tools Checklist*. Washington, DC: US EPA Office of Sustainable Communities.

US Environmental Protection Agency Office of Sustainable Communities. (2013). *Green Streets Strategy, Building Blocks for Sustainable Communities*. Washington, DC: EPA Office of Sustainable Communities.

US Environmental Protection Agency Office of Water, Nonpoint Source Control Branch. (2011). *Measuring the Cost-Effectiveness of Stormwater Management Plans Using Life Cycle Costs & Performance Metrics*. *Low Impact Development Symposium*. Philadelphia, PA.

Washington State Department of Transportation. (2008). *White Paper - BMP Effectiveness Assessment for Highway Runoff in Western Washington*. Seattle, WA: Washington State Department of Transportation.

Water Environment Research Foundation. (2009). *User's Guide to BMP and LID Whole Life Cost Model, Version 2.0*. Alexandria, VA: WERF.

Water Environment Research Foundation. (2009). *Using Green Stormwater BMPs in Urban Areas*. Retrieved 2013, from *Using Rainwater to Grow Livable Communities: Sustainable Stormwater*

Best Management Practices:

<http://www.werf.org/liveablecommunities/toolbox/urbanbmps.htm>

## GIS Data

<i>Title</i>	<i>Source</i>	<i>Link (if applicable)</i>
<b>AASHTO Group Classification</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Advisory Base Flood Elevations, Best Available Flood Hazard Data Available Water Capacity</b>	Federal Emergency Management Agency (FEMA)	<a href="http://www.region2coastal.com/sandy/abfe">http://www.region2coastal.com/sandy/abfe</a>
<b>Available Water Storage</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Basins</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Bedrock Aquifers of New Jersey</b>	Provided via email from EmNet LLC	
<b>Bedrock Cross Section Lines of New Jersey (1:100,000-scale)</b>	New Jersey Geological Survey	<a href="http://www.state.nj.us/dep/njgs/">www.state.nj.us/dep/njgs/</a>
<b>Bedrock Geology for New Jersey</b>	U. S. Geological Survey	<a href="http://www.state.nj.us/dep/njgs">http://www.state.nj.us/dep/njgs</a>
<b>Bedrock-Surface Topography of New Jersey (1:100,000-scale)</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)	<a href="http://www.state.nj.us/dep/njgs/geodata/">http://www.state.nj.us/dep/njgs/geodata/</a>
<b>Bulk Density (15 Bar, One Tenth Bar, One Third Bar)</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)	<a href="http://www.state.nj.us/dep/njgs">http://www.state.nj.us/dep/njgs</a>
<b>City Lines</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Depth to a Selected Soil Restrictive Layer</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Depth to Any Soil Restrictive Layer</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Depth to Water Table</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Drainage Class</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Flooding Frequency Class</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Hoboken 'daylighting' poles</b>	Provided via email from City of Hoboken	
<b>Hoboken Street Calming</b>	Provided via email from City of Hoboken	
<b>Hydrologic Soil Group</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Land Use</b>	Provided via email from EmNet LLC	
<b>Linear Extensibility</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Liquid Limit</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Monochromatic Bit-Mapped Topographic Images of New Jersey, 1:100,000 Scale</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)	<a href="http://www.state.nj.us/dep/njgs">http://www.state.nj.us/dep/njgs</a>
<b>New Jersey Tidal Benchmark Network</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological	<a href="http://www.nigeology.org/geodata/dgs06-2.htm">http://www.nigeology.org/geodata/dgs06-2.htm</a>

	Survey (NJGS)	
<b>NJDEP Elevation Contours for the State of New Jersey (20 Foot Intervals)</b>	NJ Department of Environmental Protection (NJDEP), Office of Information Resources Management	<a href="http://www.state.nj.us/dep/gis/digidownload/zips/statewide/stcon.zip">http://www.state.nj.us/dep/gis/digidownload/zips/statewide/stcon.zip</a>
<b>NJDEP Known Contaminated Site List for New Jersey (Non-Homeowner), Edition 201202</b>	New Jersey Department of Environmental Protection (NJDEP), Site Remediation Program (SRP), Division of Remediation Support (DRS), Information Support Element (ISE), Bureau of Information Services and Program Support (BISPS)	<a href="http://www.nj.gov/dep/gis/geoweb splash.htm">http://www.nj.gov/dep/gis/geoweb splash.htm</a>
<b>NJPDES Ground Water Discharges in New Jersey, (1:12,000)</b>	New Jersey Department of Environmental Protection (NJDEP), Environmental Regulation (ER), Division of Water Quality (DWQ), Bureau of Point Source Permitting - Region 1 (PSP-R1), Thomas Cosmas (ed.)	<a href="http://www.state.nj.us/dep/gis/digidownload/zips/statewide/njpdsgwd.zip">http://www.state.nj.us/dep/gis/digidownload/zips/statewide/njpdsgwd.zip</a>
<b>Organic Matter</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Percent Clay</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Percent Sand</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Percent Silt</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Plasticity Index</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Ponding Frequency Class</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Representative Slope</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Road Edge</b>	Provided via email from EmNet LLC	
<b>Roads</b>	Provided via email from EmNet LLC	
<b>Saturated Hydraulic Conductivity (Ksat)</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Saturated Hydraulic Conductivity (Ksat), Standard Classes</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Sewers</b>	Provided via email from EmNet LLC	
<b>Shoreline</b>	Provided via email from EmNet LLC	
<b>Soil Survey Geographic (SSURGO) database for Hudson County, New Jersey</b>	U.S. Department of Agriculture, Natural Resources Conservation Service	<a href="http://SoilDataMart.nrcs.usda.gov/">http://SoilDataMart.nrcs.usda.gov/</a>
<b>Surface Texture</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>
<b>Surficial Aquifers of New Jersey</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)	<a href="http://www.state.nj.us/dep/njgs">http://www.state.nj.us/dep/njgs</a>
<b>Surficial Geology Cross Section Lines of New Jersey (1:100,000-scale)</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)	<a href="http://www.state.nj.us/dep/njgs">http://www.state.nj.us/dep/njgs</a>
<b>Surficial Geology of New Jersey</b>	New Jersey Department of Environmental Protection (NJDEP), New Jersey Geological Survey (NJGS)	<a href="http://www.state.nj.us/dep/njgs">http://www.state.nj.us/dep/njgs</a>
<b>Unified Soil Classification</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>

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<b>United Water Geodatabase</b>	Provided via email from City of Hoboken	
<b>Water Content (15 Bar, One Third Bar)</b>	U.S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey	<a href="http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx">http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx</a>

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