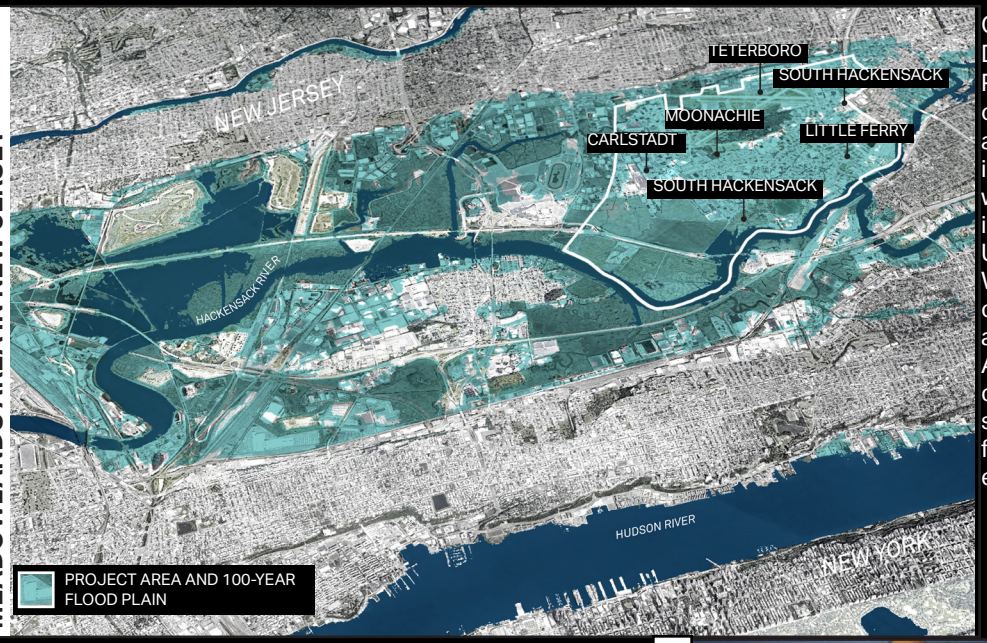
REBUILD BY DESIGN
MEADOWLANDS

REBUILD BY DESIGN MEADOWLANDS

PROJECT OVERVIEW OF FLOOD RISK REDUCTION + ECOLOGICAL + COMMUNITY BENEFITS

MEADOWLANDS AREA IN NEW JERSEY



Overseen by the New Jersey Department of Environmental Protection, the project focuses on an approximately 5,000 acre area on the Hackensack River in Bergen County. Historically wetland, the Meadowlands is relatively flat and low lying. Urban development is dense. Water-related infrastructure is often aging, under-performing, and undersized. The Project Area is vulnerable to both coastal flooding from storm surges and systemic inland flooding from large rainfall events.

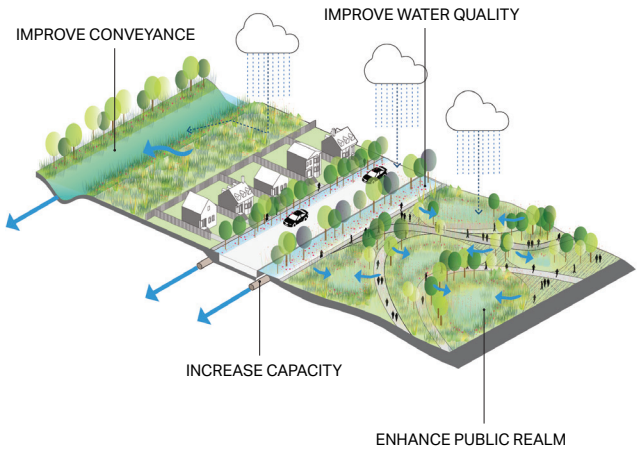
PROJECT OVERVIEW

The world's climate is changing. Sea levels are rising. Storms are occurring more often and with more rainfall. These changes make it harder for communities to address flood risk. After the destruction of Hurricane Sandy in 2012, the U.S. Department of Housing and Urban Development started a program to provide integrated flood-risk reduction and resilient solutions in flood-prone areas. The Rebuild by Design Meadowlands Project is one part of this program.

COMMUNITY ENGAGEMENT AT EVERY STEP

FLOOD REDUCTION | BUILT HUMAN ENVIRONMENT | NATURAL ENVIRONMENT | CONSTRUCTION + MAINTENANCE | COST AND BENEFIT

MULTI-BENEFIT APPROACH



In a multi-year process, the community, design team, and various agencies worked together to identify the project challenges. Through an Environmental Impact Statement and Feasibility Study, local knowledge was invaluable insight in the design process as the team assessed site-specific conditions and potential solutions. The team selected a plan for final design to address frequent inland flooding after extensive conceptual design and analysis. This approach will provide the greatest feasible flood-risk benefits within the project resources.

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www.renewjerseystronger.org

For more information please visit:
https://www.nj.gov/dep/floodresilience/rbd-meadowlands.htm

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NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

PROJECT FINAL DESIGN

AN APPROACH TO REDUCING FLOOD RISK

REDUCE FLOOD RISK + CULTIVATE ECOLOGY + ENERGIZE COMMUNITY

DESIGN APPROACH

The final design seeks to achieve three primary goals: to reduce flood risk by managing drainage from rainfall events, to cultivate ecology with native planting, and to energize community through new public realm improvements.

The project uses a watershed approach to provide opportunities to reduce the flood-risk and provide ecological and community benefits.

FINAL DESIGN COMPONENTS

1 new waterfront park

4 municipal site landscape improvements

10 streetside green infrastructure-type improvements

+

2 pump stations

4100 linear feet channel improvements

2900 linear feet force main

PROJECT IMPROVEMENTS

The designed project improvements include new pump stations, channel improvements, a new force main, native planting, green infrastructure-type improvements on public rights-of-way and at existing municipal buildings, and a proposed waterfront park on the Hackensack River. The map below shows these features located within 4 primary drainage basins (subwatersheds): East Riser Ditch, West Riser, Losen Slote, and the Hackensack River/Main Street area. To assess the flood risk reduction benefits, the team used hydraulic modeling to compare existing and proposed conditions water surface elevations for rainfall events varying in size from 2-year to 100-year across an extensive network covering 69 miles of stormwater pipes on a 4,400 acre drainage area.

ADDITIONAL INFORMATION

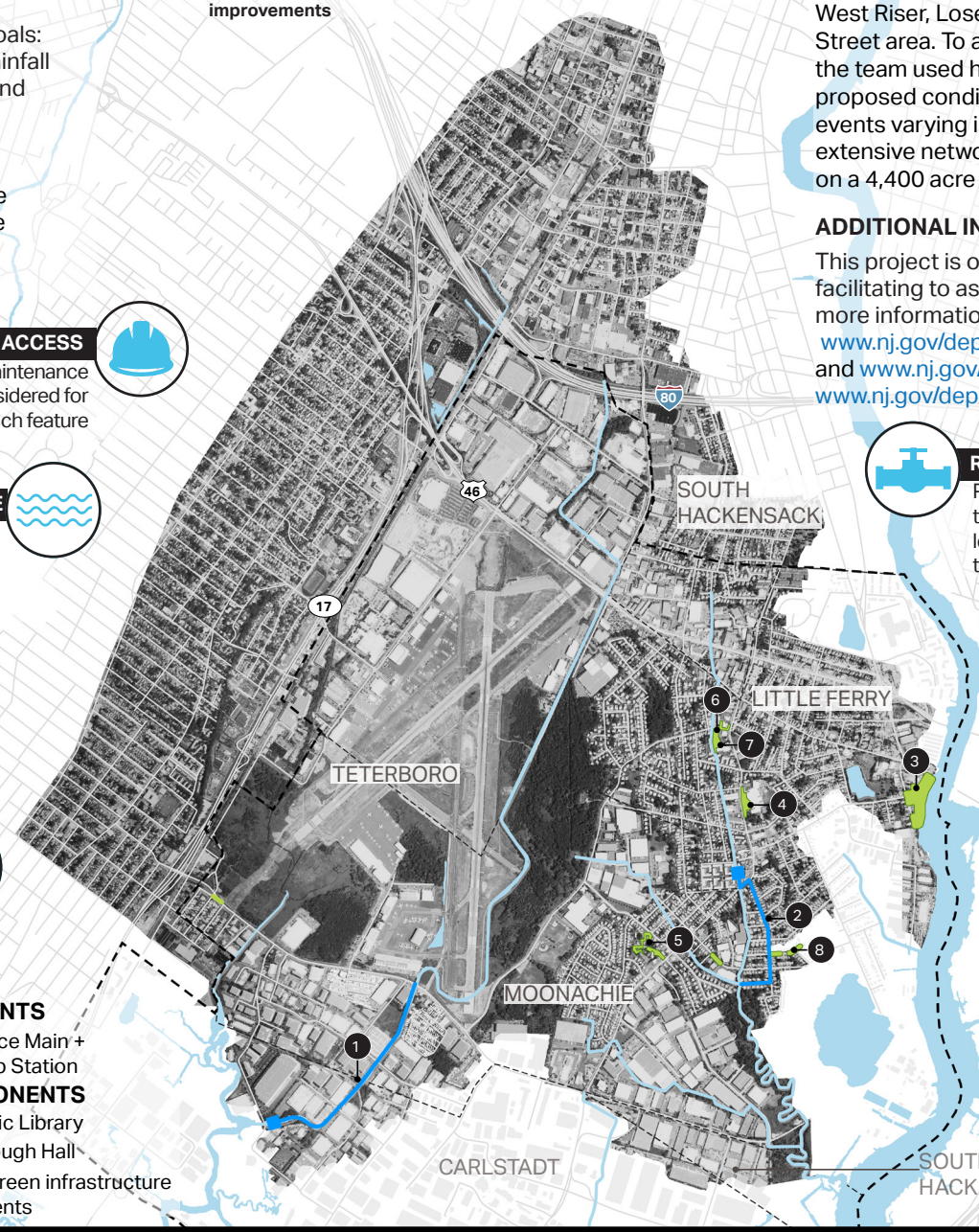
This project is one component of the efforts the NJDEP is facilitating to assist communities in building resilience. For more information, check out these resources: www.nj.gov/dep/floodresilience/rbd-meadowlands.htm and www.nj.gov/dep/cfr/ and www.nj.gov/dep/floodresilience/toolkit.html

MAINTENANCE ACCESS
Long-term maintenance access was considered for each feature

INCREASED CONVEYANCE
Deepening and widening channels and a new force main increases capacity for better stormwater conveyance

ENHANCED PUBLIC REALM
Landscape improvements to parks and municipal facilities provide an improved aesthetic, recreational and ecological community experience

IMPROVED WATER QUALITY
Green infrastructure-type improvements filter runoff and temporarily store it before releasing it into the stormwater network



RAINFALL VOLUME CONTROL
Pump stations provide additional force to stormwater conveyance and control levels when more capacity is needed in the stormwater network

PLANT-TRANSPIRATION
Water absorbed through native plant roots is released back to the atmosphere as vapor and assists in reducing the burden on stormwater drainage infrastructure

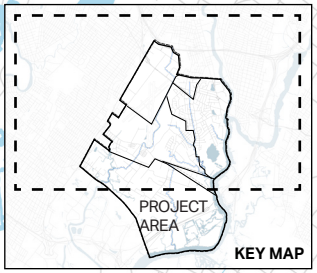
ENHANCED BIODIVERSITY
Planting native vegetation in areas of unused lawn at municipal properties, parks, and channels provides increased ecological value

PRIMARY FLOOD RISK REDUCTION COMPONENTS

1. East Riser Ditch Channel + Pump Station
2. Losen Slote Force Main + Liberty St. Pump Station

PRIMARY ECOLOGICAL + COMMUNITY COMPONENTS

3. Riverfront Park
4. Memorial Middle School
5. Moonachie Civic Center / Joseph Street Park
6. Little Ferry Public Library
7. Little Ferry Borough Hall
8. Rights-of-way green infrastructure type improvements



NOT TO SCALE