Urban challenges to restoration

- Fragmentation
- Limited dispersal corridors
- Soil: fill, high pH
- Invasives & early successional species favored under urban disturbance regime
- Few migration opportunities in response to sea level rise
RESTORATION

When opportunity knocks

Rebuilding aging infrastructure
Site built on fill

Source: USC & GC, Chart 542 1911, 1926, 1940
Fringing marsh to maritime forest
EXISTING SITE

Successional Maritime Forest
Hurricane Sandy Debris
Phragmites
Golden Aster Meadow
Coastal Shrub
Salt Marsh
Invasive Plants

High Soil pH

Sea Level Rise

Trash / Pathways

Hurricane Sandy Debris

Former Marsh / Open Water
Invasive Plants
Invasive Pathogens

Bacterial leaf scorch
http://www.usna.usda.gov

Viburnum leaf beetle
http://whitneysfarm.blogspot.com

Invasive Insects
Hi

High Soil pH
Sea Level Rise
Trash/Pathways
Hurricane Debris
Jurisdictional Boundaries

DOT Maintenance Rules

Funds Limited to Tree Restoration

Soil Specs for Engineering Needs

Historical Design Guidelines
Jurisdictional Boundaries
Maintenance Rules
Funds Limited to Tree Restoration
Soil Specs for Engineering
CONCENTRATE INVASIVES REMOVAL AROUND NEW PLANTINGS INCLUDING DOT BIOSWALVES AND OTHER IDENTIFIED RESTORATION AREAS

ENSURE CAR, BIKE, AND PEDESTRIAN VISIBILITY WITH LOW GROWING COASTAL MEADOW PLANTINGS

Plant for storm surge and sea level rise in the uplands
Model: Maritime holly and coastal oak forests

Plant for storm surge and sea level rise in the lowlands
Model: Maritime red cedar forest and coastal shrub

Modify species palette for these concerns:
- High soil pH
- Bacterial leaf scorch
- Viburnum leaf beetle
- Aesthetics
- High biodiversity against future stresses
KEY REQUIREMENTS

For a successful restoration in Jamaica Bay

- Joint planning initiatives between NYC Parks and Gateway National Wildlife Refuge
- Invasives control
ACKNOWLEDGMENTS