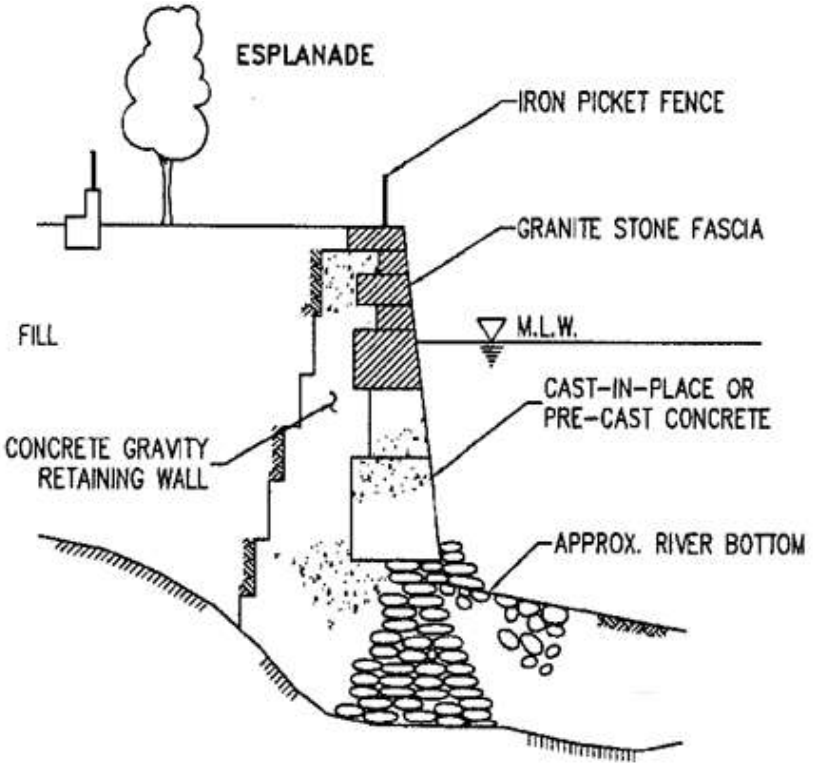
NYC Parks

East River Esplanade

Work in Progress & Planned Capital Work

Seawall Typology

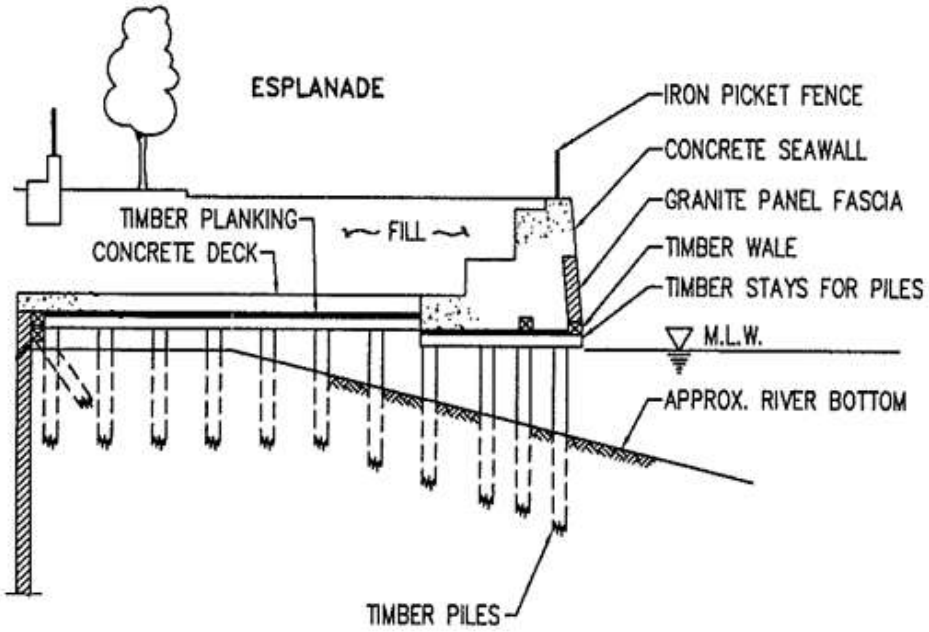
Gravity Retaining Wall Structures



Representative cross section
(details vary according to location)

Seawall Typology

Timber-Supported Platform Structures



Representative cross section
(details vary according to location)

Recent Work

Land-based restoration of depressions, sinkholes and other localized, surface hazards

NYCDPR RESTORATIONS SINCE SPRING 2012

Cross Street	Approx. Cost (K)	Completion
124	$4,000 (new platform)	Winter 2012/13
115	$50	Summer 2012
115	$50	Summer 2012
115	$50	Summer 2012
115	$50	Summer 2012
110	$75	Winter 2012/13
101	$25	Summer 2012
101	$25	Summer 2012
101	$100	Fall 2012
101	$25	Summer 2012
101	$25	Summer 2012
95	$50	Winter 2012/13
94	$100	Fall 2012
90	$75	Fall 2012
90	$75	Fall 2012
88	$200	Winter 2012/13
79	$50	Winter 2012/13
66	$75	Spring 2013
	$5,100	


E 110th St

Recent Work

Photos Before 2012/13 Restorations

E 110th St

E 101st St

E 115th St

E 91st St

Recent Work

Photos After 2012/13 Restorations


E 66th St


E 101st St


E 115th St


E 91st St

2012/13 Study

- OMB pre-scoping program
  - DPR supervised project
  - Performed by OMB-procured consultant ARCADIS and its team

- Underwater survey and inspection of accessible, City-owned shoreline structures along the East River from 41st to 124th Sts & 36th to 38th Sts (Glick Park).
  - Assess current conditions
  - Identify critical areas
  - Recommend appropriate repairs

- Entire area of study classified into various individual locations
  - Different specific types of seawall structures
  - Over 45 homogeneous sub-segments

2012/13 Study

Findings

Gravity retaining wall structures

- Over 10,000 linear feet inspected
- Characteristic grout loss along granite fascia block joints
- Loose/displaced/missing fascia blocks in various locations
- Exposed concrete seawall surfaces exhibit cracking, spalling and/or erosion

Timber-supported platform structures

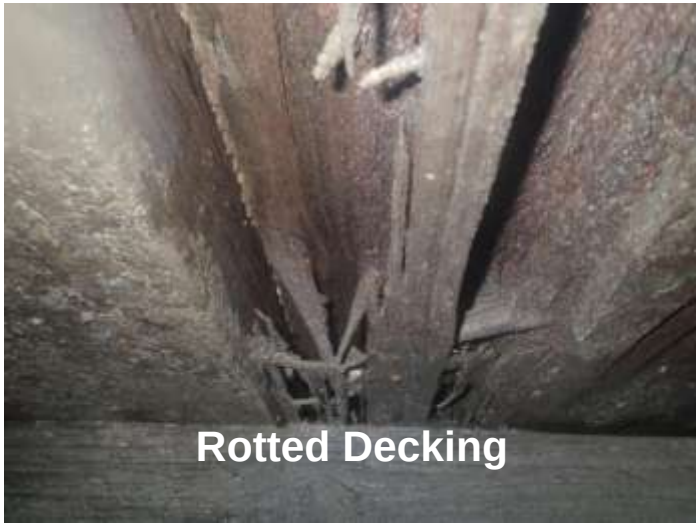
- Over 11,000 linear feet inspected
- Overall moderate marine borer activity observed
- Minor to severe timber deterioration along the East River

2012/13 Study

Findings: Gravity Retaining Wall Structures

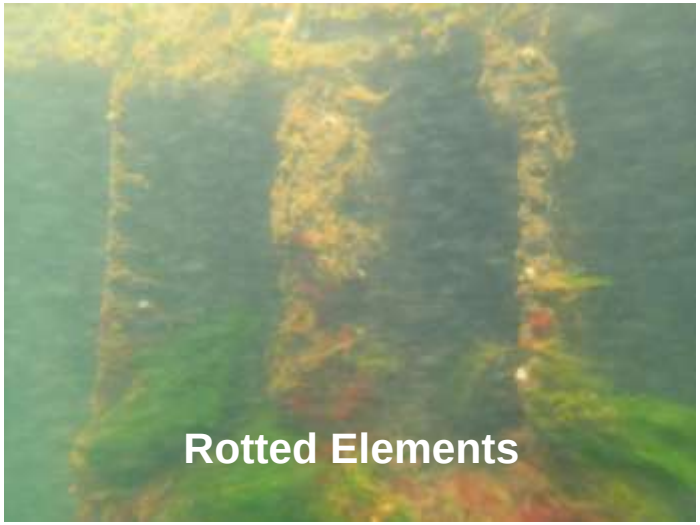
2012/13 Study

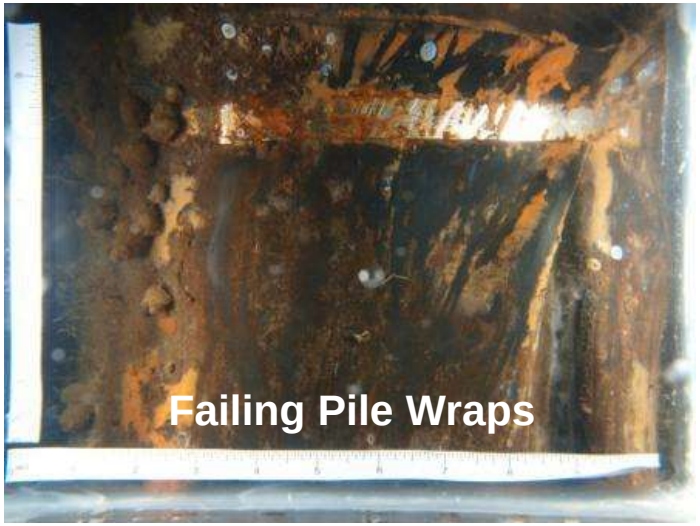
Findings: Timber-Support Platform Structures (Above Water Photos)



2012/13 Study

Findings: Timber-Support Platform Structures (Below Water Photos)

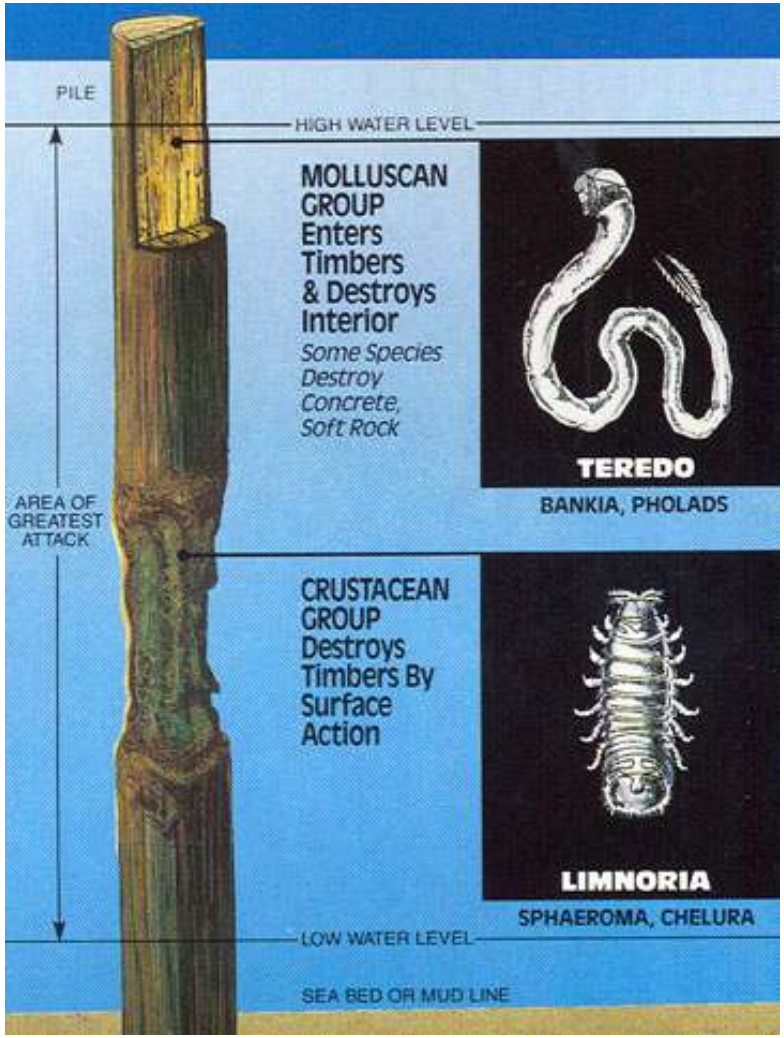




2012/13 Study

Findings: Marine Borer Attack

- Mollusc or crustacean that destroys wood by boring into and eating it.
- Clearer water provides conditions favorable for sea life (incl. marine borers)
- Gradual loss of timber creosote treatment leads to increase in marine borer attack.
- Primary cause of increasingly rapid rate of timber deterioration along the East River.



2012/13 Study

Findings: Marine Borer Attack

2012/13 Study

Recommendations for Rehabilitation

Based on the observed condition and level of deterioration of a location inspected, the recommended repair for **that** specific location is one of the following:

1. Repair of individual elements of structures (ER)
   (e.g., repair of individual piles)

2. Partial reconstruction of platform structures (PR)
   (i.e., partial demolition of existing platform structure and construction of new portions)

3. Complete reconstruction (CR)
   (i.e., complete demolition of existing structure and rebuilding a new platform replacement)

2012/13 Study

Minor to advanced deterioration observed along **all** shoreline structures.

Estimated cost of recommended rehabilitative work is $115 million.

- This is the minimum work for structural stability
- Appropriate elemental repairs / partial reconstructions are recommended for most locations
- Complete reconstruction is sparingly recommended

Notes:

1. Only structures inspected under this study were considered.
2. Estimated construction costs are in present day value and based on conditions observed during this study.
3. Estimated construction costs do not include economic considerations (e.g., closure/rerouting of Esplanade and FDR Drive) or potential NYSDEC mitigation.

Work In Progress

- DPR
  - 124th – landscaping of rebuilt platform
- DPR/EDC
  - 38th - 41st – Waterside Pier
  - 60th - 63nd – AHG / Heliport
- NYCDOT - Marine Borer Repairs
  - 15th - 18th (not shown)
  - 38th - 42nd
  - 42nd - 54th
  - 59th
  - 90th
  - 94th - 96th
- Con Ed
  - 74th Gen. Sta. – creation of open space
- Rockefeller University
  - 64th - 68th – seawall repairs

Work In Progress

DPR – E 124th Street

Transformative landscaping of newly rebuilt platform for public recreation

Work In Progress

NYCDOT – Various Locations

- NYC Department of Transportation (NYCDOT) is performing underwater repairs at select locations along the East River
  - 15th - 18th
  - 38th - 42nd
  - 42nd - 54th
  - 59th
  - 90th
  - 94th - 96th

- Repair of individual timber piles
  - Marine borer protection (wraps or epoxy)
  - Structural rehabilitation (concrete)

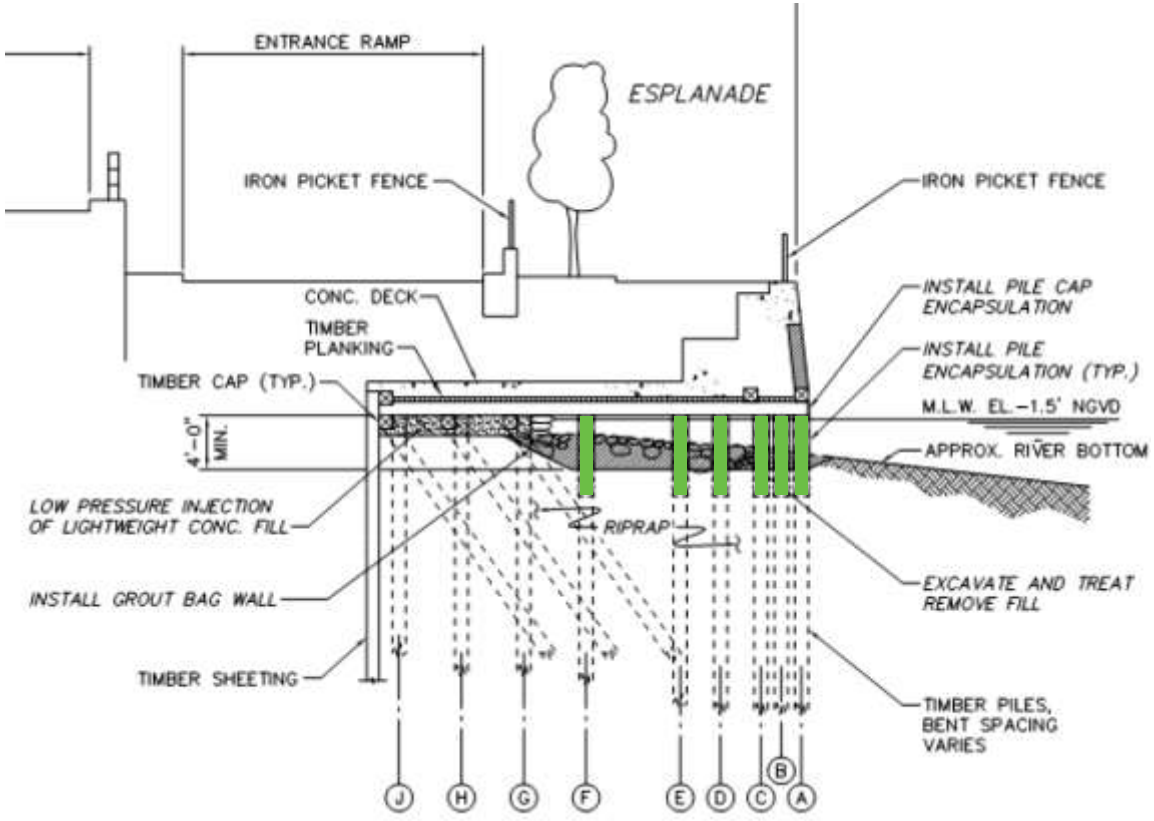
Planned Capital Work

- Esplanade rehabilitation to be phased
- Proposed locations prioritized by severity of structural conditions
- Locations to be monitored and can be re-prioritized due to changing conditions

Planned Capital Work

Elemental Repairs

Repair and/or replace individual elements of a structure (e.g., encapsulation of timber piles)

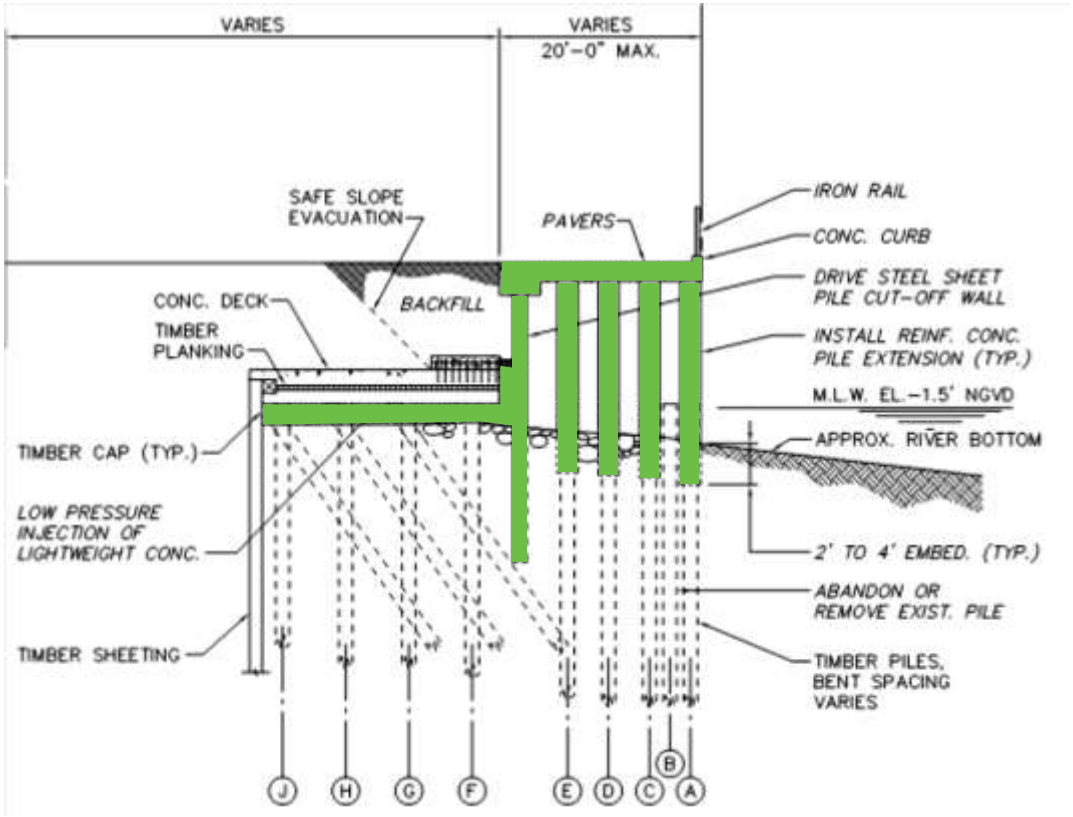


Representative cross section
(details vary according to location)

Planned Capital Work

Partial Reconstruction

Partially demolish platform; install fill under remaining platform; extend or replace timber piles with concrete piles

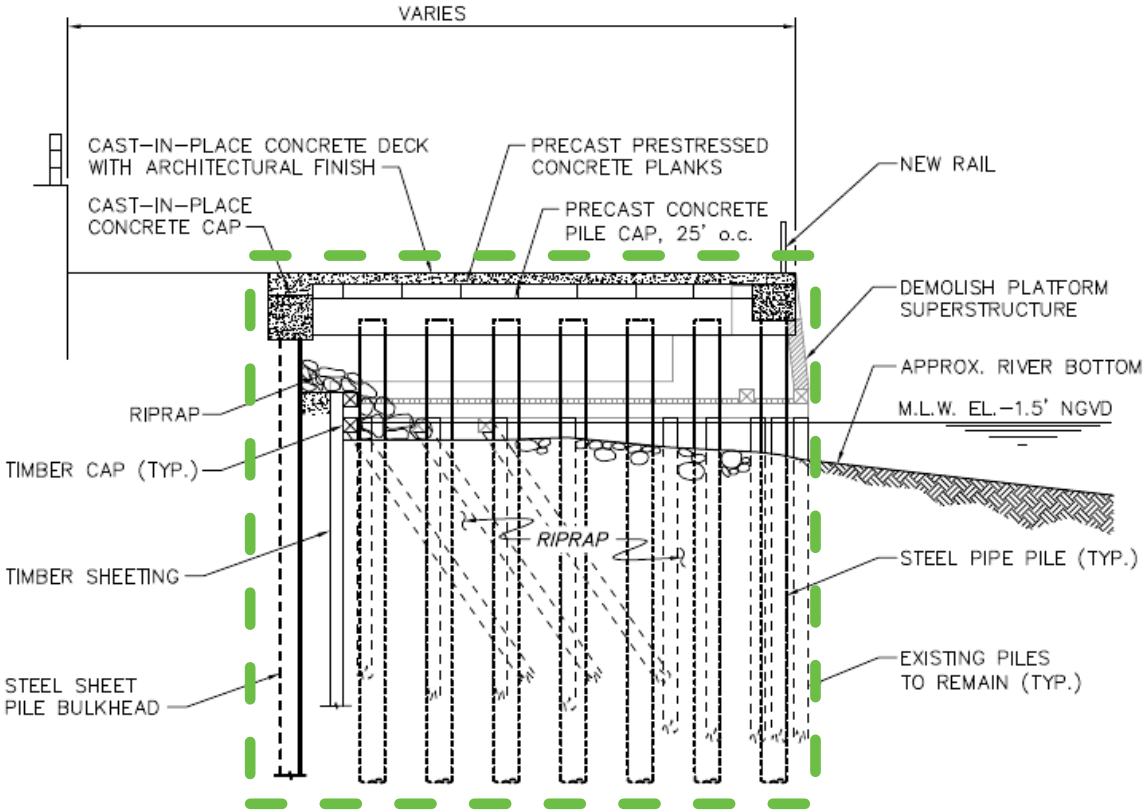


Representative cross section
(details vary according to location)

Planned Capital Work

Complete Reconstruction

Demolition of existing platform; replace with new high level platform



Representative cross section
(details vary according to location)

Planned Capital Work

Immediate Rehabilitation (2015-16)

Budget: $12 million

Location	Structure	Proposed Work	Budgeted Cost (millions)
36th	TSP	PR	$0.5
63rd - 64th	TSP	PR	$4.5
79th - 81st	GRW	ER	$0.4
88th - 90th	GRW	ER	$1.5
114th	TSP	CR	$2.8
90th - 91st	TSP	PR	$2.3

Key:
GRW = Gravity Retaining Wall
TSP = Timber Supported Platform
ER = Elemental Repair
PR = Partial Reconstruction
CR = Complete Reconstruction

Notes:
1. Estimates based on 2012/13 Study.
2. Prioritized locations based on conditions observed during study and are subject to change.

Planned Capital Work

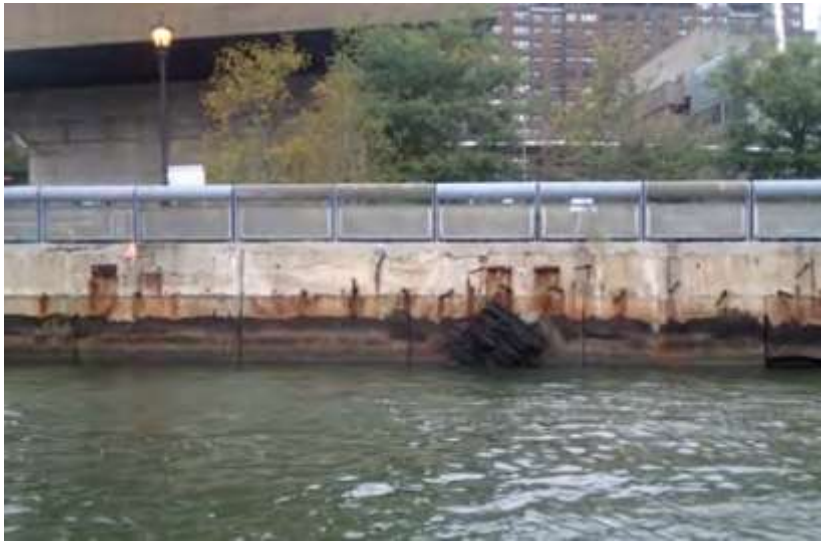
Immediate Rehabilitation

E 36th Street

Planned Capital Work

Immediate Rehabilitation

E 63rd - 64th Streets



Planned Capital Work

Immediate Rehabilitation

E 79th - 81st Streets

Planned Capital Work

Immediate Rehabilitation

E 88th - 90th Streets

Planned Capital Work

Immediate Rehabilitation

E 114th Street

Planned Capital Work

Next Round of Phased Work (2016-18)

Budget: $23 million

Location	Structure	Proposed Work	Budgeted Cost (millions)
36th - 38th	TSP	PR	$6.0
58th	GRW	ER	$0.1
68th - 73rd	GRW	ER	$2.6
76th - 79th	GRW	ER	$1.3
81st	GRW	ER	$0.1
90th - 91st	TSP	PR	$1.3
91st - 93rd	TSP	PR/ER	$10.4
94th	GRW	ER	$0.7
95th	GRW	ER	$0.1
96th	GRW	ER	$0.1
116th	GRW	ER	$0.3

Key:
GRW = Gravity Retaining Wall
TSP = Timber Supported Platform
ER = Elemental Repair
PR = Partial Reconstruction
CR = Complete Reconstruction

Notes:
1. Estimates based on 2012/13 Study.
2. Prioritized locations based on conditions observed during study and are subject to change.

Moving Forward

- Restore future depressions/sinkholes that develop
- Implement rehabilitative work over 10 years to arrest deterioration and to restore affected structures
- Complex process for recommended repairs/reconstruction
  - Funding
  - Multi-agency coordination
  - Engineering & landscape design
  - Permitting (mitigation) & approvals
  - Construction
- Work becomes more costly over time due to continuing structural deterioration and increasing marine borer activity.

E 124th St