



Shoreline Characteristics Analysis

for determination of desired future conditions in Jamaica Bay Gateway National Recreation Area
National Parks Service, Jamaica Bay Unit



Historic Change

Present Conditions



Georeferenced image from the 1950s laid over the 2006 satellite image of Floyd Bennett Field.

In the 1950s, New York City commissioned a series of high definition aerial photos of the entire urban region. The photos for the Jamaica Bay section are being compared to current satellite imagery in order to analyze shoreline characteristics and help determine desired conditions for the Jamaica Bay.

Shoreline Environment	Meters	Percent of Total
Shoreline	137949.6136	100.00%
Human Modified	56751.42951	41.14%
Residence	14746.67924	10.69%
Commercial	15048.09855	10.91%
Parking Lot	368.30517	0.27%
Bridge	714.628212	0.52%
Dock	565.895673	0.41%
Pier	246.92004	0.18%
Paved Road	2025.923527	1.47%
Beach Developed	1727.225401	1.25%
Steel or Concrete Bulkhead (V)	1271.922072	0.92%
Steel or Concrete Bulkhead (D)	6285.856981	4.56%
Rock Bulkhead (V)	1721.504916	1.25%
Rock Bulkhead (D)	12055.03398	8.74%

Human Modified (re-classed)	Meters	Percent of Total
Structure*	33417.75229	24.22%
Road	2025.923527	1.47%
Bulkhead**	21334.31794	15.47%

Natural	Meters	Percent of Total
Sand	25067.0317	18.17%
Vegetation	56007.02696	40.60%

*Includes residence, commercial, parking lot, bridge, dock, pier, beach developed
**Includes all bulkheads in front of developed (D) and vegetated (V) areas



Potential reclamation site (above) and typical shoreline condition (below).



The shoreline of Jamaica Bay (including Broad Channel Island) and its primary creeks is roughly 60% natural and 40% human-modified (see table above for exact figures). The majority (roughly 70%) of the natural coastline contains vegetation with the remainder comprised of sand beaches. It is important to keep in mind, though, that these natural shorelines often do not extend back very far before reaching developed areas. The majority (roughly 60%) of the human-modified areas are comprised of structures (mostly residential and commercial) built directly on the shoreline, with the remainder mostly comprised of bulkheads in front of developed areas. This analysis is being used to identify priority sites for hardened shoreline reclamation in short and long term plans for the bay.



Project Manager:
Mark Christiano, NPS GIS Specialist
Project Adviser:
Patti Rafferty, NPS Coastal Ecologist
Climate Change Intern:
James Connolly, PhD Candidate in Urban Planning

