

# **COSMOPOLITAN ECOLOGIES**

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“A town is saved not more by the righteous men in it than by the woods and swamps that surround it.”

—Henry David Thoreau

“It takes more than a good idea to make a great public improvement.”

—Robert Moses

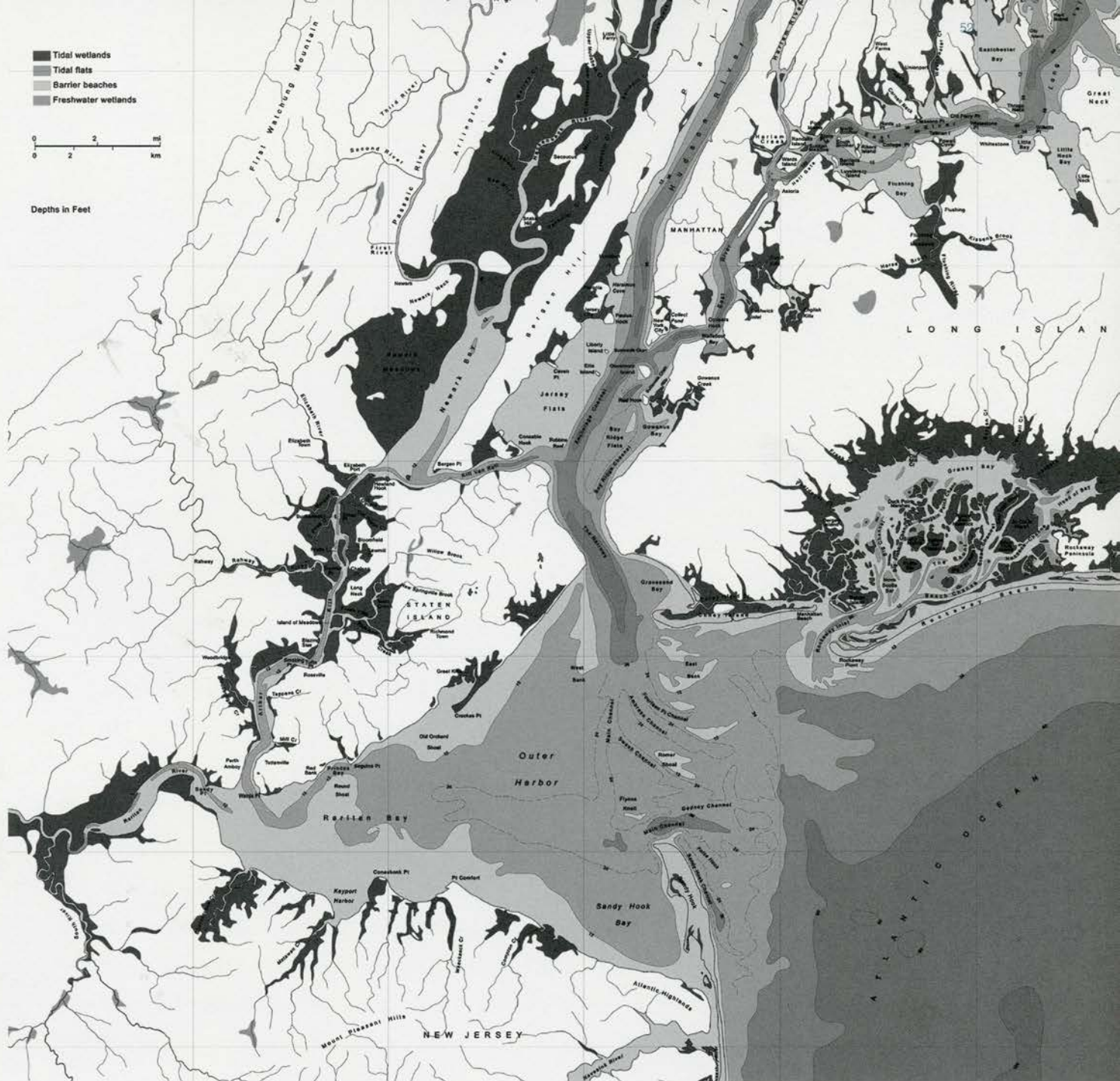
### An Urban National Park

If the Cathedral Rocks at Yosemite represent the National Park Service's (NPS) most treasured landscape, and an icon of the nation's frontier, Jamaica Bay at Gateway National Recreation Area is its physical, conceptual, and spiritual opposite. With four sewage treatment plants, thirty combined sewer outfalls, vast expanses of airport tarmacs, acres of so-called “black mayonnaise,” and a maze of bridges and highways, this collection of off-loaded land parcels has become a catalyst to set aside modern notions of “park” and rethink the role of the NPS altogether. Just as the scenic monumental landscapes of the American West shaped the nation's frontier mythology and nationalist ideology—symbolizing a land of promise and destiny—the muddy ecologies at Gateway have the potential to inspire a new ideology of global sustainable development and collaborative stewardship for the twenty-first century.

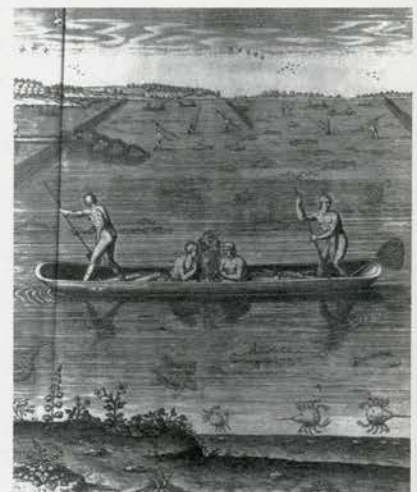
In contrast to America's relatively undeveloped countryside of 1916, when the NPS was founded, today we have dispersed settlement patterns characterized by unintended health consequences and wilderness in which nearly one quarter of the world's mammals, one third of amphibians, and more than one tenth of bird species are threatened with extinction.<sup>1</sup> Climate change alone is expected to force a further 15 to 37 percent of species to the brink of extinction within the next fifty years. This context represents a new opportunity to reinterpret the NPS's stated purpose to:

“conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”<sup>2</sup>





Plan of Greater New York showing extents of historic wetlands



Lenape Indians fishing in the bay, Theodor de Bry, 1590



What would it take to actually meet these goals in the context of Gateway? With the impending disappearance of Jamaica Bay's rich and biologically diverse matrix of salt marshes and grasslands in the next decade, as well as the inundation of large portions of the park due to sea level rise, the NPS would need to become a global deal-maker, municipal-interagency broker, and community organizer, while fostering the work of restoration ecologists, hydro-engineers, and visionary urban planners.<sup>3</sup>

### Watershed to New York City

If Gateway is a harbinger of the new dialogues and methodologies needed at a national scale involving environment and development practices, then Jamaica Bay has the potential to trigger changes in the infrastructure and culture of New York City. This teeming ecosystem has, over the years, supported Lenape Indian settlements until the seventeenth century, small-scale farming during the colonial era, the once-prosperous fishing village of Canarsie, and the vibrant urban community of New Lots, Brooklyn, supplying much of the growing region with fish and shellfish. Today, the Jamaica Bay watershed, at 91,000 acres, is one of the largest and most densely developed urban water- and sewer-sheds in the country.<sup>4</sup> It receives waste and pollution from nearly 2 million people, who collectively produce 250 million gallons of treated wastewater (which contains 30 to 40 thousand tons of nitrogen) per day, all of which gets discharged, after varying degrees of treatment, into the tributaries or open waters of the bay. This marsh ecology is threatened by a confluence of conditions, including this enormous flush of treated wastewater, as well as polluted surface runoff, the bulkheading of its formerly soft shores, dredging, sea level rise, and bacterial contamination from combined sewer overflows that collectively exceed the ecosystem's capacity for regeneration.

Far from the perceived majesty of Cathedral Rocks or the novelty and wonder of Old Faithful, this hodgepodge of historically and ecologically significant recreational grounds—tied together by diverse wildlife habitats—eludes direct cultural and aesthetic interpretation. Henry Thoreau expressed a broad appreciation for the cultural and physical potential of what he called the “swamp on the edge of town.”<sup>5</sup> Rather than the postcard-perfect iconic image of sublime rocky wilderness that affirms our country's past mythology, nature at the edges of towns and cities offers direct experience of natural processes and their reciprocal role in sustaining urban life. They are crucial to evolving our national ideology in response to environmental realities and in generating a joint approach to urban and natural systems. The muddy flats at Gateway offer a new, post-picturesque aesthetic to guide the remaking of America's increasingly urbanized landscape.



## Jamaica Bay as Pilot Project

If Jamaica Bay were to become the site of a national pilot project on urban ecology, it could generate debate and fresh ideas about climate and infrastructure, and mobilize stakeholders, scientists, park rangers, and designers alike to form alliances to generate much-needed change. This vision is already being formulated from the ground up as a result of conversations among communities, school groups, fishermen, birders, and NYC Department of Environmental Protection employees who live and work in and around the bay area. The park's indefinable mud and dispersed footprint can provoke a new generation of ideas and a shift in the role of the NPS, from one of protector and conservator of the landscape to active shaper of the environment and policy coordinator on many levels. Based on its experiences with Gateway, the NPS could set a new agenda for integrating the formerly isolated urban-nature issues that America faces all across the country. This might foreground the role of natural landscapes in cities, and synthesize the nation's approach to land-use planning, biodiversity, energy, and food, all of which are collectively contributing to climate change. Such a program would guide the transformation of interstitial and derelict landscapes across the country toward more integrated policies and practices to better support our post-carbon settlement patterns and new cooperative ways of working and living.

## A Brief History of Jamaica Bay

A gradient of land and water, local and federal jurisdictions, and contested ecological, social, military, and infrastructural contexts—both historic and contemporary—Jamaica Bay is a site of muddy ecologies and complex politics. A glance at a historic map of the region might lead one to believe that the lower third of Greater New York was once part of the bay's salt marsh system, known as the Flatlands. Its sinuous, meandering geometries are a result of the outwash from the Wisconsin Glacier's retreat nearly 10,000 years ago. Its outlines today remain in flux, changing with every storm and tidal movement through processes of erosion and deposition. Thirteen Lenape Indian sites have been identified within 3 miles of the bay, where remains of marine shellfish and bones indicate a former economy of fishing and hunting. The area still known as Canarsie was known for its vast planting fields and immense shell heaps. The Lenape fished with canoes up to 40 feet long, gathering clams, oysters, scallops, and whelk. They also hunted elk, bear, deer, beavers, raccoons, woodchucks, and various species of birds.



Dutch settlers had wrested ownership of the entire Jamaica Bay area by the mid-seventeenth century. The Dutch quite famously settled and fortified Lower Manhattan, but their cultural influence was equally strong in shaping New York's outlying territories. Their presence marked a shift in the mode of livelihood in "de Baye," from hunting and gathering to small-scale agriculture and dairy farming. The bay's salt meadows, for example, began to be periodically mowed as a source of fodder for livestock.<sup>6</sup> The following passage, dating from 1895, by the New Jersey State Geologist indicates the Dutch aversion to swampland and its perceived lack of productivity:

The prejudicial effect of the proximity of these marshlands upon the healthfulness of the cities on their borders and on the salubrity of the adjacent country districts is the strong argument for their drainage and improvement. They are not only insalubrious, but also comparatively non-productive in an agricultural point of view. The possibilities of these meadows when drained and the sanitary advantages of their reclamation, aside from the aesthetic setting, make a strong impression upon all who have seen the rich and beautiful polders of Holland.<sup>7</sup>

The notion of the swamp as unproductive land having little or no economic potential contributed to its near decimation as the city rapidly industrialized in the nineteenth century. The significance of the marshlands continues to evolve in tandem with New York's economic and cultural context. Recently Manhattan has been called "the greenest community in the United States, and one of the greenest cities in the world," but the Jamaica Bay marshes, on the verge of disappearance, are only now being revalued.<sup>8</sup>

### From Center to Periphery

By the turn of the nineteenth century the population of Jamaica Bay's surrounding communities had grown to nearly 1,000 inhabitants. It retained its agricultural base throughout the 1850s, just as horticulturalist and landscape designer Andrew Jackson Downing was penning a series of letters from Europe, urging "the necessity for a great [landscaped] Park." He was promoting a new way of inhabiting the landscape, not based on agriculture but on urban culture, that provided artful scenery, moral benefits, and healthful activity.<sup>9</sup> In that brief half-century, the population of New York City as a whole had grown to half a million. By 1850, nearly half of its residents were foreign-born, and they were dramatically reshaping the social, political, and physical form of the city, as well as its sanitary conditions. New York at this time was in the throes of the Industrial Revolution. The city was modernizing its housing stock, roads, and water and sewer systems in a complete technological transformation of its ecological fabric. The Croton Aqueduct, built to transport



G. Hayward. Lithograph.

D. T. Valentine's Manual of the City of New York for 1859.



Horse carts and rubble during the construction of Central Park, ca. 1858

VIEW IN CENTRAL PARK.  
Promenade. June 1858.

Dumping and filling at Jamaica Bay, *Brooklyn Daily Eagle*, 1930s





potable water to the city from upstate, was completed in 1842. Between 1850 and 1855, the city had built 70 miles of sewers. Jamaica Bay had shifted from being the center of a subsistence economy based on fishing, oystering, and agriculture, to the periphery of a rapidly industrializing one.

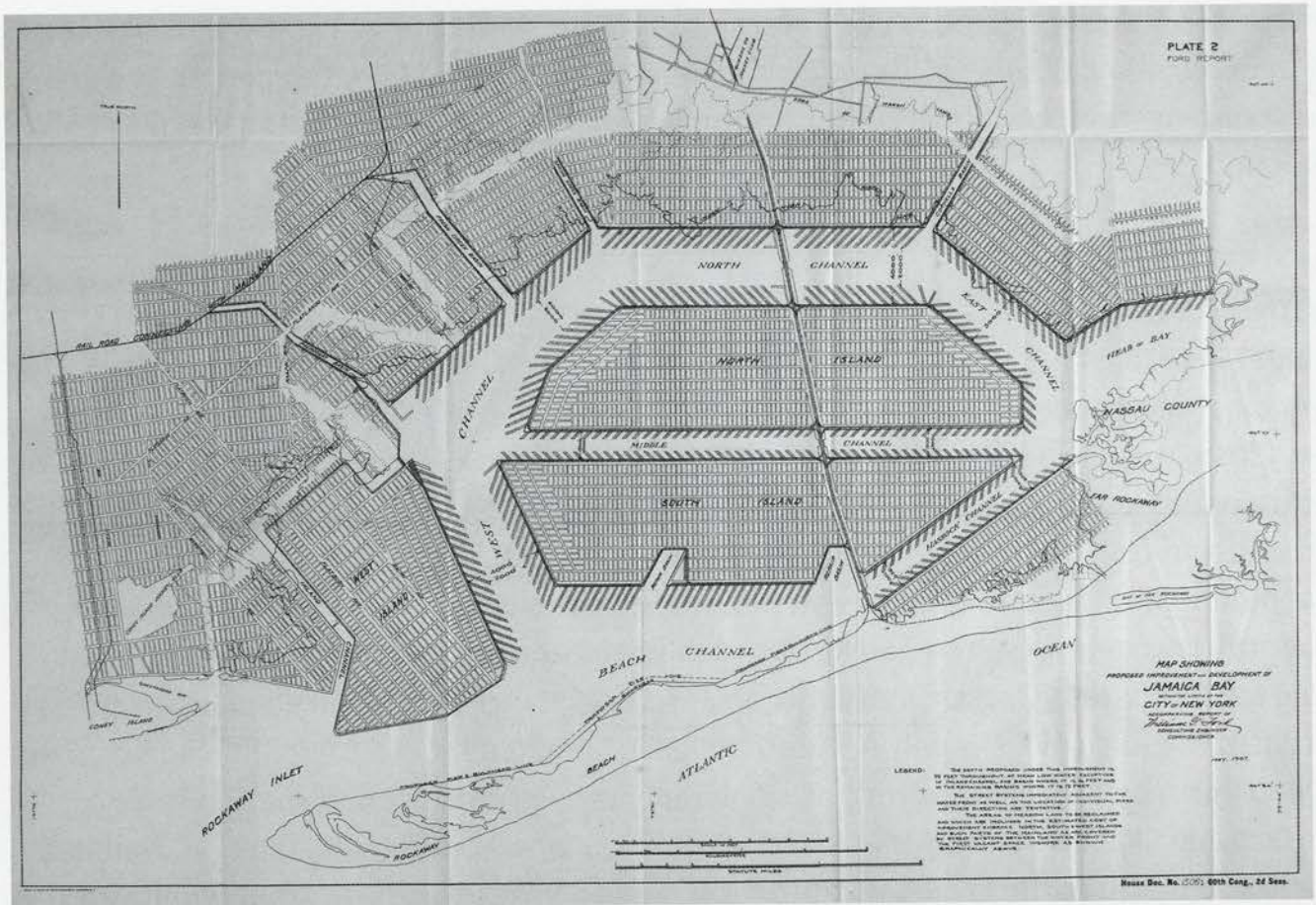
### Cain and Abel

By the early twentieth century, just as Central Park was becoming a celebrated design achievement that “synthesized” city and nature, Jamaica Bay had degenerated into a backwater and dumping ground, receiving waste from its construction. There are many lessons, albeit paradoxical, to be gleaned from comparing the histories of these two parks. In 1858 the Board of Commissioners of Central Park chose the Greensward Plan submitted by Frederick Law Olmsted and Calvert Vaux for a new, centrally located public park in Manhattan. It became a model for integrating European picturesque aesthetics with modern scales of infrastructure. Its transverse roads hybridized roadway and park. Its new Reservoir, which connected to the upstate Croton water system, seamlessly embedded large-scale hydrological function in the form of a shapely naturalistic lake. Olmsted moved 2.5 million cubic yards of stone and earth by horse-drawn carts during its first five years of construction.<sup>10</sup>

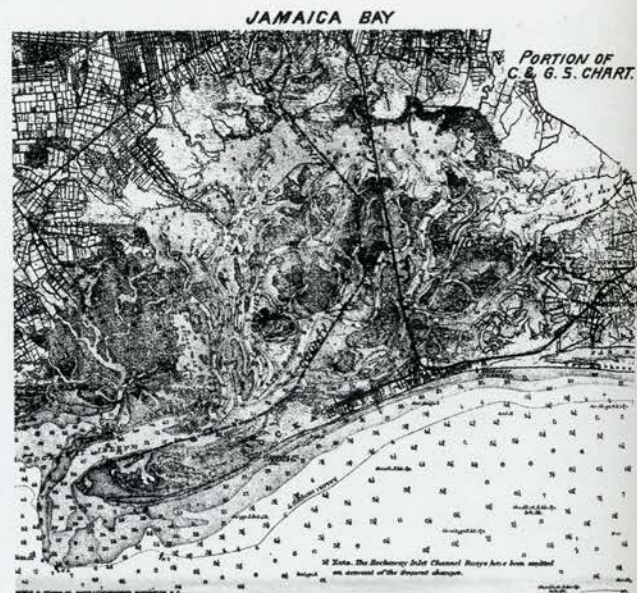
The following year two horse-rendering facilities opened on Barren Island in Jamaica Bay. The first, built by Lefferts Cornell, processed dead horses shipped from Manhattan. The area, which had a number of other dump sites, became known as Dead Horse Bay. These horse rendering plants typically exported products such as oil for industrial uses and fertilizer back to Europe.<sup>11</sup> Hundreds of thousands of horses worked in New York City in the 1860s and 70s, and the average lifespan of a horse during this time was a meager two-and-a-half years. In 1879 the P. White & Sons establishment burned to the ground in a massive inferno that included six structures and 50 tons of horsemeat. The industrialization of nature in Jamaica Bay was at this time at its most gruesome and evident.

Central Park and Jamaica Bay have much in common. They are linked by reciprocal processes of construction and waste, growth, and decay. The creation of idyllic rural scenery and sculpted lakes at Manhattan’s center happened in tandem with the creation of a vast wasteland and degenerate swamp on its periphery. What is now Gateway became a dump, harboring a self-contained colony of bone sorters, fish pickers, and metal scavengers; a place where it was said that nothing green could live and the smell would sicken at a distance of 2 miles.<sup>12</sup> As the last shovelful of earth was sculpted at Central Park and nearly 20,000 ice skaters flocked to its partially filled lake, fishing and farming had nearly ceased in the bay.





The world megaport proposal, William G. Ford, May 1907



Survey of Jamaica Bay showing marsh and settlement pattern, 1907



## From Public to Cosmopolitan

In light of this shared history, the aspiration to park-ify this workhorse landscape in the Olmstedian tradition is not the right approach. Instead of a central, land-based park representing a singular capital construction project, Gateway has water at its center and is defined by a matrix of decisions and actions that exist almost wholly outside of its physical boundaries. Gateway represents a challenge to choreograph urban and natural systems as part of a global ecocity vision for the next century. At this moment, when nations are struggling to develop economic and financial models that redirect the most destructive aspects of our carbon- and waste-heavy lifestyles, the vision of a brave new world remains unclear and without consensus. What is clear is that our past approach to problem solving, with one-dimensional super-infrastructure solutions, has failed. We have learned from Robert Moses that widening a highway doesn't solve congestion, building larger power plants doesn't reduce consumption, barricading the water's edge doesn't reduce the intensity of hurricanes or the destructive forces of flooding. These static, independent, monofunctional, and purely physical solutions do not enable our cities to incorporate habitats or adapt to the consequences of climate change, nor do they attempt to alter the human behaviors at the root of the problem. Devising a dynamic, hybridized, and flexible approach that makes our cities adaptive in the face of climate turmoil and one that generates behavior change presents the central, new challenge to us as designers.

The Envisioning Gateway competition asked participants to imagine how to move beyond old notions of the public park and related processes of democratization and recreation, toward a modern idea for a cosmopolitan landscape in light of globalization and participatory research centered on urban ecology and global environmental change. Gateway must be simultaneously global and urban, community-based and federally coordinated. This requires a new psychological, ethical, and political agenda that would serve to prepare and train us for a new century of climate-based decisions and actions. Beyond the ideology of a public park "protected for users," Gateway could inspire a shared vision with broad benefits and a work plan for getting many hands dirty (or in this case, wet) in its remaking.

## Redefining Infrastructure

Jamaica Bay challenges received notions of public, serves as a parable of modernization, and challenges its associated ideology of infrastructure. For much of the twentieth century, the bay has served as a fringe experiment for the city's massive, centralized engineering and capital-intensive projects. Its future will highlight a shift to soft, decentralized, and integrated landscape and community-based approaches.



## A World-Class Port

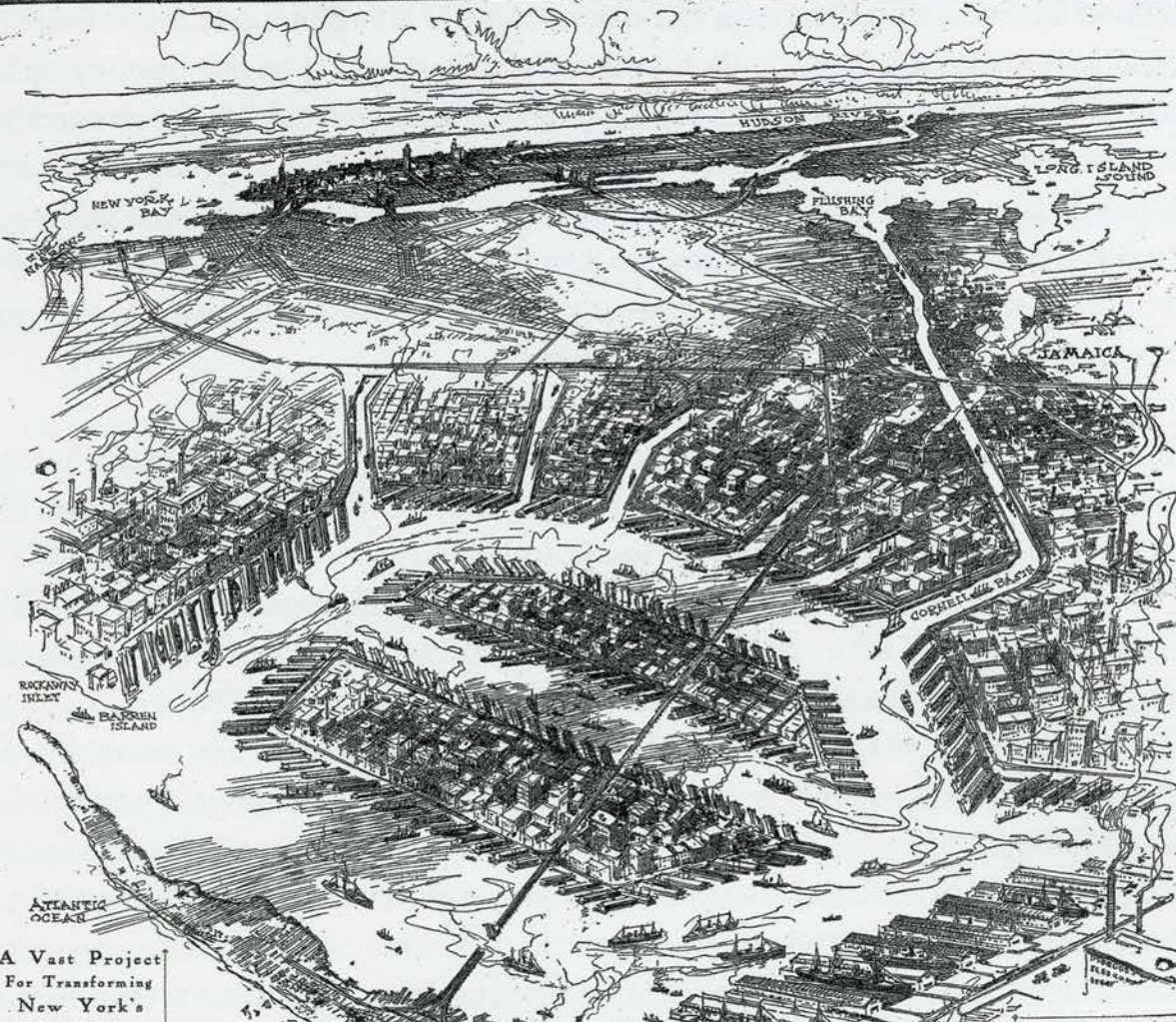
Symbolic of the peak of modern twentieth-century ideology, the construction of a megaport was planned for the area that now encompasses Gateway. At around the turn of the twentieth century—after major water, sewer, park, and roadway infrastructure were built—the city planned to transform Jamaica Bay into a futuristic world-class port. A local newspaper called it “the greatest enterprise that the City has ever undertaken.” The proposal, prepared by the U.S. Secretary of War and the City of New York, called for a forty-square-mile megaport to be dredged to a depth of 18 to 30 feet. Designed to serve ocean steamers and major ships, the intention was to reclaim New York’s predominance as an international seaport by constructing the principal port of entry into the United States from the Atlantic. The aim was to surpass Boston, Baltimore, and other harbors on the Eastern Seaboard.

The megaport proposal was based on a report by the engineer William G. Ford, secretary of the Jamaica Bay Improvement Commission at the time. Ford’s visionary plan, backed by meticulous calculations, was submitted to Congress for appropriation in May 1907.<sup>13</sup> The plan was to transform Jamaica Bay into a deep-water harbor by bulkheading the entire basin and performing a vast cut-and-fill operation using hydraulic dredges provided by the U.S. Army. A projected 267,815,575 cubic yards were to be dredged from the bay and used to backfill the bulkhead walls. This Faustian bargain was the outcome of deals with the federal government, the U.S. Secretary of War’s office, and local authorities.<sup>14</sup> Phase one involved the federal appropriation of \$250,000 to dredge channels, and for New York State to surrender its riparian rights to underwater land. Phase two was for New York City to build the bulkheads and piers at an initial expenditure of \$1 million, to create a port with more capacity than that of Liverpool, Rotterdam, and Hamburg’s ports combined.<sup>15</sup>

The bay and surrounding landscape’s perceived lack of productivity continued to provide the ideological grounds for its transformation from marshland to a grand futuristic illusion. Beyond its infrastructural benefits, the megaport plan fed New York’s hunger for real estate, through fill operations at its edges. After the industrialization of agriculture and food distribution, Jamaica Bay and its surrounding environs, once valued as a productive food source, had little value for a city that imported food from America’s heartland. Its only perceived value was as real estate or potential conduit of manufacturing and services. In fact, the city’s announcement of the megaport plan coincided with the total collapse of local fishing and oystering industries due to sewage and industrial pollution. By 1904 the bay was contaminated; shellfish were sufficiently infected to cause serious illnesses in those eating Canarsie’s oysters and clams. The *New York Times* editorialized, “Except for



# JAMAICA BAY TO BE A GREAT WORLD HARBOR



## A Vast Project For Transforming New York's Marshlands.

**M**ODERN engineering is about to undertake another of its stupendous tasks. Work is soon to be begun which will ultimately lead to the conversion of the salt-marsh and marshlands of Jamaica Bay into an artificial harbor, having an area of twenty-five and a quarter square miles and affording hundreds of miles of wharfage. That vast tract, half land and half water, just back of Rockaway Beach, which is now given over exclusively to the sportsman and the health-seeker, is to be changed into a harbor where a great fleet of fast-moving steamships may conveniently dock. It is proposed that this new harbor of New York be made the terminal of new long deep-sea steamships to link up the Hudson River with the great lakes. To this end it is planned that the creek now emptying into Jamaica Bay be converted into a canal varying from a mile to a half in width and length where these inland barges may be lifted up.

The marshland lying back of the present line of the railroad is to be filled in with the mud scooped up from the despoiled channels and bays. And a great stretch of territory now lying waste and useless will become valuable building sites. Near the docks will be the warehouses, behind them, factories, and in the convenient hinterland houses for the workmen.

This stupendous undertaking is the project that the City of New York has undertaken. It is estimated

that its ultimate cost will approach a hundred million dollars. But the work is only to be done as necessary requires. It is not believed that the present generation will see the last line of steel in Jamaica Bay in course of construction. But here is a point which must appeal to every one who has a financial interest in this city, to every one who needs a strategic port in the wonderful growth of the Jamaica Bay project or some similar project in a subsidiary of the near future. In spite of its unassuming harbor, wharves and wharves of the near future, New York must soon have greater wharfage facilities.

The population of Greater New York, as given by the State census of 1905, was 4,012,000. It is estimated that in 1910 it will have reached 5,000,000. New York is the greatest manufacturing center in the United States. The census of 1900 gives the value of its manufactures as \$1,200,000,000, an increase over 1900 of \$200,000,000. To appreciate this it is only necessary to add that this figure of the total value of New York City's manufactured products is greater than the value of the output of any other State in the Union, with the exception of New York and Pennsylvania. If we take into consideration the rubber cities, Texas, and villages in the neighborhood of New York, which, though insignificant in population, are considerable industrial centers, making up the cotton, sugar,

for their products, we find that the census of 1905 gave the New York industrial district a population of 5,200,000, and placed the value of its total product at \$1,344,000,000.

The Port of New York leads the world as a commercial city, having in 1908 a foreign tonnage of 24,098,754. These figures are the more startling when viewed in the light of the recent increase in the tonnage of the port. For in the years which have elapsed since 1905, one of which at least has been looked upon as a panic year, the increase has been 5,122,204 tons, considerably more than the total foreign tonnage of either the Port of Boston or of Philadelphia, its nearest competitor. The gain for the years 1905 to 1908 amounted to 27.2 per cent, or at the rate of 9 per cent, per year, a rate exceeded but twice in this port in twenty-five years, the last time being at least years ago, and the present rate of increase being the more remarkable because of the large figure with which we are now dealing. It is perhaps only in goods that the foreign tonnage of

the port will in 1910 amount to over 30,000,000, the value of the products of manufactures in Greater New York alone to \$2,000,000,000, and of the industrial district to \$3,000,000,000.

The wharves in New York at present for foreign trade alone does not exceed 10 per cent of the water front. The remainder is used for domestic freight service, railroad business, hotels, and miscellaneous commerce. There will be a demand for increased wharfage as time goes on.

It is likely that within the next ten years the State will have completed at an expense of \$10,000,000 the deepening of the Erie Canal. There will be the great carrying capacity of the present one will thereby be increased to a point that the existing wharves of

water transportation between the vast region of the Great Lakes and New York. Its low freight rates will probably have in New York, the

port of New York, the

just through some other channel. The city is busy constructing additional wharves, notably the South Brooklyn water front pier, which are expected to have a capacity of 4,000,000 tons. But the city realizes that unless its commerce is to be actually crippled in the not distant future it must provide for greater docking facilities than the show-front fronts of the upper bay, the Hudson, East, and Harlem rivers fronts.

And so the city turned to Jamaica Bay and decided to begin the mammoth task of turning its twenty-five and a quarter square miles of shallow water into a harbor for seagoing vessels.

Jamaica Bay has a natural breakwater, Rockaway Beach, like a long, low arm, extends along its northern boundary and may be relied upon to stem the strongest buffeting of the Atlantic Ocean. The bay has a head but the narrow entrance known as Rockaway Point, which is also protected by Rockaway Beach.

The bay is studded with many small islands. All of them low lying, some practically no more than salt marshes. A half dozen would extend easily into the bay. Adjacent to it are 5,000 acres of salt marsh.

In spite of the restriction of a small front of water boats and the other restrictions of holiday-making New Yorkers, much land is now being reclaimed, and swept up the sand in the waterways and empty it upon the neighboring land.

Continued on Following Page

The New York Times  
Published March 13, 1910  
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"Jamaica Bay To Be a Great World Harbor," New York Times, March 13, 1910



the activities of a small fleet of oyster boats and the fishing excursions of holiday seeking New Yorkers, this great expanse of land and water is now lying useless.”<sup>16</sup>

Jamaica Bay was depicted as a hazardous zone in need of quarantine. The specter of Typhoid Mary was raised by a city health official in a report to the Society of Municipal Engineers.<sup>17</sup> The official stated that fifty-seven cases of typhoid had been reported in the Jamaica Bay area, and in addition to nine active carriers on its shores, “every single oyster from Jamaica Bay is coli infected.”<sup>18</sup> By order of the Board of Health, the selling of oysters from its waters was strictly prohibited. Within this pattern of marginalization, the bay was transformed into a giant wastewater processing system and sewage treatment area overwhelmed by the city’s burgeoning population.

### From Megaport to Airport

The dredging of the bay was underway by 1912, but initial reporting by the *New York Times* portends the eventual abandonment of the plan:

Harbor Work Begun in Jamaica Bay—Government Dredges Start on the Ship Channel that is to let in Ocean Carriers—Headway is Slow Now—Channels So Shallow that Great Dredges Can Only Work at High Tide.<sup>19</sup>

The mud won this particular battle. The projected twenty-year initiative, despite its failure to construct the port’s physical infrastructure, had the legacy of centralizing authority over Jamaica Bay. On April 30, 1921, the Port of New York Authority (later renamed the Port Authority of New York and New Jersey) was established to administer and balance the shared infrastructural interests of the harbor. By this time, dreams of Jamaica Bay becoming a “Great World Harbor” had waned, in favor of building “America’s Greatest Airport” at what later became Floyd Bennett Field—a consolidated landmass formed from the dredging and fill processes—which opened in 1931 to host several historic flights.<sup>20</sup> Four years later, the U.S. Postal Service decided to maintain Newark as the central airmail terminal for Greater New York, and Floyd Bennett Field became just an auxiliary runway.<sup>21</sup> It was turned over to the U.S. Navy in 1941. Not long after, Idlewild Airport (now JFK International Airport) opened on the bay’s easternmost shore, occupying nearly 5,000 acres of new landfill. The first ambitious airport project in Jamaica Bay, Floyd Bennett Field was obsolete almost immediately upon completion.

### More Dumps

The marsh that had served as a vital and productive resource for the region’s former hunter-gatherer and agrarian economies was now deemed a dump—a primitive condition—



by the standards of an industrialized economy. A newspaper article appearing in the *Brooklyn Eagle* in 1912 described three refuse-disposal plants on Barren Island among the largest of their kind in the world. As the city expanded, waste dumps were dispersed along the bay's edges, littering the shores with decomposing materials. The landfill in Edgemere, Queens, and the Fountain Avenue and Pennsylvania Avenue landfills in Brooklyn accepted a range of sludge, construction debris, and millions of gallons of illegal toxic waste, mostly petrochemicals such as paint thinners and lacquers in the 1970s, according to the *Daily News*. The surfaces of these landfills are now undergoing rehabilitation; they will be capped and planted with shrubs as part of a city restoration project.

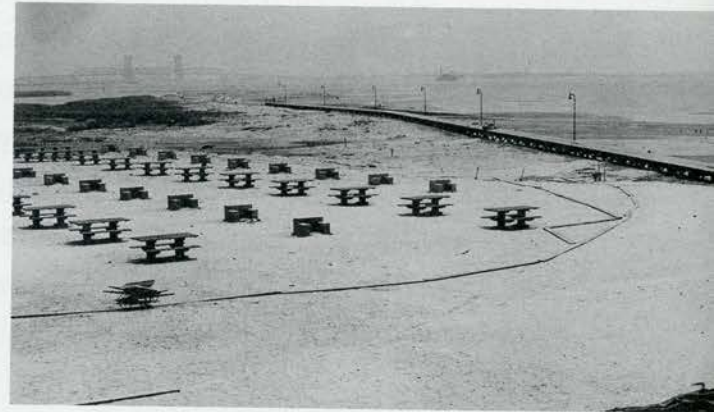
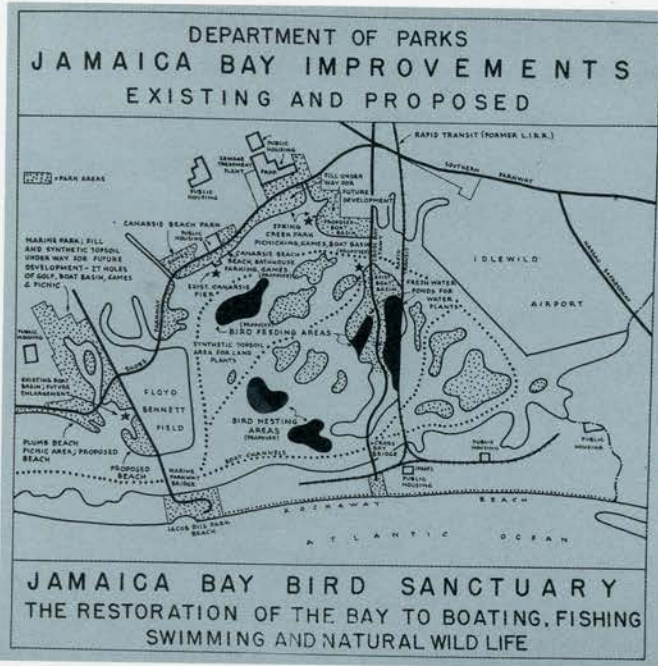
### Waste Water

The natural biological and tidal processes of Jamaica Bay, which had handled the city's sewage for years (serving as an informal primary treatment system) collapsed around the year 1900. Fifty million gallons of raw sewage were being discharged daily into the bay by 1917, from the surrounding communities of Rockaway, Jamaica, the Twenty-sixth Ward, and Paerdegat Basin. By 1939, four large sewage treatment plants were built on the bay's edges, signifying a great improvement; however, treated freshwater is deemed a pollutant to salt marsh habitat, because marine and brackish water organisms have a limited tolerance for freshwater inundation. Eventually flounder fish, which are bottom feeders that settle on the bay's "black mayonnaise," tasted strongly of petroleum by the 1970s, due to the dumping of jet fuel and oil from JFK Airport.<sup>22</sup> Today's fish populations face a different set of problems. Trace amounts of petro-chemically derived hormone disrupters (commonly found in shampoos, lotions, and other grooming products) in treated wastewater may be linked to the feminization of fish caught in certain parts of the bay. One study showed a female to male ratio of ten to one.<sup>23</sup> New species are evolving out of these seemingly invisible cultural processes, particularly at the interface between Jamaica Bay and the communities that surround it.

### Highways

Robert Moses was appointed Commissioner of the New York City Parks Department in 1934, bringing a new set of infrastructural visions and top-down methodologies into play in the region. Motor vehicle registrations in the United States had risen to more than 26 million by 1930.<sup>24</sup> Plans for the bay therefore shifted from accommodating international deepwater shipping and air travel to becoming a showcase for regional highways and bridges for cars.<sup>25</sup> All of a sudden Jamaica Bay was "in the way" of the contiguous suburban expansion of the





Gateway (Marine Park) picnic area, *Brooklyn Daily Eagle*, 1940s

Moses's master plan included recreation, public housing, development, and bird-feeding areas, *Brooklyn Daily Eagle*, 1950s



View from Jamaica Bay to North Shore, 2006



greater metropolitan region, toward the sandy beaches of Eastern Long Island and South to the Rockaways. The unveiling of a new master plan for the bay, at a party, gives a glimpse into the new planning methodology:

On February 25, 1930, before five hundred civic leaders gathered in the Grand Ballroom of the Hotel Commodore for the Park Association's annual dinner, Robert Moses, dressed in a tuxedo and black tie, rose to his feet and tugged a cord which dramatically pulled the drapery from a huge map of New York City hanging behind the dais. Running across the map were heavy red lines. One, which started in Brooklyn at the Brooklyn Bridge, ran along the borough's western and southern shores, skirting Jamaica Bay, and then, in Queens, headed north along the city's eastern boundary. The shore-front portion, Moses said, was a "Marginal Boulevard"—he had not yet named it the Belt Parkway—which would provide a quick circumferential passage around Brooklyn.<sup>26</sup>

The collaring of the bay—with what was initially called "the Marginal," later "the Circumferential," and finally the Belt Parkway—established the trajectory on which it remains today. The bay's muddy and dispersed ownership meant there was no organized resistance, leading to relatively easy acquisition. The "greatest municipal highway venture ever attempted" was to follow Lenape Indian trails. Moses stated, "We have gone back to the aboriginal Indian trails for the Belt Parkway. A glance will indicate that the red men were smarter than their white successors in laying down lines of communication and travel."<sup>27</sup> The transition from intricate levels of land, water, and cordgrass to a uniform section of water, bulkhead, and highway for the Belt Parkway effectively cut off the surrounding community's access to the shoreline while concentrating pollutants along its edges. As natural systems and life forms were flattened, the region's vehicular infrastructure became thick and diversified in the form of forty-seven different bridges, one of which Moses proudly called the "club sandwich"—a triple intersection at the start of the parkway.

Just as the megaport project led to the consolidation of power in the Port of New York Authority, Moses used funding for the construction of the Belt Parkway as leverage to gain control of the Tunnel Authority. This effectively consolidated his monopoly over all new intracity water crossings. Historian Robert Caro later recalled the series of events, explaining that if then-mayor Fiorello Henry La Guardia "wanted New York to have the great Belt system, he would have to hand over to Moses, already far too powerful, more power still." In a formal "Memorandum of Understanding" between La Guardia and Moses, the deal was struck.<sup>28</sup> Traffic on the Belt became instantly notorious. "Four lanes



of Belt Parkway had been jammed before the war. Now six lanes were jammed," according to Caro. Moses's definitive shaping of the bay's edges served to consolidate his power and eventually led to Gateway's current status as a recreational area and wildlife refuge.

### Recreation "Area"

In 1938 Moses urged the complete abandonment of the megaport plan, citing the bay's "unlimited possibilities for recreational and residential development."<sup>29</sup> He demanded that dumping by the Department of Sanitation be prohibited. Soon after, jurisdiction for all of Jamaica Bay, including its islands and waters, was transferred from the Department of Docks to the New York City Parks Department. He designated bird feeding and nesting areas, as well as large tracts of public housing, as part of an overall plan to restore the bay to boating, fishing, swimming, and natural life. This modern notion of landscape being a place of recreation with scenic functions was consolidated and implemented in New York by Moses on a vast scale. Jamaica Bay, which had resisted definition for years, was recast as an area for boating, picnicking, and public bathing at modern beaches, as well as for the preservation of wildlife. This conceptualization of landscape, as either having passive-Olmstedian or active-Moses style recreational uses, continues to define and limit the regional landscape's physical and political potential.

In the 1970s New York City was in the midst of a fiscal crisis when the NPS assumed management of Jamaica Bay, along with a collection of decommissioned military properties, beaches, municipal tracts, and islands that today comprise Gateway. Moses, 82 at the time, publicly disapproved of the transfer to federal control. "No long-range thought has been given to the idea... I spent 20 years piecing together that land in and around Jamaica Bay under the Parks Department. The idea that this is something new being saved by the fellows in Washington is utter nonsense," he was quoted as saying in a *New York Times* article.<sup>30</sup>

A closer examination of the NPS's classification of Gateway as a "Recreation Area" prefigures current issues with the park's conceptualization and management. The word recreation carries an ideology of public use and enjoyment—structuring a relationship between park users and a landscape to be used. The recreation typology presents a different set of challenges and maintenance requirements than the traditional NPS mission of preserving awe-inspiring nationally symbolic landscapes to be interpreted and passed down from one generation to the next. The term area denotes a zone devoid of spatial content, as opposed to a specific place, phenomenon, or geological feature such as rocks, geysers, monuments, and historic houses. Despite the deep commitment of countless NPS staff members since the park's founding in 1972, there remains a discrepancy between



the NPS mission, as defined by its charter legislation, and the actual ecological and infrastructural realities of Gateway.

Revitalization cannot be initiated by NPS alone. It demands a visionary federal agenda combined with a multilevel hybrid approach—a national reassessment of land use and infrastructure policy that cuts across federal, state, and local decision-making boundaries—and a ground-up effort to marshal park stakeholders and staff to become active researchers and stewards, effectively recasting the role of the typical national park visitor from enraptured wanderer to citizen scientist. This new reality demands an aesthetic that goes beyond the picturesque and sublime (a framework appropriate for a world existing outside of us) to one that empowers people and mobilizes participation, akin to the shared labor of gardening.

### A Watershed Moment

Looking at the bay not as preexisting nature to be protected or a refuge for wildlife, but as a complex metropolitan watershed that supports people, plants, and animals—and placing the communities that influence it at the center of the solution—has the potential to inspire a new type of ground-up revolution. Small projects, dispersed throughout the watershed and based on an integrated idea of regeneration, could be coordinated at national and local levels and implemented to significant effect. A great deal has been written about the NYC Planning Department's restoration of Fresh Kills and the High Line as models of contemporary landscape practice; however, both require a top-down solution and are essentially surface treatments of formerly abandoned industrial infrastructure, offering leisure-based activities typical of the industrial era. Working to reset the dynamics of Jamaica Bay could potentially generate large-scale transformation within the city. As opposed to the iconic, capital-intensive mega-project, such an approach would combine a shared vision and strategy with the cumulative effects of small-scale interventions, transforming our understanding of the postindustrial landscape and expanding the concept of "public space" to include all aspects of the city, including marginal and residual zones, utilities, water, biodiversity, energy, and waste. This contemporary interpretation of public space encompasses a new ecological culture, reciprocal to the concept of "city."

Jamaica Bay—with its scattered surroundings of brownfields, solitary housing towers, leaching landfills, a hemmed-in global airport, decaying highways, and steel bridges—survives today as a living museum of the detritus of modern infrastructure. At this moment, it has the potential to become a tool for exploring new infrastructural paradigms: dispersed, community-based, decentralized, and regionally integrated.





Beach with sewer pipe, 1939

Aerial view of Jamaica Bay, 1940s

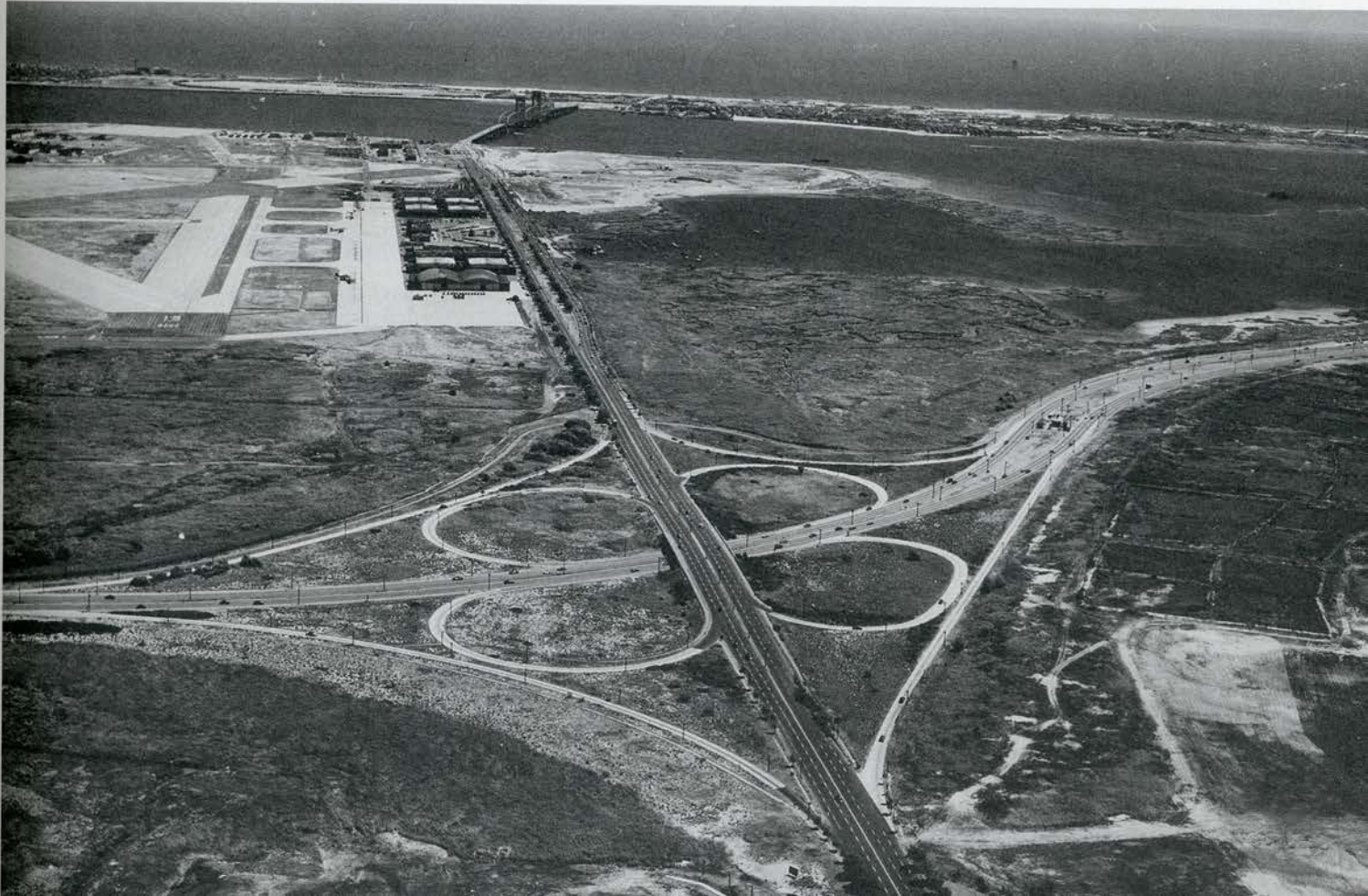




Park Commissioner Robert Moses shows progress of work on the Belt Parkway at Marine Parkway and Floyd Bennett Field to Federal Works Administrator John Carmody. Left to right are Queens Borough President George U. Harvey, Brooklyn Borough President Raymond V. Ingersoll, John Carmody, and Robert Moses, *Brooklyn Daily Eagle*, 1939



Marine Parkway, *Brooklyn Daily Eagle*, 1953





## Out of the Quagmire and Into the Mud

Water defies regulatory and physical boundaries. Constantly in motion, interacting, changing, and connecting, it presents unique challenges when considered in relation to infrastructure. Gateway is a place where, one might argue, “The very idea of nature is getting in the way of properly ecological forms of culture, philosophy, politics and art.”<sup>31</sup> Describing the bay as a dual condition of natural watershed and urban sewershed reframes it as a complex and shifting landscape with boundaries and publics that extend beyond any well-defined political or physical limits. Engaging and designing Jamaica Bay’s water and sewersheds as a central element in the city’s cultural history, for example, triggers the involvement of at least twenty-two regulatory agencies at federal, state, and local levels. Identifying actions that can be taken (and the corresponding scales of decision making) jumpstarts conversations that must take place if we are to address issues of water quality, biodiversity, and climate change. This expanded boundary of stewardship not only involves recreation seekers and park visitors, but also requires a larger shared vision of urban ecology and the value of “the swamp at the edge of town” that can bring about real change. Establishing a research station at Floyd Bennett Field and pilot projects for reintegrating Jamaica Bay into the urban and hydrological ecosystem may help identify the nation’s long-term challenges and serve as a test case for addressing future crises of waste and water, climate change, and local governmental reform.

A dwindling window of opportunity is exerting pressure to think and act differently in both the short- and long-term. The Jamaica Bay Watershed Protection Plan Advisory Committee, established by local law in 2005, concluded after comparing satellite imagery over time that the marsh may be gone by 2012, presenting a three-year window to effectively bring about change. Beyond the loss of biodiversity and nesting habitats for migratory birds—significant in that it is one of the few large-scale sites on the northeastern seaboard—New York stands to lose the landscape’s major infrastructural capacities: its role as a tertiary water treatment system and carbon sink. The marshlands sequester carbon as peat, keeping climate-warming greenhouse gases out of the atmosphere. Their disappearance may create a tipping point and provide a window into the dynamics of our ecosystem’s future collapse.

## Big Ideas, Little Projects

Cultural and ecological sustainability, as a key part of President Barack Obama’s energy and environmental agenda and Mayor Michael Bloomberg’s PLANYC 2030 sustainable development vision, could be jump-started with a renewed Jamaica Bay as its centerpiece.



If the city were to immediately implement homeowner-based tool kits, with incentives, for example, to reduce the amount of paving on surrounding property lots, install rain barrels, plant medians, switch to low-flow toilets, and build a network of rain gardens and oyster and eelgrass restoration patches, it may be possible to eliminate sewage overflow events. This is easily achievable within three year's time. This approach, in addition to a long-term transition from centralized bureaucratic infrastructures to decentralized democratic ones, is one possible way forward. It would empower individuals to participate within a loosened regulatory framework and through civic and financial incentives.

Envisioning and implementing a community-based watershed project to embed infrastructural capacities throughout the bay's drainage system could serve as a catalyst for rethinking New York City's relationship to its waterfront and trigger broad perception and behavioral changes. By addressing Jamaica Bay, the urban governance of New York City could be remade as a more environmentally focused city, where citizens are not passive consumers of pastoral park scenery but active participants in shaping a shared quality of life. Redesigning the city's residual public spaces and privately owned grounds and surfaces, such as roofs, driveways, and watery crevices, could lead to New York's emergence as an ecologically progressive cosmopolitan city. A pilot project already in the works in Jamaica Bay is reintroducing oysters, absent since the 1930s. A single adult oyster can filter up to 50 gallons of water daily, clearing away algae and contaminants. "We know we can get them to survive," says John McLaughlin, director of ecological services at the NYC Department of Environmental Protection. "The next step is, can we get them to reproduce?"

It comes down to a new kind of civic-scale gardening effort. In this way, Jamaica Bay has the potential to move the city from outdated notions of the iconic public park to a charged landscape of multiple operators and makers.

### Cosmopolitan Nature

If Central Park is a landscape about democracy, Gateway is about cosmopolitanism. In an era when atmospheric carbon levels continue to rise, global cities are both the culprit and the answer. The globalized city has the potential to "become a vehicle for facilitating... different kinds of people—of strangers who share only the fact that they live in the same geographic area—to learn to live with, even to collaborate with, each other."<sup>32</sup> Viewing civilization and nature as one system—one that exists at local, global, and more significantly now at metropolitan scales of thinking—we have come full circle to a fully cosmopolitan ecology. Crucial within this paradigm is the understanding that all citizens share in the production of urbanity, in its making and remaking.



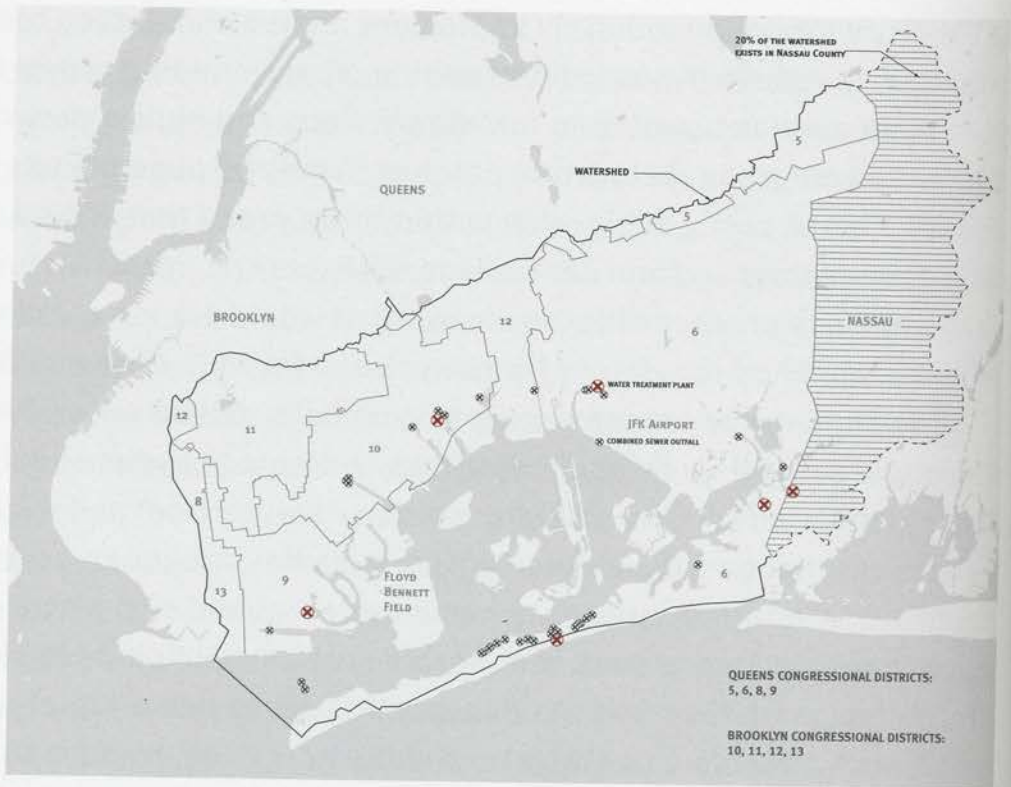


Diagram of joint watershed, sewershed, and congressional district map

## Jamaica Bay, Foul With Sewage, Closed To Oyster Beds; 300,000 Bushels Gone

Jamaica Bay, which sends 300,000 bushels of oysters to the New York City market each year, will no longer be a source of supply. The waters have become so polluted as to constitute a menace to health, and the Health Department announced yesterday an order that will put a ban on the oyster beds. The oyster growers have until March 31 to "clean up" the beds and adjust their affairs.

The action of the Department of Health has the approval, it was said, of the State Department of Health, the United States Health Service and the Bureau of Chemistry of the Department of Agriculture. As the city has jurisdiction only within its limits, this co-operation was necessary to prevent Jamaica Bay oysters being shipped into this and other States.

Years ago Jamaica Bay was an ideal place for the culture of oysters. Now it has become the emptying place for forty trunk sewers, and the growing

population along its shores has become an added source of pollution. The bay has narrow outlets and inlets through which the tides cannot circulate freely enough to freshen the waters.

Dr. Copeland said that an additional menace to the waters of the bay was the fact that there are several known typhoid carriers near the confines of the bay. As illustrating this danger he pointed to the case of "Typhoid" Mary, who is said to have been responsible for sixty cases of the disease and twenty deaths.

"Jamaica Bay produces between one-fourth and one-third of the entire supply of shell fish brought into the New York City market," said Dr. Copeland. "The stoppage of this supply may not only affect the price, but it may mean that a supply must be imported either from Canada or France to make up the deficiency. I have communicated with the health authorities of France for a report concerning the cultivation of oysters in France."

Volunteers planting seed oysters at locations throughout coastal New York and New Jersey



"Jamaica Bay, Foul With Sewage, Closed to Oyster Beds; 300,000 Bushels Gone," *New York Times*, January 30, 1921



Central Park engendered democratic debate and became part of a broader educative process that strengthened America's democratic culture. Today, just as Central Park's construction sharpened our concept of "the public realm" for an industrializing New York City, re-envisioning Jamaica Bay as a thriving cosmopolitan ecology would further evolve the concept of public space based on stewardship and cultivated wilderness for postindustrial contexts. It would reframe our understanding of infrastructure and the critical role of landscapes within cities, as well as highlight the city's responsibility toward global climate impacts for the next century. Emerging from this cooperative effort of scientific-, design-, community-, and water-based approaches is a potentially transformative set of ideas that will allow us to live together—alongside endangered species, mollusks, and migrating birds. In Jamaica Bay, the muck, now cultivated, becomes an amphibious garden: an array of spartina biofilters, racks of farmed oysters, a colony of female flounder.

#### ENDNOTES

- 1 First epigraph Henry David Thoreau, "Walking," *Atlantic Monthly* 9 no. 56 (June 1862): 657–74.
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- 3 Ian Sample, "Earth Facing Catastrophic Loss of Species," *The Guardian*, July 20, 2006.
- 4 National Park Service Organic Act, 64th cong., 1st sess., (August 25, 1916), 535, codified at U.S. Code 16 (1916), §1.
- 5 U.S. Department of the Interior and the Jamaica Bay Watershed Protection Plan Advisory Committee, "An Update on the Disappearing Salt Marshes of Jamaica Bay, New York," (Aug 2, 2007). The report states that the rate of salt marsh loss, which was approximately 33 acres per year from 1989 to 2003, accelerated during the period from 2003 to 2005. "If the 2003–2005 observed loss for the five representative marshes is extrapolated to the entire bay, the bay's marsh islands would be projected to all disappear by 2012, just five years from now. Because this projection is based on a short time period and marsh loss rates vary between individual marsh islands, some islands may persist for longer and some for shorter." (p.1)
- 6 NYC Department of Environmental Protection, "Jamaica Bay Watershed Interim Report," (Sept 1, 2006), 8.
- 7 Henry David Thoreau, quoted in Daniel B. Botkin, *No Man's Garden* (Washington, DC: Island Press, 2000), 251.
- 8 Jasper Danckaerts and Peter Sluyter, *Journal of a Voyage to New York and a Tour in Several American Colonies in 1679–80*, ed. Henry C. Murphy (Ann Arbor, MI: University Microfilms, 1966), 129–131. "There is towards the sea, a large piece of low flat land which is overflowed at every tide, like the schoor (marsh) with us, miry and muddy at the bottom, and which produces a species of hard salt grass or reed grass. Such a place they call valet and mow it for hay, which cattle would rather eat than fresh hay or grass."
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- 10 In 1849 and 1850 Downing wrote a series of letters from London urging "the necessity of a great Park" for New York City. See Roy Rosenzweig and Elizabeth Blackmar, *The Park and the People: A History of Central Park* (Ithaca, NY: Cornell University Press, 1992), 15.
- 11 John S. Berman, *Portraits of America: Central Park* (New York: Barnes and Noble, 2003), 23.
- 12 Roy Rosenzweig and Elizabeth Blackmar, *The Park and the People: A History of Central Park* (Ithaca, NY: Cornell University Press, 1998), 150.
- 13 Frederick R. Black, "Jamaica Bay: A History, Gateway National Recreation Area, New York, New Jersey, Cultural Resource Management Study No. 3," 15.
- 14 Kirk Johnson, "All the Dead Horses, Next Door: Bittersweet Memories of the City's Island of Garbage," *New York Times*, November 7, 2000.
- 15 Ford Report, Report of the Jamaica Bay Improvement Commission, document No. 1506, 60th Cong., 2nd sess. (Washington, DC: Government Printing Office, 1909).
- 16 F. H. La Guardia, letter to the editor, *New York Times*, May 25, 1921. La Guardia requested that Congress authorize the dredging of Jamaica Bay to the depth of 30 feet, and requested a Congressional delegation be sent to review progress and to release appropriations to complete the dredging so that Jamaica Bay could accept large vessels and steam ships.
- 17 "Brooklyn Jubilant Over Jamaica Bay—Many Join to Celebrate the City's Plan to Create a Great Harbor There—Government Is Criticized—Fear Tardiness May Wrest From New York Her Supremacy as Chief Atlantic Port," *New York Times*, March 1, 1910.
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- 19 Typhoid Mary was New York City's most infamous typhoid carrier, a healthy person reportedly linked to sixty cases of the disease. She was eventually quarantined on North Brother Island.
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- 26 Peter G. Rowe, *Making A Middle Landscape* (Cambridge, MA: MIT Press, 1991), 1.
- 27 Robert A. Caro, *The Power Broker* (New York: Knopf, 1975), 341.
- 28 *Ibid.*, 343.
- 29 "Belt Road to Open to Traffic Today," *New York Times*, June 29, 1940.
- 30 Caro, *The Power Broker*, 643. The lone voice of opposition to the financing—\$12 million from the New Deal, Public Works Administration, in addition to \$17.9 million in city funds—was City Comptroller Joseph McGoldrick. Although no one dared to openly question the consolidation of Moses's power within the city, McGoldrick opposed the cost of the Circumferential, stating that due to the expenditure "not a single school, not a single new hospital, not a new police station or firehouse, not even a baby health station would be provided [in the budget of 1939 or 1940]... these are essentials, and in my considered judgment, we cannot embark upon new ideas until we have met these basic needs."
- 31 Marshall Sprague, "Jamaica Bay Area Urged as Playground; 'Waste' Waterfront Region May Fit into New York's Vast Recreational Scheme Rounding Out the Pattern Fishing and Crabbing Rezoning Proposed," *New York Times*, July 24, 1938.
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