Fresh Kills Park Project
Introduction

Updates:

- **Fresh Kills Tours!**
  To sign up for a tour of Fresh Kills go to the Department of Parks & Recreation's Fresh Kills website.

Introduction

From 2001 to 2006, the City of New York, led by the Department of City Planning, conducted a master planning process to turn the now-closed Fresh Kills Landfill on Staten Island into a world class park. The resulting Draft Master Plan will guide the site's evolution over the next thirty years. The job of implementing this plan was turned over to the Department of Parks & Recreation upon the selection of a Fresh Kills Park Administrator in 2006. This website describes the planning process, concepts and content of the Draft Master Plan.

Please go to the Department of Parks & Recreation's Fresh Kills webpage for current information on the Fresh Kills Park Project.

At 2,200 acres - almost three times the size of Central Park - New York's Fresh Kills Park will be one of the most ambitious public works projects in the world, combining state of the art ecological restoration techniques with extraordinary settings for recreation, public art, and facilities for many sports and programs that are unusual in the city. While nearly forty-five percent of the site was once used for landfilling operations, the remainder of the site is currently composed of wetlands, open waterways, and unfilled lowland areas.

Renderings of future parkland and recreation at Fresh Kills

The Fresh Kills Draft Master Plan has created a blueprint for reclaiming the largest landfill in the country for public use. Fresh Kills Park will not be static but rather, will be an evolving landscape. It will grow and change just as the people who will use it. The Fresh Kills Draft Master Plan conveys through drawings, presentations and reports:

The opportunities presented by the site over time, an outline of potential future uses, and the phased implementation and scope of those uses.

- The physical and regulatory site constraints (which, because of the nature of landfills, are considerable and will change gradually over the next 30 years).
- Visual images showing the site's appearance as new uses develop.
- A process for continuing public involvement as the plan is implemented and the park grows in response to nature and evolving community needs.

Fresh Kills Park Project
Introduction

Building a World Class Park

Fresh Kills has the potential to become an international model of creative land reclamation that will transform how we experience vast, past industrial urban landscapes. New York City will build upon its history of creating large, ambitious parks.

For example, prior to the planting of trees at Central Park, the earth under the site had to be reshaped to accomodate infrastructure for the growing city - a reservoir, east-west roads, and a weather station. New earthwork also supported distinct activity areas within the park and created a variety of interesting topographic conditions intended to simulate the hilly terrain of the Hudson Valley. The soil at the Central Park site was inadequate to sustain the trees and shrubs that Richard Law Olmsted and Calvert Vaux planned, so 500,000 cubic feet of topsoil was carted in from New Jersey to plant more than 4 million trees, shrubs, and plants, representing over 1,400 species that lay the foundation for what is today's Central Park.

Over time the planted trees grew taller and more lush. Some elements of the park design - bridal paths for horsedrawn carriages, for example - have changed with the times and have been converted for new uses, like rollerblading, that were never imagined when the designers laid out the park. This is the nature of landscape, of parkland.

Like Central Park, Fresh Kills will be the result of a long-term, transformative process.

photo courtesy New York City Department of Sanitation, Bureau of Waste Disposal

Fresh Kills: Yesterday, Today and Tomorrow

Fresh Kills Park Project
Introduction

Landfills Transformed

Although there are limitations that come with the changed use of a landfill, cities all over the world have successfully converted landfills to parks featuring a range of activities, including nature reserves, sports fields, golf courses, ski slopes, sculpture gardens and more. The nature of the landfill waste and applicable closure regulations on sites included here as examples are not all identical to those at Fresh Kills, but these projects provide relevant comparisons and visions for the future.

NORMAN J. LEVY PARK
MERRICK, NY
45 ACRES

1950-1984 LANDFILL OPERATION
1995 PARK AND PRESERVE PROJECT
2000 PARK OPENED
- 3 MILES OF HIKING TRAILS
- 2 ACRES OF RESTORED TIDAL WETLAND
- 2 RAINWATER PONDS AERATED BY A WINDMILL
- NATIVE PLANTING RESTORATION
- 500 FOOT FISHING PIER
- KAYAK LAUNCHING RAMP
- 18 EXERCISE STATIONS
- EDUCATIONAL AMPHITHEATER
- COMPOSTING TOILET FACILITIES

NANJI ISLAND PARK
SEOUL, KOREA
854 ACRES

1978-1993 LANDFILL OPERATION
1993 LANDFILL RECOVERY BEGINS
2002 PARK OPENS WITH SEOUL WORLD CUP GAMES
- WORLD CUP PARK EXHIBITION CENTER
GRASS FIELD TO ABSORB POLLUTANTS
- WINDMILLS TO GENERATE ELECTRICITY
- 9-HOLE GOLF COURSE
- OPEN-AIR PERFORMANCE AREA
- 258 SQUARE FOOT LAKE AND SMALL STREAMS
- EXERCISE FACILITIES
- PLAYGROUNDS
- MULTI-PURPOSE ATHLETIC FIELDS
- BALLPARK FOR THE HANDICAPPED

DANEHY PARK
CAMBRIDGE, MASSACHUSETTS
50 ACRES

1952-1971 LANDFILL OPERATION
LATE 1970S LANDFILL CLOSED
1990 PARK OPENED
ON-GOING PUBLIC ART INSTALLATIONS (MIERLE LADERMAN UKELES)
- 3 SOFTBALL FIELDS
- 3 SOCCER FIELDS
- 400 METER TRACK
- MULTI-PURPOSE PLAYING FIELD
- PUBLIC ART: MILE "GLASSPHALT" PATH TO
OUTDOOR RUBBER "URBAN DANCE FLOOR"
- BOCCE AND HORSESHOE COURTS
- 2-ACRE WETLAND FOR STORMWATER RUNOFF
- 20 ACRES OF GRASS AND WILDFLOWER MEADOWS

Download the "Transformation of Fresh Kills" factsheet.

Fresh Kills Park Project
Project History

International Design Competition

To take advantage of the potential for the adaptive end use of this unique site, in 2001 the City of New York conducted a two-stage International Design Competition to foster the development of a master plan for Fresh Kills. The goal was to attract the best talent, worldwide, to generate ideas and innovative designs that would meet the needs of the City's communities, and respond to the natural and constructed history of the site.

- Learn more about the Competition
- View the entries of the six finalists
- Read the background information used by Competition finalists
- View an interactive map of the Fresh Kills Competition Planning Study Area*

*** Please note**: This link opens in a new window. If you have a pop-up blocker installed, it may prevent this link from working. Try holding down the Ctrl key or the Shift key on your keyboard as you click the link to override the pop-up blocker.

A multi-disciplinary expert consultant team let by landscape architecture firm Field Operations was chosen through the design competition to produce the Draft Master Plan.

View "What is a Master Plan?" factsheet.

Field Operations' winning proposal, *lifescape,* envisioned Fresh Kills Park as a new form of public ecological landscape; a new paradigm of creativity and adaptive reuse. *lifescape* was to be informed by the voice of an engaged public and shaped by time and process. The Field Operations team imagined an ecologically robust landscape, not as a pastoral refuge from the city, but as an active agent within it. Fresh Kills would provide richly diverse settings for wildlife, birds and plants, and serve as a vibrant locus for social life - for all kinds of active recreation, for physical and cultural experience. Because the site is vast and complex, the idea of a landscape developed in stages, unfolding over time - as all life does - was central to the competition proposal and remains at the core of the Draft Master Plan.

Fresh Kills Park Project
Project History

Entries of the Finalists

Winning Entry - Field Operations

- Narrative Summary

- **Drawings:**
  1. Context
  2. Planning Elements
  3. Conceptual Site Plan
  4. Conceptual Site Elements
  5. Conceptual Site Plan
  6. Conceptual Site Plan - Phase 1
  7. Phase 1 views
  8. Conceptual Site Plan Phase 1 enlargement
  9. Views
  10. Views
  11. Views
  12. Views
  13. Views
  14. Conceptual phasing

- **Models:**
  1. Model 1
  2. Model 2
  3. Model 3

Other Entries

Hargreaves Associates
Narrative Summary: 1 2
Drawings: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
Model: 1

Mathur/da Cunha + Tom Leader Studio
Narrative Summary: 1
Drawings: 1 2 3 4 5 6 7
Model: 1 2 3 4 5 6 7

JMP Landscape and John McAslan + Partners
Narrative Summary: 1
Drawings: 1 2 3 4 5 6 7 8 9 10 11 12 13 14
Model: 1

RIOS Associates Inc.
Narrative Summary: 1
Drawings: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 (6 mb)
Model: 1

Sasaki Associates, Inc.
Narrative Summary: 1
Drawings: 1 2 3 4 5 6 7
Model: 1

Fresh Kills Park Project
Project History

Draft Master Plan Project Team

In addition to the **Department of City Planning,** a committee of City and State agencies, elected officials and civic organizations worked closely with the Field Operations team in guiding the winning competition submission into the development of the Draft Master Plan:

- **New York City Department of Parks and Recreation**
- **New York City Department of Sanitation**
- **New York City Department of Cultural Affairs**
- **New York City Department of Transportation**
- **Office of the Staten Island Borough President**
- **New York State Department of State**
- **New York State Department of Environmental Conservation**
- **New York State Department of Transportation**
- **Municipal Art Society**

Field Operations' multi-disciplinary planning team included firms at the highest level of innovation, experience and professionalism in their respective fields.

- **Hamilton, Rabinovitz & Alschuler**
  Outreach and financial planning
- **Allee, King, Rosen & Fleming**
  Environmental planning
- **Arup**
  Transportation engineering
- **Applied Ecological Services, Inc.**
  Ecological restoration
- **GeoSyntec**
  Landfill engineering
- **Skidmore, Owings & Merrill**
  Urban design and planning
- **Stan Allen**
  Architecture
- **L'Observatoire International**
  Lighting design
- **Tomato**
  Media arts and communications
- **Richard Lynch**
  Plant and wetland ecology
- **Curry & Kerlinger**

Avian ecology

- **Mierle Laderman Ukeles**
  Percent for Art artist

Fresh Kills Park Project
Project History

Milestones	
1948:	Fresh Kills Landfill established by Robert Moses and the City of New York.
May 1999:	In anticipation of the closing of Fresh Kills Landfill, the Department of City Planning, in association with the Municipal Arts Society, New York State Department of State, New York City Department of Sanitation, New York City Department of Parks & Recreation, and New York City Department of Cultural Affairs, formed an International Design Competition Organizing Committee to sponsor the development of a master plan for Fresh Kills Park.
March 22, 2001:	Fresh Kills Landfill received its last barge of household solid waste.
September 5, 2001:	The City of New York announced the start of the International Design Competition for Fresh Kills Park.
December 2001:	Three finalist teams were chosen by a jury of professionals to compete for selection as planning consultant: • Field Operations - Philadelphia, PA and New York, NY: ***First Place*** • JMP Landscape and John McAslan + Partners - London, England, UK: ***Second Place*** • RIOS Associates, Inc. - Los Angeles, CA: ***Third Place***
June 2003:	Landscape architecture firm, Field Operations, was selected as the planning and design consultant.
September 2003:	Mayor Bloomberg announced the kickoff of the master planning process. Read the Mayor's announcement.
June 23, 2005:	Approximately 100 people attended the 6th public meeting at PS 58 in Staten Island to view the Preliminary Draft Master Plan for the future of Fresh Kills. View the Full Presentation (8.9 mb). View the presentation by section also in pdf format: 1. Context & Background (2.4 mb) 2. Program (Proposal) (1 mb) 3. North Park (1 mb) 4. Creek Landing & The Point (1.5 mb) 5. South Park (900 k) 6. West Park (800 k) 7. East Park (870 k) 8. Phasing, Stewardship + Finance/Project Schedule (900 k)
August 22, 2005:	Mayor Bloomberg Announced the Creation of Owl Hollow Fields, the First Park Project of Fresh Kills Park
April 6, 2006:	Mayor Michael R. Bloomberg and City Planning Director Amanda M. Burden announced the release of the Draft Master Plan for Fresh Kills Park.

May 24, 2006:	The Department of Parks & Recreation held a public scoping meeting on the Scope of Work for a Generic Environmental Impact Statement (GEIS) to be prepared for the proposed Fresh Kills Park. The Final Scope of Work to Prepare a Generic Environmental Impact Statement is now available as a downloadable PDF file on the Department of Parks & Recreation website.
September 2006:	The Fresh Kills Park Administrator was chosen by the Department of Parks & Recreation and began work overseeing park development.

The project is now moving forward into environmental and land use review through the prescribed CEQR and ULURP procedures. This will allow for ongoing public involvement in the park planning process. Please go to the Department of Parks & Recreation's Fresh Kills webpage for updates.

During the regulatory review period, specific projects will be selected for phased implementation, using the Draft Master Plan as a guide. Environmental and land use reviews should be complete by mid-2008 and park construction will begin thereafter.

Fresh Kills Park Project
About the Site

Context

Fresh Kills is centrally located on Staten Island and within the New York City metropolitan region. It is bounded on the west by the Arthur Kill, separating New York and New Jersey, and on the east by Richmond Avenue. The Staten Island Mall and the Staten Island Greenbelt lie just beyond the site, as do many neighborhoods, including Travis and Arden Heights. The West Shore Expressway bisects the site.

45% of the 2,200-acre site is composed of four landfill mounds, which range in height from 90 feet to 225 feet.

View 360 degree panoramas of the Fresh Kills landfill sections in Quicktime Virtual Reality: (Click here to download the free Quicktime Plug-In)

- View section 1/9 (West Mound) (2.5 MB will open in a new window)
- View section 2/8 (South Mound) (1.3 MB will open in a new window)
- View section 6/7 (East Mound) (1.1 MB will open in a new window)
- View section 3/4 (North Mound) (1.2 MB will open in a new window)

Hints for viewing the panoramas

The panorama will open in a new window. If you have a pop-up blocker installed, it may prevent this link from working. Try holding down the Ctrl key or the Shift key on your keyboard as you click the link to override the pop-up blocker.

Click in the middle of the photo and drag in any direction. This will provide a 360 degree view of the area. Below the photo, an enlarged map provides two pieces of information: an arrow showing the direction the camera is currently facing in the photo, and red dots showing additional places that are available for exploration within that area. Click on the red dots to visit these areas or roll your mouse over the photo until the pointer becomes a white arrow; then click to "walk" in that direction. To zoom the panorama view in and out, use the buttons below the map marked (+) and (-

).

The remaining 55% of the site is made up of creeks, wetlands and dry lowland. These flatter areas and open waterways host many things from precisely engineered landfill monitoring infrastructure to intact wetland and wildlife habitats. The land types will affect the programming of the park.

Site Composition of Fresh Kills

Before it became a landfill in 1948, Fresh Kills was much like the rest of northwest Staten Island; that is, most of the land was low lying with creeks and marsh. Fresh Kills has since developed its own unique ecology. Today, freshwater and tidal wetlands, fields, birch thickets and a coastal oak maritime forest, as well as areas dominated by non-native plant species, are all within the boundaries of Fresh Kills. Already, many of the landscapes of Fresh Kills possess a stark beauty, with 360 degree, wide horizon views from the hills, over 300 acres of salt marsh and a winding network of creeks. Its creeks and wetlands have been designated a Significant Coastal Fish and Wildlife Habitat by the New York State Dept of Environmental Conservation (DEC). Fresh Kills and its tributaries are part of the largest tidal wetland ecosystem in the region.

The Fresh Kills site and its surroundings include four major habitat groupings: breeding sites, foraging areas, freshwater marshes and wooded swamps and upland forests. In addition to acting as a stop on the Atlantic flyway, birds, as well as

other wildlife, utilize Fresh Kills as habitat.

Please note: The following media links will open in a new window. If you have a pop-up blocker installed, it may prevent this link from working. Try holding down the Ctrl key or the Shift key on your keyboard as you click the link to override the pop-up blocker.

See and hear the site as it is now (part of "PENETRATION AND TRANSPARENCY: MORPHED" © 2001-2002, by Mierle Laderman Ukeles, commissioned by the Percent for Art Program, NYC Department of Cultural Affairs and the NYC Department of Sanitation.)

See and hear landfill systems at work (part of "PENETRATION AND TRANSPARENCY: MORPHED" © 2001-2002, by Mierle Laderman Ukeles, commissioned by the Percent for Art Program, NYC Department of Cultural Affairs and the NYC Department of Sanitation.)

Follow the creek system on the blue tour

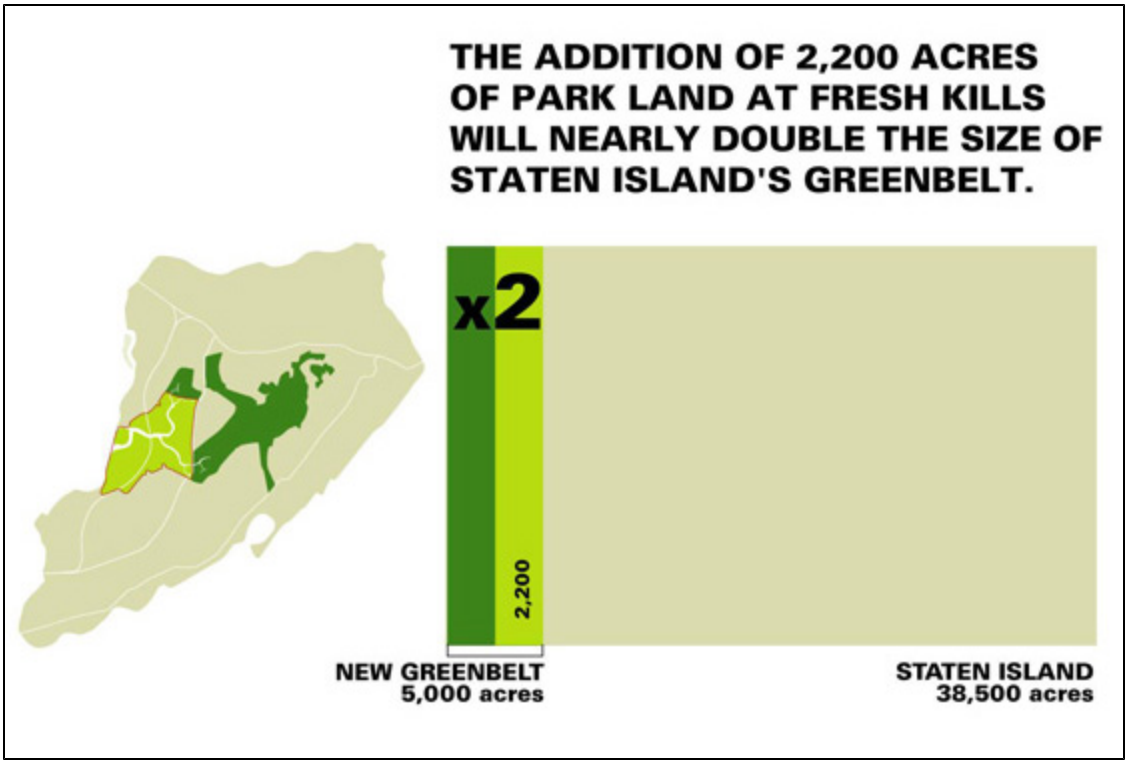
Listen to the birdsong ("IMAGING THE LANDFILL / SCALING THE CITY: '45 Species of birds found at the Fresh Kills Landfill'" © 1995, by Mierle Laderman Ukeles, commissioned by the Percent for Art Program, NYC Dept of Cultural Affairs, and the NYC Dept of Sanitation.)

Items accompanied by this symbol require the free QuickTime plugin.

Fresh Kills Park Project
About the Site

Open Space

The completion of Fresh Kills Park will increase total open space on Staten Island to 30 percent.



Fresh Kills Park Project
About the Site

Landfill Systems and Infrastructure

The mounds at Fresh Kills are the result of 50 years (1948 - 2001) of land-filling household waste. By 1997, two of the four mounds were closed and covered with a thick, impermeable cap. The remaining mounds stopped accepting waste in 2001 and are expected to be fully capped between 2008 and 2011.

The final cover placed over the solid waste is constructed in phases. The essential design goals are to provide for hydraulic performance, slope stability and long-term integrity or durability of the landfill and its systems. This is achieved by minimizing surface water infiltration, preventing erosion, promoting proper surface water drainage, and separating the waste layer from the environment to protect public health. It also captures and prevents the emission of air polluting gases.

The final cover is made of a series of layers, each with distinct functions, which are described below.

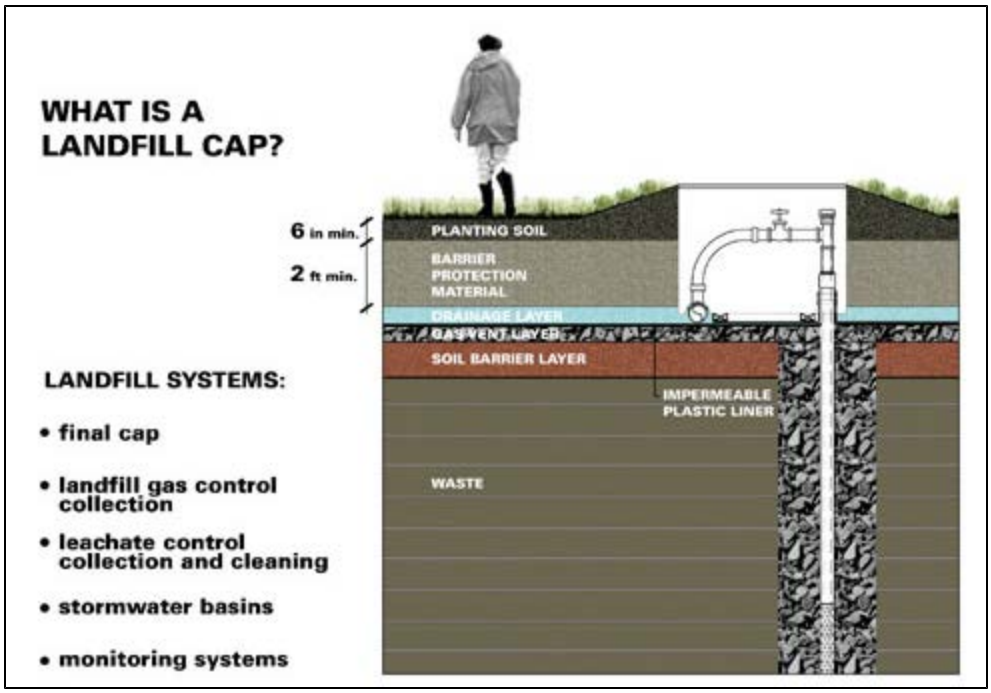
Final Grading / Soil Barrier Layer - Before the final cover can be placed, final grading must be completed. An intermediate cover material, sometimes called the cover foundation level or sub-base, is graded and compacted to the appropriate angles. Before the final cover is placed on the landfill, slopes may need to be adjusted to meet the minimum and maximum required grades (4% to 33%) set by the New York State Department of Environmental Conservation (DEC) to maintain slope stability and promote proper drainage.

Impermeable Plastic Liner - The impermeable plastic liner or hydraulic barrier is placed on the sub-base material. This is the most crucial component of final cover. It prevents water from entering the waste directly by stopping the flow of water and indirectly by promoting storage or drainage of water in the above layers. This layer also prevents the upward flow of gas into the atmosphere except in controlled places. It is made of low permeable and/or plastic material.

Drainage Layer - The drainage layer is needed in some portions of the final cover. This layer reduces the pressure of water on the barrier layer and increases friction, thus reducing the risk of sliding. It drains the overlying protection layer, increasing water storage capacity and reducing the risk of over-saturating the cover soils above.

Barrier Protection Layer - The barrier protection layer protects the hydraulic barrier from the extremes of weather that could cause the underlying layers to crack or heave. This layer stores excess water until it is either used by overlying plants or drained off. This layer is composed of soil and has a minimum thickness of 24 inches.

Planting Soil Layer - The planting soil layer or top soil layer must have a minimum thickness of six inches. It is specified to be fertile. The soil used is a sandy loam, selected for its potential to prevent soil erosion and to provide a good growing medium for the vegetation layer. The primary objective of the vegetation layer is to protect the integrity of the Final Cover through erosion control. A network of plant roots hold onto the soil, providing stability.



Environmental Control Systems

Solid waste breaks down over time. The main products of this decomposition are landfill gas and leachate. Fresh Kills is highly engineered, with sophisticated systems in place to collect and treat these by-products, and to protect public health and the environment.

Landfill gas is methane, carbon dioxide, water and other organic compounds. The Landfill Gas (LFG) System collects and controls gas emissions through a network of wells connected by pipes below the surface that convey the gas through a vacuum. Once collected, the gas is either flared off (burned) or processed to pipeline quality (recovery for domestic energy use) at an onsite LFG recovery plant. Gas emissions, non-methane organic compounds (NMOCs) and other hazardous pollutants are reduced by almost 100%. LFG and its odor are prevented from entering the atmosphere. In addition to this active gas collection and recovery system an additional safety system is in place to prevent the migration of gas off site.

Leachate is the liquid by-product of the breakdown of household waste. Once the final cover is placed on the landfill, the quantity of leachate produced diminishes considerably because the amount of water that comes in contact with refuse is minimized. The goal of the leachate management system is to remove pollutants by containment, collection and treatment of leachate before it reenters the environment. All treated water is cleaner than the nearby Arthur Kill, into which it is released.

Fresh Kills Park Project
About the Site

Public Health and Monitoring

A variety of federal, state and local laws and regulations govern the present and future use of the Fresh Kills Park. The overall goals of these regulations are to protect and preserve public health and the environment. To do so, it is essential that the integrity of the landfill and its systems be maintained. In addition to monitoring the landfill, there are regulations that govern the city's land uses, the quality of its air and water, and its coastal resources.

It is anticipated that it will take a minimum of thirty years before garbage decomposition is complete, associated gas production and settlement cease, and leachate fully drains from the site. As these processes occur, there will be a continuing need for regular maintenance, monitoring and evaluation of the site and systems that have been put into place - primarily the final cover, landfill gas (LFG) and leachate systems, as well as the extensive network of monitoring wells. It is essential that access to these systems be preserved for inspection, maintenance and repair during this period.

Two of the four mounds at Fresh Kills are already capped with a thick, impermeable cover that separates the waste from the environment and the public. The remaining two mounds are currently in the process of being capped. The City's Department of Sanitation (DSNY) is currently working with the New York State Department of Environmental Conservation (DEC) to ensure environmentally sound closure of the landfill sections that remain to be capped as well as to prepare for the DSNY's long-term operational responsibility for on-site environmental monitoring and control systems covering the entire landfill footprint. No area of Fresh Kills will be open for general public access until it has been tested and found safe for park use.

Landfill Regulations

The DEC's Division of Solid and Hazardous Waste Materials regulates landfill closure and post-closure operations under 6 NYCRR Part 360, Solid Waste Management Facilities (Title 6 of the Official Compilation of Codes, Rules, and Regulation of the State of New York).

The Solid Waste Management regulations address the need to identify and manage current or potential future releases of pollutants or the mitigation of contaminants from a landfill, and to control and mitigate any impacts once landfill operations have ceased. Among the requirements, all of which are met at Fresh Kills, are landfill gas control, leachate collection and treatment, and a post-closure operation and maintenance plan for a minimum 30-year period.

Air Quality Regulations

Under the 1970 Clean Air Act, the United States Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six air contaminants (criteria pollutants) for protection against adverse impacts to public health and welfare. These standards are have also been adopted by DEC and are specified in 6 NYCRR Part 275.

EPA and DEC regulations include emissions guidelines for municipal solid waste landfills, such as Fresh Kills. The emissions of concern from landfills are non-methane organic compounds (NMOC) and methane. The Fresh Kills gas containment and collections system involves capping the landfill, installing a gas collection system of trenches, and headers to convey the gas to one or more collection points for beneficial use (power generation) or for flaring (under controlled conditions). During the time that the gas is being recovered for reuse by Keyspan Energy, the flares are used as a safety back-up measure in the event the recovery system is down. In the future, when little or no gas is generated by the site and the active extraction system is no longer cost-effective, the remaining methane will be flared off.

Soil Standards

Unlike air and water, the framework for regulation of soil quality is not established by a single law or program. Rather, there is a collection of regulations and guidelines at the federal and state levels that are intended to apply to soil in certain situations.

Both the federal and state hazardous materials management programs provide procedures for evaluating whether soils have the potential to cause adverse impacts to human health or the environment. This is generally performed on a case-by-case basis, since the potential for adverse impacts depends on the likely pathways and extent of exposure. Both EPA and DEC have developed “screening levels,” i.e., levels below which there is unlikely to be a concern given assumptions about the potential for exposure.

Water Quality Regulations

The Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), requires the EPA to

establish and periodically update national water quality standards that are based on quantifiable pollutant concentrations and that aim to protect the environment and human health. Individual states then use these published standards to set allowable concentrations of pollutants in groundwater and surface water. In New York State, surface water and groundwater quality standards and groundwater effluent limitations are promulgated by DEC through 6 NYCRR.

At Fresh Kills, groundwater monitoring wells are installed at intervals of about 500 feet in the shallow groundwater around each landfill mound, at 750 feet in the groundwater zones downgradient of the mounds, and at 1,500 feet in the groundwater zones upgradient of the mounds. In total there are 238 groundwater monitoring wells at Fresh Kills, 116 of which are shallow well, 61 are intermediate depth wells, and 61 are deep bedrock wells. Groundwater monitoring is performed quarterly at each well.

In addition to the groundwater monitoring plan, there is also a surface water monitoring plan. This monitoring program includes an annual surface water monitoring plan for Fresh Kills, Main and Richmond Creeks within the landfill boundaries and a biennial monitoring program for their sediment quality. Monitoring is performed. Surface water and sediment sampling is performed at a total of 14 sampling stations. Four of these stations are also monitored for benthic ecology (the study of organisms living in and on the sea floor) at both the intertidal and subtidal zones.

Fresh Kills Park Project
Draft Master Plan

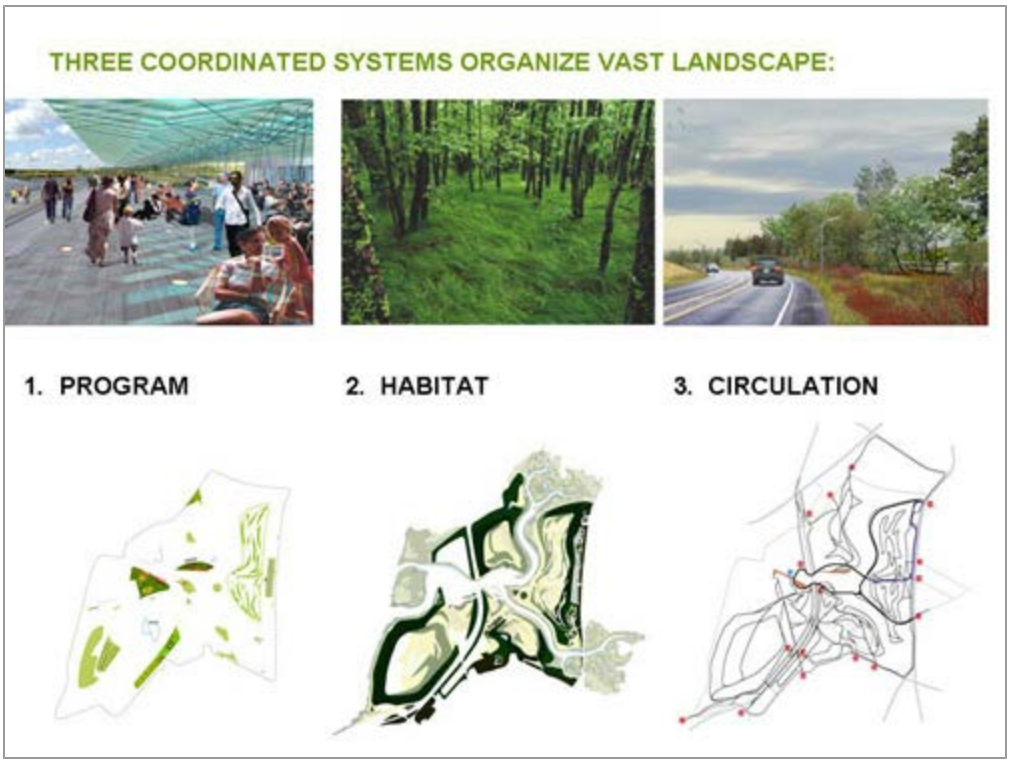
Concept

2,200 acres of natural habitats, activities and circulation routes will comprise the new Fresh Kills Park, a model of public engagement and adaptive reuse that transforms how we experience vast, reclaimed landscapes in the city. The design goal of the Draft Master Plan is to create a framework for development at Fresh Kills over the next thirty years. This will:

- Create a world-class, large scale park
- Restore ecological systems and cultivate a sustainable landscape
- Create extraordinary settings for a range of activities and programs that are unique to the city
- Honor the events of September 11, and the recovery effort that took place at Fresh Kills, in a dignified and unique way
- Build a limited system of ecologically sensitive park roadways to optimize local and regional access to the park and reduce local traffic congestion

Site Plan

The Draft Master Plan is based on the theme of "lifescape, a new parkland for New York City." The Plan is composed of three layers: program, habitat and circulation. A diversity of cultural, athletic and educational programming has been suggested for the site; an ecological restoration of the site composed of reclaimed and newly created wetlands, grasslands and woodlands will offer wildlife habitat as well as natural open spaces for park visitors; and finally, a park roadway, as well as a series of foot, bicycle and equestrian paths will circulate throughout the site.



View a Larger Image

Program

Fresh Kills Parkland will be a world-class park with an incredible variety of public spaces and facilities for social, cultural and physical activity, for learning and play. The site is large enough to support many sports and programs that are unusual in the city.

* sports fields	* canoeing	* cycling	* nature trails
* community events	* education	* extreme sports	* public art
* mountain biking	* horse back riding	* birding	*outdoor dining

Programming Under Consideration

Habitat

Fresh Kills Parkland will support richly diverse habitats for wildlife, birds and plant communities, as well as extraordinary natural settings for recreation. Through ecological innovation and creative design, new plant communities will thrive and restore the site.

* salt marsh
* native prairies
* maritime oak forest
* birch thickets
* oak/beech woodland
* swamp forest
* pine/oak barrens

Habitat Restoration

Circulation

Park drives, enhanced access to and from the West Shore Expressway and an expansive network of paths and recreational waterways will create a layered framework for an animated, interconnected parkland. People will move from place to place, and experience the site differently each time, by canoe, on horseback, on mountain bike, on foot, or by car.

* 7 miles of park drives
* bikeways
* pathways
* running trails
* horseback riding trails
* recreational boating

Park Drive

Hiking Path

Fresh Kills Park Project
Draft Master Plan

Overview

The planning team has developed a detailed vision for transformation of the 2200-acre Fresh Kills site into the City's second largest park (Pelham Bay in the Bronx is the largest at 2,765 acres). The innovative plan proposes a wide diversity of activities and visitor experiences such as field sports and cultural events; kayaking, hiking, bird-watching and bicycling; waterfront dining and picnicking; ecology education, wind and solar energy production, public art and a proposed earthwork monument to the World Trade Center Recovery Effort.

Fresh Kills Park will have five main areas: the Confluence, North Park, South Park, East Park and West Park. Each area will have a distinct character and programming approach.

Five Areas of the Park

View the Full Document (11.8 mb).

1. Introduction (1.1 mb)
2. The Fresh Kills Park Draft Master Plan (5.4 mb)
3. Five Areas of the Park (3.7 mb)
4. Implementation & Credits (2.0 mb)

The New York State Department of State, through the Division of Coastal Resources, has provided the funding for the Fresh Kills Park Draft Master Plan under Title 11 of the Environmental Protection Fund.

Fresh Kills Park Project
Draft Master Plan

The Confluence

The Confluence is located in the heart of Fresh Kills. On the north side of Fresh Kills Creek is Creek Landing, on the south side is The Point.

Creek Landing

The Creek Landing is located where Richmond Creek and Main Creek join the central Fresh Kills Creek. The vision for Creek Landing is for waterfront activities, including an esplanade, canoe and boat launch, special restaurants, a visitor center, and a huge event lawn for gatherings, picnics and sunbathing. The area would also allow for car parking and could be a central point of arrival and departure for park users.

Aerial View of Creek Landing

Rendering of Proposed Creek Landing

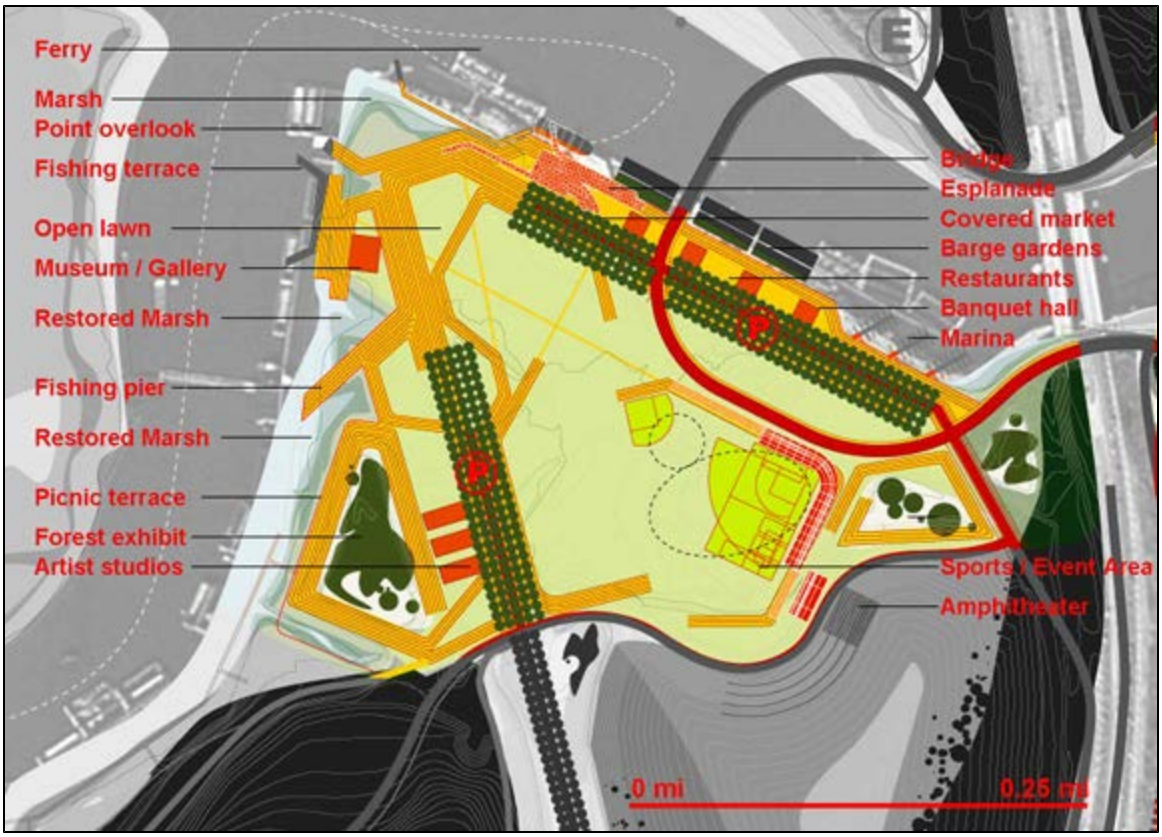
Proposed Creek Landing Open Lawn

Proposed Creek Landing Waterfront Promenade

The Point

The Point is a large, level area on the south side of Fresh Kills Creek which can provide event areas, sports fields, lawns and art-works. A long promenade along the water's edge could support restaurants with outdoor dining, a banquet facility and an open-air market roof. Old machinery and artifacts from Fresh Kills, such as old barges re-made as floating planted gardens, may form a unique feature here. The promenade would be a vibrant social space, with seating, fishing piers, and great views across the water of the Isle of Meadows nature preserve. The Point may also support a ferry service to and from Manhattan, as well as a number of specially designed, unique waterfront restaurants and cafes.

Aerial View of The Point



Activities at The Point

Proposed Promenade and Barge Gardens

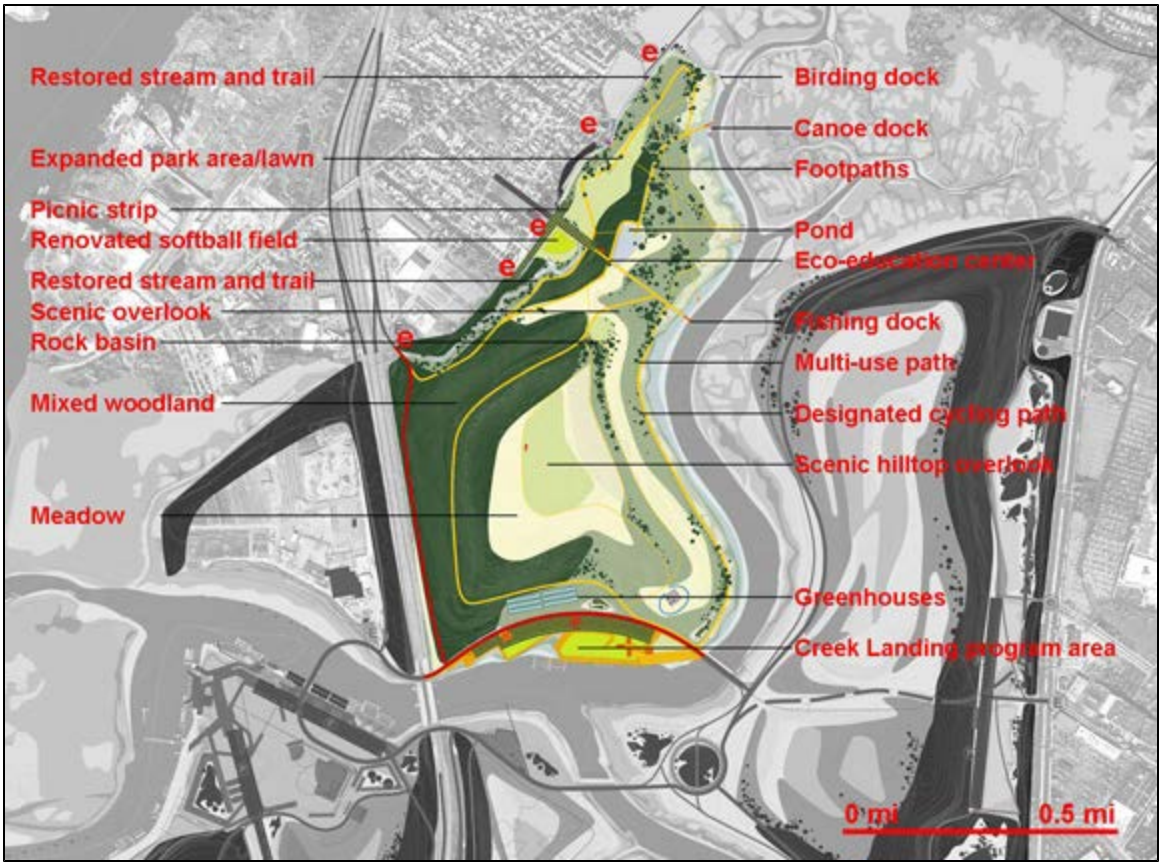
Proposed Cafe at The Point

Fresh Kills Park Project
Draft Master Plan

North Park

The vision for North Park is characterized by simple, broad natural settings, meadows, wetlands and creeks. Adjacent to the Travis neighborhood, and overlooking the William T. Davis Wildlife Refuge, this area is planned to be kept open, with paths and trails to the creek edges. Extensive pathways — specifically designated for walking, for bicycles or for multiple uses — would encircle the northern mound. Scenic overlooks and spaces for picknicking, fishing, and sitting as well as a small neighborhood park and playground are proposed.

Aerial view of North Park



Activities at North Park

Proposed North Park Pier

Proposed North Park Multi Use Path

Future North Park Natural Areas

Fresh Kills Park Project
Draft Master Plan

South Park

The vision for South Park is characterized by large natural settings and active recreational spaces, including soccer fields, mountain biking pathways and bridle trails. Adjacent to Arden Heights, South Park would also support a neighborhood park with picnic areas, sports fields and nature trails. The hilltops afford spectacular views across the site to distant horizons.

Aerial View of South Park

Activities at South Park

Proposed South Park Hill Top Overlook

Proposed South Park Stables

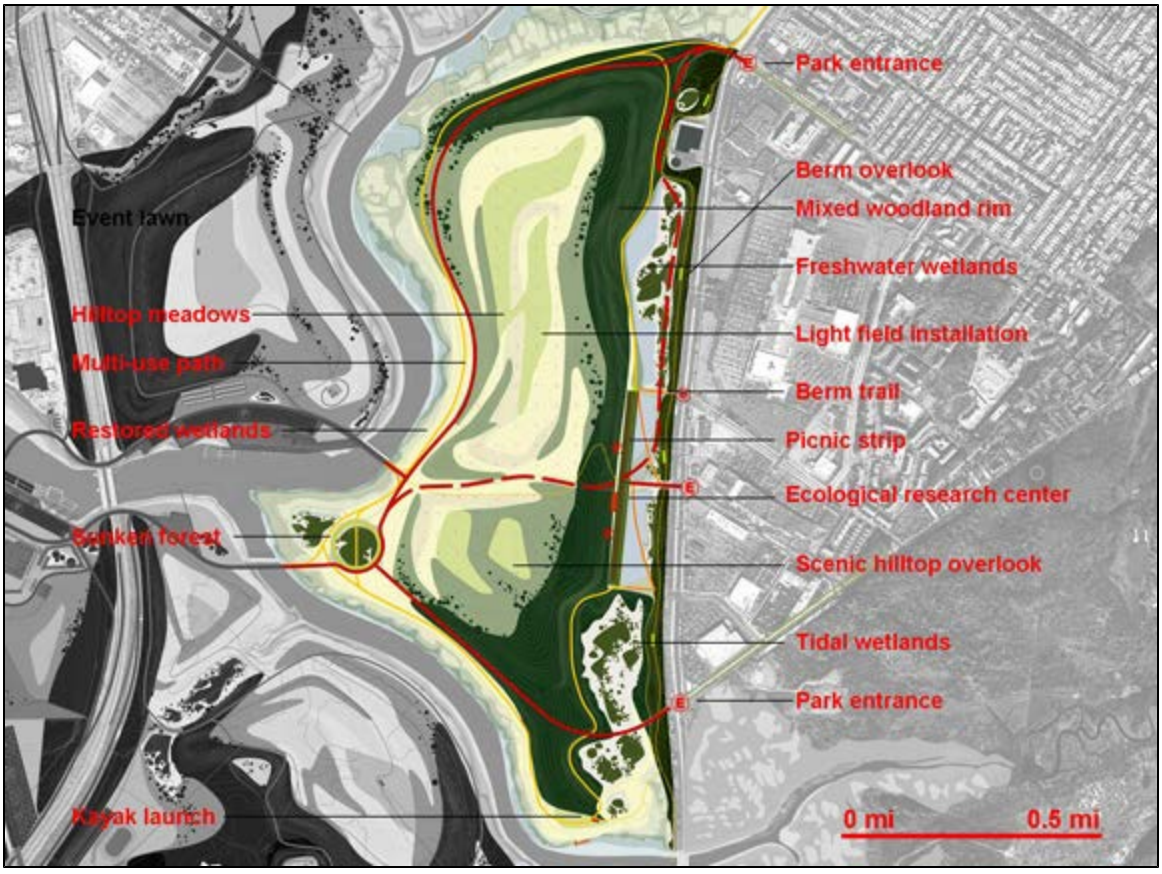
Proposed South Park Bike Trail

Fresh Kills Park Project
Draft Master Plan

East Park

East Park's unique features would provide opportunities for wetland ecology education and public art installations, such as berm overlooks accessible from Richmond Avenue. The proposal for East Park also accommodates much of the drive that will extend from Richmond Avenue into the heart of the site to connect to the West Shore Expressway. The park drive will be sensitively designed as a scenic route and be integrated into the landscape. The design team is presently studying two alternative drive alignments, both of which are equally effective in meeting traffic goals. Alignment A travels along the western side of the East Mound, Alignment B parallels Richmond Avenue on the eastern side of the East Mound.

Aerial View of East Park



Activities at East Park

Proposed East Park Wetland Boardwalk

Proposed East Park Drive

Proposed East Park Drive Alignment 'A'

Proposed East Park Drive Alignment 'B'

Fresh Kills Park Project
Draft Master Plan

West Park

West Park is characterized by the site's largest mound, and is bounded by the West Shore Expressway to the east and the Arthur Kill to the west. Set upon a vast hilltop wildflower meadow, the top of West Park will offer spectacular 360-degree views of the region, including a direct sightline to lower Manhattan. West Park will also provide paths and natural areas. An earthwork monument, in remembrance of the exhaustive and heroic recovery effort that took place in this location, is proposed for this site.

Aerial View of West Park

Activities at West Park

Proposed West Park Bird Overlook

Proposed West Park
View from Top of West Mound

Fresh Kills Park Project
Draft Master Plan

Community Input

Between fall 2004 and March 2006, a series of meetings and workshops were conducted for participants to devise their visions for the future of Fresh Kills working directly with the project team. Staten Islanders, as well as other participants, offered a wide variety of ideas for the future of Fresh Kills - new roads to ease local traffic problems and provide public access to the site; active recreational uses such as kayaking and canoeing, horseback riding, sports fields and courts, golf, and hiking; nature programs and a wildlife refuge; blossoming cherry tree groves and gardens; an observation tower to take advantage of the panoramic views. Some residents thought the site should house alternative sources of energy, like wind-driven generators, in addition to the landfill gas recovery plant that currently extracts and processes energy. Others emphasized the potential for scientific and environmental research and education; or the opportunity to make Fresh Kills' transformation an international model for excellence in land reclamation and neighborhood-based planning.

In addition to the public meetings, the planning process was guided by a Community Advisory Group, comprised of stakeholders representing local and regional recreational, environmental, cultural and youth organizations.

Community Advisory Group		
Linda Allocco Executive Director, Staten Island YMCA	**John Antoniello** Chairman, Community Board 3	**Linda Baran** President, Staten Island Chamber of Commerce
Kent Barwick President, Municipal Art Society	**Richard Buegler** Protectors of Pine Oaks Woods	**Sean Sweeney** Chairman, Community Board 1
Mark Casserta Executive Director, New York League of Conservation Voters	**Cesar Claro** President, Staten Island EDC	**Dennis Dell'Angelo** President, Prince's Bay Pleasant Plains Civic Association
Timothy Desiderio Staten Island EDC	**Christian DiPalermo** Executive Director, New Yorkers for Parks	**Nick Dmytryszyn** Staten Island Borough President's Office
Elizabeth Egbert Executive Director, Staten Island Institute of Arts and Sciences	**Denise Fastasia** Membership Manager, Girl Scouts Council of Greater New York	**John Guild** Executive Director, Staten Island Historical Society
Robert Hoerburger Director, Public School Athletic League	**Sanford Krueger** Chief Executive Officer, Staten Island Board of Realtors	**Brian Laline** Editor-in-Chief, Staten Island Advance
Andrew Lanza Councilman, City of New York	**Matthew J. Lebow** Vice President, New York Adventure Racing Association	**Vin Lenza** Staten Island EDC
Adena Long Executive Director, Greenbelt Conservancy, Inc.	**Dana Magee** Chairman, Community Board 2	**Mike Mahon** Staten Island Council Boy Scouts
Frank Marino Staten Island Recreational Congress, Inc.	**Gregory Markow** Community Board 3	**E. J. McAdams** Executive Director, New York City Audubon Society
Dennis J. McKeon Church of St. Clare: WTC Outreach Program	**Michael McMahon** Councilman, City of New York	**Kimberly Miller** Director of Planning, Municipal Art Society

James Molinaro President, Borough of Staten Island	**Anthony Navarino** Catholic Youth Organization	**James Oddo** Councilman, City of New York
Joe Panepinto Executive Director, Catholic Youth Organization	**Henry Salmon** Chairman, Staten Island Chamber of Commerce	**James Scarcella** President, Natural Resources Protective Association
Dee Vandenburg Staten Island Tax Payers Assocation	**Laura Jean Watters** Executive Director, Council on the Arts & Humanities for Staten Island	**Sally Williams** Greenbelt Conservancy, Inc.

Fresh Kills Park Project
Project Phasing

Project Phasing

The Draft Master Plan offers a framework for development to guide the site's evolution over the next thirty years. To assure that the park's long-range construction does not become a waiting period, but is a time of dynamic change with access to the extraordinary "public space in-process", phasing is choreographed in three ten-year phases.

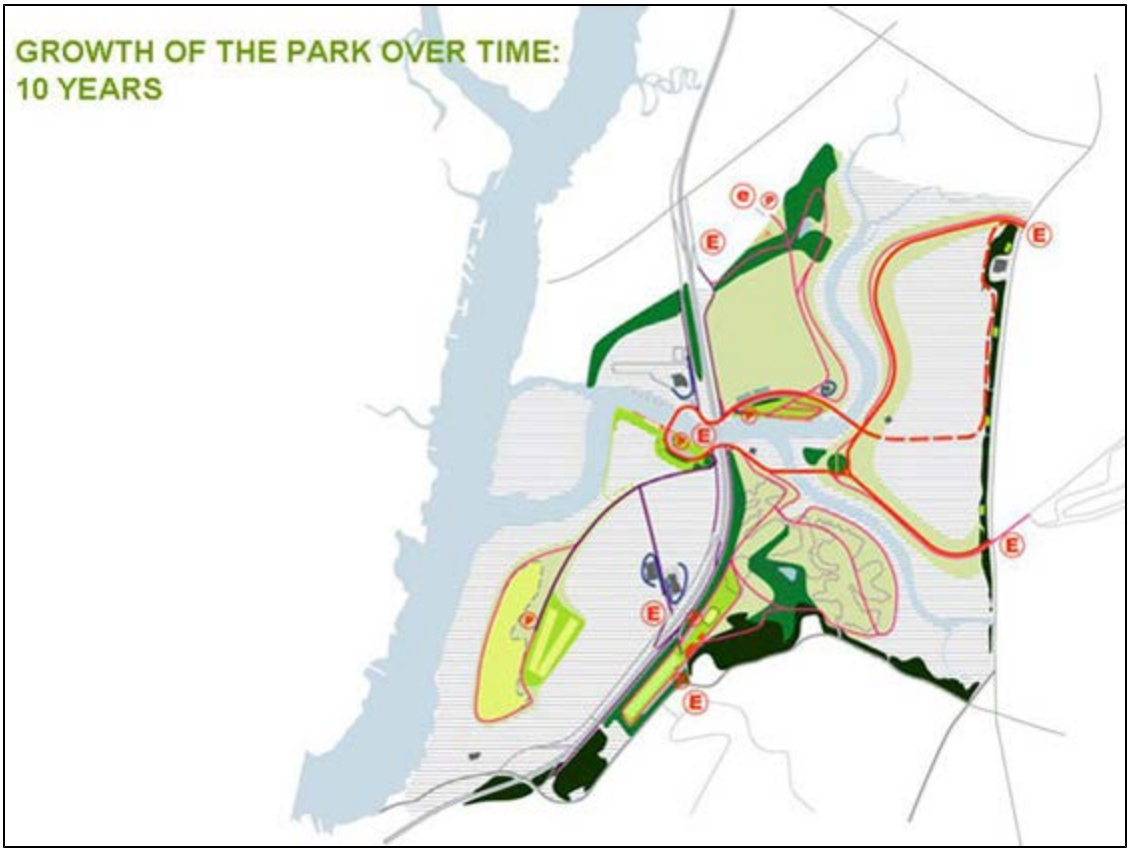
The Draft Master Plan focuses on executing a carefully-planned first phase of development that will initiate active use of the park, generate enthusiasm and commitment on the part of stakeholders, and propel later phases of development. Phase I would occur over the first ten years of the park's development, with projects and facilities opening throughout this period.

Please note that the following phasing reflects the vision outlined in the 2001 Draft Master Plan. The current schedule and details of each phase are changing based on the timelines of the environmental and land use reviews, technical analyses, and regulatory requirements.

Phase 1

Major outcomes of Phase 1 include:

- Portions of the South Park and North Park and the Confluence open to the public
- Completion of the Loop drive and links to the West Shore Expressway
- First recreational facilities complete and in operation
- Early programs and settings for non-profit and commercial initiative
- Visible progress of ecological transformation underway
- Establishment of new parkland identity
- East and West Mounds closed and capped



Phase 2

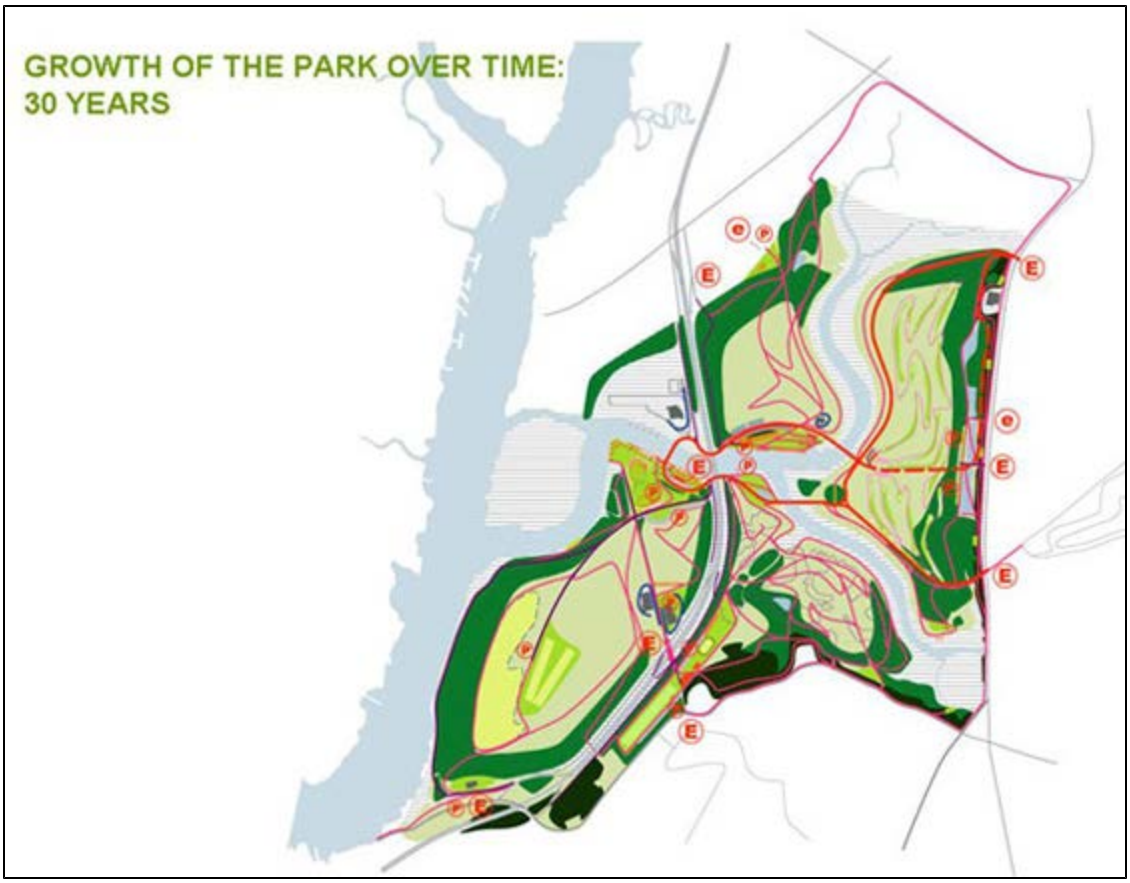
With much of the park infrastructure in place, Phase 2 concentrates on enhancing program settings and ecology. Major outcomes of Phase 2 include:

- East Park opens
- Additional recreational facilities, public space and ecology improvements in North Park, South Park and the Confluence
- Paths, trails and boatways extended
- A range of non-profit and commercial ventures built and animating the park's public spaces

Phase 3

Phase 3 expands the acreage open to the public and converts landfill infrastructure to support new uses. Major outcomes of Phase 3 include:

- West Park natural areas and public landscapes significantly expanded; development of the Arthur Kill edge of the park
- Development of the Arthur Kill edge of the park
- The Point program areas built out and highly active
- Continued emergence of new habitats


GROWTH OF THE PARK OVER TIME:
30 YEARS

Fresh Kills Park Project
FAQs

Frequently Asked Questions about Fresh Kills

Where is Fresh Kills?

Fresh Kills is located along the Arthur Kill on Staten Island's western shore. It encompasses the Fresh Kills Estuary and the Isle of Meadows. It is bounded on the north by Victory Boulevard and Travis Avenue, to the east by Richmond Avenue, and in the south by Arthur Kill Road. The West Shore Expressway (Rte. 440) bisects the entire site in a north/south direction.

Where does the name 'Fresh Kills' come from?

'Kill' is derived from old Dutch and means stream, brook or channel. The usage of the word 'kill' is seen frequently in place names throughout New York City and State where early Dutch settlement occurred. It is thought that the name Fresh Kills is derived from the historical natural features of the site which, prior to landfilling, was dominated by a vast tidal wetland fed by fresh water springs and streams. It was not uncommon to use 'fresh' when naming places with such springs. Fresh Kills, specifically, appeared as a place name by 1750.

How big is Fresh Kills and how old is it?

The Fresh Kills Landfill began receiving waste in 1948. The original site encompassed almost 3,000 acres. Over the years many of these properties have been relinquished for parks and other public uses. Since 1980 the site boundaries have constricted to encompass about 2,200 acres, with only 1,200 acres used to bury and mound garbage. At 2,200 acres, the Fresh Kills site is roughly 2.5 times the size of Central Park and takes up approximately 11 percent of Staten Island land area.

I would very much like the opportunity to do a walking tour of the site. Is that presently possible?

The Department of Parks & Recreation is providing free bus tours of the Fresh Kills site. Please visit www.nycgovparks.org for further information.

What have people suggested for the future of Fresh Kills and how will their suggestions be used?

Through phone calls and e-mails and at a series of public outreach meetings and workshops hosted by the Department of City Planning, citizens have proposed a wide variety of ideas for Fresh Kills. These include: development of new roads connecting the West Shore Expressway (Rt. 440) and Richmond Avenue to improve local circulation and provide public access to the site; active and passive recreational uses such as mountain biking, golf, ballfields, tennis courts, hiking trails and bridle paths; non-motorized, waterborne recreation such as kayaking and canoeing; and environmental programs and a wildlife refuge. Other suggestions have included an observatory, a dude ranch, a model airplane field and camping facilities.

Some residents think the site should house alternative energy facilities, like wind-driven generators, in addition to the landfill gas extraction and processing plant which currently produces energy for heating and cooking in Staten Island homes. Others have suggested community and cultural uses, such as museums, educational and research centers, theaters, an outdoor cinema, market areas and community meeting halls.

As part of the planning process the Department of City Planning and its consultants used this information and other suggestions to inform the Draft Master Plan. There are constraints to the site that make some suggestions more feasible than others, but all are being investigated by the design and planning team.

I have noticed that there are not as many odors coming from Fresh Kills. Why is that and will this continue to be the case when it is a park?

Landfill odors are caused by decaying garbage that is handled and buried at the site. As there is no new garbage arriving, odor from the landfill handling operations should stop. As for the buried waste, these odors are carried from the site by landfill gas (LFG). Since 1999 most of these gases have been controlled by a gas collection system and either burned or cleaned to make natural gas for use in Staten Island. While any gas emissions are below the regulatory requirements, some gas does escape from the system. Placement of the final cover on the North and South Mounds is complete and currently underway on the East and West Mounds. As final cover continues to be placed over the landfill, these gas

emissions will continue to diminish until, essentially, all the gas will be captured by the system.

How long will systems be monitored?

It is anticipated that it will take a minimum of thirty years before garbage decomposition is complete, associated gas production and settlement cease, and leachate fully drains from the site. As these processes occur, there will be a continuing need for regular maintenance, monitoring and evaluation of the site and systems that have been put into place, primarily the final cover, landfill gas (LFG) and leachate systems, as well as the extensive network of monitoring wells. It is essential that access to these systems be preserved during this time for inspection, maintenance and repair.

Why isn't the City moving the WTC materials as some family groups have requested?

The City evaluated numerous complex issues and varying perspectives in its consideration of the proposal to remove WTC materials from Fresh Kills. These included review of the exhaustive recovery efforts previously undertaken, the logistics of removal and capacity to identify an alternative receiving site. The City listened to and considered proposals from members of the WTC Families for Proper Burial and differing views of other families who lost loved ones on September 11, 2001. Given this information, the City has determined that it would be best not to disturb the materials from the World Trade Center remaining at Fresh Kills.

During the 10-month recovery effort rescue workers carefully screened and sifted the 1.2 million tons of material that came from the WTC site to Fresh Kills. The search effort did not end until all discernable remains and effects were removed and taken to the New York City Medical Examiners office for identification and safekeeping. Memorial Park, adjacent to the medical examiners office, is the temporary resting place of the WTC remains. The identification effort continues with more than half of the roughly 20,000 found remains matched to victims by fall 2004.

After the FBI, NYPD, and Office of Emergency Management determined the process of retrieval had been exhaustive and complete the screened and sifted WTC materials remaining at Fresh Kills were placed in a 48-acre area (the materials area) immediately adjacent to the recovery site on the West Mound (Section 1/9) at Fresh Kills. A layer of clean soil at least 1 foot deep was placed in this area prior to placement of the screened materials; afterward it was covered with additional clean soil to protect the site and control erosion. The area is clearly marked to prevent disturbance.

The screened material sifted during the course of the recovery effort included fines, materials that passed through a quarter-inch sieve. These fines amounted to approximately 360,000 480,000 tons. It is this material, estimated to be equivalent in volume to 1 acre, 200 feet high, which the City has been asked to move. Aside from the sheer quantity of materials involved, and the absence of a receiving site, the City understands that there are 9-11 families who are opposed to disturbing the 48 acre site on the West Mound.

The City, therefore, is proceeding, with input from the victims families and other interested citizens, on preliminary designs for an appropriately respectful treatment of the WTC materials area, and a monument at the adjoining recovery site. The consultant preparing the Fresh Kills Draft Master Plan has proposed a processional earthwork mirroring the forms of the Twin Towers for the top of the West Mound, and outside the WTC materials area, in an expansive wildflower meadow. The final plan for the monument will be developed as part of the larger master planning public process. The city is committed to an on-going dialogue with all interested citizens.

Fresh Kills Park Project
Get Involved!

Please go to the Department of Parks & Recreation's Fresh Kills webpage for updates.

For information on Fresh Kills tour dates, visit the Department of Parks & Recreation's Fresh Kills Park Tours page.

For information on other events and news about Fresh Kills, subscribe to the Department of Parks & Recreation's Fresh Kills Park Newsgroup.