SCALE

21st century New York's massive, green legacy

At 2,200 acres, Freshkills Park will be almost three times the size of Central Park. It is the largest park to be developed in New York City in more than 100 years (the Bronx's Pelham Bay Park, the city's biggest park at 2,764 acres, was created in 1888), and the largest that is likely to be developed in the foreseeable future; most of today's City park acquisitions are smaller lots and parcels. Barring the sort of wholesale land clearance and population displacement that led to the creation of Central Park, there are simply no new green sites of this scale left in New York.

The scale of the park is massive, and so is the scale of the opportunity to create it. The comparison with Central Park is not immaterial. In many ways, Central Park stands as a symbol of classic New York. In turn, Freshkills Park is poised to become a symbol of a new, 21st century New York. The park exemplifies the values and aspirations of contemporary New Yorkers, not just by providing a diversity of recreational opportunities uncommon in the city—mountain biking, trail running, kayaking, horseback riding—but also, because of its very nature, by emphasizing environmental sustainability and a renewed public concern for our human impact on the earth. The transformation of what was the city's biggest landfill—a reminder of wastefulness, excess and environmental neglect—into a productive, vital, beautiful cultural destination that is open to all is a powerful and hopeful symbol of renewal and an expression of how our society can help to restore the proper functioning of our landscape.

The combination of the site's vastness and its outsize aspirations make its development one of the most ambitious public works projects in the City's history, with the potential to redefine how Staten Islanders, New Yorkers at large and visitors from around the world think about the City's relationship to the natural landscape. Taking in the extensive and rich network of creeks and wetlands between the valleys of the park's hills, visitors will feel immersed in a vibrant landscape far removed from the metropolis

(CONTINUED)

(CONTINUED)

nearby. From the hilltops, views across the harbor and the Arthur Kill will assemble a clear regional perspective with a turn of the head. And in assuming its role as a proving ground for our renewed relationship with the land, the Park will serve as a living laboratory. Alternative and renewable energy sources, native plant and bulk seed nurseries and onsite botanical, biological and renewable energy-based research will complement art installations, performance venues, workshop space and cultural events as venues for engagement with and investigation of the site and its many implications.

Freshkills Park will be 21st century New York's most significant contribution to an already rich and well-loved network of parks. It will be not only an emblem of and refuge for present-day New York, but also a landmark and a physical legacy left by today's City to the City of the future.

SITE HISTORY

From marshland to landfill to park

For most of its history, Fresh Kills was comprised almost entirely of coastal marshes and twisting estuarine creeks. Sandy hummocks protruded out of tide-inundated land. The land was pristine and lush.

Staten Island had originally formed, thousands of years ago, from glacial deposits of gravel, sand and silt, and its higher moraine shed rainwater west into the lower marshes of what became Fresh Kills—a name given by 17th century Dutch settlers meaning "fresh creek" or "fresh waters." The marshland was fertile: a combination of glacial soils, drainage patterns and the formation of the Hudson River estuary created a special microclimate that encouraged rich ecosystems and plant communities to emerge.

Thanks to the fertility, diversity and marshy character of Fresh Kills, the human built footprint on the land remained minimal. From its early years, the site played host to large Native American settlements that subsisted on shellfish harvesting, wild game hunting and farming. Even after the arrival of Europeans in the 17th century, the land retained its agricultural character—it was used primarily as a salt hay marsh, but also hosted orchards and cultivated fields. It was not until the late 19th century that industrialization

Centrally located along Staten Island's west shore, Freshkills Park is directly adjacent to the William T. Davis Wildlife Refuge and is bounded on the west by the Arthur Kill, which separates 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.

complemented those uses with a series of brick factories that quarried local clay, and even then, this activity was only on a small portion of the site. Though cargo ships began to troll Fresh Kills Creek and Richmond Creek, the waterways continued to be used for fishing, hunting and swimming.

(CONTINUED)

(CONTINUED)

In fact, Fresh Kills remained largely rural into the mid-20th century, even though Staten Island and the surrounding area continued to be settled and to develop built and industrial uses. On what was once farmland to the south of Fresh Kills, Kreischerville (now Charleston) was devoted to manufacturing fire bricks, gas retorts and drainpipes; to the north, Lineoleumville (now Travis) produced linoleum as well as floor cloths, ground cork and linseed oil.

Landfilling begins

When landfill operations began at Fresh Kills In 1948, they were meant to be short-term. To address its increasing solid waste disposal needs, the City of New York opened the site as part of a network of landfills developed to serve dual purposes of municipal solid waste disposal and land reclamation. The marshland was inhospitable to construction and thought to be a breeding ground for insect-borne disease; the site was expected to be used for landfilling for three years, after which Parks Commissioner Robert Moses envisioned a large residential community surrounding an inner park belt to be developed atop the fill and an industrial zone along the Arthur Kill.

But that plan did not come to fruition. In the decades that followed, Fresh Kills became a principal landfill facility for the disposal of collected household and municipal solid waste. The site's acceptance of new garbage peaked at 29,000 tons a day between 1986 and 1987. By the mid-1990s, it was the City's only operating landfill and the largest landfill in the world.

Though it had been considered an advanced waste operations facility in the 1950s, Fresh Kills Landfill predated the existence of Federal and State regulations pertaining to the design and operation of solid waste landfills. With the promulgation of new statutes in the 1970s, federal and state regulations were established for the siting, design, operation, closure, and monitoring of solid waste facilities. Operating under a consent order with the New York State Department of Environmental Conservation (NYSDEC), the Department of Sanitation was allowed to continue operating Fresh Kills Landfill in the early 1990s while the City retrofitted it with infrastructure designed to keep the site safe and to minimize its impact on surrounding areas.

A 1996 state law required the landfill to cease accepting solid waste by December 31, 2001. By 1997, two of the four mounds were closed and covered with a thick, impermeable cap. The last barge of solid waste was, in fact, delivered on March 22, 2001. After the World Trade Center attack of September 11, 2001, the Consent Order was amended by the Governor of New York to temporarily suspend the City's obligation and to allow disposal of materials from the World Trade Center site. No other materials were brought to Fresh Kills during this temporary suspension of the closure.

Nearly 45% of the site was used for landfilling operations, but the remainder is currently composed of wetlands, hundreds of acres of salt marsh and an extensive network of tidal creeks; it remains a home to hundreds of species of plants and wildlife. The tops of the landfill mounds offer spectacular vistas of the site as well as of Coney Island, Jersey City and the Manhattan skyline. The site will never again be the pristine marshland it once was, but park development aims to cultivate its existing, unique assets in staging the next phase of its history as a public amenity.

VISION

Collaborators on an inspiring plan

From 2001 to 2006, the New York City Department of City Planning, backed by the Municipal Arts Society and the New York State Department of State, Division of Coastal Resources, conducted a master planning process for Freshkills Park. A multi-disciplinary expert consultant team led by landscape architecture firm Field Operations was chosen through an international design competition to produce the Draft Master Plan, Freshkills Park: Lifescape, which will guide the site's evolution over the next 30 years. Park development is now underway under the direction of the New York City Department of Parks & Recreation (DPR). In implementing the plan, the DPR team's goals are:

- transforming the site into a safe, beautiful and accessible park, the unique operations of which are transparent to its users;
- promoting responsible and innovative strategies for environmental sustainability through demonstration, instruction, and collaborative investigation;
- providing amenities and attractions that both distinguish the park and draw visitors at local, regional and international scales; and
- reconnecting the site to its natural history, local ecosystems and neighboring communities.

A diverse mix of uses is proposed, but the majority of the park is devoted to natural areas, including open water, salt marsh and freshwater wetlands, meadow and woodland. The plan for Freshkills Park aims to support richly diverse habitats for wildlife, birds and plant communities as well as providing extraordinary natural settings for recreation—including horseback riding, mountain biking, kayaking and nature trails—and large-scale public art and cultural programming. An earthworks monument will pay tribute to the enormous recovery effort that took place at Fresh Kills after the events of September 11, 2001. More than 40 miles of paths, an expansive network of recreational waterways and enhanced access to and from the West Shore Expressway through a system of park roads will help to create animated, interconnected parkland.

The park will be comprised of five main areas: the Confluence, North Park, South Park, East Park and West Park. Each area will have a distinct character and programming approach, developed in response to site opportunities and constraints, public meeting and stakeholder input, agency input, operation and maintenance concerns, and feasibility of

(CONTINUED)

The design competition-winning site plan prepared by landscape architecture firm Field Operations in 2001.

(CONTINUED)

implementation. Though the park's development will continue in phases for the next 30 years, development over the next 10 years will focus on creating early interventions and public access at North and South Park. East and West Parks are still undergoing landfill capping construction; development on these mounds, as in North and South Parks, will complement safe and effective landfill closure with state-of-the-art land reclamation techniques, alternative energy resources and ecological demonstration projects.

VISION

One park, five areas, many experiences

The five main areas of the park have been designed to maximize habitat and passive recreational space while reserving discrete, predominantly off-mound areas for intensive use.

North Park

The 233-acre North Park will be characterized by simple, vast natural settings—meadows, wetlands and creeks. Adjacent to the Travis neighborhood and overlooking the William T. Davis Wildlife Refuge, the area will feature paths and trails for walking, running, bicycling and skating encircling the northern mound. Scenic overlooks and spaces for picnicking, catch-and-release fishing and birdwatching will be provided.

South Park

The 425-acre South Park will provide large natural settings and active recreational spaces, including soccer fields, an equestrian facility and mountain biking pathways. Adjacent to the Arden Heights neighborhood, South Park will also host picnic areas, fields and trails. The area is also large enough to house a major sports and recreation center for track and field and/or swimming. The hilltops lend spectacular views across the site and into the distance.

(CONTINUED)

The current site master plan, prepared by landscape architecture firm Field Operations.

(CONTINUED)

The Confluence

The 100-acre Confluence is the cultural and waterfront recreation core of the park, sited at the confluence of Richmond Creek and Main Creek and encircled by the park road. Two developed areas along this loop are the main activity sites in the park: the 20-acre Creek Landing is designed for waterfront activities, including an esplanade, canoe and boat launch, special restaurants, a visitor center and a large event lawn for gatherings, picnics and sunbathing. The area will also allow for ample car parking and a central point of arrival and departure of park users.

The 50-acre Point is designed to accommodate sports fields, event spaces, lawns, artwork and educational programming. A long promenade along the water's edge will support restaurants, a banquet facility and an open-air market roof. Old machinery and artifacts from Fresh Kills Landfill operations will act as outdoor sculptural pieces, and the old barges will be reimagined as floating gardens. The promenade will be a vibrant social place with seating, fishing piers, a boat launch and great views across the water toward the natural beauty of the nearby Isle of Meadows.

East Park

The 482-acre East Park will play host to large, vegetated spaces and spectacular views. This part of the site is defined by the park road that extends from Richmond Avenue into the heart of the site and connects to the West Shore Expressway. The park drive will be sensitively designed as a scenic route integrated into the landscape. The Richmond Avenue side of East Park has been conceptualized as a nature education area, with specially designed wetlands, boardwalks and exhibits and public art installations. The large mound in this area lends itself to a variety of recreational uses, from golf and field sports to archery, informal pickup games, frisbee and picnicking.

West Park

The 545-acre West Park hosts the site's largest mound, with the West Shore Expressway to the east and the Arthur Kill to the west. An enormous earthwork monument is envisioned atop the mound in remembrance of the September 11 recovery effort that occurred in this location. Set on a vast hilltop wildflower meadow, the earthwork would be open to the sky and offer spectacular 360-degree views of the region, including a direct line of sight to lower Manhattan.

IDENTITY

Creating a new model of sustainable parkland

Freshkills Park will be the ambassador of a new era of park operations in New York City—an era whose goals are firmly aligned with Mayor Michael Bloomberg's PlaNYC 2030. The park will turn around connotations of waste and excess associated with the landfill site by implementing technologies and land management practices aimed at reducing waste, minimizing gross energy expenditure, and nourishing the health and wellbeing of local ecology. Measures the park will implement to serve these goals include reliance on renewable energy sources, stormwater management, water conservation and reuse, solid waste reduction and cultivation of native plants and bulk seed for use on site.

Renewable energy sources

With the help of advanced landfill gas collection infrastructure connecting throughout the landfill, the Department of Sanitation is already actively harvesting methane from decomposing waste buried at Fresh Kills. This methane is sold to heat homes all over Staten Island. Extrapolating this early initiative, the DPR project team's objective is to minimize energy consumption within new buildings and infrastructure systems and to use renewable energy technologies to supply as much of the park's energy as possible, using photovoltaic cells and wind turbines, using solar thermal cells in water heating systems and abiding LEED (green building) principles.

Stormwater management

Best management practices will be used at Freshkills Park to prevent or minimize the amount of sediments, nutrients, and pollution entering both surface and ground water. Design elements intended to address stormwater management include rain gardens designed to capture rainwater for use in irrigation and infiltration trenches and pervious pavements to minimize stormwater runoff.

Water conservation and reuse

Among the efforts that will be introduced to conserve water onsite are waterless urinals, composting

(CONTINUED)

(CONTINUED)

toilets, low-flow fixtures, greywater recycling in larger buildings and rainwater harvesting on building roofs. Collectively these systems could reduce onsite water demand by about 40 percent from a conventional water supply system.

Solid waste

The park will employ a mix of strategies to reduce the amount of solid waste produced onsite, including composting, active recycling and reuse campaigns and selective material choices for onsite products and services.

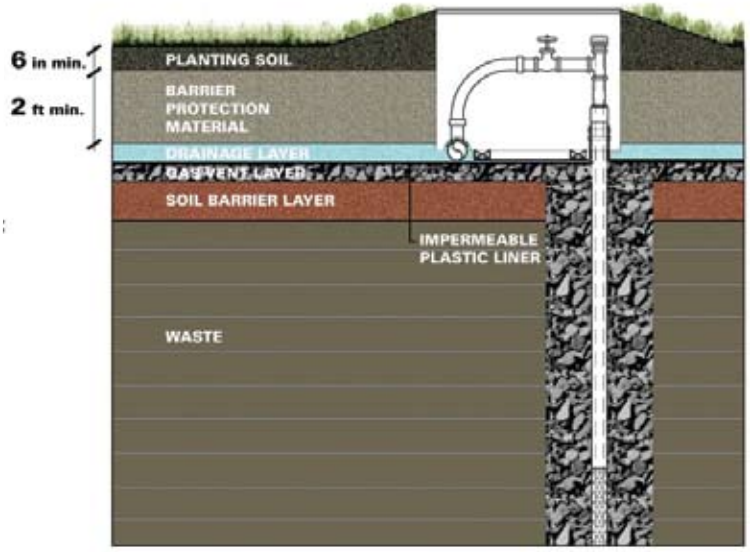
Native plant and bulk seed cultivation

To the greatest extent possible, plant materials for use in landscaping and construction will be grown onsite both to reduce the need for long-distance trucking and to increase the self-sustainability of the site. With the collaboration of the Department of Parks & Recreation's Greenbelt Native Plant Center, an effort to harvest local, native seed and to grow trees for sitewide planting will begin in the first stages of development in North Park.

LANDFILL SYSTEMS

No ordinary park infrastructure

Part of what makes the transformation of Freshkills Park so remarkable is the extensive infrastructure at work throughout the site to manage landfill activities and to minimize their impact on the landscape. Though the Department of Parks & Recreation is the lead agency on park development, Freshkills Park represents a unique management and operations partnership with the Department of Sanitation (DSNY), which will continue to monitor and maintain its infrastructure and facilities over the long term in accordance with regulations set by the New York State Department of Environmental Conservation. DSNY's primary landfill management systems onsite are the final cover, landfill gas collection system and leachate collection and cleansing system, in addition to a series of stormwater basins and monitoring systems.



A diagrammatic section showing the layers of final landfill cover.

Final Cover

The final cover over the solid waste has been constructed in phases and is comprised of several layers:

- A sub-base layer of soil is first laid over the solid waste, graded and compacted to the appropriate angles to minimize erosion and allow for optimal slope stability and drainage.
- An impermeable plastic liner or hydraulic barrier is placed atop the sub-base material. This is the most crucial component of final cover: it prevents water from entering the waste and prevents the waste or its byproducts from escaping.
- An additional drainage layer is needed in some portions of the final cover to reduce the pressure of water on the barrier layer.

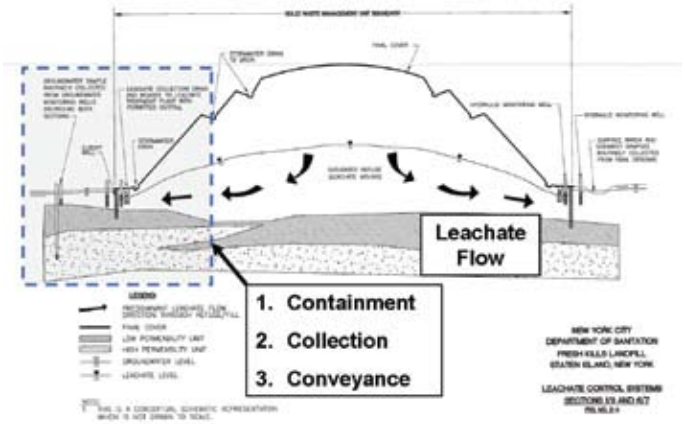
(CONTINUED)

(CONTINUED)

- A thick barrier protection layer of soil protects the hydraulic barrier from the extremes of weather that could cause the underlying layers to crack or heave.
- The final layer is the planting soil layer or top soil layer, which must have a minimum thickness of six inches to meet state specifications for vegetation support and fertility. 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.

Leachate Collection System

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 leachate collection system is a network of pipes extending throughout the landfill that funnels and captures leachate, carrying it to an onsite treatment plant. At the plant, the leachate is separated into solids and liquids. The solids are compressed and shipped to a special off-site disposal center, and the liquids are purified until cleaner than the nearby Arthur Kill, into which the resulting water is released.



A diagram illustrating leachate collection.

A map of the Landfill Gas Collection System.

Landfill Gas Collection System

Landfill gas is generated through the decomposition of solid waste and is comprised of methane, carbon dioxide, water and other organic compounds. The Landfill Gas (LFG) System onsite 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 processed to pipeline quality at an onsite recovery plant and sold for domestic energy use. Gas recovery and sale will continue until the amount of gas produced by the landfill is small enough as to no longer be economically viable, at which point it will be burned off at flare stations onsite. Combination of the two systems ensures that gas emissions, non-methane organic compounds (NMOCs) and other hazardous pollutants are reduced by almost 100%, and LFG and its odor are prevented from entering the atmosphere.

NATURE

A return of plants and wildlife

Today's Fresh Kills bears little resemblance to the massive trash piles that mark the memories and imaginations of so many New Yorkers. Today, the mounds are grassy and sedate, and the site brings to mind an expanse of rolling hills and valleys. Nature has become the primary designer of Fresh Kills' new look: since landfill closure in 2001, there has been a resurgence of plant and animal life at the site.

In addition to the volunteer trees and wild meadows that have overtaken the capped landfill mounds, there are numerous upland habitats at Fresh Kills, including 10- to 50-year-old woodlands and expanses of both native and non-native grasslands. A number of these areas are considered rare or critical within the city and state and represent valuable habitats for flora and fauna. Among the list of tree species present are black locust, tree of heaven, eastern cottonwood, Japanese knotweed, Virginia creeper, red maple, sweet-gum, pin oak and northern arrowwood.

There also remain hundreds of acres of freshwater and saltwater wetlands, which filter pollutants, aerate soil and provide flood control, not to mention providing habitat to a variety of fish and fishing birds.

(CONTINUED)

(CONTINUED)

Species found to be nesting in and around Fresh Kills include the great egret, cattle egret, little blue heron, snowy egret, yellow-crowned night heron, and the glossy ibis. A host of land-borne birds including hawks, owls and killdeer are also frequently sighted. A survey of the site has confirmed the presence of as many as 84 bird species nesting or migrating through the site. It has become a regular destination for birdwatchers, and the New York City Audobon Society has begun organizing outings to the site.

More discreetly, the site has become home to a growing population of mammals, many of which survive by foraging and hunting in the thick wetland growth. Species observed in 2007 include muskrat, cottontail rabbits, cats, mice, voles, raccoons and even white-tailed deer. The deer population is believed to have migrated south from New Jersey across the Arthur Kill and has been growing over time.

Park development will protect and build upon the natural assets already onsite for the purposes of cultivating a diverse landscape. Expanding the site's inventory of woodlands, grasslands and other plant communities will help to reinforce ecological connections to nearby habitats, including the William T. Davis Wildlife Refuge to the north of the site, the Staten Island Greenbelt to the east, and the Isle of Meadows, off the coast in the Arthur Kill, which will continue to thrive as a refuge and bird sanctuary with no visitor access.

WTC MATERIALS

A recovery site after major tragedy

After the World Trade Center attack of September 11, 2001, the New York State consent order closing the landfill was amended by Governor Pataki in order to allow for the handling of materials from the World Trade Center (WTC) site. Materials were brought to the West Mound. No other materials were brought to Fresh Kills during this temporary suspension of the closure.

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 discernible remains and effects were removed and taken to the New York City Medical Examiner's office for identification and safekeeping. 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 immediately adjacent to the recovery site on the West Mound. 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.

Appeals to re-site WTC materials

Some families of World Trade Center attack victims have requested that the City remove buried WTC materials from Fresh Kills and re-site them elsewhere. 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 opposed to disturbing the 48-acre site on the West Mound.

The City has evaluated numerous complex issues and varying perspectives in its consideration of this proposal. These included review of the 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

(CONTINUED)

(CONTINUED)
disturb the materials from the World Trade Center remaining at Fresh Kills.

So the City 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. Landscape architecture firm Field Operations 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 city is committed to an on-going dialogue with all interested citizens.

NATIVE PLANTS

Restoring local ecology, locally

Supporting the ecology of Freshkills Park does not just mean minimizing pollution and waste production onsite; it also means doing what we can to preserve the natural biodiversity of the wild plant population. Pairing this challenge with the task of revegetating the four mounds at Freshkills Park, the project team is collaborating with the Department of Parks & Recreation's Greenbelt Native Plant Center (GNPC) on two innovative and promising endeavors to use portions of the park site to grow plant material for use in other portions of the site, and possibly in other New York City parks as well.

Founder Seed

The GNPC hopes to ensure the seed cover used on the mounds at Freshkills Park comes from native species and local populations—this means species that are indigenous to the New York City area and from which the originator or "founder" seeds were actually collected and grown in the area. These seeds are already genetically adapted to local environmental conditions and promise to yield hardier and less ecologically disruptive plant species. Once harvested, the seeds are separated from the other plant matter, cleaned, dried and placed in a humidity-controlled refrigerator. They are then placed in small growing containers and put in another refrigerator to mimic the winter season. Next, the germinating grasses are transferred to a controlled greenhouse environment. Finally, the seedlings are planted in founder seed plots.

For their own 13-acre operation adjacent to Freshkills Park, the GNPC has been collecting wild, local seed from a variety of locations on Staten Island and the environs for the last three years. They currently operate four 1,000 square foot plots at their headquarters, with each plot containing only one species but encompassing plants from many populations.

But because of the enormity of the Fresh Kills site, a large quantity of bulk seed will need to be grown for use in revegetation. A tiny pilot plot was opened in what will be South Park at Freshkills Park last year; next year's first phase of development in North Park will add an additional seven acres of founder seed plots to GNPC's operation and will provide park visitors the opportunity to observe GNPC farmers in action, cultivating seed to be planted at Freshkills Park and, ideally, for other large-scale park restoration projects as well.

(CONTINUED)

A founder seed plot at the Greenbelt Native Plant Center's 13-acre headquarters adjacent to Freshkills Park.

Tree Nurseries
(CONTINUED)

The GNPC will also be overseeing a tree nursery to be developed in the same initial phase of North Park development. Local species will be grown from 800 one-inch caliper trees in pots, planted in a network of larger pots buried in the earth along the arc path of North Park. Park visitors will be able to track the progress of young trees as they are nurtured to maturity and relocated to other sectors of the site for planting as development proceeds.

The goal achieved by these GNPC projects is not only robust, locally adapted revegetation; by growing and harvesting plant material onsite, the park will also be able to reduce the amount of long-distance trucking required to import materials from offsite. More importantly, the Founder Seed plots and tree nurseries will help make the working process of transforming Fresh Kills immediate and transparent to park visitors. The Fresh Kills Landfill was an explicit product of human activity, and its reclamation and transformation into Freshkills Park will be as well.

CURRENT PROJECTS

Schmul Park

Nestled within the Travis neighborhood, the existing two-acre Schmul Park has been redesigned by landscape architecture firm Field Operations as part of North Park's development and will create a local entrance to Freshkills Park. Now a playground of asphalt surfaces with little green space, the new plan aims to create a greener park with softer, more engaging play areas. The goal of the

(CONTINUED)

(CONTINUED)

redevelopment of Schmul Park is to create an open park for the community and to connect the neighborhood with the rest of Freshkills Park.

The park will feature a colorful playground area comprised of a series of rubber-clad mounds. Other features include a spray shower, two handball courts, two full basketball courts and two half-courts. A new comfort station, designed by architecture firm BKSK, will have a green roof and convey excess rainwater to an adjacent rain garden for irrigation. Paths will be paved with porous, natural materials to allow for direct stormwater infiltration and minimal runoff. Schmul Park construction is anticipated to begin in 2010.

Top: The site plan for the Schmul Park redesign, by Field Operations. Above: A rendering of the Schmul Park Comfort Station, by BKSK.

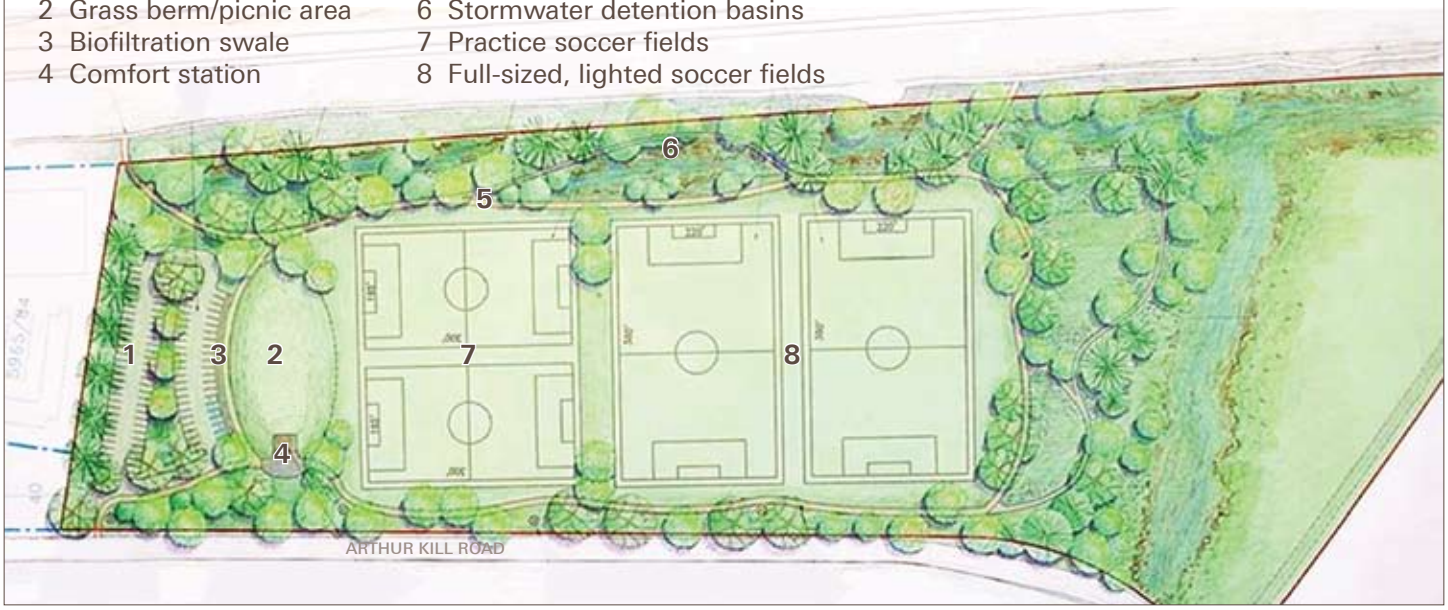
CURRENT PROJECTS

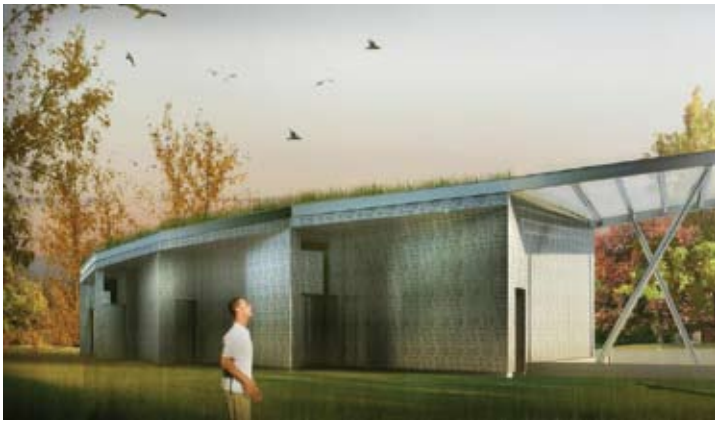
Owl Hollow Fields

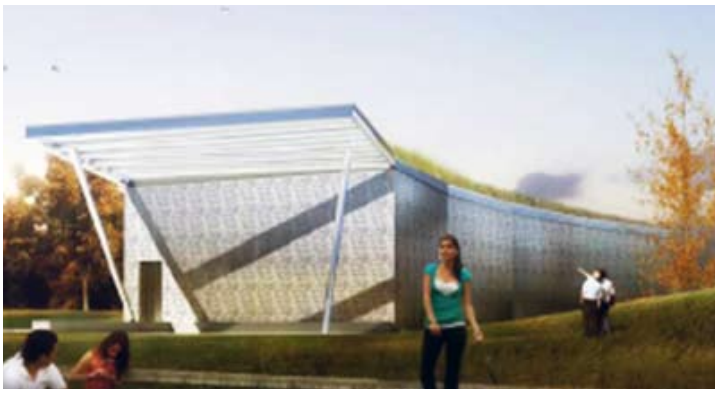
Owl Hollow is a 21–acre area adjacent to Arden Heights Woods. The site at Owl Hollow has been designed to include four synthetic turf soccer fields (two of which will be lighted), a loop pedestrian path encircling the fields, a comfort station, parking, and landscaped lawn areas. The comfort station, designed by Sage + Coombe Architects, will be a LEED certified building. It will have a green roof, geothermal heating and cooling and a wind turbine for generating electricity. The building will include restrooms, an office for DPR Maintenance & Operations personnel, and a covered outdoor area with seating and picnicking.

Owl Hollow Soccer Fields site plan

1 104-space parking lot
2 Grass berm/picnic area
3 Biofiltration swale
4 Comfort station
5 Perimeter path
6 Stormwater detention basins
7 Practice soccer fields
8 Full-sized, lighted soccer fields







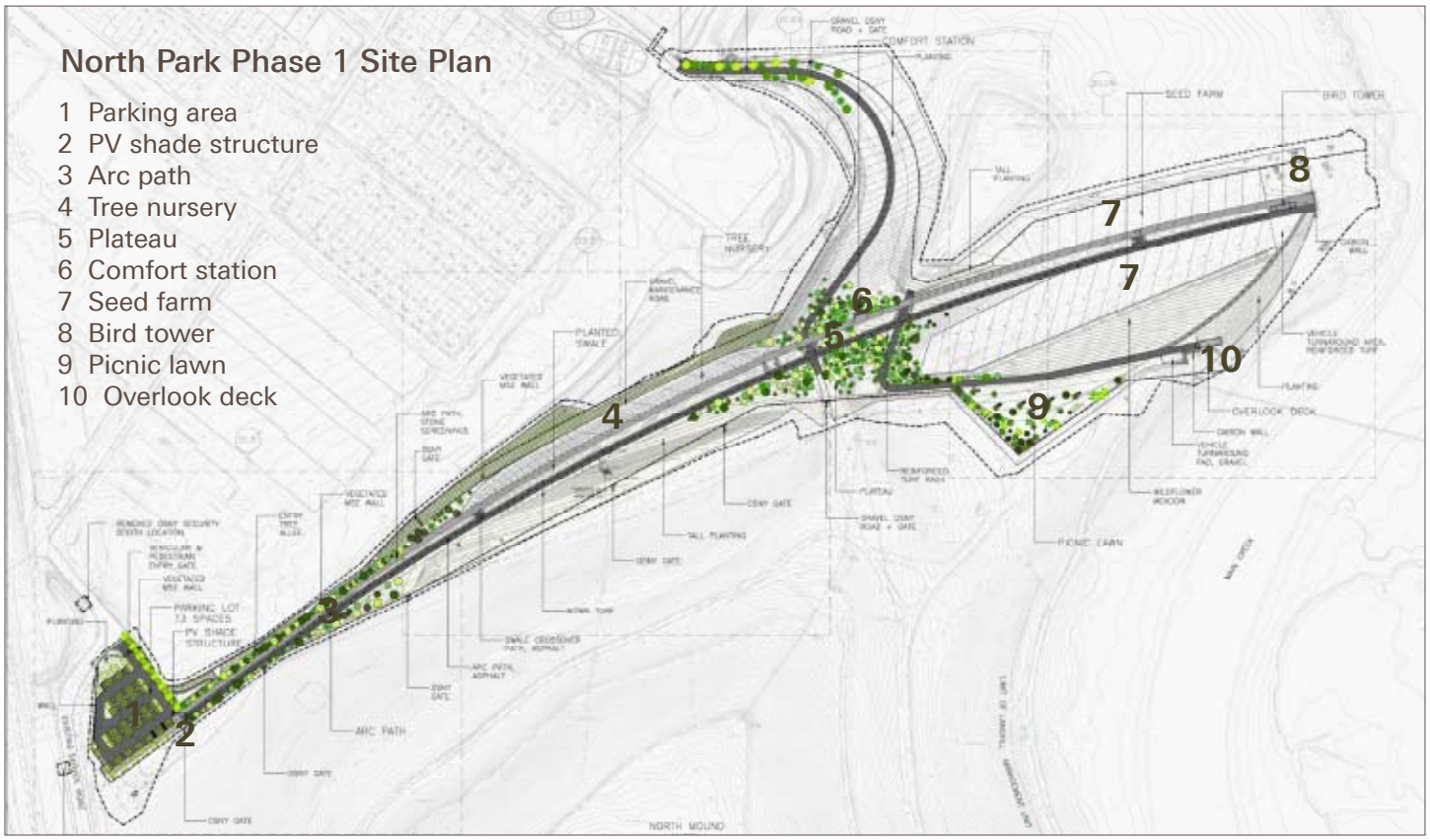
Above: The DPR-designed Owl Hollow Fields site plan. Left: Two renderings of the Owl Hollow Comfort Station, designed by Sage + Coombe Architects. The comfort station will be have a green roof, geothermal heating and cool and a wind turbine for generating electricity.

CURRENT PROJECTS

North Park

The first phase of the 240-acre North Park development will comprise a 20-acre swath of land connecting both regional visitors entering from a new 75-space parking lot off of Wild Avenue and neighborhood visitors entering at Schmul Park to Main Creek and spectacular views of the William T. Davis Wildlife Refuge. Divided walking and high-speed paths will lead visitors past flowering swales and through a scenic Forested Plateau to an expansive picnic lawn, an overlook deck and a contemporary, signature Bird Observation Tower at water's edge. The public will be able to glimpse the active

(CONTINUED)



(CONTINUED)

process of transforming Freshkills one plant at a time not only by witnessing the progress of tree growth in an innovative pot-in-pot tree nursery, but also by wending through seven acres of Founder Seed plots operated by the Department of Parks & Recreation's Greenbelt Native Plant Center. After five years of operation, this area, having harvested a host of vibrant and lush greenery, will become a flowering meadow.

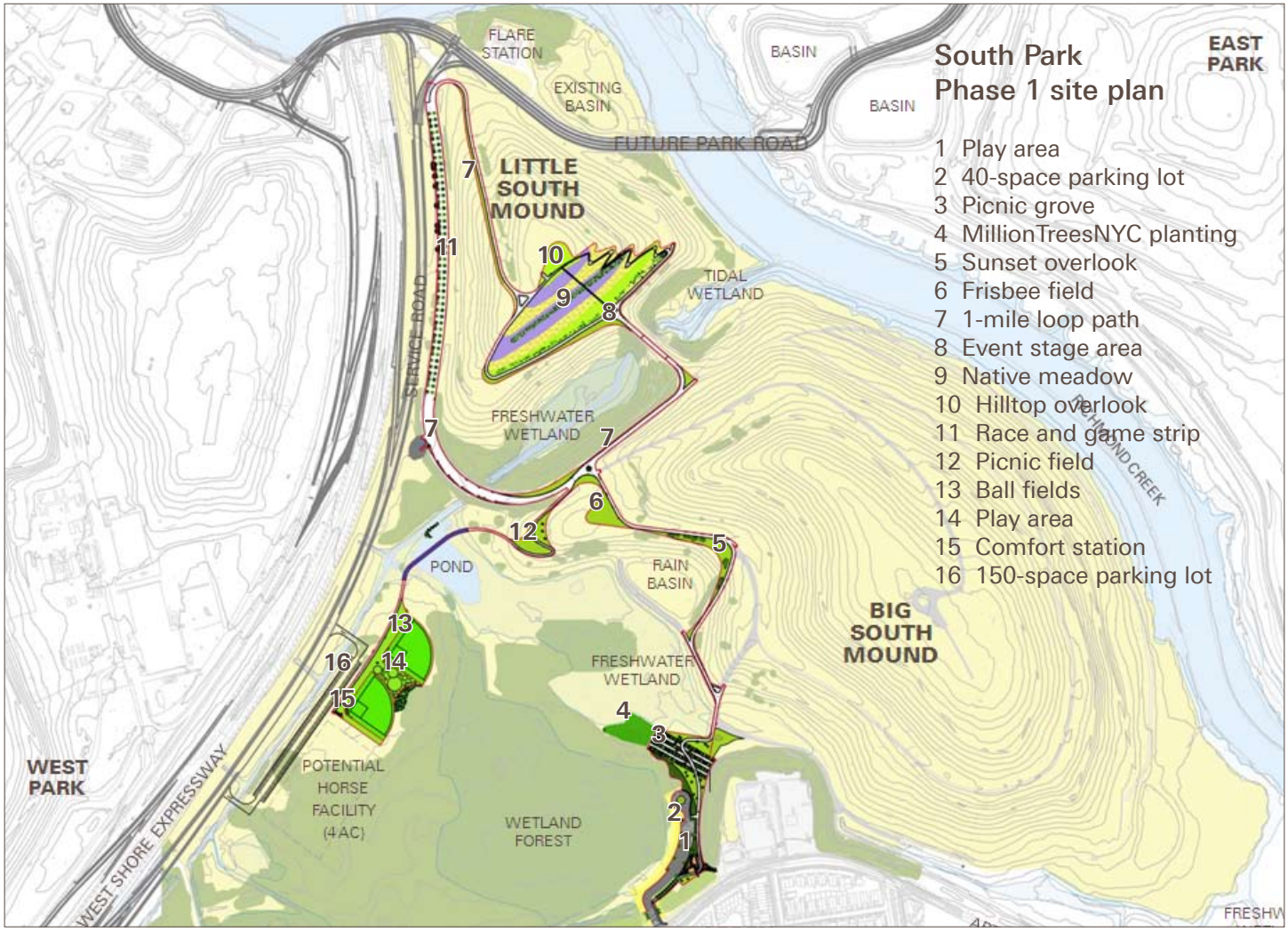
Above Left: A rendering of the view overlooking the multi-speed Arc Path and the Founder Seed Farm, to be operated by the GNPC.
Left: A rendering of what the field of sockets will look like in the pot-in-pot tree nursery.

CURRENT PROJECTS

South Park

The first phase of development for 425-acre South Park will focus on providing recreational opportunities to park visitors while maximizing access to the site's spectacular landscapes and vistas. Visitors will enter through one of South Park's two main parking lots and venture through 2.4 miles of multi-use paths to the 20-acre project's many features, designed by James Corner Field Operations. Play and picnic areas near the entrances will invite visitors to relax in an intimate, neighborhood-like setting before setting off along the path to the mounds. Two softball/little league fields will host games nearby. Multi-use paths will be complemented by a series of scenic overlooks and lawns for informal games and

(CONTINUED)



(CONTINUED)

events. Little South Mound will host a 1-mile loop path for running and high-speed biking as well as a race and game strip for slower speed activities and games. Signage and overlooks will explain the history, value and restoration of forest, grassland and wetland habitats that adjoin the site.

Left: The plan focuses on providing year-round active recreational opportunities: softball, little league, biking, running, sledding, cross country skiing and other games.

CURRENT PROJECTS

Renewable energy: a centerpiece of development

With the help of advanced landfill gas collection infrastructure connecting throughout the landfill, the Department of Sanitation is already actively harvesting methane from decomposing waste buried at Fresh Kills. This methane is sold to National Grid to heat approximately 22,000 homes on Staten Island. The city generates approximately $11 million in annual revenue from the sale of methane captured at Fresh Kills. Gas recovery and sale will continue until the amount of gas produced by the landfill is small enough as to no longer be economically viable, at which point it will be burned off at flare stations onsite.

A rendering of the Photovoltaic Shade Structure at the entrance to North Park.

Looking Forward

While maintaining the objective of minimizing energy consumption within new buildings and infrastructure systems onsite, DPR is also committed to extrapolating from Sanitation's precedent in using renewable energy technologies to supply as much of the park's energy as possible. This commitment encompasses consideration of technologies including photovoltaic cells and wind turbines, using solar thermal cells in water heating systems and geothermal heating and cooling where possible, and abiding LEED (green building) principles.

North Park Photovoltaic Shade Structure

Presiding over the regional entryway to the first major segment of Freshkills Park to be built, the Photovoltaic

(CONTINUED)

A view of the North Park Phase One Composting Comfort Station from the Forested Plateau.

(CONTINUED)

Shade Structure welcomes visitors to the 21-acre North Park Phase One development. The 33-panel array will provide shade to visitors seated at benches along the Arc Path and power the 14 100-watt overhead lights situated throughout the parking lot.

North Park Composting Comfort Station

At the Sumac-Oak Plateau at the center of North Park Phase One's Arc Path, a two-stall comfort station with composting toilets will host two 8-watt interior lights powered by six PV panels atop the roof. The panels will generate a maximum of 390 watts.

Owl Hollow Comfort Station

The Owl Hollow Soccer Fields will be located at the Southwestern edge of the Freshkills Park site. The two practice soccer fields and two competition fields will be serviced by a LEED-certified comfort station and DPR maintenance and operations office. The 1200-sq ft facilty makes use of a number of energy-saving technologies: a green roof, geothermal heating and cooling and a small wind turbine.

Benefits of geothermal heating include lower air emissions and higher energy efficiency. The HVAC design for Owl Hollow Comfort Station uses high-efficiency water-source heat pumps connected to a horizontal geothermal loop system. A computer-based simulation has projected the Comfort Station to save 18% in energy costs when compared to a non-geothermal, code-compliant building.

WHAT'S NEXT

Beginning a long-term transformation

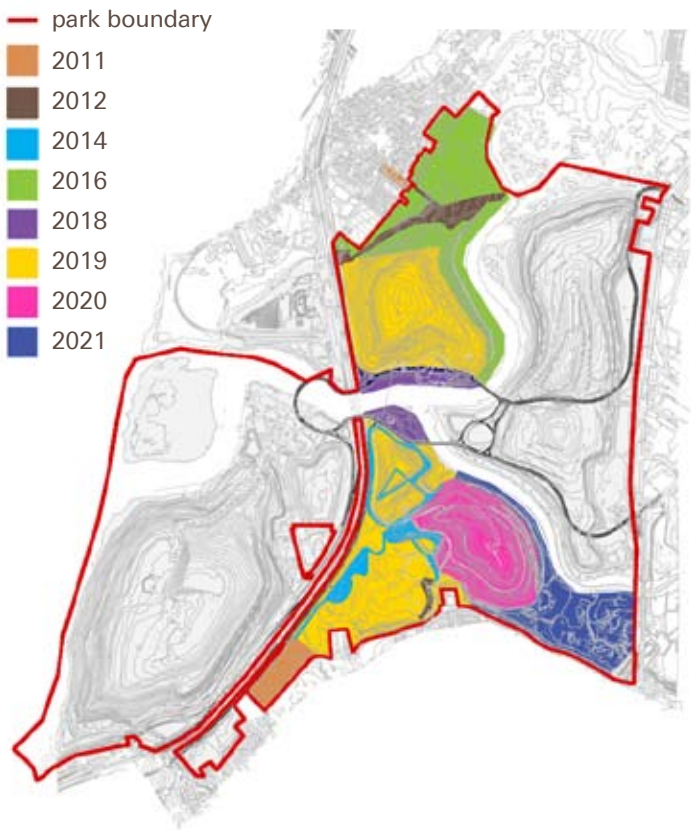
The huge scale and complexity of the transformation of Freshkills Park means that the process will inevitably take time—the Draft Master Plan poses a 30-year timeline. The staged build-out of the park will allow visitors the chance to witness firsthand the processes underway in making neighboring areas of the park safe, accessible and accommodating.

Within the next ten years, the DPR project team's goal is to provide access to North and South Park and to complete the circulation system allowing vehicular access to and through Freshkills Park. The first phases of those efforts are now underway and are expected to launch into construction within the next year.

Roads System

A publicly accessible road system will be a major feature of Freshkills Park. The road will provide access to the different areas of the park and create an alternative connection between the West Shore Expressway (Route 440) and Richmond Avenue. Transportation consultants are currently examining the technical feasibility of two alternate routes through the site and six road alignment alternatives, with design variables that include the number of lanes,

PHASING PLAN



location of landfill infrastructure and wetland impacts. Issues such as the differential settlement of the mounds, weight constraints on sensitive infrastructure and the viability of flexible pavement are also being analyzed.