2.1 WHAT IS LIFESCAPE?

Lifescape is both a place and a process.

The place is Fresh Kills Park, once the world's largest landfill, now to be transformed into 2,315 acres of public parkland, featuring a beautiful expanse of tidal marshes and creeks, over 40 miles of trails and pathways, and significant recreational, cultural and educational amenities, including a proposed hilltop earthwork monument to honor the September 11 recovery effort undertaken at Fresh Kills. Fresh Kills Park will be a diverse reserve for wildlife, cultural and social life, and active recreation.

Lifescape is an ecological process of environmental reclamation and renewal on a vast scale, recovering not only the health and biodiversity of ecosystems across the site, but also the spirit and imagination of people who will use the new park. Lifescape is about the dynamic cultivation of new ecologies at Fresh Kills over time—ecologies of soil, air and water; of vegetation and wildlife; of program and human activity; of financing, stewardship and adaptive management; of environmental technology, renewable energy and education; and of new forms of interaction among people, nature, technology and the passage of time.

The Fresh Kills site today already shows signs of remarkable ecological, cultural and scenic potential. Its vast scale, beautiful winding creeks and extensive wetlands, along with the surreal presence of large engineered mounds (mostly now covered in grasses and clumps of woody material) create an unusually beautiful landscape. While significant areas of landfill are still undergoing closure construction and the operations of the Sanitation Department will continue for many years to come, lifescape is a design strategy for actualizing the public parkland potential of the site in realistic and intelligent ways. The design strategy proposes a series of flexible and incremental stages to ensure an effective working balance between ongoing landfill closure and processes of site management with the transformation of the site into new public parkland.

The City and State of New York, led by the Department of City Planning, are coordinating this master planning study for the conversion of the site into Fresh Kills Park. The Draft Master Plan describes the place and process of lifescape, and demonstrates how New Yorkers will soon be able to boast to the world that they transformed an industrial landscape into a state-of-the-art environmental preserve and innovative, contemporary urban park. This vision is responsive to the increasingly urgent "global green" demands of the 21st century, while significantly enhancing the recreational opportunities for Staten Islanders and the New York Metropolitan region.

FIGURE 3: PHOTOGRAPH FROM NORTH MOUND LOOKING SOUTH ACROSS MAIN CREEK TOWARD EAST MOUND, SUMMER 2003

FIGURE 4: PHOTOGRAPH FROM EAST MOUND LOOKING WEST ACROSS RICHMOND CREEK TOWARD SOUTH MOUND, FALL 2003

FIGURE 5: AERIAL PHOTOGRAPH TAKEN ABOVE WILLIAM T. DAVIS WILDLIFE REFUGE LOOKING SOUTH ALONG MAIN CREEK TOWARD ARDEN HEIGHTS, SUMMER 2003

FIGURES 3, 4 and 5: Photographs of the site as it looks today show the intrinsic beauty of creeks, tidal flats, wetlands, grasslands and hill forms. The huge, open scale of the site suggests great potential for significant ecological habitat improvement and new public recreational uses.

FIGURE 6: This aerial view shows how the site might look 20 years or so from now, with restored landscapes, extensive paths and trails, scenic overlooks, sports and recreational amenities, and alternative energy resources.

FIGURE 6: ILLUSTRATIVE AERIAL VIEW OF FRESH KILLS PARK

2.2 SUMMARY OF THE DRAFT MASTER PLAN

The transformation of Fresh Kills landfill into a park heralds a significant enhancement to the quality of life and land use on Staten Island, and at the same time marks a new commitment to the transformation of once-industrial sites to new cultural, programmatic and environmental uses.

Only 45% of Fresh Kills' four square miles is actually landfill; the other 55% is made up of wetland, creeks and tidal flats, open meadows and woodland. Paradoxically, the landfill operations during the past 50 years have afforded a unique opportunity for the preservation of this huge land reserve from development sprawl and fragmentation. Now that the landfill is approaching final capping of the mounds, the beauty and potential of the area are striking. The Draft Master Plan is the first step in beginning the process of transformation that will open the site for new public uses.

Reengineered over time as a self-sustaining ecosystem, Fresh Kills Park will create significant wildlife habitat for the region and estuary, provide hundreds of acres of land for active and passive recreation (including over 40 miles of new walking, running, bicycle and equestrian paths), and improve local connectivity with the provision of new park drives and access points. This ambitious project will showcase state-of-the-art environmental reclamation techniques alongside innovative design of park spaces coordinated with landfill infrastructure and ongoing monitoring operations—both important elements given the unique characteristics of the site. Another proposed major feature in the park is the September 11 earthwork monument honoring the recovery effort that occurred at Fresh Kills in 2001-02. The Design Team has proposed a huge earthwork that would allow for contemplative strolling along a vast open horizon, culminating in a 360-degree view of the surrounding region and estuary, including an axis vista to lower Manhattan.

Important to the success of Fresh Kills Park is community engagement and participation. During the past two years, numerous public meetings—as well as many smaller meetings with representatives, stakeholders and public agencies—have allowed for broad-based discussion, input and feedback. As the Master Plan moves forward, continued public participation will be essential to the successful stewardship of the project.

Also important to the success of the project is the ongoing relationship with the Department of Sanitation (DSNY), which is charged with the final closure of the landfill and the long-term monitoring and maintenance of its infrastructure and facilities. The phased opening and transformation of the site into parkland has been and will continue to be carefully coordinated with long-term DSNY operations and ongoing landfill infrastructure and maintenance obligations.

The implementation of the project comprises three 10-year phases, the first beginning as early as 2008 following the EIS and design development. This first phase should see the implementation of entrances and drives; two neighborhood parks; public pathways and trails; public art installations; sports and recreational fields; wetland, meadow and woodland restoration; and the completion of the September 11 earthwork monument to the recovery effort, a major feature of the site. One-hundred million dollars has already been budgeted for Phase 1 with additional funding to be sought from a combination of sources. At the conclusion of this project, Staten Island, New York and the world will have created a truly unique place, as significant to the region as Central Park is today, although in a very different context, scale and form.

FIGURE 7: AERIAL VIEW OF EXISTING SITE

FIGURE 8: ILLUSTRATIVE SITE PLAN

The park as a whole can be seen as comprising five areas, each undergoing continuing review and further consideration.

- The 233-acre **North Park** [figure 9] is characterized by simple, vast natural settings—meadows, wetlands and creeks. Adjacent to the Travis neighborhood, and overlooking the William T. Davis Wildlife Refuge, this area is to remain open, with paths and trails to the creek. Extensive pathways, specifically designated for walking, bicycling and multiple uses, encircle the northern mound. Scenic overlooks and spaces for picnicking, fishing and sitting are provided. A neighborhood park is proposed alongside the Travis edge, with picnic areas, a playground, a lawn and restored stream and paths.

- The 100-acre **Confluence** is the cultural and waterfront recreation core of the park, sited at the confluence of the two main creeks and encircled by the park drive and entry points on and off the Expressway. Two developed areas along this loop are the main activity sites in the park. The 20-acre **Creek Landing** [figure 10] 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** [figure 11] is the western area of the confluence loop, and is designed to accommodate sports fields, event spaces, lawns, artwork and educational programming. A long promenade along the water's edge supports restaurants, a banquet facility and an open-air market roof. Old machinery and artifacts from Fresh Kills landfill operations provide a unique feature here, as do the old barges remade 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 Isle of Meadows. Three smaller areas around the Confluence—the Terrace, the Marsh and the Sunken Forest—provide additional spaces for picnicking, strolling and habitat restoration.

- The 425-acre **South Park** [figure 12] is characterized by large natural settings and active recreational spaces, including soccer fields, an equestrian facility and mountain biking pathways. Adjacent to Arden Heights, South Park will also support picnic areas, fields and trails. This area is also large enough to house a major sports and recreation center for track and field and/or swimming. The hilltops afford spectacular views across the site to distant horizons.

- The 482-acre **East Park** [figure 13] is characterized by large, vegetated spaces and spectacular views. This 482-acre site is defined by the drive that extends from Richmond Avenue into the heart of the site and connects to the West Shore Expressway. The park drive is sensitively designed as a scenic route integrated into the landscape. Multiple alignments for the Park Drive along East Mound are under review. The Richmond Avenue side of East Park is designed as a nature education area, with specially designed wetlands, boardwalks and exhibits, public art installations and early access berm overlooks. The large mound in this area lends itself to a variety of recreational uses, from golf and field sports to skeet shooting, archery, informal pickup games, frisbee and picnicking.

- The 545-acre **West Park** [figure 14] is characterized by the site's largest mound, with the expressway to the east and Arthur Kill to the west. An enormous earthwork monument is envisioned atop the mound, the same size and scale of the original twin towers, in remembrance of the September 11 recovery effort that occurred in this location. Set upon a vast hilltop wildflower meadow, the earthwork would be open to the sky and offer spectacular 360-degree views of the region, including an axis to lower Manhattan.

FIGURE 9: ILLUSTRATIVE VIEW OF NORTH PARK BIKING TRAIL

FIGURE 10: ILLUSTRATIVE VIEW OF CREEK LANDING CANOE LAUNCH

FIGURE 11: ILLUSTRATIVE VIEW OF THE POINT PROMENADE AND FERRY LANDING

FIGURE 12: ILLUSTRATIVE VIEW FROM SOUTH PARK'S SCENIC OVERLOOK

FIGURE 13: ILLUSTRATIVE VIEW OF EAST PARK'S PARK DRIVE

FIGURE 14: ILLUSTRATIVE VIEW OF WEST PARK'S SEPTEMBER 11 EARTHWORK MONUMENT

2.3 FRESH KILLS PAST AND PRESENT

Many thousands of years ago, Staten Island was formed as glacial meltwaters deposited gravels, sands and silts.

Marshland soon developed, and the higher moraine of eastern Staten Island shed most of its rainwater west into the lower marshes of what is now Fresh Kills—a name given by Dutch settlers meaning "fresh creek" or "fresh waters." The modifying effect of the Hudson estuary also created a special microclimate that, in combination with the glacial soils and drainage patterns, allowed for rich ecosystems and plant communities to emerge. Indeed, naturalists on Staten Island have historically found species growing here that are outside of their normal geographical limits, meaning that many northern and southern Atlantic seaboard species commingle and create unusually rich ecological diversity. The island, and Fresh Kills in particular, is also a major destination of birds migrating along the eastern flyway.

Urban development on Staten Island has since destroyed much of the ecological richness originally found there, and certainly the use of the Fresh Kills marshes as landfill during the latter half of the 20th-century further eroded the quality of the environment. And yet today, with the closure of the landfill, the site has a hauntingly potent presence, where the pulse of life, new growth and greenery is surprisingly palpable. This is aided by the fact that less than half of the site is actual landfill; the rest of the site consists of meandering creeks and tidal flats; extensive marsh and wetland (including the William T. Davis Wildlife Refuge and the Isle of Meadows); areas of grassland, meadow and woodland; and close proximity to the Staten Island Greenbelt, La Tourette Park and Arden Heights Woods.

This site was opened as a landfill in 1948. It received its last barge of waste in March 2001 and was scheduled to close in December 2001. The final date of closure was delayed until the spring of 2002 due to the World Trade Center tragedy that took place on September 11, 2001. As part of closure, the Department of Sanitation has been laying down infrastructure and building final covers, and is required to fulfill ongoing maintenance and monitoring obligations mandated by the state.

Today, four landfill mounds lend an unusual large-scale topographic character to the site. The largest of the mounds is the westernmost mound (labeled by the Department of Sanitation as section 1/9), which is undergoing closure. The next largest is the easternmost mound, along Richmond Avenue (section 6/7), which is also undergoing closure. The remaining two mounds making up the central spine of the site, the South Mound (section 2/8), and the North Mound (section 3/4) have been closed since the mid-1990's, although ongoing maintenance and monitoring operations continue. The site will continue to be subject to a variety of environmental regulations throughout closure and post-closure, which require that the site be continually monitored and maintained. In particular, the leachate control, landfill gas management, storm water management and final cover systems will need to be protected and maintained. Moreover, the numerous monitoring systems—the groundwater and methane gas monitoring wells—will need to be protected and kept accessible. The Master Plan has been informed and guided by ongoing landfill closure and maintenance operations through the staged phasing of implementation, the coordinated placement of program areas, structures, roads and paths, and the provision of easy access to landfill infrastructure.

ONLY 45% OF THE FRESH KILLS SITE IS LANDFILL. THE OTHER 55% IS MADE UP OF CREEKS, WETLANDS AND OPEN FIELDS

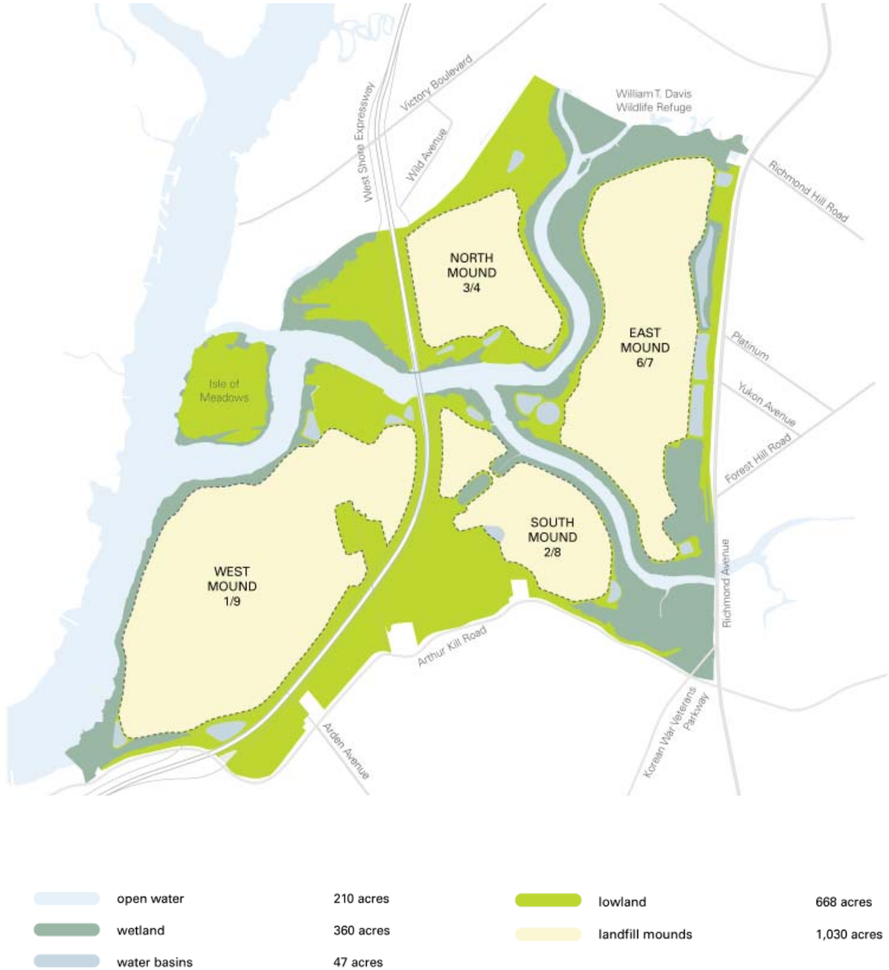


FIGURE 15: ILLUSTRATIVE DIAGRAM OF EXISTING SITE DEPICTING THE DISTRIBUTION OF LAND TYPE

1 Section 3/4 - North Mound

2 Section 2/8 - South Mound

3 Section 6/7 - East Mound

4 Section 1/9 - West Mound

5 DSNY Staten Island waste transfer station

6 DSNY construction staging area

7 DSNY Staten Island District 2 Garage

8 Stormwater basin

9 DSNY construction operations area

10 DSNY landfill gas and purification system

11 DSNY Staten Island District 3 Garage and Borough Repair Shop

12 DSNY leachate treatment plant

13 DSNY LFG flare station

FKL site boundary

Solid Waste Management Unit boundary

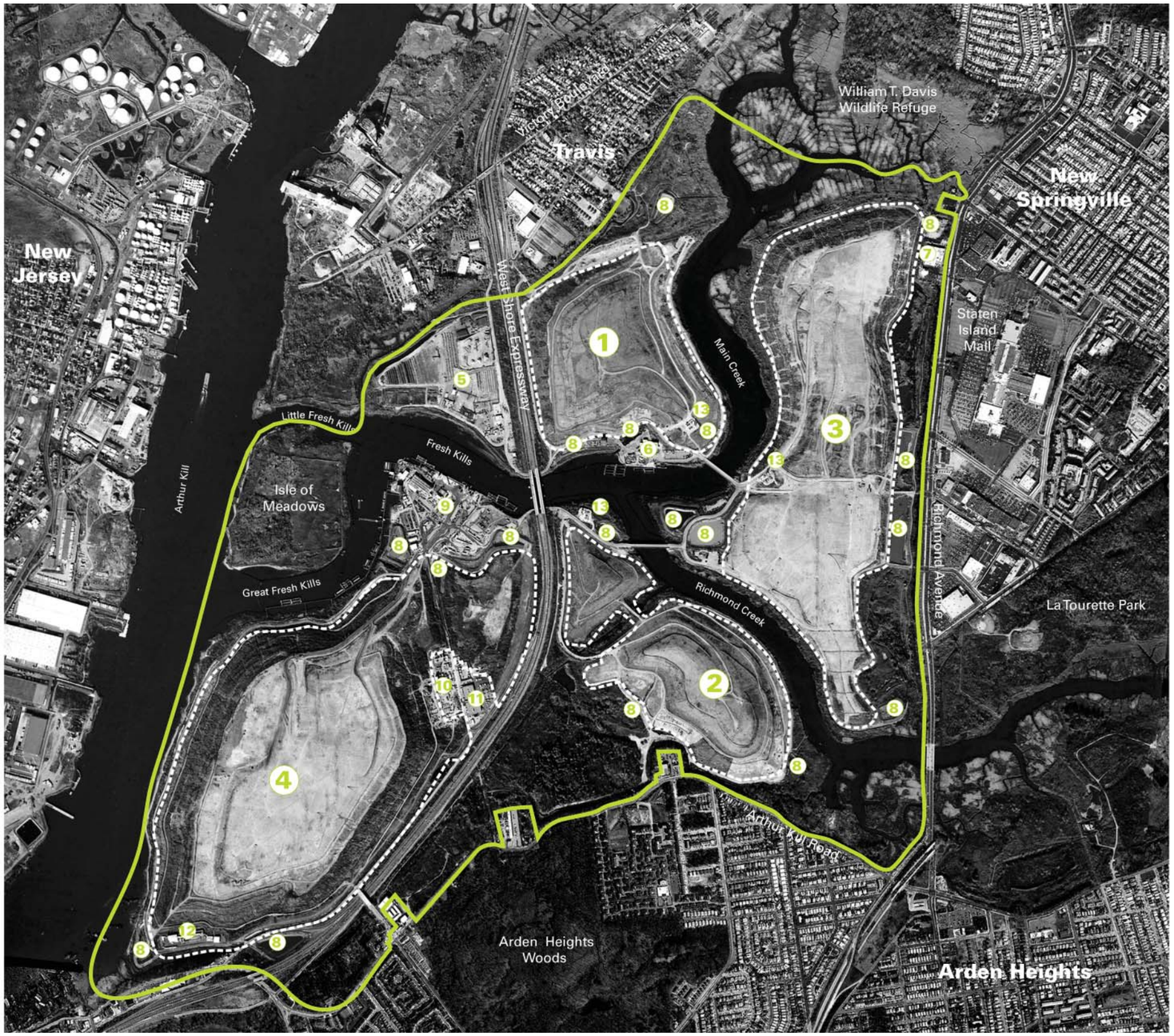


FIGURE 16: AERIAL PHOTOGRAPH OF THE SITE TODAY

0 mile 0.25 mile 0.5 mile 1 mile

2.4 ENVIRONMENTAL HEALTH AND SAFETY

Landfill operations and closure are subject to numerous local, state and federal regulations that ensure public health and safety.

The Fresh Kills Master Plan will be subject to City Environmental Quality Review (CEQR) and State Environmental Quality Review (SEQRA), and will be examined in an environmental impact statement. This analysis will include an assessment of proposed modifications to the closure plan and their possible affect on the public health or on wildlife and natural resources as well as the water, air and soil monitoring data for areas of public access, to determine if there is any potential adverse environmental impact.

No area of Fresh Kills Park will be opened to the public until regulatory standards for health and safety are demonstrably met. In addition to the landfill closure regulations that must be adhered to, there are environmental standards for groundwater, surface water and air. These standards were established in part for the purposes of protecting public health and the environment. By applying these or similar standards, as well as environmental controls and monitoring programs, many closed landfill sites both regionally and nationally have been reopened to public use.

Among the landfill closure requirements, all of which are met at Fresh Kills, are landfill methane gas control, leachate collection and treatment, and a post-closure operation and maintenance plan for a minimum 30-year period. These regulations are enforced by the New York State Department of Environmental Conservation (DEC) as part of the New York State Codified Rules and Regulations, Part 360, "Solid Waste Management Facilities," specifically, subsection 360-2.15, "Landfill Closure and Post Closure Criteria." Closure at Fresh Kills, in accordance with these regulations, is implemented by the Department of Sanitation, (DSNY). This closure includes installing final cover at the landfill mounds (two are completed and two are undergoing final cover), groundwater and surface water protection measures (including leachate collection and treatment), and landfill gas collection. The original method for releasing the methane buildup on the landfill was through flaring, performed at three flare stations on the site. This method of flaring of the gas was replaced with the sophisticated gas collection system that now harnesses the methane gas and utilizes it as an energy resource. The stations are maintained to be operational in the case of a temporary closure of the gas collection plant and for the future, when methane production decreases to such a level that it is no longer financially viable to extract the methane from the mounds. At that time, the gas may again be flared at up to two of the three stations.

Once the site is open for park use, continual monitoring of the water and air will continue for the duration of the required post-closure maintenance period to ensure that allowing public access does not impact public health. Environmental control systems and monitoring programs will be in place at Fresh Kills to monitor conditions to protect the environment, public health, and indigenous and migratory wildlife from adverse environmental impacts associated with the landfill. As a result, the potential pathways of pollutant exposure—areas used by hikers or kayakers for example—are monitored and regularly tested to ensure that the public health and the environment are protected.

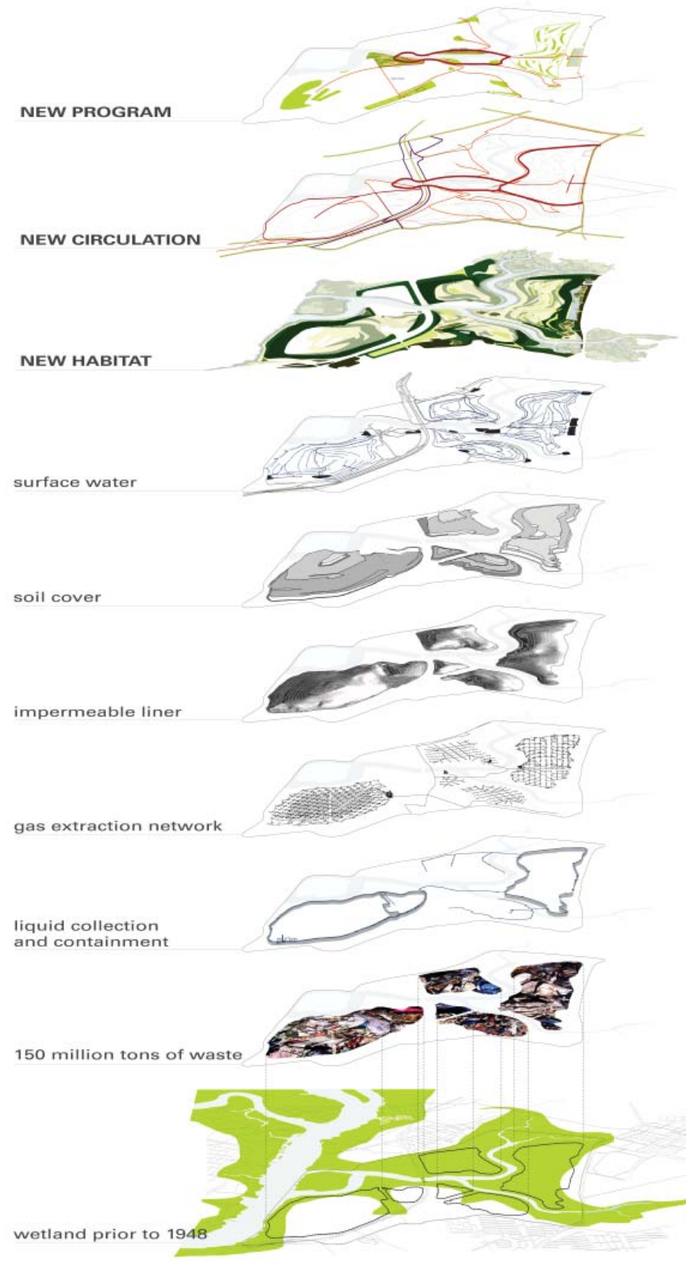


FIGURE 17: HISTORICAL AND INFRASTRUCTURAL LAYERS FOR THE FRESH KILLS SITE

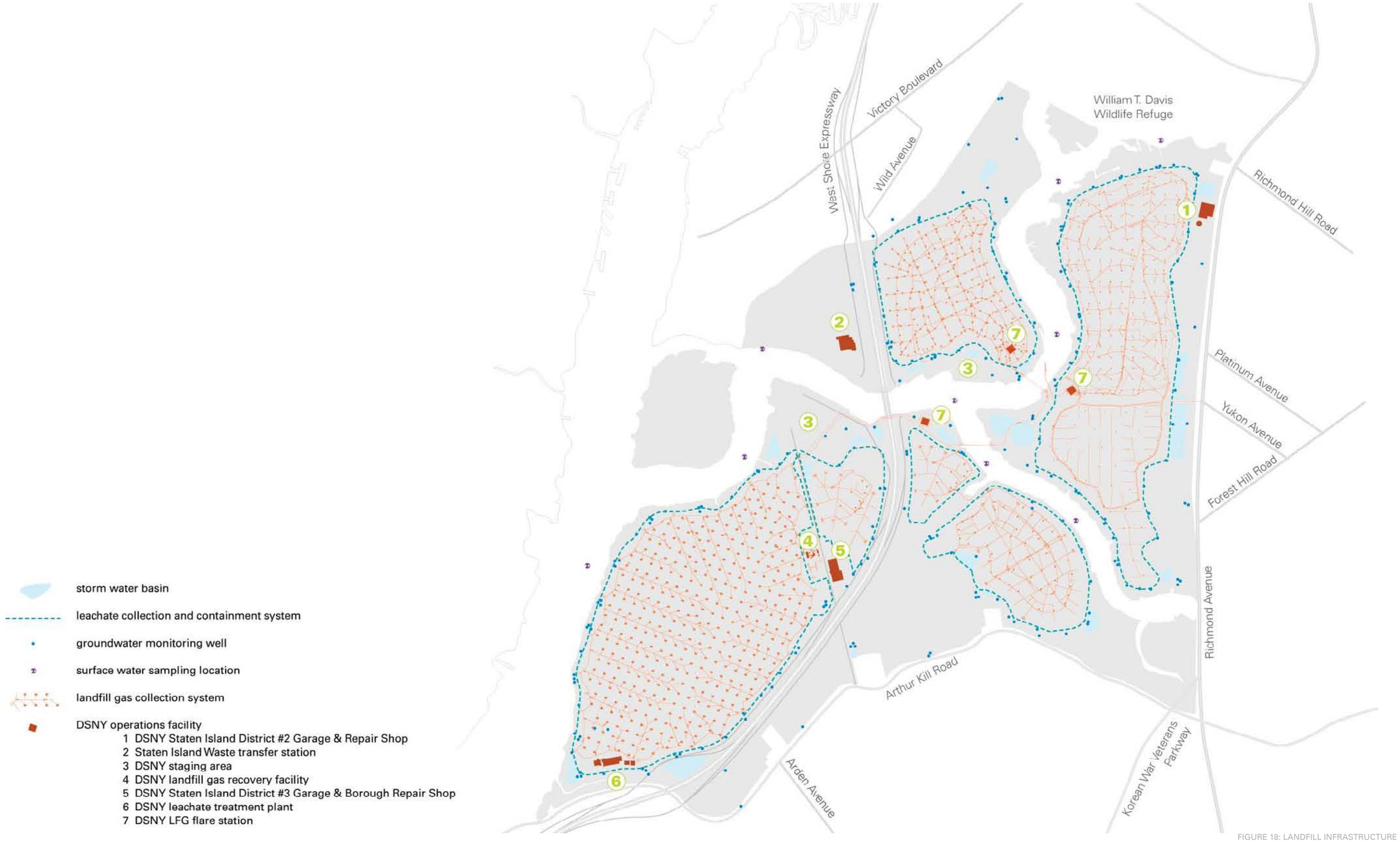


FIGURE 18: LANDFILL INFRASTRUCTURE

2.5 THE ILLUSTRATIVE SITE PLAN

The lifescape site plan:

The Fresh Kills Park: lifescape illustrative site plan (figure 20), shows the overall organization of the park. The plan illustrates a coherent landscape framework for Fresh Kills Park that supports the six primary design goals for the project, each defined through public outreach during the master planning phase:

- Create a world-class, large-scale park that capitalizes upon the unique characteristics of its metropolitan location, vast scale, openness and ecology;
- Restore ecological systems across the site and cultivate a diverse, sustainable landscape, potentially incorporating the use of state-of-the-art land reclamation techniques, alternative energy resources and ecological demonstration projects;
- Create extraordinary large-scale settings for a range of activities and programs that are unique in the city, allowing for extensive active and passive recreation, educational amenities and cultural enrichment;
- Honor the events of September 11 and the enormous recovery effort that took place at Fresh Kills in a dignified, unique and powerful way;
- Build a limited system of ecologically sensitive park drives to optimize local and regional access to and around the park and reduce local traffic congestion through improved connectivity;
- Stage the implementation of the park build-out in a way that affords maximum public gain early on (within the next 10 years) while also ensuring safe and effective operations of ongoing landfill closure, maintenance and monitoring.

Proposed land use

A diverse mix of uses is proposed, but the majority of the park—1,740 acres—is devoted to natural areas, including open water, salt marsh and freshwater wetlands, meadow and woodland. Over 40 miles of bikeways, trails and paths open up many of the meadow and woodland areas for recreation in wild settings and enjoyment of the large-scale open space. The waterways can be used for boating and fishing as well as habitat, while the wetlands are reserved for wildlife.

The master plan recommends a wide array of sports and recreation facilities, cultural and educational activities, restaurants, market spaces, waterfront programs, energy farming and greenhouses, art, architecture, gardens and earthwork features for the 330 acres of the park designated for active programming. The proposed land use approach is consistent with the aspirations for Fresh Kills Park suggested by participants in public meetings over the past three years.

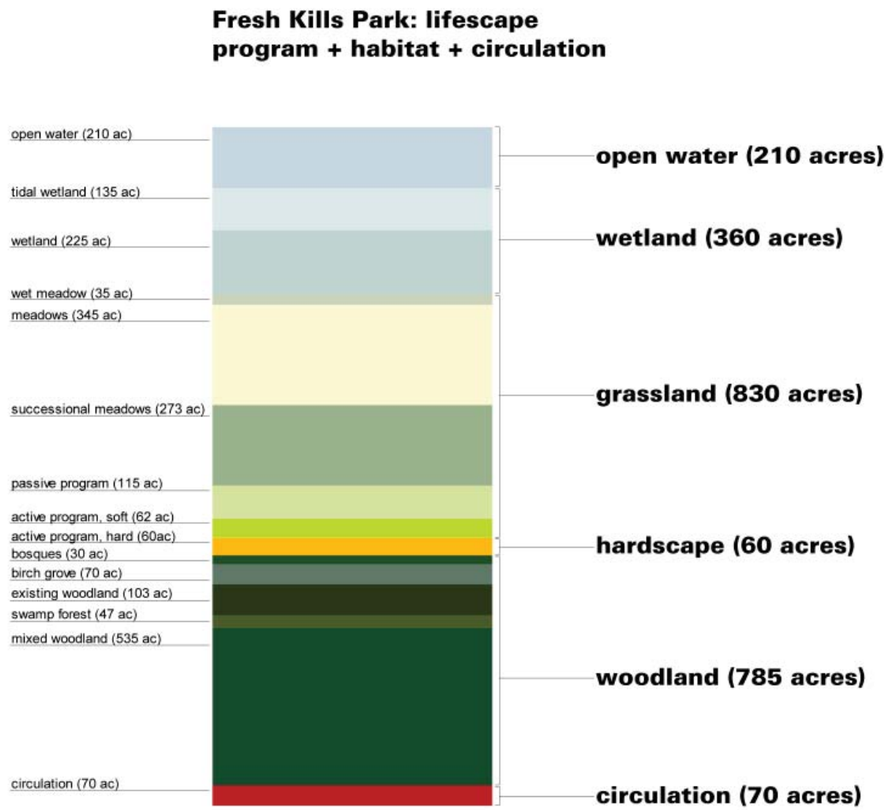


FIGURE 19: CHART SHOWING DISTRIBUTION OF PROGRAM AREAS AND LANDSCAPE TYPES

- bosque parking lot
- non-vehicular entrance
- vehicular entrance to parking areas only
- vehicular entrance
- ferry landing
- DSNY + park service entrance
- proposed interchange
- existing interchange
- new park drive
- new park drive alternate A
- new park drive alternate B
- secondary park drive
- primary recreational path
- secondary paths + trails
- lighting and media screens
- low salt marsh
- high salt marsh
- mud flat
- low tide
- high tide
- wet woods
- swamp forest
- dry prairie
- moist prairie
- successional meadow
- turf
- program concentrations
- grove
- sycamore bosque
- proposed woodland
- existing woodland

NORTH PARK
1 tennis, handball or basketball
2 playground
3 hockey rink
4 restored stream and trail
5 softball field
6 Travis parade ground
7 nature center
8 picnic strip
9 birding dock
10 canoe dock
11 wildlife observation deck
12 fishing dock
13 floating dock for birders and kayaks
14 William T. Davis Wildlife Refuge
15 overlook picnic deck
16 hilltop open field for kites + games
17 flare station: art installation / performance area
18 wind energy farm
19 native plant center greenhouses

SOUTH PARK
20 horseback riding, cross-country skiing + hiking trails
21 restored wetland inlet
22 cross-country running and hiking trails
23 mountain biking course
24 hilltop meadow + overlook deck
25 berm overlook / art installation
26 Arden Heights neighborhood park, barbecue + play area
27 berm trail
28 pedestrian + bicycle bridge
29 equestrian center + stables
30 equestrian training ring
31 open lawn for steeplechase, carnivals, concerts
32 tennis center
33 multi-sport sports barn
34 restored wetlands
35 Owl Hollow soccer fields
36 Arden Heights Woods
37 early intervention entrance + information center

CONFLUENCE
The Point
38 restored wetland
39 pier overlook
40 ferry landing
41 market roof
42 fishing + family picnic piers
43 signature bridge
44 restaurant row
45 barge gardens
46 marina for small boats
47 light towers / media field posts + screen
48 banquet hall facilities
49 multi-use sports fields
50 arts exhibition space + cultural programming
51 discovery center
52 amphitheater
Creek Landing
53 visitor center
54 fishing pier
55 event lawn
56 esplanade + market shade roof
57 restaurants
58 canoe rentals, boat tie-up + boathouse
The Terrace
59 fishing piers and boat tie-up
60 wetland garden
61 flare station + screen
The Marsh
62 sunken forest exhibit + performance space

WEST PARK
63 hilltop field
64 habitat area for grassland + nesting birds
65 Department of Sanitation garage
66 methane gas recovery plant and screen
67 Isle of Meadows bird sanctuary
68 water entry to the park
69 Isle of Meadows bird-watching overlook
70 boat + fishing deck
71 September 11 earthwork monument to the recovery effort
72 September 11 materials area (TBD)
73 landfill leachate treatment plant
74 future rail lines to transfer station (outside park boundary)
75 organic compost manufacturing area (outside park boundary)
76 Staten Island waste transfer facility (outside park boundary)

EAST PARK
77 East Park drive (alt. A)
78 East Park drive (alt. B)
79 East Park drive south
80 waterfront bike path and running loop
81 event lawn and overlook
82 light installation, morphing timelines: energy
83 outdoor classroom
84 freshwater marsh interpretive center
85 wetland garden boardwalk
86 picnic area + paddling club
87 kayak and canoe tie-up
88 La Tourette Park
89 tidal marsh
90 flare station + screen
91 Department of Sanitation garage
92 berm overlook
93 potential golf course or recreation fields
94 pedestrian + bicycle bridge

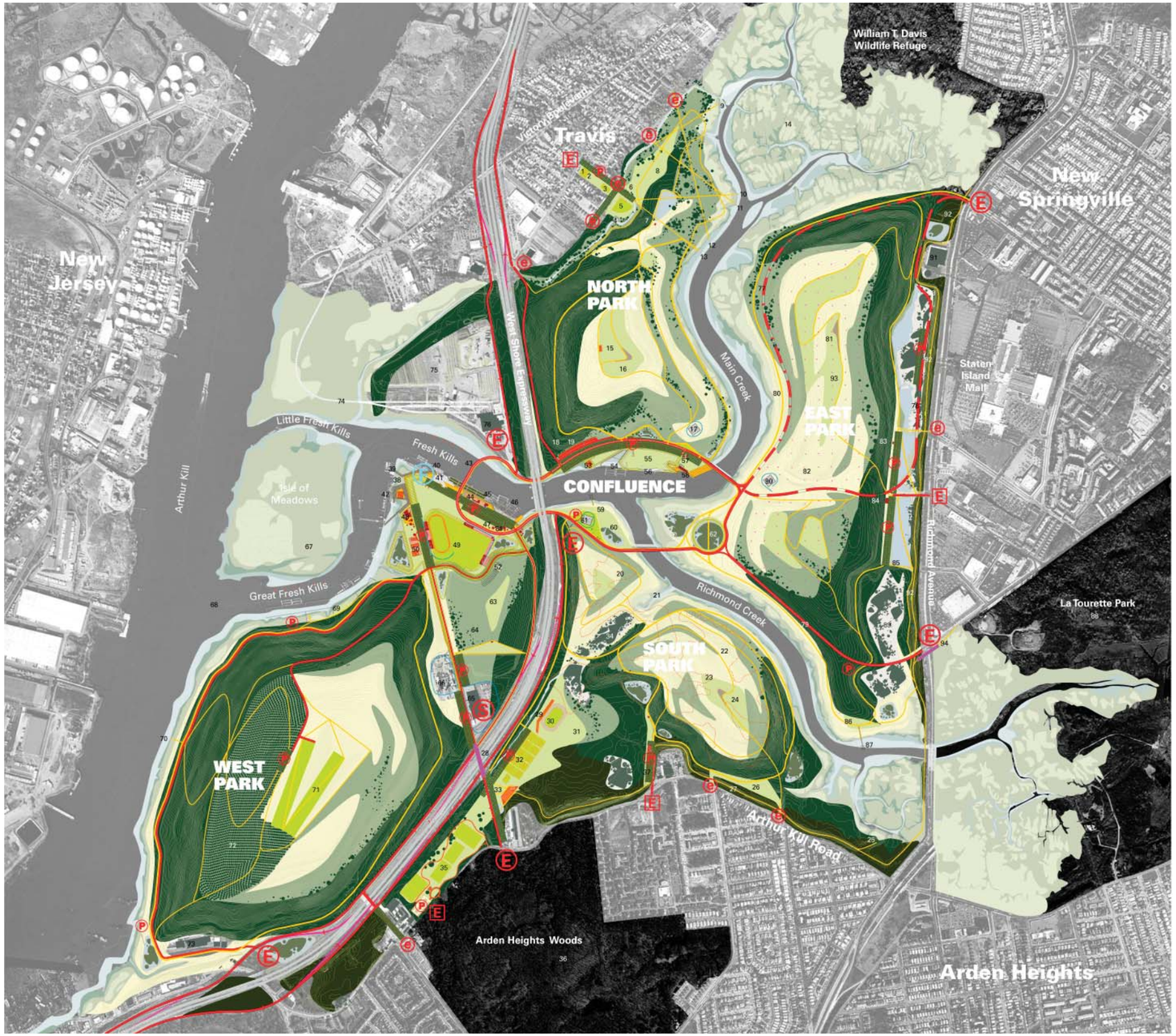


FIGURE 20: ILLUSTRATIVE SITE PLAN

0 mile 0.25 mile 0.5 mile 1 mile

2.6 VEHICULAR CIRCULATION PLAN

The site plan optimizes connectivity, access and movement. The circulation plan responds to five primary goals:

- Optimize connectivity within and beyond the site, facilitating both local and regional access to major destinations in the park and alleviating local traffic congestion. Allow all areas of the park to be accessible to all people and compliant with ADA regulations;

- Integrate vehicular park drives into the landscape, using curvilinear geometry to follow the contours and create slow (35 mph), scenic driving experiences;

- Enhance the park experience with an extensive intermodal circulation network, including multi-use paths and trails; specially designated paths for bicycles, mountain bikes, horseback riding and hiking; boating access; local bus connections; and a docking facility for passenger ferries;

- Use the drives and pathways to help orient visitors in the park through varied materials, signage and signature design, and provide pedestrian-friendly crossings;

- Coordinate the implementation and operation of new drives, paths and trails with ongoing maintenance and service needs associated with landfill closure.

Vehicular circulation is accommodated through the construction of seven miles of new park drives, most of which will be in place by 2009. The city is committed to providing connectivity from Richmond Avenue to the West Shore Expressway. With new entrances at Richmond Avenue (one at Richmond Hill Road and one at Forest Hill Road), the drives can be routed around the East Mound to the center of the site, and then on to the West Shore Expressway. The roads will be designed to provide the needed connectivity and to preserve large open spaces and habitat areas. While the preliminary traffic analysis indicates that the proposed single-lane, two-way drives will adequately serve demand, a roadway system incorporating two lanes in each direction to provide future capacity for long-term growth will be studied in detail. This study will include a preliminary engineering analysis. In addition, a four-lane road system will be evaluated in the project's EIS.

A new signature-design bridge west of the expressway will complete the loop, improving circulation and access to the western part of the parkland. From the loop, service roads will extend north and south (parallel to the expressway), facilitating connectivity to and from Arthur Kill Road, and north to and from Victory Boulevard. As the specific siting of the drives must balance environmental, landfill management, regulatory and local transportation demands, alternative driveway designs and access locations on and off the expressway will be explored as part of the EIS.

The design team is also studying two alternative drive alignments in East Park, both of which are equally effective in terms of meeting traffic and site design goals and providing scenic and direct routes. The west side of the mound, alignment A, presents technical challenges to construction of roadways on mound slopes and presents a visual intrusion in the northeastern part of the park near the William T. Davis Wildlife Refuge. The east side of the mound, alignment B, also presents technical challenges to bring the road to grade and over the mound, and impacts upon the freshwater pond system between the East Mound and the Richmond Avenue berm. These alignments will undergo further study in the EIS to determine the preferred route.

FIGURE 21: ILLUSTRATIVE VIEW OF NEW PARK DRIVE

FIGURE 22: ILLUSTRATIVE VIEW OF PARK DRIVE ALIGNMENT A LOOKING SOUTH ALONG MAIN CREEK

FIGURE 23: ILLUSTRATIVE VIEW OF PARK DRIVE ALIGNMENT B LOOKING SOUTH ALONG RICHMOND AVENUE

FIGURE 24: PROPOSED VEHICULAR CIRCULATION PLAN

2.7 PARKING PLAN

Parking will be distributed throughout the park in tree-shaded lots with permeable surfaces. At major gathering points, the tree-lined parking areas, or "bosques," will become major design features.

Even though the goal of island officials is to greatly enhance public transportation, it is unlikely that a paradigm shift away from a highly car-dependent community will take place within the next 50 years on Staten Island. Therefore, this site must be prepared to accommodate a large population of attendees arriving to the site by car. However, because the site is intended to be a major urban habitat, the parking program needs to be carefully integrated into the overall landscape of the park.

The strategy is to disperse the parking at appropriate locations throughout the site, allowing for localized or neighborhood access associated with the many secondary park entrances. These entrances, intended to provide local residents with access to the park by bicycle or on foot, will also provide sufficient space for parking. The lots will be designed with permeable surfaces to reduce heat island effect and control runoff, and will be lined with trees to blend into the surrounding natural habitat. These parking areas will be sized appropriately for the uses that can be accessed in the park area that adjoins each entrance.

Larger parking bosques, lined with mature trees, will become major elements in the areas of high concentration, the Point and Creek Landing. This concentration allows for users to access the hub, which is centered at the two bulkheaded non-landfilled dock areas of the site, at points where all of the mounds can be accessed. This strategy will allow for maximum opportunity to experience the many diverse areas of the park.

The parking areas, as well as the two main access roads into the confluence, will also contain much of the necessary infrastructure that will need to be brought to the site to accommodate envisioned new programs. This infrastructure will likely be supported by on-site energy generation techniques under consideration.

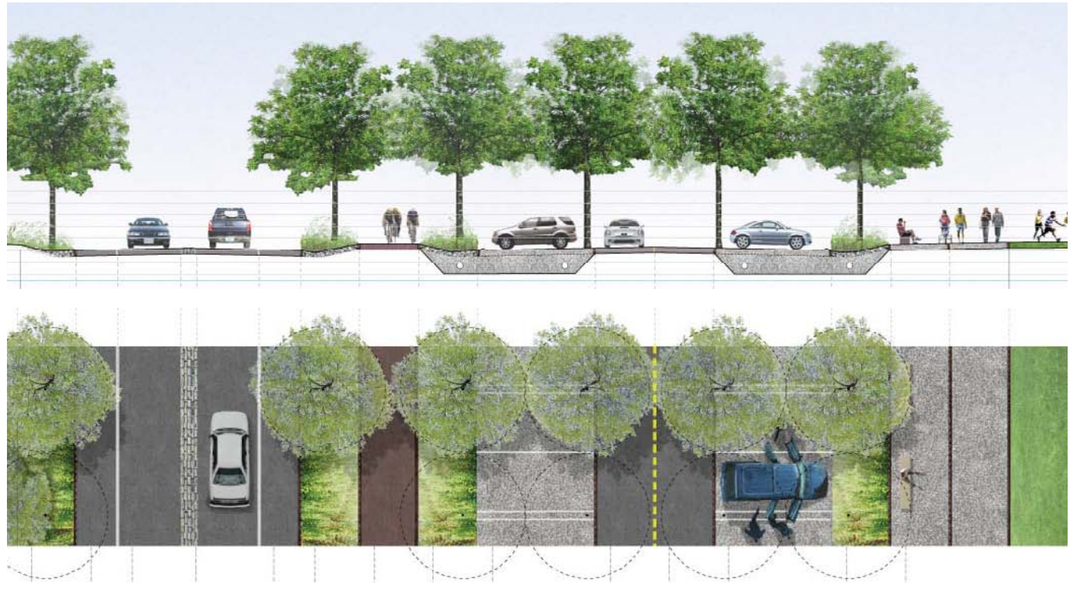


FIGURE 25: ILLUSTRATIVE SECTION AND VIEW OF THE PARK DRIVE, BIKE LANE, PARKING BOSQUES AND MULTI-USE PATH AT CREEK LANDING

FIGURE 26: ILLUSTRATIVE AERIAL VIEW OF THE PARKING BOSQUE ADJACENT TO CREEK LANDING LOOKING WEST

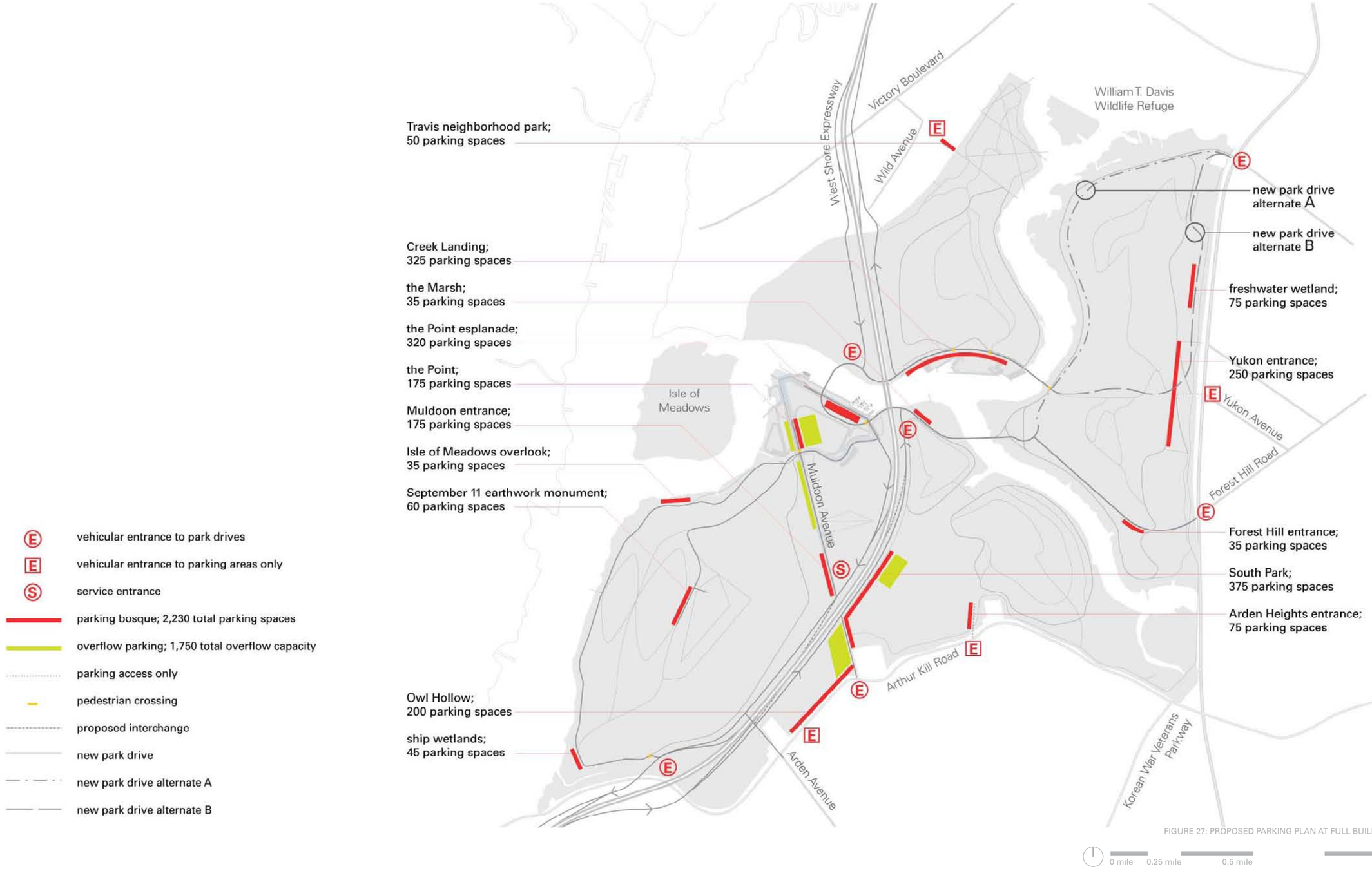


FIGURE 27: PROPOSED PARKING PLAN AT FULL BUILD OUT

2.8 NON-VEHICULAR CIRCULATION PLAN

A variety of paths and trails allow for extensive movement and access to all areas of the park.

Many of these paths allow for multiple users (walkers, cyclists, runners, etc.), while others are specifically designated for single use. All paths are separated from roads, with special pedestrian crossings as needed to facilitate safe passage. Most paths are also designed to be compliant with ADA standards. There are three types of paths suggested for the park:

Multi-use paths accommodate a mix of non-motorized usage (walking, running, cycling, horseback riding). These 20-foot-wide pathways create loops (13 miles in sum) around the base of each of the mounds, allowing visitors to complete a measured circuit (ideal for walkers and runners). With signage, seating, picnic areas and lighting, these loops could be the primary activity paths in the park. These paths also accommodate service, maintenance and emergency vehicles.

Specially designated paths and trails allow for separation of cyclists, mountain bikers, horseback riders, pedestrians and hikers. The plan provides more than 20 miles of such paths, each specifically designed for their user group.

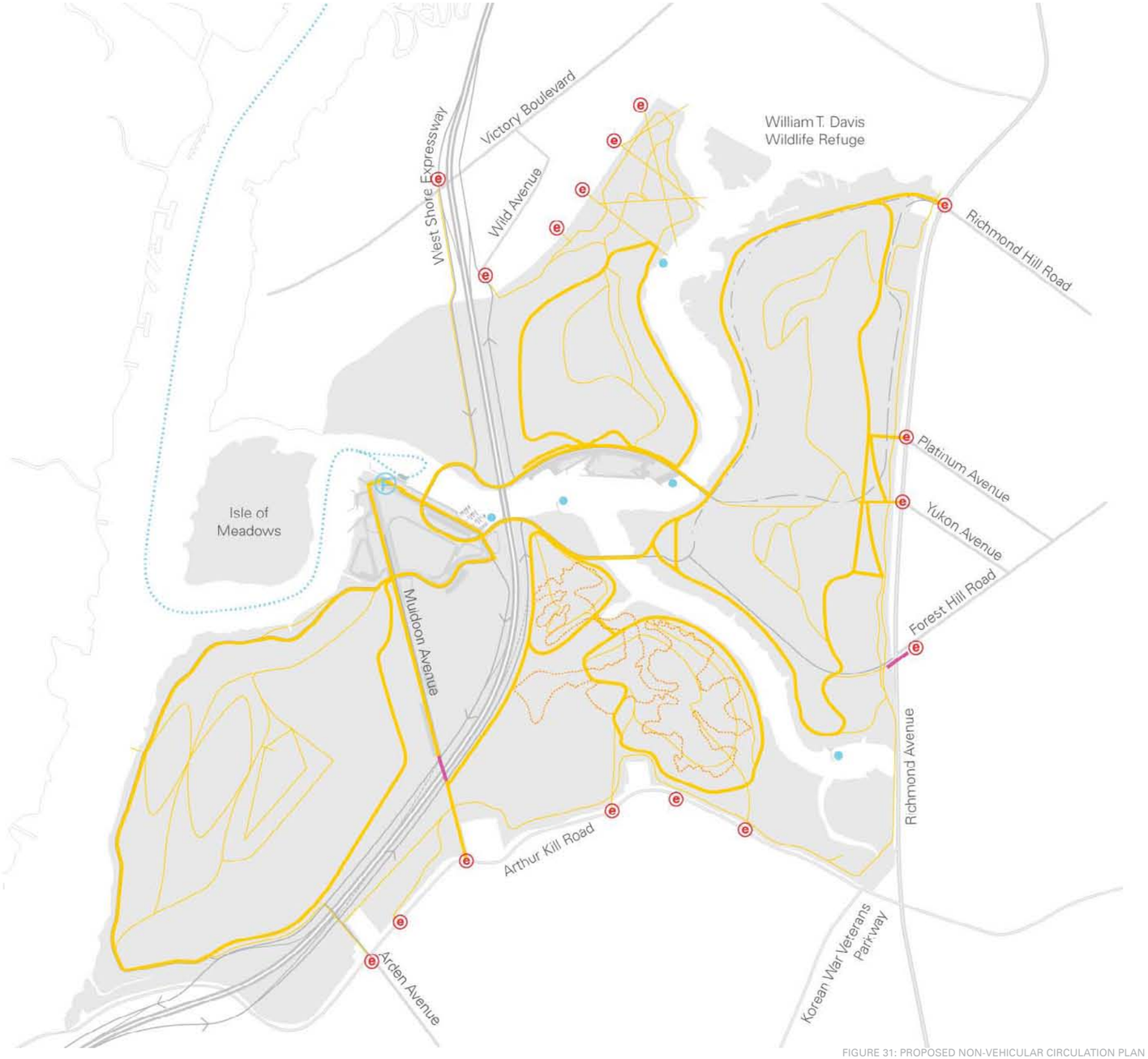
Waterfront access is accommodated by numerous docks and launches around the creeks. A larger boat facility is proposed west of the expressway (at the Point) for boating west to the Arthur Kill. A ferry port is also proposed to facilitate connection to and from Manhattan.

Key connections are needed to ensure non-vehicular access into the park and between park areas. Two pedestrian overpasses are envisioned, both critical to connectivity. The first, across Route 440 at Muldoon Avenue, allows for direct non-vehicular connections between West Mound and South Mound with regional connectivity for pedestrians, bicycles and horses moving north to south. The second critical connection allows for direct non-vehicular movement across Richmond Avenue. While at-grade crossings will be available at the intersection of Richmond Hill Road and Forest Hill Road, a direct above-grade link between the greenbelt and Fresh Kills Park will be essential to the connectivity of these two large park expanses. Both bridges are envisioned to be constructed in the later phases of park implementation.

FIGURE 28: ILLUSTRATIVE VIEW OF THE MULTI-USE PATH ALONG THE BASE OF NORTH PARK

FIGURE 29: ILLUSTRATIVE VIEW OF THE BICYCLE PATH ALONG THE BASE OF SOUTH PARK

FIGURE 30: ILLUSTRATIVE VIEW OF THE CANOE AND KAYAK LAUNCH AT NORTH PARK



- non-vehicular entrance
- ferryboat waterway
- ferry dock
- canoe and boat launch
- pedestrian bridge
- primary multi-use recreational path
- paths + trails
- mountain biking trails

FIGURE 31: PROPOSED NON-VEHICULAR CIRCULATION PLAN

0 mile 0.25 mile 0.5 mile 1 mile

2.9 PROGRAM PLAN

The cultivation of Fresh Kills Park will help enhance the identity of Staten Island as a place to live, raise children, visit and enjoy.

There is extraordinary potential at Fresh Kills for a wide range of active uses to be set within generous and diverse landscapes: a rich reserve for nature and wildlife, cultural and social life, environmental education and outdoor arts, active recreation and sports, and alternative energy resources and experimentation. The sheer size of the site allows seemingly incompatible programs (wildlife habitat and major public gatherings) to coexist. The Master Plan aims to promote the development of a lively mix of programs by creating extraordinary settings for a wide range of activities. Over time, the park program will become increasingly diverse and focused as the community and stewardship group adaptively manage the site to suit particular interests and needs. The program strategy for the site plan has five main goals:

- Create a distinctive programmatic identity for the park that is contemporary, productive, active and green, incorporating nature, art, leisure, recreation, education and park commerce;
- Create neighborhood-scaled recreational facilities for local communities;
- Design a durable landscape framework that is flexible enough to accommodate change;
- Organize and stage park programming around existing natural resources and site features, including ongoing landfill closure, maintenance and monitoring operations;
- Concentrate active programs and structures in the center of the site, responding to both central connectivity and the preservation of large open landscape areas;
- Identify opportunities for commercial programs that will help generate revenue and sustain the park.

A contemporary park at Fresh Kills can accommodate a range of active programs that the city's historic parks cannot—a competition-sized mountain biking venue, orienteering, boating, cross-country running and skiing, team sports, festivals and even camping. At the same time, areas of the site can be preserved as quiet natural areas that are beautiful and scenic and improve regional environmental health.

Active program and commercial uses are concentrated in two high-intensity areas: the Point and Creek Landing. Additional sports and recreation facilities are found in three sites within South, East and North Parks. Passive program areas are more dispersed. All of these settings are nested in open landscapes laced with paths and trails.

The Master Plan concentrates active programs in the dry, lowland, non-landfill areas that do not have significant existing vegetation. The lowlands form a connective tissue between the mounds, the wetlands and waterfront. Relatively flat, the lowlands are suited to architecture, playing fields and other large surface programs. Lowland areas in the Point and Creek Landing have been paved and bulkheaded to support current DSNY operations facilities. These waterfront areas are the most flexible in terms of future active and commercial development. The plan limits programming and construction on the mounds to paths and trails, earthworks, open fields, public art and scenic overlooks. Construction in the wetlands is limited to boardwalks, viewing platforms, signage, and fishing and boat docks in select areas. Proposed elements will recognize the site's recent past as an industrial facility, while also pointing to the future integration of nature, culture and technology as the park evolves. The site may also accommodate community facilities, such as NYPD and FDNY stations.

FIGURE 32: ILLUSTRATIVE VIEW OF A FIREWORKS DISPLAY ON THE GREAT LAWN AT CREEK LANDING

FIGURE 33: ILLUSTRATIVE VIEW OF THE TRAVIS NEIGHBORHOOD PICNIC AREA AND PLAYGROUND

FIGURE 34: ILLUSTRATIVE VIEW OF THE OWL HOLLOW SOCCER FIELDS

FIGURE 35: SITE PROGRAM PLAN

2.10 STRUCTURES PLAN

There is a unique opportunity for distinctive and innovative architecture at Fresh Kills for all envisioned building types.

We envision an architecture that is consistent with the landscape and ecological strategies outlined in the Master Plan. This implies an architecture open to change and adaptability, yet fully integrated with the local ecologies and site conditions. Many of the structures and programs proposed will need to anticipate changing programmatic needs; others may be only temporary, or will need to be relocated over time. Still others will be required to service the site, including comfort stations, maintenance buildings, security posts and storage. The idea is to integrate these facilities into the landscape so as not to detract from otherwise scenic settings. The plan proposes an innovative architectural palette of open roof structures, multi-use sheds, platforms or programmable surfaces—a flexible architectural infrastructure that will adapt as the site itself develops and changes. Some site structures could provide the opportunity for artist participation.

Three architectural typologies govern the plan. First are vertical structures, modest in height, which include information posts, observation platforms, large fence screens designed to protect non-public infrastructure, signage and wayfinding, and park entrance structures at both the neighborhood and regional scale. Second are horizontal structures: low buildings such as boathouses, cafes, market roofs, shade structures, bleacher-type seating, canopy structures, comfort stations and park administration, maintenance and security facilities. And third are boxes: large enclosed buildings that echo the industrial sheds on the site today, but reinterpreted or retrofitted existing structures for new uses in a contemporary park setting. These include larger restaurants, banquet halls, visitor centers, a sports barn and art and community workshop facilities for public art. Structures are generally confined to the Confluence area in an effort to limit building on mounds and in wetlands and preserve large open landscape areas. Signage elements may be more broadly distributed, especially around entrances and overlooks, providing information about the unusual transformation and restoration process at Fresh Kills.

All structures in the park are envisioned to conform to the highest degree of environmental conservation and principles of sustainability. All structures are designed to:

- have a minimal impact on the site by reducing built footprints and heavy foundations;
- take advantage of opportunities for passive heating, cooling and ventilation systems;
- where appropriate, incorporate sustainable technologies such as photovoltaics or greenroofs;
- utilize local, industrial or recycled materials wherever possible;

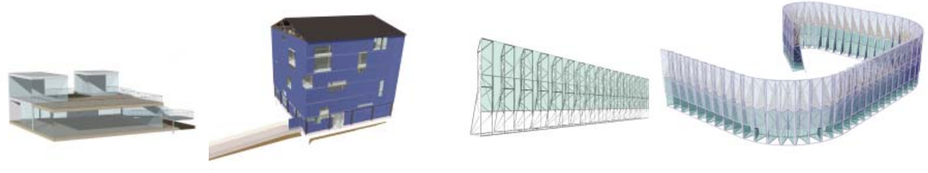


FIGURE 36: POSSIBLE ARCHITECTURE TYPOLOGIES: DESTINATION RESTAURANT, INFO/VISITOR CENTER, VIEW SCREEN AND FLARE SCREEN

FIGURE 37: ILLUSTRATIVE VIEW OF THE VISITOR CENTER, GATHERING EVENT ROOF AND OBSERVATION PLATFORM

FIGURE 38: ILLUSTRATIVE VIEW OF FLARE STATION ARCHITECTURAL SCREEN

FIGURE 39: ILLUSTRATIVE VIEW OF THE INTERIOR OF THE BLUE BARN GALLERY

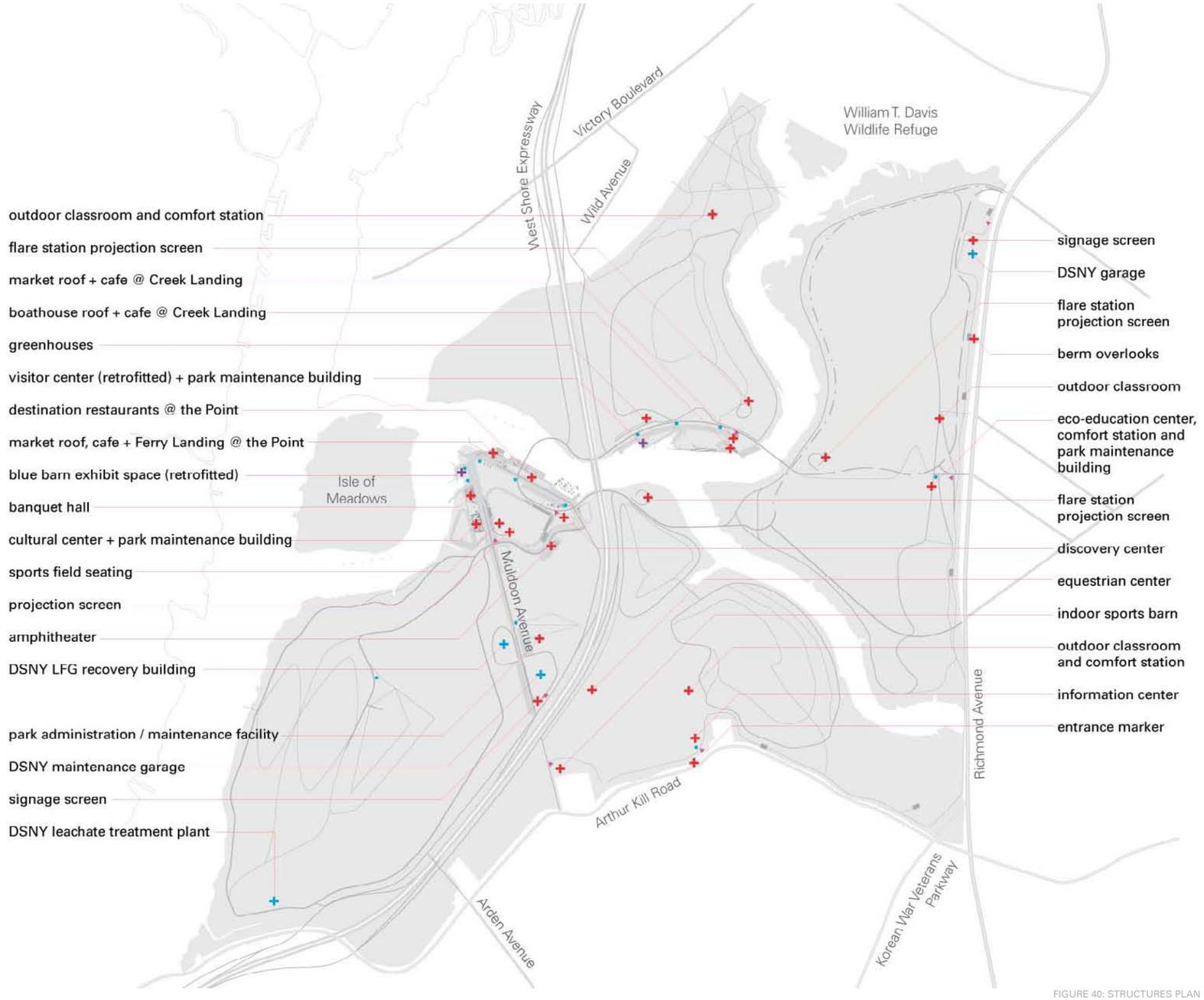


FIGURE 40: STRUCTURES PLAN

2.11 ART AND CULTURE AT FRESH KILLS

A site as culturally significant as Fresh Kills—with its history of consumption, waste, endless work, engineering and, now, transformation—calls out for the integration of art and culture throughout the new parkland.

The master planning team continues to collaborate with the Department of Cultural Affairs to explore opportunities for artists' contributions and involvement throughout the site's development. The plan envisions and recommends locations for art and community workshops, galleries and exhibitions, public art and an amphitheater for performances, although artists' explorations need not be so limited. Indeed, artists should be involved with many aspects of site design, furniture and signage and in the ongoing development and planning of cultural events.

The master planning team is also collaborating with artist Mierle Laderman Ukeles, commissioned by the Department of Cultural Affairs Percent for Art Program and the Department of Sanitation, on specific proposals for artwork. They come out of her vision for Fresh Kills, where our power to create transformation becomes visible and renews people's connection to the site. These conceptual proposals include:

- **Morphing Timelines: Energy**—This would be an early project for the park's East Mound. Tiny, delicate points of light signal the grid layout of the methane gas monitoring heads, tied to the gas infrastructure organized below the surface. This energy infrastructure system is revealed in two ways: During the day, small mirrors move in tandem, slowly tracking the sun's passage overhead; and at night, cobalt blue solar-powered lights pulse softly. Expressing alternative energy from methane produced from waste decomposition, the artwork becomes a timeline of this productive landscape.

- **Discovery Center With Four Discovery Outposts**—This represents an attempt to capture the spirit of this unique environmental urban park, allowing the stories of Fresh Kills to be interpreted. An entry for visitors at the Point, the Discovery Center comprises a distributed field of earthwork structures and mounds with high-tech interior hollows—eggs—for hands-on learning, experimentation and exploration of advanced developments in ecology, technology and the flow of urban materials. Discovery Outposts would be located at infrastructure work facilities for leachate processing and methane recovery and at various soil manufacturing sites. A series of Media Field Posts around the park reveal provocative insight, at multiple scales, into their location and prospect.

- **Public Offerings: Made By All, Redeemed By All**—All of us made the social sculpture that is Fresh Kills. In order to renew the site's social meaning, 1 million donor citizens are invited to create or select something of personal value as public offerings. These material objects would be offered to be shared in community and embedded in glass blocks as markers of intention materialized. The offerings would be embedded at local workshops held in a citywide network of Cultural Transfer Stations. Each glass block containing an offering is marked with a bar code and is inventoried in a web archive that records, classifies and locates the coordinates of each one on paths and vertical surfaces all around the site.

- **Berm Overlooks**—In the early stages of park development, a series of berm overlooks located around the perimeter of the site would allow people to look into the site and view its transformation. As the site is developed and begins to open, the overlooks themselves morph into staircases, ramps and points of access all around.

FIGURE 41A: MORPHING TIME LINES: ENERGY, DAYTIME VIEW; 41B: MORPHING TIME LINES: ENERGY, NIGHTTIME VIEW

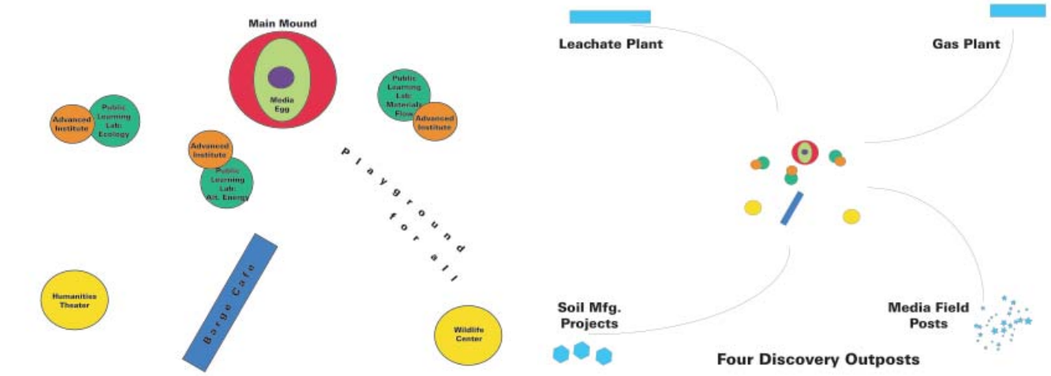
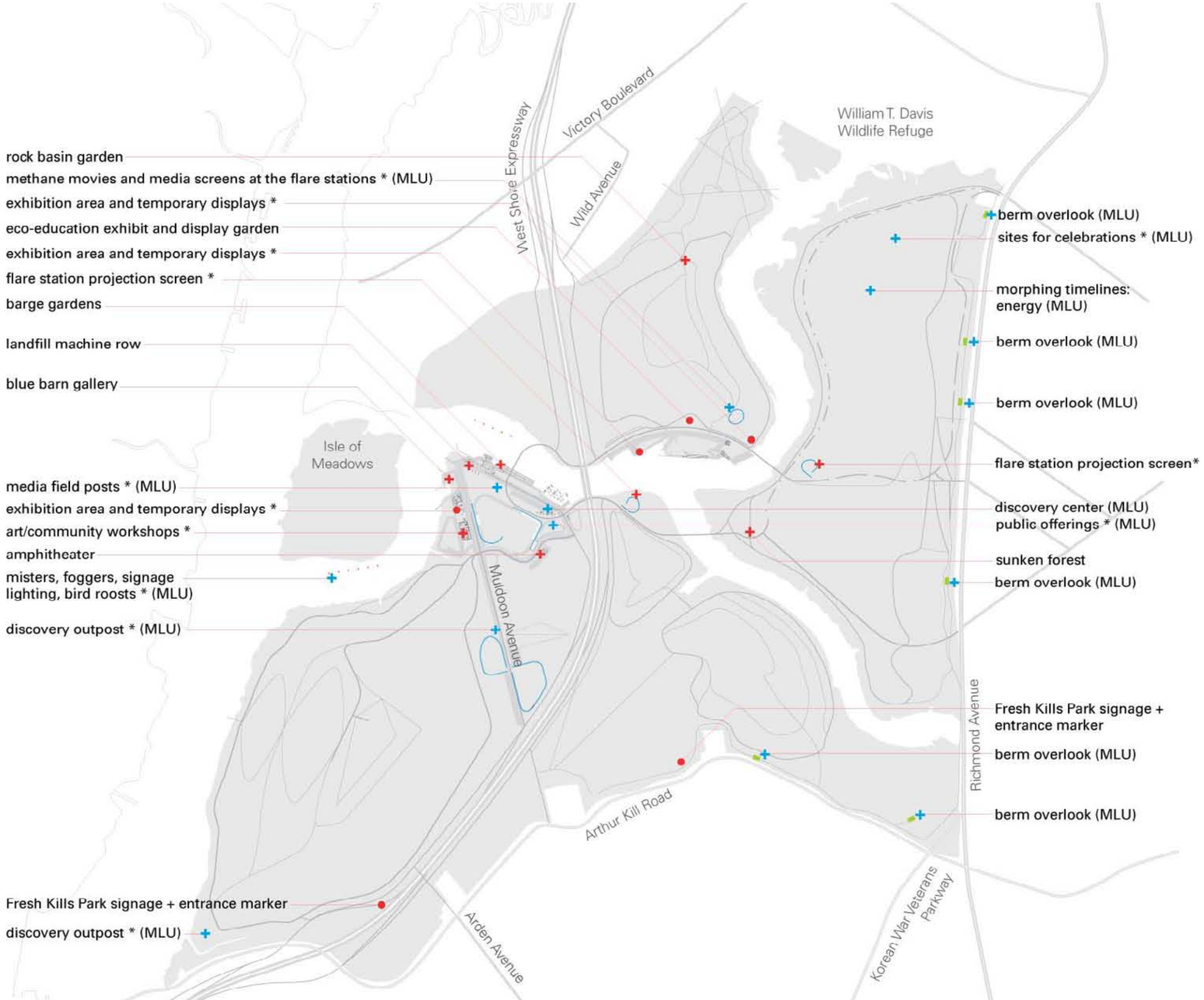


FIGURE 42A: DISCOVERY CENTER, AERIAL DIAGRAM; 42B: 4 DISCOVERY OUTPOSTS, AERIAL DIAGRAM

FIGURE 43A: PUBLIC OFFERINGS: OFFERINGS EXCHANGED VIA NETWORK OF CITYWIDE CULTURAL TRANSFER; 43B: PUBLIC OFFERINGS: ENCASED OFFERING WITH BARCODE



Mierle Laderman Ukeles (MLU) proposals for art work: morphing timelines: energy; discovery center and outposts; media field posts; public offerings; berm overlooks; methane movies and media screens; misters, foggers, signage, lighting and bird roosts; sites for celebrations

proposed cultural facilities/works

other opportunities for art and culture

flare station projection screens

* locations may occur throughout the site

FIGURE 44: ART AND CULTURE PLAN

2.12 LANDSCAPE AND HABITAT PLAN

Before the opening of the landfill in 1948, Fresh Kills was one of the largest and most productive marshes in the Hudson River Estuary.

The site is currently a highly engineered landscape. Vast and varied, it is a complex amalgam of artificial landscape and natural systems. The disturbance to ecosystems and blight of 50 years of land filling has been significant, and much of the landfill now supports only simple, homogenous ecologies dominated by two plant species. Yet Fresh Kills has surprising ecological assets: hundreds of acres of salt marsh, a network of tidal creeks, diverse microclimates created by the artificial terrain, and proximity to the biomass of the Greenbelt from which a rich mix of species could migrate. The Master Plan proposes to build on these natural assets to cultivate a diverse and resilient landscape, one that might improve the performance of the landfill cap covers and reduce maintenance over time. This ambitious transformation of over 2,300 acres of landfill into a dynamic contemporary park is an opportunity for New York to demonstrate innovative ecological techniques for land reclamation. The landscape and habitat plan has five main goals:

- Cultivate a diverse, resilient landscape that is a natural asset to the region in terms of ecological connectivity, water and air quality improvement, biodiversity and sustainability;
- Create meaningful habitat for the region and the estuary by building wildlife corridors linked to existing natural resources, taking into account not only plant life but also bird, mammal, fish, crustacean, insect and microbial communities;
- Organize the park internally around existing natural resources and local opportunities for enhanced habitat creation;
- Design and stage ecological improvements so that the parkland can be understood and enjoyed in each phase of its development as a legible "landscape in process," designed to promote successional diversification over time;
- Integrate ecological improvement plans with ongoing landfill management operations to increase benefits, reduce public expenditure and enhance site sustainability.

Although there are many signs of life at Fresh Kills Park, decades of land filling and industrial cover operations have impaired the health and productivity of ecological systems. Through adaptive engineering of existing ecology, this site can be converted into a diverse and valuable natural and open-space asset. Appropriate site strategies must be tuned to the scale of Fresh Kills and the public mandate for cost-effective solutions. Many techniques that operate well on a smaller scale or in a less challenging site may be difficult to implement on a site this vast, therefore larger-scale agricultural techniques may be more appropriate.

In keeping with the ecological goals of the Master Plan, three primary factors drive the organization of the habitat layer: 1) location of existing natural resources and opportunities for habitat creation, 2) connectivity with adjacent natural resources, and 3) desired spatial envelope and landscape setting for the park.

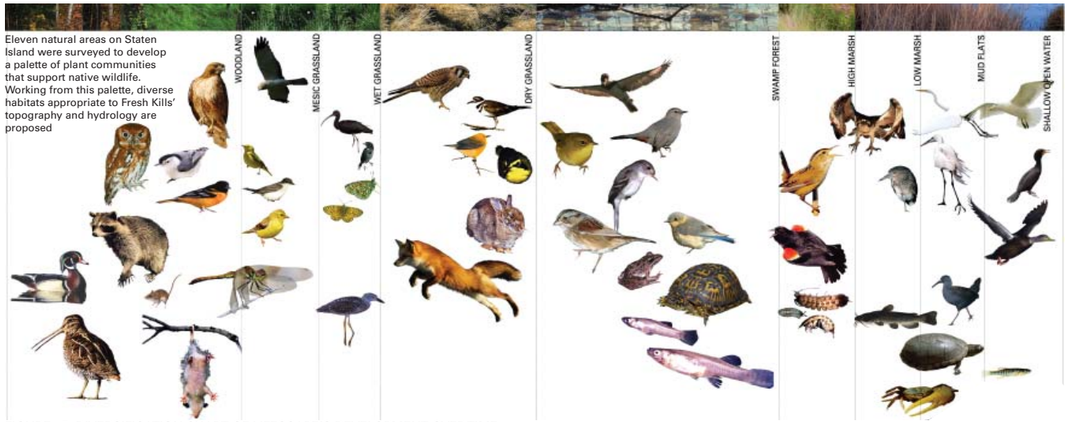
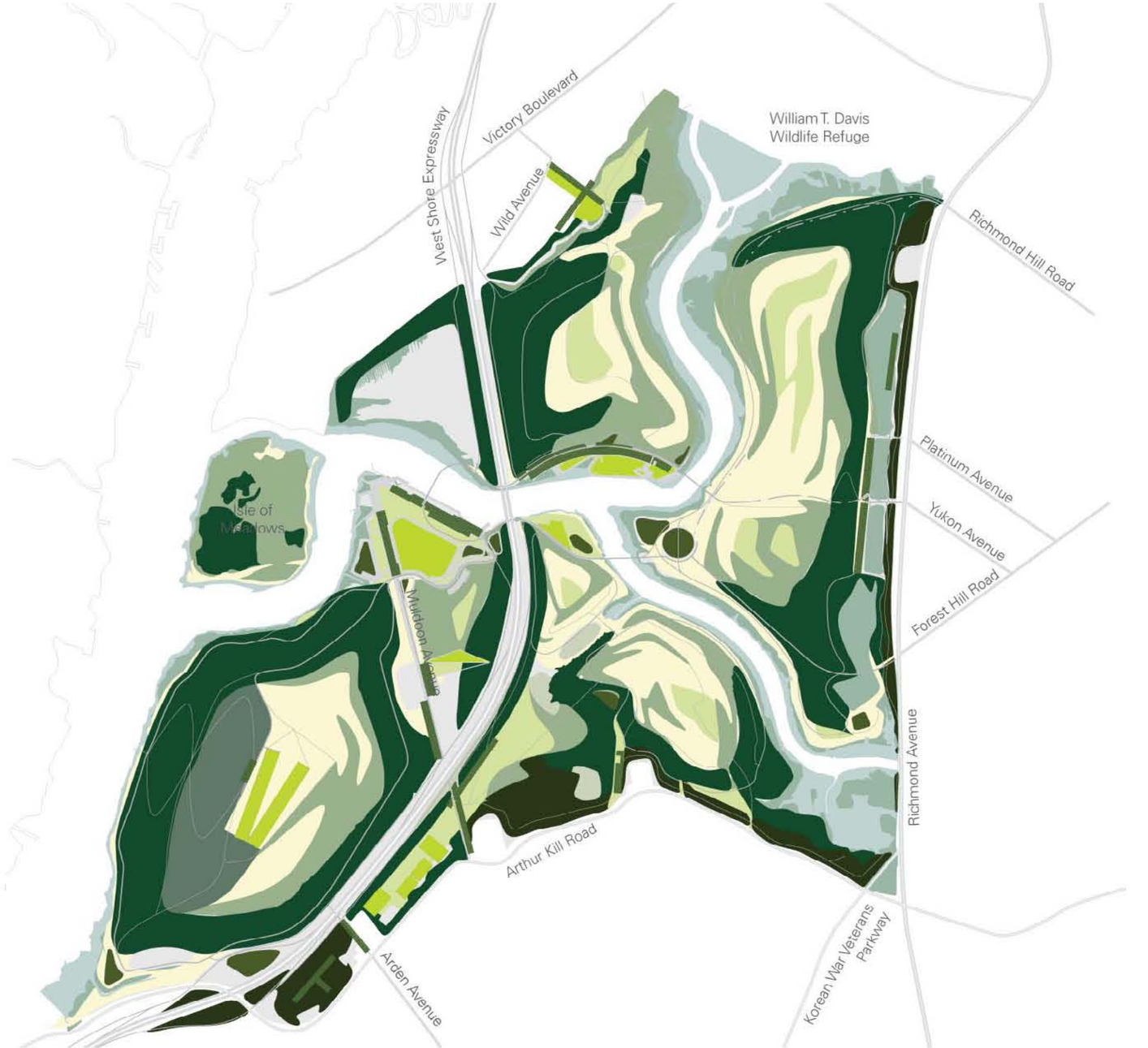


FIGURE 45: DIVERSIFICATION CHART OF LIFESCAPE'S DEVELOPMENT OVER TIME


FIGURE 46: EDUCATIONAL OPPORTUNITIES FOR URBAN RECLAMATION, WETLAND RESTORATION AND ENVIRONMENTAL STUDY


FIGURE 47: EXPANSIVE AREAS OF RECLAIMED AND RE-CREATED WETLAND, GRASSLAND AND WOODLAND



	salt marsh	135 acres
	wetland	225 acres
	meadow	345 acres
	successional meadow	273 acres
	turf	115 acres
	recreational turf	62 acres
	grove	70 acres
	bosque	30 acres
	wet woods	35 acres
	swamp forest	47 acres
	mixed woodland	535 acres
	existing woodland	103 acres

FIGURE 48: LANDSCAPE AND HABITAT PLAN

2.13 HABITAT TYPES

Three primary landscape types are proposed to be created and managed at Fresh Kills–wetlands, grasslands and woodlands.

The 10-foot contour marks the edge of the regulated wetland boundary. From a current regulatory standpoint, land below the 10-foot contour is considered wetland. Over time these wetlands will be renovated to remove invasive species and create more diverse, self-sustaining wetland communities. Off-mound grasslands will be shaped to accommodate new uses in the park. On-mound grasslands will need to be cultivated over time, using special installation and management techniques. The conversion of the current grasses on the mounds to native meadows would help to improve ecological resources and habitat and may reduce costs of mowing and long-term maintenance. Woodlands would be expanded from where they are presently, as well as in significant areas of new planting, both on- and off-mound, to help create a large buffer rim around the site and enhance corridor connectivity with adjacent natural systems. Over time, the plan proposes cultivating a diverse range of wetland, grassland and woodland communities to ensure biodiversity, to test and experiment with different habitat groupings and to construct a truly unique nature reserve.

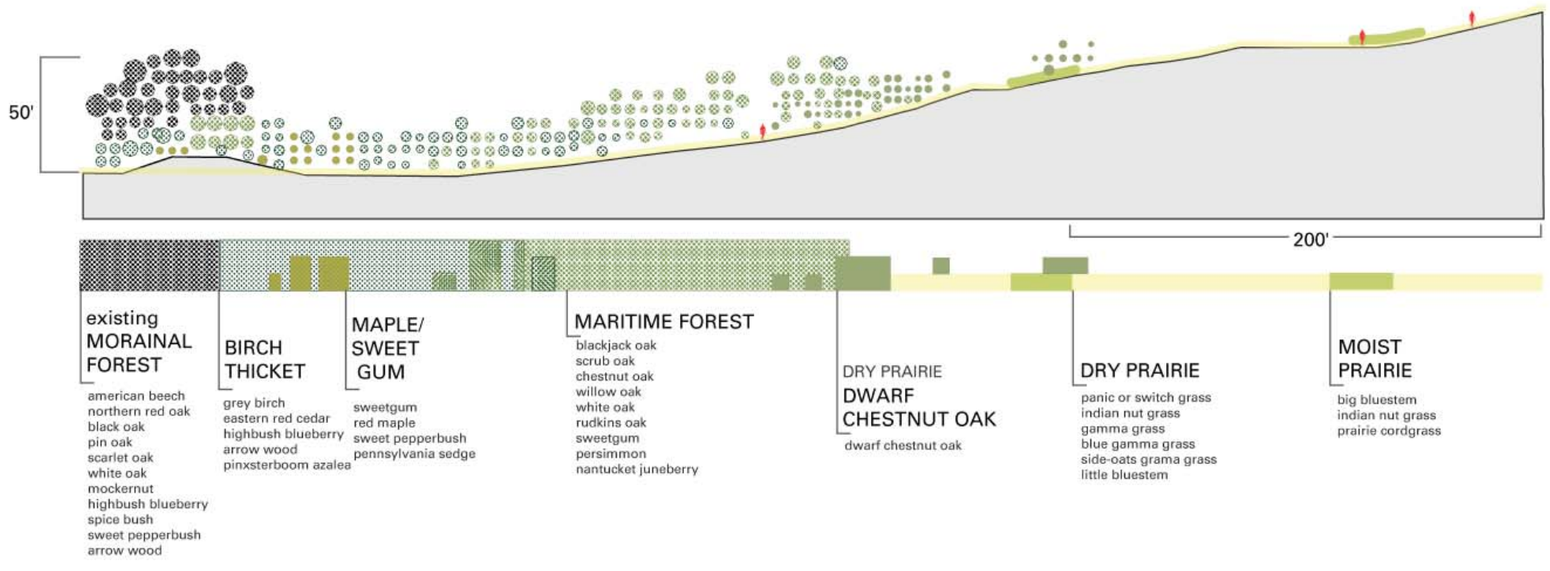
The proposed palette of planted communities at Fresh Kills is based on site analysis and field study in healthy natural areas on Staten Island. It includes hardy species that are adapted to existing conditions, as well as a more diverse set of species suited to improved growing conditions. The plan recommends that habitat creation efforts rely primarily on tough, "workhorse" species. The majority of the vast acreage of the parkland should be planted with reliable plants that do not require a high degree of maintenance. These "workhorse" species will re-establish the prerequisite conditions for natural, successional processes to build diversity over time. Small-scale plantings of a wider range of species will test their adaptability to park conditions and restock the seed bank with plants indigenous to Staten Island. This mixed palette would satisfy the goals of creating significant wildlife habitat while cultivating a diverse, resilient and sustainable landscape.

FIGURE 49: HABITAT MATRIX

0 - 15 YEARS

HABITAT DIVERSIFICATION OVER TIME

early stages: preliminary plantings related to existing biomass and habitat



15 - 30 YEARS

HABITAT DIVERSIFICATION OVER TIME

developed stages: overlapping inter-plantings and "spread" of seed bank and species, establishing stratified habitat communities and diverse ecological matrices

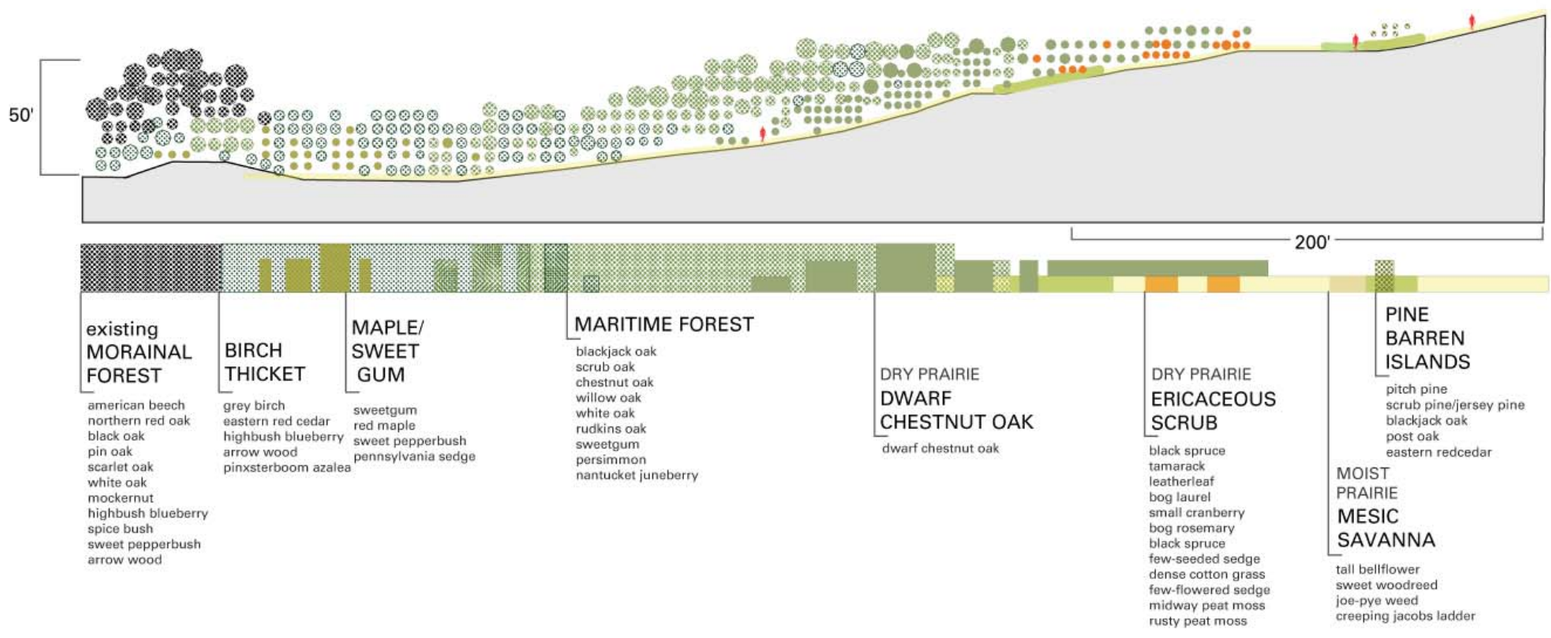


FIGURE 50: HABITAT DIVERSIFICATION OVER TIME

2.14 LANDFILL MOUND RESTORATION PLAN

Based on preliminary analysis, current conditions on the landfill mounds will not be sufficient to meet habitat goals and may be subject to extensive maintenance and repair over the long term.

Soils are thin and of poor quality, moisture levels are generally low but also highly variable, invasive species dominate, and there is very little species diversity. Importantly, the renovation of soils and vegetative cover on the mounds would not only improve the health and diversity of ecosystems across the site but would also improve the performance of the landfill caps by reducing localized cover burnout, minimizing erosion, improving soil hydrology and drainage, thickening soil depth and reducing long-term maintenance costs.

Critical objectives for the mound ecological restoration are:

- increase soil quality and quantity while ensuring structural stability;
- retain more water for plants while avoiding water accumulation;
- reduce the spread of invasive species;
- reintroduce native plant communities capable of building a diverse seed bank and establishing a robust cover;
- minimize maintenance requirements and costs, while complying with regulatory requirements.

The habitat plan proposes a range of techniques for achieving these goals, ranging from in situ management over time to importing and/or manufacturing new soils for overlay on the cap and “farming” the slopes to renovate soils in situ, and then establishing new meadow cover. Given the range of different situations and cover types at Fresh Kills, it is likely that a combination of techniques will be necessary.

One technique currently under consideration that may be of particular significance is an adaptation of agricultural strip cropping. By gently plowing and cultivating the slopes following the contours of the mounds, fast-growing plants can be repeatedly grown and then plowed into the soil to create a green manure, adding organic matter and depth to the soil over time. When the quality of the soil has improved to a suitable level, a final meadow mix may be sown and established. Strip cropping is a potentially less expensive industrial-scale technique for increasing the organic content of poor soils, reducing plant uptake of metals in the soil, increasing soil depth and controlling weeds over a large area. In addition to its productive effects, the distinctive visual and spatial qualities of large-scale strip cropping (particularly in the city) could be beautiful and experientially distinctive—emblematic of large-scale environmental renovation and renewal of the site for new uses. Combined with other techniques of soil production at Fresh Kills, there is an unusual opportunity to foreground soil making, recycling and in situ reclamation. All of these options are still undergoing further research and study.

FIGURE 51: STRIP-CROPPING LANDSCAPE: A COST-EFFECTIVE AND VISUALLY INTERESTING TECHNIQUE TO BUILD AND RENOVATE NEW SOIL OVER TIME

FIGURE 52: STRIP CROPPING ON THE SLOPES OF THE MOUNDS

FIGURE 53: IMPORTED SOIL + TREE PLUG PLANTING

CULTIVATING NEW HABITATS OVER TIME

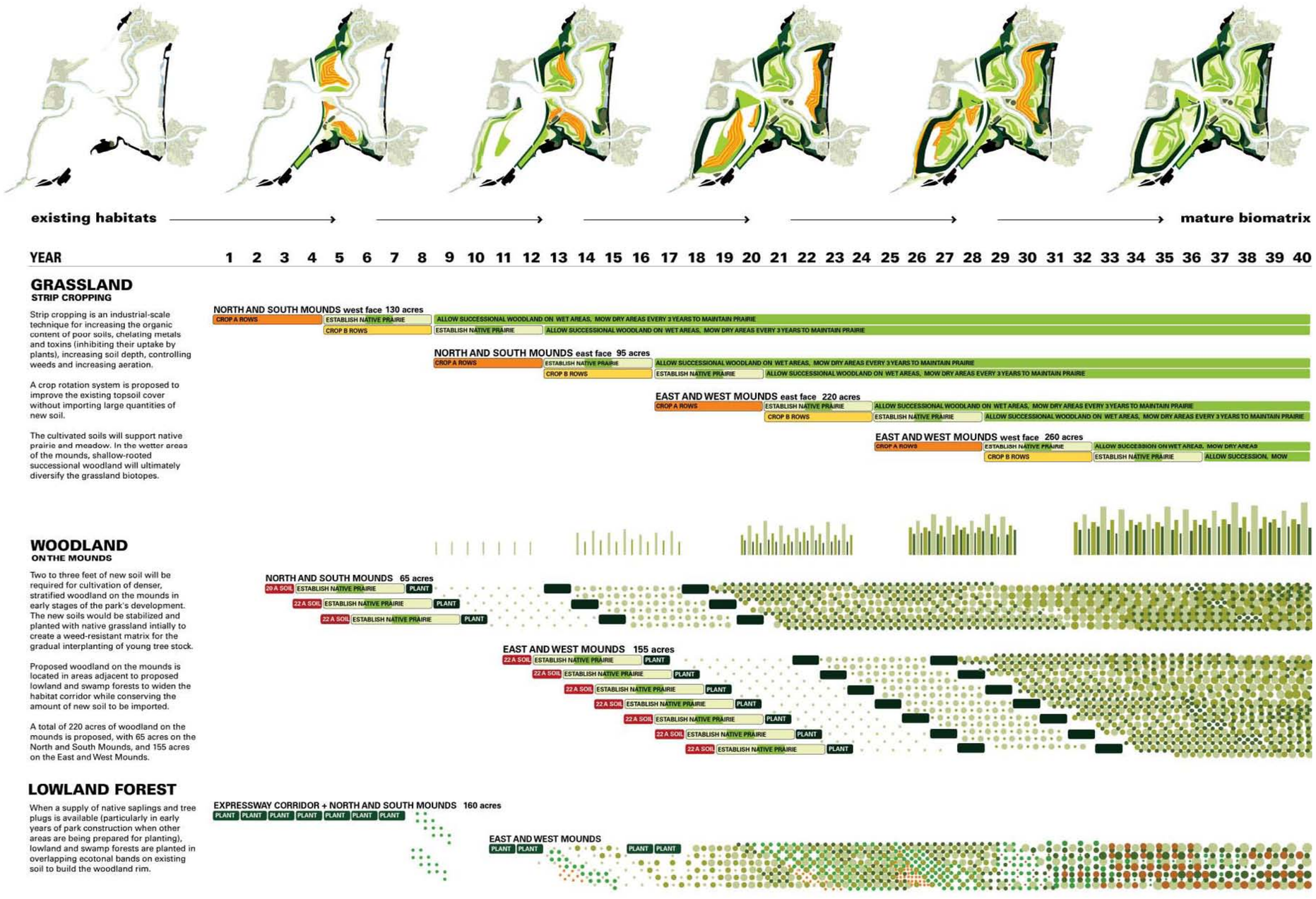


FIGURE 54: PHASING AND CULTIVATION OF NEW HABITATS OVER TIME AT FRESH KILLS PARK