

BROOKFIELD AVENUE LANDFILL

Public Meeting

April 29, 2004

PS 32



Department of
Environmental Conservation



Speakers

- **Daniel C. Walsh, Ph. D.**
 - Chief, Hazardous Waste & Brownfield Cleanup Program
 - New York State Department of Environmental Conservation
- **Patrick O'Connor, P.E.**
 - Executive Project Manager
 - New York City Department of Environmental Protection
- **John McLaughlin**
 - Director, Ecological Services
 - New York City Department of Environmental Protection
- **Wendy Kuehner**
 - Assistant Sanitary Engineer
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Announcements

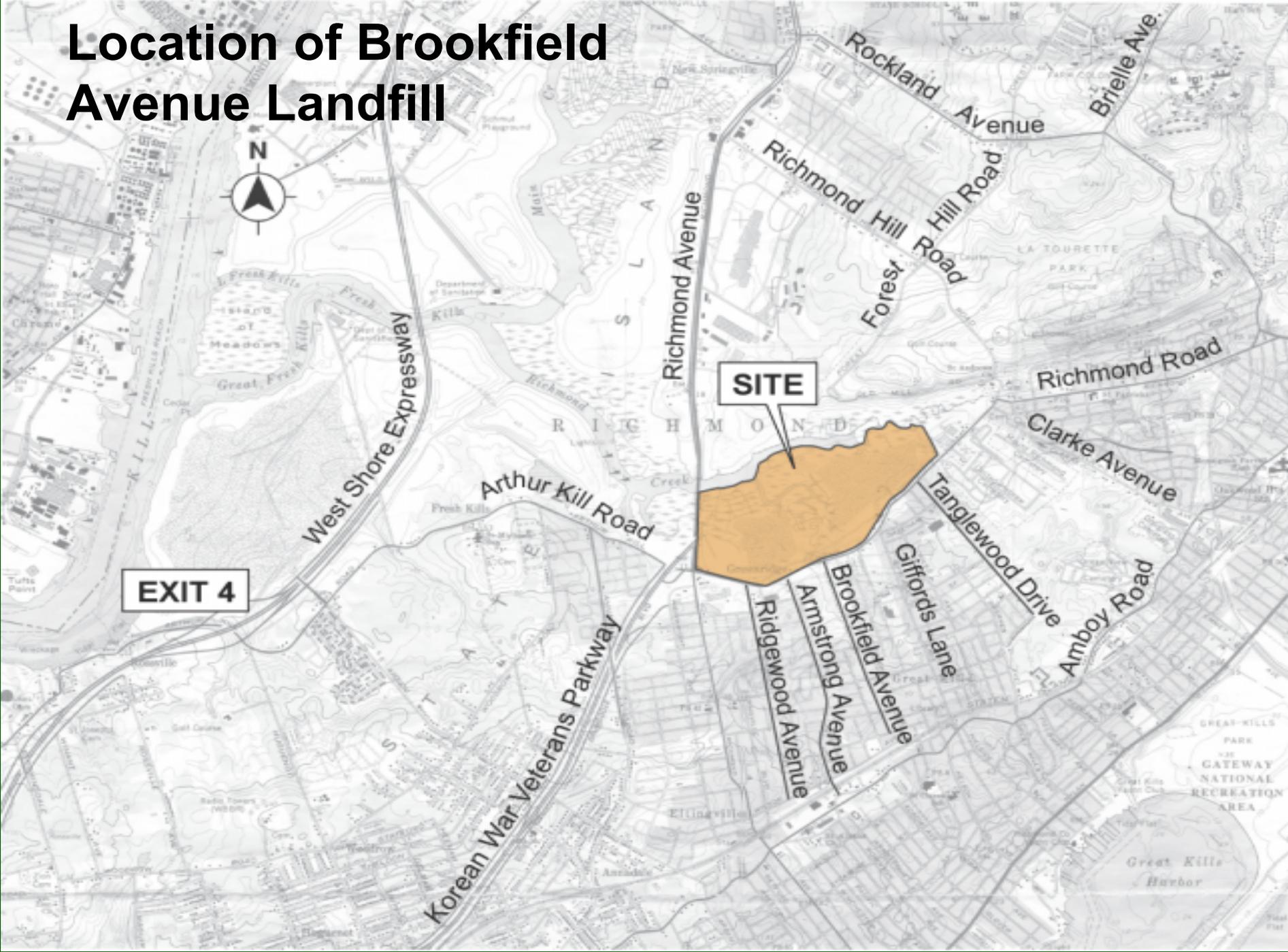
- Sign-in sheet
 - Please sign in
- Fact Sheets are available
- Contact List
 - To receive future Fact Sheets
 - Fill out form
 - Name, address, zip code

*Why is this Public Meeting
taking place?*

Purpose of Public Meeting

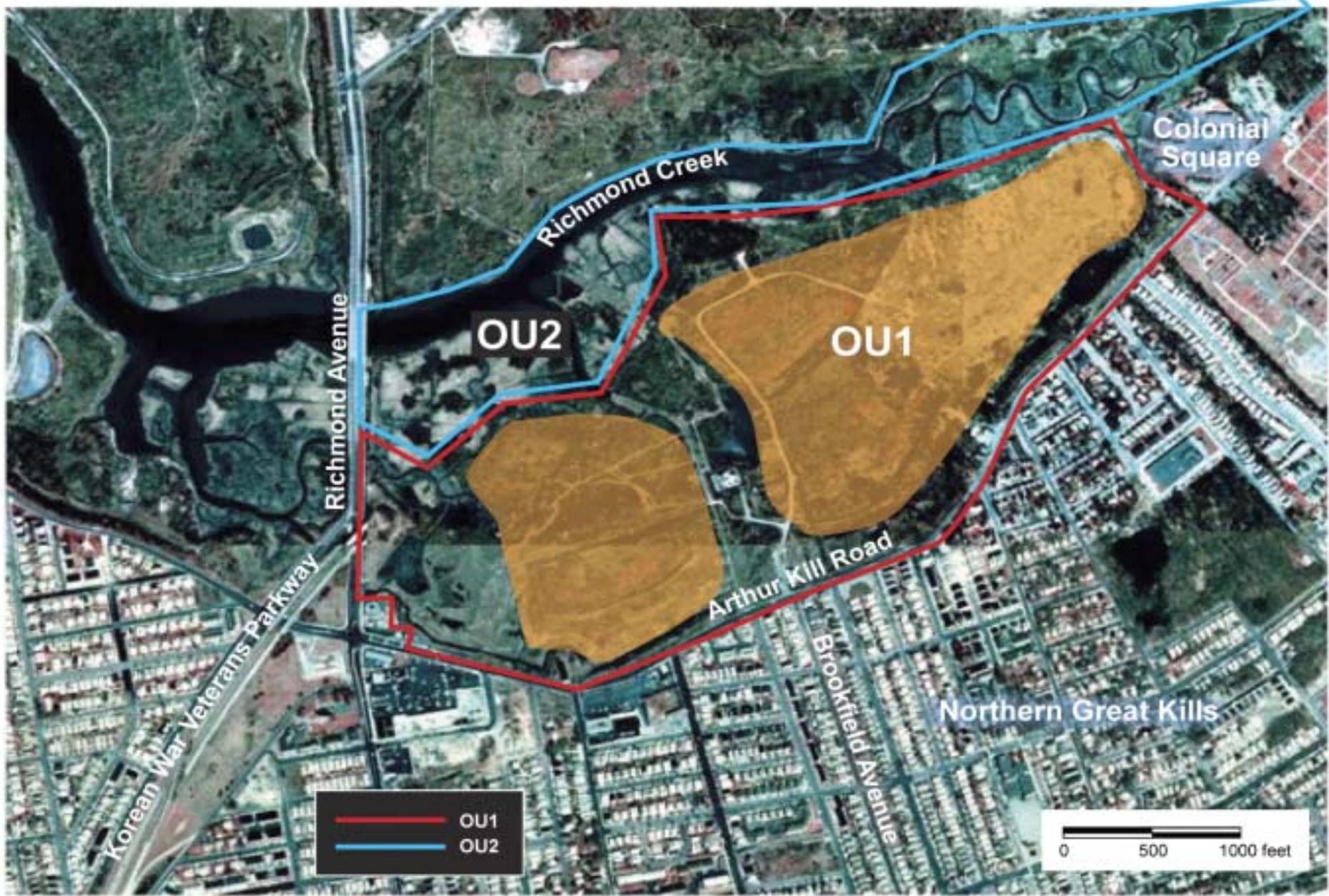
- Present details of Preliminary Remedial Action Design for Brookfield Avenue Landfill
 - Currently at 60% completion
 - Final design complete late 2004
- Solicit citizen input and comment
 - Modify design as necessary
- Present details of end use plan
 - Built after Remedial Action is completed
- Answer your questions

Location of Brookfield Avenue Landfill



EXIT 4

SITE



Operable Unit Boundaries

*What will be covered in this
Public Meeting?*

Public Meeting Summary

- **New York State DEC**
 - Citizens Participation Program
 - Identify involved parties
 - Brief history of site
 - New York State Hazardous Waste Remediation Process
 - Current Status of Remedial Action

Meeting Summary

- **New York City DEP**
 - Preliminary Remedial Action Design
 - Schedule
 - Park End-Use Plan
- **New York State DEC and DOH**
 - Community protections
 - During & after Remedial Action
- **Public Comments, Questions and Answers**

*How is the community involved in
this Brookfield Remedial Action
process?*

Citizens Participation Program

- **Public meetings**
 - Inform public
 - Solicit input
- **Fact Sheets**
 - Mailed to all people on Contact List
 - Currently 400 recipients
- **Document Repositories**
- **Citizen representatives in process**

*Where can you go to view
important Brookfield Remedial
Action documents?*

Citizen Participation Program

- Document Repository
 - Place where you can read project documents
 - 7 locations
 - 5 locations on Staten Island
 - Staten Island Borough Hall
 - Staten Island Public Library
 - Richmondtown Branch
 - New Dorp Regional
 - Staten Island Community Boards 2 & 3

*What agencies and other parties
are involved in the Brookfield
Remedial Action process?*

Involved Agencies

- **Environment Protection**
 - New York State Department of Environmental Conservation (DEC)
- **Public Health Protection**
 - New York State Department of Health (DOH)
- **Site Remedial Action:** New York City (owner)
 - New York City Department of Environmental Protection (DEP)
 - Engineering Consultant (for Remedial Design)
 - Camp Dresser & McKee (CDM)

*Who represents the community in
the Brookfield Remedial Action
process?*

Citizen Participation Program

- Citizen Representation
 - SI Borough President's Office (Borough Engineer)
 - Brookfield Citizens Advisory Committee (CAC)
 - Citizen's organization
 - Represents public in Brookfield Project
 - Brookfield Science Advisory Committee (SAC)
 - Team of scientists and engineers
 - Represents community
 - Reports to CAC & community
 - Technical and advisory arm of the CAC
 - Participates in investigation and remedial design
 - Attends meetings
 - Independent, third party review
 - Funded through project

Brief Site History

- Landfill Operation: 1966 – 1980
- 1982 NYS Senate Select Committee Hearing
 - Illegal hazardous waste dumping 1974-1979
 - Industrial wastes including:
 - Waste oil
 - Sludges
 - Metal plating wastes
 - Lacquers
 - Solvents
 - Site was listed in 1986
 - New York State Inactive Hazardous Waste Registry

What process does New York State use to handle Hazardous Waste Remedial Action projects?

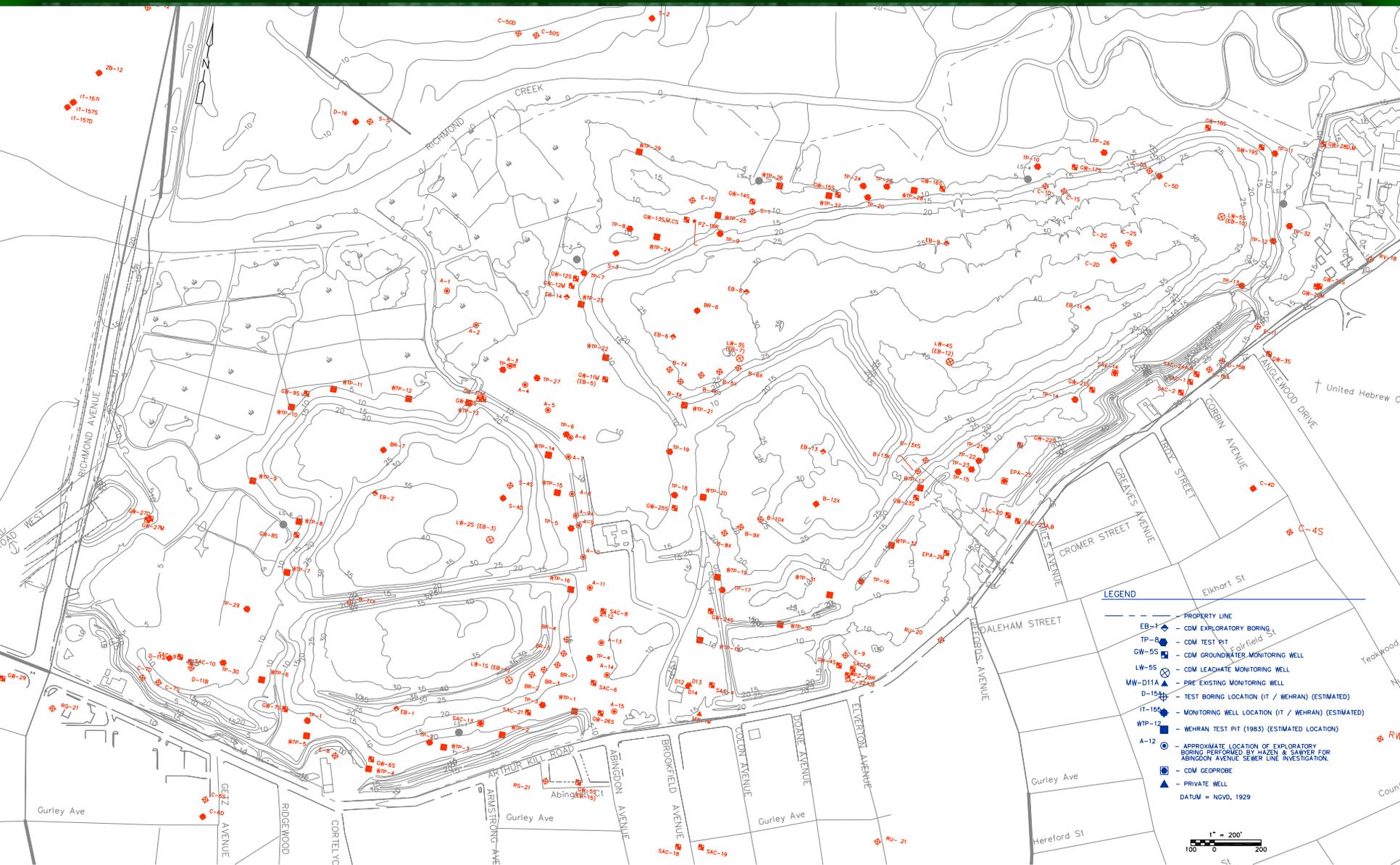
NY State Hazardous Waste Remedial Action Process

- Listing of Site
- Remedial Investigation
 - Collect necessary data; define problem
- Feasibility Study
 - Identify possible solutions
- Develop Proposed Remedial Action Plan (PRAP)
- Hold Public Meeting; solicit public comment
- Select Remedy: Record of Decision (ROD)
- Design Remedy
- Construct Remedy
- Construct End Use

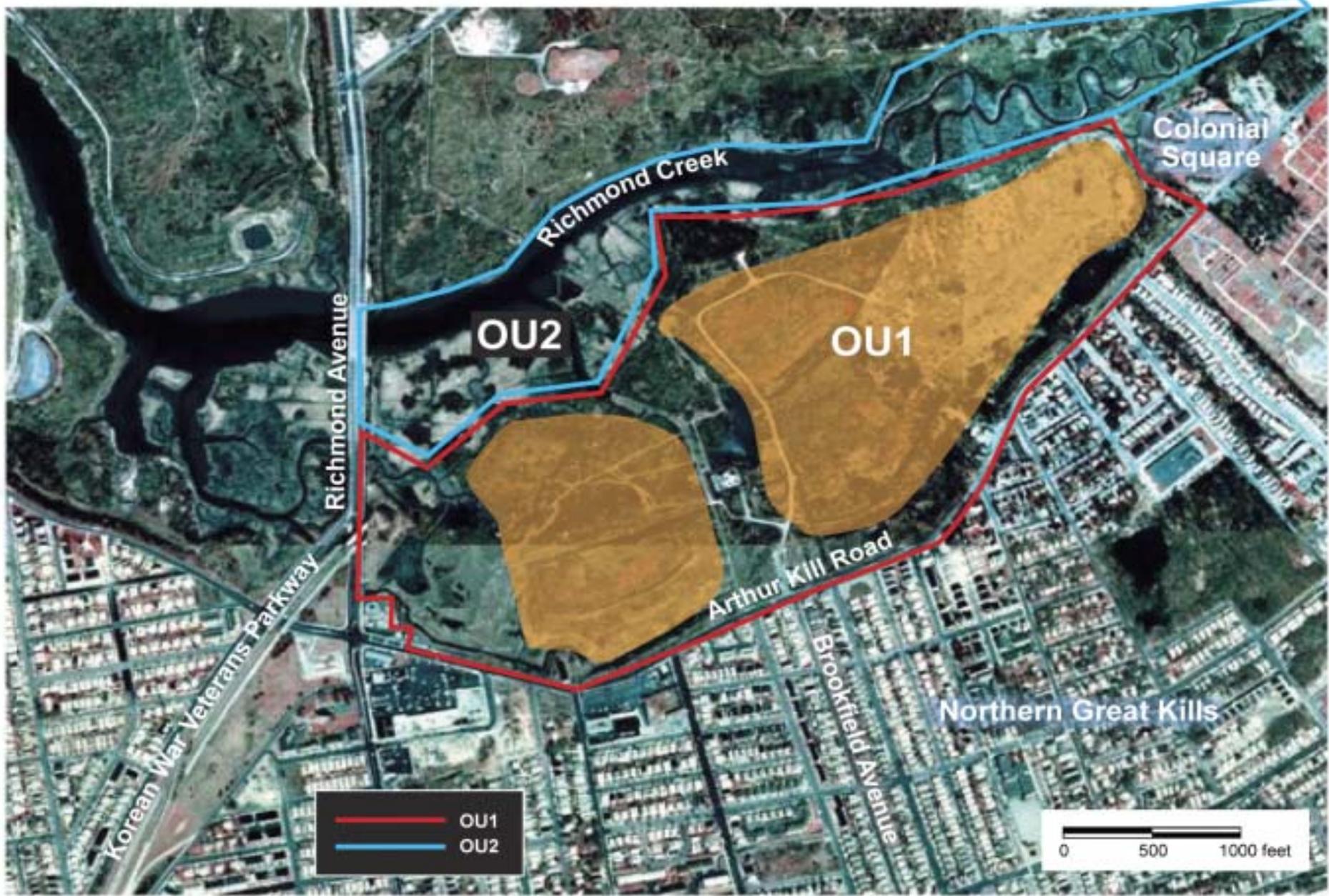
*What is the current status of the
Brookfield Remedial Action
project?*

Brookfield Site Investigations

- Investigations performed
 - 1993-1994 (Phase 1)
 - 1996-1998 (Phase 2)
- Remedial Investigation Report
 - September, 1998



Existing Site Plan



Operable Unit Boundaries

Remedy Selection Process

- **Proposed Remedial Action Plan (PRAP)**
 - Public Meeting, January 2002
- **Remedy (ROD) selected**
 - March 2002
- **Remedial Design begun**
 - 30% design complete June 2003
 - 60% design complete January 2004

NY State Hazardous Waste Remedial Action Process

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- **Design Remedy**
- Construct Remedy
- Construct End Use

*What are the goals of the
Brookfield Remedial Action
Program?*

Remediation Goals

- Make the site **protective of public health**
 - Suitable for its intended use
- Make the site **protective of the environment**

*What is the intended use of the
Brookfield Site?*



Park End-Use Plan

*Has a Remedial Action site ever
been turned into a park before?*

Other Remedial Action Park Projects in NYC area

- Bush Terminal (Brooklyn)
- Fountain Avenue (Brooklyn)
- Pennsylvania Avenue (Brooklyn)
- Barretto Point (Bronx)
- Croton Landfill (Westchester)

Cleanup Objectives

- Manage leachate migrating from the site
- Manage gas generated in the site
 - Includes combustible landfill gasses
- Manage contaminated surface soils

Speakers

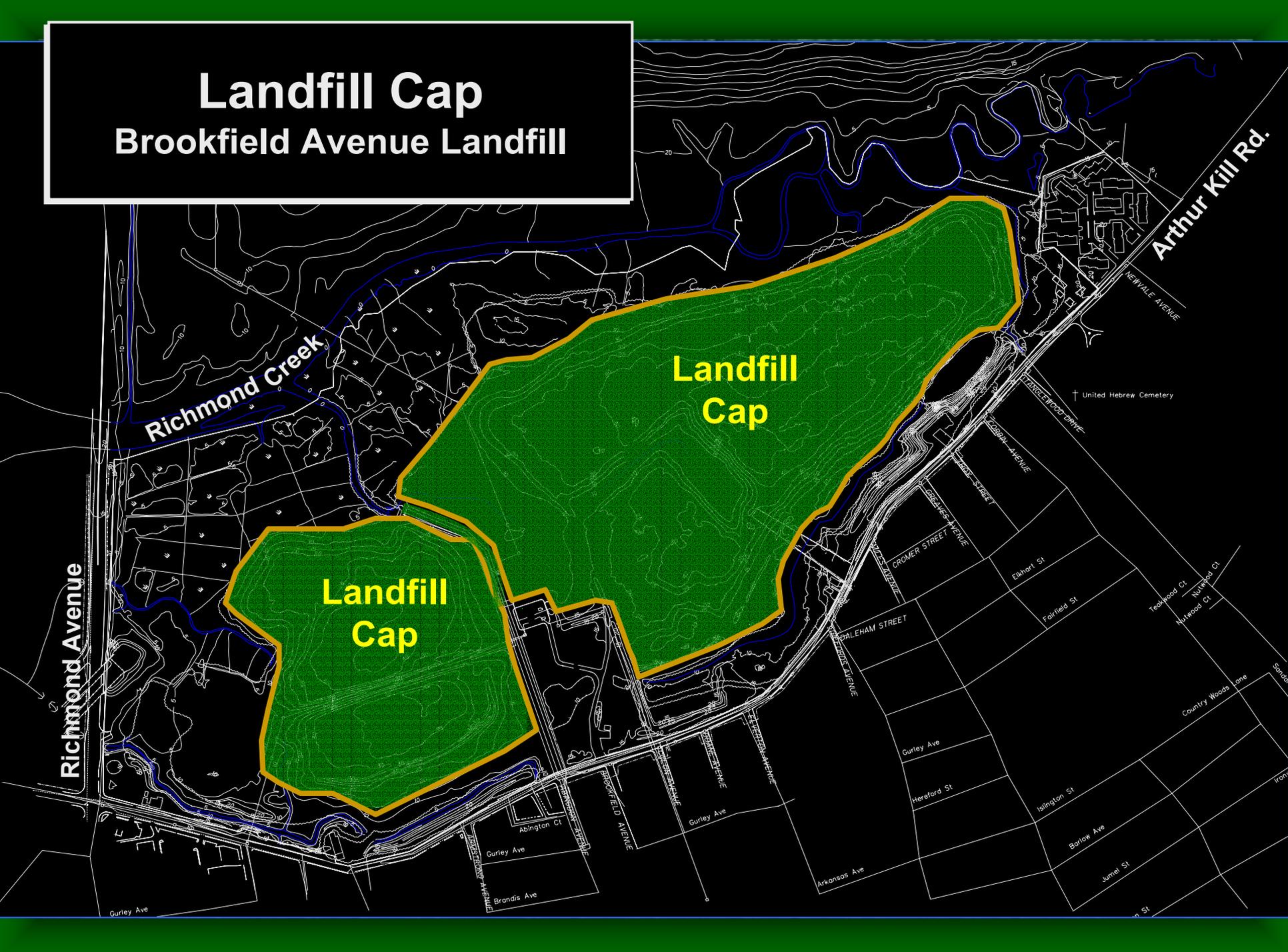
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Remedial Action Design

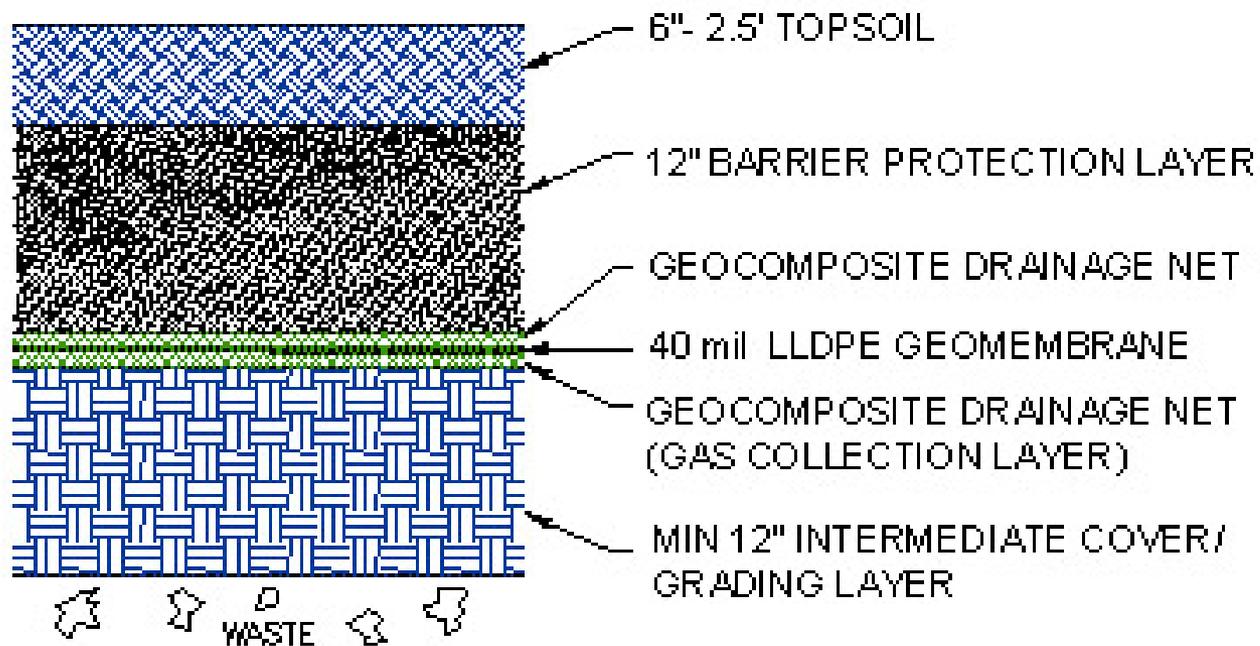
- **CAP TOP OF THE LANDFILL**
- **BARRIER WALL/ LEACHATE COLLECTION & TREATMENT SYSTEM**
 - Stop leachate from leaving the landfill area
 - Capture and treat fluids
 - Discharge to sewage treatment plant
- **GAS COLLECTION & TREATMENT SYSTEM**

Landfill Cap

Brookfield Avenue Landfill



Cross Section



Remedial Action Design

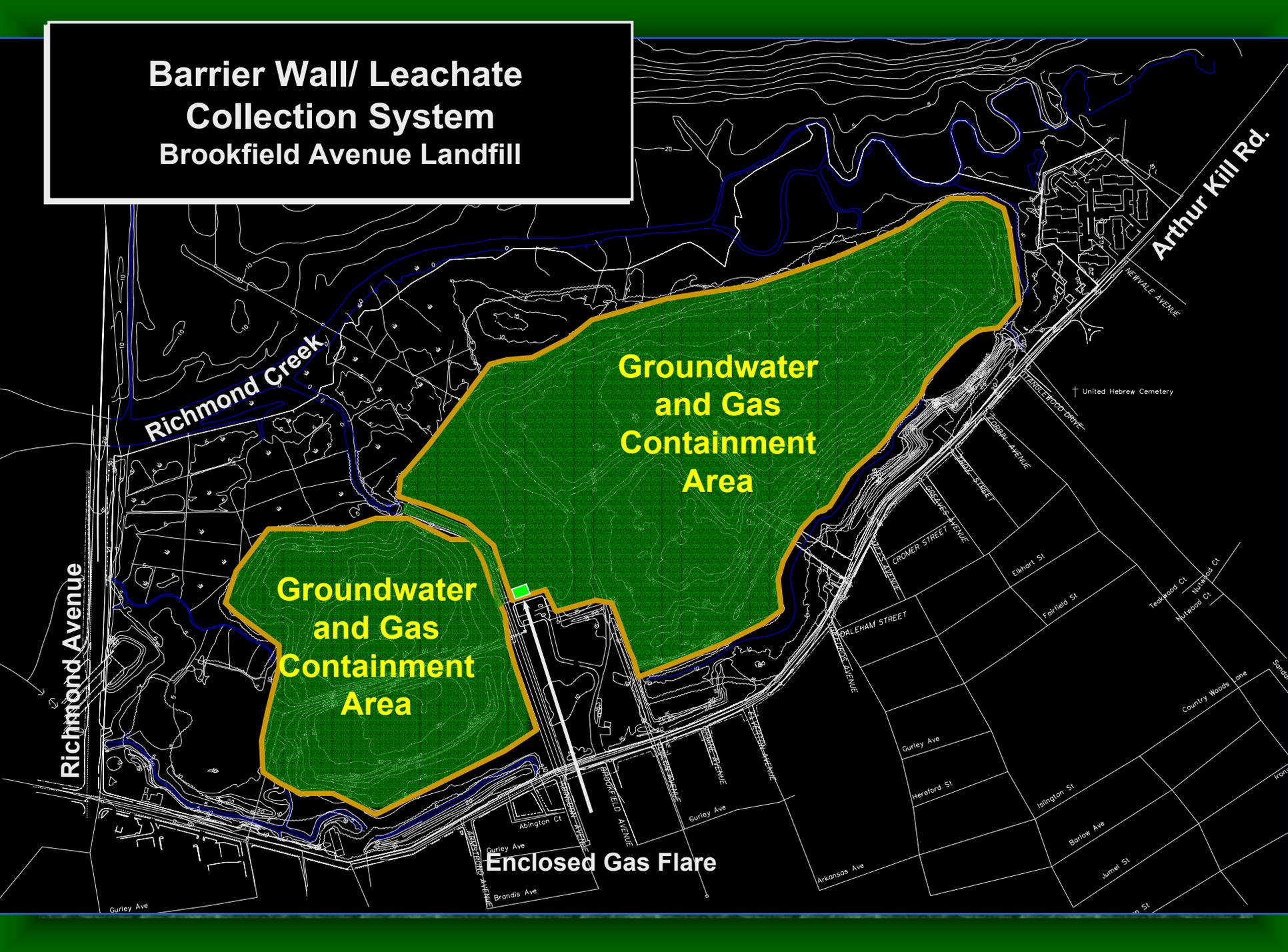
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**Barrier Wall/ Leachate
Collection System
Brookfield Avenue Landfill**

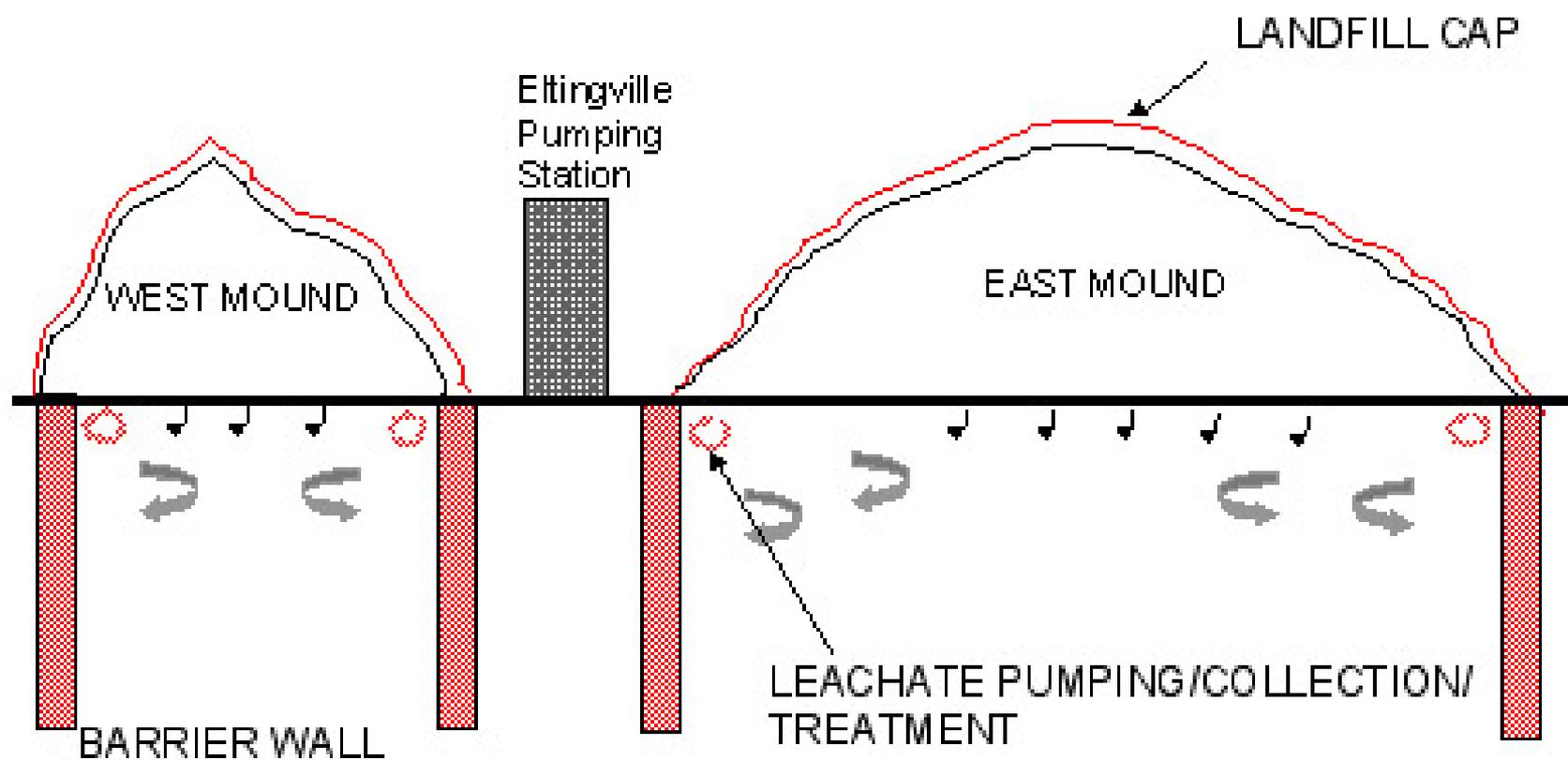
**Groundwater
and Gas
Containment
Area**

**Groundwater
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Enclosed Gas Flare

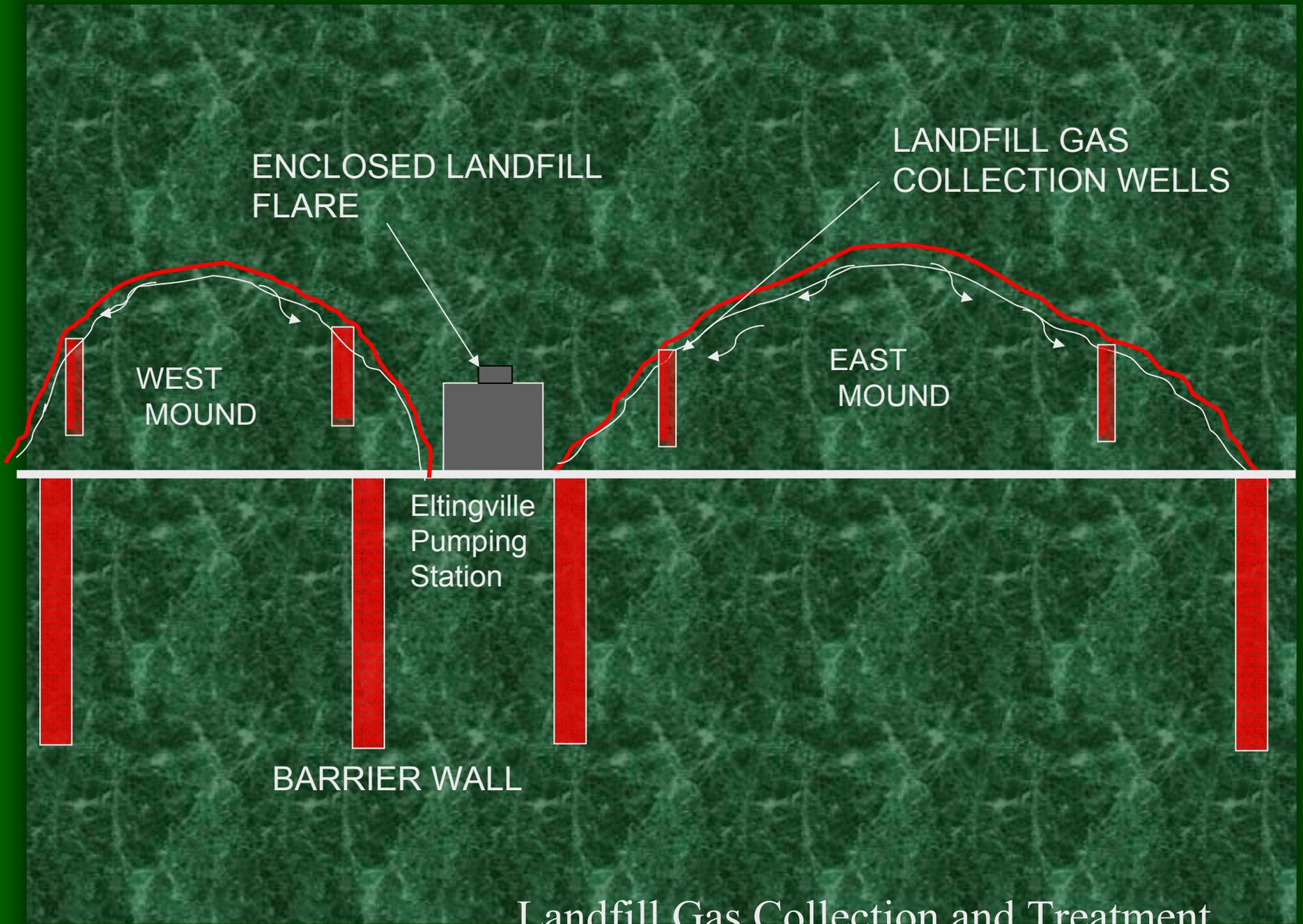


Barrier Wall/Leachate Collection System



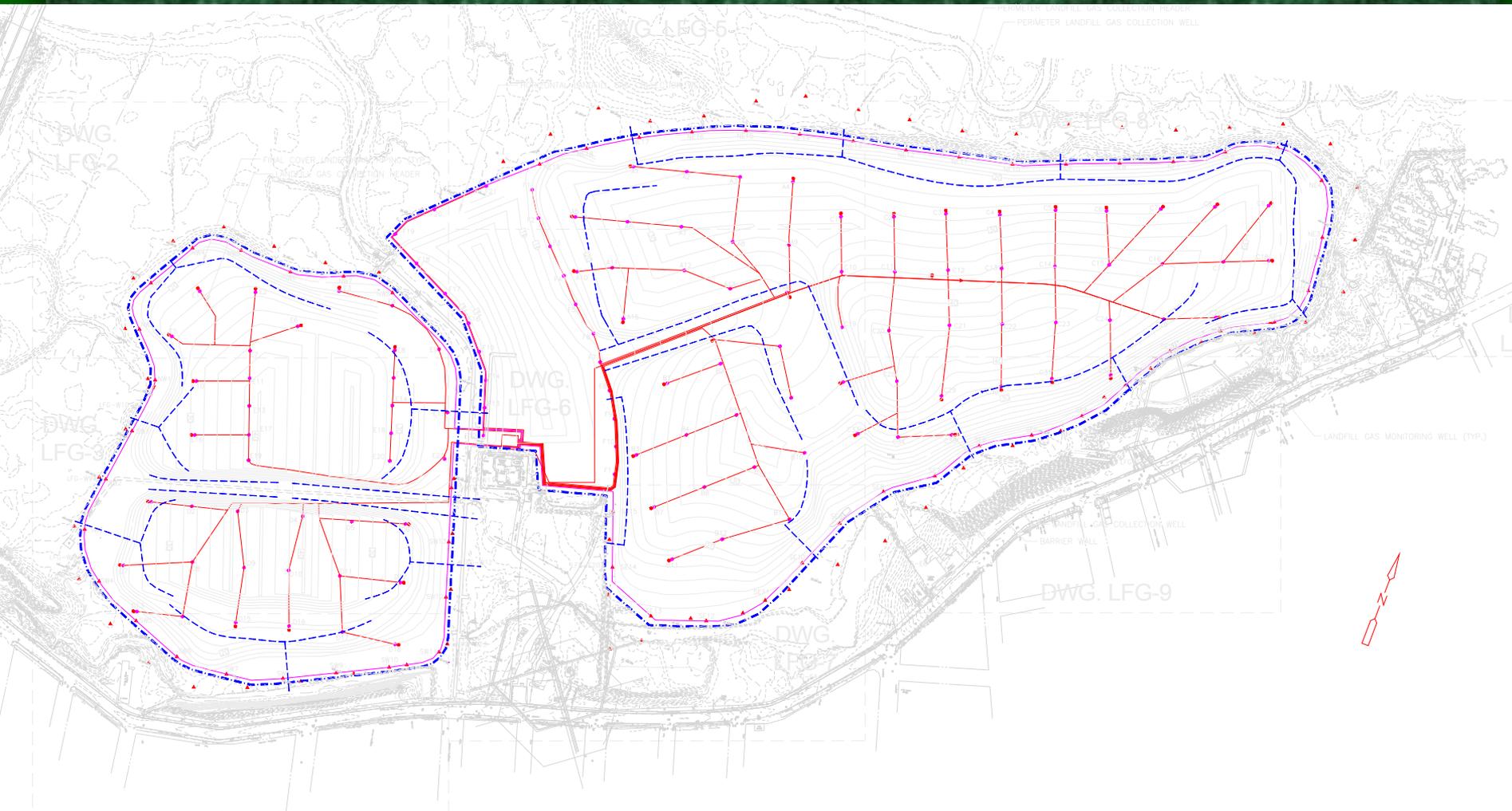
Remedial Action Design

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- **GAS COLLECTION & TREATMENT SYSTEM**



Landfill Gas Collection and Treatment

Gas Collection System





Reuse Example



Reuse Example



Reuse Example



Reuse Example



Reuse Example



Aerial View



Aerial View



Aerial View



Aerial View



Aerial View



Aerial View

Remediation Schedule and Cost

<u>Milestone</u>	<u>Range</u>
Complete Final Design	October-December 2004
Advertise	February-April 2005
Receive Construction Bids	April-June 2005
Begin Remedial Construction	October 2005-April 2006
Complete Remediation Construction	February-October 2008
Complete Natural Restoration	February-October 2009

Estimated Cost: \$90-100 million

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Benefits of an Ecological Restoration

- Opportunity to re-introduce extirpated and rare plants
- Increase genetic diversity
- Improve wildlife habitat, shelter and food sources
- Eliminate the need for supplemental watering, fertilizing, herbicides and insecticides
- Slow down soil erosion
- Improve water quality
- Responsible stewardship of land
- Must think of future generations
- Simply a “good thing” to do



Conceptual End Use Plan

Restoration Features

- Approximately 20,000 plants will be “contract” grown to guarantee specific species and quantities
- Provenance (origin) of all plant material must be within a 150-mile radius of site
- Plants must be grown from seed and limit cuttings to no more than 25 per individual plant to maintain genetic diversity
- Vary plant sizes of same species to avoid mono-age planting
- Smaller plant sizes specified to help plants acclimate to site faster
- Plant “communities” are stressed rather than individual specimens

Restoration Features

- Will provide a major seed source for Staten Island region
- Soil specifications (loamy sand) were designed after evaluating existing similar plant communities in New Jersey and Long Island
- Approximately 4 miles of walking trails
- Approximately 10-acres of Active Recreation reserved space (subsequent contract)
- Approximately 8-acres of Passive Recreation reserved space (subsequent contract)

Pinus echinata – Short-leaf Pine



Gaylussacia baccata – Black Huckleberry



Hudsonia tomentosa – Golden Heather

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Quercus stellata – Post Oak



Arctostaphylos uva-ursi - Bearberry

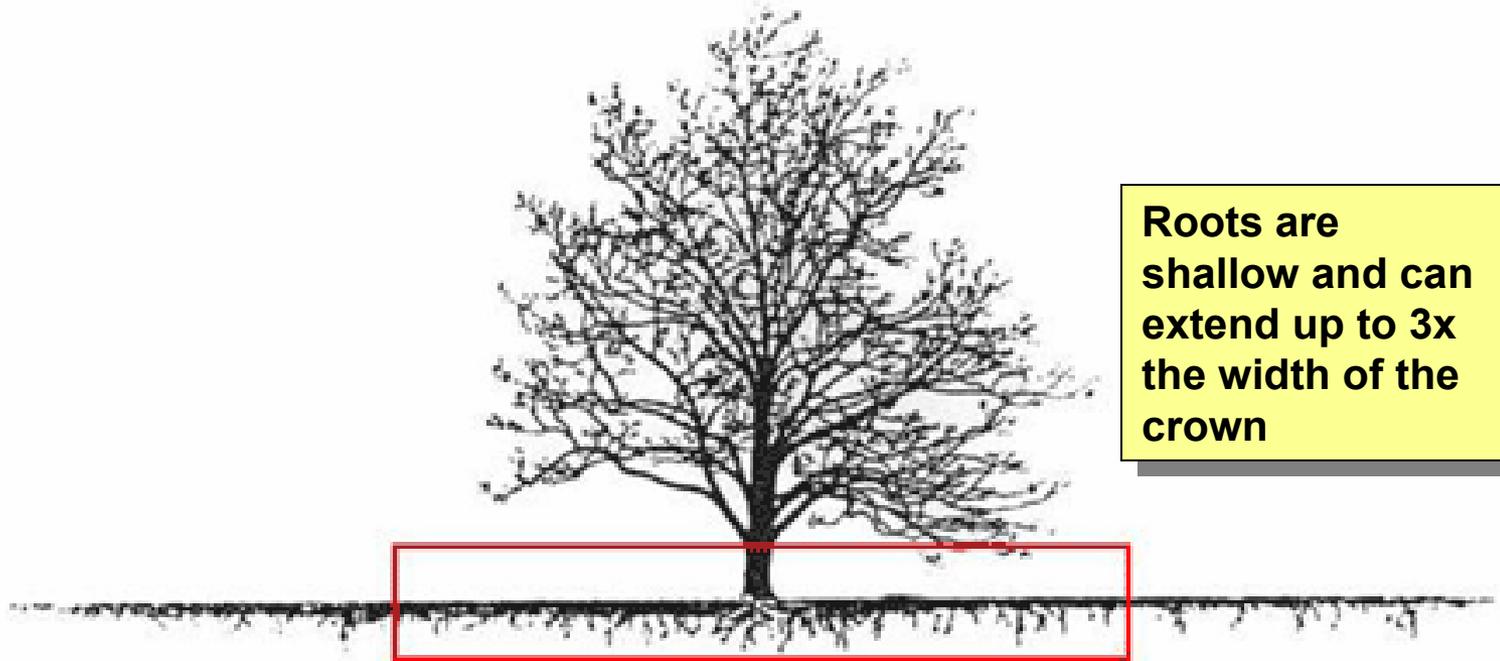


Atlantic White Cedar Swamp



Tree Roots

Where Are They?



Roots are shallow and can extend up to 3x the width of the crown

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Preliminary Remedial Action Design

- State-of-the-art Remedial Action
- Will make the site suitable for park use
- Substantial construction effort

*How will the community be
protected during construction?*

Community Protections During Construction

- New York State Goals
 - Community Protected at all times
 - Work Performed Safely
 - Environment Protected
 - Nuisances Minimized

Key Construction Issues

- Air Monitoring
- Dust Control
- Contaminant Control
- Truck Routes
- Contingency Planning ('what if' plan)
- Quality Control (project oversight)

Air Monitoring

- Air monitoring will be performed by a qualified professional
- Oversight of Air Monitoring Program
 - New York State Department of Health



Ambient Air Sampling Locations

*What is the role of the New York
State Department of Health?*

Dust & Odor Control Measures

- Site roadways kept moist
- Vehicle speed restricted
- Double-handling of soils minimized
- Work area wetted as necessary
- Procedures modified based on air monitoring results
- Minimize excavation size
- Seasonal staging of work



Truck Washing

- Trucks washed on-site
 - wheels
 - under carriage
- Trucks Covered
 - prevent Spillage



Truck Route Selection Criteria

- Minimize traffic through residential areas
- Most direct routes to and from highway
- Safest merging onto highways
- Increase use of predefined truck routes

Construction Quality Control

- Full-time monitor inspections by NYSDEC
- Full-time oversight by
 - Site Engineer
 - Quality Control Officer
- Frequent meetings to discuss work activities

*How will the Brookfield
Remedial Action be funded?*

Funding of Remedial Action

- Project cost: \$90-100 million
- Title 3 of Environmental Conservation Law
 - 75% funding available from New York State
 - For eligible costs
 - Remainder funded by New York City

*Will there be further public
outreach for this project?*

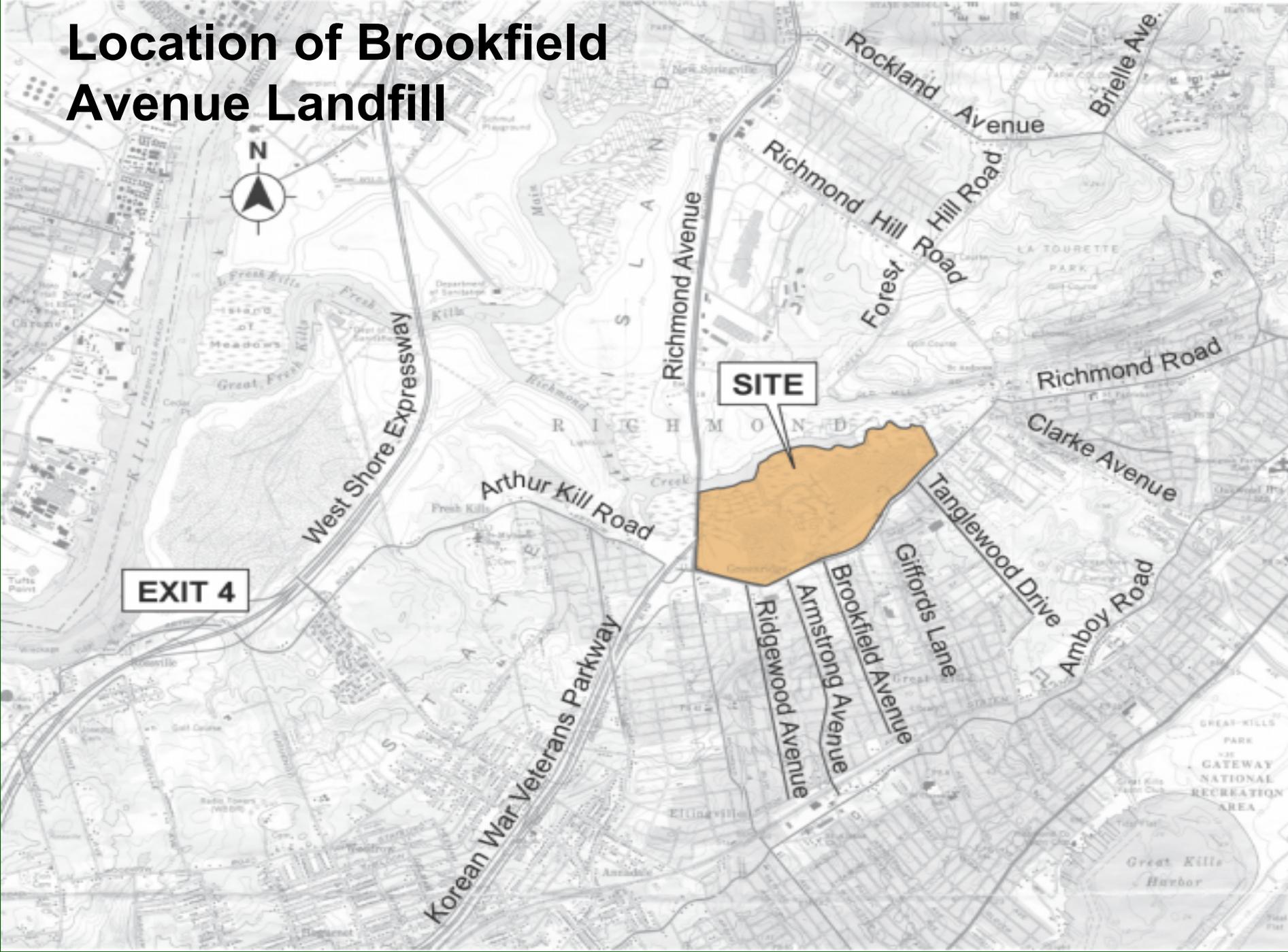
Public Outreach

- Fact Sheets
 - Update on progress of design
- Informational meetings
- Citizens Advisory Committee & Science Advisory Committee
 - Will continue to represent the public in the design process

Public Comments

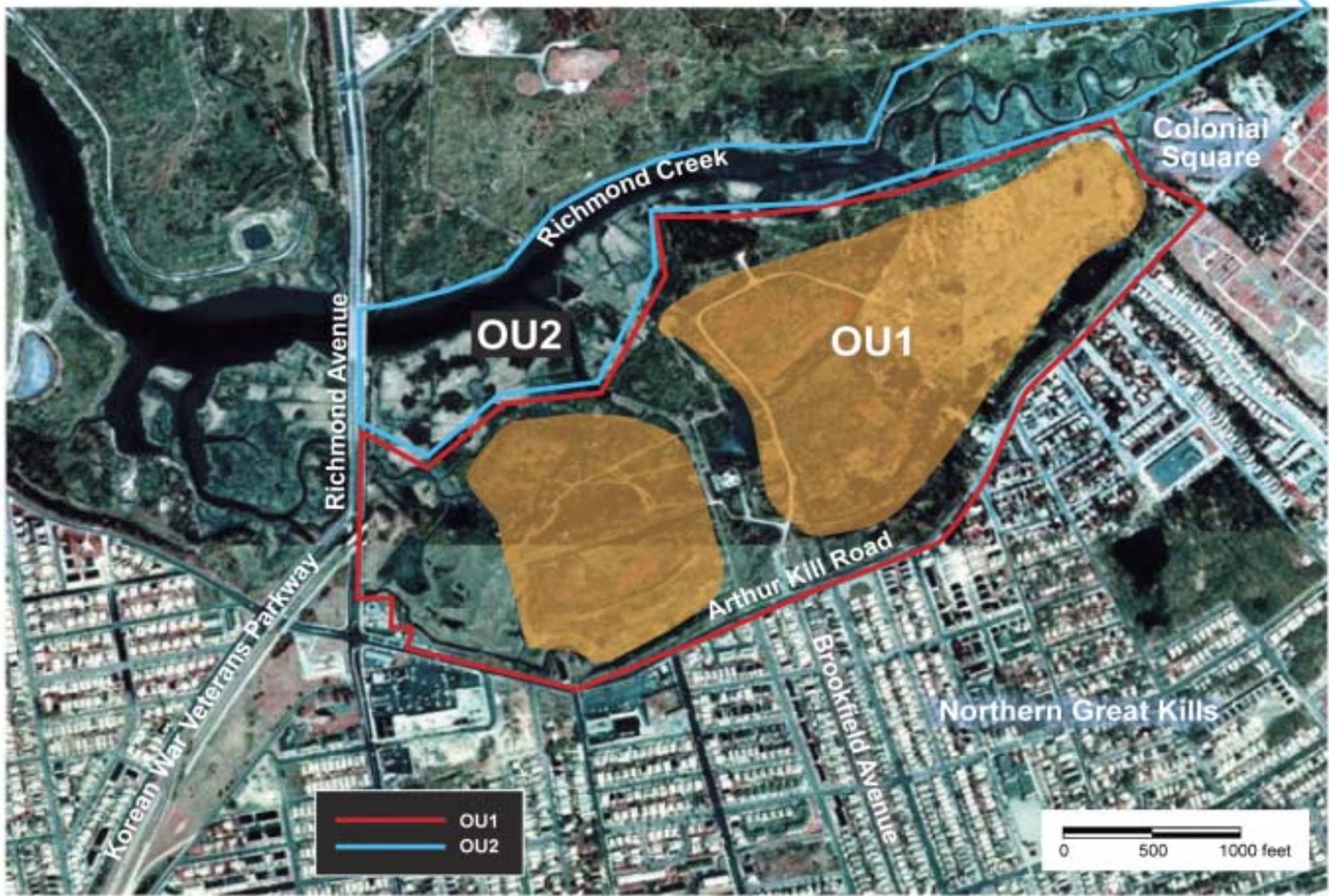
Questions & Answers

Location of Brookfield Avenue Landfill



EXIT 4

SITE



Operable Unit Boundaries

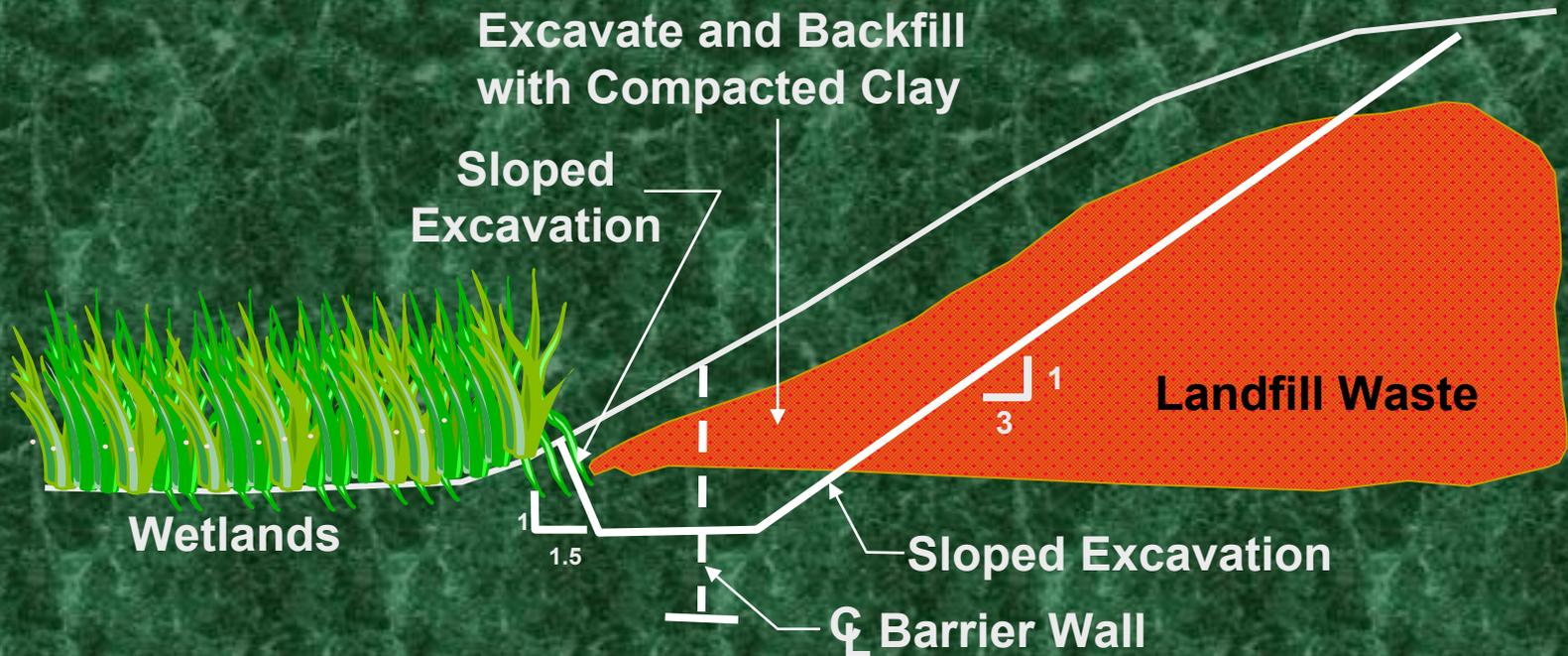


Conceptual End Use Plan



Ambient Air Sampling Locations

Pre-Excavation of Waste



Trench Alignment Preparation
When Conflicting with Waste