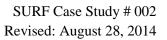| **Case Study:** Former Fresh Kills Landfill (now Freshkills Park), New York, New York USA	
Site Overview	The former Fresh Kills landfill on western Staten Island, New York City served as the City's principal solid waste landfill (municipal & household) from 1946- 2001. Started by Robert Moses as a short term wetlands fill project, by the mid-1990s, Fresh Kills was the world's largest landfill receiving up to 29,000 tons/day of waste. The new Freshkills Park is the largest landfill to park project in the world and the largest park to be developed by NYC in 100 years. It is a symbol of renewal and sustainability and a testament to our ability to restore balance to a blighted landscape.
GSR Project Outcome	• Creation of 2,200 acres of new park space in NYC • Creation of new space for outdoor recreation, arts and science programming and scientific research • Methane harvesting provides heat and revenue (in 2013 harvesting provided heat for about 10,000 homes and $3.35 million in revenue) • 130 acres of restored freshwater and tidal wetlands • Long range plan for alternative energy generation via solar power
Background & Drivers	• Years of activism in response to the impacts of landfill operations on Staten Island neighborhoods • Political alignment between NYS Governor, NYC Mayor and Staten Island Borough President • 1996 NYSDEC Consent Order requiring City to cease landfill operations by 12/2001 • PlaNYC, a broad citywide plan to address climate change, strengthen community resiliency and clean up contaminated sites
Regulatory Program	• Title 6 NYCRR Part 360 Regulations- Solid Waste Management Facilities Regulation • New York State Environmental Conservation Law (ECL) • NYC Solid Waste Management Plan • State Pollution Elimination Discharge System
Site End Use	• Public park with recreational and art programming • Protection and expansion of wetlands • Urban environmental science research (institution & citizen-based) • 47 acre 4 to 10 megawatt solar power facilities
Contaminants of Concern and Impacted Media	• Impacted media: soil gas, soil and groundwater • Impacts: Petroleum spills, municipal and household garbage and fill of unknown origin possibly containing semi-volatile organics, metals, pesticides, PCBs

Key Stakeholders in Project	- Residents - NYSDEC - NYC Department of Sanitation, NYC Dept. of Parks, Mayor's Office of Long Term Planning and Sustainability, Mayor's Office of Environmental Remediation - Utility: ConEd/National Grid - Alternative energy developers (SunEdison) - National, State and City elected officials
Cleanup Objectives	For portion of landfill being covered now*: - NYS Part 375-6.8(b) restricted residential soil cleanup objectives - Ecological soil cleanup objectives as applicable *Soils used to cover sections in 1990s met commercial clean up standards
Remediation Strategy	- Comprehensive landfill cover system - Extensive landfill gas collection system - Flare station and landfill gas treatment plant - Leachate trenches and barrier wall system - Leachate collection, treatment and monitoring system - Stormwater collection system - Broad based operation and maintenance program
GSR Strategy/Best Management Practices (BMPs)	- Advanced landfill gas collection and treatment - Energy conversion infrastructure - Final cover designed to minimize water infiltration and gas releases with a soil/geomembrane layer and vegetative cover that minimizes erosion - Comprehensive network of drainage structures to collect surface water runoff
GSR Metrics and/or Footprinting Tool(s)	N/A
Lessons Learned [Optional]	- Decide end use early so that landfill cover soils are consistent with appropriate regulatory requirements - Know the environmental regulations that will impact the redevelopment projects - Develop good working relationship among agencies involved
GSR Project Contact	Eloise Hirsh, Freshkills Park Administrator Eloise.Hirsh@parks.nyc.gov tatiana choulika, field operations project director tchoulika@fieldoperations.net
Relevant Links [Optional]	www.freshkillspark.org http://www.fieldoperations.net/

References [Optional]	