Green Remediation Focus

Minimizing the environmental footprint of site cleanup

A Profile in Using Green Remediation Strategies

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Barksdale Air Force Base
Bossier City, LA

Federal Facility

Cleanup Objectives: Contain 25 acres of construction debris and hazardous waste (including petroleum-based solvents and metals) constituting an onsite landfill adjacent to a wetland area and the Flat River

Green Remediation Strategy: Modified the original construction plan for landfill cover to capitalize on green construction methods and meet federal "greening the government" goals, while expanding the facility's natural resource conservation program

- Retained an existing natural levee to maintain the habitat corridor, minimize riparian ecosystem disturbance, and provide secondary erosion controls
- Developed a drainage design and construction plan recreating natural hydraulic patterns of the wetland and river
- Removed trees and shrubs selectively and chipped/recycled the material for placement on hiking trails within the facility's conservation area
- Used uncontaminated spoil material from previous dredging operations to construct an 18-inch low-permeability cover
- Used demolition concrete as rip-rap and aggregate material for stormwater runoff management and as base fill for access roads
- Removed, stockpiled, and later reapplied topsoil to enhance plant growth on the landfill cover surface
- Installed immediate grass cover on the cover surface for erosion and sediment transport control, followed by seeding of native drought-resistant wildflowers

Results:

- Used low impact development designs for constructing on-site drainage systems that mirror natural hydraulic conditions of the greater area
- Recycled 1,000 tons of concrete debris
- Reused 60,500 cubic yards of topsoil and subsurface material
- Saved 700 tons of removed woody material for beneficial use
- Avoided maintenance such as mowing for final landfill cover
- Achieved economic benefits totaling over $377,000 through sustainable design and construction of the remedy
- Integrated the facility's conservation plan into long-term stewardship of cleanup actions at "landfill 3" while preserving integrity of daily flight activities

Property End Use: Ongoing military operations

Point of Contact: Wallace Robertson, Barksdale Air Force Base

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Concrete was salvaged during demolition of flight pavement and an onsite building and sorted by aggregate size for construction use.

Careful planning of construction activities helped avoid clearcutting in work areas adjacent to the landfill cover.

The site's protected wetlands continue to play a role in the extensive habitat corridor surrounding the site.

In addition to silt fences and hay bales along construction boundaries, areas of intense stormwater runoff were lined with geotextile material and armored with rip-rap stone.

Riparian systems near the the landfill were preserved throughout cover construction.

Drought-resistant wildflowers such as white yarrow, clasping coneflower, Indian blanket, and black-eyed susan were seeded across 20 acres of the landfill cover. Late winter mowing promotes seed germination and regeneration of the annuals each spring. Use of these native, low-maintenance species saves approximately $1,800 each year in fuel and labor costs, when compared to other plants requiring frequent mowing.

United States Environmental Protection Agency
Office of Solid Waste and Emergency Response (5202P)

For more information:
www.cluin.org/greenremediation
Carlos Pachon (pachon.carlos@epa.gov)