PLANNING THE FUTURE OF

For over half a century, the Hartford Landfill served as the city's main waste repository. In December, 2008, the landfill was closed to all further deposits. The Connecticut Resource Recovery Authority (CRRA), which has been managing the facility since 1982, is now in the process of "capping" the landfill. Once this process is completed (see diagram), Hartford will have to decide the best use for this 124-acre site, which has access to both the Connecticut River and Interstate-91. Should it become a park? A wildlife sanctuary? A site for future commercial development? That question is currently being discussed among Hartford officials, city residents, CRRA and other interested parties. While there are indeed many viable and attractive options, any decision of the future of the site must also take into account its unique history. CRRA is taking numerous measures to ensure that the waste beneath the site is safely managed. These measures must be taken into account in any decision on future uses for the former landfill.

Landfill Post-Closure Community Advisory Committee

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Hartford Landfill: An Overview

- The Hartford Landfill has been used for waste disposal by the city since the 1940s
- CRRA leased from city in 1982
- Waste Deliveries ended December 2008
- Lease ends when Landfill Closure Certified by DEP
- Easement Agreement then takes effect
- CRRA responsible for Post-Closure Care
- The overall site consists of 124 acres; 96 acres are devoted to the operation of the landfill; actual disposal of waste took place in the 16 Acre Ash Area and the 80 Acre of Main Landfill

Environmental safeguards

- Synthetic Membrane
- Groundwater flow control system
- Ash-leachate collection system
- Groundwater monitoring program
- Landfill gas collection & control system
- Systems to function for decades after closure

Gas collection system

- 78 vertical gas wells, 4" HDPE pipe, perforated portion in the waste mass
- Connected to subsurface horizontal piping
- Centrifugal blower moves collected gas to control device for destruction
  - Two internal combustion engine/generators rated @ 1.9 MW total
  - Produce enough electricity to supply about 1,700 households
- Enclosed flare, minimum 98% destruction efficiency
- System handles 330MM scf per year of landfill gas
- Quarterly Reports to DEP
- Time frame of 7-10 years of useful electricity production remaining."

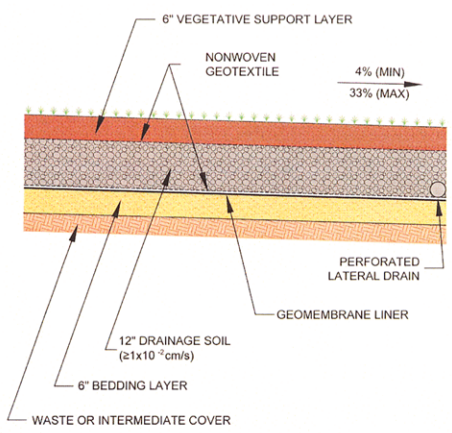
Water collection & treatment systems

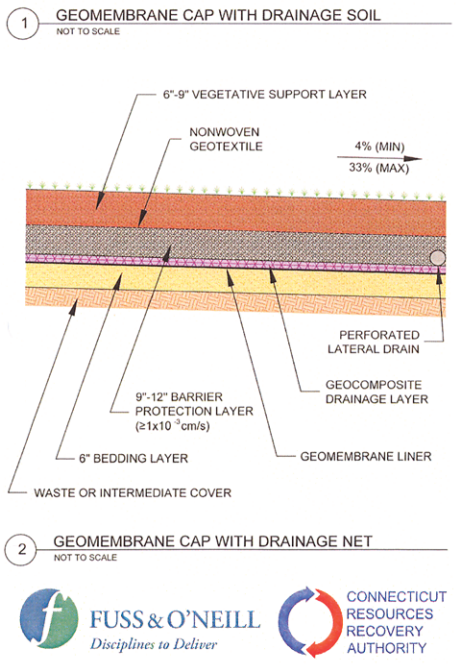
- Groundwater Flow Control System
- 4 Groundwater Extraction Wells
- 10 Pairs of shallow monitoring wells
- Bentonite Clay Slurry Wall & Army Corps of Engineers Dike
- 90,000 gallons per day removed
- Permitted Discharge to Sanitary Sewer

Ash Leachate Collection & Treatment

- Ash Area
- Collected from Primary & Secondary Liner

Geomembrane Cap Design Alternatives
Connecticut Resources Recovery Authority - Hartford Landfill





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Two "Rules of Thumb" for Post Closure Planning

You can do nearly anything on a closed landfill, it is a matter of how much it will cost to do it.

It is generally more expensive to do something on a closed landfill than it is to do it on a undeveloped property.

- 60,000 gallon Above Ground Tank
- Neutralization
- Permitted Discharge to Sanitary Sewer
- Stormwater (Rainfall, Snowmelt)

Collection & Conveyance

- Minimize Infiltration of Stormwater
- Prevent Erosion of Landfill Cap
- 4 Discreet Stormwater Discharge Points

Groundwater & Surface Water Monitoring

- 24 Groundwater Wells Sampled Quarterly
- CT River, Decker's Brook, Meadow Brook
- Quarterly & Annual Water Quality Reporting to DEP

Post-Closure Land Surface Care

- Maintain Integrity of Landfill Cap
- Inspections
- Mowing
- Maintain Stormwater Swales

Considerations for Post Closure Planning

Physical Considerations

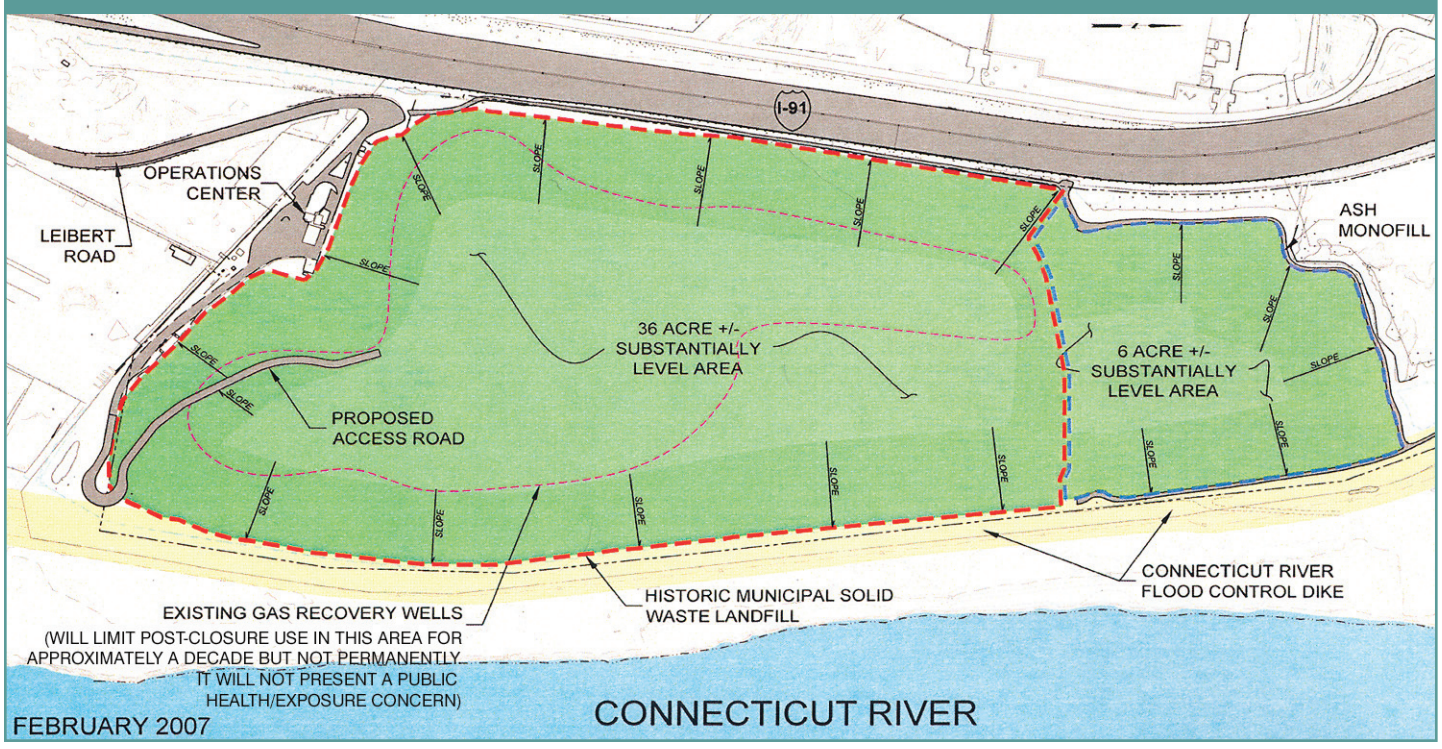
- Steep side slopes (3:1) over most of site
- Shallow slopes (20:1) on top only (36+6 acres)
- Very high (from elev. 20' to elev. 138')
- Visible and accessible from I-91

TIMELINE OF CLOSURE PROCESS

July 2007: Closure Activities Begin	December 2008: Last Shipment of Waste	June 2009: Close Remaining Ash Area	Spring 2010: Begin Closure on Final 33 Acres of Main Landfill	Summer 2011: Closure Complete & DEP Approval

THE HARTFORD LANDFILL

Plan of Landfill After Capping Off Process is Completed



- Good view of, and close proximity to, Connecticut River
- Unimpeded view of Hartford skyline and Connecticut Valley
- Natural Habitat (e.g. presence of a bald eagle's nest)

Technical Considerations

- Large, complex mounded landfill
- Closure design already completed
- Must protect and maintain functionality of:
  - 78 Gas extraction wells (key issue)
  - Cap/Synthetic membrane over entire LF surface (key issue)
  - Subsurface slurry wall around LF
  - CT River flood control dike
  - LF Gas treatment, Ash-Leachate collection and treatment
- Geotechnical – bearing capacity and settlement
- Site Security/Access

Regulatory Considerations

- From Section 22a-209-13 (d) of CTDEP Solid Waste Management Regulations:

  "Detailed information concerning the use of the site following closing shall be submitted to the [DEP] Commissioner for approval and such approval shall be obtained before any use is made of the site. Upon approval, such plan shall become part of the facility plan."

- From CTDEP Guidance for Disruption Activities, Closure Activities, and/or Post-Closure Use at Solid Waste Disposal Areas:

  What is post-closure use? *Post-closure use is considered as any activity at a closed solid waste disposal area. Post-closure use requires approval of the [DEP] Commissioner prior to the redevelopment or re-use to ensure that the use is protective of human health and the environment.*

  What is the process for obtaining post-closure use approval? *Department regulations require that a plan for post-closure use be submitted to the Commissioner for review and written approval as part of a closure plan or whenever a change in an approved post-closure use is sought. The plan must identify the proposed redevelopment or post-closure uses and what controls will be used to minimize exposures during redevelopment to protect human health and the environment.*

Human Health and the Environment Considerations

- Required by CTDEP to "protect human health and the environment".
- Air emissions – active gas collection and treatment system at this site
- Safety – Proximity to landfill infrastructure and steep slopes

Financial Considerations

- Capital costs for post closure improvements can be expensive (Example: 1 foot of soil over 1 acre => $20,000)
- Long term operation, monitoring and maintenance
  - CRRA responsible for landfill-related costs
  - City responsible for post-closure use related costs
- Opportunities for revenue generation, grants, or other funding

Examples of Post-Closure Landfill Uses

- Recreation
- Energy Generation (Wind Turbines and Solar Panels)
- Public Art
- Skiing or Sledding
- Golf/Driving Range
- Parking
- Commercial Development
- Municipal Composting

Proposed Next Steps

- Three phase planning process
  - 1 – Consider all possible uses – be creative
  - 2 – Create short list of uses
  - 3 – Select recommended use(s)
- Multi-phase implementation process
- Divide site into sub-areas for planning purposes
  - Flat (top) vs. steep (side slopes)
  - North (no wells) vs. south (wells)
- Situational or part time use
- Non-intrusive uses (low cost-easy to permit)
- Continued public involvement

Next Meeting October 7

The Landfill Post-Closure Community Advisory Committee will hold its next public information and input meeting on Wednesday, October 7, at the Hartford Public Library, 2nd floor, 500 Main Street, Downtown Hartford. Current suggestions from the public range from doing nothing with the site to using it for renewable energy development or commercial greenhouses. For more information on the October 7 meeting, call or e-mail Brendan Mahoney at 860-757-9568 or mahob001@hartford.gov.

CT DEP Post Closure Use Approvals

- Stamford (K-Park) - athletic fields, walking paths, picnic area
- Stamford (Cove Island Park) - birding area
- Norwalk - passive recreation
- Westport - library on old MSW site
- Coventry - athletic fields
- East Hartford – transfer station on eastern landform
- Ridgefield - bus parking area, garage
- New London (Bates Woods) - athletic fields
- Orange - Home Depot (built on portion of MSW sitel)
- Newington – Lowe's (historic brush dump under parking area)
- Meriden - post office constructed on historic disposal area - Center St.
- Berlin - Manafort Landfill - top of landfill used for storage of containers
- Berlin - Legion Square - Massario Drive - historic disposal area - parking area for Stop & Shop
- Hartford - (Brookfield St. & Flatbush Ave.) - historic disposal area - Hartford Magnet School athletic fields
- Hartford - Bulkely High School - historic disposal area - softball fields
- Hartford – McDonough School – historic disposal area (wood & coal ash) – school addition
- Hartford – Meadows Music Theater – historic disposal area (incinerator ash)
- Hartford – 1450 Main Street – historic disposal area – commercial/residential development
- Mansfield - UCONN campus - 2-3 sites - cell towers, parking areas
- Monroe - (Guinea Rd. site) - cell tower
- Milford - Silver Sands State Park
- Mansfield - RT 89 - brush chipping
- Waterford - Minor Lane - brush chipping
- Groton – Welles Rd. - leaf composting
- Greenwich - Cos Cob Power Plant - park development
- Redding –brush storage and processing; storage of empty containers and storage of containerized tires
- Old Saybrook - park development, leaf composting
- Middletown - historic disposal area - North Main St.- building development
- Middletown – RTSI Newfield Street site - storage area for front-loading containers and as a parking area for new excess inventory automobiles from a local dealership
- Stafford - historic disposal area - Sellars Lane - lay down area for public works projects
- Norwich - Occum Park - park development
- New Haven - Grannis Island - lay down area for construction equipment
- Haddam - historic disposal area (behind old jail site) - athletic fields
- Bristol - ash landfill - portion approved for leaf composting
- Hamden - (Wintergreen Ave.) - leaf composting
- Simsbury - leaf composting
- Ellington - Hoffman Rd. - brush processing
- Stonington - Greenhaven Rd. - transfer station
- West Hartford - Brixton St. - transfer station
- West Hartford - Albany Ave. - leaf composting

Space for this information was donated by the Connecticut Resources Recovery Authority (CRRA)

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