



King County

Department of
Natural Resources and Parks
Solid Waste Division

King County Solid Waste Management System

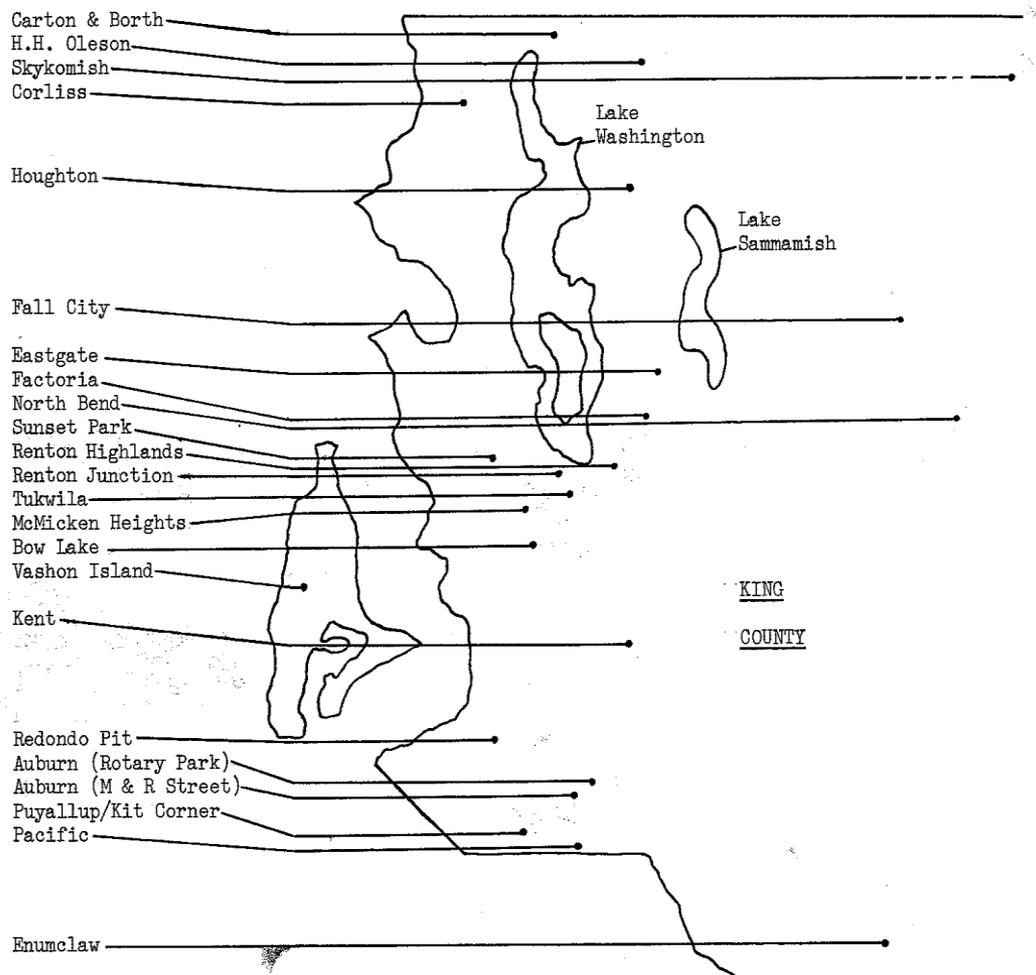
King County's Solid Waste Management System



King County Solid Waste Management System

In the Beginning

- In the mid-1960's, the County's solid waste management system was established to facilitate the closure of community landfills, including privately owned and operated sites
- Since the rolling closure of local "open dumps" operated by a number of non-county parties, there are fewer disposal sites in the county now than there were in the 1980's



Source: Abandoned Landfill Study
Seattle-King County Department of Public Health
April 30, 1985



King County's solid waste management system is comprised of:

- Transfer Stations that are located in geographically diverse areas of King County to ensure easy access for our customers (public, private and self-service);
- Rural landfills located across King County's jurisdiction provided essential solid waste disposal for the County's residents – all of these rural landfills are now closed and are regularly monitored by King County to ensure environmental compliance; and
- The Cedar Hills Regional Landfill is located in Maple Valley – this active 920-acre landfill is the disposal site for all solid waste received at the County's transfer stations, and is anticipated to close in approximately 2025.

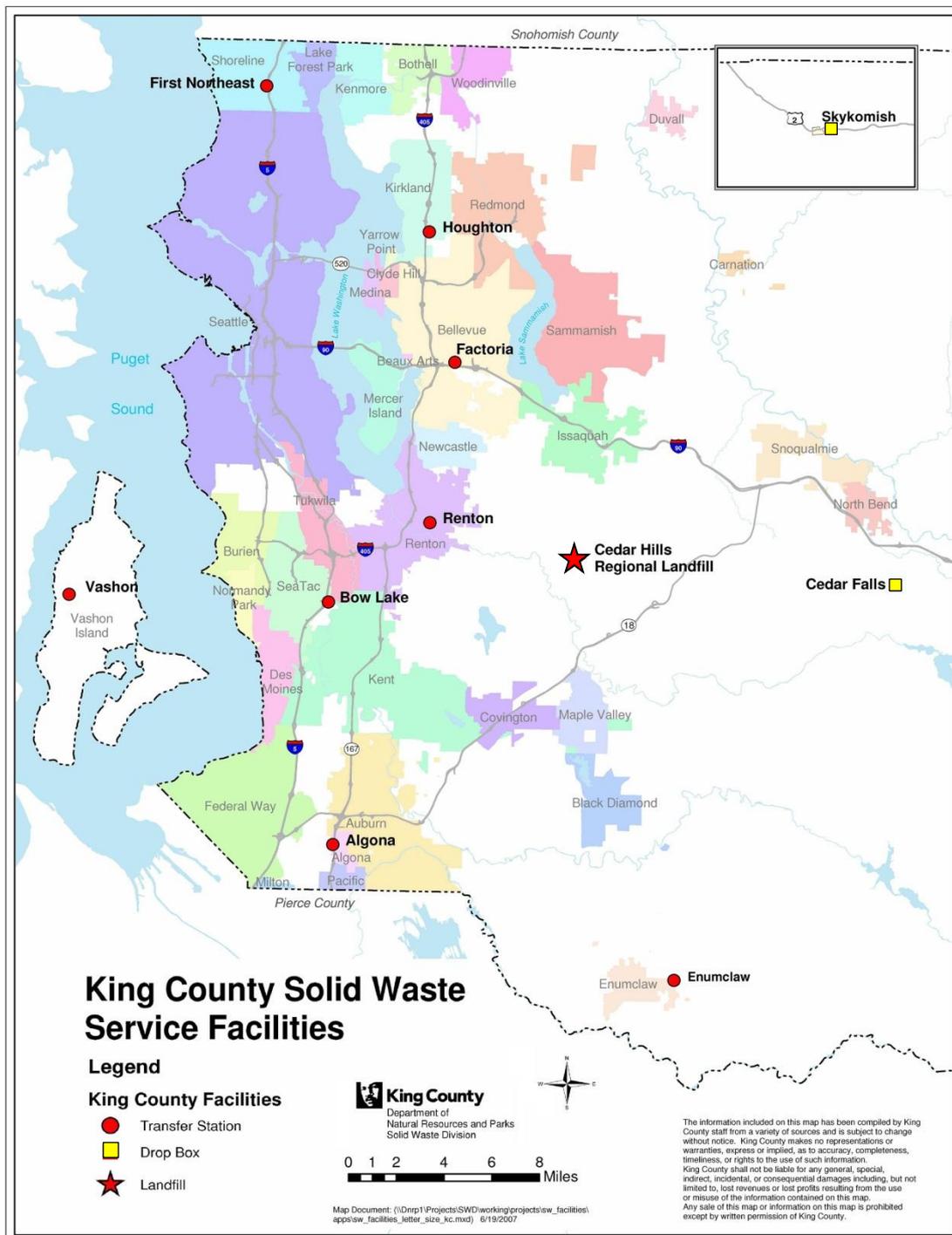


King County's current operations consist of:

8 transfer stations, which are the public face of the solid waste system; and 2 rural drop boxes. These transfer stations are disbursed throughout the urban and rural areas of the county, and replaced rural landfills once they closed. The transfer stations and drop boxes:

- Accept garbage and, in most cases, recyclable materials from business & residential self-haulers;
- Provide accessible drop-off locations for garbage picked up at the curb by the commercial collection companies;
- Hold solid waste less than a day and consolidate loads for disposal; and
- Facilitate convenient consolidation and retrieval of solid waste by the county for transport and disposal to the Cedar Hills Landfill.

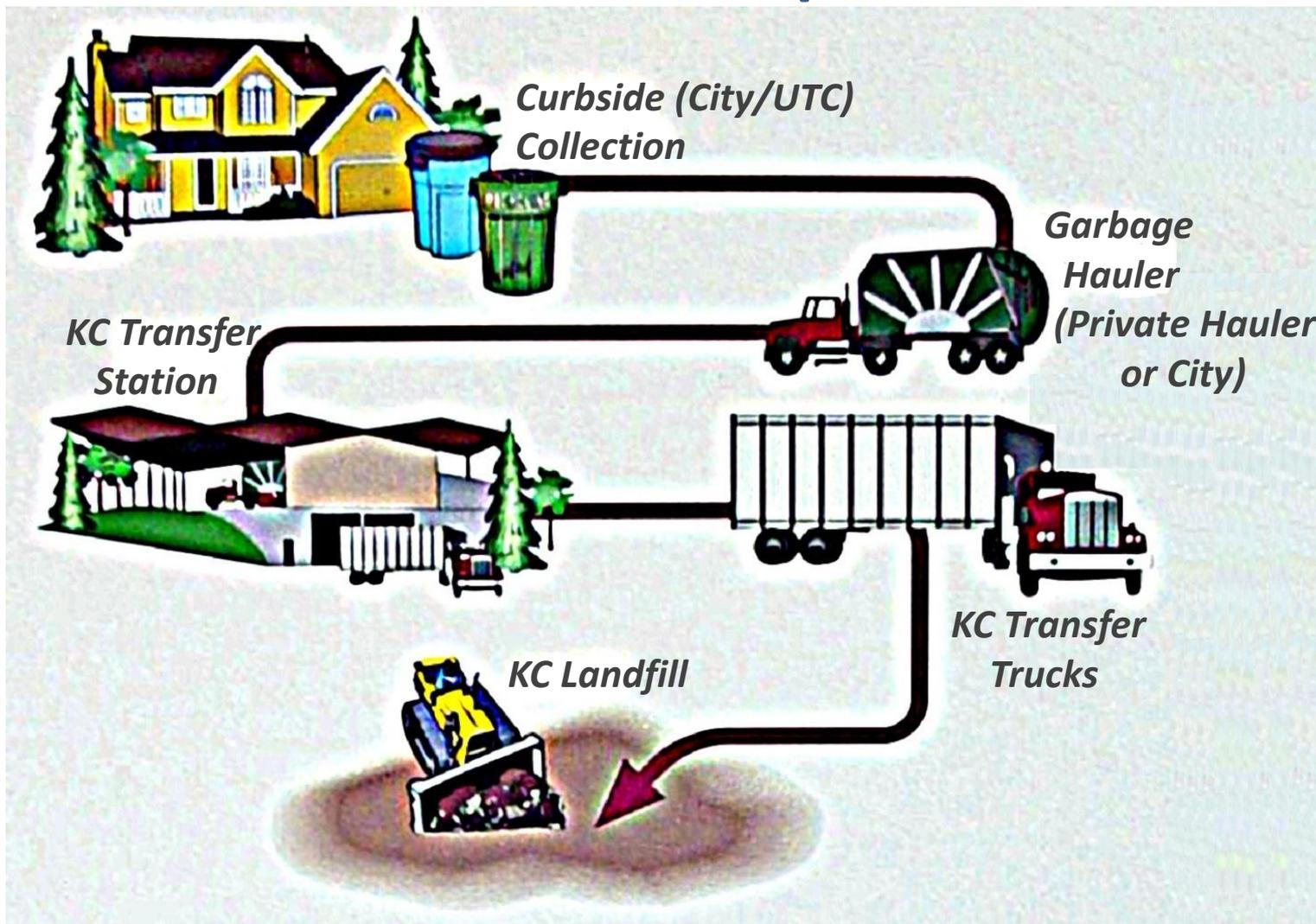
Location of Transfer Stations





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Transfer Station Operations



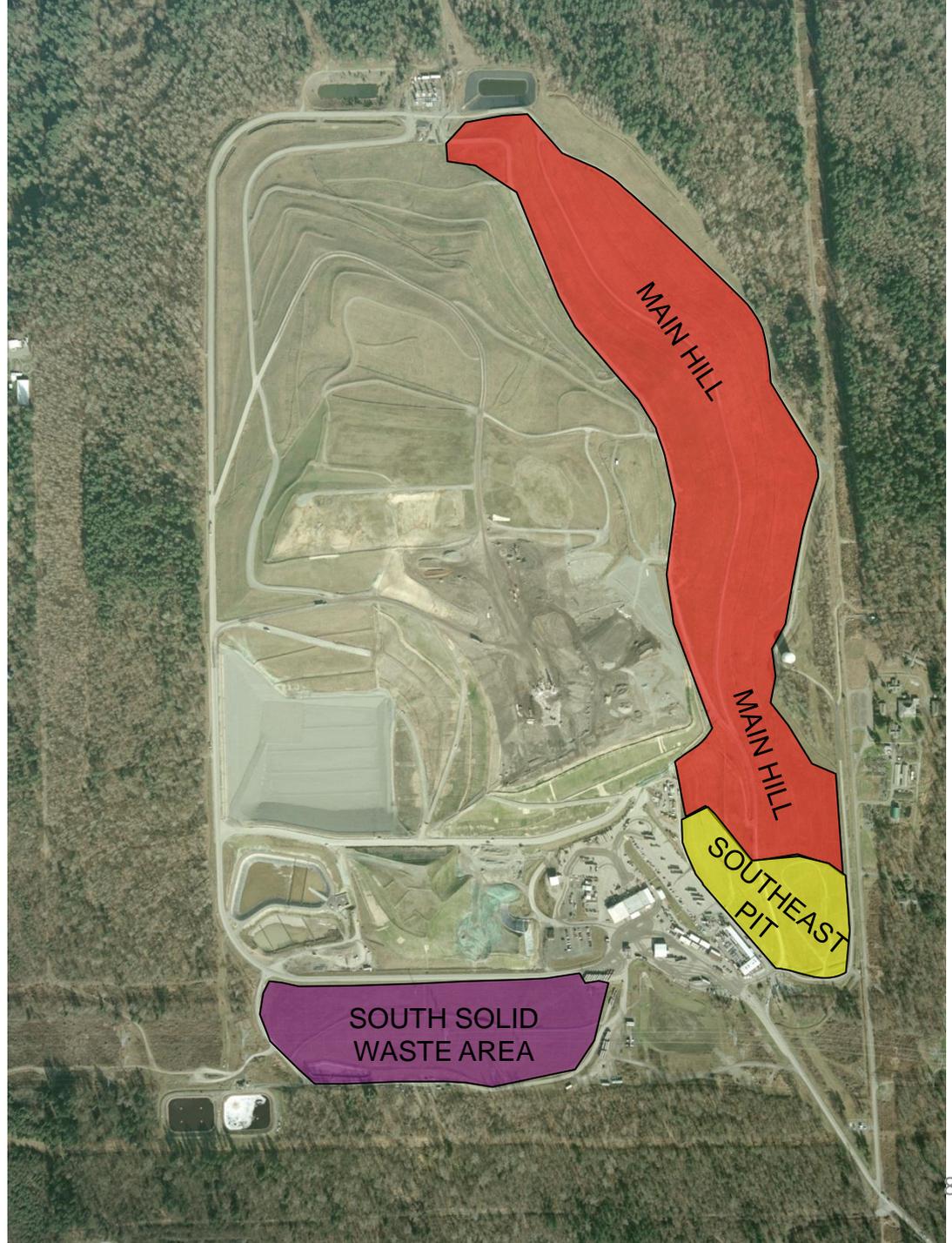
The Cedar Hills Regional Landfill

The Cedar Hills Regional Landfill began operating in the mid-1960's accepting waste primarily from transfer stations and remains the only active Landfill in King County's solid waste handling system. The Landfill is regularly monitored by highly trained County staff, the Health Department, Department of Ecology and Puget Sound Clean Air Agency.

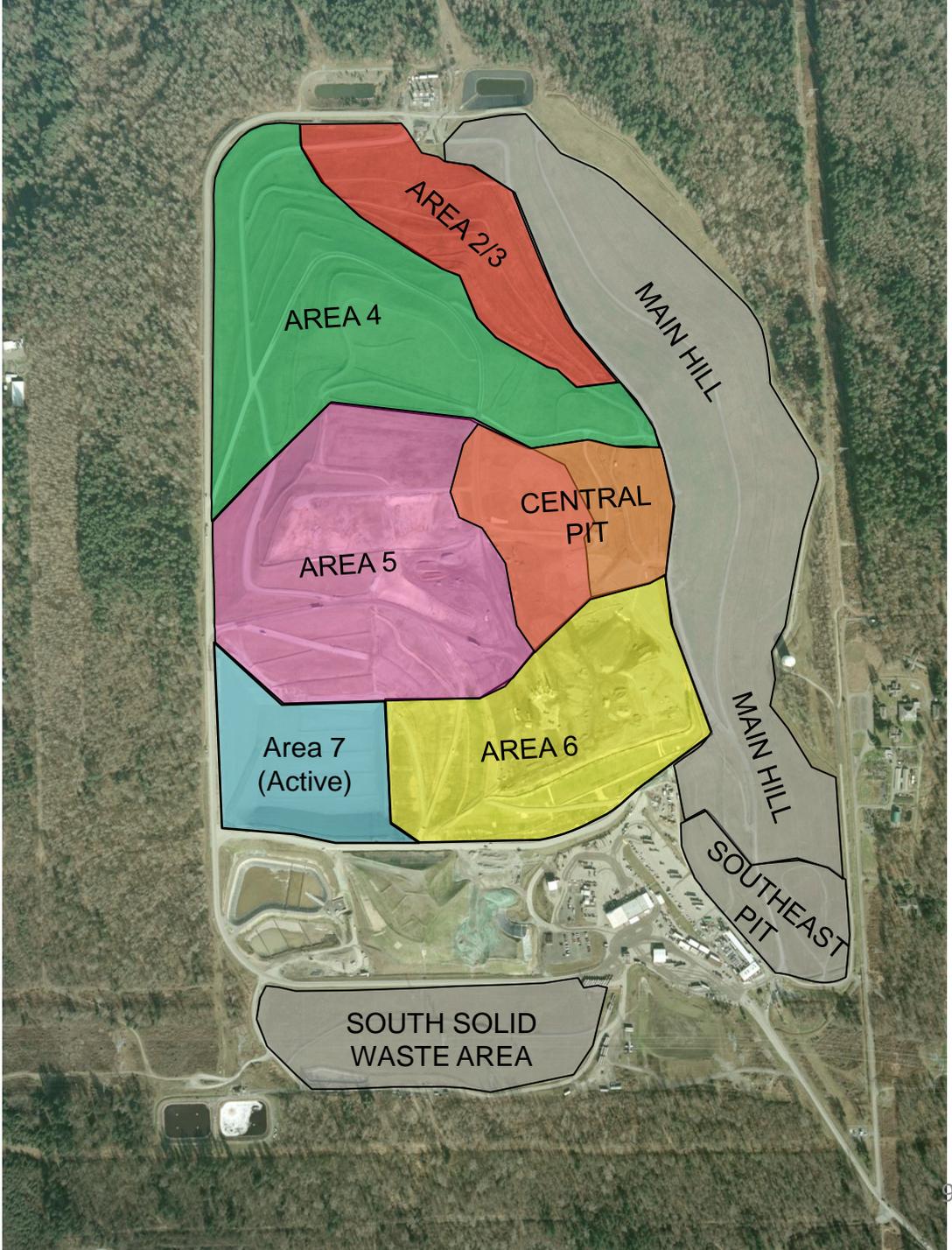


The Cedar Hills Landfill was permitted in 1960 and began receiving solid waste in the mid-1960's.

From the opening until 1986, disposal of solid waste received at the Landfill was disposed in unlined, uncovered areas.



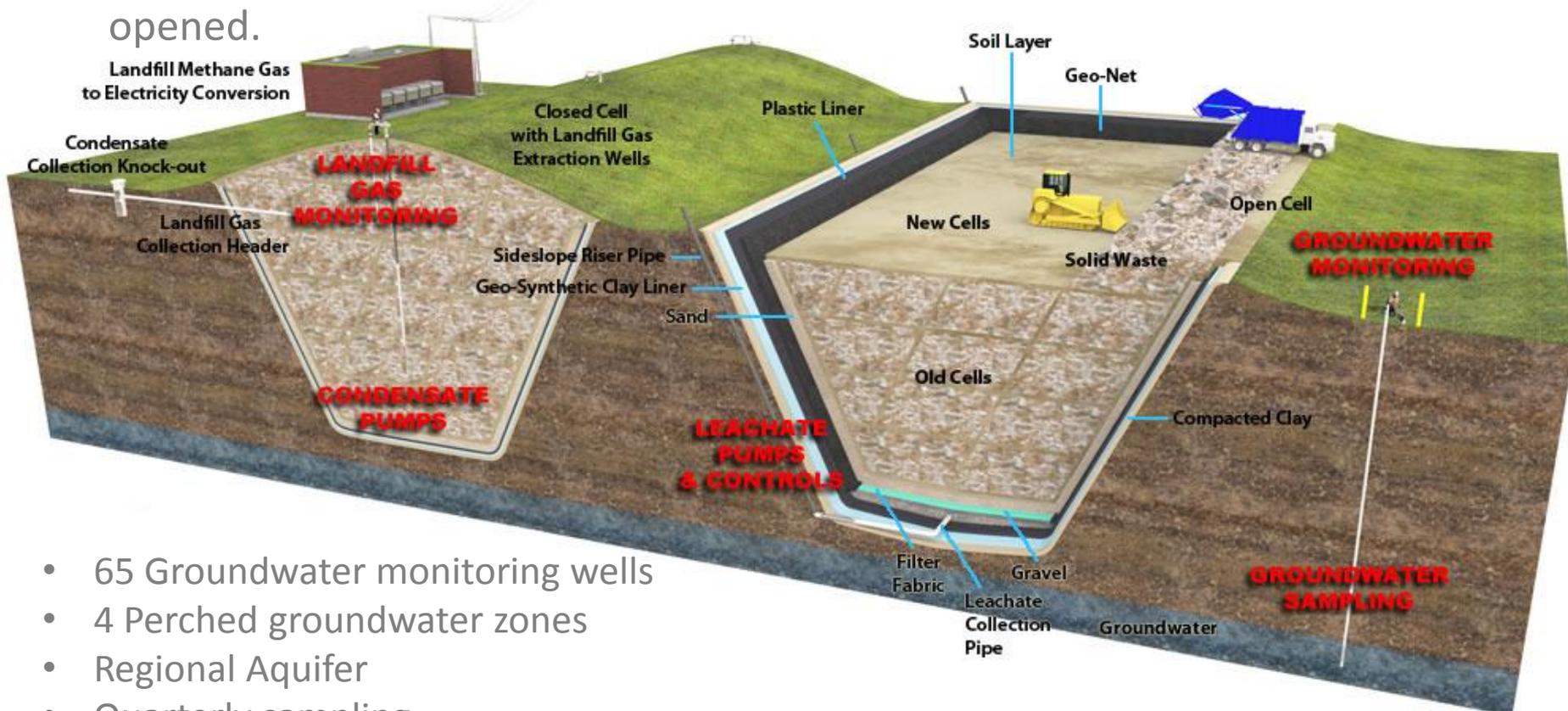
This slide depicts the Cedar Hills Regional Landfilled-areas from 1986 to the present that have been constructed with underlining .





King County Solid Waste Management System

- Significant capital upgrades were made to the individual cells at the Cedar Hills Landfill beginning in the 1980's as environment regulations changed.
- Beginning in 1984, an elaborate groundwater monitoring network was established at the Landfill and has been continually expanded as new areas are opened.



- 65 Groundwater monitoring wells
- 4 Perched groundwater zones
- Regional Aquifer
- Quarterly sampling

- In 1986, the first lined area was installed at the Landfill known as the “Central Pit” – around that same time, complex and extensive leachate and gas collection systems were installed.



Placing of bottom fabric material liner



Placing leachate system in liner



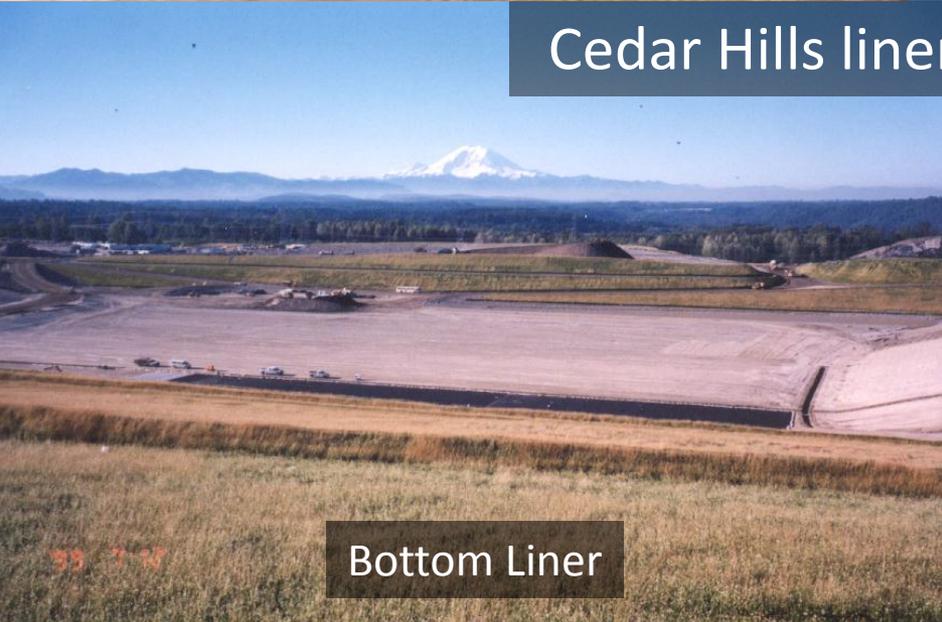
Cedar Hills Liner Installation



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Cedar Hills liner completion



Bottom Liner



Area 6 cell Ready for operation

03/14/2005



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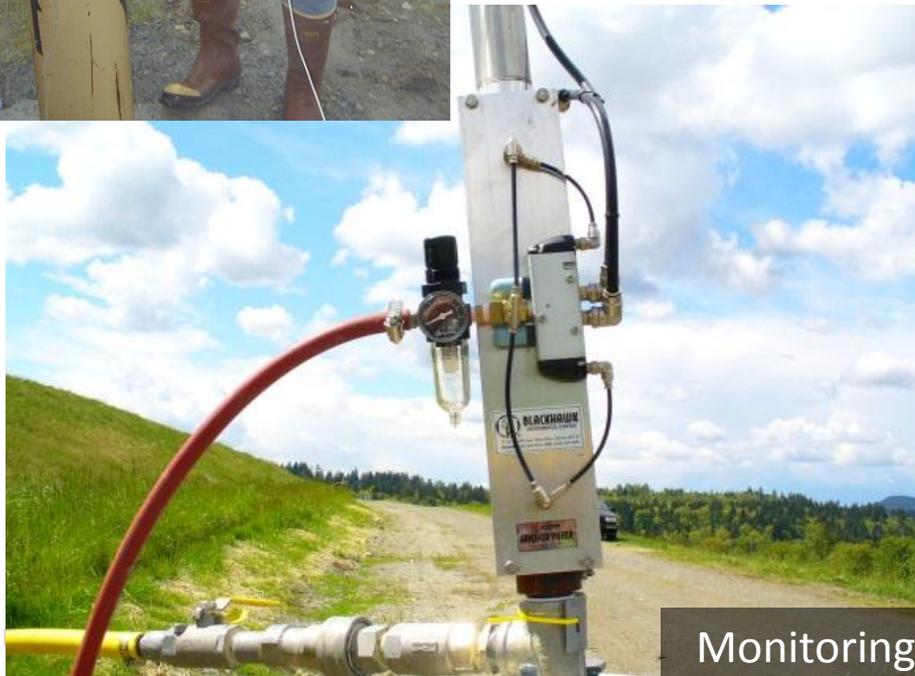
- 140 Gas Monitoring probes
- Monitor monthly
- 588 Gas extraction wells
- Monitor weekly



Installing gas well and gas probe



King County Solid Waste Management System



Monitoring gas well and gas probe



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- From the mid-1980's to mid-1990's older areas of the Landfill received cover systems and environmental controls; this ongoing infrastructure development is supported by funds derived from the rates collected from system users.
- Commencing in 2009, landfill gas generated by refuse disposed at the Landfill is sold to Bio Energy (Washington), LLC (BEW) for conversion to natural gas which goes to Puget Sound Energy's natural gas-fired power plants where it is used to generate electricity. BEW's facility is pictured below.
- In 2011, the landfill received about 812,000 tons of solid waste.





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Extending the Life of the Landfill

- Construction of a new disposal area will extend the life of the Landfill to about 2025.
- The new cell area will be financed through contributions to the Landfill Reserve Fund.
- The longer life of the Landfill will defer the eventual transition to some other more costly method(s) of disposal.





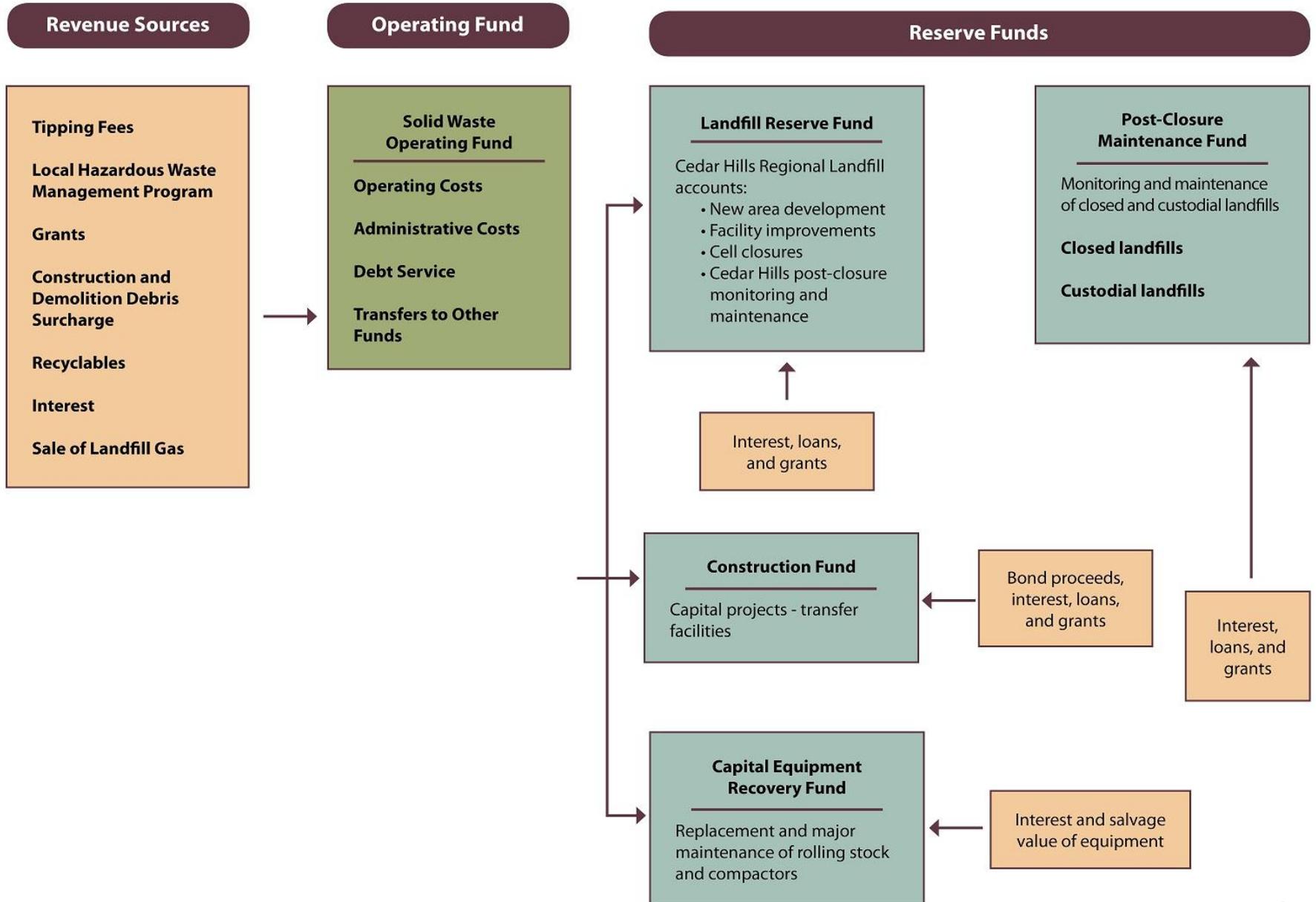
Financing the Landfill's Infrastructure, Closure and Post-Closure Maintenance

The Solid Waste Division's Enterprise Fund is supported by rates.

The fund structure and financial policies that support the Division's operations, administrative activities and allocation of the funds collected is divided into three different categories:

- Revenue Sources
- Operating Fund
- Reserve Funds

Solid Waste Division Fund Structure





Revenue Sources – 2012 Annual Estimates

■ Tipping Fees	\$ 88,300,900
■ Grants	\$ 568,000
■ Recyclables	\$ 296,900
■ Interest	\$ 40,524
■ Sale of Landfill Gas	\$ 1,097,328
■ C & D Surcharge	\$ 4.25/ton
■ Rent – Harbor Island	\$ 895,781
■ Other (cell tower, rental prop.)	\$ 118,000



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Operating Fund – 2012 Annual Estimates

■ Operating Costs	\$ 54,395,617
■ Administrative Costs	\$ 22,213,966
■ Debt Service	\$ 5,457,944
■ Reserve Fund Contribution	\$ 12,811,983



Reserve Funds – 2012 Fund Balances

- Landfill Reserve Fund \$ 32,770,891
Provides accumulates a reserve to fund closure and post-closure requirements for Cedar Hills pursuant to state and federal law. It also provides for development of new disposal areas at Cedar Hills and facility improvements supporting landfill operation.
- Post-Closure Maintenance Fund \$ 12,696,522
Supports the maintenance and monitoring for closed landfills pursuant to state and federal law.
- Construction Fund \$ 6,413,108
Provides funding for capital program from bond and cash contributions per King County Code.
- Capital Equipment Recovery Fund \$ 13,894,852
Provides for replacement of major equipment per King County Code.



Cedar Hills Landfill Insurance Coverage

King County at-large and its Enterprise Fund agencies (including the Solid Waste Division) are self-insured for non-environmental claims. The Solid Waste Division has secured a separate \$50 million pollution legal liability insurance policy for its operation of the Cedar Hills Landfill.

A copy will be made available online.