Closed Landfill Program

2008 Report to the Legislature

Minnesota Pollution Control Agency

Minnesota Pollution Control Agency
520 Lafayette Road North
Saint Paul, MN 55155-4194
http://www.pca.state.mn.us
651-296-6300 or 800-657-3864 toll free
TTY 651-282-5332 or 800-657-3864 toll free
Available in alternative formats

Author

Shawn Ruotsinoja

Contributors

Tom Newman

Peter Tiffany

Alan Williams

Editing and Graphics

CoriAhna Rude-Young

Barb Olafson

Jennifer Holstad

lrc-clf-1sy09

Cover photos from left to right: Constructing New Lined Cell at Mille Lacs County Landfill; Adjacent Development at Hopkins Landfill, Hennepin County; Surveying Waste Removal at Long Prairie Landfill, Todd County; Laying Sand Drainage Layer on top of Bottom Liner at Albert Lea Landfill, Freeborn County

The total cost of preparing the 2008 Closed Landfill Report *was approximately $3,200 including staff time, writing, editing and color printing.*

The MPCA is reducing printing and mailing costs by using the Internet to distribute reports and information to a wider audience. For additional information, see the Web site: http://www.pca.state.mn.us/cleanup/closedlandfills.html.

This report was printed on recycled paper manufactured without the use of elemental chlorine (cover: 30% post-consumer; body: 30% post-consumer).

Table of Contents

Executive Summary

The 1994 Landfill Cleanup Act (LCA) created Minnesota's Closed Landfill Program (CLP or Program). The CLP is an alternative to Superfund for cleaning up and maintaining closed landfills and was the first such program in the nation. The CLP is unique because it is the only program that gives the Minnesota Pollution Control Agency (MPCA) the responsibility to "manage"112 closed landfills to mitigate risks to the public and the environment. The CLP manages these sites by:

- Implementing response actions that address contamination and landfill gas migration
- Performing operation and maintenance tasks
- Working with local governments to ensure that land use at and near the landfills protects human health and safety as well as the State's investment involving response actions taken and equipment purchased

The LCA (Minn. Stat. § 115B.412, subd. 10) requires the MPCA to provide a report to the legislature on the previous fiscal year's (FY) activities and anticipated future work. This report fulfills the requirement and covers FY 2008 (July 1, 2007 to June 30, 2008) activities.

The report provides detailed information on how the CLP managed the closed landfills in the Program. The following pages give an overview of the Program, a description of how the CLP is funded, a report of FY 2008 expenditures, an update on the various remedial, operation and maintenance, land-use related, and other Program activities that were accomplished in FY 2008. The report also provides a look ahead to FY 2009.

Program highlights in FY 2008 were many and included the following:

- Completing or starting design, construction, or investigation activities at 14 sites
- Preventing 26.7 million pounds of methane, as well as other landfill gases, from entering the atmosphere
- Reducing overall landfill waste footprint by nearly 26.5 acres and eliminating 38 acres of non-compliant landfill cover, thereby reducing potential impacts to ground water
- Capturing nearly nine million gallons of landfill leachate and preventing it from impacting the ground water.
- The receipt of nearly $2.7 million dollars in insurance settlement payments from insurance carriers
- Extensively involving the public in an unprecedented remedy selection process for the Program to address the perfluorochemical release at the Washington County Landfill
- Implementing continuous process improvement efforts to develop more effective program activities and to better manage the risks associated with each closed landfill

The CLP spent more than $18 million in contractual and administrative costs in FY 2008 in order to accomplish these and other activities. Future CLP work will require the upgrade of covers and gas systems at some sites, as well as partnering with local governments to assure prudent land use at and near the landfills. Major construction is still needed at four large landfills to address significant environmental concerns. As these and other construction activities are completed, the CLP anticipates fewer corrective actions and greater focus on operation and maintenance and long-term land use planning activities.

Program Overview

Purpose

The 1994 LCA created Minnesota's CLP in order for the State to effectively protect human health, safety, and the environment associated with 112 closed, state-permitted landfills throughout Minnesota. The Program's goals to help achieve this outcome include managing the risks associated with human exposure to landfill contaminants and landfill gas as well as the degradation of ground water and surface water. In turn, managing these risks is best accomplished by implementing certain strategies including: 1) understanding the extent and magnitude of contaminant and landfill gas impacts, as well as the overall risks, at each site, 2) implementing response actions to reasonably address the contaminant and gas migration problems, and 3) managing on-site nearby land use. Table 1 summarizes the CLP's desired outcome, goals, and strategies.

Table 1: Outcome, Goals, and Strategies of the CLP

Desired Outcome	Goals	Strategies
Protect human health, safety, and the environment associated with closed landfills	Manage the risk Minimize human exposure to contaminants and landfill gas Minimize degradation of ground water and surface water	Understand extent and magnitude of contamination and landfill gas migration Cleanup and/or control ground water contamination Control or reduce landfill gas migration or emissions Cooperatively manage land use

The LCA gives the MPCA the authority to initiate cleanup actions, complete landfill closures, and to maintain these landfills in perpetuity. The LCA also authorizes the MPCA to work with local governments to ensure that safe and prudent land use occurs at and near the landfills.

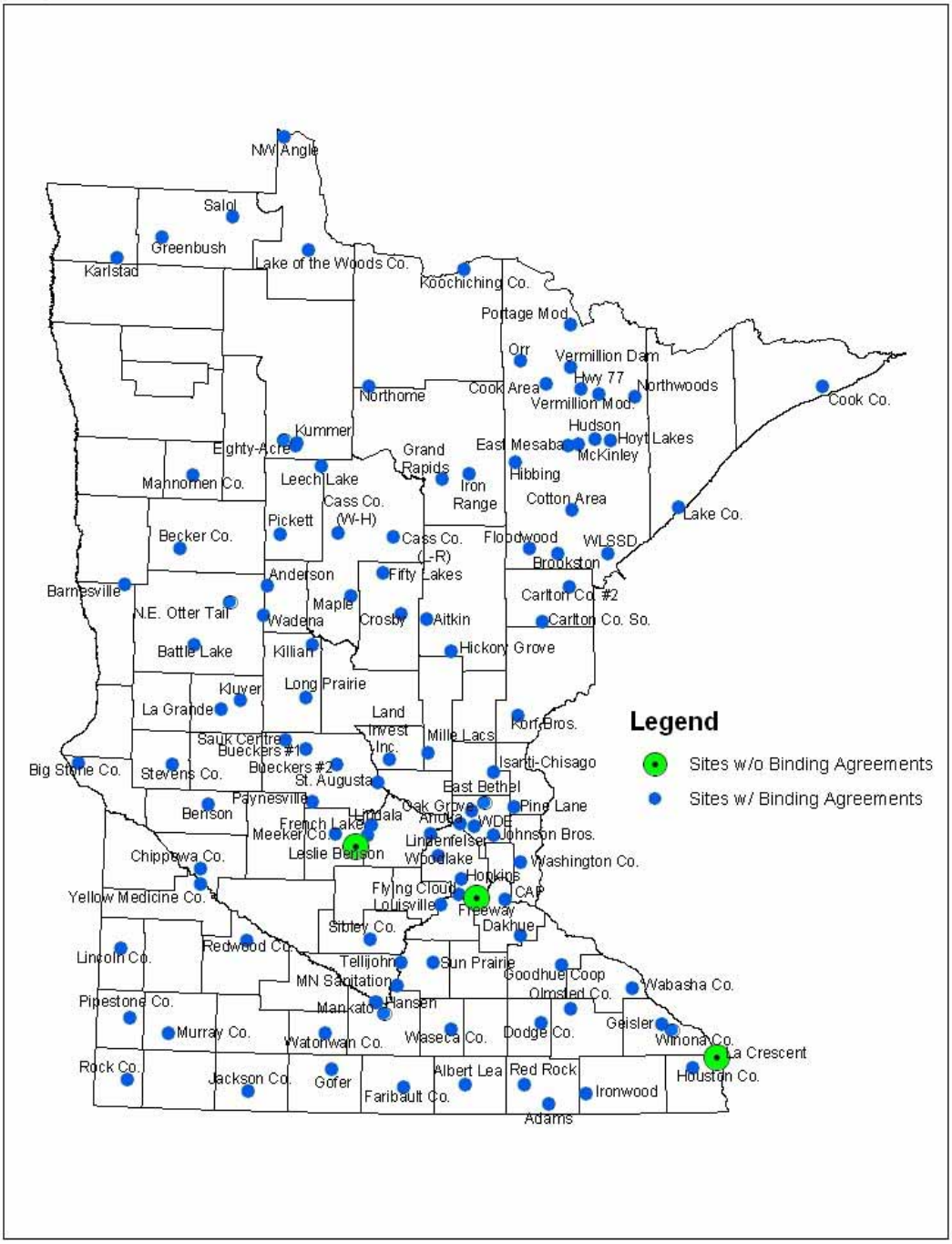
Process

Before landfills are accepted into the CLP, certain requirements as stated in a Landfill Cleanup Agreement or Binding Agreement (BA) (typically executed between landfill owners/operators and the state) must be met. Once these requirements are met, a Notice of Compliance (NOC) is issued to the owner/operator. At this point, the site enters the Program and the state takes over responsibility for the landfill in perpetuity.

Through June 30, 2008, 109 landfill owners/operators had executed a Landfill Cleanup Agreement and received a NOC. Currently, three landfills are qualified for entry into the CLP but have not yet executed a BA. Significant progress has been made in developing a BA for the La Crescent Landfill. However, similar efforts have been challenging regarding the Freeway and Leslie Benson landfills since the LCA doesn't require a date by which these sites must enter the Program. Figure 1 shows the location of all 112 qualified facilities including the three that currently do not have a Landfill Cleanup Agreement.

The LCA also requires the CLP to reimburse eligible parties for past cleanup costs after completing corrective actions. Reimbursements to landfill owners, operators, and responsible parties totaled $37,107,759, while reimbursements to the U.S. Environmental Protection Agency (EPA) amounted to $4,014,550. The Freeway Landfill is the only site that remains eligible for reimbursement to EPA, at a cost of $17,000, when it enters the Program.

Figure 1: Locations of CLP Qualified Facilities



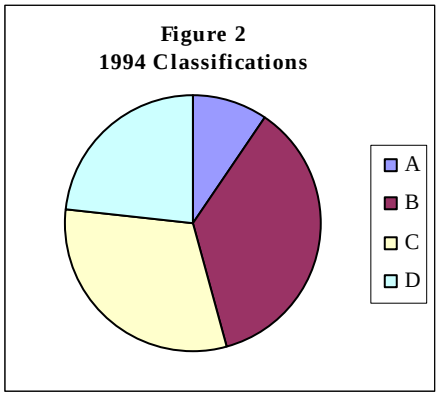
Landfills in the CLP require long-term care as well as occasional corrective actions that require construction. In general, long-term care, or operation and maintenance, includes mowing the landfill cover, sampling ground water and landfill gas wells and surface water, operating active gas extraction systems and ground-water treatment systems, and repairing equipment as well as roads and portions of the landfill cover. Response actions, such as constructing new covers and installing gas extraction and ground-water treatment systems, are implemented when the need arises to better control landfill gas migration and address ground-water contamination that threaten human health and safety and the environment. In some unique circumstances, the best solution may be for the CLP to acquire title to certain parcels as a buffer to protect the public. In addition, working with local units of government to address land use (zoning changes, creating setbacks, conservation easements, etc.) is sometimes warranted in order to mitigate the risk to public health and safety.

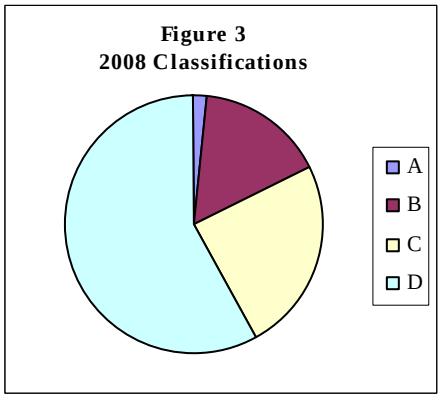
Each site is currently assigned a priority classification and score which reflects a site's priority or need for remedial measures. An A classification signifies the highest priority and a D signifies the lowest. More specifically, sites with an A classification pose an imminent threat to human health, welfare or the environment. The B classification represents sites that require response actions to mitigate exceedences of existing environmental standards. Sites with a C classification are those where the landfill cover does not meet the requirements in the current solid waste rules. The D classification is reserved for sites where the site is in compliance with cover requirements in the current solid waste rules. Within each classification, sites are given a score. Landfills with high numbers are a higher priority than landfills with low numbers within each classification. The classification and score for each landfill in the Program can be found in Appendix B.

Classifications and scores for particular sites are not static. When landfills are improved by constructing remedies, such as a new cover system or an active gas system, sites are given a lower classification and/or score. In addition, if monitoring at a landfill indicates there is a reduced threat to human health and the environment, the classification and/or score can be reduced to reflect a lower priority. Conversely, when public health and/or environmental issues arise as a result of impacts from landfills, the classification and/or score is upgraded to reflect a higher priority. Recently, the classifications and/or priority scores were modified for five landfills. Table 2 lists the five sites and the reasons for the classification/score changes. Figures 2 and 3 illustrate how CLP activities have resulted in a significant overall reduction in relative risk to human health and the environment during the past 14 years.

Table 2: Classification and score modifications

Site Name	Class/Score	Revised Class/Score	Comments
Bueckers No. 1	D / 4	C / 23	Off-site landfill gas migration near occupied building
East Bethel	B / 40	D / 16	New cover and active gas system resulted in ground-water improvements
Long Prairie	B / 10	D / 5	Consolidated waste, constructed new cover and passive gas vents
Sibley County	C / 7	D / 2	Consolidated waste, constructed new cover and passive gas vents
Winona County	B / 22	D / 13	Constructed new cover and installed bottom liner





As a result of the CLP, the EPA has removed eight closed landfills from the NPL (federal Superfund list). Since its inception, the CLP has also cleared the way for the removal of 50 closed landfills from the PLP (state Superfund list). Only one closed landfill, the Freeway Landfill, remains on the NPL and PLP.

As part of the Program's redesign to more effectively manage the risks at the landfills (see Redesign of Program section), a new priority scoring system will be used, starting in FY 2009, to better depict the risks associated with each site. The scoring system will also allow the landfills to be ranked relative to each other according to the risk the sites pose to the public and environment. This scoring system will be an improvement over the existing classification/priority score system by considering overall risk the sites pose to the public rather than the need for constructed remedies.

Funding

Funding for the CLP comes from three major sources:

- Funds transferred from the Environmental Fund
- General obligation bonds
- Settlements from landfill-related insurance coverage

In addition, closed landfills with financial assurance accounts were required to deposit remaining balances into the Remediation Fund in order to enter the Program. Also, the 3M Company will be providing the CLP up to $8 million for PFC-related remedies at the Washington County Landfill per the consent agreement it has with the MPCA.

Transfers from the Environmental Fund

The Environmental Fund is used to support many programs at the MPCA including, in part, the CLP. Various sources of revenue are deposited into the Environmental Fund. A portion of this fund is then transferred into the Remediation Fund for use at CLP sites and for other remediation programs.

General obligation bonds

In 1994, the Legislature authorized $90 million in general obligation bonds to be appropriated over 10 years. This money was to be used for construction of remedial systems at publicly-owned, closed landfills. However, in 2000, Minn. Stat. § 16A.642 cancelled all unused bonds more than four years old, regardless of program need or original legislative intent. This resulted in the cancellation of approximately $56 million of bonding authority. Since 2001, however, the Legislature has authorized $51.15 million of general obligation bonds for construction. There are 93 closed landfills that are publicly owned and are eligible for bonds. Through FY 2008, more than $76 million of general obligation bonds have been spent on construction activities at 52 sites.

Financial assurance

Minn. R. 7035.2665 requires owners of mixed municipal solid waste landfills remaining in operation after July 1, 1990, to set aside funds to pay for the cost of facility closure, postclosure care, and contingency action. Because several of the landfills that entered the CLP were still in operation as of July 1, 1990, their owners were required to meet these financial assurance rules. As part of the LCA, the owners of these landfills, upon entering the CLP, were required to transfer their financial assurance balances to the MPCA after having met closure requirements.

From inception of the CLP through FY 2008, the state has received a total of $15,406,837 in financial assurance payments from owners or operators of 25 closed landfills. An additional $1,781,489 that would have been collected from Waste Management of Minnesota, Inc. for the Anoka-Ramsey Landfill was waived because Waste Management of Minnesota, Inc. agreed to waive its reimbursement claim by an equal amount. A summary of financial assurance collected and the amount of it spent to date at each landfill is located in Appendix A. Unless legislative changes allow additional sites to qualify for the CLP and transferring remaining financial assurance funds is required, no additional financial assurance dollars are anticipated in the future.

Insurance recovery

The LCA authorizes the MPCA and the Attorney General's office to seek to recover a fair share of the State's landfill cleanup costs from insurance carriers based upon insurance policies issued to responsible persons who are liable for clean-up costs under the state Superfund law. This would include insurance policyholders who owned or operated the landfills, hauled waste containing hazardous substances to the landfills, or arranged for the disposal of waste containing hazardous substances at the landfills. Under the LCA, the MPCA and Attorney General may negotiate coverage settlements directly with insurance carriers. If a carrier has had an opportunity to settle with the state and fails to do so, the state may sue the carrier directly to recover clean-up costs to the extent of the insurance coverage issued to responsible persons.

To date, the State has commenced six lawsuits against a total of 56 insurance companies with assistance from the State's Special Attorneys that have been appointed by the Attorney General's office. The first four lawsuits have been fully resolved including settlements with 41 insurance carrier defendants. In the fifth lawsuit, four of the five defendants have entered global settlements with the State and one carrier continues to litigate. The sole remaining defendant in that case is currently appealing a statute of limitations question that was decided in MPCA's favor by the trial court. In January 2008, MPCA and the Attorney General's office filed the sixth landfill insurance recovery lawsuit against 10 insurance companies. There have not been any settlements with these carriers since the suit was filed.

The State's settlement efforts in FY 2008 continued to focus on negotiating global settlements with insurance carriers that have been sued by the State. Global settlements resolve all of an insurance carrier's liability for all of the landfills covered by the 1994 Landfill Clean Act. The State reached global settlements with four insurance carriers in FY 2008. These settlements, plus one payment of a settlement reached prior to FY 2008, resulted in a net deposit of $2,670,519 into the State treasury, which was split equally between the Remediation Fund and Closed Landfill Investment Fund. The State did not issue settlement offers to any additional insurance carriers in FY 2008. Through FY 2008, deposits into the State treasury from insurance carrier settlements total $75.9 million.

Under the LCA, insurance carriers may request that the State's claims for natural resource damages (NRD) at any of the landfills in the CLP be included in settlements with the State. NRD payments received in FY 2008 as a result of settlements amounted to $255,372. Total NRD payments received through June 30, 2008 equal $7,595,278. NRD recoveries are used by the Minnesota Department of Natural Resources (DNR) to rehabilitate, restore or acquire natural resources to remedy injuries or losses to natural resources resulting from a release of a hazardous substance through the DNR's Remediation Fund Grants Program. In FY 2008, the DNR awarded $1,120,000 to five projects.

3M Settlement agreement and consent order

The MPCA executed a Settlement Agreement and Consent Order with the 3M Company in May 2007 that authorizes 3M to take response actions to address releases of PFCs at three disposal sites. As part of this agreement, 3M also agreed to provide to the MPCA up to $8 million for implementing remedial actions at the Washington County Landfill selected by the MPCA. Five million dollars was provided to the MPCA in late FY 2008.

Fiscal Year 2008 Expenditures

Program expenditures are primarily for investigation, design, construction, operation and maintenance, administration, and insurance recovery. Expenditures in FY 2008, including encumbrances not yet spent, totaled $18,032,608. A summary of expenditures can be found in Table 3. Expenditures for each landfill in FY 2008 are itemized in Appendix B.

Table 3: Landfill expenditures (including FY 2008 encumbrances)

Expenditures	FY 2008	Cumulative
Closed Landfill Program Administration and Support	$2,553,264	$30,601,293
Design, Construction, Investigations*	$7,633,948	$133,595,935
Operation and Maintenance	$5,796,478	$45,396,050
CLP Legal Counsel (Attorney General)	$67,364	$2,165,777
Insurance Recovery Legal Counsel (Attorney General)	$128,397	$2,818,307
Insurance Recovery Legal Counsel (Special Attorneys)	$1,853,157	$33,826,356
EPA Reimbursement	$0	$4,014,550
Responsible Party Reimbursements	$0	$37,107,759
Total	**$18,032,608**	**$289,526,028**

Expenditure information is based on MAPS data for the time period of July 1, 2007 to June 30, 2008.

* These activities include both Bond and non-Bond expenditures through June 30, 2008.

Program Activities in Fiscal Year 2008

CLP activities in Fiscal Year 2008 included:

- Designing and constructing landfill covers, gas systems, and other corrective actions
- Investigating ground water contamination and cover thickness
- Providing residences with bottled water and maintaining whole-house water treatment filters
- Landfill operation and maintenance
- Landfill gas, ground-water, and surface-water monitoring
- Operation of gas-to-energy systems
- Continued redesign of the Closed Landfill Program

Design, construction, and investigation

CLP response actions at closed landfills in FY 2008 included ground water investigations, providing alternative water supplies or water treatment systems, cover construction, waste consolidation, and installation of active and passive gas systems. Table 4 summarizes the design, construction, investigation, and other response action activities that occurred in FY 2008. This table reports the type of response actions taken at 14 landfills to demonstrate how $7,611,075 was spent or encumbered during the fiscal year.

The CLP uses several contracts and contractors to help complete some of these response actions. One contract involves designing response actions and providing construction oversight and another is for drilling services.

Constructing bottom liner and sump at Mille Lacs County Landfill

Table 4: Design, construction, investigation, and other activities

Landfill	Design, Oversight, Construction, and Other Activities	Expenditures and Encumbrances
Albert Lea	Designed lined cell at landfill that would receive wastes from city dump	$ 28,665
East Bethel	Completed construction of active gas system and new cover; waste relocation	$ 77,430
Freeway	Completed preliminary design for waste relocation, new cover and liner, active gas system, and improved monitoring system	$ 473,829
Hansen	Installed new gas vents	$ 58,996
Koochiching County	Completed pre-design investigation for possible new cover and passive gas system	$ 27,698
Long Prairie	Completed relocation of waste and construction of new cover and passive gas vents	$ 1,239,540
Maple	Completed a redesign investigation	$ 66,462
Mille Lacs County	Completed pre-design investigation and design for waste relocation, new cover, leachate collection; ongoing drinking water response	$ 92,710
Sibley County	Completed relocation of waste and construction of new cover and passive gas vents	$ 1,028,399
Sun Prairie	Installed new gas vents	$ 56,419
Washington County	Completed a remedial feasibility assessment and began designing a waste relocation remedy to address PFCs; drinking water response actions and ground water investigations are ongoing.	$ 221,876
Winona County	Completed relocation of waste and construction of liner, new cover, and active gas system	$ 991,373
WLSSD	Ongoing cover design investigations	$ 212,152
Woodlake	Completed relocation of waste and construction of new cover and active gas system	$ 3,035,526
Total		**$ 7,611,075**

The costs shown are for invoices paid and dollars encumbered in FY 2008, not necessarily total project costs

Operation and maintenance

The CLP is responsible for the long-term care of all Program landfills in perpetuity. Depending on the site, operation and maintenance (O&M) activities include mowing, sampling and analysis, general repair and maintenance, and general operation of active gas and ground water treatment systems or gas-to-energy systems. O&M costs totaled more than $5.7 million in FY 2008. Costs for each site are provided in Appendix B.

Many of the O&M activities are performed by firms under contract with the CLP or the Department of Administration. One contract is for routine O&M activities, a second is for sampling and analytical services, a third is for mowing the landfills, and a fourth is for data management.

Monitoring Well Nest at Hopkins Landfill, Hennepin County

Landfill gas-to-energy

The CLP is currently exploring several options to make use of landfill gas as a boiler fuel or for the production of electricity to provide a beneficial use for this source of energy. It is estimated that if all closed landfills with operational or proposed active gas extraction systems were developed for electrical generation, these landfills would have the capacity to produce as much as 8-10 MW of baseload (steady state) electricity. This would provide sufficient electricity for the annual needs of more than 9,300 homes.

As part of a pilot project in FY 2007, four Stirling cycle engines were installed at the WDE Landfill. These engines will generate 220 kW of electricity and is estimated will provide electricity to as many as 140 homes. The engines are scheduled for retrofitting in FY 2009 due to certain design flaws.

Planergy International, a subsidiary of Xcel Energy, Inc., having purchased the gas rights from the former landfill owner, generates approximately 1MW of electricity using the landfill gas generated by the Anoka-Ramsey Landfill located in Ramsey, Minnesota.

The CLP intends to develop several projects to demonstrate the technical and economic feasibility of landfill gas-to-energy in direct use applications, as well as electric generation at additional landfills. Where it is economically advantageous, the CLP will be issuing several Request for Proposals seeking commercial development at selected closed landfills where landfill gas production is sufficient to support commercial operations.

Lake Elmo perfluorochemical contamination

The CLP continued to address the perfluorochemical (PFC) contaminated ground water in the City of Lake Elmo in FY 2008. One of the sources of the PFC contamination is the Washington County Landfill. PFCs are a family of manmade chemicals that have been used for decades to make products that resist heat, oil, stains, grease, and water. Common uses include nonstick cookware, stain-resistant carpets and fabrics, components in fire-fighting foam, and other industrial applications. Some of the chemicals in the PFC group are perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanoic acid (PFBA). The chemical structures of PFCs make them extremely resistant to breakdown in the environment.

The MPCA began sampling for PFCs in ground water near the Washington County Landfill (Lake Elmo, Washington County) in the spring of 2004 in response to information indicating 3M's past disposal of PFCs at the landfill. PFCs were detected in samples collected from both shallow and deep monitoring wells around the landfill. Both the MPCA and the Minnesota Department of Health (MDH) expanded its sampling to the south and southeast of the landfill, discovering PFCs in residential wells. It was also discovered that some PFC contamination was coming from the Oakdale Disposal Site located west of the landfill.

PFOA has been detected in monitoring wells at the Washington County Landfill at concentrations up to 82 parts per billion (ppb) and at 0.1 ppb at the edge of the monitoring system 0.7 miles south of the landfill. PFOS has been detected in monitoring wells at the landfill at concentrations up to 1.7 ppb and has been detected 0.5 mile southeast from the landfill at a concentration of 0.07 ppb. PFBA has been detected at a range of 0.2 to 622 ppb in landfill monitoring wells. It has been detected at the edge of the monitoring system (0.7 miles south of the landfill) at a concentration of 0.4 ppb. Overall, the PFC plume appears to be stable.

The MDH established health risk limits (HRL) of 0.5 ppb for PFOA, 0.3 ppb for PFOS, and a health based value (HBV) of 7 ppb for PFBA in drinking water. HRLs and HBVs are exposure values for concentrations of groundwater contaminants that can be safely consumed daily for a lifetime. They are similar with one significant exception – HRLs have been promulgated as rules, HBVs have not. Toxicological data used to develop an HBV may be held to less rigorous standards than are data used to develop a HRL.

The MDH and MPCA sampled more than 400 private wells as part of the ongoing investigation of PFCs in the ground water of western Lake Elmo. PFCs were detected in more than 300 private wells.

The MDH advised residents whose well water was affected with PFCs above HRLs or HBVs to not drink or cook with the water. Many of the affected homes have since been connected to municipal water while homes outside of this area are being provided bottled water or have a granular activated carbon (GAC) filter connected to their home's water supply to treat PFCs. The CLP installed and is maintaining 50 GAC filters for Lake Elmo residents and is providing another three residents with bottled water.

Due to the high-profile nature of this issue, and to be consistent with the approach taken with the three PFC Superfund sites in the east metro, the CLP took a more comprehensive and analytical approach to selecting a remedy for the Washington County Landfill than what is usually implemented or required for sites in the Program. The CLP hired a contractor in FY 2008 to conduct a Remedy Feasibility Assessment to evaluate six remedy alternatives to address the contamination at the landfill. The remedies were evaluated using the EPA's criteria established to assess a permanent remedial alternative. The remedy alternatives included:

- No additional action
- Excavating the waste and converting it onsite into gas and inert slag using plasma torch technology
- Pumping the contaminated ground water out of the ground and sending it to a wastewater treatment plant via a forcemain
- Pumping the contaminated ground water out of the ground, treating it with carbon or resin to remove the PFCs, and returning the treated water to the ground through a seepage pond
- Digging up the waste and placing it on a liner at the same location in order to eliminate any further release of PFCs to the ground water
- Digging up the waste and transporting it offsite to a licensed solid waste facility

The contractor's assessment concluded that the Dig & Line option was the most feasible based on the criteria.

The MPCA held a series of public information meetings with residents and the Lake Elmo city council to explain the remedy feasibility assessment and to get feedback from the public. In addition, the CLP sought public comment on the proposed Dig & Line remedy. In June 2008, the MPCA Commissioner signed a Remedy Decision Document, selecting the Dig & Line option as the remedy for the Washington County Landfill. The CLP anticipates beginning construction in the spring of 2009.

Program redesign

In 2006, the CLP initiated a redesign of the Program. It began as an effort to develop a product and process for implementing land use planning requirements (per State statute) for each landfill (see Land Use Planning section). It became apparent that land use planning plays a much larger role – to effectively manage the risk to public health and the environment posed by the closed landfills – than previously thought and is imperative to the overall goal of the Program. As a result, the CLP realized a more holistic approach to managing the risk was needed and that the Program needed to be redesigned. As part of the redesign effort, the CLP conducted focus groups with local governments as well as CLP staff. It also implemented continuous improvement tools to assist in the redesign.

Several items were identified as being critical to assure the quality of an effective Program, including the need for a single information system for storing and managing Program data; increased legal assistance to help with property issues; a new site priority system based on risk; as well as training, and refocusing the work, of certain staff in land use planning to handle those requirements of the Program.

Land Use Issues

Land use issues near closed landfills are increasing as development expands to more rural areas of the state and as open areas in metropolitan communities become limited. The property near, and at landfills, is becoming more attractive for commercial and residential development, as well as for recreational purposes. Challenges arise when specific land use desires come in conflict with ground-water contamination and landfill gas emanating from a landfill, or with long-term response actions at the landfill which are the state's responsibility. These challenges are greater when contamination problems are not well understood by those interested in developing property, or when local zoning is not compatible with the CLP's long-term obligations at a landfill.

Managing the risks associated with the closed landfills not only involves cleanup and long-term operation and maintenance, but also managing land use on and near the landfills so that the public living or working on the affected land can do so in a safe manner. As it is unlikely that a reasonable cleanup effort will entirely eliminate all the risks, certain land-use controls or restrictions may be necessary to protect the public.

The CLP is designed to respond to these land use pressures by: 1) providing local governments with information on ground-water contamination and landfill gas plumes, and 2) developing site-specific Land Use Plans for each landfill and providing them to the local governments so they can align their local land-use plans with the CLP's land use plans and obligations at each landfill.

Residential development adjacent to Hopkins Landfill, Hennepin County

Land Use Planning

Much of the risk to public health and the environment from closed landfills is addressed by implementing and maintaining remediation systems (engineered covers, gas collection and ground water treatment systems) and monitoring ground water, surface water and landfill gas. However, the proper management and regulation of land use at and near these closed landfills is an additional important factor in assuring long-term protection from the risks posed by these facilities. Future use of property at and around closed landfills needs to be planned carefully and responsibly.

The MPCA intends to develop a comprehensive planning document that addresses the following elements for each landfill: 1) a Land Use Plan (LUP) in which the MPCA sets overall policies and standards for the use of the property at the landfill where the MPCA is implementing environmental response actions; 2) information about property near the landfill that may be affected by ground water or surface water contamination and landfill gas migration and that requires local planning authorities to take appropriate action; and 3) information about properties related to closed landfills that are owned or otherwise managed and controlled by the MPCA under the CLP. The level of detail within each planning document will depend on individual site conditions.

The LCA requires local units of government to make their local land use plans consistent with the LUP developed by the MPCA. The purpose of each LUP is to:

- Protect the integrity of the landfill's remediation systems and the MPCA's ability to continue to take required environmental response actions at the landfill
- Set the land use policies and standards for the landfill which local units of government must incorporate in their land use plans

The LCA requires the MPCA to provide local units of government with information that describes the types, locations, and potential movement of hazardous substances, pollutants and contaminants, or decomposition gases related to the landfill, and the property around the landfill that may be affected. In addition, the LCA requires local units of government to incorporate this information into their land use plans and to notify persons applying for a permit to develop affected property of the existence of this information and, on request, to provide them a copy of the information.

Maps showing known areas of ground water contamination and areas of potential landfill gas and ground water concern will be provided. For these areas, local units of government are responsible for amending their land use plans, and implementing appropriate official controls, in order to take into account the information provided by the MPCA. In its planning document for a landfill, the MPCA will recommend specific measures such as zoning or other controls on use or construction in these areas to address any ground water or landfill gas concerns.

The CLP has completed two site LUPs to date. Each LUP resulted in the local unit of government adopting a new zoning district and ordinance for the landfill called Closed Landfill Restricted.

Site reports

The CLP develops a report for each landfill in the Program if significant changes have occurred within the past year. The reports serve to provide information including:

- Basic information about the landfill and certain site characteristics
- Summary of landfill maintenance and construction
- Gas, ground water, and surface water monitoring results
- Description of the landfill's reclassification and/or rescoring, if applicable
- MPCA staff contacts
- Recommendations for future actions

The reports are meant to provide site information to those that are interested. In the near future, each site report will include site maps showing the areas of landfill gas migration, ground water contamination, and areas of concern associated with ground water contamination. These reports serve as an information source that local units of government can utilize to plan land use that is responsible and appropriate for property near the landfill that may be affected by off-site contamination and/or landfill gas.

Site annual reports, including executive summaries and technical data, are located on the MPCA's Web site at www.pca.state.mn.us/cleanup/landfill-closed.html. MPCA staff will continue to post the most recent site reports on the CLP Web site as significant changes to the sites occur.

State ownership of landfills and adjacent property

The MPCA currently owns 26 landfills totaling 1,973 acres across the state as part of the landfill's entry into the CLP or via tax forfeiture (see Appendix C for a complete list of property owned by the State). This was done in those cases where state ownership provided the best method of controlling access, managing the facility, and providing the best possible environmental protection and safety for the citizens living or working near the facility. In addition to the landfill property itself, the MPCA has acquired adjacent properties at 19

sites totaling 649 acres as a measure to protect human health and safety. In FY 2008, the CLP acquired 6.7 acres of land containing landfill waste adjacent to the Paynesville Landfill and took title to 28 acres of tax-forfeited landfill property at the Long Prairie Landfill.

The CLP is in the process of acquiring, at no cost, three additional landfills (Barnesville, Crosby American Properties, and WDE) with a number of others pending. Several private closed landfill property owners have expressed an interest in transferring ownership to the CLP. In addition, the CLP is currently working on acquiring property adjacent to the Kluver and Barnesville landfills as buffer due to waste and/or landfill gas concerns.

Measuring Program Progress

MPCA staff use environmental and other indicators to generally measure the progress of the CLP. Currently, there are two environmental indicators that are measured: 1) the volume of landfill leachate that is collected before it has a chance to impact ground water, and 2) the amount of landfill gas emissions that is captured and destroyed. Both, if left unabated, have the potential to cause significant risk to public health and the environment.

Leachate reduction

Landfill leachate is the liquid that has percolated through solid waste and contains extracted, dissolved, or suspended materials from it. Some of the response actions completed at closed landfills have resulted in significant reductions in the amount of leachate reaching the ground water. Completely eliminating leachate generation at unlined landfills is impossible given current technology, knowledge, and economics. However, there are several activities that can be done to reduce the amount of leachate each landfill generates, thereby minimizing the potential impact leachate can have on ground water. Those activities include relocating poorly covered waste and waste originally placed in or near ground water, reducing waste footprints, placing impermeable covers over waste, and collecting and treating leachate and contaminated ground water. In certain situations, although expensive, constructing a bottom liner and relocating the waste on top of that liner can provide the greatest safeguard to protecting public health and the environment.

Improved or synthetic covers greatly reduce the infiltration of precipitation into the waste, thereby reducing the volume of leachate produced. Since the Program's inception, covers that meet or exceed current standards protect more than 2000 acres of waste currently managed by the CLP.

In FY 2008, the CLP replaced 18 acres of poor, non-compliant cover at the Long Prairie Landfill with 10.2 acres of compliant cover while reducing the overall footprint by 7.8 acres. At the Sibley County Landfill, the CLP eliminated 14 acres of non-compliant cover and reduced its footprint by six acres by consolidating the waste under eight acres of compliant cover. In addition, the waste footprint at the Woodlake Landfill was reduced by a total of 12.4 acres – including 6.2 acres of non-compliant covered waste.

The CLP also re-contours landfill surfaces, establishes vegetative growth on landfill covers, and engineers holding basins to further reduce the amount of surface water likely to come into contact with waste and form leachate. The CLP also operates six leachate collection systems and nine ground-water collection systems at 14 sites. This prevented another nine million gallons of leachate from reaching the ground water in FY 2008.

New Flare and Liner Construction at Woodlake Landfill, Hennepin County

Landfill gas reduction

Landfill gas, primarily methane, is a concern with closed landfills because: 1) it can migrate off-site and become an explosive hazard, and 2) it is a greenhouse gas. Methane is generated as landfill waste decomposes and needs to be managed since it accumulates beneath the landfill's cover. Currently, most landfills in the CLP have some type of passive-gas extraction system that helps alleviate methane buildup.

Total elimination of landfill gas escaping to the environment is not currently possible. However, installation of active gas collection systems at larger sites can significantly reduce landfill gas emissions directly to the atmosphere. Currently, twenty-one landfills have active-gas extraction systems. The Anoka-Ramsey Landfill, in addition to having a flare to burn gas from the active-gas extraction system, has a gas-to-energy plant, operated by Planergy International, which converts the gas to electricity for use. The WDE Landfill is addressing gas issues by both a flare and gas-to-energy system that began operating last year (see Landfill Gas to Energy).

Active landfill gas extraction systems, therefore, provide the following beneficial uses:

- Reduction in methane migration and vegetative loss
- Overall reduction in greenhouse gases
- Reduction of volatile organic compounds otherwise migrating to groundwater
- Gas-to-energy use

In FY 2008, 26.7 million pounds of methane were destroyed by the gas extraction and gas-to-energy systems that are operated at CLP landfills (see Table 5). Since 2000, these systems have prevented more than 211 million pounds of methane (2 million metric tons of CO_2 equivalents) from entering the atmosphere. Stack test results from earlier studies show nearly 99 percent destruction of methane and other contaminants in the CLP's enclosed flares.

Another method to control landfill methane is the use of a solar-powered, single-vent flare. One such flare was installed at the Kummer Landfill in March 2008 as a demonstration and educational project. The flare is a single vent unit used to destroy methane from one vent. It serves the same basic purpose as a landfill active gas system except that the single-vent flare addresses landfill gas at a specific location at the landfill. The advantages of this type of flare are that they can be effective on a single low flow vent and no outside source of electricity is required. The flare has been operating as designed since its installation. If the single-vent flare is found to be effective, additional flares like this could be used at other landfills in the Program.

Solar flare at Kummer Landfill, Beltrami County

Table 5: Methane destroyed by gas extraction and gas-to-energy systems

Landfills	Gas Flow (cfm)	%Methane in LF Gas	Operation Hours	Methane Destroyed (Pounds)
Albert Lea	173	49%	5,962	**1,359,541**
Anoka - flare	313	45%	277	**104,696**
Anoka - Planergy engines	313	45%	8,483	**3,206,258**
Becker County	62	32%	5,151	**270,682**
Dakhue	80	36%	5,008	**385,190**
East Bethel	79	44%	8,648	**803,266**
Flying Cloud	250	50%	8,526	**2,853,661**
Grand Rapids	91	40%	5,603	**537,413**
Hopkins	79	22%	7,517	**344,963**
Koochiching County	50	60%	1,218	**97,134**
Lindenfelser	77	44%	8,300	**743,304**
Louisville	377	36%	8,451	**3,059,688**
Oak Grove	84	55%	8,781	**1,091,788**
Olmsted	235	44%	6,743	**1,848,594**
Pine Lane	155	49%	7,884	**1,611,715**
St. Augusta	75	40%	8,213	**666,134**
Tellijohn	79	32%	7,924	**536,932**
Washington County	89	45%	8,700	**933,043**
Watonwan County	74	32%	7,419	**475,502**
WDE	112	48%	8,722	**1,256,515**
Winona County	131	57%	6,215	**1,227,736**
Woodlake	283	52%	8,207	**3,244,988**
TOTAL				**26,658,743**

Looking Ahead to FY 09

Proposed new projects

In FY 2009, the CLP anticipates completing ongoing constructing projects; upgrading landfill covers, gas systems, and leachate collection systems, as well as completing the design and starting construction at the Washington County Landfill to address PFC contamination. Table 6 lists the anticipated response actions at specific sites. Additional activities for FY 2009 include ongoing water/GAC filter services to residents in near the Washington County, Becker County, and Mille Lacs County Landfills, as well as completing the Program's redesign.

Laying Base Liner at Mille Lac's County Landfill

Table 6: Anticipated response actions at specific sites in FY 2009

Landfill	Class	Design, Oversight, Construction, and Other Activities
Albert Lea	B	Initiate relocation of city dump waste as well as landfill contaminated soil to lined cell at landfill
East Mesaba	B	Design for waste consolidation, new cover, and passive gas system
Koochiching County	C	Design new cover and passive gas system
Maple	C	Design and make improvements to the landfill cover and site access
Mille Lacs County	A	Complete relocation of waste, installation of liner, new cover, and leachate collection system
Washington County	A	Complete pre-design investigation as well as design of Dig & Line remedy, begin construction of remedy, install additional monitoring wells
WDE	B	Improve ground-water pump and treat system at hazardous waste pit
WLSSD	B	Design and begin constructing a new cover and active gas extraction system and relocate waste from adjacent Duluth Dump

Additional Information

Additional information about the CLP, including landfill-specific information, can be found on the MPCA's Web site at: www.pca.state.mn.us/cleanup/landfill-closed.html.

Program Contacts

For more information about the CLP, contact:

- **Shawn Ruotsinoja**, Project Leader, Closed Landfill Program, 651-296-6300, 1-800-657-3864
- **Doug Day**, Unit Supervisor, Landfill Cleanup Program, 651-296-6300, 1-800-657-3864
- **Jeff Lewis**, Section Manager, Petroleum and Landfill Remediation Programs, 651-296-6300, 1-800-657-3864

Appendix A: Financial Assurance

Site Name	Financial Assurance Received	Amount Spent in FY 08	Total Amount Spent	Financial Assurance Balance
Anoka-Ramsey*	$ 1,781,489	$ -	$ 1,781,489	$ -
Cass Co. (L-R)	$ 84,497	$ 3,207	$ 45,465	$ 39,032
Cass Co. (W-H)	$ 84,497	$ 6,102	$ 84,497	$ -
Chippewa County	$ 362,516	$ 12,815	$ 153,561	$ 208,955
Cook County	$ 644,726	$ 36,601	$ 235,595	$ 409,131
Dakhue	$ 150,411	$ -	$ 150,411	$ -
Dodge County	$ 1,189,672	$ 9,144	$ 92,847	$ 1,096,825
East Mesaba	$ 696,244	$ 9,812	$ 235,994	$ 460,250
French Lake	$ 14,931	$ -	$ 14,931	$ -
Grand Rapids	$ 1,750,000	$ 105,911	$ 887,970	$ 862,030
Hibbing	$ 468,020	$ 10,404	$ 322,654	$ 145,366
Isanti-Chisago	$ 333,839	$ -	$ 333,839	$ -
Lindenfelser	$ 400,827	$ -	$ 400,827	$ -
Long Prairie	$ 72,973	$ -	$ 72,973	$ -
Louisville	$ 337,130	$ -	$ 337,130	$ -
Meeker County	$ 378,002	$ -	$ 378,002	$ -
Northeast Otter Tail	$ 590,996	$ 191,195	$ 382,941	$ 208,055
Paynesville	$ 111,641	$ -	$ 111,641	$ -
Pipestone County	$ 16,622	$ -	$ 16,622	$ -
Redwood County	$ 81,689	$ -	$ 81,689	$ -
Sun Prairie	$ 10,725	$ -	$ 10,725	$ -
Tellijohn	$ 351,406	$ -	$ 351,406	$ -
Winona	$ 1,586,726	$ -	$ 1,586,726	$ -
Woodlake	$ 1,350,000	$ -	$ 1,350,000	$ -
WLSSD	$ 4,338,747	$ 158,081	$ 436,586	$ 3,902,161
Total	**$ 15,406,837**	**$ 543,524**	**$ 9,856,773**	**$ 5,550,064**

* An additional $1,781,489 that would have been collected from Waste Management of Minnesota, Inc., (Anoka-Ramsey Municipal Sanitary Landfill) was waived because Anoka-Ramsey Municipal Sanitary Landfill agreed to waive its reimbursement claim from MPCA in an equal amount.

Appendix B: Fiscal Year 2008 Financial Summary

Landfill Name	Class & Score	MPCA Salary & Expenses	Attorney General Support	Operation & Maintenance	Design/ Construction Non-Bond	Design/ Construction Bond	Landfill Totals
Adams (Relocated)	D/00	$ 214					$ 214
Aitkin Area	D/26	$ 1,802		$ 7,782			$ 9,584
Albert Lea	B/25	$ 41,090	$ 5,121	$ 135,278	$ 12,200	$ 16,465	$ 210,154
Anderson-Sebeka	D/02	$ 421		$ 5,227			$ 5,648
Anoka-Ramsey	D/03	$ 13,273	$ 5,500	$ 436,947			$ 455,720
Barnesville	C/01	$ 1,260		$ 14,910			$ 16,170
Battle Lake	D/01	$ 1,379		$ 7,036			$ 8,415
Becker County	B/13	$ 7,347		$ 314,463			$ 321,810
Benson	D/03	$ 1,669		$ 14,250			$ 15,919
Big Stone County	D/02	$ 1,044		$ 11,883			$ 12,877
Brookston Area	C/02	$ 1,547		$ 2,787			$ 4,334
Bueckers #1	C/23	$ 1,490		$ 8,864			$ 10,354
Bueckers #2 (Relocated)	D/00						$ 0
Carlton County #2	D/05	$ 2,372		$ 11,063			$ 13,435
Carlton County South	B/10	$ 1,450		$ 9,074			$ 10,524
Cass County (L-R)	D/05	$ 960		$ 3,207			$ 4,167
Cass County (W-H)	D/02	$ 1,270		$ 6,102			$ 7,372
Chippewa County	B/14	$ 2,694		$ 12,815			$ 15,509
Cook Area	C/04	$ 1,996	$ 71	$ 5,261			$ 7,328
Cook County	D/03	$ 3,118	$ 394	$ 36,601			$ 40,113
Cotton Area	D/05	$ 3,206		$ 3,077			$ 6,283
Crosby	D/02	$ 3,456	$ 10	$ 24,111			$ 27,577
Crosby American Properties	B/07	$ 2,488	$ 3,424	$ 30,311			$ 36,223
Dakhue	B/11	$ 6,808	$ 40	$ 64,071			$ 70,919
Dodge County	D/30	$ 2,870		$ 9,144			$ 12,014
East Bethel	D/16	$ 20,825	$ 10	$ 203,435	$ 77,430		$ 301,700
East Mesaba	B/19	$ 2,546	$ 10	$ 9,812			$ 12,368
Eighty Acre	D/10	$ 1,400		$ 8,976			$ 10,376
Faribault County	C/12	$ 4,820		$ 30,765			$ 35,585
Fifty Lakes	D/04	$ 3,081		$ 23,945			$ 27,026
Floodwood	C/05	$ 1,168		$ 4,757			$ 5,925
Flying Cloud	C/12	$ 5,533		$ 39,128			$ 44,661
Freeway	B/100	$ 16,742	$ 5,858		$ 473,829		$ 496,429
French Lake	D/03	$ 1,853		$ 4,829			$ 6,682
Geislers (Relocated)	D/00	$ 169					$ 169
Gofer	D/09	$ 1,787	$ 40	$ 13,751			$ 15,578
Goodhue Co-Op	C/11	$ 1,365		$ 6,650			$ 8,015
Grand Rapids	D/17	$ 2,971		$ 105,911			$ 108,882
Greenbush (Relocated)	D/00	$ 490					$ 490
Hansen	C/14	$ 5,431		$ 4,636	$ 58,996		$ 69,063
Hibbing	D/07	$ 2,472		$ 10,404			$ 12,876
Hickory Grove	D/02	$ 1,539		$ 3,456			$ 4,995
Highway 77	C/02	$ 430		$ 3,784			$ 4,214
Hopkins	B/22	$ 5,158	$ 212	$ 106,099			$ 111,469
Houston County	D/25	$ 4,353		$ 27,596			$ 31,949
Hoyt Lakes	C/03	$ 566		$ 1,984			$ 2,550
Hudson	C/05	$ 886		$ 2,852			$ 3,738
Iron Range	C/04	$ 1,662		$ 3,263			$ 4,925
Ironwood	D/09	$ 7,440		$ 142,007			$ 149,447
Isanti-Chisago	B/22	$ 3,854		$ 102,650			$ 106,504
Jackson County	C/06	$ 4,996		$ 23,555			$ 28,551
Johnson Bros.	C/11	$ 3,010	$ 71	$ 2,483			$ 5,564
Karlstad	C/04	$ 1,503		$ 6,696			$ 8,199
Killian	D/05	$ 2,415		$ 18,011			$ 20,426
Kluver	D/31	$ 6,457	$ 5,444	$ 11,301			$ 23,202
Koochiching County	C/17	$ 6,437		$ 146,296	$ 27,698		$ 180,431
Korf Bros.	D/15	$ 3,216	$ 20	$ 6,245			$ 9,481
Kummer	B/13	$ 14,055		$ 262,187			$ 276,242
La Crescent	C/03	$ 695	$ 2,767				$ 3,462
La Grand	D/03	$ 4,569	$ 2,937	$ 33,959			$ 41,465
Lake County	D/03	$ 2,677	$ 152	$ 22,829			$ 25,658
Lake of The Woods County	C/08	$ 752		$ 44,512			$ 45,264

Landfill Name	Class & Score	MPCA Salary & Expenses	Attorney General Support	Operation & Maintenance	Design/ Construction Non-Bond	Design/ Construction Bond	Landfill Totals
Land Investors (Relocated)	D/15	$ 83		$ 3,243			$ 3,326
Leech Lake	D/04	$ 3,394		$ 9,754			$ 13,148
Leslie Benson	C/01	$ 83	$ 2,727				$ 2,810
Lincoln County (Relocated)	D/02	$ 225					$ 225
Lindala	B/11	$ 4,242		$ 90,102			$ 94,344
Lindenfelser	D/07	$ 3,806		$ 67,948			$ 71,754
Long Prairie	D/05	$ 35,794	$ 4,828	$ 7,837	$ 1,239,540		$ 1,287,999
Louisville	D/04	$ 5,685	$ 8,512	$ 108,310			$ 122,507
Mahnomen County	C/10	$ 1,554		$ 3,234			$ 4,788
Mankato	D/23	$ 1,572		$ 4,813			$ 6,385
Maple	C/16	$ 7,701		$ 6,288	$ 66,462		$ 80,451
McKinley	C/04	$ 640		$ 993			$ 1,633
Meeker County	D/03	$ 2,026		$ 15,499			$ 17,525
Mille Lacs County	A/74	$ 38,339	$ 3,889	$ 83,899	$ 92,710		$ 218,837
Minnesota Sanitation	D/07	$ 3,324		$ 5,884			$ 9,208
Murray County	D/105	$ 3,352		$ 16,301			$ 19,653
Northeast Otter Tail	D/03	$ 6,823		$ 191,195			$ 198,018
Northome	D/03	$ 935		$ 2,107			$ 3,042
Northwest Angle	B/02	$ 733		$ 1,256			$ 1,989
Northwoods	D/09	$ 1,996		$ 10,348			$ 12,344
Oak Grove	D/13	$ 2,528	$ 1,121	$ 112,864			$ 116,513
Olmsted County	D/13	$ 14,076	$ 141	$ 152,758			$ 166,975
Orr	C/05	$ 418					$ 418
Paynesville	C/09	$ 6,986	$ 7,696	$ 25,830			$ 40,512
Pickett	B/03	$ 2,655	$ 4,939	$ 13,503			$ 21,097
Pine Lane	D/06	$ 1,980		$ 113,022			$ 115,002
Pipestone County	C/08	$ 1,404		$ 17,608			$ 19,012
Portage Mod. (Relocated)	D/00	$ 599					$ 599
Red Rock	D/26	$ 4,192		$ 26,273			$ 30,465
Redwood County	D/08	$ 3,354		$ 13,978			$ 17,332
Rock County	D/07	$ 3,430	$ 20	$ 13,137			$ 16,587
Salol / Roseau	D/04	$ 1,779		$ 12,816			$ 14,595
Sauk Centre	D/22	$ 2,894	$ 4,969	$ 9,327			$ 17,190
Sibley County	D/02	$ 29,555		$ 8,332	$ 1,028,399		$ 1,066,286
St. Augusta	D/04	$ 20,956	$ 30	$ 93,482			$ 114,468
Stevens County	C/12	$ 1,713	$ 10	$ 7,952			$ 9,675
Sun Prairie	D/22	$ 6,077		$ 9,467	$ 56,419		$ 71,963
Tellijohn	D/15	$ 8,154		$ 78,904			$ 87,058
Vermillion Dam (Relocated)	D/00	$ 310					$ 310
Vermillion Modified	D/11	$ 501		$ 2,277			$ 2,778
Wabasha County	D/11	$ 3,216		$ 18,484			$ 21,700
Wadena County	D/05	$ 1,849	$ 61	$ 6,213			$ 8,123
Waseca County	B/20	$ 3,573		$ 26,331			$ 29,904
Washington County	A/24	$ 92,086	$ 5,505	$ 243,964	$ 221,876		$ 563,431
Watonwan County	D/06	$ 6,790		$ 87,460			$ 94,250
Waste Disposal Eng (WDE)	B/236	$ 18,952	$ 19,816	$ 560,802			$ 599,570
Winona County	D/13	$ 23,869		$ 175,545	$ 924,519	$ 66,854	$ 1,190,787
WLSSD	B/48	$ 25,557	$ 4,495	$ 158,081		$ 212,152	$ 400,285
Woodlake	B/34	$ 50,430		$ 220,176	$ 1,084,796	$ 1,950,730	$ 3,306,132
Yellow Medicine County	D/20	$ 1,960		$ 12,528			$ 14,488
Administration & Support		$ 1,834,567	$ (33,476)	$ 333,375	$ 22,873		$ 2,157,339
TOTAL		**$ 2,553,264**	**$ 67,364**	**$ 5,796,478**	**$ 5,387,747**	**$ 2,246,201**	**$ 16,051,054**

Appendix C: CLP State Ownership of Landfills and Adjacent Property

SITE NAME*	County	Landfill Acres	Buffer Acres	Twp	Range	Sect	Donated
Anderson/Sebeka	Wadena	27		137	35	29	Y
Anoka/Ramsey	Anoka	317		32	25	27	Y
Anoka/Ramsey Buffer	Anoka		23	32	25	23	N
Bueckers #1	Stearns	17	13	126	32	31	Y
Dakhue	Dakota	80		113	18	24	Y
East Bethel	Anoka	60		33	23	8&9	Y
East Bethel Buffer	Anoka		0.3	33	23	8	N
East Mesaba	St Louis	128		58	17	15	Y
French Lake	Wright	11		120	28	28	Y
French Lake Buffer	Wright		69	120	28	28	N
Isanti/Chisago	Isanti	40		35	23	1	Y
Kummer Buffer	Beltrami		10	147	33	32	N
La Grande	Douglas	77.2		128	38	18	Y
Land Investors, Inc.	Benton	9		36	30	11	Y
Leech Lake	Hubbard	60		145	32	13	Y
Leech Lake Buffer	Hubbard		16	145	32	13	N
Lindala	Wright	60		120	28	3	Y
Lindala Buffer	Wright		23	120	28	3	Y
Lindenfelser	Wright	60		120	24	26	Y
Lindenfelser Buffer	Wright		11	120	24	26	N
Long Prairie	Todd	28		129	32	18	Y
Long Prairie Buffer	Todd		100.7	129	32	18	N
Oak Grove	Anoka	160		33	24	28	Y
Oak Grove Buffer (3 Properties)	ANOKA		6	33	24	28	N
Olmsted	Olmsted	252		108	14	27	Y
Olmsted Buffer	Olmsted		47	108	14	27	y
Paynesville	Stearns	63		122	32	22	Y
Pickett	Hubbard	16		140	34	7	Y
Pine Lane	Chisago	44		33	21	16/17/20	Y
Pine Lane Buffer	Chisago		22	33	21	16/17/20	N
Pipestone	Pipestone	40		107	44	31	Y
Red Rock	Mower	80		108	17	32	Y
Red Rock Buffer	Mower		81	108	17	32	N
SALOL	Roseau	102		162	38	15	Y
Sauk Centre Buffer	Stearns		14	126	34	14	N
St. Augusta	Stearns	48		123	27	17/12	Y
St. Augusta Buffer	Stearns		43	123	27	7	Y
St. Augusta Buffer	Stearns		35	123	27	7	N
Sun Prairie	Le Sueur	80		111	24	24	Y
Wabasha County	Wabasha	29		109	24	24	Y
Washington Co. Buffer	Washington		20	29	21	10	N
WDE Buffer	Anoka		6	32	24	27	N
Woodlake	Hennepin	85		118	23	8	Y
Woodlake Buffer	Hennepin		110	118	23	8	Y
Total		**1,972.5**	**649.1**				