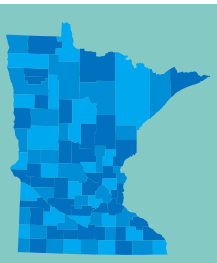
Landfills

January 2020

Metropolitan Landfill Contingency Action Trust (MLCAT) Account

FY2019 annual report on use of the MLCAT Account

MINNESOTA POLLUTION CONTROL AGENCY



Legislative charge

2019 First Special Session, Chapter 4, H.F. No. 7, Sec. 114

Sec. 114. METROPOLITAN LANDFILL CONTINGENCY ACTION TRUST ACCOUNT; REPORT.

By February 1, 2020, the commissioner of the Pollution Control Agency must submit a report to the chairs and ranking minority members of the house of representatives and senate committees and divisions with jurisdiction over environment and natural resources finance regarding the long-term health and availability of the metropolitan landfill contingency action trust account, including its ability to meet future obligations. The commissioner must consult affected local governments in preparing the report.

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Cover photo

Between June 2000 and September 2005 remedial activities at Pig's Eye Landfill included the removal, waste characterization, and disposal of drums from the landfill and along Battle Creek. Approximately 235 drums were removed by the MPCA's contractors, as shown in this photograph.

Minnesota Pollution Control Agency

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This report is available in alternative formats upon request, and online at www.pca.state.mn.us.

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Executive summary

This report provides the Legislature with an assessment of the long-term health and availability of the Metropolitan Landfill Contingency Action Trust (MLCAT) Account, including its ability to meet future obligations to take care of eligible closed disposal sites for mixed municipal solid waste in the seven-county Twin Cities metropolitan area. (The relevant statutes, as amended, are contained in the appendix.)

The report also briefly summarizes the history, purpose, and requirements of the Metropolitan Landfill Contingency Action Trust (MLCAT) Account; the current fiscal status of the account; and previous Minnesota Pollution Control Agency (MPCA) actions taken and proposed future actions at each eligible landfill.

The MLCAT Account is funded chiefly by revenue from a 25% share of a fee on mixed municipal solid waste buried at metro area landfills, amounting to $0.50 per cubic yard of waste ($6.66 per ton). These fees are currently being collected only from the two active MLCAT-eligible landfills: Pine Bend Sanitary Landfill in Inver Grove Heights and Burnsville Sanitary Landfill in Burnsville.

The seven landfills that are eligible for the MLCAT account are:

- Begin Demolition Landfill (Hennepin County) – closed landfill; currently eligible for account
- Burnsville Sanitary Landfill (Dakota County) – currently open landfill; not eligible until 30 years post closure
- Herbst and Sons Demolition Landfill (Hennepin County) – closed landfill; currently eligible for account
- Pig's Eye Landfill (Ramsey County) – closed landfill; currently eligible for account
- Pine Bend Sanitary Landfill (Dakota County) – currently open landfill; not eligible until 30 years post closure
- Rosemount Demolition Landfill (Dakota County) – closed landfill; currently eligible for account
- Vadnais Heights Demolition Landfill (Ramsey County) – closed landfill; currently eligible for account

Over the course of 11 years (from 2004 to 2015), $22,005.000 from the MLCAT Account was transferred out to other funds (General Fund and Renewable Development Account). To date, $13,905,000 of this has not been paid back to the MLCAT Account.

Short-and long-term (through 2049) projections estimate that more than $65 million will be required to complete needed monitoring and response actions at MLCAT sites between now and FY 2049. These projections do not include funding that will be required to address issues at the Pine Bend and Burnsville Landfills, which are projected to be eligible for MLCAT funding in 2052 and 2051, respectively.

Current expenses for the care of the five sites that are currently MLCAT Account-eligible will be more than the account balance within the next three fiscal years. A significant increase in funding is needed in order to satisfy both short- and long-term MLCAT needs.

Introduction and background

The original purpose of the MLCAT Account was to ensure that necessary and reasonable care would be adequately funded at mixed municipal solid waste (MMSW) disposal facilities within the seven-county Twin Cities metropolitan (metro) area (Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington Counties). Money would be available on an emergency basis to address immediate threats that older landfills might pose where the owners or operators proved unable to meet their obligations. In addition, the fund would help pay the cost of long-term care at sites that had been closed properly for three decades (also known as 30 years post closure).

In 1994, however, the passage of the Landfill Cleanup Act by the Minnesota Legislature established the State's Closed Landfill Program (CLP). At that time, the reliance on the MLCAT Account for actions at metro-area landfills was significantly reduced because the majority of closed metro-area landfills that had been eligible for spending under the MLCAT Account became qualified for cleanup and long-term care under the state's CLP. The landfill's eligibility in the CLP took effect after the owners of the eligible, closed MMSW landfill earned a notice of compliance under the CLP statutes. The creation of the CLP left only six landfill sites reliant on the earlier MLCAT law, because those six landfills did not qualify for participation in the CLP. Due to a legislative change in 2001, the Pig's Eye Landfill also became the seventh MLCAT eligible landfill under Minn. Stat. § 473.845.subd. 3(4). The following are the seven landfills that remain MLCAT-eligible:

- Four closed, demolition landfills that accepted small quantities of MMSW prior to being permitted as demolition landfills are eligible now for the MLCAT Account: Vadnais Heights Demolition Landfill (Ramsey County), Rosemount Demolition Landfill (Dakota County), Herbst and Sons Demolition Landfill (Hennepin County), and Begin Demolition Landfill (Hennepin County).
- Pig's Eye Landfill is a large site including a dump that operated without a state permit until closure in 1972. The dump is co-located with a state-permitted sewage-sludge ash landfill that operated from 1977 to 1985.
- Two open sanitary landfills will be eligible for the MLCAT Account 30 years post closure: Burnsville Sanitary Landfill (Dakota County) and Pine Bend Sanitary Landfill (Dakota County).

A summary of the MLCAT Account-eligible landfills history and status is included in Table 1.

Table 1 Status of the MLCAT Account-eligible landfills

Landfill	County	Closure date	30-yr post closure date	Using MLCAT account	Notes
Begin (SW-134)	Hennepin	1979	2009	Yes	2
Burnsville (SW-56)	Dakota	Estimated 2021	Estimated 2051	No	1,2,4
Herbst & Sons (SW-136)	Ramsey	1983	2013	Yes	2
Pig's Eye Landfill & Dump	Ramsey	1972	2002	Yes	3
Pine Bend (SW-45)	Dakota	Estimated 2022	Estimated 2052	No	1,2,5
Rosemount (SW-118)	Dakota	1981	2011	Yes	2
Vadnais Heights (SW-27)	Ramsey	1981	2011	Yes	2

Notes:

1. *Any current on-site work, including closure and/or post closure, is being conducted by the permittee.*
2. *Site is currently in compliance with permit or post closure care requirements.*
3. *In accordance with the Long-Term Maintenance & Monitoring Plan (July 2006), the City of St. Paul and the MPCA share operation and maintenance responsibilities and duties.*
4. *Burnsville has proposed a major modification to expand the landfill capacity. If the expansion is granted to the Burnsville Landfill, the closure date will be estimated at 2070 with a 30-year post closure date of 2100. This expansion is contingent on a Certificate of Need (CON).*
5. *Pine Bend received a new permit in 2019 that depends on Certificate of Need (CON). If the CON is granted, the closure date will be 2027 with a 30-year post closure date of 2057.*

Money deposited in the MLCAT Account comes from three sources:

1. Twenty-five percent of the $2/cubic yard, or 25% of the $6.66/ton, Metropolitan Solid Waste Landfill fee on MMSW disposed in Twin Cities metro-area landfills (currently only collected at the active Pine Bend Sanitary Landfill and the Burnsville Sanitary Landfill).
2. Interest earned from investment of money in the MLCAT Account.
3. Any money recovered by the MPCA for reimbursement of costs incurred.

On June 30, 2004, $9,905,000 (Appendix A) —essentially the entire available balance of the MLCAT Account — was transferred to the State's General Fund as part of a budget-balancing initiative. As part of the transfer authorization, the Legislature expressed the intent to restore an equivalent amount to the MLCAT Account at a later date, as revenue became available, so that the account could meet the long-term care needs at MLCAT-eligible landfills.

During FY 2005 (First Special Session 2005, Chapter 1, Art. 3, Sec. 17), the Legislature authorized the transfer of an additional $4,000,000 (Appendix A) from the MLCAT Account to the renewable development account, to occur in FY 2007.

In FY 2015, the Legislature authorized the transfer of $8,100,000 from the MLCAT Account to the General Fund. In November 2015, the $8,100,000 amount was repaid to the MLCAT Account.

Table 2 summarizes the MLCAT Account revenues, expenditures, and balance between FY 2015 and FY 2019.

Table 2-FY 2019 MLCAT Account status ($ in thousands)

	Actual FY 2015	Actual FY 2016	Actual FY 2017	Actual FY 2018	Actual FY 2019
Balance forward from prior year	**7,332**	**181**	**9,201**	**1,786**	**2,552**
Revenues:					
Metro Landfill Contingency Fee	909	897	951	1,000	1,014
Investment earnings	40	58	35	6	67
Total revenues	**949**	**955**	**986**	**1,006**	**1,081**
Transfers:					
From MLCAT to General Fund[1]	(8,100)	8,100			
From MLCAT to SBI[2]			(8,100)		
Total available resources	**181**	**9,236**	**2,087**	**2,792**	**3,633**
Expenditures:					
Investigations	-	11	226	199	127
O&M/land management	-	24	76	158	177
Total expenditures	**-**	**35**	**301**	**357**	**303**
Account balance (fiscal year end)	**181**	**9,201**	**1,786**	**2,435**	**3,329**

Notes:

1. *FY 2015 transfer to General Fund was enacted by the Legislature. The full amount was reallocated to the MLCAT Account in FY 2016.*
2. *FY 2017 transfer to the SBI was to realize earnings on the account. Balance of MLCAT Account at SBI was $10,941 (in thousands) as of June 30, 2019. See Table 11 for planned fiscal year expenditures using the dedicated MLCAT SBI balance.*

In FY 2019, all the closed MLCAT Account-eligible landfills were inspected in order to assess:

- Surface water drainage and control
- Vegetation
- Erosion and overall integrity of the final cover
- Access to the filled area
- Facility maintenance
- Current land use

These observations are summarized in Table 3.

Table 3. FY 2019 inspection summaries of MLCAT Account-eligible closed landfills

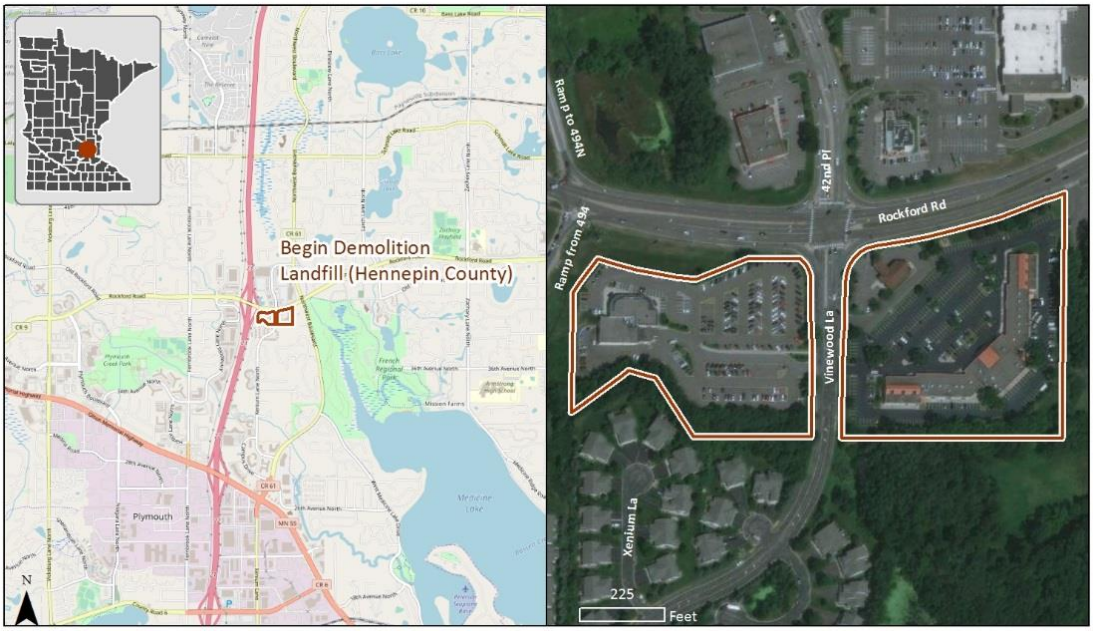
Landfill	Access control	Erosion visible	Cover	Current land use
Begin (SW-134)	None	No	Pavement and vegetation	Three Rivers Regional Park has been developed around the old gravel pit/site. Several commercial buildings are on-site.
Herbst & Sons (SW-136)	Yes	No	Gravel parking lot and vegetation	Open area used for concrete recycling operation and parking area for equipment.
Pig's Eye Landfill & Dump	Partial	No	Vegetation for habitat	Wildlife habitat and wood-chipping facility for District Energy, St. Paul.
Rosemount (SW-118)	Partial	No	Gravel parking lot and vegetation	Gravel and equipment storage for city; possible agriculture use.
Vadnais Heights (SW-27)	None	No	Vegetation (recreational use) and city-owned structures	City park with ball field, picnic grounds, ice rink, community center.

Additionally, the MPCA oversaw environmental investigations at each landfill to assess any remaining environmental risks. The work completed included:

- Groundwater and surface water sampling
- A topographic survey at Pig's Eye Landfill and Dump
- A pilot study at Pig's Eye Landfill and Dump
- Methane and volatile organic compound soil gas sampling at Begin, Herbst & Sons, Rosemount, and Vadnais Heights

Closed MLCAT landfills: Location/setting, past activities, and proposed future work

Begin Demolition Landfill



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Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Location and setting

The Begin Demolition Landfill (Begin Landfill) is located at 3900 to 3950 Vinewood Lane North in Plymouth, Minnesota. Begin Landfill is located on a mostly flat, upland area with a creek/wetland area adjacent to the south/southeast. The Cottonwood Plaza strip mall and Anchor Bank occupy the east side of Begin Landfill. The west side of Begin Landfill is occupied by the Cornerstone Automotive dealership (3901 Vinewood Lane N). The majority of Begin Landfill is covered by paved parking lots and landscaped areas. The surrounding area consists of industrial, commercial, and residential properties.

Background

Begin Landfill began operating in the early 1970s and closed in 1979. Begin Landfill accepted small quantities of mixed municipal waste prior to being permitted as a demolition landfill. Soil borings were conducted during a Phase II Environmental Site Assessment (ESA) in 2017. At that time, landfill waste was found to consist of lumber, concrete, brick, glass, plastic, rubber, paper, cardboard, and potential paint products. Beneath the landfill waste/fill soil, native soil was observed consisting of clay, sand, and silt. Begin Landfill is roughly nine acres in size. Begin Landfill is currently being used for commercial purposes and is bordered by the Three Rivers Regional Park.

Past activities

Various phases of environmental investigation at Begin Landfill revealed low levels of contaminants in groundwater, surface water, and sediments. In FY 2016, a Phase I ESA was completed. It was determined that potential contamination associated with the landfill waste may pose a risk to people or

the environment. In FY 2017, the MPCA completed a Phase II ESA to conduct environmental sampling at the site. The results identified methane concentrations (a gas commonly associated with landfills) greater than the lower explosive limit in the soil around the Cottonwood Plaza and Anchor Bank buildings.

Based on the results of the Phase II, the MPCA completed an additional landfill gas assessment to evaluate the risk posed by the subsurface methane concentrations. At that time, the MPCA also installed soil gas monitoring points and sampled the indoor air for VOCs at the Cottonwood Plaza property to determine if active mitigation was required for this building. The property owner installed a vapor mitigation system based on those results of the methane and VOC soil vapor data.

The properties surrounding Begin Landfill were included in the landfill gas assessment. Fifteen properties were evaluated with sub-slab vapor sampling for methane, oxygen, and volatile organic compounds. These results identified no contaminants exceeding the MPCA intrusion screening values (ISVs) or expedited action level for methane. In FY 2019, additional vapor investigation activities included sub-slab sampling beneath the Anchor Bank building. The results for the Anchor Bank building indicated that active mitigation was not necessary.

Groundwater exceedances include cis 1,3-dichloropropene, metals, 1,4-dioxin, TCDD, PFOS, and PFOA. Surrounding properties have municipal drinking water supply and are not at risk. Soil exceedances include PAHs, metals, and petroleum, and there is no direct human exposure risk to contaminated soil. Soil gas exceedances include 1,1,2-trichloroethane, ethylbenzene, and PCE. The methane soil gas plume is defined and does not appear to pose a significant risk.

MPCA conducted a post closure inspection in FY 2019, in which the Begin Landfill was confirmed to be in compliance with all requirements identified in the permit upon closure of the landfill.

Following the completion of all activities to confirm there are no immediate risks to the Begin Landfill and surrounding properties, the MPCA is completing a remedial investigation in FY 2020 to define the extent and magnitude of contamination associated with the Begin Landfill. This work will include installation of groundwater monitoring wells. A detailed site timeline for prior work completed at the Begin Landfill is included in Appendix B.

Proposed future work

Based on the results from the remedial investigation and groundwater sampling in FY 2020, it is anticipated that additional remedial investigation work will be necessary to delineate impacts in soil, groundwater, and soil gas at the site and off-site properties. This work will identify and minimize risks associated with the landfill.

Fiscal needs for FY 2020-2024 are included in Table 4. Additional projected costs at Begin Landfill are estimated in the 30-year projection spreadsheet in Appendix C.

Table 4. FY 2020-2024 Begin Landfill estimated expenditures ($ in thousands)

	Budget FY 2020	Budget FY 2021	Budget FY 2022	Budget FY 2023	Budget FY 2024
Expenditures:					
Investigations	120	80	50	50	50
O&M/land management	-	-	-	-	-
Total estimated expenditures	120	80	50	50	50

Herbst & Sons Demolition Landfill

Location and setting

The Herbst & Sons Demolition Landfill (Herbst Landfill) is located at 2200 Old Highway 8 in New Brighton, Minnesota. Herbst Landfill is located in an industrial area, with Interstate 35W adjacent to the east, Rush Lake to the south, and Rice Creek and Rice Creek wetlands to the west. Several commercial/industrial buildings occupy the area to the north, including a trucking and distribution company (SAIA) and a manufacturing facility (Fedtech). The Belair Excavation Company currently occupies Herbst Landfill. Belair Excavation uses the site for construction staging and storage. The majority of Herbst Landfill is unpaved and fenced in. The surrounding area consists of industrial and commercial properties.

Background

Herbst Landfill began operating in the early 1970s and closed in 1983. Herbst landfill accepted small quantities of mixed municipal waste prior to being permitted as a demolition landfill. Herbst Landfill was less than an acre in size.

Past activities

Various phases of investigation at the Herbst Landfill found low levels contaminants in the groundwater, surface water, and sediments at the site. In FY 2017, the MPCA completed a Phase II ESA and identified groundwater contamination that posed a potential vapor intrusion risk to receptors. This work included installation of soil gas monitoring points to screen for risks and eventual sampling. In FY 2018 and FY 2019, the MPCA sampled the soil gas monitoring points for methane, oxygen, and VOCs at on- and off-site locations. The MPCA performed sub-slab sampling for methane, oxygen, and VOCs at the nearby buildings, including Fedtech, Inc., located at 4751 Mustang Circle, located to the north of the site. The soil gas and sub-slab vapor sampling results indicated there was not a methane or vapor intrusion risk to the on-site building owned by Belair Excavation or off-site buildings.

Tetrachloroethene (PCE) in the soil gas exceeded the MPCA 33x industrial ISV in two locations off the landfill site adjacent to the SAIA maintenance building located 2160 Mustang Drive. Based on the screening results, sub-slab sampling was completed at the SAIA building. The results in the sub-slab found concentrations of PCE exceeding the 33x industrial ISV and indicated that building mitigation was necessary. PCE has not been previously detected in groundwater or soil gas on the landfill site, indicating the landfill is unlikely to be the source of the PCE identified on the SAIA site.

Groundwater exceedances include PAHs, benzene, TCE, metals, pesticide, PCBs, PFOS, PFOAs, and petroleum. Surrounding properties have municipal drinking water supply and are not at risk. Soil exceedances include benzene, methylene chloride, naphthalene, TCE, PAHs, metals, PCBs, and petroleum. There is no direct human exposure risk to contaminated soil. Soil gas exceedances include PCE and TCE. The methane soil gas plume is defined and does not appear to pose a significant risk.

In FY 2019, MPCA conducted a post closure inspection, in which the Herbst Landfill was confirmed to be in compliance with all requirements identified in the permit upon closure of the landfill.

Following the completion of all activities to confirm there are no immediate risks to the Herbst Landfill on-site buildings and surrounding properties, the MPCA is completing a remedial investigation in FY 2020 to define the extent and magnitude of contamination associated with the Herbst Landfill. This work will include installation of groundwater monitoring wells. A detailed site timeline for prior work completed at the Herbst Landfill is included in Appendix B.

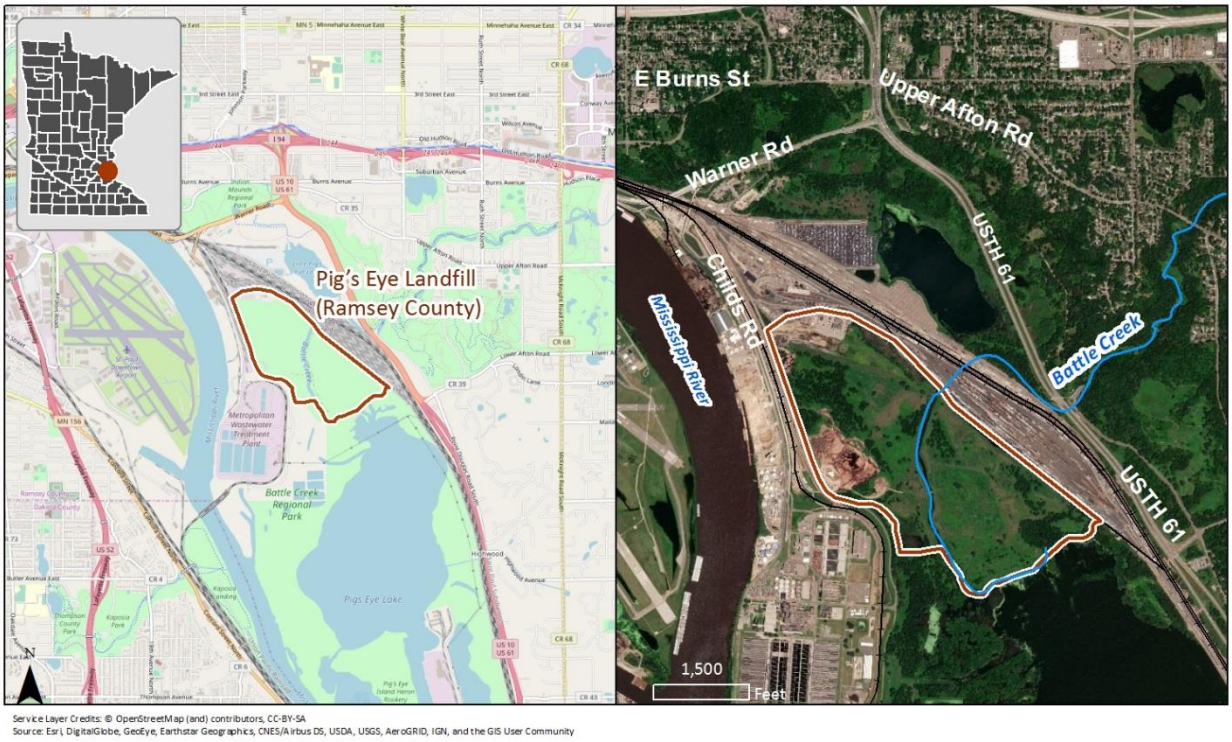
Proposed future work

Based on the results from the remedial investigation and groundwater sampling in FY 2020, it is anticipated that additional remedial investigation work will be necessary to delineate impacts in soil, groundwater, and soil gas at the site and off-site properties. This work will identify and minimize risks associated with the landfill. Fiscal needs for FY 2020-2024 are included in Table 5. Additional projected costs at Herbst Landfill are estimated in the 30-year projection spreadsheet in Appendix C.

Table 5. FY 2020-2024 Herbst Landfill estimated expenditures ($ in thousands)

	Budget FY 2020	Budget FY 2021	Budget FY 2022	Budget FY 2023	Budget FY 2024
Expenditures:					
Investigations	97	55	45	45	45
O&M/land management	-	-	-	-	-
Total estimated expenditures	97	55	45	45	45

Pig's Eye Landfill



Location and setting

Pig's Eye Landfill is a closed waste disposal site located within the floodplain of the Mississippi River, east of the St. Paul downtown airport and east of Pig's Eye Lake Road in St. Paul. Pig's Eye Landfill is bounded by a railroad switching yard to the northeast, various industrial properties to the west, and Pig's Eye Lake to the south. The Metropolitan Council Environmental Services' (MCES) wastewater treatment plant is located adjacent to Pig's Eye Landfill to the southwest. The final reach of Battle Creek flows through the central portion of Pig's Eye Landfill and discharges into Pig's Eye Lake. The Mississippi River is located approximately 800 feet west of Pig's Eye Landfill.

Background

Pig's Eye Landfill operated as an unpermitted landfill between 1956 and 1972, accepting municipal, commercial, and industrial wastes from surrounding communities and businesses in the Twin Cities east-metropolitan area. Much of the waste was deposited in former wetland areas on the property. The MPCA records indicate that an estimated 8.3 million cubic yards of waste was disposed of within the approximately 230-acre property, making Pig's Eye Landfill the largest unpermitted dump in Minnesota. From 1977 to 1985, the wastewater treatment plant operated by the MCES' predecessor agency was permitted to dispose of sewage sludge ash on approximately 31 acres of the property. An estimated 236,000 cubic yards of ash were placed on top of existing waste, and was then covered with approximately two to three feet of soil.

Various phases of environmental investigation have been conducted at Pig's Eye Landfill since the 1970s. The MPCA placed Pig's Eye Landfill on the State Superfund Permanent List of Priorities in 1989. Environmental monitoring of Pig's Eye Landfill by the MPCA started in 1992. In 1994, the U.S. Environmental Protection Agency (EPA) conducted a limited investigation, and the City of St. Paul

conducted investigations from 1998 to 1999. Contaminants detected included VOCs, SVOCs, cyanide, metals, PFAS, and PCBs in groundwater, surface water, and sediments.

Conventional methods of addressing and remediating environmental impacts at other landfill facilities are unlikely to be feasible at Pig's Eye Landfill. Because of the landfill's proximity to Pig's Eye Lake and the Mississippi River floodplain, installing an impermeable cover to prevent the infiltration of precipitation would be of limited use because sampling results indicate that PFAS-impacted groundwater is already migrating from and through the wastes into Battle Creek, and an active system to remove contaminated groundwater from the entire landfill would be impracticable.

Past activities

The MPCA and the City of St. Paul implemented a Response Action Plan (RAP) in two separate phases from June 2001 through September 2005. The primary purposes of the remedial activities were to remove and/or minimize sources of contamination at the landfill, to prevent direct human contact to the wastes by placing a soil cover, and to reduce the migration of impacted groundwater from the landfill to Battle Creek and Pig's Eye Lake. The Phase I and II remedial activities were completed at a cost of less than $6,000,000 and included the following activities:

- Grading the edges of the landfill and re-sloping the lower reach (furthest downstream portion) of Battle Creek to pull back, consolidate, and relocate solid waste in order to minimize contact and exposure to the waste.
- Construction of erosion control measures along the banks of the creek.
- Construction of a permeable reactive barrier (PRB) where the landfill meets the lower portion of Battle Creek along its eastern bank and with Pig's Eye Lake. The PRB consisted of moderately permeable, organic-rich soil intended to increase the potential attenuation of contaminants in the shallow groundwater as it flows through the PRB to minimize contaminants from reaching adjacent surface waters.
- Stabilization of lead and cadmium contaminated soils in a battery disposal area, approximately one acre in size, to minimize leaching into groundwater.
- Filling in of two ponds located in the southeast and southwest portions of the landfill with organic rich soil.
- Removal and proper disposal of drums containing waste and tires.
- Installation of a permanent crossing over Battle Creek.
- Installation of groundwater monitoring wells and continued monitoring and sampling of the wells.
- Covering the entire landfill with at least two feet of clean soil.
- Seeding and tree planting to prevent erosion and encourage biological removal of contaminants.

The landfill is maintained and monitored in accordance with the July 2006, *Long-Term Maintenance and Monitoring Plan*, prepared on behalf of the City of St. Paul and the MPCA. As outlined in the *Long-Term Maintenance and Monitoring Plan,* since 2006, the City of St. Paul continues to conduct biannual inspections of the landfill; maintain the cover, slopes, erosion controls, and the creek crossing; and provide funding for monitoring and reporting.

Since 2006, the MPCA continues to conduct annual groundwater and surface water monitoring and sampling; inspections of the monitoring wells; and completion of annual sampling summary reports. Initially, groundwater and surface water samples were collected and analyzed for VOCs, SVOCs, metals, PCBs, and PFAS. Based on the cumulative sampling results and contaminant concentration trends

observed at the site, analyses of VOCs, SVOCs, and PCBs in the samples have been discontinued. Analyses of SVOCs and PCBs were last conducted in 2008 because these chemicals were not detected above laboratory reporting limits in any of the previously collected samples. Analyses of VOCs were discontinued following the 2011 sampling event because the compounds were not detected above laboratory reporting limits at the sampled locations. PFAS are the primary contaminants of concern in groundwater samples collected from within the landfill body and in surface water samples collected from Battle Creek.

Since initially being detected in groundwater in 2005, the MPCA has continued to sample the groundwater and surface water for PFAS. Although the sampling results indicate that the PRB has been effective at reducing PFAS (and other contaminants') concentrations as groundwater travels through the barrier, the barrier was only placed along a limited portion of Battle Creek's east bank and Pig's Eye Lake, and the source(s) of PFAS within the landfill's waste remains undetermined.

In FY 2014, the MPCA began conducting investigations of PFAS impacts to sediments throughout Pig's Eye Lake, in particular along its northern shore, adjacent to the landfill. At that time, the impacted sediments were delineated, but additional remedial actions have not been conducted to address them. Starting in FY 2016, the MPCA initiated investigation activities to identify areas of PFAS impacts in the landfill, northwest of Battle Creek and near the east bank.

In FY 2018, a Focused Feasibility Study (FFS) was completed to summarize the site conditions and impacts, assist in determining risk to the surrounding area and river, and present options and cost estimates for addressing them. The FFS recommended that two future remedial actions at Pig's Eye Landfill be conducted. Those recommended remedial actions are aimed to:

1. Reduce the migration of PFAS-impacted groundwater from Pig's Eye Landfill into Battle Creek and Pig's Eye Lake.
2. Remove impacted sediments in the northern portion of Pig's Eye Lake.

The two recommended remedial actions are described in the next section of the report.

Proposed future work

Recommended remedial investigation: FY 2020 surface water, groundwater, and landfill gas monitoring and sampling

Based on the surface water and groundwater sampling results from FY 2019, it is anticipated that continued sampling will be necessary to monitor the impacts in FY 2020. Permanent methane and VOCs soil gas sampling locations will be installed and sampled in FY 2020 to identify and assess the risks of methane and soil gas generation from the landfill's wastes.

Recommended remedial action No. 1: Reduction of the migration of PFAS-impacted groundwater

The FFS completed in FY 2018 evaluated four remedial actions and provided estimated costs to reduce the migration of PFAS-impacted groundwater through the landfill into Battle Creek and Pig's Eye Lake. The first two options (Options 1 and 2) included expanding the placement of a PRB along portions of the creek where it was not previously placed. The remaining two options included a targeted source removal of PFAS within the landfill (Option 3) and total excavation of the landfill (Option 4). Table 6 summarizes the options and costs evaluated in the FFS.

Table 6. Recommended remedial action No. 1: Options and estimated costs ($ in thousands)

Remedial action options	Estimated costs ($ in thousands)
Option 1 – Expand PRB along both shorelines of Battle Creek where groundwater impacts have been detected; excluding the east side of the creek's upper reach (furthest upstream portion) where groundwater assessment has not been previously conducted.	$10,825
Option 2 – Expand PRB along both shorelines of Battle Creek, including both sides of the creek's upper reach; followed by groundwater assessment where not previously conducted.	$12,906
Option 3 – Delineate PFAS impacts within the landfill and remove sources (this option does not include remedial actions to address impacted groundwater — would need to be combined with Option 1 or 2 described above).	$10,233
Option 4 – Remove the entire landfill and dispose of off-site in a permitted landfill facility.	$730,734

Since FY 2018, the MPCA has conducted investigations to evaluate, identify, and implement Option 1 or 2 of the above remedial options, including:

- Completion of a topographic survey along the entire reach of Battle Creek within the landfill.
- Development of a groundwater model to understanding groundwater and surface water interactions, and for designing the remedy.
- Evaluation of technologies for the PRB.
- Conducting a pilot study to evaluate the efficiency and effectiveness of the existing PRB and other materials.
- Conducting a bench scale test to optimize the design and placement of the expanded PRB along a limited portion of Battle Creek.

Based on the results of the activities since FY 2018, the MPCA is planning the construction of a PRB along a limited portion of Battle Creek in FY 2021 to treat impacted groundwater (Option 1). Although the work planned for FY 2021 will not complete a PRB along the landfill's entire interface with Battle Creek, it will be placed along the portions of the creek where monitoring indicates that contaminant concentrations in groundwater are the highest.

Construction of a PRB along the landfill's entire interface with Battle Creek (Option 2 discussed above) would provide a more comprehensive remedy to reduce impacted groundwater from Pig's Eye Landfill into Battle Creek and Pig's Eye Lake. Based on the availability of funding, the PRB could be constructed along the remaining portions of the landfill's interface with the creek in a future phase(s).

Option 3, the delineation and removal of PFAS sources within the landfill, was eliminated at this time as it would also require Option 1 or 2 to be implemented to address the groundwater impacts. Option 4, the removal and disposal of the entire landfill, was eliminated at this time due to the significant estimated project costs.

Recommended remedial action No. 2: Removal of impacted sediments from Pig's Eye Lake

Various investigations have identified substantial impacts to the sediments in Pig's Eye Lake; however, remedial actions have not been conducted to mitigate them to date. In the FY 2018 FFS, the remedial options (and estimated costs) to address the sediment impacts include the removal of the sediments from the lake by mechanical dredging, conveyance, and dewatering, followed by disposal of the material

either at Pig's Eye Landfill (on-site) (Option 1), or at an off-site landfill facility (Option 2). Table 7 summarizes these options and costs evaluated in the FFS.

Table 7. Recommended remedial action No. 2: Options and estimated costs ($ in thousands)

Remedial action options	Estimated costs ($ in thousands)
Option 1 – Removal of impacted sediments and ***on-site*** disposal	$19,828
Option 2 – Removal of impacted sediments and ***off-site*** disposal	$31,448

To support the two remedial options, the FFS recommended that a pilot-scale dredging project be performed to provide a proof-of-concept field demonstration of the proposed activities. The costs to conduct a pilot-scale dredging project are estimated to be approximately 25% of the total costs for either of the recommended remedial action options ($4,957,000 for Option 1 and $7,862,000 for Option 2). The completion of a pilot-scale dredging project would allow future, full-scale remediation activities to be appropriately evaluated and designed to achieve maximum effectiveness at providing long-term human and ecological improvements to Pig's Eye Lake. Based on the results of the FFS, the MPCA is planning for the pilot-scale dredging project to occur in FY 2023.

Significant work has been completed at Pig's Eye Landfill to understand the site's conditions, identify impacts, assess risks, and evaluate and present remedial options to mitigate these impacts. The landfill's proximity to surface waters, and the large aerial extent and volume of waste present a number of challenges. However, because of the risks identified, the impacts warrant additional investigation in the upper reach of Battle Creek where groundwater assessment has not been previously conducted and remedies implemented in accordance with the FFS.

Based on the remedial options presented and evaluated in the FFS, and the two remedial alternatives summarized above, significant allocation of resources over a number of years would be necessary to completely and adequately address the risks associated with Pig's Eye Landfill. Fiscal needs for FY 2020-2024 are included in Table 8. Additional projected costs at Pig's Eye Landfill are estimated in the 30-year projection spreadsheet in Appendix C.

Table 8. FY 2020-2024 Pig's Eye Landfill estimated expenditures ($ in thousands)

	Budget FY 2020	Budget FY 2021	Budget FY 2022	Budget FY 2023	Budget FY 2024
Expenditures:					
Investigations	5	25	25	25	25
O&M/land management	207	5,000	5,500	32,025	-
Total estimated expenditures	212	5,025	5,525	32,050	25

Rosemount Demolition Landfill

Location and setting

The Rosemount Demolition Landfill (Rosemount Landfill) is a closed landfill located at 15615 Robert Trail South in Rosemount, Minnesota. Rosemount Landfill is located on a flat parcel and is used by the Rosemount Public Works department for storing construction equipment and materials. Rosemount Landfill is currently covered by either green space or gravel. The surrounding area to the west consists of residential properties.

Background

The Rosemount Landfill began operating in the 1970s and closed in 1981. Rosemount Landfill accepted small quantities of mixed municipal waste prior to being permitted as a demolition landfill. Various phases of environmental investigation at the Rosemount Landfill found low levels of contaminants in groundwater, soil, and soil gas.

Past activities

In FY 2017, the MPCA completed a Phase II Environmental Site Assessment at the Rosemount Landfill and identified methane concentrations of greater than 100% the lower explosive limit conditions in the soil surrounding the Rosemount Landfill. Based on those results, in FY 2018 the MPCA completed additional landfill gas assessment activities. The assessment was aimed at evaluating the risk posed by the subsurface methane gas identified at the site. The landfill gas assessment activities continued in FY 2019, including conducting sub-slab vapor sampling for methane, oxygen, and VOCs at 15 properties surrounding the Rosemount Landfill. The results identified no soil vapor contaminants exceeding the MPCA ISVs or expedited action level for methane.

Groundwater exceedances included metals, petroleum, and dioxin/furans. Surrounding properties have municipal water supply and are not at risk. Soil exceedances include PAHs, metals, petroleum, and dioxin/furans and there is no direct human exposure risk to contaminated soil. Soil gas exceedances include methane, TCE, benzene, ethylbenzene, and m&p-xylene. Sub-slab soil gas sampling results did not indicate risk to surrounding properties. The methane soil gas plume is defined in all directions with the exception of the east, but does not appear to pose a significant risk.

MPCA conducted a post closure inspection in FY 2019, in which the Rosemount Landfill was confirmed to be in compliance with all requirements identified in the permit upon closure of the landfill.

Following the completion of all activities to confirm there are no immediate risks to the Rosemount Landfill site and surrounding properties, the MPCA is completing a Remedial Investigation in FY 2020 to define the extent and magnitude of contamination associated with the Rosemount Landfill. This work will include installation of groundwater monitoring wells. A detailed site timeline for prior work completed at the Rosemount Landfill is included in Appendix B.

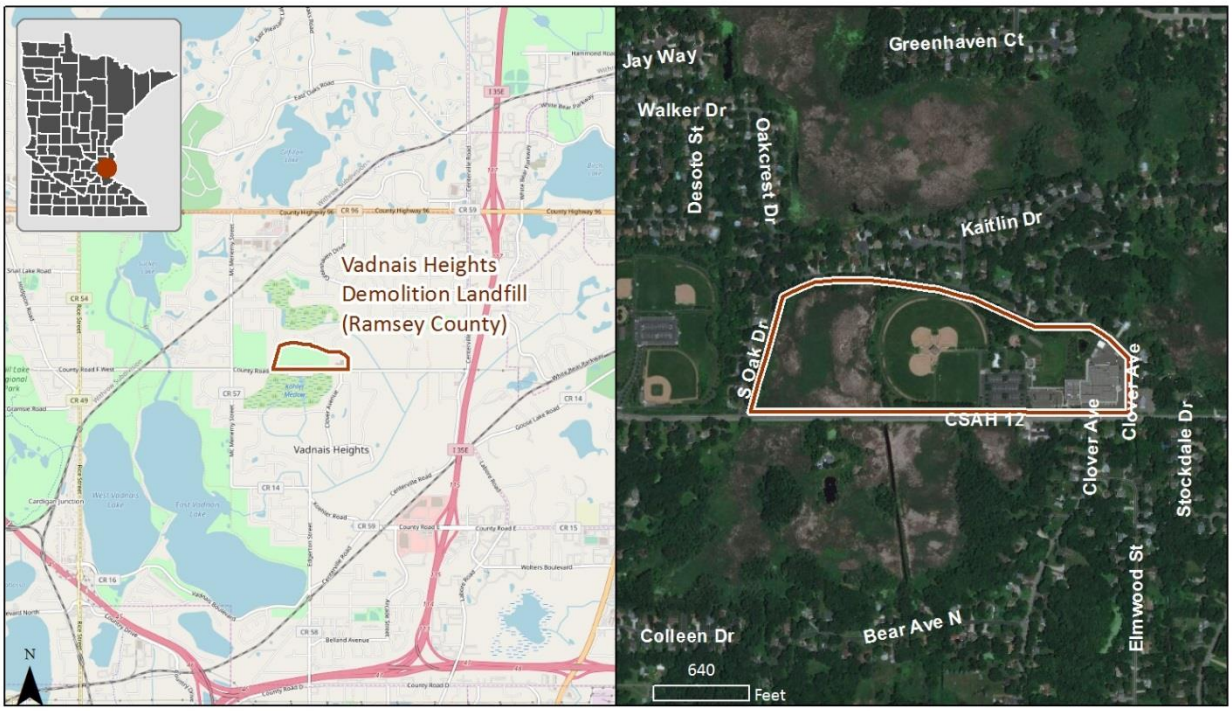
Proposed future work

Based on the results from the Remedial Investigation and groundwater sampling in FY 2020, it is anticipated that additional remedial investigation work will be necessary to delineate impacts in soil, groundwater, and soil gas at the site and off-site properties. This work will identify and minimize risks associated with the landfill. Fiscal needs for FY 2020-2024 are included in Table 9. Additional projected costs at Rosemount Landfill are estimated in the 30-year projection spreadsheet in Appendix C.

Table 9. FY 2020-2024 Rosemount Landfill estimated expenditures ($ in thousands)

	Budget FY 2020	Budget FY 2021	Budget FY 2022	Budget FY 2023	Budget FY 2024
Expenditures:					
Investigations	137	80	70	50	50
O&M/land management	-	-	-	-	-
Total estimated expenditures	**137**	**80**	**70**	**50**	**50**

Vadnais Demolition Landfill



Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Location and setting

The Vadnais Demolition Landfill (Vadnais Landfill) is a closed landfill located at 651 County Road F East in Vadnais Heights, Minnesota. The site is located on a flat, grassy area with two paved parking lots near the entrance and a wetland area to the west. The site is currently used as a community park owned by the City of Vadnais Heights, which includes a community center and a softball field complex. The surrounding area consists of residential properties.

Background

Vadnais Landfill began operating in the 1970s and closed in 1981. Vadnais Landfill accepted small quantities of mixed municipal waste prior to being permitted as a demolition landfill. Various phases of environmental investigation at the Vadnais Landfill found low levels of contaminants in groundwater, soil, and soil gas.

Past activities

In FY 2016, the MPCA completed a Phase I Environmental Site Assessment and determined that potential contamination associated with the landfill may potentially pose a risk to the on-site building and nearby properties. Based on those findings, in FY 2017, the MPCA completed a Phase II ESA at the site. The results identified methane concentrations.

The MPCA then completed additional vapor intrusion assessment activities. The assessment activities included looking at the building design drawings for the on-site buildings. It was noted that the on-site buildings had vapor barriers installed during construction; therefore, sub-slab sampling was not performed to avoid damaging the vapor barrier material. As an alternative to sub-slab sampling, indoor air screening was completed in the on-site buildings. Methane was not detected in the on-site buildings.

Soil gas monitoring points were installed and sampled along the perimeter of the landfill. Methane was detected in 15 of the 33 soil gas monitoring points. In FY 2018, sub-slab sampling was completed at two residences based on results from the soil gas monitoring point data. The results of the sub-slab sampling did not detect methane beneath the residential homes, and no VOCs exceeded the residential 33x intrusion screening value. An intrusion screening value is a chemical specific, risk-based inhalation screening criteria for compounds commonly evaluated during vapor intrusion investigations.

A water well survey was completed and the results indicated that there are no nearby private drinking water wells in the vicinity of the landfill and all residences are on city water. In FY 2019, additional soil gas monitoring was completed to determine if a response action to address on-site methane is required.

Groundwater exceedances include PAHs, metals, petroleum, dioxin/furan, PFOS, PFOA, and DDT. Surrounding properties have municipal drinking water supply and are not at risk. Soil exceedances include PAHs, metals, PCBs, petroleum, and dioxin/furan, and there is no direct human exposure risk to contaminated soil. Soil gas exceedances include methane, benzene, 1,4-dichlorobenzene, vinyl chloride, and ethylbenzene. Sub-slab soil gas sampling results did not indicate risk to surrounding properties. Methane levels present a potential vapor intrusion risk to on-site and off-site buildings and residences. The buildings and residences are being monitored quarterly and there is no current risk.

MPCA conducted a post closure inspection in FY 2019, in which the Vadnais Landfill was confirmed to be in compliance with all requirements identified in the permit upon closure of the landfill.

Following the completion of all activities to confirm there are no immediate risks to the Vadnais Landfill site and surrounding properties, the MPCA is completing a Remedial Investigation in FY 2020 to define the extent and magnitude of contamination associated with the Vadnais Landfill. This work will include installation of groundwater monitoring wells, and the results will determine if a response action is required at the landfill to address any on-site impacts. A detailed site timeline for prior work completed at the Vadnais Landfill is included in Appendix B.

Proposed future work

Based on the results from the Remedial Investigation and groundwater sampling in FY 2020, it is anticipated that additional remedial investigation work will be necessary to delineate impacts in soil, groundwater, and soil gas at the landfill and off-site properties. The presence of landfill gas impacts in the soil gas sampling points represent a potential vapor intrusion risk to surrounding properties. This work will identify necessary response actions to mitigate any risks to on-site buildings and minimize future risks associated with the landfill. Fiscal needs for FY 2020-2024 are included in Table 10. Additional projected costs at Vadnais Landfill are estimated in the 30-year projection spreadsheet in Appendix C.

Table 10. FY 2020-2024 Vadnais Landfill estimated expenditures ($ in thousands)

	Budget FY 2020	Budget FY 2021	Budget FY 2022	Budget FY 2023	Budget FY 2024
Expenditures:					
Investigations	149	100	70	65	50
O&M/land management	-	-	-	-	-
Total estimated expenditures	**149**	**100**	**75**	**65**	**50**

Open/operating MLCAT landfills

The two open MLCAT-eligible landfills still accepting waste for disposal are Pine Bend Sanitary Landfill and Burnsville Sanitary Landfill. Both are located in Dakota County. Due to the landfills' size, complexity, and the large disposal volumes at each of these sites, staff from both the MPCA and Dakota County perform inspections and monitoring. Both landfills have approved financial assurance programs monitored by the MPCA, and the financial assurance is anticipated to be sufficient to pay for site care over a period of 30 years following closure. The activities at each facility are described below.

Burnsville Sanitary Landfill

Service Layer Credits: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Burnsville Sanitary Landfill, Inc., owns and operates the Burnsville Sanitary Landfill (BSL) in the City of Burnsville. BSL is a wholly owned subsidiary of Waste Management, Inc. The capacity of BSL is projected to be sufficient through 2021 at current waste accumulation rates.

The following is a brief summary of the recent permits issued at BSL by the MPCA:

- 1997 for construction of three C&D cells
- 2002 for Phases 24 and 25 expansion
- 2006 for the Phase 20 slope liner, the Stage IV final cover, and a modification of the leachate forced main
- 2007 for horizontal expansion
- 2011 for changing waste type in the north development area (NDA) from C&D to industrial waste

An application for a solid waste permit modification to increase the disposal capacity of the facility was submitted on April 15, 2019. BSL is proposing additional disposal capacity of 23,620,276 cubic yards in

addition to the existing design capacity of 18,692,146 cubic yards. Although, the application has not been reviewed, if the proposed capacity is granted, it will increase the operating life of the facility for another 51 years (i.e., year 2070 at the current disposal rates). This expansion would require a Certificate of Need (CON).

BSL has a 4.2-megawatt landfill gas-to-energy system consisting of gas extraction wells and a piping network that draws gas by a blower-created vacuum to a central building for cleaning, after which the gas is burned for electrical generation. Electricity is fed into Xcel Energy's grid.

Engineering controls are in place at BSL that are likely to prevent contamination of groundwater. Vertical expansion of lined areas over and above the unlined portion of the facility may be preventing infiltration of precipitation and leaching of contaminants into the groundwater.

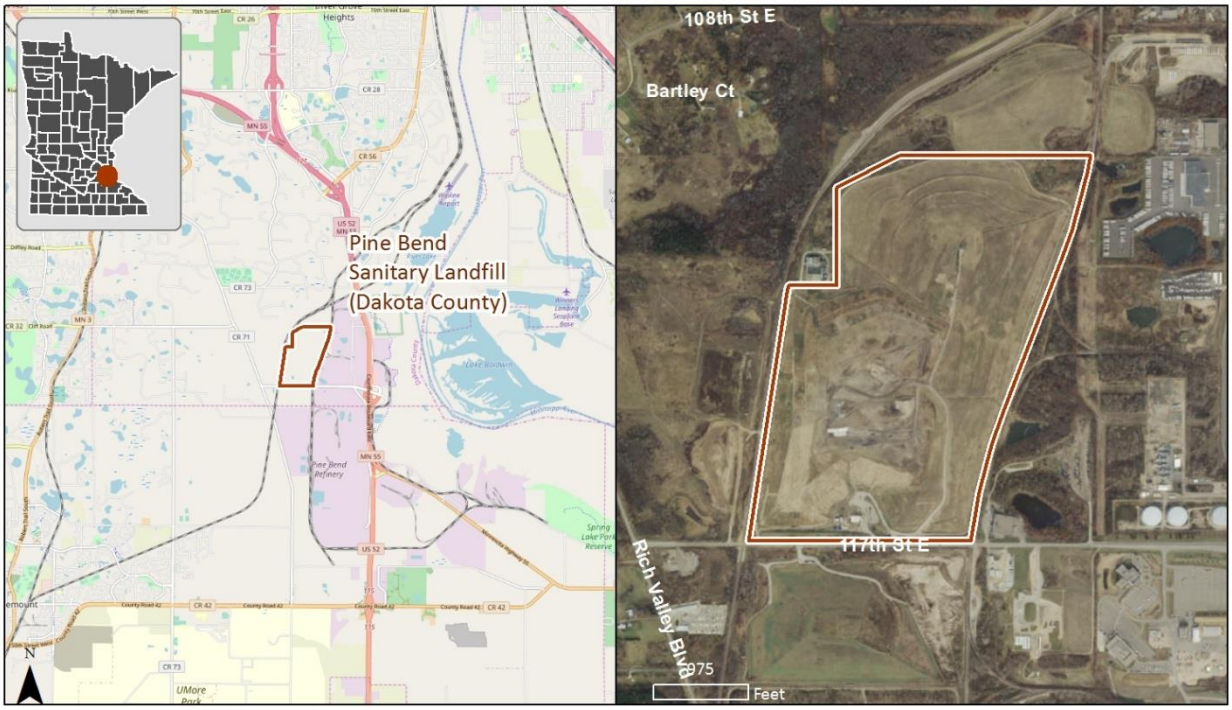
A groundwater monitoring system evaluates water quality from both the lined and unlined portions of the facility. In response to permitting of additional MMSW cells, the groundwater monitoring network expanded to a total of 20 groundwater monitoring wells and one surface water monitoring station. Each groundwater monitoring well is used to collect water elevation while water quality data is collected from 10 wells and one surface water monitoring station. Water quality data includes inorganics (for example: metals and nitrate), volatile organic compounds (VOCs), and various field parameters.

There are several nearby receptors of potential contamination, should it occur, from BSL. The Minnesota River is to the north of BSL. Based on flow direction, there is a potential that a nearby quarry's pumping wells could locally lower the groundwater table below the unlined areas of BSL and possibly receive groundwater that flows to the east from BSL. Once the quarry stops pumping it will affect the groundwater table. Both the City of Burnsville and the City of Savage used the quarry dewatering wells for drinking water supply.

There are potential off-site sources that may directly or indirectly alter groundwater quality. The Cargill Salt plant to the west could directly contribute chemical changes (such as chloride) or indirectly change groundwater quality (such as potentially high amounts of salt changing chemical equilibria). A former fertilizer plant operated in the southwest portion of BSL which could have potentially contributed directly to nitrate in groundwater.

Based on the most recent annual monitoring report from 2018 for BSL, data from both inorganic and VOC analyses demonstrated generally insignificant landfill impact to groundwater quality. Of the 64 VOC analyses conducted for each of the 10 monitoring wells (approximately 640 analyses total), there was only one low-level VOC detection (chloroethane) and that analyte does not have a Minnesota Department of Health (MDH) issued health risk limit (HRL) or equivalent. Of the inorganic parameter analyses in 2018, manganese was detected above the intervention limits (ILs) and HRLs but, overall, there appeared to be no significant change downgradient from the landfill. Nitrate was not detected above the HRL in 2018.

Pine Bend Sanitary Landfill



BFI Waste Systems of North America, LLC operates Pine Bend Sanitary Landfill (PBSL) in Inver Grove Heights. It is the largest MMSW landfill in the state. The permitted fill area encompasses 220 acres, 52 acres of which are lined. No fill area received final cover until 1993, when 25 acres (Phase 1) were capped. The remaining unlined portion of the fill area received final cover during the 1995 and 1996 construction seasons. The capacity of PBSL is projected to be sufficient through 2022 at current waste accumulation rates.

Acceptable materials for disposal in the lined landfill include industrial, MMSW, asbestos, and construction and demolition debris waste. Vacuum pumps and a network of pipes extract landfill gas from the waste, and extensive groundwater and methane monitoring systems surround the fill areas.

In April 1996, PBSL completed the replacement of its landfill gas collection network. The new system included gas collection piping and wells, a landfill gas-to-energy system rated at 12 megawatts, and additional methane gas probes to monitor the western facility boundary. PBSL expanded the gas collection system in 2000 and 2001. The gas-to-energy system is currently inactive, with plans to replace it in the future. At this time, landfill gasses are flared.

The following is a brief summary of the recent permits issued at PBSL by the MPCA:

- 2004 for increased capacity
- 2006 for Phase 5
- 2009 for increased capacity
- 2015 for groundwater monitoring alterations (including adding PFAS to the IL list)
- 2019 for increased capacity (over the existing landfill footprint by developing and permitting 3:1 cover slopes around the entire existing landfill footprint) and some groundwater monitoring alterations

A groundwater monitoring system at PBSL monitors water quality from both the lined and unlined portion of the facility. The lined area is also monitored for leakage by a leak detection system. This system indicates that the lined area has not released contaminants to the subsurface.

Water quality monitoring indicates that PBSL has adversely impacted the groundwater down-gradient of the facility. A number of corrective actions have been implemented to limit these impacts. These measures include maintaining the impervious landfill cover; provision of municipal water connections for nearby residents; continued maintenance and operation of the active gas extraction system; and installation and operation of pumps that remove leachate from the buried waste via the gas extraction wells. These measures limit the generation of leachate, and assist in removing leachate, along with its associated contaminants, from the landfill mass. Over time, this should improve the groundwater quality down-gradient of the landfill.

Numerous analytes have been detected above the ILs. Those include VOCs, metals, refrigerants, PFAS, and nitrate. Based on five-year statistical analysis, there is a general decreasing trend of contaminant concentrations.

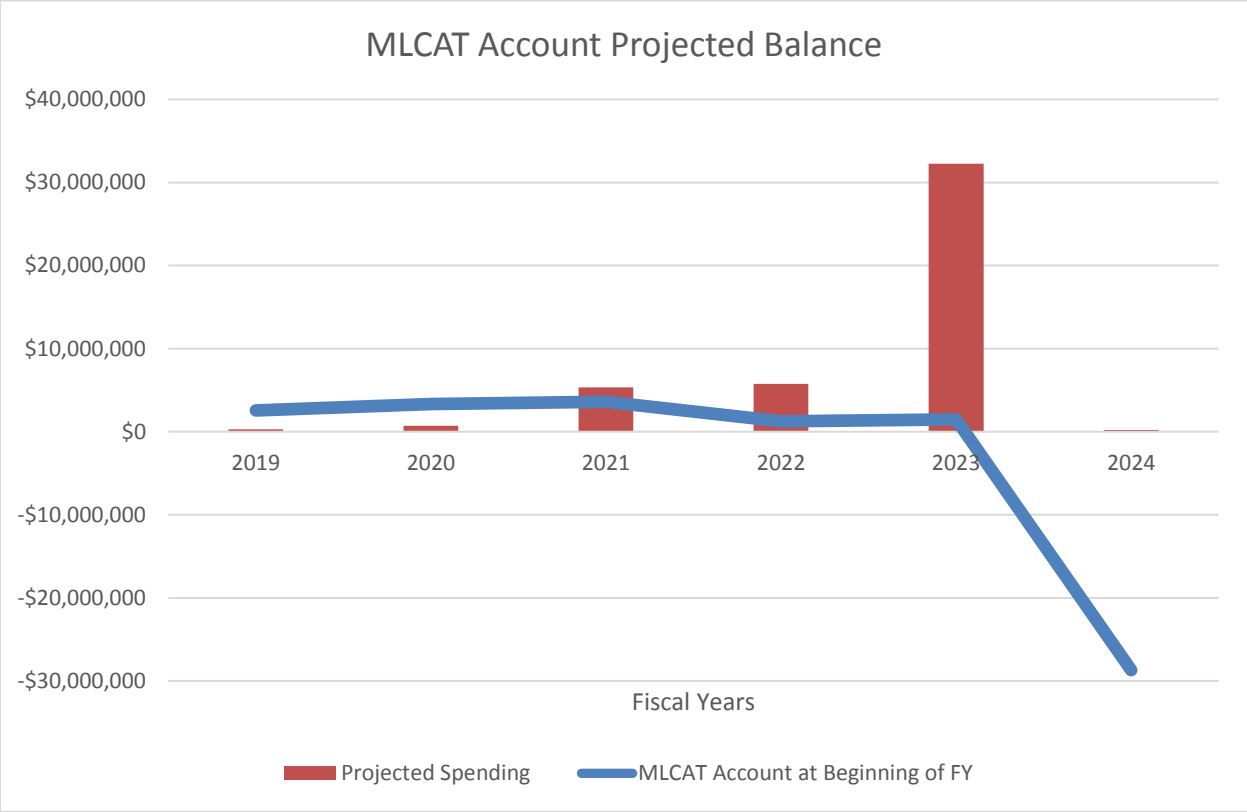
There are several nearby receptors of groundwater that flows from PBSL. The primary receptor is the Mississippi River, which is a little over a mile downgradient.

There are potential off-site sources that may directly or indirectly alter groundwater quality. The following is a general discussion of off-site sources and not intended to be exhaustive. Side-gradient from PBSL is the Koch Refinery. Downgradient sources that could influence groundwater quality include Xcel Energy storage tanks, CHS lubricant plant, and several petroleum sources. Upgradient from PBSL is a bituminous facility.

MLCAT Account viability

Current expenses for the care of the five sites that are currently MLCAT Account-eligible will be more than the account balance within the next three fiscal years as illustrated in Figure 1.

Figure 1. MLCAT Account projected balance



Short-term account viability

These estimates include actual account balances for FY 2019 and projected revenue and expenditures for FY 2020 through FY 2024 as detailed in Table 11 of this report. Beginning in FY 2023 only investigations such as groundwater, surface water, and vapor sampling will be able to continue due to shortfalls in the MLCAT Account. Any additional remedial actions required would not be able to be conducted. This will also leave the planned removal of impacted sediment at Pig's Eye Landfill unfunded allowing the sediments to continue leaching into the surface waters.

In order to accomplish the needed work at the MLCAT sites, a significant increase in the fund is required. One option would be for the Legislature to restore the amounts transferred out of MLCAT for the benefit of other accounts: a total of $13,905,000 to-date, although this would still fall well short of the funding needs.

Long-term account viability

The long-term expenditures necessary to address the five closed MLCAT Account-eligible landfills, including projected and probable costs for FY 2025 through FY 2049, are estimated in Appendix C. Expenses for long-term post closure care at the two largest eligible landfills (Pine Bend and Burnsville) will begin 30 years after they close or stop receiving wastes, and are therefore not presented here. However, those landfills will require investments beyond 2050. If the MLCAT Account is exhausted as projected, there is no State funding source for the long-term care of these two landfills identified at this time.

The MLCAT Account's long-term balance for use at both the five closed landfills and the two open landfills described in this report will depend on a number of factors:

- The closure dates of Pine Bend and Burnsville Landfills. Landfill operators are to cover operation, maintenance, and response action costs for the first 30 years of care after closure, but MLCAT is to pay those "perpetual care" expenses afterward.
- The future of metropolitan landfill fees. Unless a new MMSW landfill is opened in the metropolitan area, no more landfill fee revenue will be deposited into the MLCAT Account after Burnsville and Pine Bend landfills close in 2021 and 2022.
- The long-term estimate through FY 2049 is more than $65 million, this estimate does not include the Pine Bend and Burnsville Landfills which will be MLCAT eligible at a future date. Further funding options need to be secured to satisfy both short and long-term MLCAT needs.

Table 11. FY 2019 MLCAT Account status and projections through FY2024 ($ in thousands)

	Actual FY 2019	Budget FY 2020	Budget FY 2021	Budget FY 2022	Budget FY 2023	Budget FY 2024
Balance forward from prior year	**2,552**	**3,329**	**3,604**	**1,253**	**1,477**	**(29,648)**
Revenues:						
Metro Landfill Contingency Fee	1,014	954	954	954	0	0
Investment earnings	67	35	35	35	35	35
Total revenues	**1,081**	**989**	**989**	**989**	**35**	**35**
Transfers:						
From State Board of Investment (SBI) to MLCAT[1]			2,000	5,000	1,100	
Total available balance	**3,633**	**4,318**	**6,593**	**7,242**	**2,612**	**(29,613)**
Expenditures:						
Investigations	127	125	340	265	235	220
O&M/land management	177	589	5,000	5,500	32,025	-
Total expenditures	**303**	**714**	**5,340**	**5,765**	**32,260**	**220**
Account balance (fiscal year end)	**3,329**	**3,604**	**1,253**	**1,477**	**(29,648)**	**(29,833)**

Notes:

1. *In FY 2017, $8,100 (in thousands) was transferred from the MLCAT Account to the SBI to realize earnings on investments to the account. A balance of $10,941 (in thousands) as of June 30, 2019, is with the SBI in the MLCAT Account. The investment returns are not included in Figure 1 or Table 11 above. Transfers from SBI to the MLCAT Account will need to begin in FY 2021 until the funds are expended, projected to occur in FY 2023, to satisfy long-term obligations at the landfills.*

Appendix A: Statutes Pertinent to the MLCAT Account

(Source: Minnesota Statutes 2019, Minn. Session Laws 2003 Regular Session, and Minn. Session Laws 2005, Special Session)

473.843 Metropolitan Solid Waste Landfill Fee

Subdivision 1.Amount of fee; application.

The operator of a mixed municipal solid waste disposal facility in the metropolitan area shall pay a fee on solid waste accepted and disposed at the facility as follows:

(a) A facility that weighs the waste that it accepts must pay a fee of $6.66 per ton of waste accepted at the entrance of the facility.

(b) A facility that does not weigh the waste but that measures the volume of the waste that it accepts must pay a fee of $2 per cubic yard of waste accepted at the entrance of the facility. This fee and the tipping fee must be calculated on the same basis.

(c) Waste residue, from recycling facilities at which recyclable materials are separated or processed for the purposes of recycling, or from energy and resource recovery facilities at which solid waste is processed for the purpose of extracting, reducing, converting to energy, or otherwise separating and preparing solid waste for reuse, is exempt from the fee imposed by this subdivision if there is at least an 85 percent weight reduction in the solid waste processed. To qualify for exemption under this clause, waste residue must be brought to a disposal facility separately. The commissioner of revenue, with the advice and assistance of the agency, shall prescribe procedures for determining the amount of waste residue qualifying for exemption.

Subd. 2. Disposition of proceeds.

The proceeds of the fees imposed under this section, including interest and penalties, must be deposited as follows:

(1) Three-fourths of the proceeds must be deposited in the environmental fund for metropolitan landfill abatement for the purposes described in section 473.844; and

(2) One-fourth of the proceeds must be deposited in the metropolitan landfill contingency action trust account in the remediation fund established in sections 116.155 and 473.845.

Subd. 3. Payment of fee.

On or before the 20th day of each month each operator shall pay the fee due under this section for the previous month, using a form provided by the commissioner of revenue.

An operator having a fee of $10,000 or more during a fiscal year ending June 30 must pay all fees in all subsequent calendar years by electronic means.

Subd. 4. Exchange of information.

Notwithstanding the provisions of section 116.075, the agency may provide the commissioner of revenue with the information necessary for the enforcement of this section. Information disclosed in a return filed under this section is public information. Information exchanged between the commissioner and the agency is public unless the information is of the type determined to be for the confidential use

of the agency under section 116.075 or is trade secret information classified under section 13.37. Information obtained in the course of an audit by the Department of Revenue is private or nonpublic data to the extent that it would not be directly divulged in a return.

Subd. 5. Penalties; enforcement.

The audit, penalty, and enforcement provisions applicable to corporate franchise taxes imposed under chapter 290 apply to the fees imposed under this section. The commissioner of revenue shall administer the provisions.

Subd. 6. Rules.

The commissioner of revenue may adopt rules necessary to implement this section.

Subd. 7.

[Repealed, 1985 c 274 s 47]

473.845 Metropolitan Landfill Contingency Action Account

Subdivision 1.Establishment.

The metropolitan landfill contingency action trust account is an expendable trust account in the remediation fund. The account consists of revenue deposited in the account under section 473.843, subdivision 2, clause (2); amounts recovered under subdivision 7; and interest earned on investment of money in the account. The account must be managed to maximize long-term gain through the State Board of Investment.

Subd. 2.

[Repealed, 1999 c 231 s 207]

Subd. 3. Contingency actions and reimbursement.

Money in the account is appropriated to the agency for expenditure for any of the following:

(1)To take reasonable and necessary actions for closure and postclosure care of a mixed municipal solid waste disposal facility in the metropolitan area for a 30-year period after closure, if the agency determines that the operator or owner will not take the necessary actions requested by the agency for closure and postclosure in the manner and within the time requested;

(2)To take reasonable and necessary response actions and postclosure care actions at a mixed municipal solid waste disposal facility in the metropolitan area that has been closed for 30 years in compliance with the closure and postclosure rules of the agency;

(3)To reimburse a local government unit for costs incurred over $400,000 under a work plan approved by the commissioner of the agency to remediate methane at a closed disposal facility owned by the local government unit; or

(4) Reasonable and necessary response costs at an unpermitted facility for mixed municipal solid waste disposal in the metropolitan area that was permitted by the agency for disposal of sludge ash from a wastewater treatment facility.

Subd. 4.

[Repealed, 2003 c 128 art 2 s 56]

Subd. 5. Duty to provide information.

The operator or owner of a mixed municipal solid waste disposal facility or a solid waste disposal facility shall provide the necessary information to the agency required by sections 473.842 to 473.847 or by agency rules.

Subd. 6. Access to information and property.

The agency or any member, employee, or agent thereof authorized by the agency, upon presentation of credentials, may:

(1) Examine and copy any books, papers, records, memoranda, or data of any person who has a duty to provide information to the agency under sections 473.842 to 473.847; and

(2) Enter upon any property, public or private, for the purpose of taking any action authorized by this section including obtaining information from any person who has a duty to provide the information, conducting surveys or investigations, and taking response action.

Subd. 7. Recovery of expenses.

When the agency incurs expenses for response actions at a facility, the agency is subrogated to any right of action which the operator or owner of the facility may have against any other person for the recovery of the expenses. The attorney general may bring an action to recover amounts spent by the agency under this section from persons who may be liable for them. Amounts recovered, including money paid under any agreement, stipulation, or settlement must be deposited in the metropolitan landfill contingency action account in the remediation fund created under section 116.155.

Subd. 8. Civil penalties.

The civil penalties of sections 115.071 and 116.072 apply to any person in violation of this section.

473.846 Report to the Legislature

The agency shall submit to the senate and House of Representatives committees having jurisdiction over environment and natural resources a report describing the activities for which money for landfill abatement has been spent under section 473.844. The report shall be included in the report required by section 115A.411, and shall include recommendations on the future management and use of the metropolitan landfill abatement account.

2003 Chapter 128-S.F. No. 905

Article 1.

Sec. 10. [FUND TRANSFER.]

(a) By June 30, 2003, the commissioner of the pollution control agency shall transfer $11,000,000 from the unreserved balance of the solid waste fund to the commissioner of finance for cancellation to the general fund.

(b) The commissioner of the pollution control agency shall transfer $5,000,000 before July 30, 2003, and $5,000,000 before July 30, 2004, from the unreserved balance of the environmental fund to the commissioner of finance for cancellation to the

general fund.

(c) By June 30, 2005, the commissioner of the pollution control agency shall transfer $1,370,000 from the environmental fund to the commissioner of finance for cancellation to the general fund.

(d) By June 30, 2007, the commissioner of the pollution control agency shall transfer $1,370,000 from the environmental fund to the commissioner of finance for cancellation to the general fund.

(e) By June 30, 2004, the commissioner of the pollution control agency shall transfer $9,905,000 from the metropolitan landfill contingency action trust fund to the commissioner of finance for cancellation to the general fund. This is a onetime transfer from the metropolitan landfill contingency action trust fund to the general fund. It is the intent of the legislature to restore these funds to the metropolitan landfill contingency action trust fund as revenues become available in the future to ensure the state meets future financial obligations under Minnesota Statutes, section 473.845.

[EFFECTIVE DATE.] This section is effective the day following final enactment.

2005 Special Session Chapter 1-S;.F. No. 69

Article 3

Sec. 17. [FUND TRANSFER.]

By June 30, 2007, the commissioner of the Pollution Control Agency shall transfer $4,000,000 from the metropolitan landfill contingency action trust account within the remediation fund to the commissioner of finance for transfer to the renewable development account, under Minnesota Statutes, section 116C.779. This is a onetime transfer from the metropolitan landfill contingency action trust account to the renewable development account. It is the intent of the legislature to restore these funds to the metropolitan landfill contingency action trust account as revenues become available in the future to ensure the state meets future financial obligations under Minnesota Statutes, section 473.845. The funds provided for in this transfer may only be used to make the incentive payments for wind energy conversion systems authorized under Minnesota Statutes, section 116C.779, subdivision 2.

[EFFECTIVE DATE.] This section is effective the day following final enactment.

Appendix B: Closed MLCAT landfills environmental investigation and work activity timeline summaries

Begin Landfill

Summary timeline of work completed by fiscal year

FY 2016: Phase I environmental site assessment, in which research is completed on the history of the site
Summary Report of past investigations

FY 2017: Phase II Investigation, in which an investigation is completed for collection of soil, groundwater, and soil gas samples

FY 2018: Vapor investigation completed by MPCA

FY 2019: Site inspected by MPCA staff for post closure compliance
Vapor investigation continued by MPCA
Mitigation system installed at Cottonwood Plaza based on methane results

FY 2020: Remedial Investigation, installation of monitoring wells

FY 2021: Further Investigation, conduct monitoring well sampling, landfill gas screening

FY 2022: Conduct monitoring well sampling, landfill gas screening

FY 2023: Conduct monitoring well sampling, landfill gas screening

Herbst Landfill

Summary timeline of work completed by fiscal year

FY 2017: Phase II Investigation, in which an investigation was completed for collection of soil gas samples

FY 2018: Vapor investigation completed by MPCA

FY 2019: Site inspected by MPCA staff for post closure compliance
Vapor investigation continued by MPCA

FY 2020: Remedial Investigation, installation of monitoring wells

FY 2021: Further investigation, conduct monitoring well sampling, landfill gas screening

FY 2022: Conduct monitoring well sampling, landfill gas screening

FY 2023: Conduct monitoring well sampling, landfill gas screening

Rosemount Landfill

Summary timeline of work completed by fiscal year

FY 2017: Phase II Investigation, in which an investigation was completed and samples were collected.

FY 2018: Vapor investigation completed by MPCA

FY 2019: Vapor investigation continued by MPCA
Site inspected by MPCA staff for post closure compliance

FY 2020: Remedial Investigation, installation of monitoring wells

FY 2021: Conduct monitoring well sampling, landfill gas screening

FY 2022: Conduct monitoring well sampling, landfill gas screening

FY 2023: Conduct monitoring well sampling, landfill gas screening

Vadnais Landfill

Summary timeline of work completed by fiscal year

FY 2016: Phase I Assessment, in which research is completed on the history on the site

FY 2017: Phase II Investigation, in which an investigation is completed for sample collection.

FY 2018: Vapor investigation completed by MPCA
Soil gas monitoring points installed

FY 2019: Site inspected by MPCA staff for post closure compliance
Vapor investigation continued by MPCA

FY 2020: Remedial Investigation, installation of monitoring wells

FY 2021: Further investigation, conduct monitoring well sampling, landfill gas screening, potential for landfill gas extraction system

FY 2022: Potential O&M on extraction system, conduct monitoring well sampling, landfill gas screening

FY 2023: Potential O&M on extraction system, conduct monitoring well sampling, landfill gas screening

Appendix C: 30-year projection model for MLCAT-eligible sites

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006
Begin DLF					
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -
Land Management	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Herbst & Sons DLF					
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -
Land Management	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Pig's Eye Landfill					
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -
Land Management	$ -	$ -	$ -	$ -	$ -
Response Actions	$ 627,000	$ 629,000	$ 3,152,000	$ 51,000	$ 62,000
Total	**$ 627,000**	**$ 629,000**	**$ 3,152,000**	**$ 51,000**	**$ 62,000**
Rosemount DLF					
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -
Land Management	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Vadnais Heights DLF					
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -
Land Management	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Totals					
O&M and Monitoring	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Land Management	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Response Actions	**$ 627,000**	**$ 629,000**	**$ 3,152,000**	**$ 51,000**	**$ 62,000**
TOTAL	**$ 627,000**	**$ 629,000**	**$ 3,152,000**	**$ 51,000**	**$ 62,000**

No costs were charged to the MLCAT Account from FY1995 through FY2001, and FY2008 through FY2015

Actual Costs: Total of the costs charged to the MLCAT Account from FY2002 through FY2007, and FY2016 through FY2019.

Projected Costs: Total of the costs anticipated to be charged to the MLCAT Account from FY2020 through FY2049

Probable Costs: Total of the costs (including a probability factor) that may be charged to the MLCAT Account from FY2020 through FY2049

Total Costs: Summation of the Actual Costs, Projected Costs, and Probable Costs from FY1995 through FY2049

MLCAT ACCOUNT SITE COSTS BY SITE - ACTUAL, PROJECTED, AND PROBABLE **January 2020**

	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	Actual Costs
Begin DLF														
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,929	$ 81,410	$ 89,192	$ 37,460	**$ 210,991**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,929**	**$ 81,410**	**$ 89,192**	**$ 37,460**	**$ 210,991**
Herbst & Sons DLF														
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,553	$ 47,495	$ 25,827	$ 26,437	**$ 102,312**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,553**	**$ 47,495**	**$ 25,827**	**$ 26,437**	**$ 102,312**
Pig's Eye Landfill														
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,954	**$ 5,954**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,266	**$ 13,266**
Response Actions	$ 20,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 23,938	$ 75,724	$ 158,134	$ 163,606	**$ 4,962,402**
Total	**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 23,938**	**$ 75,724**	**$ 158,134**	**$ 182,826**	**$ 4,981,622**
Rosemount DLF														
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,491	$ 38,957	$ 24,912	$ 33,926	**$ 100,285**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,491**	**$ 38,957**	**$ 24,912**	**$ 33,926**	**$ 100,285**
Vadnais Heights DLF														
O&M and Monitoring	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,783	$ 57,714	$ 59,413	$ 22,805	**$ 142,715**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Total	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 2,783**	**$ 57,714**	**$ 59,413**	**$ 22,805**	**$ 142,715**
Totals														
O&M and Monitoring	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 10,756**	**$ 225,575**	**$ 199,344**	**$ 126,582**	**$ 562,256**
Land Management	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 13,266**	**$ 13,266**
Response Actions	**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 23,938**	**$ 75,724**	**$ 158,134**	**$ 163,606**	**$ 4,962,402**
TOTAL	**$ 20,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 34,694**	**$ 301,299**	**$ 357,478**	**$ 303,454**	**$ 5,537,924**

No costs were charged to the MLCAT Account from FY1995 through FY2001, and FY2008 through FY2015

Actual Costs: Total of the costs charged to the MLCAT Account from FY2002 through FY2007, and FY2016 through FY2019.

Projected Costs: Total of the costs anticipated to be charged to the MLCAT Account from FY2020 through FY2049

Probable Costs: Total of the costs (including a probability factor) that may be charged to the MLCAT Account from FY2020 through FY2049

Total Costs: Summation of the Actual Costs, Projected Costs, and Probable Costs from FY1995 through FY2049

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	FY 2029	FY 2030	FY 2031
Begin DLF												
O&M and Monitoring	$ 119,983	$ 80,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 119,983**	**$ 80,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**
Herbst & Sons DLF												
O&M and Monitoring	$ -	$ 55,000	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 45,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ 97,008	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 97,008**	**$ 55,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 45,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**
Pig's Eye Landfill												
O&M and Monitoring	$ 5,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 25,000	$ 20,000
Land Management	$ -	$ -	$ -	$ 25,000	$ -	$ -	$ -	$ 25,000	$ -	$ -	$ -	$ -
Response Actions	$ 206,500	$ 5,000,000	$ 5,500,000	$ 32,000,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 211,500**	**$ 5,025,000**	**$ 5,525,000**	**$ 32,050,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 50,000**	**$ 25,000**	**$ 25,000**	**$ 25,000**	**$ 20,000**
Rosemount DLF												
O&M and Monitoring	$ -	$ 80,000	$ 70,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ 136,775	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 136,775**	**$ 80,000**	**$ 70,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**
Vadnais Heights DLF												
O&M and Monitoring	$ -	$ 100,000	$ 75,000	$ 65,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ 148,732	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 148,732**	**$ 100,000**	**$ 75,000**	**$ 65,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**
Totals												
O&M and Monitoring	**$ 124,983**	**$ 340,000**	**$ 265,000**	**$ 235,000**	**$ 220,000**	**$ 220,000**	**$ 220,000**	**$ 205,000**	**$ 195,000**	**$ 195,000**	**$ 195,000**	**$ 190,000**
Land Management	**$ -**	**$ -**	**$ -**	**$ 25,000**	**$ -**	**$ -**	**$ -**	**$ 25,000**	**$ -**	**$ -**	**$ -**	**$ -**
Response Actions	**$ 589,015**	**$ 5,000,000**	**$ 5,500,000**	**$ 32,000,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL	**$ 713,998**	**$ 5,340,000**	**$ 5,765,000**	**$ 32,260,000**	**$ 220,000**	**$ 220,000**	**$ 220,000**	**$ 230,000**	**$ 195,000**	**$ 195,000**	**$ 195,000**	**$ 190,000**

No costs were charged to the MLCAT Account from FY1995 through FY2001, and FY2008 through FY2015

Actual Costs: Total of the costs charged to the MLCAT Account from FY2002 through FY2007, and FY2016 through FY2019.

Projected Costs: Total of the costs anticipated to be charged to the MLCAT Account from FY2020 through FY2049

Probable Costs: Total of the costs (including a probability factor) that may be charged to the MLCAT Account from FY2020 through FY2049

Total Costs: Summation of the Actual Costs, Projected Costs, and Probable Costs from FY1995 through FY2049

	FY 2032	FY 2033	FY 2034	FY 2035	FY 2036	FY 2037	FY 2038	FY 2039	FY 2040	FY 2041	FY 2042	FY 2043
Begin DLF												
O&M and Monitoring	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**
Herbst & Sons DLF												
O&M and Monitoring	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**
Pig's Eye Landfill												
O&M and Monitoring	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 25,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ 25,000	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 50,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 20,000**
Rosemount DLF												
O&M and Monitoring	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**
Vadnais Heights DLF												
O&M and Monitoring	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**
Totals												
O&M and Monitoring	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 195,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**
Land Management	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 25,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Response Actions	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
TOTAL	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 220,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 190,000**

No costs were charged to the MLCAT Account from FY1995 through FY2001, and FY2008 through FY2015

Actual Costs: Total of the costs charged to the MLCAT Account from FY2002 through FY2007, and FY2016 through FY2019.

Projected Costs: Total of the costs anticipated to be charged to the MLCAT Account from FY2020 through FY2049

Probable Costs: Total of the costs (including a probability factor) that may be charged to the MLCAT Account from FY2020 through FY2049

Total Costs: Summation of the Actual Costs, Projected Costs, and Probable Costs from FY1995 through FY2049

	FY 2044	FY 2045	FY 2046	FY 2047	FY 2048	FY 2049	Projected Costs	Probable Costs	Total Costs
Begin DLF									
O&M and Monitoring	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	**$ 1,369,983**	$ -	**$ 1,580,974**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	**$ -**
Total	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 1,369,983**	**$ -**	**$ 1,580,974**
Herbst & Sons DLF									
O&M and Monitoring	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	**$ 1,200,000**	$ -	**$ 1,302,312**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	**$ 97,008**	$ -	**$ 97,008**
Total	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 1,297,008**	**$ -**	**$ 1,399,320**
Pig's Eye Landfill									
O&M and Monitoring	$ 20,000	$ 20,000	$ 20,000	$ 25,000	$ 20,000	$ 20,000	**$ 645,000**	$ 250,000	**$ 900,954**
Land Management	$ -	$ -	$ -	$ 25,000	$ -	$ -	**$ 100,000**	$ -	**$ 113,266**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	**$ 42,706,500**	$ 10,550,000	**$ 58,218,902**
Total	**$ 20,000**	**$ 20,000**	**$ 20,000**	**$ 50,000**	**$ 20,000**	**$ 20,000**	**$ 43,451,500**	**$ 10,800,000**	**$ 59,233,122**
Rosemount DLF									
O&M and Monitoring	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	$ 40,000	**$ 1,280,000**	$ -	**$ 1,380,285**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	**$ 136,775**	$ -	**$ 136,775**
Total	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 40,000**	**$ 1,416,775**	**$ -**	**$ 1,517,060**
Vadnais Heights DLF									
O&M and Monitoring	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	**$ 1,540,000**	$ -	**$ 1,682,715**
Land Management	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**	$ -	**$ -**
Response Actions	$ -	$ -	$ -	$ -	$ -	$ -	**$ 148,732**	$ -	**$ 148,732**
Total	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 50,000**	**$ 1,688,732**	**$ -**	**$ 1,831,447**
Totals									
O&M and Monitoring	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 195,000**	**$ 190,000**	**$ 190,000**	**$ 6,034,983**	**$ 250,000**	**$ 6,847,239**
Land Management	**$ -**	**$ -**	**$ -**	**$ 25,000**	**$ -**	**$ -**	**$ 100,000**	**$ -**	**$ 113,266**
Response Actions	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 43,089,015**	**$ 10,550,000**	**$ 58,601,417**
TOTAL	**$ 190,000**	**$ 190,000**	**$ 190,000**	**$ 220,000**	**$ 190,000**	**$ 190,000**	**$ 49,223,998**	**$ 10,800,000**	**$ 65,561,922**

No costs were charged to the MLCAT Account from FY1995 through FY2001, and FY2008 through FY2015

Actual Costs: Total of the costs charged to the MLCAT Account from FY2002 through FY2007, and FY2016 through FY2019.

Projected Costs: Total of the costs anticipated to be charged to the MLCAT Account from FY2020 through FY2049

Probable Costs: Total of the costs (including a probability factor) that may be charged to the MLCAT Account from FY2020 through FY2049

Total Costs: Summation of the Actual Costs, Projected Costs, and Probable Costs from FY1995 through FY2049