Pollution Control Agency

Projects Summary

($ in Thousands)

Project Title	2014 Agency Priority Ranking	Agency Project Request for State Funds ($ by Session)				Governor's Recommendations 2014	Governor's Planning Estimate	
		2014	2016	2018	Total		2016	2018
Capital Assistance Program	1	$15,050	$9,000	$9,000	$33,050	$0	$0	$0
Municipal Stormwater Pond Cleanout	2	5,000	5,000	5,000	15,000	0	0	0
Electric Vehicle Charging Stations	3	4,000	4,000	4,000	12,000	0	0	0
Solar Power at Closed Landfills	4	6,000	4,000	4,000	14,000	0	0	0
Total Project Requests		$30,050	$22,000	$22,000	$74,050	$0	$0	$0

2014 STATE APPROPRIATION REQUEST: $15,050,000

AGENCY PROJECT PRIORITY: 1 of 4

Project At A Glance

The Solid Waste Processing Facilities Capital Assistance Program (CAP) is a landfill abatement program providing financial incentives to local governmental units for implementing integrated solid waste management systems. Integrated solid waste management systems require infrastructure that are basic public assets to Minnesota. Additionally, these systems become more cost effective with an even greater environmental benefit when alternative energy solutions are incorporated.

Project Description

This request is for $15.05 million for grants to local governments for the construction of solid waste resource recovery facilities and to retrofit existing facilities with solar arrays or wind energy as a source of power to operate a facility. The Capital Assistance Program (CAP) promotes the recovery of materials and energy from waste. Solid waste resource recovery facilities preserve land, recover valuable resources and energy, and create jobs. These facilities also reduce the environmental risks and potential liabilities associated with waste disposal. The retrofitting of existing facilities with alternative energy power will further increase the environmental benefit as well as reduce operating costs.

The Minnesota Waste Management Act (M.S. 115A) promotes an integrated waste management system in a manner appropriate to the characteristics of the waste stream. Such a system protects the state's land, air, water, and other natural resources and enhances human health. Since 1985, CAP grants have funded a portion of total solid waste project costs. Local governments have financed the balance of development, construction, and operating costs. In addition to CAP financial assistance, MPCA's staff provide technical assistance to local governments in project development and the institutional and operational challenges that are a part of implementing an integrated solid waste management system.

Eligible recipients under CAP are limited by statute to Minnesota cities, counties, solid waste management districts, and sanitary districts. Eligible projects are solid waste processing facilities that include resource recovery.

Following are examples of eligible projects:

- recycling facilities;
- composting facilities;
- waste-to-energy facilities;
- transfer stations that will serve waste processing facilities;
- projects to increase recovery of materials or energy, to substantially reduce the amount or toxicity of waste processing residuals, or to expand the capacity of an existing resource recovery facility to meet the needs of expanded regions; and
- special waste streams (i.e., household hazardous waste).

CAP provides an incentive to develop key solid waste infrastructure and cultivates a partnership between the state of Minnesota and local governments to develop integrated solid waste management systems. Under the CAP funding formula, LGUs have the incentive to work together on regional projects. The MPCA's administration and oversight of CAP grants help develop projects that are technically, institutionally, and financially sound.

Depending on project type, a single-county project may receive funding of 25% or 50% of eligible capital costs, up to a maximum of $2 million. Multi-county projects can receive 25% or 50% of the eligible capital costs, or up to $2 million times the number of participating counties, whichever is less. A new transfer station to serve an existing processing facility may be eligible for up to 75% funding of eligible capital costs.

The following are examples of eligible costs:

- final design, engineering, and architectural plans;
- land and structures;
- waste processing equipment; and
- on-site roads, parking areas and landscaping.

Integrated Solid Waste Systems. Minnesota's authority to control the flow of mixed municipal solid waste was restored by an April 2007 Supreme Court

decision (Oneida-Herkiemer). The Court reinstated the authority of LGUs to direct trash haulers to use specific facilities. In its opinion, the Court regarded waste management as a typical and traditional power of state and local government and considered local government action to protect health and safety a legitimate use of police powers.

Minnesota's solid waste objectives, as outlined in the Waste Management Act, benefit by this ruling. Minnesota law outlines a process for establishing county flow control regulations, called designation. State oversight requirements and regulatory safeguards provided for in Minnesota's designation law (M.S. 115A.94) requires counties to use an orderly and deliberate process to promulgate solid waste flow control.

CAP Project Needs

(Amounts in 000s)

FY 2014-15	Project Type	Total Capital Cost	Applicant's Capital Cost	CAP Grant
Northwest	Transfer station/ recycling facilities	$4,000	$1,500	$2,500
North central	Waste-to-Energy/MRF	$15,000	$7,500	$7,500
Northeast	Composting/reuse	200	100	100
South central	Recycling Facility Expansion	$500	$250	$250
Southwest	Recycling Facility	1,400	$700	$700
Statewide	Alternative Energy Retrofits	$5,000	$1,000	$4,000
	Subtotal	$26,100	$11,050	$15,050

Impact on Agency Operating Budgets

Existing MPCA staff administer CAP grants and are funded through appropriations to the MPCA from the Environmental Fund. This bonding request does not affect MPCA's annual operating budget.

Previous Appropriations for this Project

2011, SS Ch. 12	$0.55 million
2010, Chapter 189	$5.08 million
2006, Chapter 258	4.00 million
2005, Chapter 20	4.00 million
2002, Chapter 393	1.15 million
2000, Chapter 492	2.20 million
1999, Chapter 220	3.00 million
1998, Chapter 404	3.50 million
1996, Chapter 463	3.00 million
1994, Chapter 643	3.00 million
1992, Chapter 558	2.00 million
1990, Chapter 610	7.00 million
1987, Chapter 400	4.00 million
1985, Chapter 15	11.40 million
1980, Chapter 564	8.80 million
	$62.68 million

Other Considerations

CAP is administered to encourage local communities to develop feasible and prudent alternatives to waste disposal. The development of an integrated solid waste management system is a complex, controversial and expensive endeavor. Without CAP's technical and financial assistance, many local governments will not move forward in developing a solid waste management infrastructure.

Alternative energy incorporation into solid waste management facilities will reduce environmental impacts from power supplied by traditional energy sources, save operational dollars for local governments, and provide jobs through the business supply chain needed to support the development of alternative energy design and construction

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Municipal Stormwater Pond Cleanout

2014 STATE APPROPRIATION REQUEST: $5,000,000

AGENCY PROJECT PRIORITY: 2 of 4

Project At A Glance
A grant program for stormwater pond improvements

Project Description
The MPCA is requesting $5.0 million for financial assistance to cities to fund removal of sediment from constructed stormwater ponds. Eligible municipalities will apply for grant assistance (up to $250,000 per pond) to fund sediment removal that will enable the stormwater ponds to again function as designed and built for stormwater management and flood control. State grants will require a 50 percent match from non-state funding sources. Preference will be given to:

1. projects that alleviate a threat of flooding to private or public properties including residential and business properties;
2. projects that provide direct water quality benefits to an impaired water; and
3. projects that include measures to reduce the future accumulation of contaminants that help reduce long-term operation and management costs.

Stormwater runoff is a leading source of water pollution. Stormwater runoff can harm surface waters such as rivers, lakes, and streams, which in turn cause or contribute to water quality exceeding its corresponding standards. Municipalities required by permit to operate and maintain stormwater infrastructure are experiencing high costs to remove and manage accumulated sediment.

Background
Legislative action in 2009, Chapter 172, Article 2, Section 4, Item G, provided the MPCA with funding for grants to municipalities to clean out contaminated stormwater sediments. 2009 grant funds were awarded to 6 municipalities (3 grants in 2010 and 3 in 2012).

Sediment accumulating in stormwater ponds, especially sediment that may require special handling and disposal, has proven to be a significant financial burden for some municipalities. Stormwater ponds that are not optimally maintained lose their ability to:

1. settle out pollutants and buffer the risk to water quality;
2. hold excess stormwater runoff; and
3. protect homes and community infrastructure from flood events.

Impact on Agency Operating Budgets
The MPCA will use staff resources funded through its operating budget to provide technical assistance to municipalities. Technical assistance includes providing guidance for best management practices and oversight of grants for stormwater pond sediment management

Previous Appropriations for this Project
During the 2012 legislative session the MPCA proposed to continue financial assistance for cities to clean out stormwater conveyance and collection systems. The bonding proposal did not advance during the 2012 legislative session.

Other Considerations
The high cost to remove and properly manage stormwater sediment is a strong disincentive for cities to remove sediments from stormwater ponds and maintain this important infrastructure.

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Electric Vehicle Charging Stations

2014 STATE APPROPRIATION REQUEST: $4,000,000

AGENCY PROJECT PRIORITY: 3 of 4

Project At A Glance

This project will provide critical infrastructure support for electric vehicles on Minnesota roads. The project will install fast charging stations that are powered with renewable energy at strategic locations to support transit routes for commuters, recreation and other high use traffic corridors

Project Description

This request is for $4.0 million to install fast charging stations in high use traffic corridors throughout the state. This proposal addresses air pollution emitted by mobile sources: the cars and trucks on our state highways. Electric vehicles are 75 percent more efficient than internal combustion engines vehicles. Developing infrastructure to advance the use of electric vehicles on Minnesota roadways will reduce carbon dioxide emitting gases that contribute to the production of greenhouse gasses (GHG). Developing this infrastructure is on par with developing improved road construction techniques when moving from horse drawn transportation to motor vehicles or the rails for a light rail system.

Greenhouse Gas Reduction

In 2010, Minnesotans traveled 57 *billion* vehicle miles.[1] If electric vehicles, charged with electricity from the Xcel Energy grid, were driven for all these miles, the equivalent of 13 million tons of carbon dioxide (CO_{2e}) emissions would be reduced in our state annually. Taking this one step further, if those same electric vehicles were powered by wind or solar-generated electricity, 43 million tons of CO_{2e} dioxide emissions would be reduced.[2] The use of solar or wind generated electricity will be the priority goal of this project.

By 2025 our state GHG emissions are predicted to be 200 million tons of $CO_{2e.}$[3] The reduction of 43 million tons CO_{2e} by pairing of electric vehicle charging stations with renewable energy would reduce GHG emission by 22 percent. This perspective displays the potential and promise of electric vehicle especially when powered by wind or solar generated electricity. Electric vehicle are the only alternative-fueled vehicles with an option to be directly powered by renewable energy—resulting in zero tailpipe and electrical-generation emissions.

The Center for Automotive Research predicts that by 2025 up to 65 percent of the cars on the road could be plug-in hybrid electrics or battery electric vehicles.[4] In this case, the amount of CO2 emission reduction would be an impressive 28 million tons or a 14 percent reduction in CO_{2e} for our state.

Hazardous and Criteria Air Pollutants

Nationally, mobile sources represent the largest contributor to this category of 187 hazardous or toxic pollutants. Air toxics are pollutants known or suspected to cause cancer or other serious health or environmental effects.[5] In Minnesota, over one third of the toxic or hazardous air pollutants are from mobile sources including cars and trucks. The zero tailpipe emissions of electric vehicles for hazardous air pollution will improve local-air quality improvements. Coupling electric vehicles with wind or solar generated electricity will further reduce the emissions from power plants and reduce the draw on our electric grid.

Project Needs

The development of a complete infrastructure that adequately provides for transportation throughout Minnesota and eventually enable travel between states will take effort and an investment over time. A request of $4 million will allow funds to be matched by local and state entities to put in place nearly 60 Level III fast charging systems (15 minute charge time) using solar arrays for energy and about 90 Level II charging systems with a 2-4 hour charge time

Impact on Agency Operating Budgets

Existing MPCA staff will administer the Environmental Assistance grant program including this project and are funded through the Environmental Fund. This bonding request does not affect MPCA's annual operating budget.

Previous Appropriations for this Project

There has been no previous bonding for this project request.

Other Considerations

Electric vehicles and Clean Energy

The 'greenest' rollout of electric vehicles relies upon an anticipated parallel track of continual improvements to the electrical grid. According to a Union Concerned Scientists report, "To turn the nascent electric vehicle market into a mainstream phenomenon over the coming years, continued investments are needed for improving electric vehicles' performance and costs, incentivizing consumers and manufacturers, expanding accessible charging infrastructure, and reducing barriers to low-cost home charging…. The expected decline in emissions intensity of the U.S. electricity grid is due in large part to state and regional policies and federal tax incentives for increasing the supply of renewable electricity and hastening the retirement of coal-fired plants. More than 70 percent of coal-powered plants in the United States are more than 30 years old. The percentage of coal in the nation's grid mix has been declining over the past decade, and widespread retirements of existing coal plants are expected by 2020 (UCS 2011)."[7]

References:

[1]MnDOT Roadway Database: www.dot.state.mn.us/roadway/data/reports/vmt.html

[2]Based upon Xcel Energy-produced electricity only. *Responsible by Nature: 2008 Corporate Responsibility Report A Report on the Economic,Environmental & Social Impacts of Xcel Energy* and *http://www.pca.state.mn.us/publications/p-gen7-02.pdf. Calculations compare an carbon emissions of a gasoline powered Ford Transit Connect at .85 lbs per mile to a Ford Transist Connect EV at .38 lbs per mile for a reduction of .47 lbs per milewith 1.5 lbs carbon emission per mile for the average internal combustion vehicle.*

[3] Minnesota GHG Inventory and Reference Case Projection Center for Climate Stratedgies, March 2008, found at www.mnclimatechange.us/ewebeditpro/items/O3F20492.pdf

[4] The US Automotive Market and Industry in 2025. Center for Automotive Research. June 2011 found at http://www.cargroup.org/assets/files/ami.pdf

[5] EPA Mobile Source Toxics at http://www.epa.gov/oms/toxics.htm#what

[6] Environmental Assessment of Plug-in Hybrid Electric Vehicles in Michigan: GHG Emissions, Criteria Pollutants, and Petroleum Displacement, found at http://css.snre.umich.edu/publication/environmental-assessment-plug-hybrid-electric-vehicles-michigan-greenhouse-gas-emissions

[7] State of Charge: Electric Vehicles' Global Warming Emissions and Fuel-Cost Savings across the United States, found at http://www.ucsusa.org/assets/documents/clean_vehicles/electric-car-global-warming-emissions-report.pdf

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Solar Power at Closed Landfills

2014 STATE APPROPRIATION REQUEST: $6,000,000

AGENCY PROJECT PRIORITY: 4 of 4

Project At A Glance

Placing solar installations at a selected closed landfill sites to help meet goals for solar energy production.

Project Description

This request is for $6.0 million for the design, purchase and installation of solar arrays and various appurtenances necessary to generate 1-1.5 megawatts of electricity. The MPCA is proposing to install solar power arrays at closed landfill sites because of their large, sloping and shade-free areas. The MPCA's Closed Landfill Program (CLP) has long-term care responsibility for 112 closed landfills in Minnesota. Siting solar arrays on publicly owned closed landfill sites, where this use is feasible, could directly offset the carbon footprint of government operations through solar energy production as well as make these properties more productive.

Background. Closed landfill sites in the Xcel Energy service territory may be good candidates for new "community solar" gardens. A bill that was passed during the 2013 legislative session that requires the state's largest utility, Xcel Energy, to establish a community solar gardens program early in 2014. Also, new solar energy standards requires four investor-owned electric public utilities (Xcel, Minnesota Power, Otter Tail Power, and Alliant Energy Interstate Power and Light) to provide 1.5 percent of their power from solar by 2020. Assessing the potential for solar production at these sites will also position the MPCA to take advantage of opportunities for solar development under this new legislation.

The proposal would:

1. Estimate solar production and rank sites according to production potential.
2. Evaluate various cost and renewable energy production scenarios for best return to the State.
3. Survey local utility interest/willingness to purchase power production and issues related to transmission capacity.
4. Assess the impact of solar arrays on closed landfill operation and maintenance costs and evaluate the potential for offsetting current landfill power costs (currently about $195,000/year) through the sale of power.
5. Design, purchase and install sufficient solar panels for complete array installation and power production on at least three (3) representative landfills.

Impact on Agency Operating Budgets (Facilities Notes)

The MPCA will use staff resources funded by appropriations to the MPCA from the Remediation Fund to conduct the feasibility assessment of which sites are conducive to solar power installations.

Previous Appropriations for this Project

There have been no previous appropriations for this capital request.

Other Considerations

Installation of solar arrays using bond dollars at closed landfill will be off-set through the creation of local "green" jobs, providing a productive use for closed landfills and increased production of renewable energy to meet the NextGen goals as well as potentially serving as a distributed source of energy for local communities, businesses or industry.

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