

**COUNTY OF MILWAUKEE
INTER-OFFICE COMMUNICATION**

DATE: February 10, 2014

TO: Supervisor Michael Mayo, Sr., Chair, Transportation, Public Works & Transit Committee
Supervisor Gerry Broderick, Chair, Parks, Energy & Environment Committee

FROM: Gordie Bennett, Sustainability Director, DAS-Facilities Management

SUBJECT: **Requested follow-up to File No. 13-915, Planning and Implementing Clean Energy Investments in Wisconsin Communities grant (INFORMATIONAL)**

Background

File No. 13-915 was considered at the December 2013 meetings of the Committees on Transportation, Public Works, and Transit and Parks, Energy, and Environment.

As requested by the Committees, this informational report provides an update on the Clean Energy Investments in Wisconsin Communities grant application. A copy of the grant application, submitted by the Sustainability Director to the State Energy Office on December 13, 2013, is attached.

There were two funding tracks to the grant: 1) strategic energy plan development; and 2) clean energy project implementation. For all applications, the State Energy Office gave preference to proposals that would directly yield energy savings or renewable energy generation. The end result of track #1 would be a strategic energy plan, not energy savings or renewable energy generation. Consequently, to make Milwaukee County's grant application more competitive, the Sustainability Director proposed a project under track #2.

The proposed project was to incorporate solar-powered fans into the landfill gas control system at Doyme Park in Milwaukee. The solar fans could have reduced electric costs by up to \$1,477 per year. However, the application was not selected for an award. Apparently, the selection process was very competitive - the State Energy Office received applications for more than four times the total grant amount.

Recommendation

No action requested. Informational only unless otherwise directed.

Prepared by: Gordie Bennett, Sustainability Director

Approved by:



Julie Esch, Director of Operations, DAS

Cc: Chris Abele, County Executive

Amber Moreen, Chief of Staff, County Executive

Marina Dimitrijevic, Chairwoman, Milwaukee County Board of Supervisors

Kelly Bablitch, Chief of Staff, County Board of Supervisors


John Zapfel, Deputy Chief of Staff, County Executive

Don Tyler, Director, DAS

Josh Fudge, Fiscal and Budget Administrator, DAS

Planning/Implementing Municipal Clean Energy Projects

Cover Page

Application Submission Date: 12/13/13	
Organization Name: Milwaukee County Office of Sustainability	
Primary Contact Name (First, Last): Gordie Bennett	
Primary Contact Title: Sustainability Director	
Mailing Address: 2711 West Wells Street, Room 217	
City: Milwaukee	Zip: 53209
County: Milwaukee	
Phone: 414-278-4837	Fax: 414-223-1366
Email: Gordon.Bennett@milwcnty.com	
Employer ID Number (W-9) : 396005720	Amount Requested: \$15,054.92
Signature: 	Date: 12/13/13

Submit completed application by December 13, 2013 at 05:00 PM CDT to:

Megan Levy, Director
 State Energy Programs
 Wisconsin State Energy Office
 101 East Wilson St. 6th Floor
 Madison, WI 53703
megan.levy@wisconsin.gov

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Date Received:	Reviewed by:	Score: <input type="checkbox"/> A <input type="checkbox"/> R
<input type="checkbox"/> Letter Sent Date:	Contract Start Date:	Contract End Date:

Planning/Implementing Municipal Clean Energy Projects

Project Narrative

1. INTRODUCTION TO THE PROJECT

The Milwaukee County Office of Sustainability is proposing to incorporate solar-powered fans into the previously installed landfill gas (LFG) control system at Doyne Park in Milwaukee. By installing and operating solar fans on top of five existing passive gas vent pipes, it may be possible to run the system's 15-horsepower blower less often – or perhaps even not at all. Consequently, the solar fans could help reduce energy use and costs, including environmental impacts, associated with operating the LFG control system.

2. APPLICANT BACKGROUND AND QUALIFICATIONS

Among local governments in Wisconsin, Milwaukee County is a leader in energy efficiency and the use of clean energy. In 2007, the Board of Supervisors adopted a 'Green Print' resolution that established 16 energy and conservation provisions for County operations. Since then, the County has established benchmarks (around a 2007 baseline) for evaluating clean energy initiatives. Additionally, Milwaukee County has implemented energy savings performance contracts in approximately 5.5 million gross square feet of County facilities, resulting in more than \$1.2 million in avoided energy costs. And, the County has gradually built one of the largest fleets of hybrid electric vehicles in the state.

The Milwaukee County Office of Sustainability was established in February 2013 with the hiring of a Sustainability Director. To date, much of the Office's efforts have focused on encouraging staff involvement with the County's sustainability program. With the help of the County Executive, the Office of Sustainability coordinated a "Kill-a-Watt" Challenge to reduce County electricity use by 2 percent from May-October 2013 relative to the same period in 2012. By encouraging conservation practices like turning off unnecessary lighting and using power management settings on computers, the County met its energy reduction goal and avoided around \$128,000 in electricity costs.

3. DETAILED DESCRIPTION OF THE PROJECT

Located approximately 4.5 miles west of downtown Milwaukee, Doyne Park was used as a quarry in the early 1900's and later used by the City of Milwaukee for the disposal of solid waste (also formerly known as the Hawley Road Landfill). The site is approximately 40 acres in size. Milwaukee County owns the easterly 35 acres and the Badger Association of the Blind, who uses it for a parking lot, owns the westerly 5 acres. Records regarding waste disposal at the site are vague, but suggest that filling may have begun in the 1940's. WDNR records indicate that the site received wood, old appliances, and street sweepings before it closed in 1976. The total volume of the waste on the entire site is estimated to be between 2.5 and 5.2 million cubic yards.

In response to concerns that landfill gas might migrate into nearby residences, a perimeter LFG control system was installed at Doyne Park in 1998. The system was constructed along the southern boundary of the park and includes 38 gas extraction wells, two underground condensate tanks, and a blower station. In addition, methane detectors were installed in the basements of local residents. This project was conducted as a joint effort with the City of Milwaukee. The layout of the gas probes and extraction system for Doyne Landfill is illustrated in Figure 1. The proposed project would incorporate solar-powered fans into the perimeter LFG control system.

4. PROJECTED ENERGY SAVINGS ON AN ANNUAL BASIS

Electricity use and costs metered by WE Energies for the existing LFG control system at Doyne Park is shown below. Based on this data, solar fans could help reduce annual electric use and costs by up to 19,729 kWh and \$1,477, respectively.

Current Average kWh Used / Year (kWh):	19,729
Current Average \$ / kWh:	0.0749
Current Estimated Annual Electricity Cost (\$):	1,477
Percent of Active System Runtime Reduced:	100%
Time to Payback (Year):	10.2

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Budget Justification Form

1. PERSONNEL

Position Title	Pay Rate (\$/hr)	Time (est hours)	Total Compensation (\$)	Requested from SEO (\$)	Leverage (\$)	Work Description
Sustainability Director	37.09	20	741.80	0	741.80	Coordinate grant activities and serve as point of contact for project; Meet with WDNR and prepare project-related reports as requested; Help research and communicate project requirements and specifications
Environmental Engineer	29.54	14	413.56	0	413.56	Provide technical assistance with project planning, design, and implementation; Guide project-related site preparation and construction

Additional Information: 'Total compensation' is wages only and does not include fringe

2. FRINGE

Position	Total Compensation (\$)	Rate (%)	Total Fringe (\$)	Requested from SEO (\$)	Leverage (\$)	Rate Basis
Sustainability Director	741.80	225	1,669.05	0	1,669.05	See Additional Information
Environmental Engineer	413.56	225	930.51	0	930.51	See Additional Information

Additional Information: Fringe rate percentage based on estimated fiscal year 2013 overhead rate of 2.25 for Milwaukee County Architecture, Engineering, and Environmental Services Division staff.

3. TRAVEL N/A

Description	In-state or Out-of-State	Total Cost (\$)	Requested from SEO (\$)	Leverage (\$)	Basis of Cost

Additional Information:

4. SUPPLIES N/A

Description	Total Cost (\$)	Requested from SEO (\$)	Leverage (\$)	Basis of Cost

Additional Information:

5. EQUIPMENT

Description	Total Cost (\$)	Requested from SEO (\$)	Leverage (\$)	Basis of Cost
Five (5) solar fan kits including installation	7,500	7,500	0	Kits include solar fans, photovoltaic panels, voltage controllers, wiring/connection cables, and mounting hardware. \$1,500/unit cost estimated by landfill engineering consultant, which has used solar fans for similar applications

Additional Information:

6. OTHER

Description	Total Cost (\$)	Requested from SEO (\$)	Leverage (\$)	Basis of Cost
Planning and design of solar fans	1,300	1,300	0	Current landfill engineering consultant charges \$100/hour. Based on project scope, we anticipate needing about 13 hours of planning and design help.
WDNR Project Review Fee(s)	1,000	1,000	0	Modifications to landfills require approval from WDNR. Thus, Milwaukee County may be required to pay WDNR fee(s) for reviewing the proposed project.

Additional Information:

7. INDIRECT COSTS

Description	Total Cost (\$)	Requested from SEO (\$)	Leverage (\$)	Basis of Cost
Additional Landfill Gas Monitoring	1,500	1,500	0	WDNR may require additional monitoring of LFG control system after solar fans are installed. Current monitoring done by landfill engineering consultant four times/year at about \$150/visit. Assume WDNR would require monthly monitoring (8 extra visits) for the 1 st year after the fans are installed, bi-monthly reporting (2 extra visits) during Year 2, and quarterly monitoring resuming Year 3. Thus, LFG monitoring would be done 10 extra times for approximately \$1,500.

Additional Information:

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Budget Summary

SUMMARY

Category	Requested from SEO (\$)	Leverage (\$)	Total
Personnel	0	1,155.36	1,155.36
Fringe	0	2,599.56	2,599.56
Supplies	0	0	0
Equipment	7,500	0	7,500
Other	2,300	0	2,300
Total Direct Costs	9,800	3,754.92	13,554.92
Indirect	1,500	0	1,500
Total Year One Budget	11,300	3,754.92	15,054.92

Additional Information:

Planning/Implementing Municipal Clean Energy Projects

Personnel

1. Gordie Bennett, MS, MCP*

Sustainability Director
Office of Sustainability
Milwaukee County
2711 West Wells Street, Room 217
Milwaukee, WI 53209
Gordon.Bennett@milwcnty.com
414-278-4837

Related activities and experience:

- Direct implementation of Milwaukee County's Green Print resolution
- Secured and administered \$36,000 energy efficiency grant
- Over four years experience preparing energy and emissions reports

2. Sean Hayes, PE

Environmental Engineer
Environmental Services
Milwaukee County
2711 West Wells Street, Room 211
Milwaukee, WI 53209
Sean.Hayes@milwcnty.com
414-278-4891

Related activities and experience:

- Project manager for numerous public works projects, including \$2.6M lift station
- Five years experience operating and maintaining Doyne Park LFG control system
- Managed design and installation of multiple solar PV and hot water systems

* Will coordinate grant activities and serve as a point of contact for project

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Letter of Reference



The Park People

Friends of Milwaukee County Parks

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Thomson Reuters

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John Dangle
Milwaukee County Parks
Director

Executive Director

James Goulee

Megan Levy, Director
State Energy Programs
Wisconsin State Energy Office
101 East Wilson St. 6th Floor
Madison, WI 53703.

December 12, 2013

Dear Ms. Levy:

The Park People of Milwaukee County wishes to express its support for the Milwaukee County Office of Sustainability's application for *Planning and Implementing Clean Energy Investments in Wisconsin Communities* funds for incorporating solar-powered fans into the landfill gas migration control system at Doyne Park. This innovative project would reduce the need for blowers and external power at the landfill, lowering Milwaukee County Parks' energy use and costs. In addition, the project would increase the use of renewable energy in our world-class parks system, conserving natural resources for the benefit of the community.

Milwaukee County has taken a number of steps to improve its energy efficiency and increase its use of clean energy. In 2007, the County adopted a 'Green Print' resolution consisting of 16 energy and conservation provisions. Since that time, total energy use in County facilities has decreased by almost 10 percent. More recently, the County has implemented six solar photovoltaic projects and three solar hot water projects. In total, the systems generate about 104,000 kWh of clean, renewable power per year - roughly equivalent to the electricity used to power 10 homes.

By incorporating solar fans into the Doyne Park Landfill, Milwaukee County can take another step towards integrating sustainability into its operations. We urge the State Energy Office to award the project a *Planning and Implementing Clean Energy Investments in Wisconsin Communities* grant.

Sincerely,

James P. Goulee
Executive Director
The Park People of Milwaukee County, Inc.

1845 North Farwell Avenue, Suite 100 - Milwaukee, WI 53202
(414) 273-PARK - (414) 273-7293 fax - www.parkpeoplemke.org