

STEVEN L. BESHEAR
GOVERNOR



LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

November 24, 2010

Sanitation District No. 1
Attn: Jeffrey Eger, Executive Director
1045 Eaton Drive
Ft. Wright, KY 41017

Re: Sanitation District No. 1
AI# 2449
Lakeview Pump Station Improvements Project
CWSRF Project ID: CWL11080

Dear Mr. Eger:

Thank you for submitting the required documentation to support a "Categorically green project" classification for the Lakeview Pump Station Improvements project, funded through the CWSRF. A provision of the 2011 CWSRF capitalization grant requires that to the extent there are eligible project applications; states shall use 20% of its Clean Water State Revolving Fund capitalization grant for green infrastructure projects to address water and energy efficiency improvements or other environmentally innovative activities. The Kentucky Division of Water (KY DOW) has reviewed the information to support a "categorically green" classification, and has found the justification to be acceptable. This project is categorically excluded from preparing a Green Project Reserve business case. If the scope of the project is altered in any way to exclude GPR eligible components, the Sanitation District No. 1 shall submit the changes in writing to the KY DOW and receive prior approval in writing before proceeding with construction.

We look forward to working with you in finalizing your wastewater infrastructure project. If you have any questions regarding this correspondence, please contact me at (502) 564-3410, extension 4832.

Sincerely,

A handwritten signature in black ink, appearing to read "Greg Goode".

Greg Goode, P.E.
Water Infrastructure Branch
Kentucky Division of Water

Cc: Chris Novak, SD1
Brandon Vatter, SD1
Tim Pringle, Hazen & Sawyer
CWSRF Files

November 22, 2010

Ms. Amanda Yeary
KY Division of Water
200 Fair Oaks
Frankfort, KY 40601

Re: Lakeview PS CWSRF Fund
2010 Clean Water Act and Drinking Water State
Revolving Fund

Dear Ms. Yeary,

I have reviewed your request to the Sanitation District No. 1 for a business case for the subject project. As you recommended, I have reviewed the *Drinking Water State Revolving Fund Green Project Reserve, Business Case Examples* as well as the *2010 Clean Water and Drinking Water State Revolving Fund 20% Green Project Reserve: Guidance for Determining Project Eligibility* guidance documents. The *Guidance for Determining Project Eligibility*, Subsection 3.2-2, page 9, "Projects that achieve a 20% reduction in energy consumption are categorically eligible for Green Project Reserve (GPR)." Upon review of this guidance it is apparent that the Lakeview Project exceeds the 20% recommended minimum increase in pump efficiency thus a Business Case is not required.

Theoretically, the overall efficiency of the existing pumps and motors, in the Lakeview Pump Station, is 70%. This was obtained based on the hydraulic efficiency (78%) of each existing pump, when new, multiplied by the efficiency (90%) of each existing motor, when new. The theoretical total efficiency of each pump, when new, is $0.78 \times 0.90 = 70\%$.

Based on testing performed by Hazen and Sawyer on the current pumps at Lakeview, it became apparent that each pump was pumping off of its pump curve; the observations collected indicated that the flow is 80% below the average and the head at 95% below the average. Thus, the current total efficiency of each existing pump at Lakeview is $0.7 \times 0.95 \times 0.8 = 53\%$.

The proposed improvements at Lakeview will have a motor efficiency of 95% and a hydraulic efficiency of 75.6%, leading to a total overall efficiency of 72.5% that is $0.95 \times 0.756 = 72.5\%$.

Based on these results, we believe that the increased efficiency, by implementing these improvements is, approximately 36%, [$(72.5\%/53\%) = 1.36$], which is larger than the threshold set by the department of Energy study entitled *United States Industrial Motor Systems Market Opportunities Assessment* and adopted by the Consortium for Energy Efficiency. This 36% increase in efficiency would translate into 26% reduction in energy usage per pump.

Hence, and based on our discussion, this project qualifies to be a candidate for the Green Project Reserve and therefore does not require a Business Case Study.

HAZEN AND SAWYER

Ms. Amanda Yeary
November 22, 2010
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We thank you for your time and help on this matter. If you have any questions regarding the information provided in this letter, please contact me at your convenience.

Very truly yours,

HAZEN AND SAWYER, P. C.



Tim J. Pringle, PE
Associate

cc: Mr. Brandon Vatter, PE SD1
Mr. Sean Fitzgerald, PE Hazen and Sawyer

2) Based on the attached guidance, please categorize your green components into the identified categories and provide a listing of the green components and an estimation of related costs at this time:

a. Water Efficiency \$ _____ (total)

Breakdown of components included with related costs:

Component	Cost
_____	_____
_____	_____
_____	_____

b. Energy Efficiency \$ \$1,475,000 (total)

Breakdown of components included with related costs:

Component	Cost
<u>Pump and Motor Replacement</u>	<u>\$1,300,000</u>
<u>SCADA Improvements</u>	<u>\$175,000</u>
_____	_____
_____	_____

c. Green Infrastructure \$ _____ (total)

Breakdown of components included with related costs:

Component	Cost
_____	_____
_____	_____
_____	_____

d. Environmentally Innovative Activities

Breakdown of components included with related costs:

Component	Cost
_____	_____
_____	_____
_____	_____

3) Total Project Cost related to “green” components (all categories): \$1,475,000