

OHIO ENVIRONMENTAL PROTECTION AGENCY
DRINKING WATER STATE REVOLVING FUND (DWSRF)
AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 (ARRA)
GREEN PROJECT INFORMATION

FFY 2009 ARRA GREEN PROJECT INFORMATION FORM

The Federal American Recovery and Reinvestment Act of 2009 (ARRA) requires a minimum amount of funding be used toward Green Infrastructure, Energy Efficiency, Water Efficiency, or other Environmentally Innovative activity. To ensure that this requirement is met, Ohio EPA is requiring ARRA recipients to provide additional information about potential green components of their project(s).

In many instances, a Business Case is required for justification to consider an item or activity "green". The US Environmental Protection Agency (EPA) has provided guidance for help in evaluating the green elements of a project. Please complete this cover sheet and appropriate page(s), as noted below for each project that will incorporate a "green" component(s). More guidance is provided on the back of each form.

PWS Name: City of Zanesville PWSID: 6002712

Project Name: New WTP PPL #: 78
(as assigned by OEPA- refer to project list on web)

Total Estimated Project Cost: \$16,101,750 Total Est. Green Amount: \$5,880,508
ARRA maximum \$4,500,000.00

Type of "Green" Element(s) included in this project. For each box that is checked the corresponding page of this form must be completed and submitted with this cover page. Attach additional pages as necessary:

- Green Infrastructure** (porous pavement, bioretention, trees, green roofs, and other practices that mimic natural hydrology and reduce effective imperviousness)
- Energy Efficiency** (energy audit, water pump system improvements or replacements, variable frequency drives, SCADA, on-site clean power, solids treatment or handling, replacement or rehabilitation of distribution lines)
- Water Efficiency** (water meter installation or replacement, leak detection equipment, water line replacement, water audit, water efficient fixtures)
- Other Environmentally Innovative Activity**

Completed by:

Name: Sarah Wallace Title: Environmental Engineer
(please print)

Signature: *Sarah Wallace* Date: October 15, 2009

For OEPA use only:

Project #: FS390904-01 DWSRF #: PPL # 78

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OTHER ENVIRONMENTALLY INNOVATIVE ACTIVITY

PWS Name: City of Zanesville

PWSID: 6002712

Project Name: New WTP

PPL #: 78
as assigned by OEPA – refer to ARRA
project list on web)

Total Est. Project Cost: \$16,101,750 Total Est. Green Reserve Amount: \$5,205,000

Project Summary:

This project entails the construction of a new 10 MGD groundwater iron and manganese removal water treatment plant to replace the existing antiquated facility. The new plant will obtain water from the existing wells and will include the addition of a wet well, new low service pumps, new filters, new high service pumps and new chemical feed facilities in a new energy efficient building.

Business Case Narrative:

The existing water treatment equipment is housed in a 100 year old historic building that initially served as a steam pump plant. Various upgrades to the equipment have occurred throughout the years but very little has been done to the building. This project will leave the historic structure in place and build a completely new facility next to it. Some of the energy efficient measures being utilized in the construction of the new building include³:

- Additional thickness cavity wall construction to allow extra insulation in the walls
- Roof insulation to plus R-30
- All the window and door frames are thermally broken and insulation
- All glazing for windows and doors is low-E insulating glass
- Zone construction to maximize the overall efficiency of the computer controlled HVAC system
- Variable air volume fume hood in the laboratory to reduce heating and cooling load
- Clear story lighting in the fixtures

A second building will be constructed for housing the low service pumps that also includes the abovementioned energy efficient measures but also is equipped with skylights to reduce the lighting fixture required.

The entire construction of these two buildings is considered green eligible. From the bids received 8/13/09⁴, this is \$4,955,000 for the WTP building and \$250,000 for the low service pump building for a total of \$5,205,000.

³ Email from Gary Long, PE

⁴ Bid Tabs

From: <Gary.Long@CH2M.com>
To: <sarah.wallace@epa.state.oh.us>
CC: <zak@kokosing.biz>
Date: 10/13/2009 5:13 PM
Subject: RE: ARRA Green Project Evaluation

Sarah,
Here is the list of items that can be considered "green" in relation to the old WTP.

1. High and Low Service Pumps. The existing WTP had 2 HS and 2 LS pumps. Operators controlled the existing duplex pumping system by throttling manual valves while running the pumps at 100%. The new WTP will have 3 HS and 3 LS pumps. All new pumps are provided with premium efficiency motors and VFD drives. Plant operators will be able to operate the HS and LS pumps at peak efficiency with minimum energy usage using the VFD drives and the new SCADA system. By more smaller pumps the startup demand will be lower and it will be easier the operate the pumps at the more peak efficiency point of the operating curve.

2. Water Treatment Building. The WTP is provided with additional thickness cavity wall construction to allow additional insulation in the walls. The roof is insulated to plus R-30. All of the window and door frames are thermally broken and insulated. In addition, all glazing for windows and doors is low-E insulating glass.

The WTP Building HVAC system is computer controlled to provide maximum energy efficiency for the size and type of units required for this construction. In addition, the building is zoned to enhance the overall efficiency of the HVAC system. The laboratory is equipped with a variable air volume fume hood to reduce heating and cooling load.

Clear story lighting was incorporated to reduce the lighting fixtures required and the energy required to power the additional fixtures.

3. Skylights were incorporated in the Low Service Pump Building to reduce the lighting fixtures required and the energy required to power the additional fixtures.

4. SCADA System: The entire plant process is SCADA controlled to minimize energy usage.

I contacted Zack Keller at Kokosing and requested the Schedule of Values. He is working to provide it on Wednesday. When he sends it to me I will forward to you.

Let me know if you need more info.

Gary

-----Original Message-----

From: Sarah Wallace [mailto:sarah.wallace@epa.state.oh.us]
Sent: Tuesday, October 06, 2009 2:34 PM
To: Long, Gary/COL
Subject: ARRA Green Project Evaluation

Gary,

I've tried to catch you several times to go through this but can't seem to find you in your office. One of the follow-up requirements for the Zanesville WTP ARRA funded project is to complete a Green Project Evaluation Form. In essence, a "Green Reserve Project" includes:

- Pipe, meter or other infrastructure replacement to reduce water loss in the system;
- Equipment replacement or building upgrades that reduce electrical usage; and
- Alternative energy usage (solar, wind).

The attached form includes instructions on how to calculate the green dollar values. It is imperative that a business case be included as backup for these amounts. Water loss calculations, electrical rates and individual equipment costs are examples of appropriate information to be included.

USEPA's guidance on how to present a business case to show the green portion of the drinking water project is attached. I've also attached a FAQ put together by USEPA for both drinking water & clean water ARRA green project. All of these forms and guidances along with additional information is available on our website at:

http://epa.ohio.gov/ddagw/dwaf_economic_stimulus.aspx

I will be working over the next two weeks to get these completed. I am going to have to ask you to help me with some of the specifics for this very large project. Please call me at (740) 380-5207 to go through these forms to come up with a game plan for how we're going to do this massive project.

Thank you for your continued efforts to help us meet the numerous requirements of the ARRA program.

Sarah Wallace
Ohio EPA - DDAGW

