

US EPA ARCHIVE DOCUMENT



2009-2011 INDIANA ENERGY MANAGEMENT PILOT



Valparaiso Flint Lake Drinking Water Plant

Who we are

The Valparaiso Water Department provides two drinking water treatment plants: the Airport (AP) Plant built in 1963 and expanded in 1977, and the Flint Lake (FL) Plant originally built in 1885. The present FL Plant was constructed in 1993 and expanded in 2004. The FL Plant is the focus of efforts during the Indiana Energy Management Pilot and is the subject of this fact sheet. It includes three well fields (total of 15 wells) that provide water to the FL filtration plant where 5 pressure filters remove iron and manganese out of raw water. Liquid chlorine is added during the treatment processes. Fluoride and phosphate are also introduced to produce finished water.



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Electricity Usage

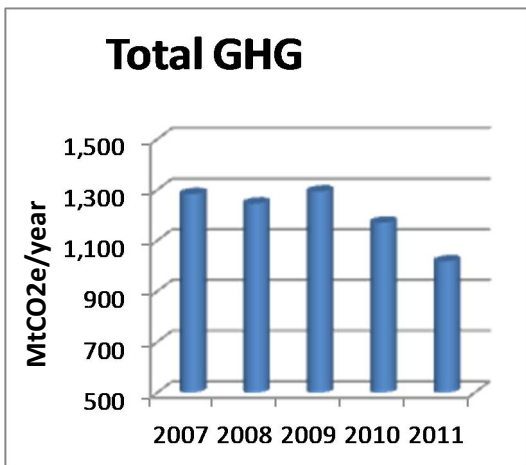
- 2008: 1,760,987 kWh
- 2009: 1,828,730 kWh
- 2010: 1,654,485 kWh
- 2011: 1,438,880 kWh

Greenhouse gas (GHG) avoided:
228 metric tons carbon dioxide per year (2011 compared to 2008 baseline).*

Project Success Story

In December 2010, Northern Indiana Public Service Company (NIPSCO) regional manager informed Valparaiso drinking water utility staff that NIPSCO customers are eligible to change their rate tariffs if the current ones are not the most beneficial. The water utility did a full rate analysis based on historical electricity usage and concluded that the FL Plant was not being billed at the lowest rate by NIPSCO.

The water utility contacted NIPSCO and requested that NIPSCO confirm the finding, which it did. This led to a rate tariff change in January 2011. After switching to the new rate tariff, the water treatment plant has seen a reduction of \$1,000/month (\$12,000/year) on electricity bill. This change of rate tariff did not reduce electricity usage. However, water operations successfully reduced its expenses.



Greenhouse gas emissions avoided are equivalent to

- Removing 445 vehicles from the road for a year
- Electricity for 29 homes for a year
- 1 Railcar of coal
- 530 Barrels of Oil

*Green House Gas Equivalencies calculated using USEPA calculator (<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>)

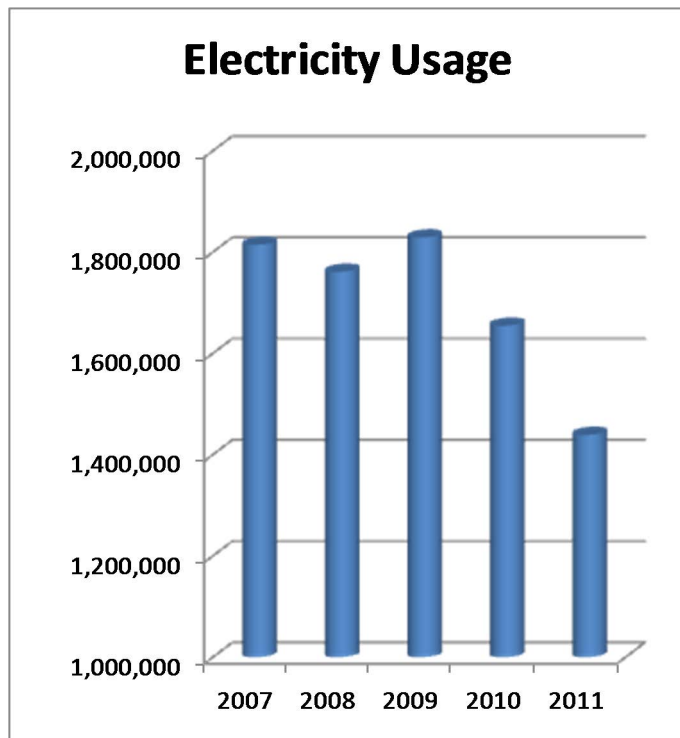
Key Improvements

The Valparaiso Water Department has reduced electrical energy use by implementing numerous strategies.

Process Targeted / Goal	Improvement and estimated saving	Estimated annual energy saving, kWh	Implementation cost, \$	Annual cost saving,	Simple pay-back, years
Lighting	Reduced number of lighting hrs by 40%	7488	No cost. Turn lights off	\$749	0
Lighting	Will replace T12 with T8 bulbs and fixtures	1,098		\$110	No estimate
High service pumps	Replacing high service pumps with premium efficiency ones at both plants	34,640	\$52,400	\$3,464	15.1
HVAC ¹	Purchased portable HI-E dehumidifiers to replace the gas burning dehumidifier.	36,000	\$500	\$13,600	1
Rate Tariff	Worked with NIPSCO to apply the best rate tariff to water operations	NA	NA	\$12,000	0

1. The gas burning dehumidifier cost more in natural gas than electricity. This cost saving includes the estimated saving of \$10000 on natural gas.

Documented Results



High Pressure Filtration, Flint Lake Drinking Water Plant



Storage, Flint Lake Drinking Water Plant