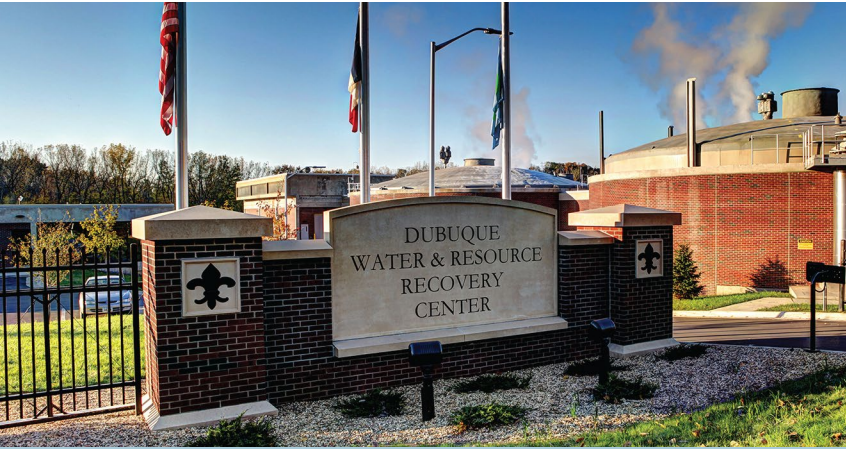


Dubuque Water & Resource Recovery Center

\$HOWING RETURN ON INVE\$TMENT



Dubuque's Water & Resource Recovery Center (WRRC), the City's wastewater treatment plant located on Julien Dubuque Drive, underwent a nearly \$70 million facility upgrade that was completed in 2013. At the time, it was the largest capital improvement project in the city's history. The new treatment system has been in operation for four fiscal years so it's a good time to review how this major investment is performing.

what happens there?



When water and "other stuff" go down the drain in Dubuque, it ends up at the Water & Resource Recovery Center, which processes an average of **7 million gallons** of wastewater per day!



Pure-oxygen biological treatment is used to clean the wastewater. Then, anaerobic digesters use helpful bacteria to convert the wastewater sludge into a **beneficial by-product, fertilizer for farm fields.**

FROM BURNING WASTE (THE OLD PROCESS) TO PRODUCING A USEFUL PRODUCT

15½ tons of soil amendment (fertilizer) are produced PER DAY

That's an average of eight semi loads per week of useful material created instead of being burned!



REDUCED OPERATING COSTS

Thanks to the ability to produce electricity and operational efficiencies, the facility's demand for grid-purchased electricity has dropped by 70-75%, from 1000 kilowatts down to just 250-300 kilowatts.

ANNUAL ELECTRICITY COST SAVINGS! \$244,000

Because of these efficiencies and the plant now producing its own electricity, annual electricity costs have dropped from \$579,205 in fiscal year (FY) 2011 to \$334,908 in FY2017.

ANNUAL FUEL-OIL COST SAVINGS! \$300,000

Before the facility upgrade, the bio-solids produced at the plant were incinerated. In FY2011, the City spent \$300,000 on fuel oil for this activity at the plant. **Because anaerobic digestion is now used, incineration is not needed so the City was able to reduce fuel costs by \$300,000 per year!**

ANNUAL STAFFING COST SAVINGS! \$80,000

Operating efficiencies of the WRRC now allow the plant to operate with one less employee, resulting in a cost savings of \$80,000 per year.

\$624,000 TOTAL ANNUAL OPERATING COST SAVINGS

ENERGY PRODUCTION

The WRRC converts waste into electricity and heat. The anaerobic digestion process produces methane gas. The gas is captured, cleaned, and burned to power turbines that generate electricity. The heat produced through this process is used to heat the complex, and the electricity produced is used to power the facility. Currently, the facility produces enough electricity to power approximately 360 households per day, which is 70% of the electricity needed to operate the facility.



A NEW AND ABOVE-AVERAGE FACILITY FOR AVERAGE RATES

The operation of the Water and Resource Recovery Center and the \$70 million upgrade made to the facility are supported through the sanitary sewer user fees paid by customers. Dubuque's average household rate for the current fiscal year (2018) is \$39.25 per month. Although Dubuque has one of the newest wastewater treatment facilities in the state, the average monthly rate for the other 11 cities in Iowa with populations over 50,000 is \$37.13, just five percent below Dubuque's rate. Davenport, Des Moines, and Ankeny have higher rates with Ankeny's rate at \$67.52 per month, 72 percent higher than Dubuque's rate.

ROOM FOR GROWTH AND EXPANSION

The Water & Resource Recovery Center currently operates at 70-75% of its average capacity, which means there is considerable capacity to meet future residential and industrial growth.

SUPPORTING LOCAL BUSINESSES & JOBS

Thanks to the facility upgrades, the WRRC now has the capacity to process high-strength waste, which means the facility provides a critical service to a variety of local businesses that produce high-strength waste through their production or manufacturing processes. Local companies like Hormel, Rousselot, and Western Dubuque Biodiesel can now take their waste products to the WRRC to be processed. In fact, Hormel's cost per gallon for treatment/disposal was reduced by 60%. Hormel previously hauled their high-strength waste over 90 miles to Madison, Wis., every day.

The WRRC's ability to process these materials saves those companies the cost of having to transport that waste to other locations for disposal and makes Dubuque a more attractive location for business expansion and new businesses.

Processing high-strength waste also produces revenue for the City. The WRRC expects to **generate \$215,000 in revenue** through this activity this year.

MAKING METHANE MEAN MORE SAVINGS

The WRRC produces more methane than can be used at the facility. The City of Dubuque and Greater Dubuque Development Corporation researched beneficial uses for this excess methane. Project requirements included: creating additional positive environmental outcomes, generating revenue or reducing costs, creating opportunity for additional economic development and growth, and not requiring additional direct investment or risk from the City.

In August of 2016, the City entered into an agreement with BioResource Development, LLC for the co-location of equipment at the W&RRC which will further process all bio-gas produced at the facility. Renewable natural gas will be delivered to the Black Hills Energy Pipeline, qualifying for gas revenues and RIN (Renewable Inventory Number) payments due to its use as an advanced bio-fuel. **The City will receive lease payments and a portion of gross revenues from the sale of gas and RINs.**

LEARN MORE!

**www.cityofdubuque.org/wrrc
or 563-589-4176**

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