



The City of Wooster, Ohio

Water Resource Recovery Facility

Presented by:

quasar
energy group

Agenda

- The City's Challenges
- Process Alternatives Considered
- Evaluation of Options
- quasar Construction
- Reality
- Benefits to the City
- Benefits to quasar
- Innovative R&D

What Were the City's Challenges?

Regulatory Issues:

Ohio EPA Compliance

Sewer Hook-up Restrictions

Process Issues:

Solids Handling Issue

Anaerobic Digesters

Cogeneration Utilization

Disposal Issues:

Reduce Liquid Hauling

Reduce Solids Hauling



Process Alternatives Considered

Existing Digester Improvements

Overall Solids Management

Third Party Biosolids Management

Class “A” Biosolids Conversion



Process Alternatives

Improve Existing Anaerobic Digesters

1. Solids Handling
2. Optional Dewatering

Advantages	Disadvantages
Improves sludge processing capacity	High capital cost
Potential for increased gas production	More labor costs for O&M
Reduced hauling costs	Land application

Total Construction Cost

w/o dewatering= \$5.1M

with dewatering = \$7.3M

Process Alternatives

Third Party Biosolids Management

1. Privatize portion of the plant
2. Third Party Biosolids Management Improvements:

Advantages	Disadvantages	Total Construction Cost
Low capital cost to the City	Joint use of WRRF site	\$1.4M
O&M of solids processing by others	Potential odor complaints	
Increased gas production & cogen	Fees may exceed current hauling	

Evaluation of Options

- Internal Evaluation of Options
- RFP Issued
- Selection



quasar Construction

Scope of Work:

- Retrofit 3 Digesters
- Construct New Tank, Building, & Receiving
- Install 1100 kW Generator

Challenges:

- Old Facility
- Existing Footprint
- Continuous Operation

Reality

Privatize Portion of the Plant



Wooster Water Resource Recovery

Welcome to the Future...

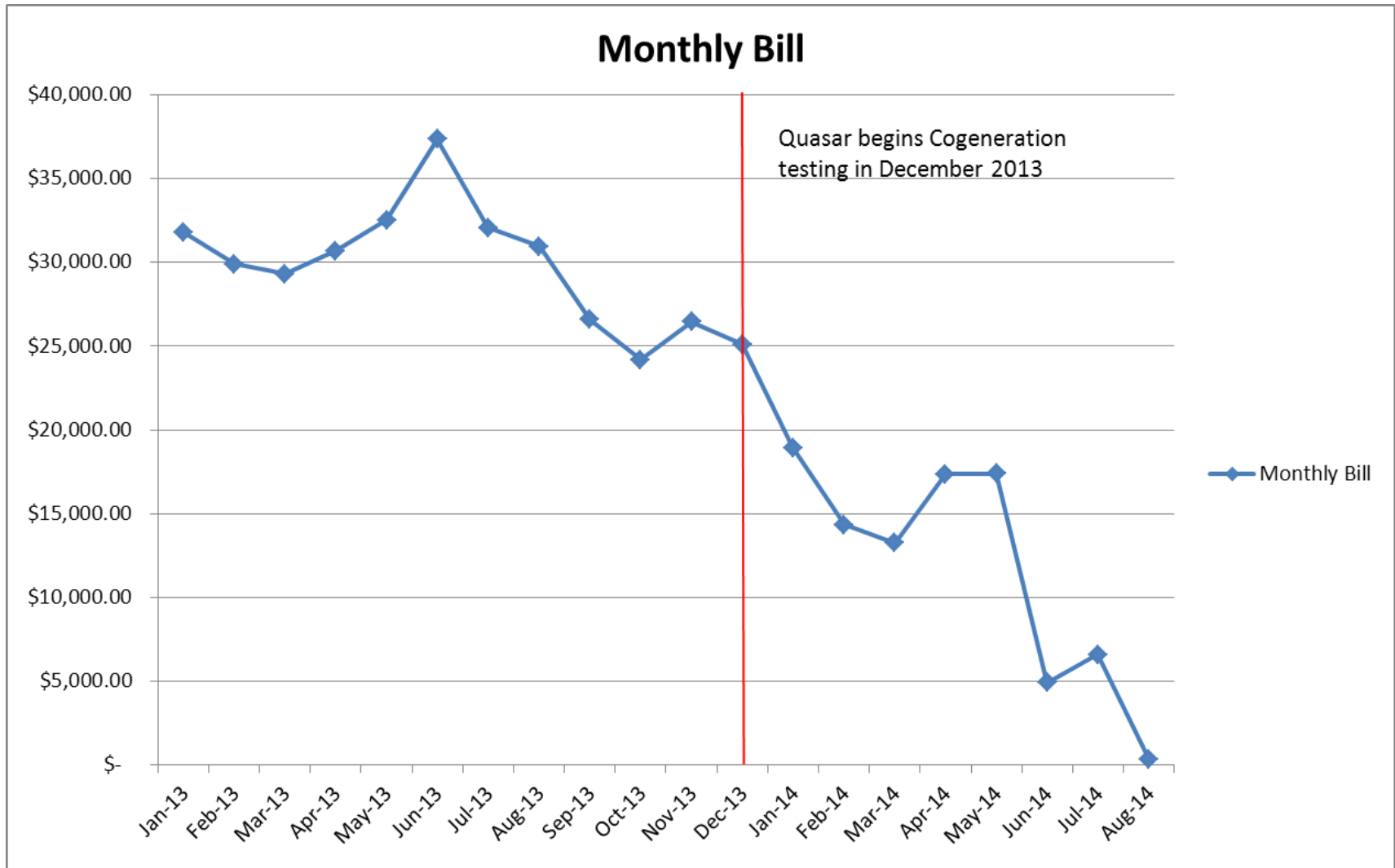


Benefits to the City

- Regulatory Compliance
- Increase Plant Capacity
- Minimal Capital Outlay
- Renewable Energy
- Accelerated Construction Schedule
- 20 Year Performance Guarantee
- Economic Development
- Collaborative Partnership



How Quickly did the City benefit?



Do you really see the savings?

August 2013 Invoice

AEP OHIO
A unit of American Electric Power

Send Inquiries To:
PO BOX 24401
CANTON, OH 44701-4401
R-07-UNMETERED
29929-1

Account Number
077-756-425-0-2
CY 02
0

\$30,961.88
Total Amount Due

Amount Enclosed \$ 7

Do Not Pay This Bill.

☐ The Neighbor to Neighbor program helps disadvantaged customers pay their electric bill. I want to help. My payment reflects my gift of \$ _____

Make Check Payable and Send To:
AMERICAN ELECTRIC POWER
PO BOX 24002
CANTON OH 44701-4002

WPCP CITY OF WOOSTER
ANDREI DORDEA-FINANCE
538 N MARKET ST
WOOSTER, OH 44691-3406

003096188003114121010000000000777564250229082009002900005

Please tear on dotted line

Return top portion with your payment

Service Address:

Rate Tariff: -000		
Account Number	Total Amount Due	Due Date
077-756-425-0-2	\$30,961.88	Sep 20, 2013
Meter Number	Cycle-Route	Bill Date
Unmetered	02-	Aug 29, 2013

August 2014 Invoice

AEP OHIO
A unit of American Electric Power

Send Inquiries To:
PO BOX 24401
CANTON, OH 44701-4401
R-07-UNMETERED
24398-1

Account Number
077-756-425-0-2
CY 02
0

\$315.76
Total Amount Due

Amount Enclosed \$ 7

Do Not Pay This Bill.

☐ The Neighbor to Neighbor program helps disadvantaged customers pay their electric bill. I want to help. My payment reflects my gift of \$ _____

Make Check Payable and Send To:
AMERICAN ELECTRIC POWER
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Please tear on dotted line

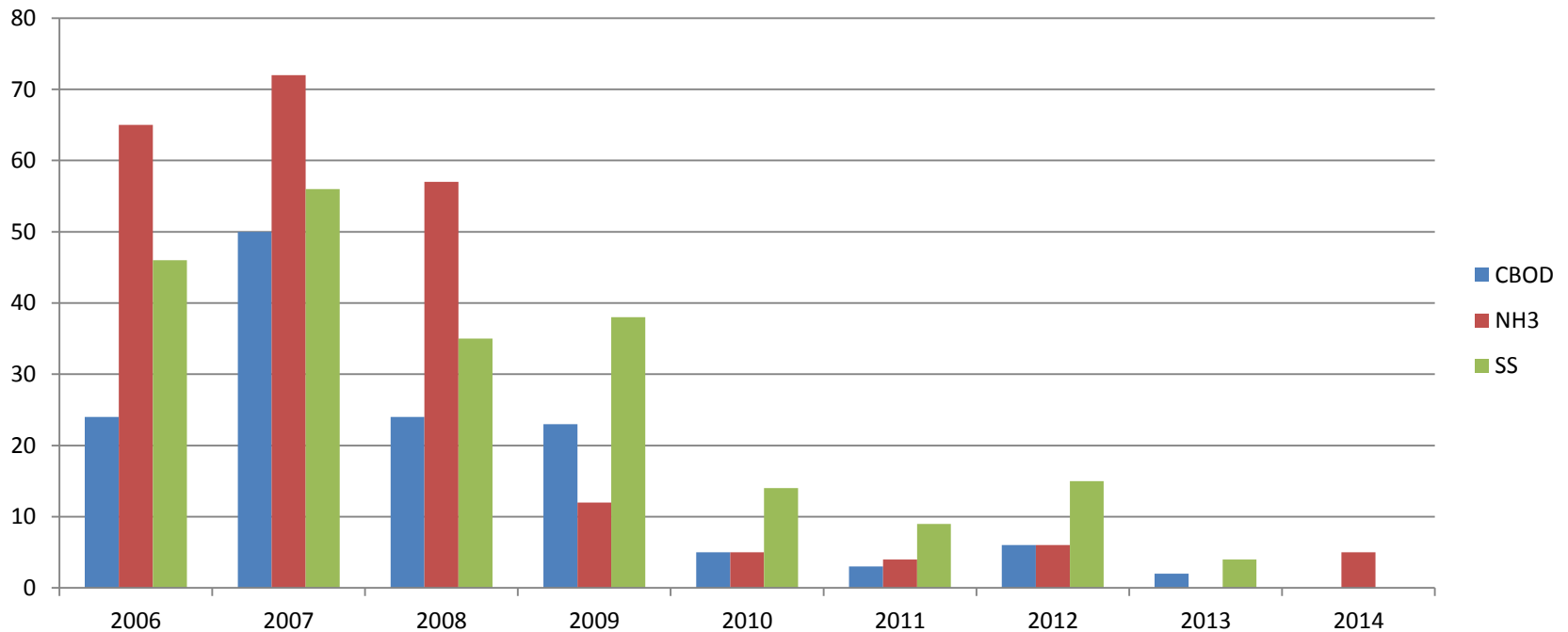
Return top portion with your payment

Service Address:

Rate Tariff: -000		
Account Number	Total Amount Due	Due Date
077-756-425-0-2	\$315.76	Sep 23, 2014
Meter Number	Cycle-Route	Bill Date
Unmetered	02-	Aug 29, 2014

What are the other benefits?

Annual NPDES Violations



Benefits to quasar

- Long Term Biosolids Contract
- Long Term Power Purchase
- Proof of P3 Concept
- Technology Showcase
- Innovative R&D Facility
- Proximity to OSU



Next Steps



- **Interconnection between WRRF and Water Treatment Plant to take advantage of excess power generation and utilize 2.2 MW backup generator**
- **Future CNG Fueling Station**
- **Conversion of Utility vehicle fleet and eventually all City vehicles**

Innovative R&D

- Front-end Solids and Material Handling
- Innovative Digester Technology
- Innovative Back-end technology
 - Nutrient Recovery
 - Material Reduction



Questions & Contact Information



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