

Rome Regional Anaerobic Digestion Facility – Small, Medium, or Large?

Dennis Clough, Energy Systems Group

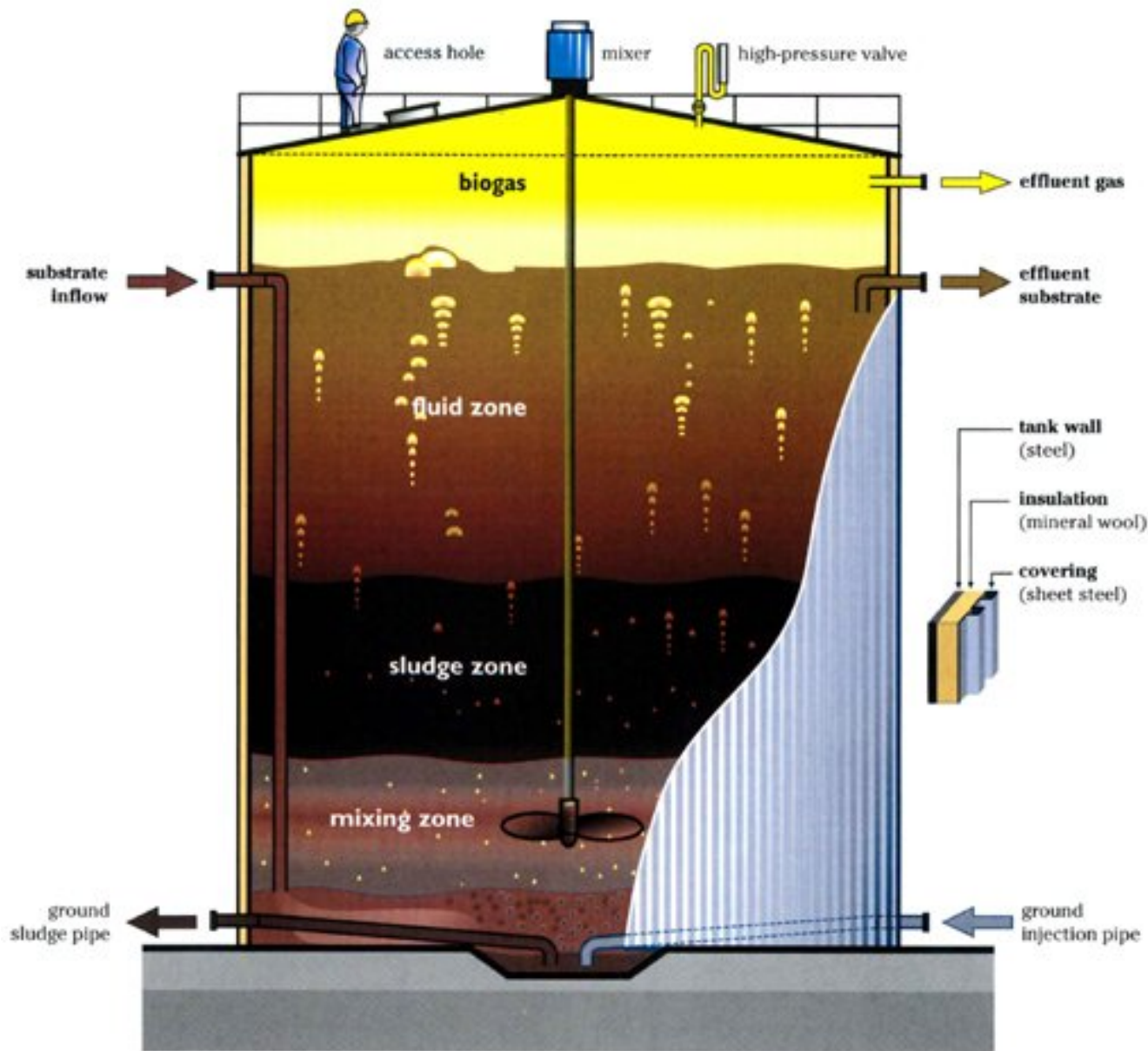
George Bevington, Gerhardt

Rich Straut, Barton & Loguidice

Rick Kenealy, City of Rome





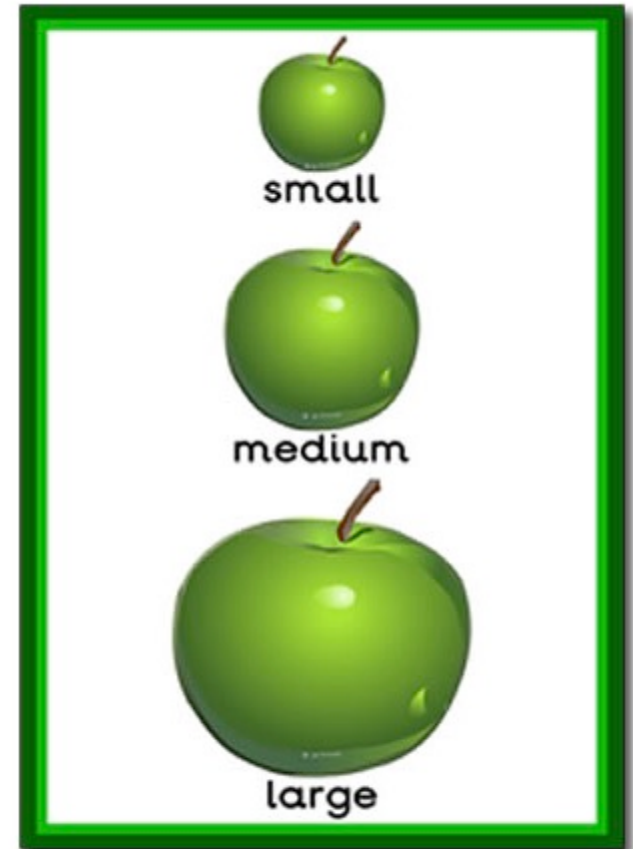


Feasibility Study Options

#1 Small: Required
Asset Renewal

#2 Medium: Organics
with Existing Digesters

#3 Large: Organics with
Additional New Digester



#1 Required Asset Renewal













#1 Required Asset Renewal

- Gravity Thickener No. 3 - PS/ WAS Thickening
- Primary Digester Tank Renovation
- Primary Digester Control Building Renovations
- Secondary Digester Renovation
- Sludge Dewatering Improvements
- Facility Building Improvements
- Electrical System Upgrade
- Investment = \$6.5M
- Annual Debt Service = \$480,000
- Operational Savings = \$0
- New Revenue = \$0
- NYSERDA Grant = \$0

#2 Organics with Existing Digesters



#2 Organics with Existing Digesters

- Addresses all required asset renewal
- **260 kW cogeneration system**
- **Gas conditioning system**
- **Gravity Thickener No. 1 – for organics receiving**
- Investment = \$10.0M
- Annual Debt Service = \$742,000
- Operational Savings = \$85,000
- NYSERDA Grant = \$0

***Ability to accept 20,000
gallons per day***

#3 Organics with Additional New Digester

#3 Organics with Additional New Digester

- Address all asset renewal needs
- Gravity Thickener No. 1 - Acid Whey Receiving
- Gravity Thickener No. 3 - PS/WAS Thickening
- HSW Receiving Facilities
- ***New 1.25 MG Primary Digester and Control Building***
- ***800 kW cogeneration System***
- Investment = \$19.9M
- Annual Debt Service = \$1,394,000
- Operational Savings = \$206,000

***Ability to accept 130,000
gallons per day***



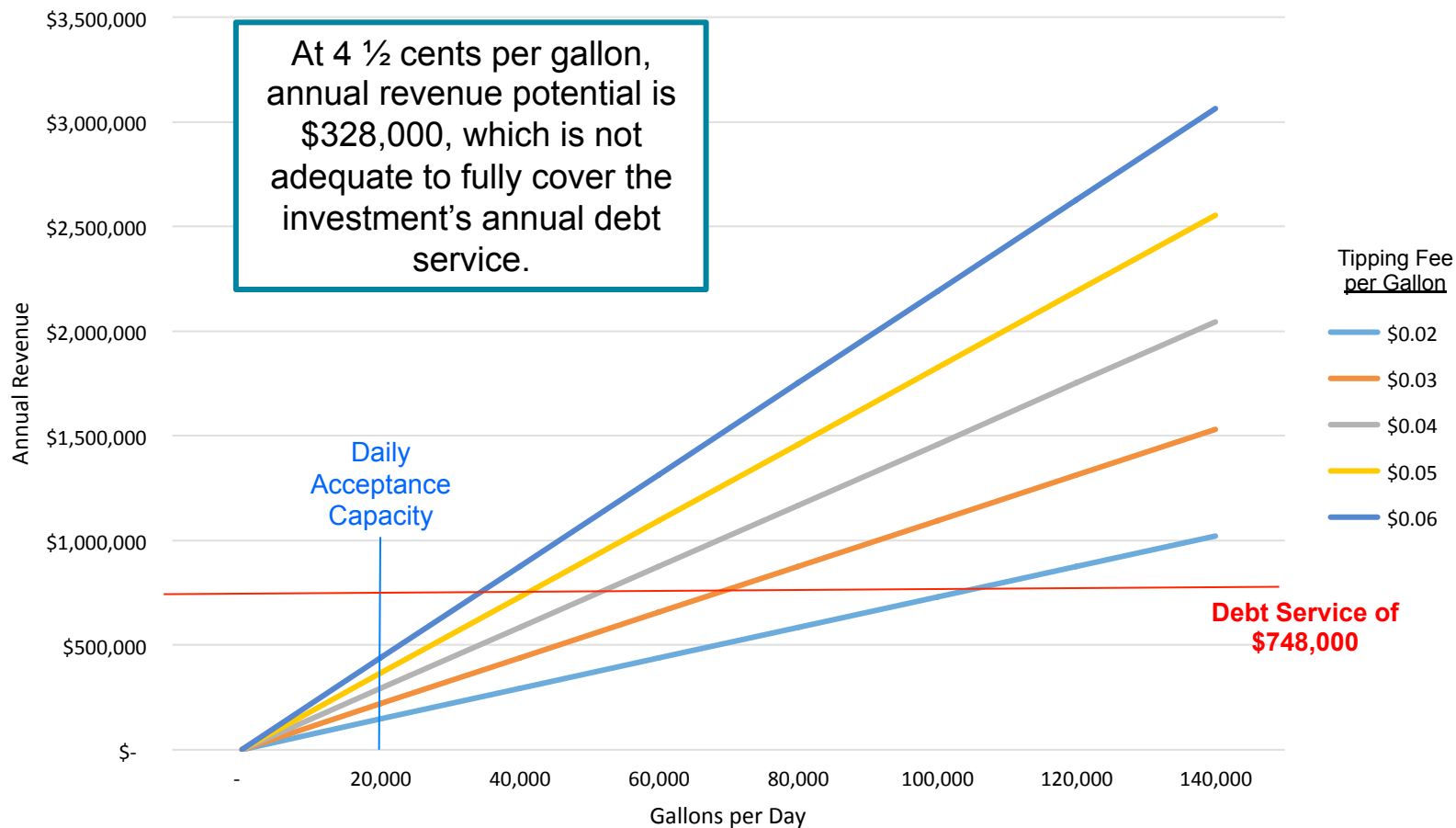
Target area for organics is a 60 mile radius from Rome treatment plant.



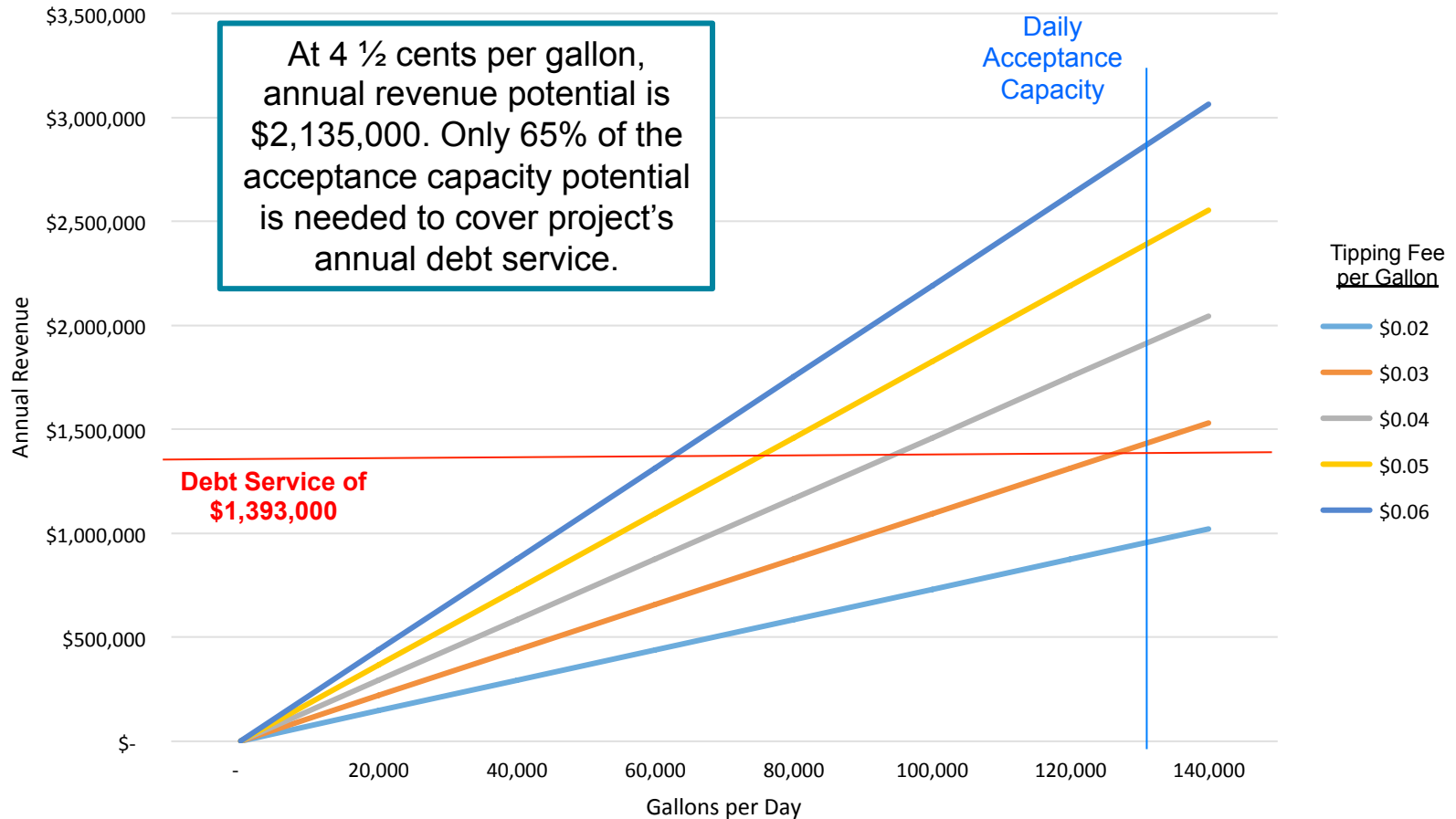
Organics Search Summary (expected tip fee per gallon)

- Dairy Waste (3-5 cents)
- Trap Grease (8 cents)
- DAF Waste (6-8 cents)
- Food Processing (3-5 cents)
- Liquid Sludge (5 ½ cents)
- Food Waste (TBD)
- De-icing Fluid (5 cents)

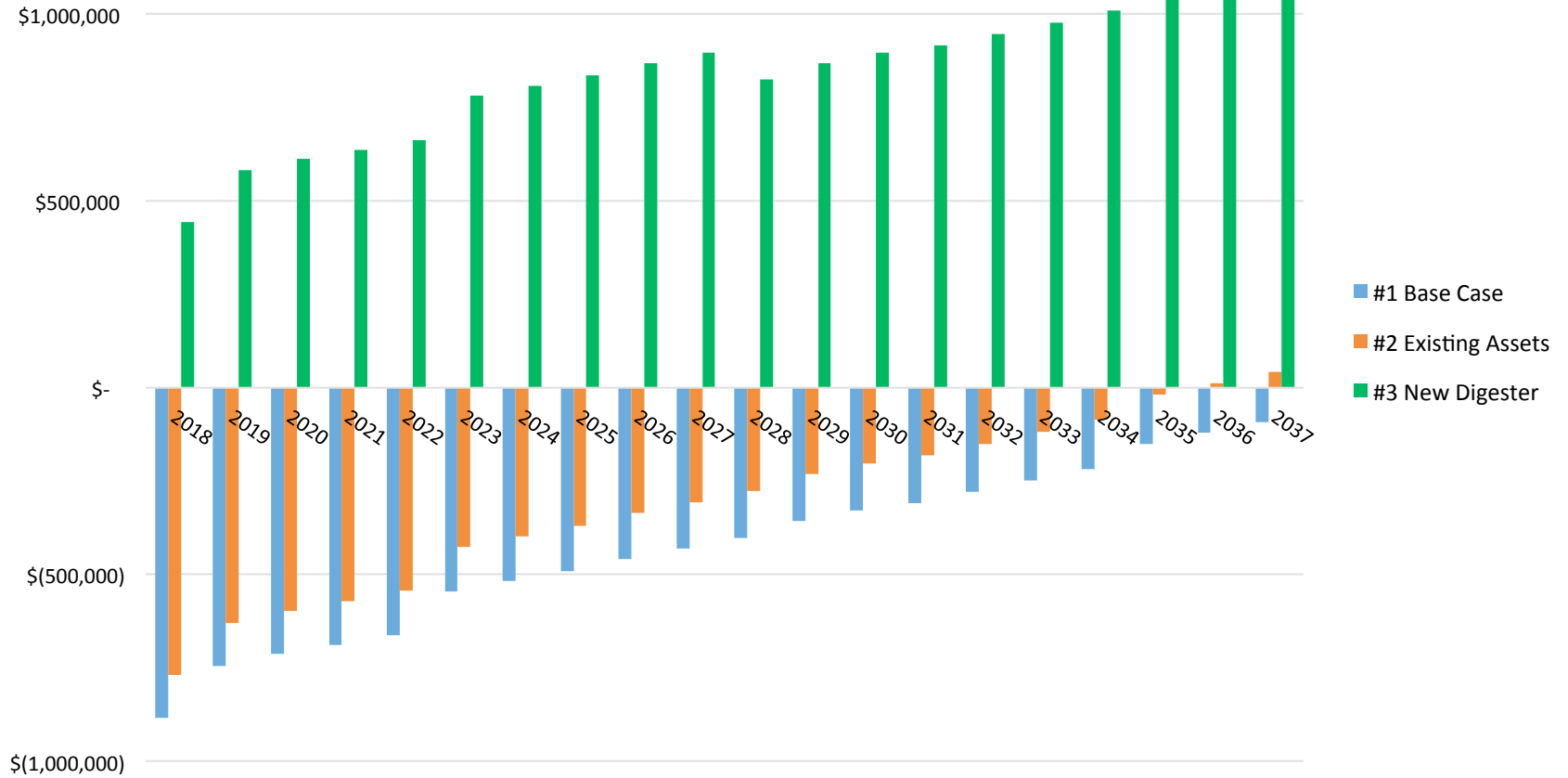
New Revenue from Accepting Organics (Using Existing Digesters Only)



New Revenue from Accepting Organics (Using Existing plus New Digester Capacity)



Annual Cashflow Comparison (Revenue - Expenses)



Summary

	Option #1 Asset Renewal	Option #2 Existing Digesters	Option #3 New Digester
Updated Equipment?	Yes	Yes	Yes
Accept Organics?	No	Yes	Yes
Generate Revenues?	No	Yes	Yes
Net Zero Facility?	No	No	Yes
Grant Eligible?	No	No	Yes
Positive Cashflow?	No	No	Yes

So: Small, Medium or Large?

- Based on analysis, appears that the Large project would be the best choice for Rome
- Tipping fee potential plus electricity generation significant
- Large project puts Rome on the “Utility of the Future” path, important goal for Chief Operator

So: Small, Medium or Large?

- New City of Rome Mayor and Administrative staff took office on January 1, 2016
- Water plant improvements, pump station rebuild, dewatering improvements, and other capital projects stressing Rome's capital needs
- Many projects, all need attention now, what is priority?
- Decision on wastewater project under evaluation



For More Information

Dennis Clough, Project Director

Energy Systems Group

443.909.9642

dclough@energysystemsgroup.com

Alternative Project Delivery via an Energy Performance Contract

- A contractual agreement with an energy service company (ESCO) for the scope development, design, construction, and performance measurement of infrastructure improvements that will result in operational cost savings.
- Operational savings cover some or all project costs.
- ESCO has financial performance guarantee obligation for the life of the contract.
- City of Rome, New York project delivery via Performance Contract

The PC Process

