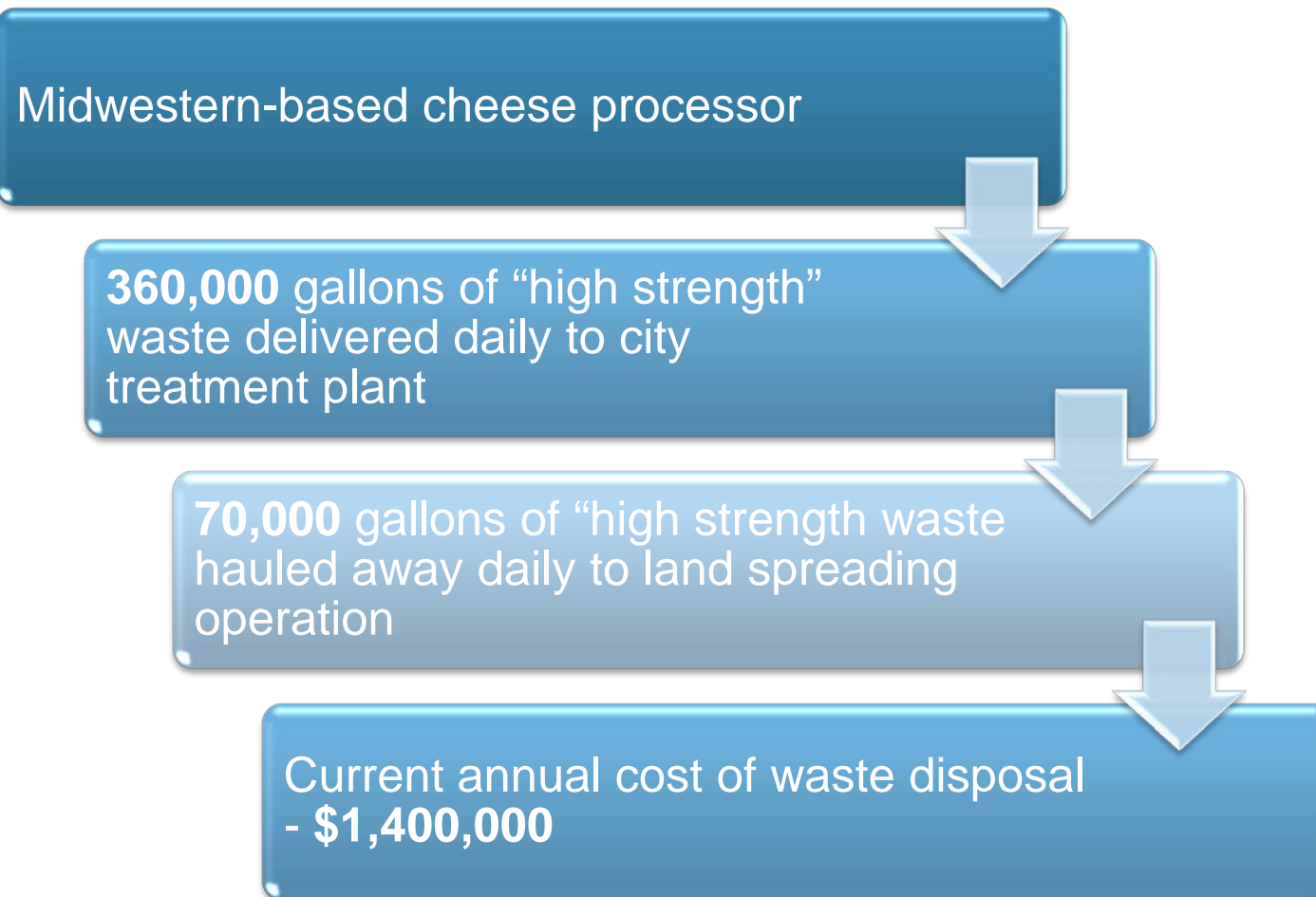


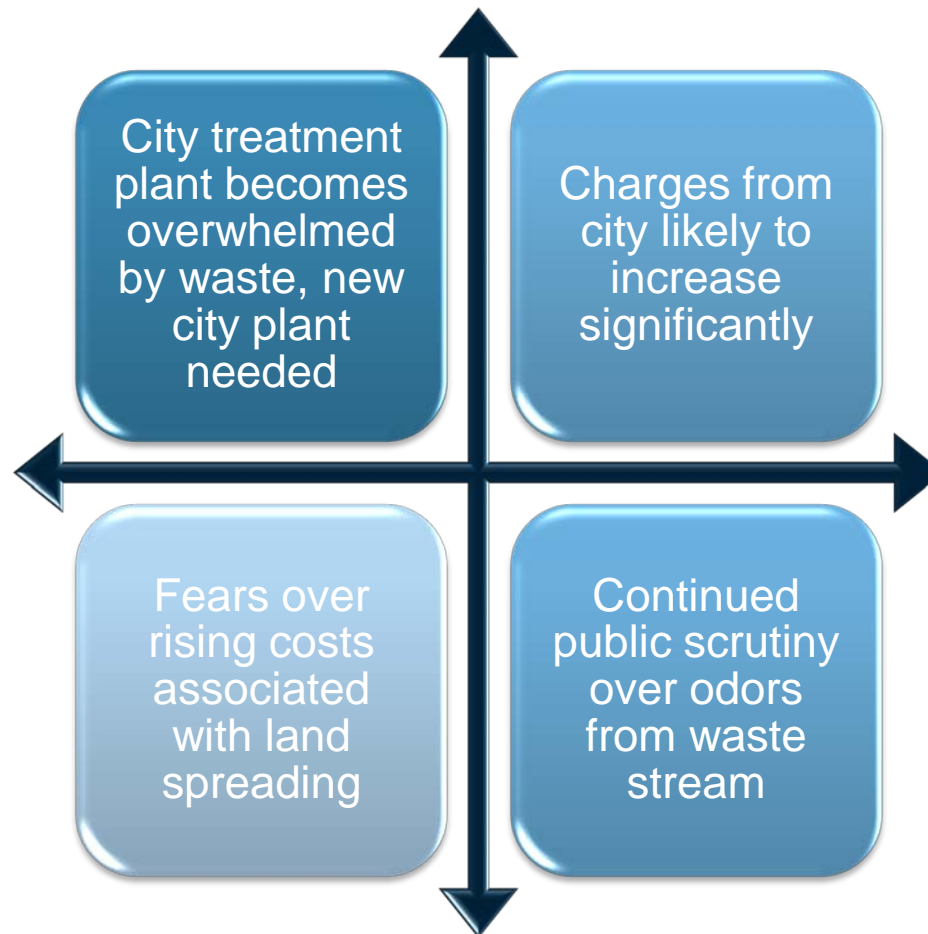
## Feasibility of an anaerobic digestion pre-treatment facility for a food processor

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Let's talk about an opportunity.





## Anaerobic digestion pre-treatment facility could:



## Understanding the variables

- > Collaborated with processor's industrial engineering group in order to evaluate waste stream components and values:
  - Flow rates
  - BOD – Biological Oxygen Demand
  - COD – Chemical Oxygen Demand
  - TSS – Total Suspended Solids
  - Phosphorous
  - Conversion rates:
    - » COD to Methane
    - » Methane to kilowatt-hours

### **Feedstock Procurement Contracts**

- > Evaluated possibility for procuring additional feedstock
  - Other food processors in the area
  - Food waste hauling companies

### **Power Purchase Agreement**

- > Identified three potential offtakers
- > Established queue position for highest power purchase price
  - Special tariff rate offered by utility as a result of obligations under the state's Renewable Portfolio Standard (\$.092/kwh)

### **Grid Interconnection**

- > Verified availability of adequate capacity on local grid
- > Worked with utility engineers to estimate grid system upgrade costs

### **Identified all possible applicable Tax Credits, Grants, Low/no interest loan programs**

#### > Federal level

- 1603 Grant in Lieu of ITC
- USDA Rural Energy for America Program Grant
- USDA Rural Energy for America Loan Guarantee
- USDA B & I Loan Guarantee Program
- New Markets Tax Credit
- Biomass Conversion Assistance Program (BCAP)

#### > State level

- State Energy Program (SEP-ARRA)
- State Utility Grant Program
- State Food Processing, Plant, and Food Warehouse Investment Credit

# Capital budget, incentives, and equity needs



Candor. Insight. Results.

<b>Total estimated project cost</b>		<b>\$9,280,000</b>
<b>Applicable incentives – grants, tax credits, low/no interest loans</b>		
U.S. Treasury Grant	\$2,022,935	
New Markets Tax Credit	\$1,570,000	
State Energy Program (SEP-ARRA)	\$3,500,000	
State Utility Grant Program	\$250,000	
<b>Total incentives</b>		<b>\$7,342,935</b>
<b>Total equity needed</b>		<b>\$1,937,065</b>

- > Created comprehensive and flexible financial model to allow for the evaluation of various scenarios
  - Ownership structures
  - Facility inputs
  - Optimal capital structure
  - Maximize returns

Annual savings on waste stream disposal	\$400,000
Annual income from pre-treatment facility	\$620,000
<b>Total annual benefit to bottom line</b>	<b>\$1,020,000</b>

- > Two-year payback on capital investment
- > Seven-year IRR of 20.3%
- > Fifteen-year IRR of 30.9%
- > 7,300 metric tons of Green House Gas emissions avoided annually
- > 70,000 gallons of pollutants diverted daily from watershed

**Waste stream disposal costs locked in for twenty years**



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John specializes in management of projects from infancy to completed construction. From the early stages of project feasibility and due diligence, through the entitlement, project finance, and construction phase, he uses his analytical and negotiation skills to bring efficiency and maximum value to projects.

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