



HUBBELL, ROTH & CLARK, INC

Consulting Engineers

## *Septage Receiving Made Easy:*

### *Ten Things we have Learned*

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## *Allegan Plant History*

- Original plant built in 1938 along Kalamazoo River
- Major expansion in 1970's to increase capacity to 4.0 mgd and provide secondary treatment



## *Plant History (cont.)*

- Addition of new tanks in the 1990's to accommodate loading from Perrigo Corporation
- Major Renovation project in 2008 to replace most process equipment and double organic treatment capacity. Added septage receiving as part of this project.
- Currently doing renovations on Treatment Train No. 3 built in the 1990's
- Planned construction project in 2013 to add a second Septage receiving station and second UV disinfection channel.

## *Why Receive Septage?*

- Revenue Source for Plant to maintain operations and pay down debt
- Additional points on SRF program
- Provides Service to the surrounding Communities
- Good for the Environment
  - Treated/Screened/Regulated



# *Up Front Planning & Marketing to develop Business Plan*

- Do preliminary investigation to determine Market Size
  - Solicit letters from local septage haulers to request service
- Educate City Council/Leadership about benefits and risks
- Secure Funding for necessary improvements
- Talks at County Health Department septage meetings to inform local septage haulers
- Mailings to local septage haulers/City Website
- Coordinate with MDEQ/Apply for Septage Receiving Authorization
  - Provides for 25 mile radius zone for required hauling/disposal

# Radius Map



# Septage Treatment Overview

- Allegan's receiving station has automatic filling system with card reader, automated valve, rock trap, flow meter and septage fine screen (0.25 inch) with 400 gpm capacity.



- A prefabricated building was built next to an existing, unused sludge storage tank which was rehabed/retrofitted for septage/WAS storage/mixing

## *Septage Treatment Overview (cont.)*

- Septage drains by gravity from screen to 200,000 gallon aerated mix tank



- WAS is directed to aerated mix tank and mixes with septage for approx. 3 days detention time



## *Septage Treatment Overview (cont.)*



- Two PD pumps pump sludge from this tank to one of three on site storage tanks for aerobic digestion, settling/thickening, decant before final sludge removal for land application of biosolids
- City follows EPA 40 CFR 503 rules for land application

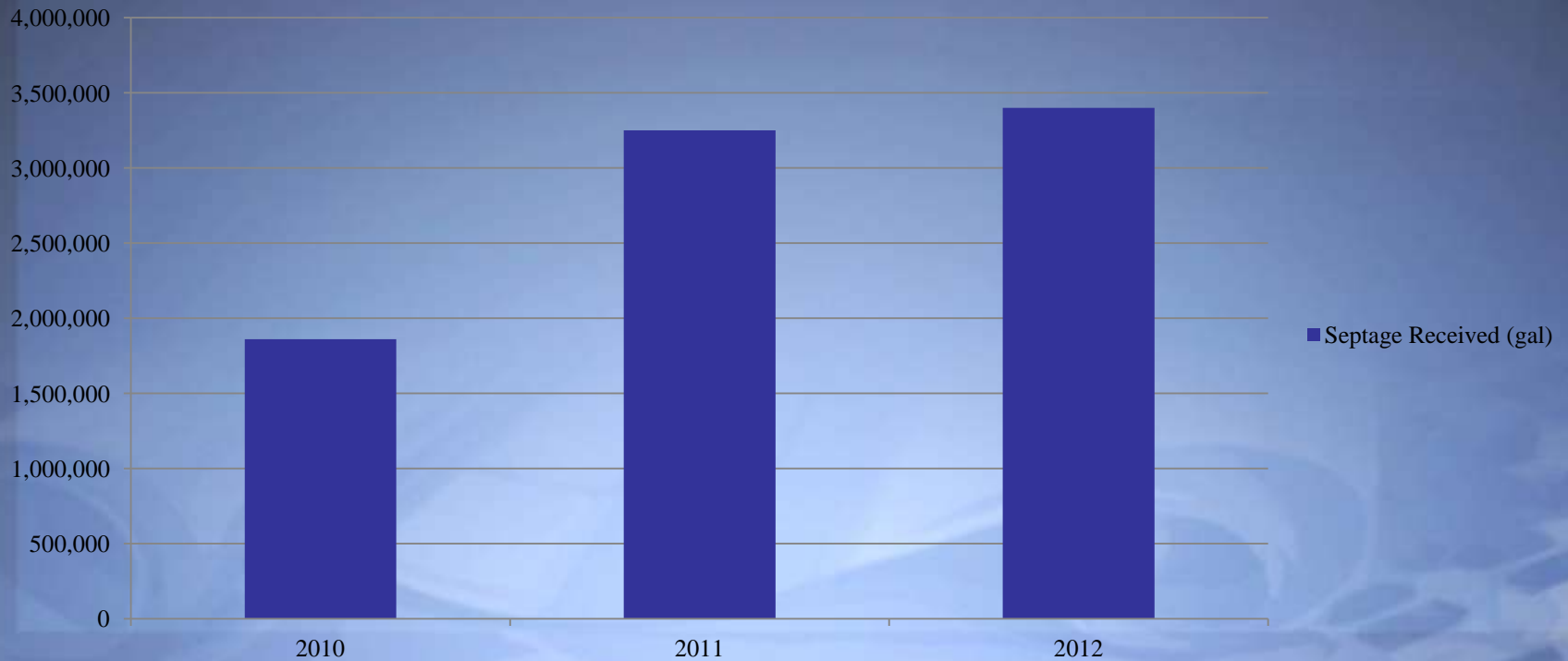
## *Wastes Received*

- Allegan receives:
  - Residential septage waste
  - Commercial septage waste
  - Food establishment waste if mixed with domestic septage
  - Mobile home park raw waste
  - Porta-Potty waste
  - Industrial waste (preapproved only)



# *Total Septage Received*

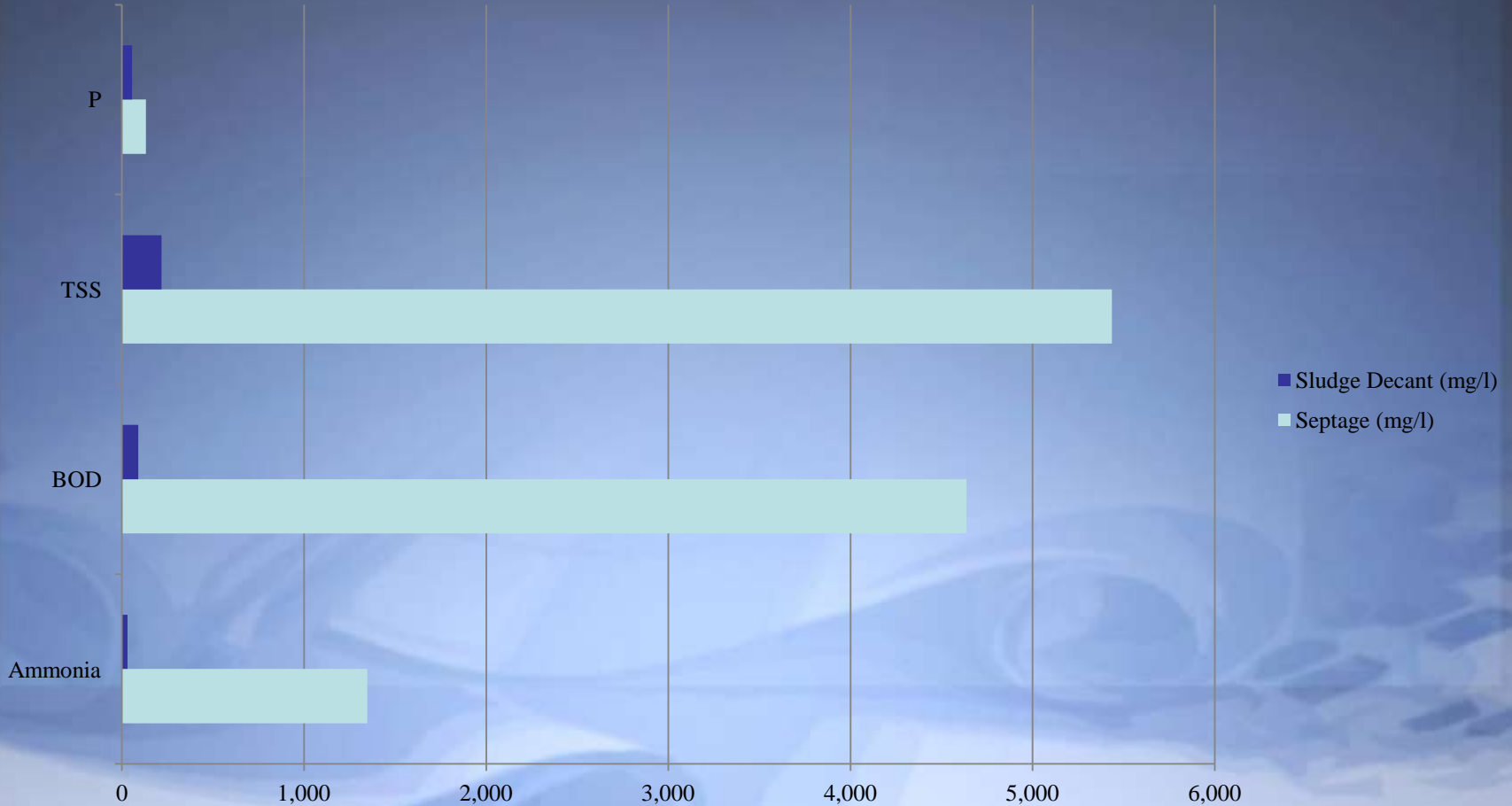
## **Septage Received (gal)**



# *Revenue Received*

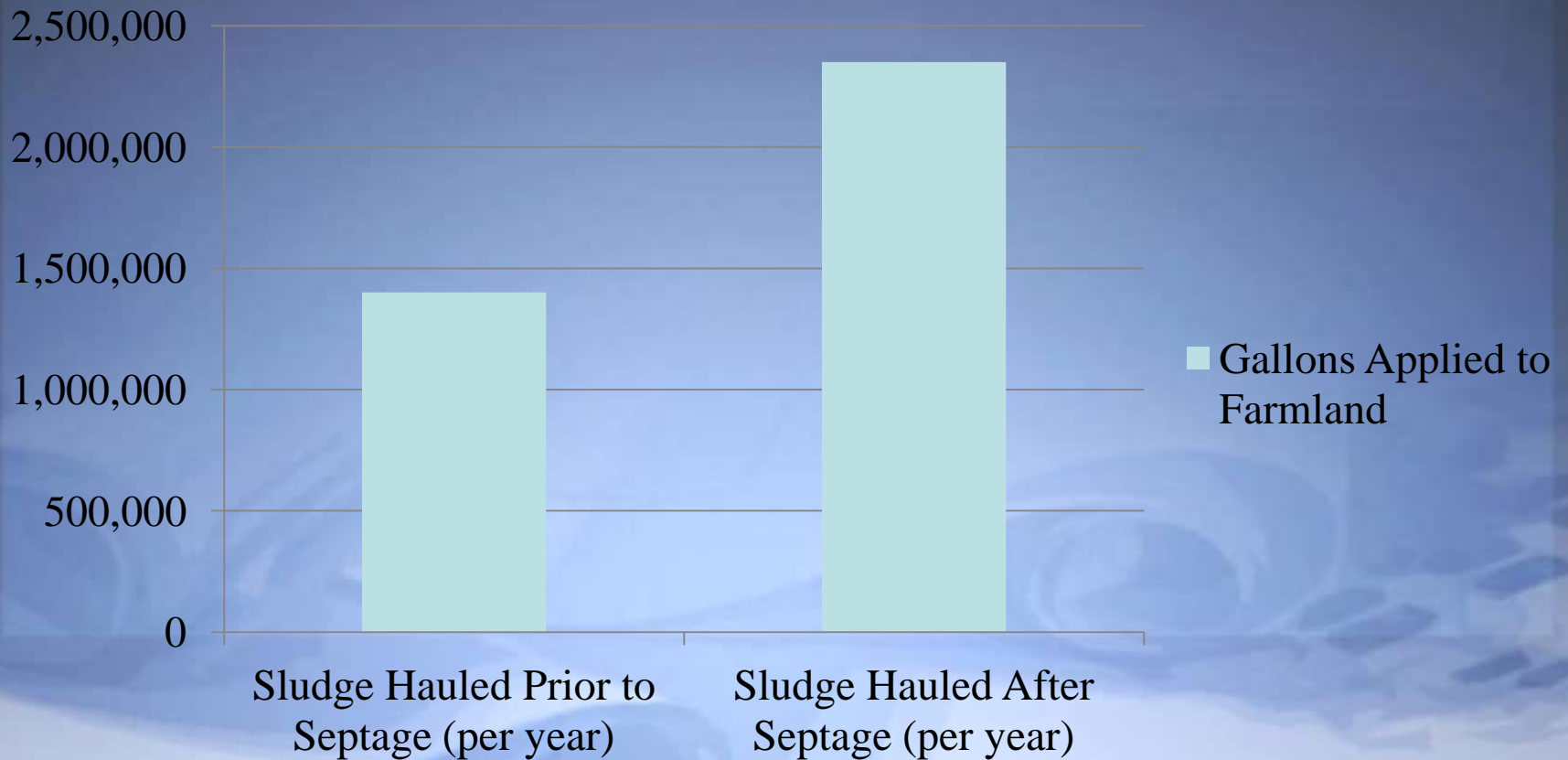


# *Septage versus Sludge Tank Decant*



# *Total Sludge Hauled from Plant*

## **Gallons Applied to Farmland**



# *Provide Good Customer Service to Maintain/Increase Market Share*

- Interact with Septage Haulers
- Ask them what would make their experience better
- Keep a tidy facility
  - Get the Septage Haulers to “Buy-in” to keeping it clean

- Provide “Perks”

- Annual Open House
- Door Prizes
- Luncheons
- Provide rubber gloves
- Recognition to Largest Haulers – Jackets, hats, calendars, etc.



# *Invoicing*

- Load tracking should be automated
- Billing once per month or incentive to prepay
- Allow for flexibility in payment
- Keep up with delinquent accounts
- Bottom line – operate as a business





# *Unloading Operations*

- Easy access and turn around/pull through
- 24 hour/7 day access, automatic gates
- Easy unloading
- Security cameras in place



## *Unloading Operations (cont)*

- Washdown area with hoses/fittings provided for different sizes
- Forced air compressor unloading system
- Equipment reliability
  - Schedule maintenance during off times



## *Unloading videos*



# *Unloading*



# *Sampling*



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# *Unloading Video with Air Supply*



# *Air Supply Unloading System*



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## *Inside Station while Unloading*





# *Competitive Rates*

- Rates should cover:
  - Capital costs
    - Debt repayment for septage receiving facility
    - Debt repayment for any oversizing of other processes to accommodate septage
  - Operations costs
    - Electricity
    - Dumpster for screenings disposal
    - Water bills
    - Manpower costs
    - Equipment maintenance/replacement
    - Analytical testing
    - Sludge disposal – land application, etc.

## *Competitive Rates (cont.)*

- Assume a conservative amount of septage in determining fixed cost repayment – if additional septage received, this provides cushion
- Compare your rates with your competitors!
  - If out-of-line, why??
  - Pay-per-load or per-gallon
- Distance versus convenience versus rates



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# Questions



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