

Lehigh County Authority

Operations update –
LCA pretreatment facility



ch2m.SM

Agenda

- Welcome and introduction
- Safety
- CH2M background and profile
- Plant performance
- Services supporting LCA
- Continuing our partnership



- ▶ Pennsylvania Water Environment Association
2014 Beneficial Use of Biosolids Award >5.0 MGD
- ▶ Eastern Pennsylvania Operators Association
2014 Plant Safety Award Class II – 9 or More Employees

Safety moment – Zika Virus facts and prevention

- Insect-borne virus spreading through Americas since initial detection in Brazil—2015
- Mild to zero symptoms; no vaccine
- One carrier mosquito species has range extending into Pennsylvania
- Virus can cause severe fetal brain defects; pregnant women should take precautions if traveling to Zika-prone locations
- Use effective repellent, wear full-coverage clothing, minimize standing water where insects breed
- For more information - <http://www.cdc.gov/zika/index.html>



About **CH2M** OM Services

- **+ 2,600** employees
- **240** projects
 - **59** Industrial OM
 - **181** Municipal Water/Wastewater OM
- Serving **4 million** people each day
- **1.6 billion** gallons treated per day
- **38 million** square feet managed



WATER/WASTEWATER



INDUSTRIAL O&M

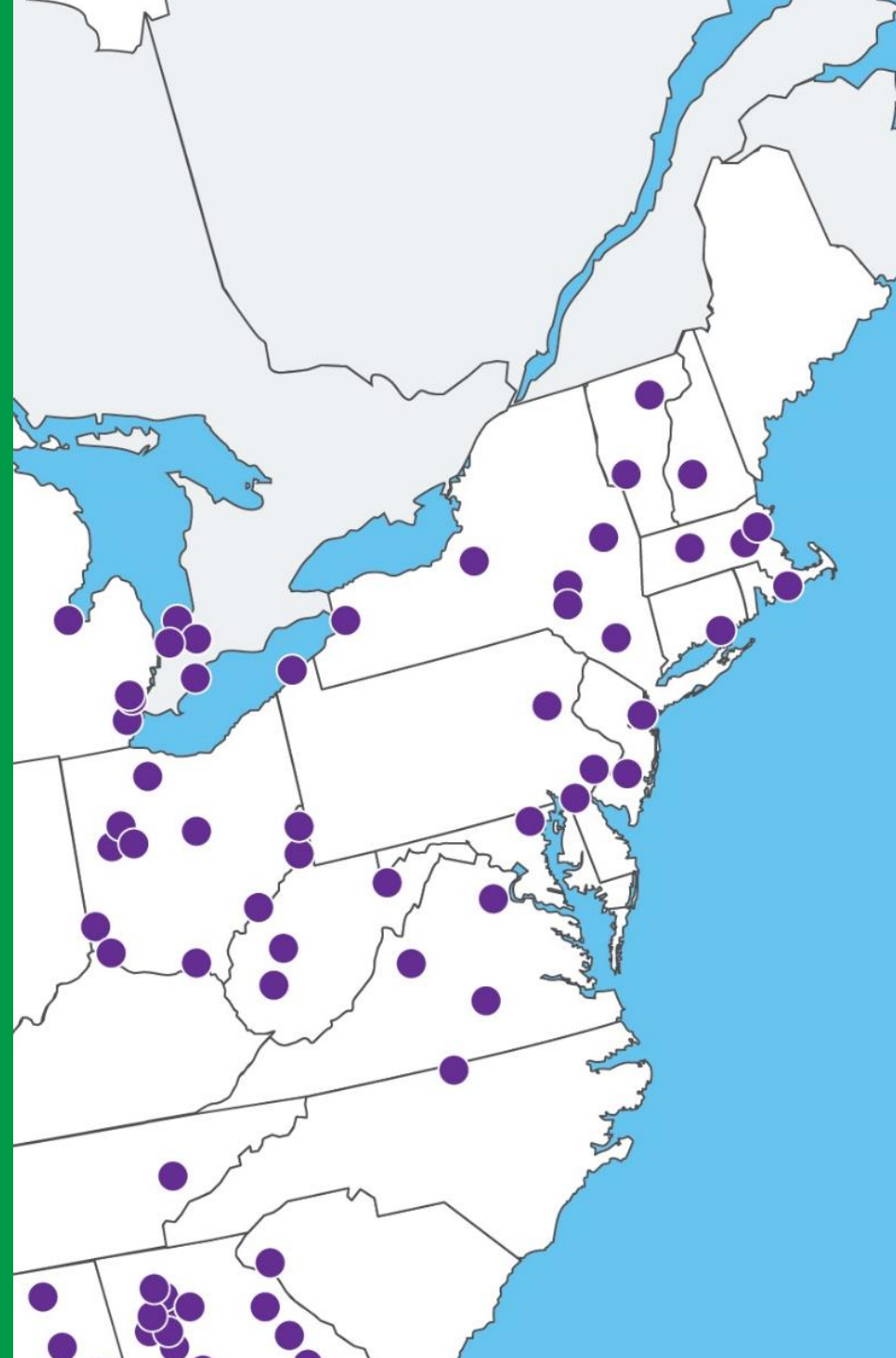


MUNICIPAL SERVICES



OM CONSULTING

**Nationwide
scale with regional
efficiencies –
OM resources
available to LCA
from around the
Northeast**



About CH2M – skills and resources for LCA's most difficult challenges

- Broad expertise – water, industrial, environment, energy/nuclear, transportation
- Business philosophy built on safety, ethics, sustainability
- Ethisphere Institute *World's Most Ethical Companies*
8 consecutive years (2009-2016)
- Top industry rankings from *Engineering News Record*
- 22,000 staff

ENR has ranked CH2M as a top **Program Management** and top **Environmental firm** for over a decade.



Top Design Firms:

- Sewer/Wastewater
- “Pure” Designers
- Sewerage & Solid Waste
- Wastewater Treatment Plants
- Sanitary & Storm Sewers
- Semiconductor Plants

Top Environmental Firms:

- Consulting/Studies
- Engineering/Design
- CM/PM
- Federal Clients



LCA pretreatment plant particulars

- **Commissioned 1990**
- **5.75 million-gallon-per-day** treatment capacity
- **Treats sanitary and industrial flow**
 - Boston Beer, Coca-Cola, Kraft, Nestle Waters, Niagara, SunOpta, Bimbo Bakery, Ocean Spray
 - Hauled waste
 - Residential septic and holding
 - Grease
 - Other industrial
- **CH2M your OM partner since 1995** – Ops and staffing, process control, data management, compliance, hauler program, sludge management, community outreach
- Pretreated effluent discharged to Kline's Island WWTP in Allentown

Your OM Partner
since 1995

Plant and process overview

Headworks ●

Hauled-waste receiving ●

Oxygen Plant/
Aerators ●

Clarifiers ●

Digesters ●

Dewatering ●

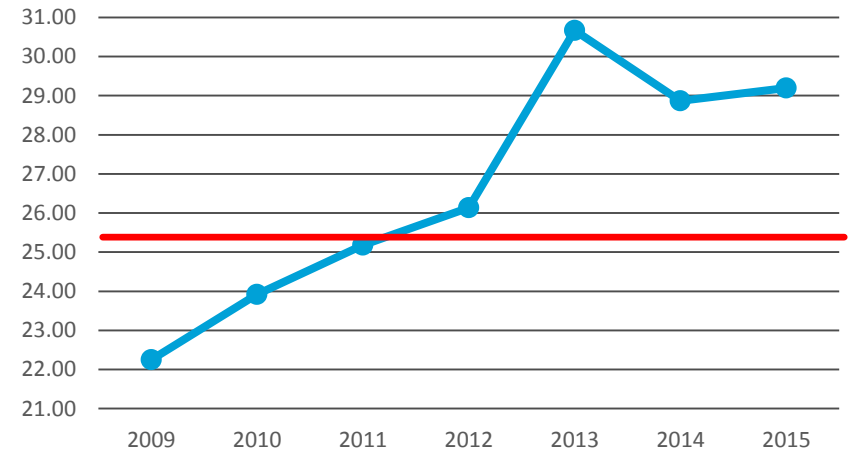


Plant performance keeps pace with rising flow and demand; TSS removal outperforms design

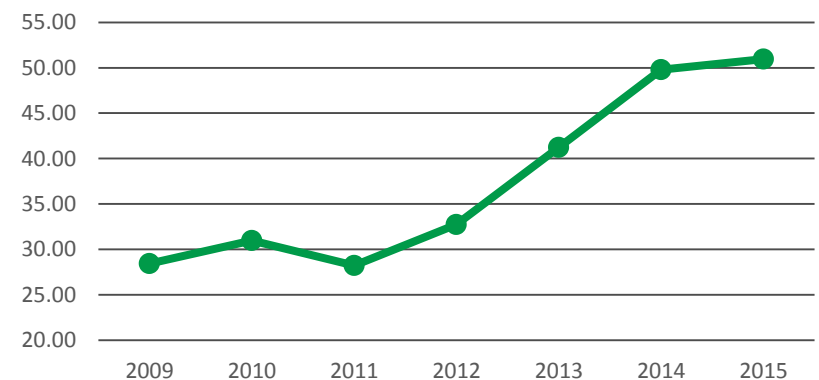
Combined Influent Flow, MGD



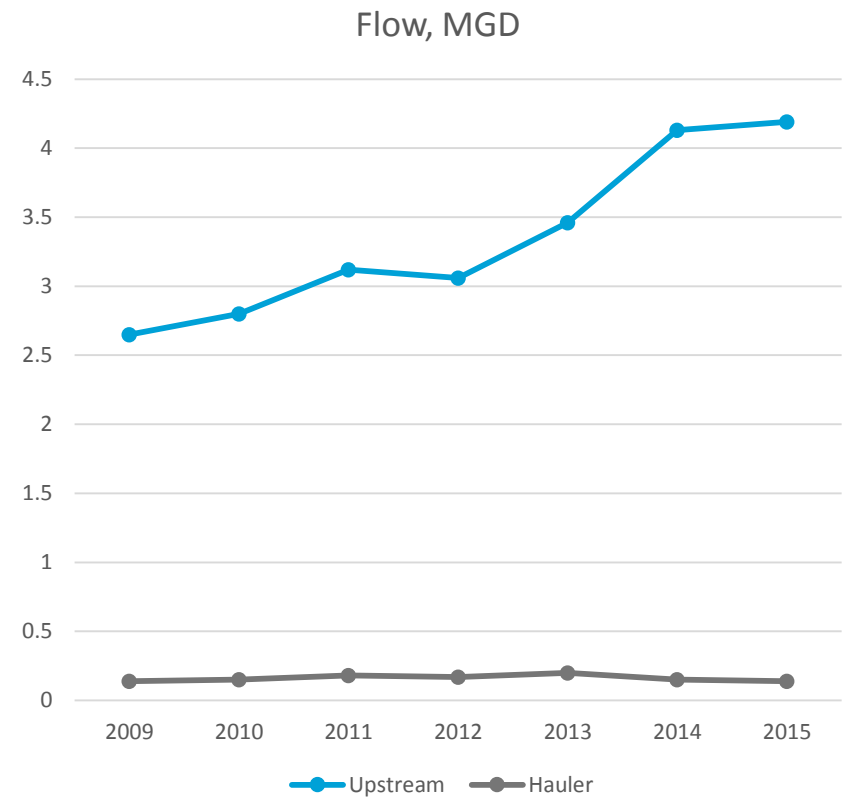
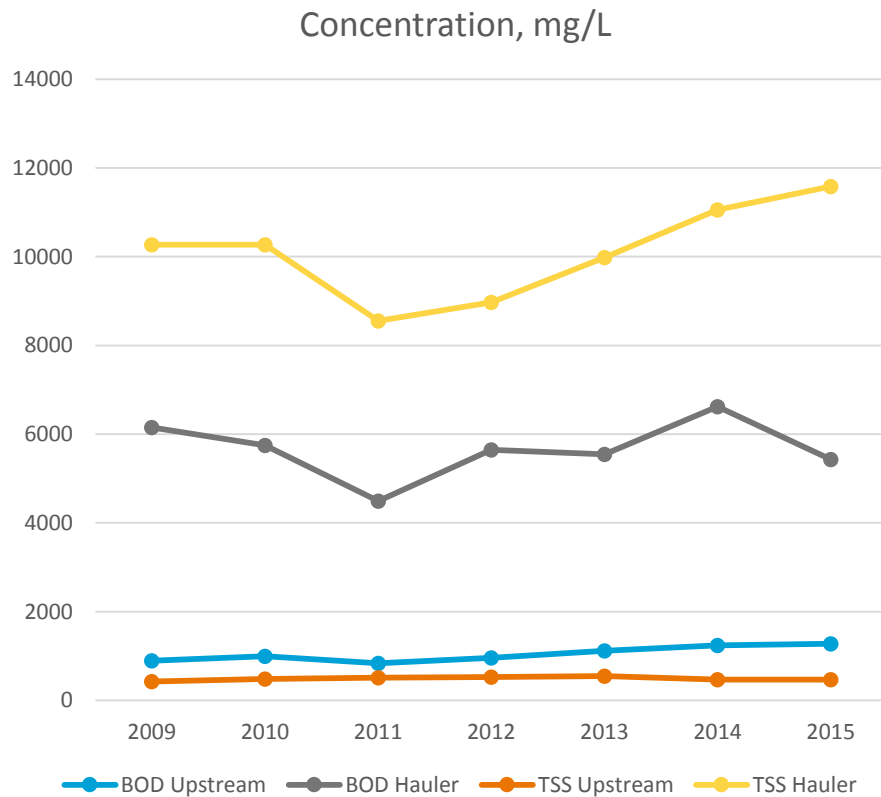
Combined Influent TSS, lbs (000)



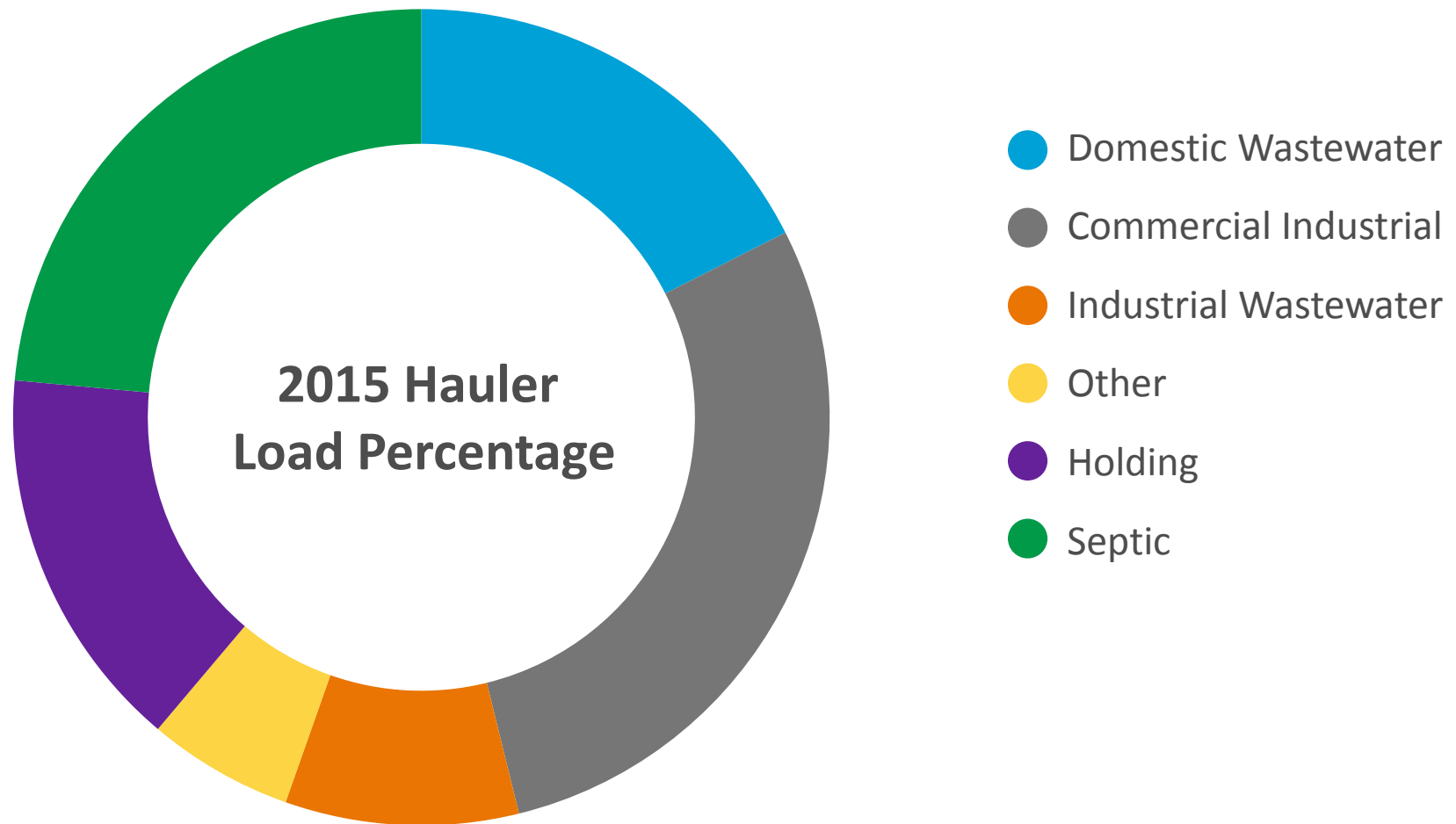
Combined Influent BOD, lbs (000)



Complex waste mix requires special OM expertise



Diversity of hauler program underscores need to maintain and strengthen customer relations



Partnership achievements over 20 years

- Formed productive business ties with waste haulers and key industrial customers—Coca Cola, Boston Beer Co., Kraft Foods, Nestle Waters, Bimbo, SunOpta, Ocean Spray
- Multiple PWEA awards for safety, maintenance, operations
 - Beneficial biosolids reuse, plant safety, collection system safety, industrial pretreatment program, appreciation award, employee of the year (Diana Heimbach)
- Consistent compliance and uninterrupted operations promote productivity and minimize downtime
- Ongoing – attract industrial customers and haulers via efficiency, cost control, process engineering, and marketing of waste-hauler program
- Added value to LCA transition for the City of Allentown assets



Sustaining LCA's vision and mission

LCA vision/mission elements	CH2M
Industry leadership, world-class operations	OM plus engineering/technical supports LCA world-class service pledge Capital improvements for efficiency and ROI
Exceptional value, high-quality services	CH2M knowledge of plant needs and challenges promotes consistency and compliance, keeps industries operating
Fiscal responsibility	Generated \$1.95 million in 2015 revenue from hauled waste – revenue helps fund LCA operations, key equipment
Rewarding work environment for staff	Staff and leadership training Career advancement opportunity
Environmental stewardship	Improved TSS performance – Perfect compliance in 2016 Consistent compliance throughout partnership
Partnership with Lehigh community and industry; responding to community needs	Optimized use of assets via proactive condition-assessment program, collaboration with waste haulers, community outreach and public education

Community outreach and interaction demonstrates LCA value to public health and the environment

- **Hydromania** – Four CH2M professionals spent a day at a local college campus helping with water-related science demonstrations for school children.
- **Plant tours** for Kutztown and Reading Community colleges' students
- Annual Boy Scouts fundraising
- **Operations Assistance Committee update meetings** – held quarterly to keep communications open between industries and the pretreatment plant
- **Hauler Program** – Biannual hauler appreciation events promote familiarity with Lehigh staff



Growing our partnership for future success

- Contract executed after 2009 competitive renewal has potential for two 5-year extensions beyond 2018
- CH2M investment in Orege sludge conditioning and air-deck mixer technologies will reach full maturity during extended contract
- Positive discussions with LCA staff about extended service partnership
- Longer-term partnership supports additional CH2M capital investment – reduced per-gallon treatment cost
- Cost stability for LCA over time



Contract Key Elements

$$\text{SF} = \text{FC} + \text{VC} + \text{RC} + \text{EI}$$

$$\text{Service Fee} = \text{Fixed component} + \text{Variable Component} + \text{Reimbursable Cost Charge} + \text{Extraordinary Items}$$

- FC- base plus electricity
- VC- flows and loads above the base
- RC- reimbursable maintenance outside of base
- EI- out of scope and acts of God

Summary

- Proven, tested partner
- Investment in the future
- Additional capabilities, resources and expertise

Questions?



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