Lehigh County Authority

Operations update –
LCA pretreatment facility
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
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
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.

*ENR Ranks #1*

*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

(W in 2016) ENR publications through August 8, 2016

“World’s Most Ethical Companies” and “Ethisphere” names and marks are registered trademarks of Ethisphere LLC.
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
Complex waste mix requires special OM expertise

**Concentration, mg/L**

- BOD Upstream
- BOD Hauler
- TSS Upstream
- TSS Hauler

**Flow, MGD**

- Upstream
- Hauler
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

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

\[ SF = FC + VC + RC + EI \]

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

- 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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