

City of Columbus Update

5 Cities Conference

August 17, 2017

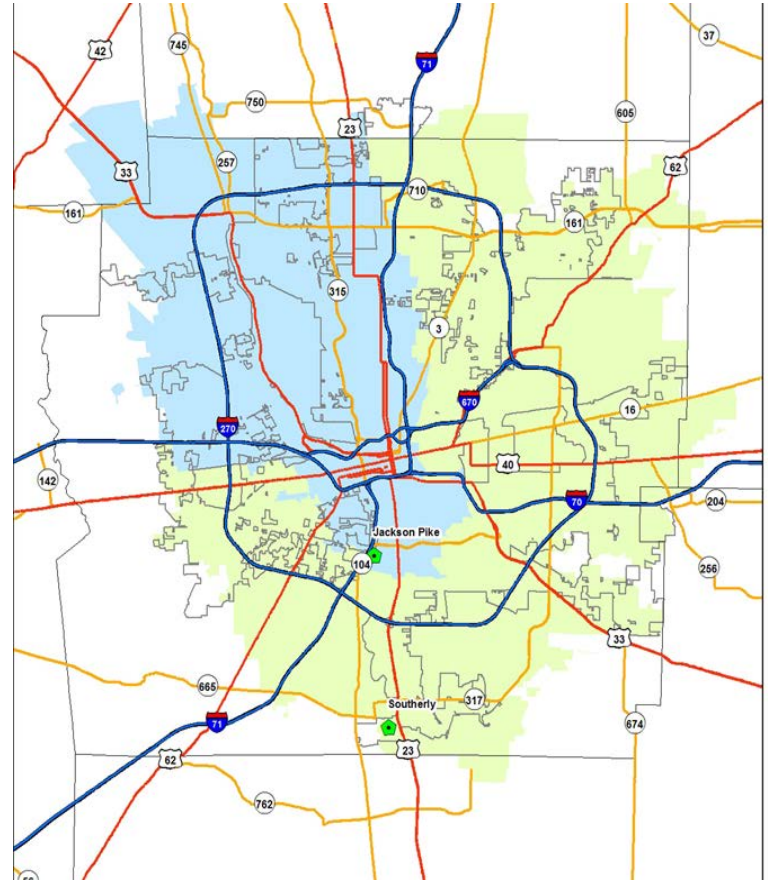


THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF
PUBLIC UTILITIES

Columbus Division of Sewerage & Drainage

- 5 County Treatment Area
- Two large treatment plants:
 - Jackson Pike (150 mgd peak)
 - 46% of Total Annual Treated Flow
 - Southerly (330 mgd peak)
 - 54% of Total Annual Treated Flow
- Composting facility:
 - >41,000 wet tons processed in 2016
- 4600 miles of sanitary, combined and storm pipe



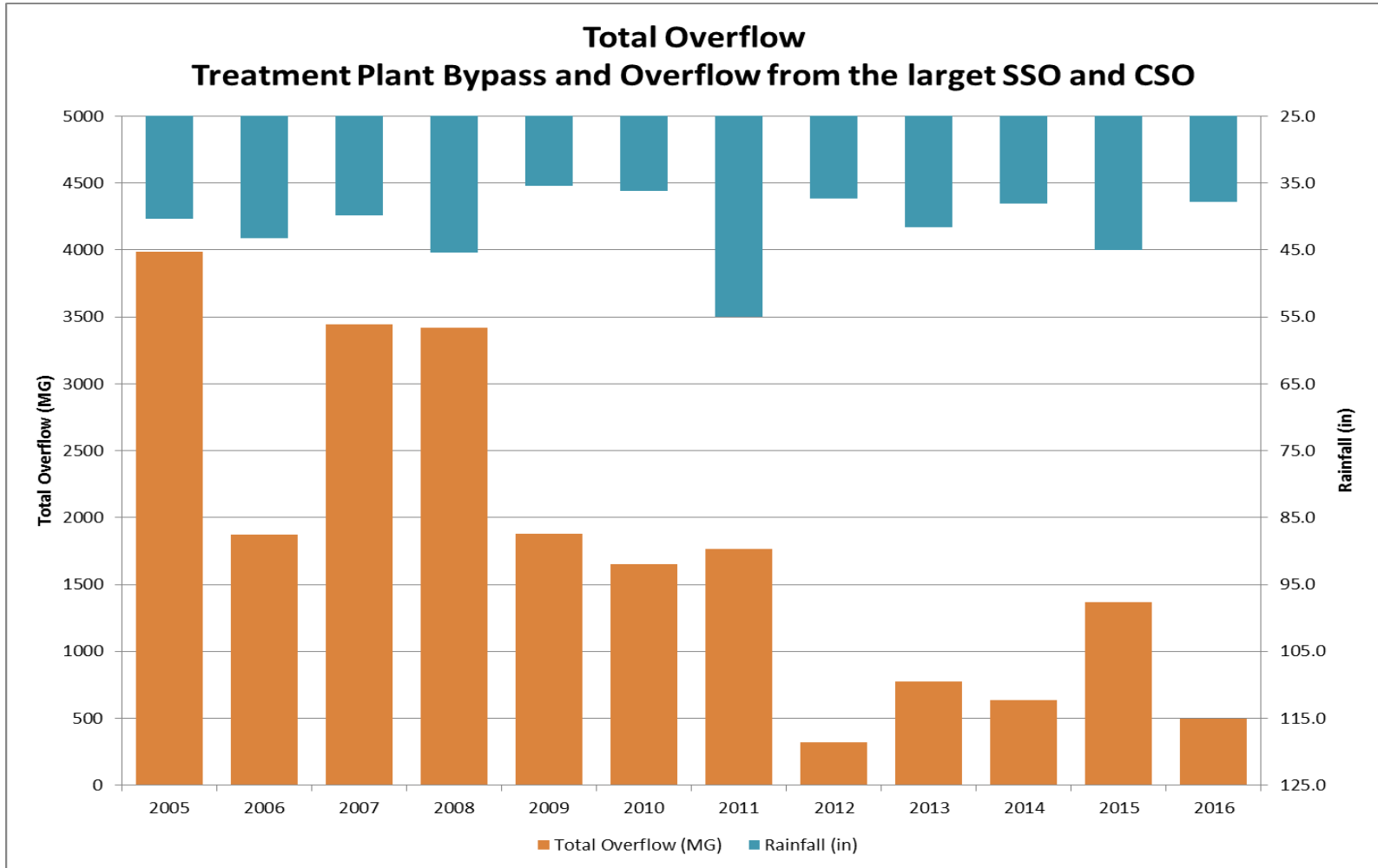
Consent Order History

- 2002 Sanitary Sewer Overflow (SSO) Consent Order
System Evaluation and Capacity Assurance Plan (SECAP)
- 2004 Combined Sewer Overflow (CSO) Consent Order
CSO Long Term Control Plan (LTCP)
- SECAP and LTCP were combined to form the
2005 Wet Weather Management Plan (WWMP)
Submitted July 1, 2005

WWMP Capital Program

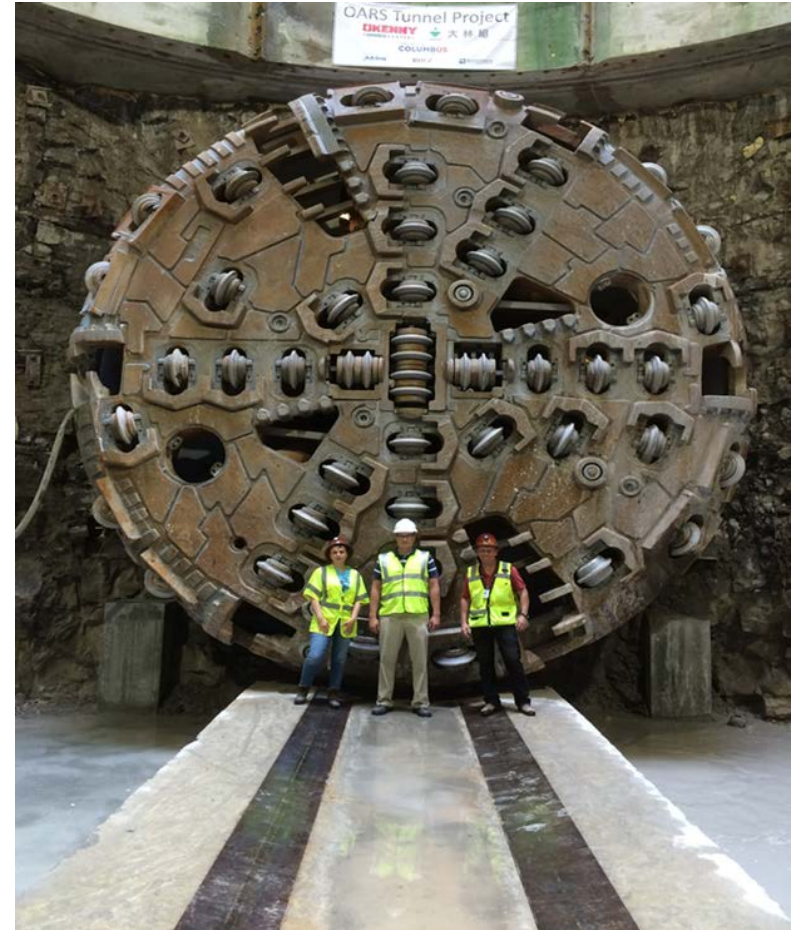
- Major Capital Projects focused on treatment plant and tunnels to address CSO and SSO
- Treatment plant project highlights
 - Treatment Plant work increased each plant capacity 50%
 - First CO driven project started in 2005
 - Projects completed in 2011
 - Jackson Pike WWTP: (\$96 Million)
 - Southerly WWTP: (\$550 Million)

WWMP Capital Program



WWMP Capital Program

- Collection system project highlight
 - OSIS Augmentation Relief Sewer (OARS)
- Construction 2010 (Phase 1)
- Total Construction (Phase 1 and Phase 2) = \$371M
- OARS Project in operation July 2017



WWMP Capital Program

- The remainder of the plan was to focus on separate sanitary overflows (SSO)
- SSO tunnels would have been:
 - 5 times longer
 - Far more costly
 - Achieve far less

WWMP Capital Program

- The WWMP did not address stormwater, only addresses SSOs and CSOs
- Columbus rivers are more impacted by stormwater than SSOs
 - 64% of the City's Facilities Planning Area has stormwater listed as a cause of impairment (2012 OEPA Integrated Report)

Blueprint Plan

- Ohio EPA granted permission to put a hold on 2005 WWMP projects in 2012
- Explore alternative approach to meet consent order obligations

**BLUE
PRINT
COLUMBUS**

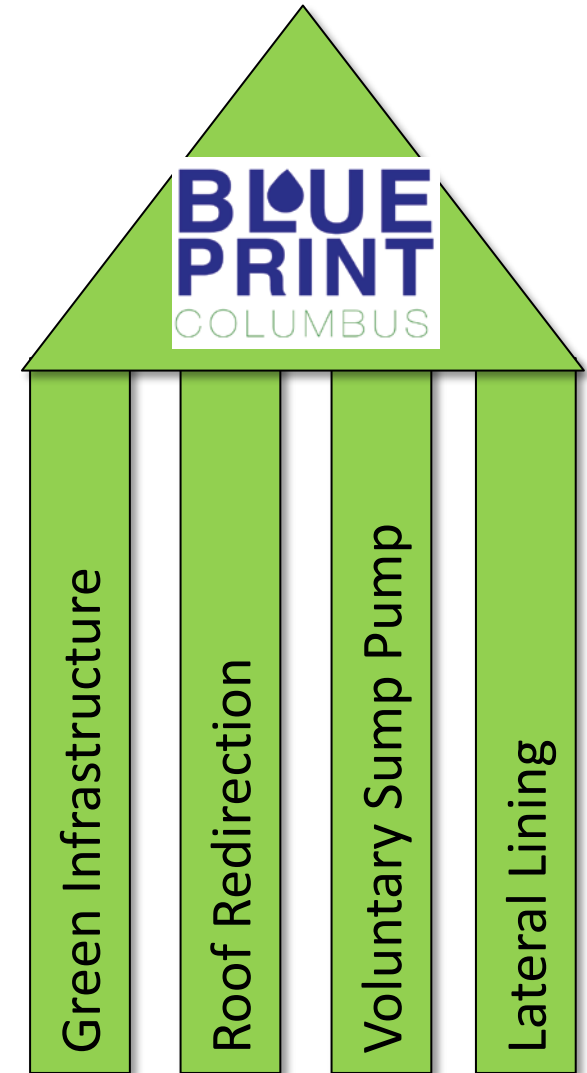
Clean streams.
Strong neighborhoods.

Blueprint Plan

- Blueprint Columbus submitted September, 2015 to OEPA
- Approval Received December, 2015
 - Will comprise much of the future capital planning
 - Addresses stormwater and sewer overflows
 - First of the Neighborhood 4-Pillar Projects started in 2012
 - Additional Projects Underway
 - Chemically Enhanced Primary Treatment (CEPT)
 - Lower Olentangy Tunnel (LOT)

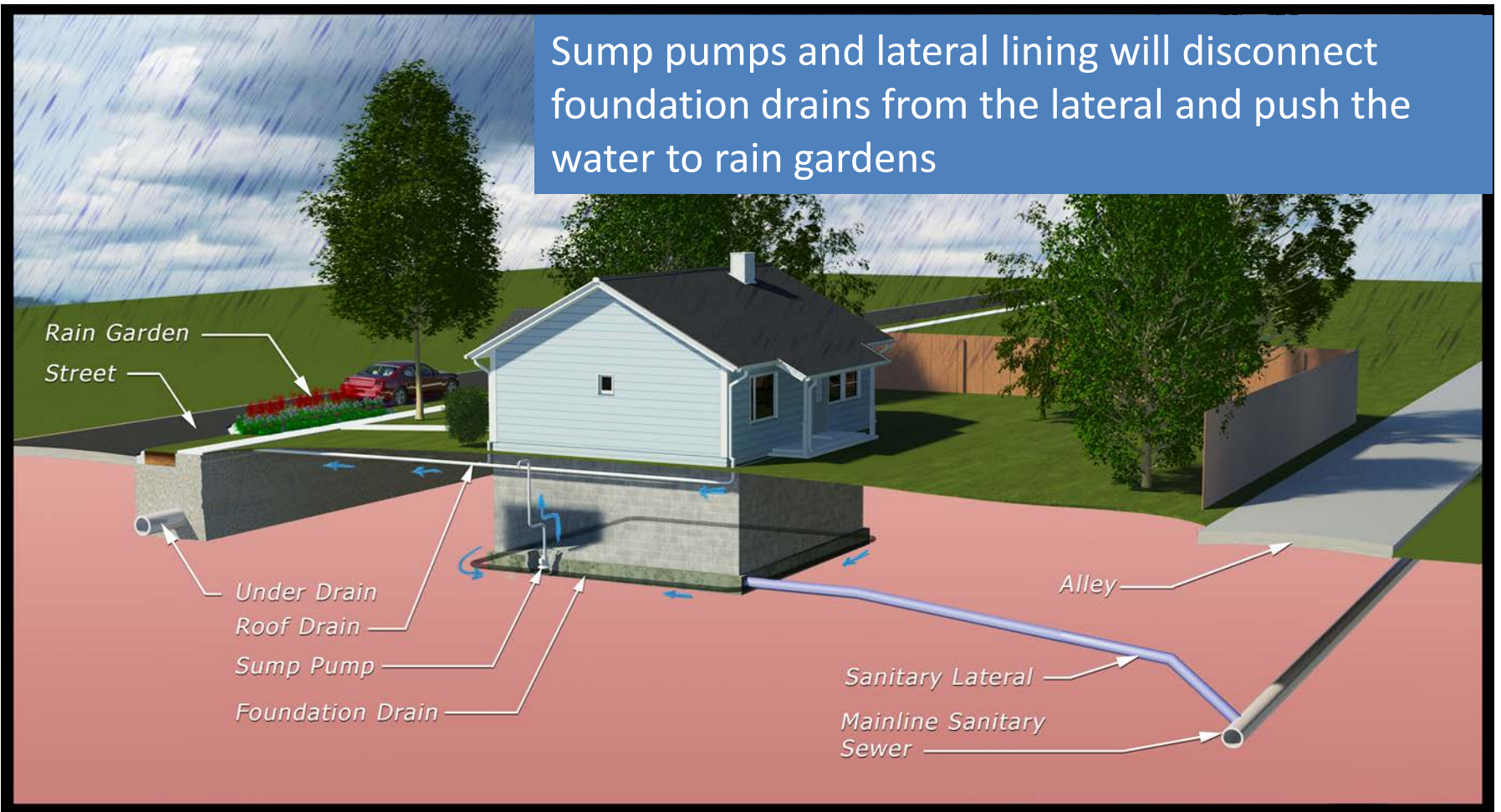
Blueprint Plan

- Address the problem, not the symptom
- Focus on private side
 - Majority of inflow & infiltration is coming from private side
 - Older residential areas
- Combine inflow and infiltration removal with green infrastructure



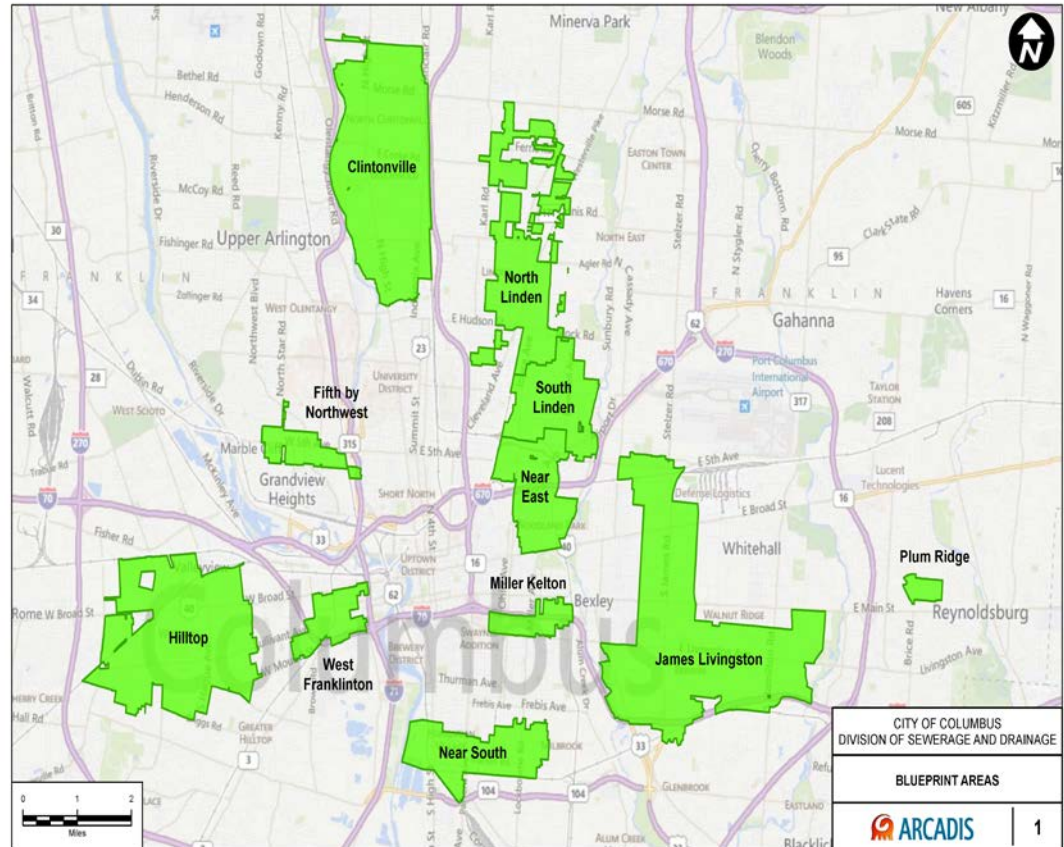
Blueprint Plan

Sump pumps and lateral lining will disconnect foundation drains from the lateral and push the water to rain gardens



Blueprint Plan

- Blueprint Neighborhood Areas
- Currently in various phases in the following areas:
 - Clintonville
 - Linden
 - Hilltop
 - Miller/Kelton
 - W. Franklinton
 - Fifth by Northwest
 - Near South



Blueprint Clintonville 1 (2012)



Barthman/Parsons Pilot Project

- Repurposing vacant lots for Green Infrastructure Component of the 4-pillars
- Working closely with City's Department of Development
 - Incorporates coordination with the community
- Identified locations that may provide viable options at a reasonable price
- Emphasis on variety of GI installations in R/W as well
 - Example of the new Heritage Park

Barthman/Parsons - South Side Settlement House Area 2015

1



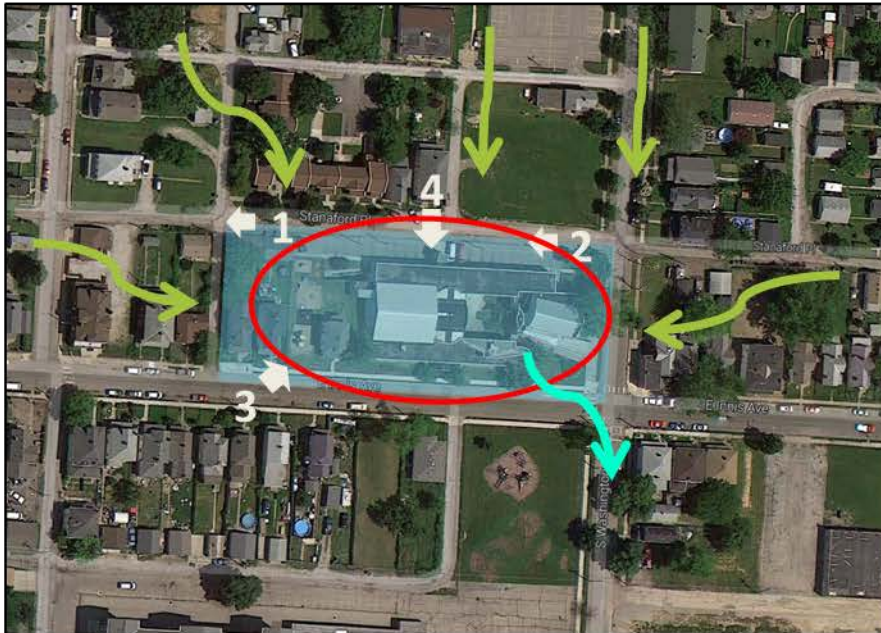
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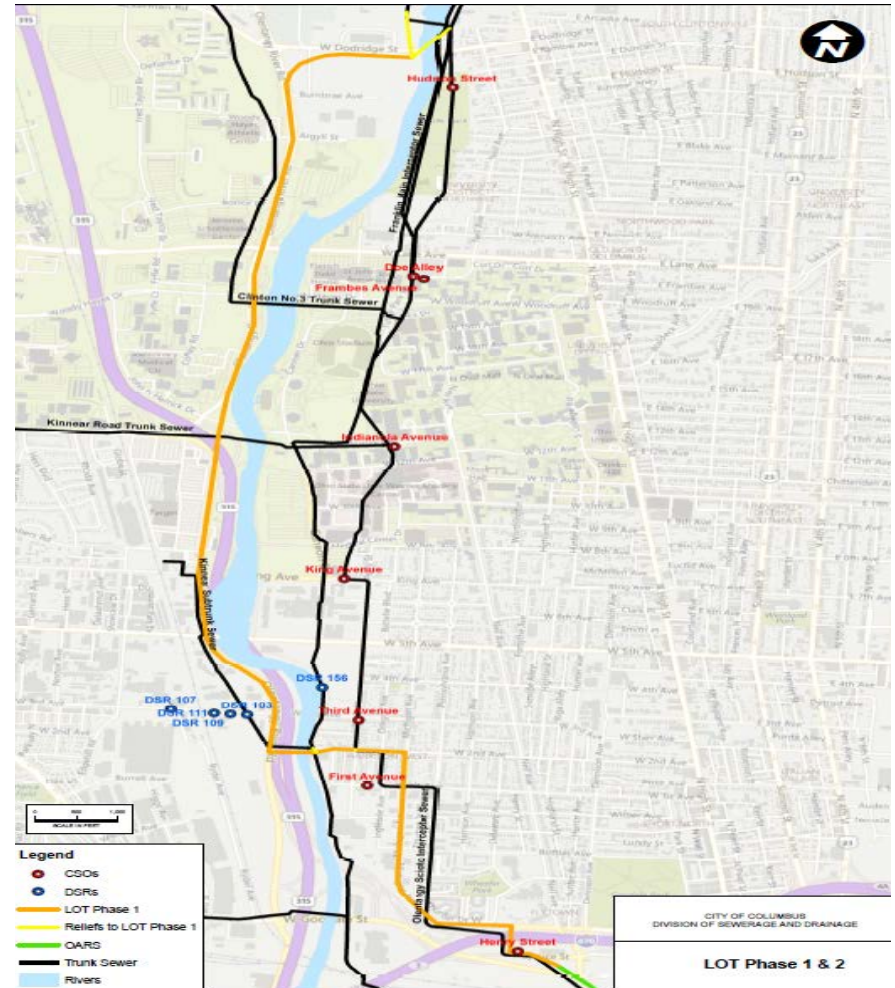


South Side Settlement Heritage Park



Lower Olentangy Tunnel

- From Arena District to Tuttle Park
- Will provide relief to the Fifth by Northwest area SSOs
- Will provide required relief for Olentangy CSOs
- Will need to be installed and operational by July 1, 2025 to meet CSO CO
- Project currently under design

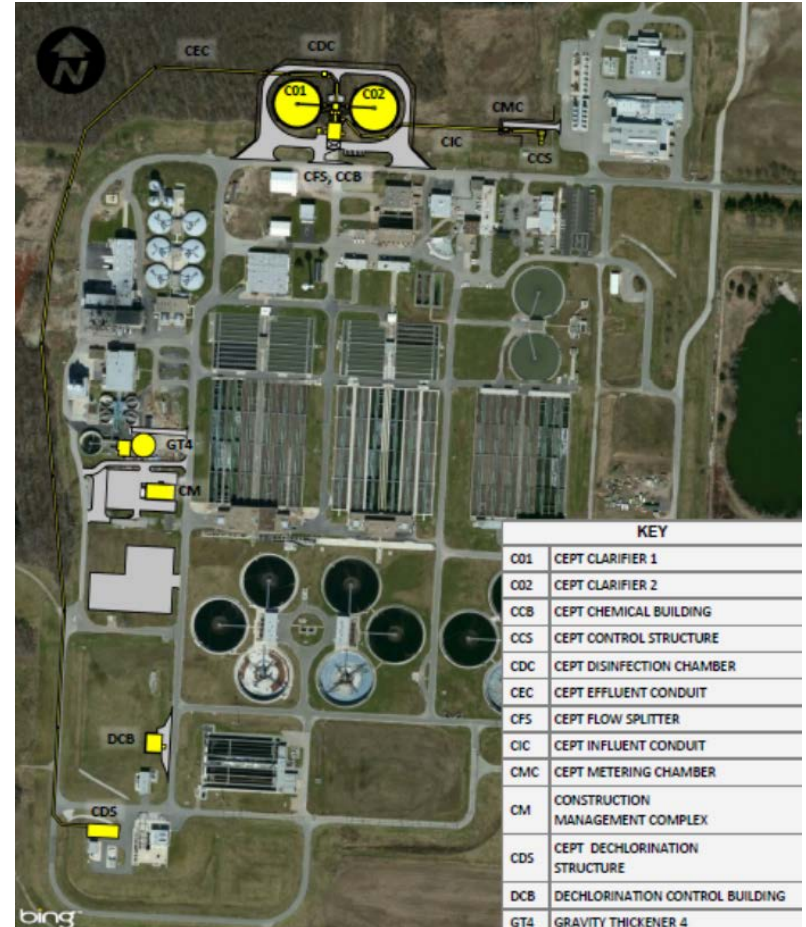


Wastewater Treatment Plants

- CEPT
- Solids Treatment and Utilization
- Digester Gas Utilization Update

Chemically Enhanced Primary Treatment

- Much more immediate benefit in overflow reduction compared to tunnel (WWMP ART)
- Maximizes value of existing assets at SWWTP



Chemically Enhanced Primary Treatment

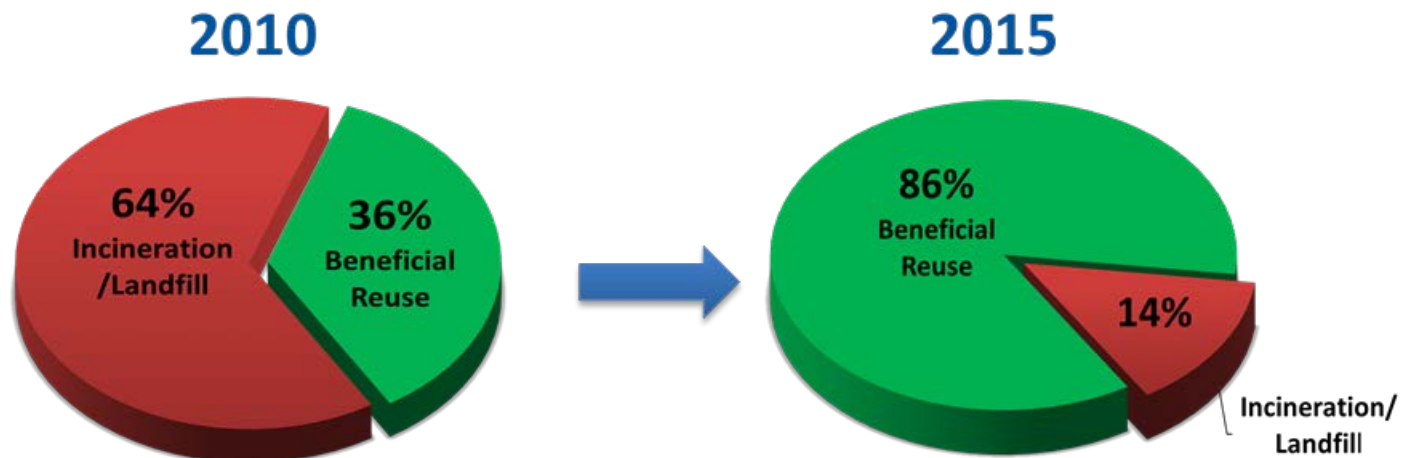
- Add 110 million gallons per day (mgd) of high rate treatment capacity
 - Will treat flows in excess of 330 mgd
- Project divided into three components
 - Pumping/Screening, Enhanced Primary Settling, Disinfection
- Construction estimate \$100m with completion in 2019
- Last major improvement to meet CO at the Plants

Biosolids Utilization

- Incinerators decommissioned
 - EPA mandates and cost to comply
- Columbus uses multiple outlets to manage biosolids
 - Diversity of methods provides resiliency to changing regulations and market forces
- Emphasis of biosolids program is to shift to both greener and less costly methods

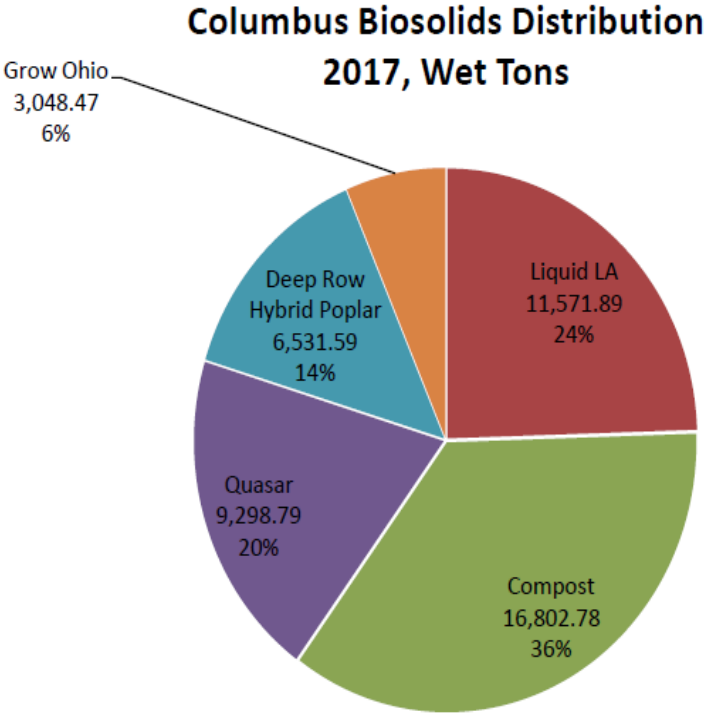
Biosolids Reutilization

- Historical Look



Biosolids Reutilization

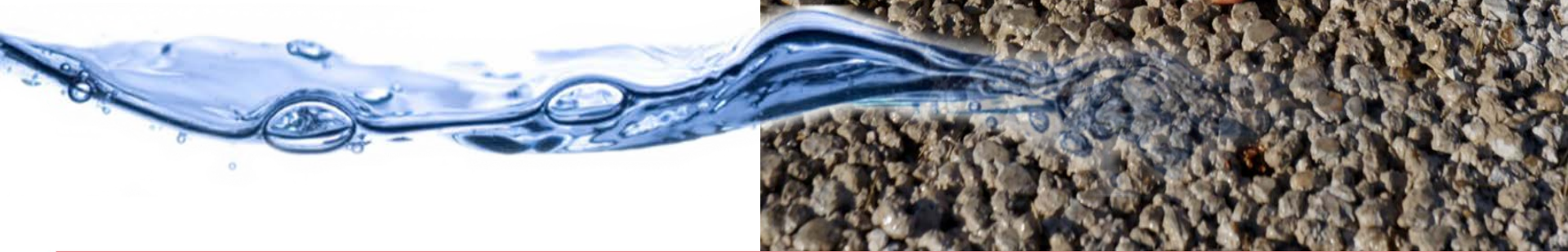
- Currently in 2017, 100% of biosolids beneficially reused
- Flexibility will continue with improvements in storage currently in construction/design



Digester Gas Utilization

- Co-Generation: Using biogas to produce electricity + capturing combustion heat for plant process
 - Environmentally Preferred – net carbon footprint reduction; Flare reduction
- Contract awarded for both Plants
 - Anticipated Construction in 2019
- SWWTP Digester Expansion
 - Produce more gas, reduction in volume, convert to Class B

Thank you!



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