



# Community Advisory Panel

October 29, 2013

THE CITY OF  
**COLUMBUS**  
MICHAEL B. COLEMAN, MAYOR

DEPARTMENT OF  
PUBLIC UTILITIES

**BLUE  
PRINT**  
COLUMBUS  
Clean streams.  
Strong neighborhoods.



# Outline

- Why we are here
- Sewers 101
- When it Rains...
- Blueprint Columbus
- Neighborhoods
- Prioritization



# Why We Are Here

- Blueprint Columbus is a potential new approach
  - Instead of just building a bigger sewer, focus on getting rain water out of sewers
  - And use green infrastructure to improve streams
- Purpose of CAP is to provide guidance to City
- Tonight focus on background and seek input from CAP
  - How the City should prioritize neighborhoods

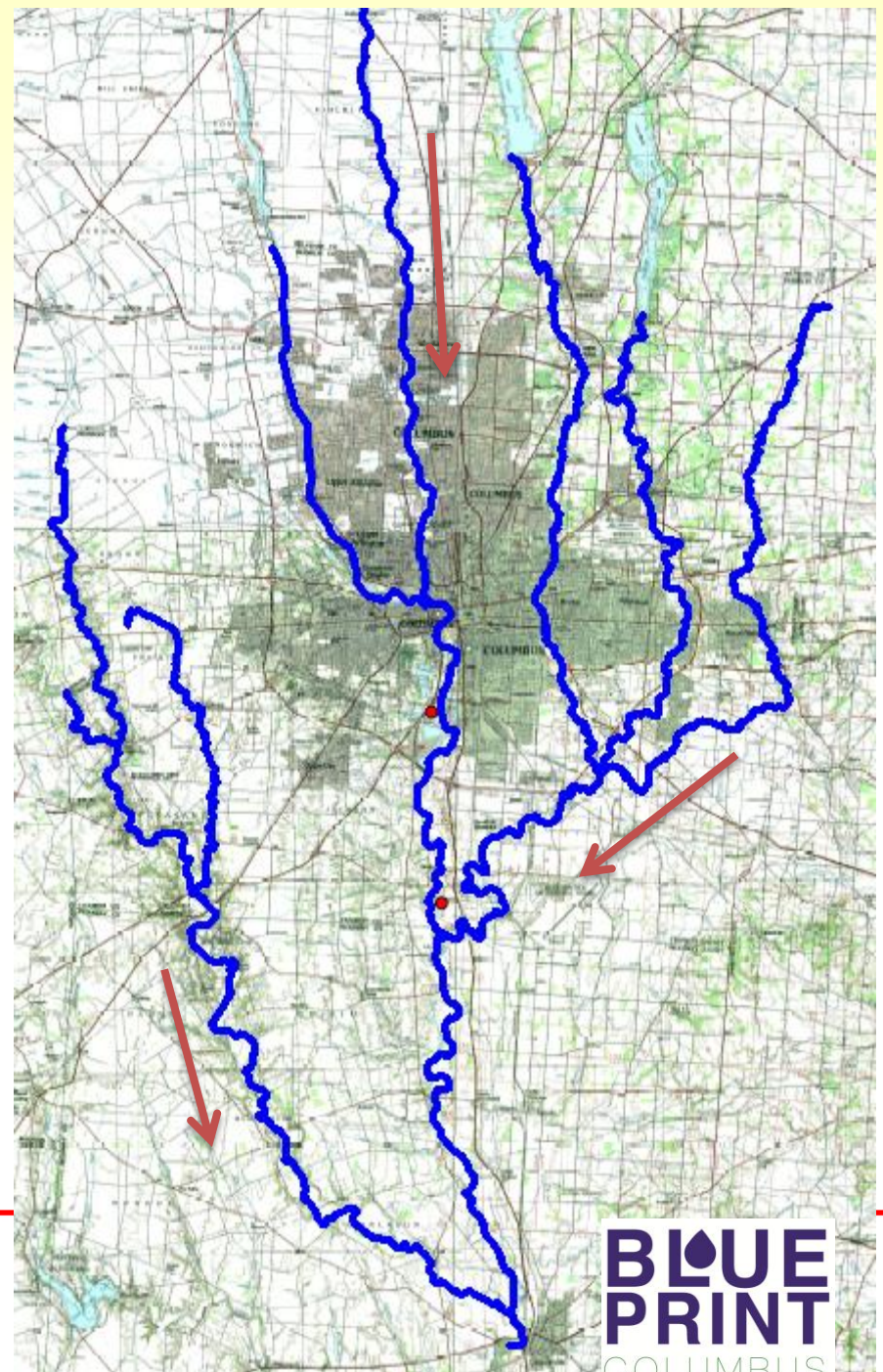
# Why Blueprint?

- City is under orders to stop sewer overflows
  - There is no “do nothing” alternative
  - \$2.5 billion over next 30 years
- Traditional approach: bigger sewers (tunnels)
  - Treats the symptom not the cause
- Blueprint Columbus
  - Treat the cause – too much water



# Sewers 101

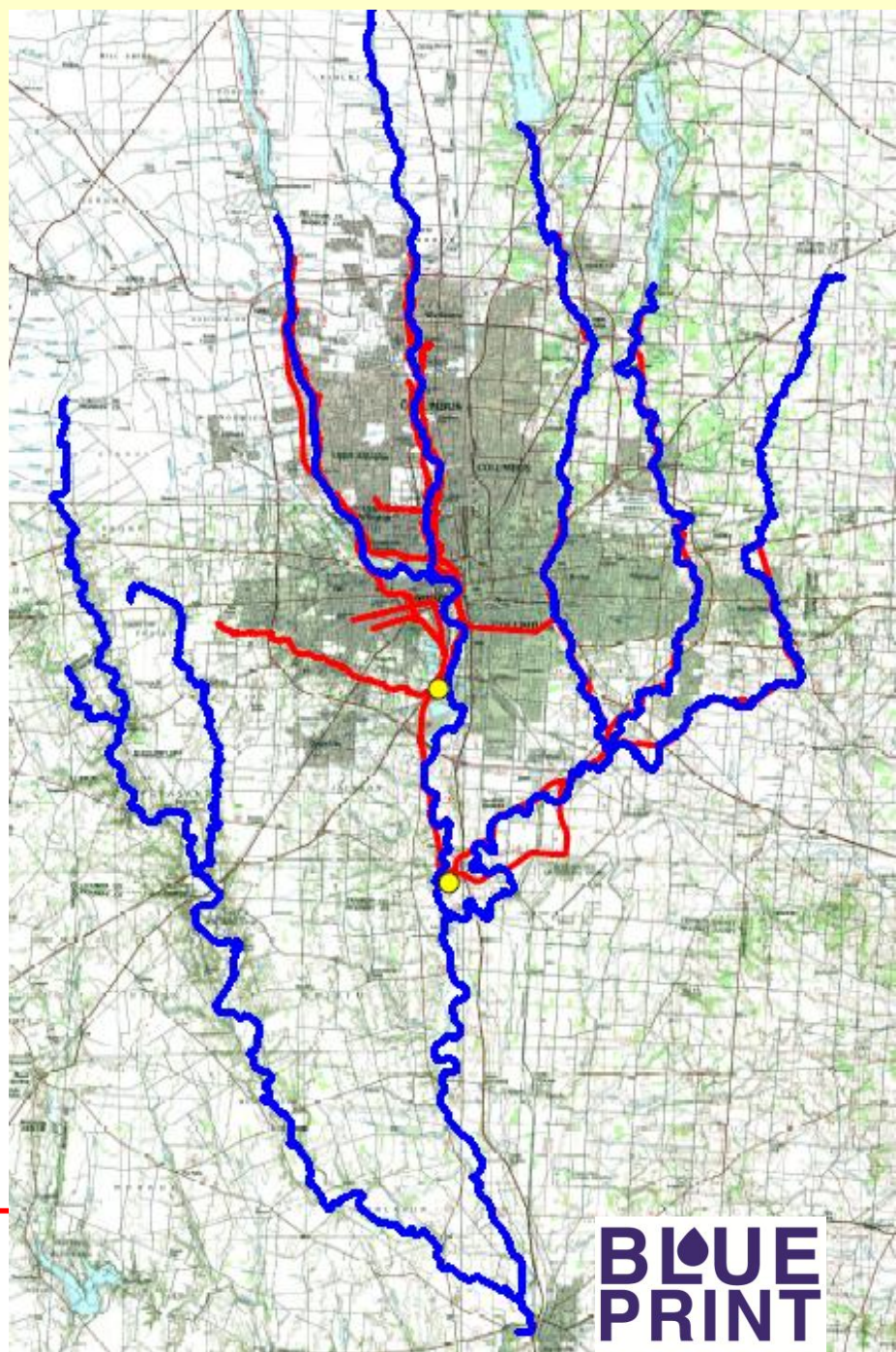
- The north side of the City is at a higher elevation than the south side
- Water flows from north to south toward the Ohio River
- Scioto River Watershed





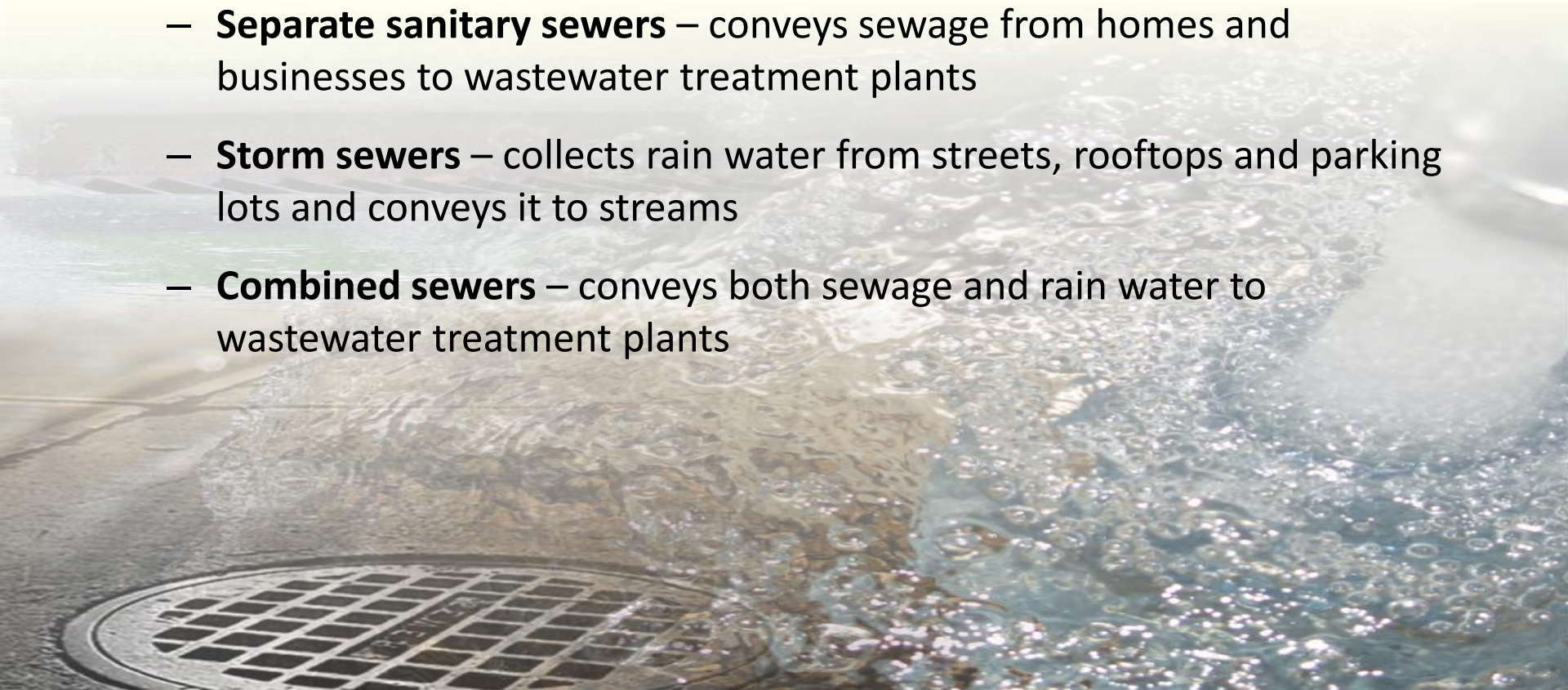
# Sewers 101

- Sewers take advantage of gravity
- Sewers run near rivers because they have a low elevation
- The sewer system brings flow to two wastewater treatment plants



# Sewers 101

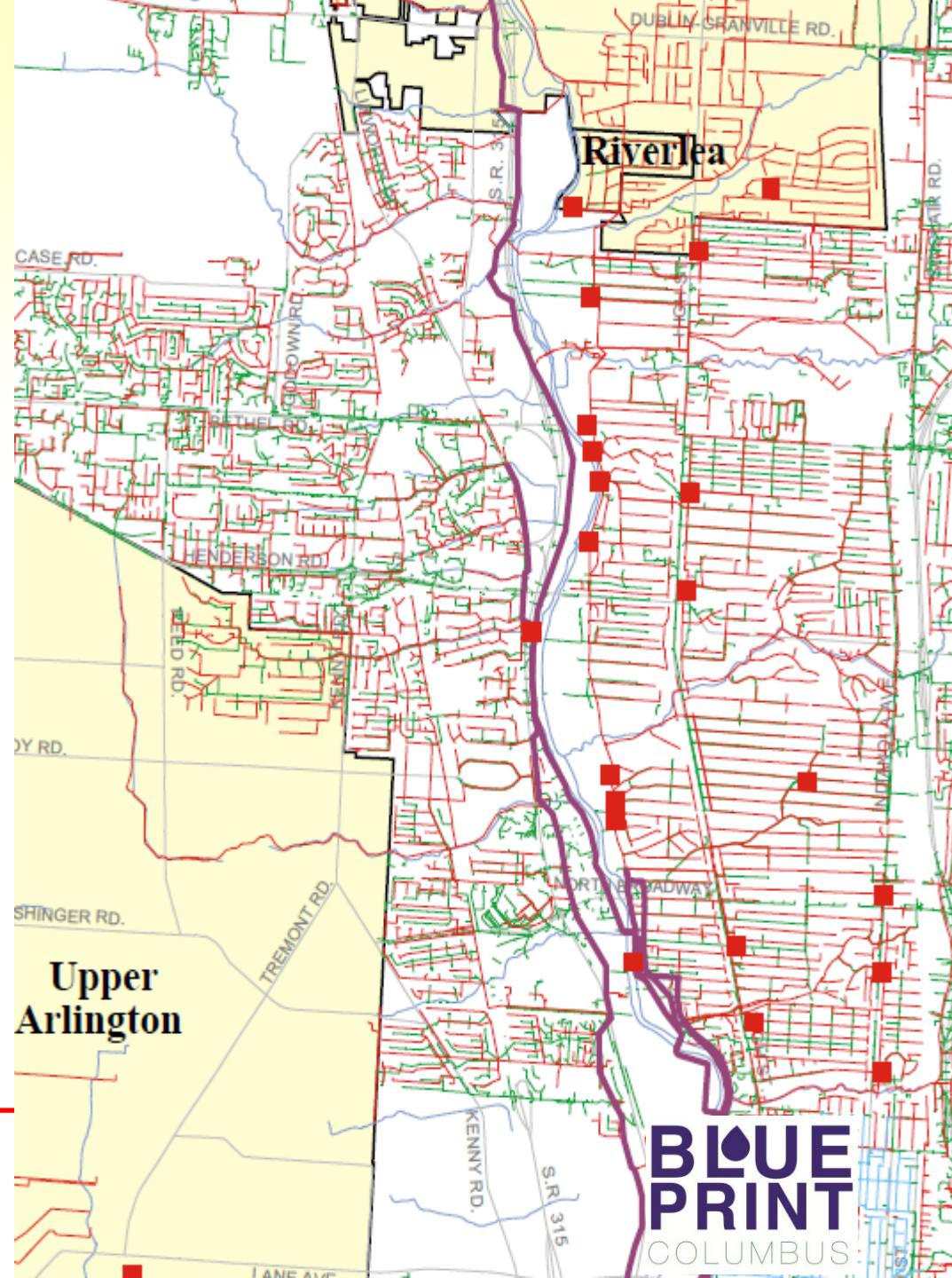
- There are three types of sewers
  - **Separate sanitary sewers** – conveys sewage from homes and businesses to wastewater treatment plants
  - **Storm sewers** – collects rain water from streets, rooftops and parking lots and conveys it to streams
  - **Combined sewers** – conveys both sewage and rain water to wastewater treatment plants





# Separate Sanitary Sewers

- More modern sewers
- Intended to carry only sewage
- Over 95% of the City
- Carry wastewater to the treatment plants
- Built in parallel with storm sewers





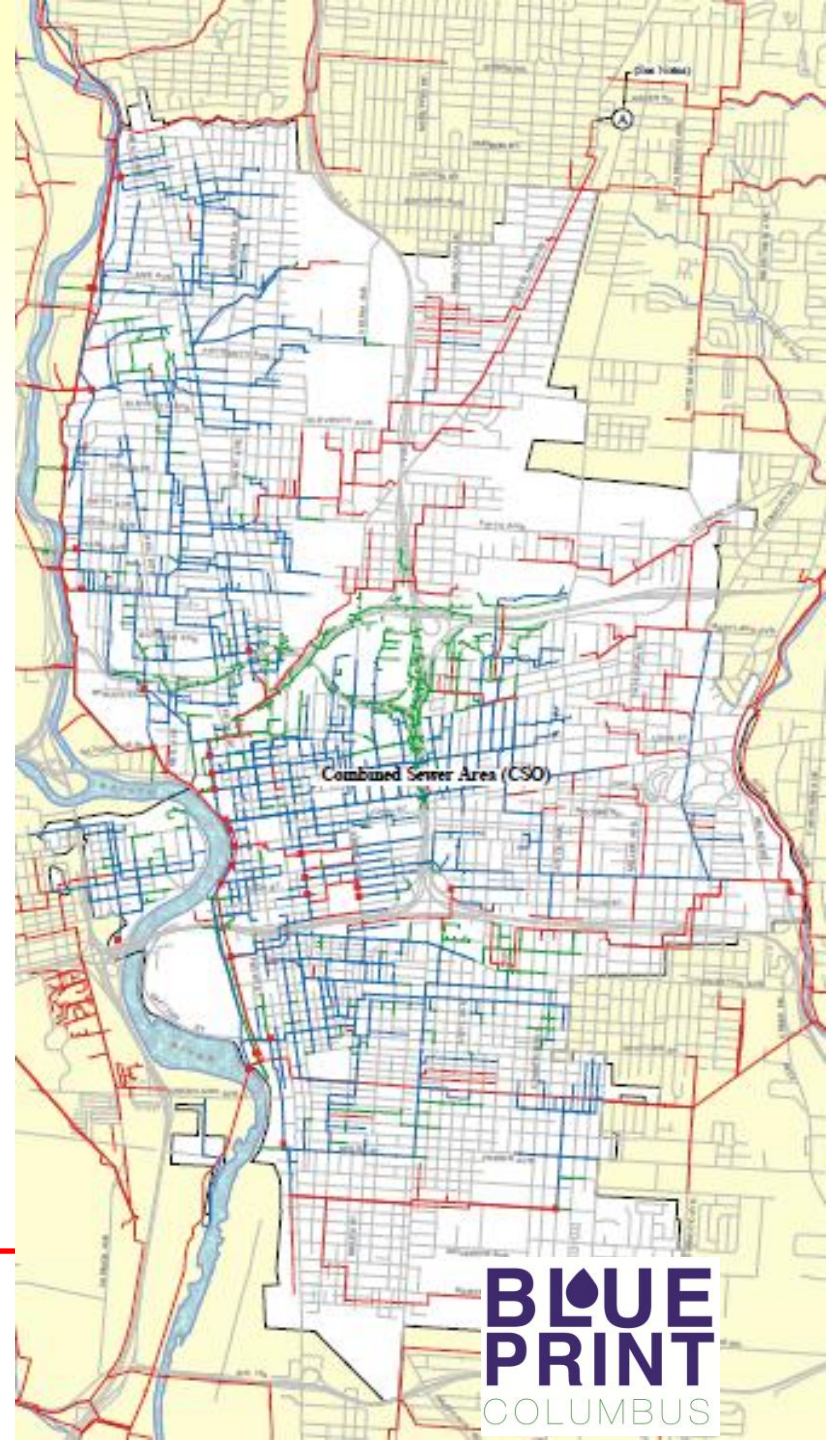
# Storm Sewers

- Carry only stormwater (rain)
- Rain picks up pollutants (dirt, oil, grease, fertilizer, trash, animal waste)
- Dry when not raining
- Curb inlets feed this system
- Directly discharge into streams, no treatment



# Combined Sewers

- Largely built prior to 1930s
- Designed to carry both sewage and stormwater
- In dry weather, all flows to wastewater plants
- During periods of heavy rain designed to overflow to streams





# When it Rains...

- Combined sewers
  - Designed to overflow into the rivers for large rain events
  - Permitted and regulated by Ohio EPA and the Clean Water Act
  - Monitored continuously
  - These events are called Combined Sewer Overflows (CSOs)

**Combined sewers are NOT the focus of Blueprint Columbus**

-Largely under control

# When it Rains...

- Storm sewers
  - Fill with rainwater
  - On its way to the storm sewer the rain picks up pollutants (dirt, oil, trash, etc.)
  - The storm sewers quickly carry the rain and pollutants directly to the stream



# When it Rains...

- Sanitary sewers
  - Rain water can enter sanitary sewers through leaky joints, cracks, roof gutters, old sewers, and foundation drains
    - This is known as **Infiltration and Inflow (I/I)**.
  - These sewers are not designed to convey rainwater and therefore can overflow
  - These events are called Sanitary Sewer Overflows (SSOs)
  - SSOs are prohibited

# When it Rains...

- Water In Basement events
  - Overwhelmed sewers back up into basements
  - Called WIBs
  - Not part of the Consent Order, however City strives for low WIBs
  - Project Dry Basement



# Solutions

- Bigger pipes, larger treatment plants (treating the symptom)
  - This was the 2005 plan
  - Wet Weather Management Plan
- Or, focus on the cause – which is too much water in the sanitary sewer
  - The City is now investigating an alternative new approach
  - Blueprint Columbus
- In addition, use green infrastructure to treat the stormwater

# Example of a Green Technology: Porous Pavement







# Blueprint Video



# Blueprint Columbus

- Plan is due to Ohio EPA on September 15, 2015
- Will need to demonstrate how the City will eliminate SSOs citywide
- There are 13 large areas across the City that contain the City's SSOs
- These 13 areas will be divided into approximately 1000-acre projects for Blueprint implementation
- First two: Clintonville and Linden (but not all of either)

# Blueprint Areas

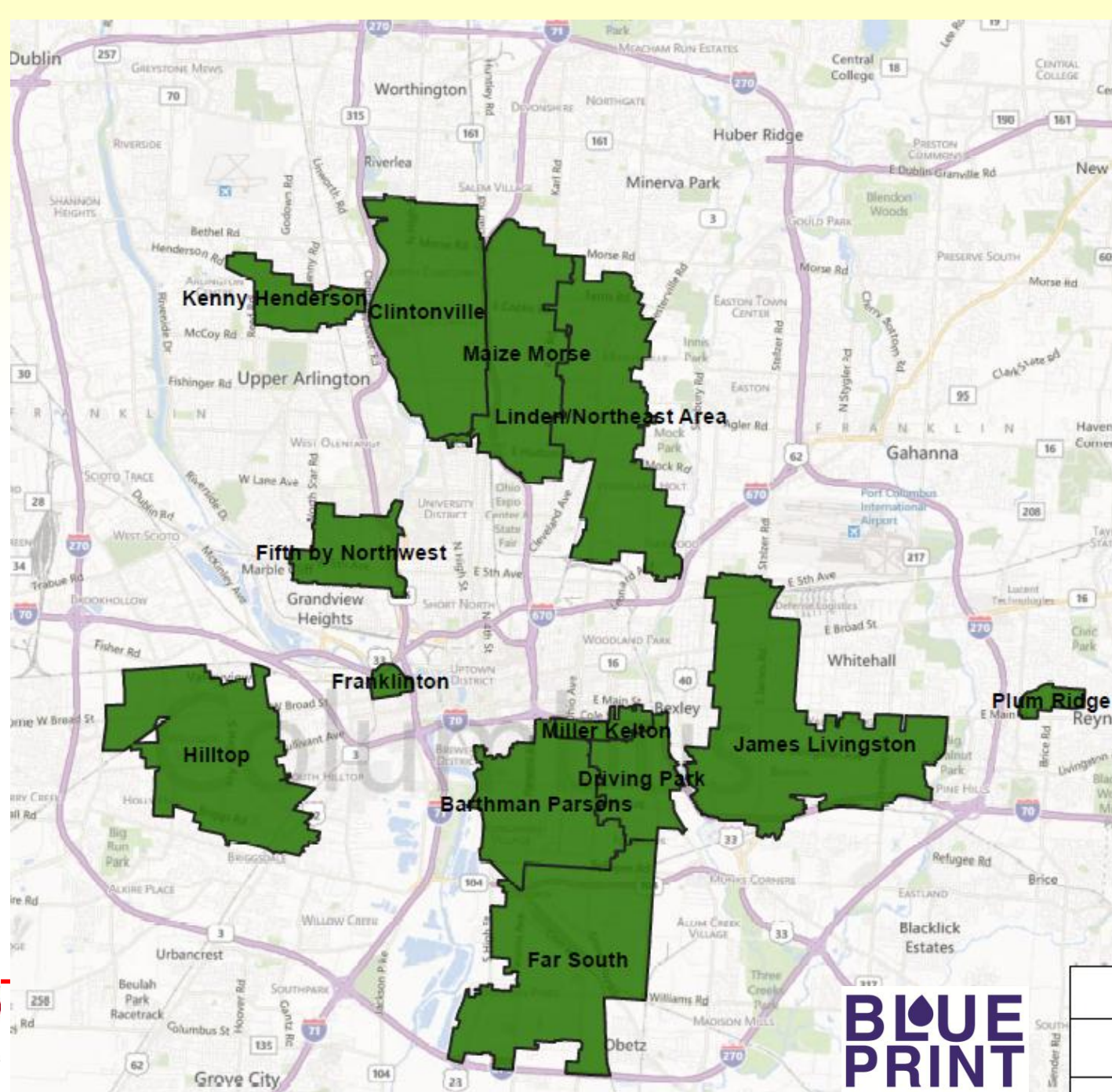




# Future Blueprint Areas

- Clintonville
- Kenny Henderson
- Maize Morse
- Driving Park
- Linden/Northeast Area
- Fifth by Northwest
- Hilltop
- Barthman Parsons
- James Livingston
- Franklinton
- Miller Kelton
- Plum Ridge
- Far South

# Future Blueprint Areas



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# Prioritization



# Where Do We Go Next?

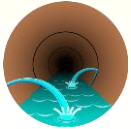
- City needs to develop a way to prioritize the Blueprint Areas
- Need to develop a list of key criteria that are important to City and the community
- Weights will be given to the criteria according to relative importance
- The areas will then be ranked to schedule future work



# Proposed Criteria for Ranking Each Area



Number and size of overflows



Leaky sewers having a downstream impact



Public Exposure to overflows



Water In Basement events



Structural / Operations and Maintenance concerns



Water Quality

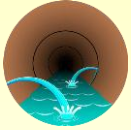


# Sanitary Sewer Overflows

- The number of overflows in the 1000-acre project areas
- How often they activate
- How much volume

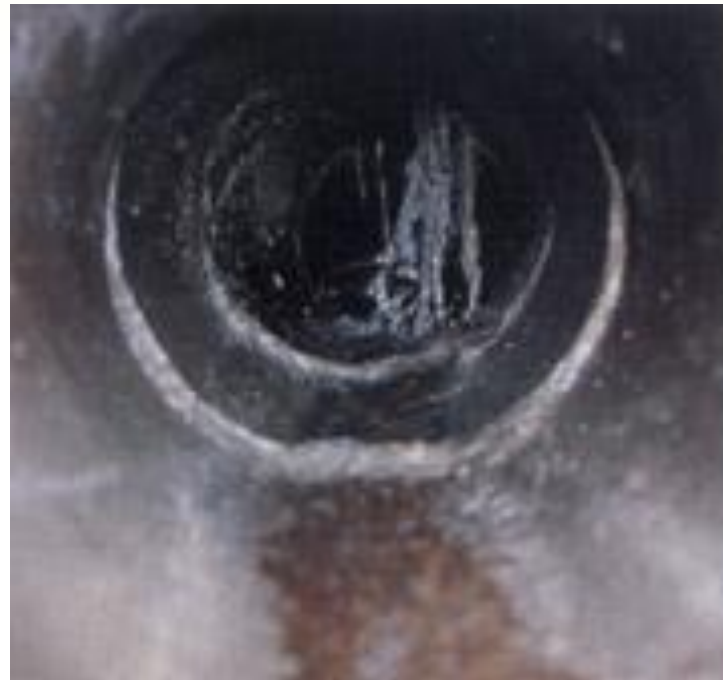






## Downstream Impact

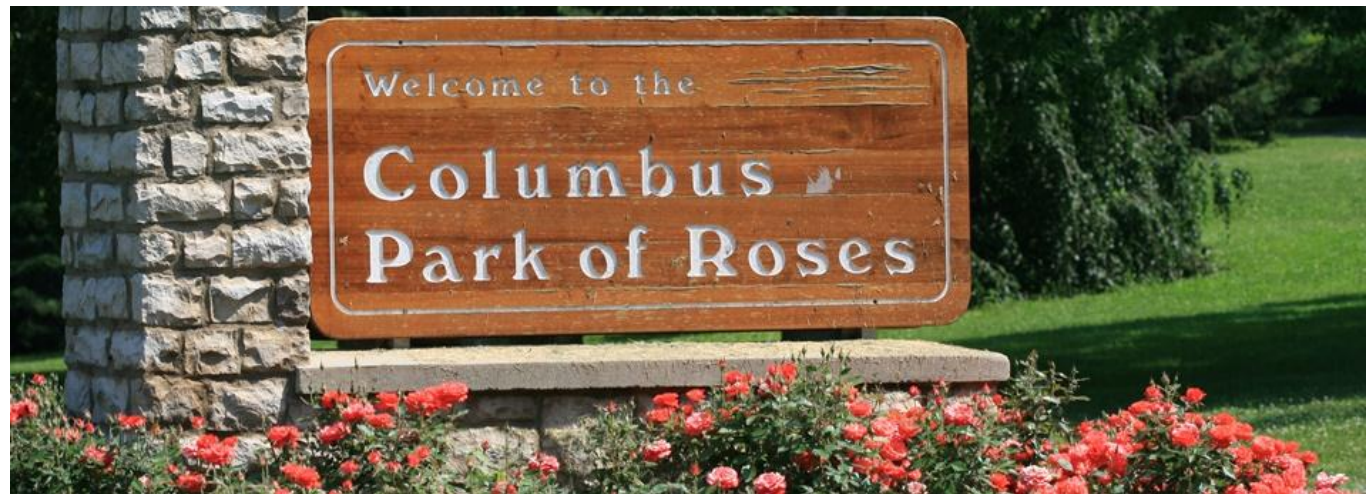
- Makes sense to start with leaky areas that are causing problems further down the sewer





# Public Exposure to Overflows

- Special consideration might be given to overflows that:
  - Are accessible to the public
  - Are located in a public park
  - Discharge into a tributary stream/sensitive water







# Water In Basement Events

- When the sewers are full during a rain event water can back up into basements (WIBs)
- Basement backups are not the focus of the Consent orders, but the City strives to minimize
- Areas with numerous basement backups might receive higher ranking





# Structural / Operations and Maintenance

- There are sewers that we know have problems
  - Require more maintenance from the City
- Starting with these sewers can provide double benefit
  - Reduce maintenance costs
  - Address leaks in sewer







# Water Quality

- Some Blueprint areas contribute to a stream's inability to meet Ohio EPA requirements
- Priority might be given to areas that have small tributary streams
  - Pollutants
  - Rapid changes in flow
  - Bank erosion



# What are we missing?

- Unlike traditional sewer projects, Blueprint will be more noticeable in the neighborhoods
- Should we try to add other factors, such as geographical diversity?
- How?
- Need to meet our core mission cost effectively

# Comments or Questions?

