



Kings Run Project Public Meeting

July 31, 2014

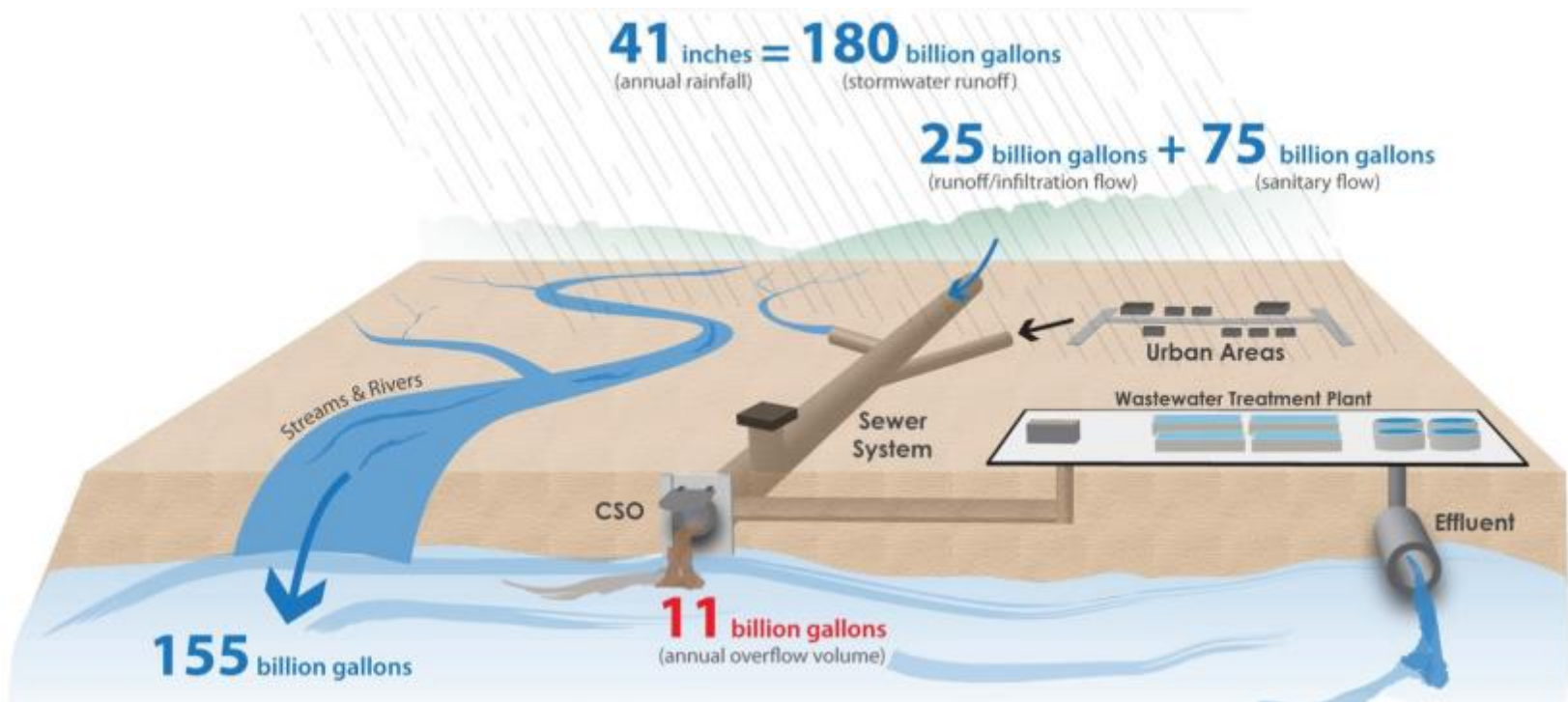


Tonight's Agenda

- Welcome and Overview
- Lower Mill Creek - Kings Run Project Details
- Q&A
- Kings Run Project Stations (opportunity to talk to MSD staff)

Our Challenge

MSD is under a federal mandate (Consent Decree) to reduce sewer overflows into local streams and rivers.



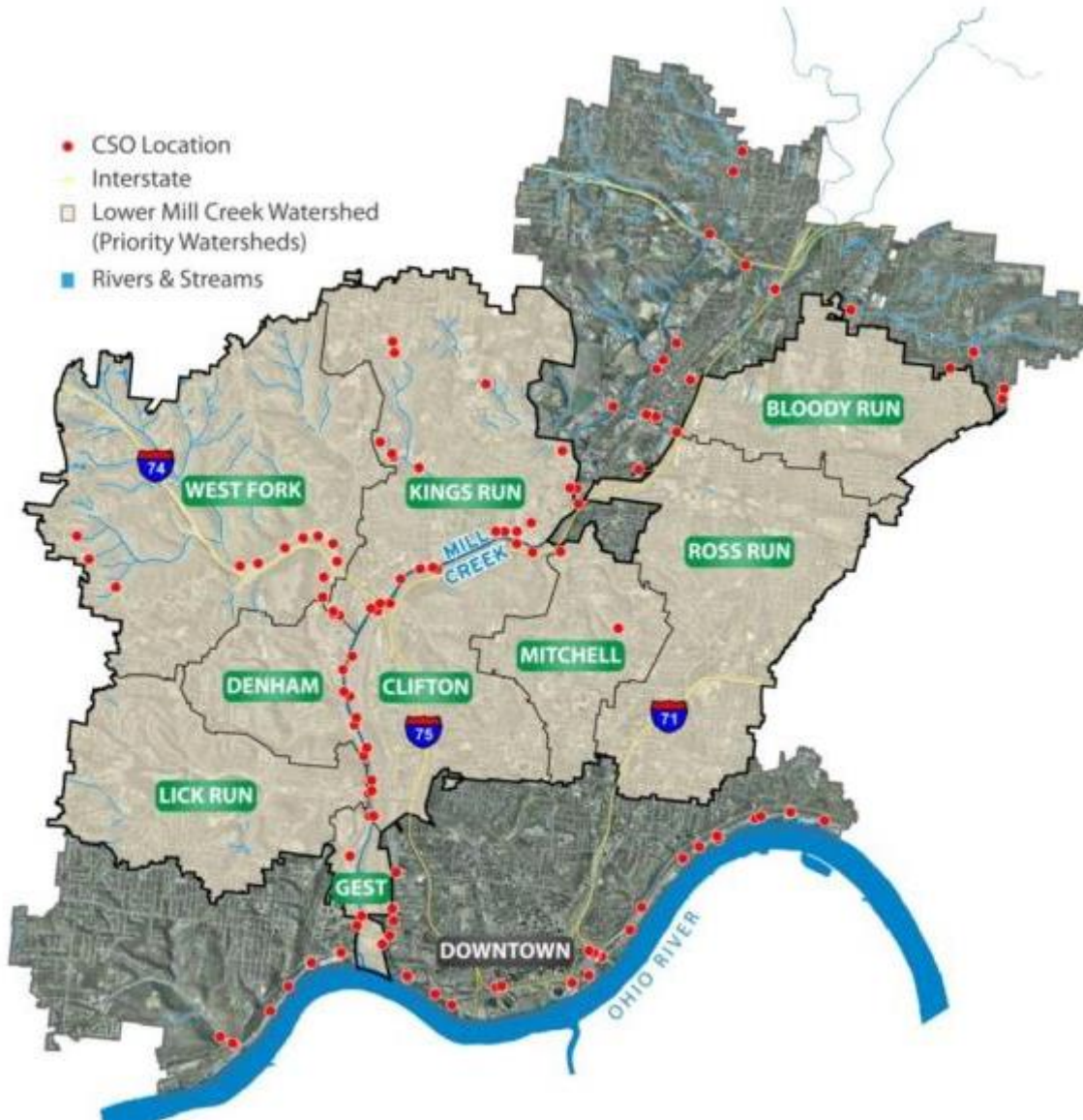
Combined sewers carry both sewage and stormwater in the same pipe.



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Our Challenge

More than half of the combined sewer overflows (CSOs) are into the Mill Creek.



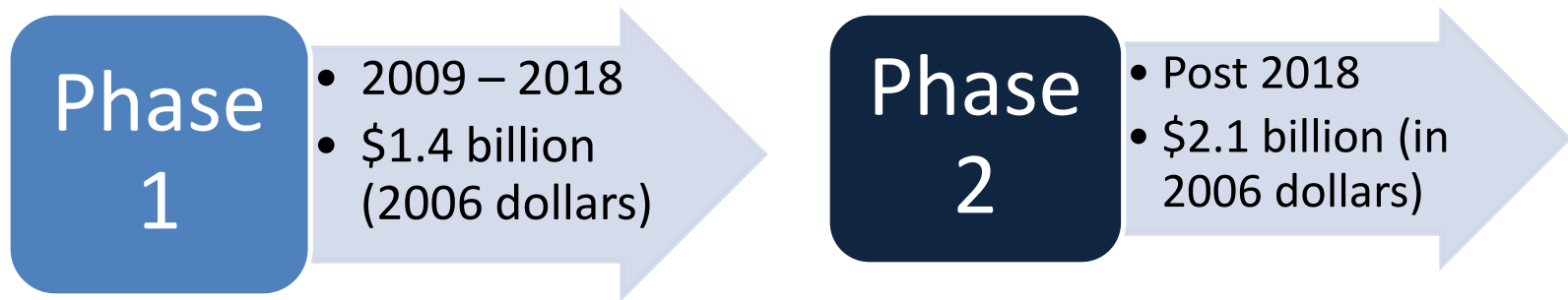
Overflow into the
Mill Creek



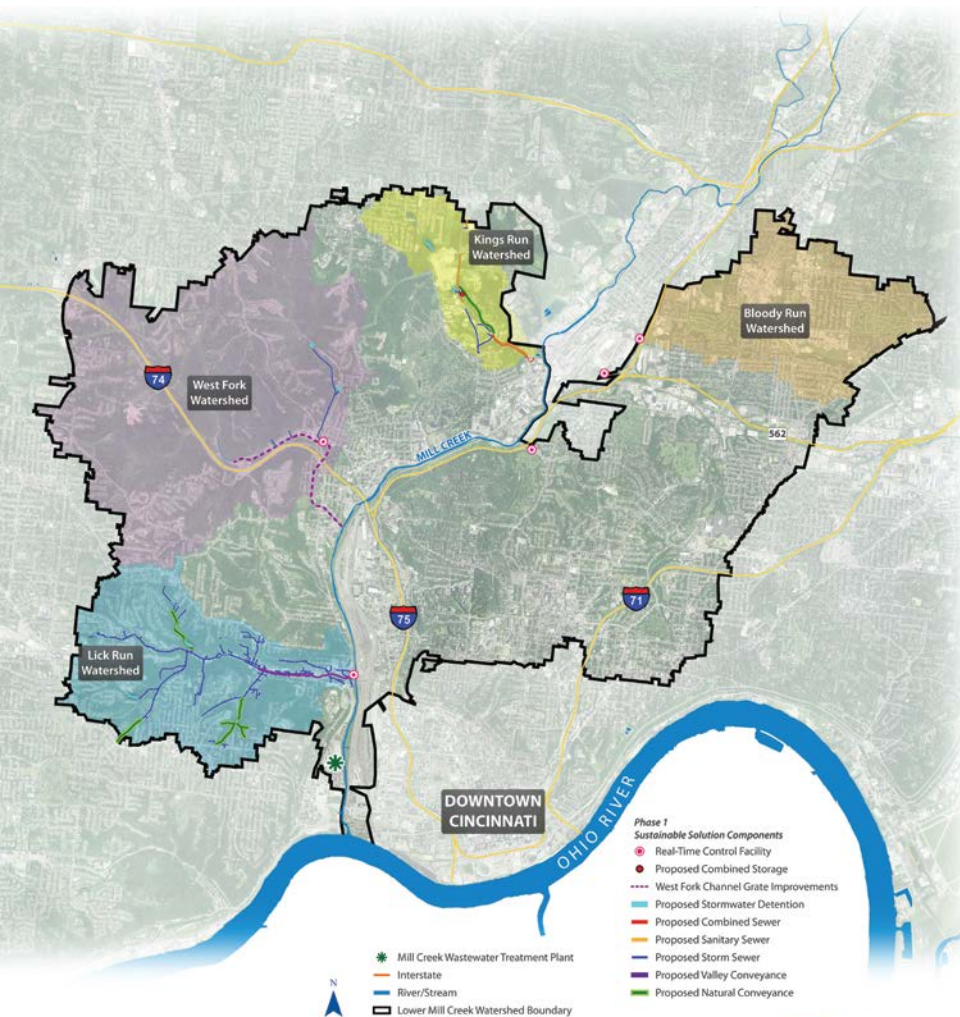
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Our Solution

- Project Groundwork is our plan to reduce sewer overflows
- Includes hundreds of sewer and stormwater management projects across Hamilton County



Lower Mill Creek Partial Remedy (LMCPR)



- Under Phase 1, MSD required to eliminate 1.78 billion gallons of CSOs annually into Lower Mill Creek – called the Lower Mill Creek Partial Remedy (LMCPR)
- Regulators approved a sustainable/hybrid, watershed-based solution in May 2013
- Cost is \$244 million (in 2006 dollars), about \$200 million less than the tunnel
- Includes a mix of green and gray projects in Lick Run, Bloody Run, West Fork and Kings Run

Benefits

Overall Benefits of Lower Mill Creek Solution



Benefits (cont.)

Lick Run

701 Construction/ Trade Jobs

- 54,300 feet of storm sewer
- 3,600 feet of relocated combined
- 8 detention basins/floodplain enhancements
- 8,700 feet of valley conveyance system
- 9,900 feet of natural conveyance, inlet sealing

Kings Run

128 Construction/ Trade Jobs

- 6,600 feet of storm sewer
- 4,300 feet of combined sewer
- 2,700 feet of sanitary sewer
- ~1.5 million gallon combined sewer overflow (CSO) storage tank at CSO 217
- 4 stormwater detention basins
- Stream stabilization for Kings Run stream

West Fork

54 Construction/ Trade Jobs

- 500 feet of storm sewer
- 7,600 feet of basin discharge pipe
- 2 stormwater detention basins (approximately 23 acre feet of storage)

Trades jobs are predominantly laborers, operators, and drivers positions.



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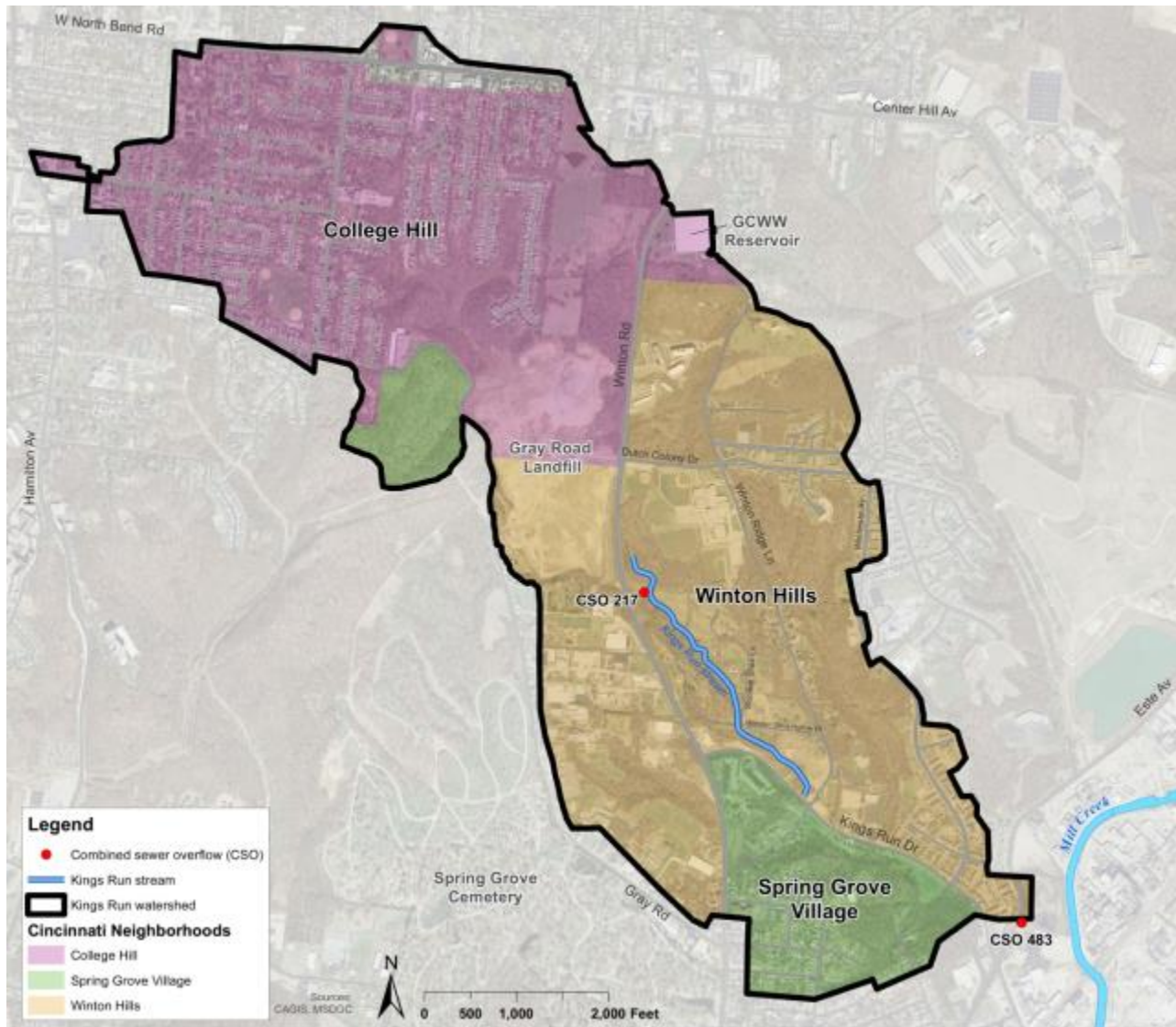
Kings Run Watershed

- About 1,000 acres in size
- Includes portions of College Hill, Spring Grove Village and Winton Hills
- Drains to the Mill Creek
- Named after the Kings Run stream
- Stream used to flow into the Mill Creek but was piped into the combined sewer system



Kings Run Watershed Communities

College Hill, Spring Grove Village and Winton Hills



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Kings Run Project Background

- A large combined sewer collects sanitary sewage and stormwater from the watershed
- During heavy rains, this combined sewer overflows at two locations:
 - CSO 217 into the Kings Run stream
 - CSO 483 into the Mill Creek



Kings Run Project Background (cont.)

- About 300 million gallons overflow from the watershed during a typical year
 - About one-third from CSO 217 into the Kings Run stream
 - About two-thirds from CSO 483 into the Mill Creek
- Overflows at CSO 217 contribute to overflows at CSO 483
 - The two CSOs are nested (connected)
 - Overflows at CSO 217 go into the Kings Run stream
 - The Kings Run stream connects back into the combined sewer system and contributes to overflows at CSO 483 into the Mill Creek

Lower Mill Creek – Kings Run Project

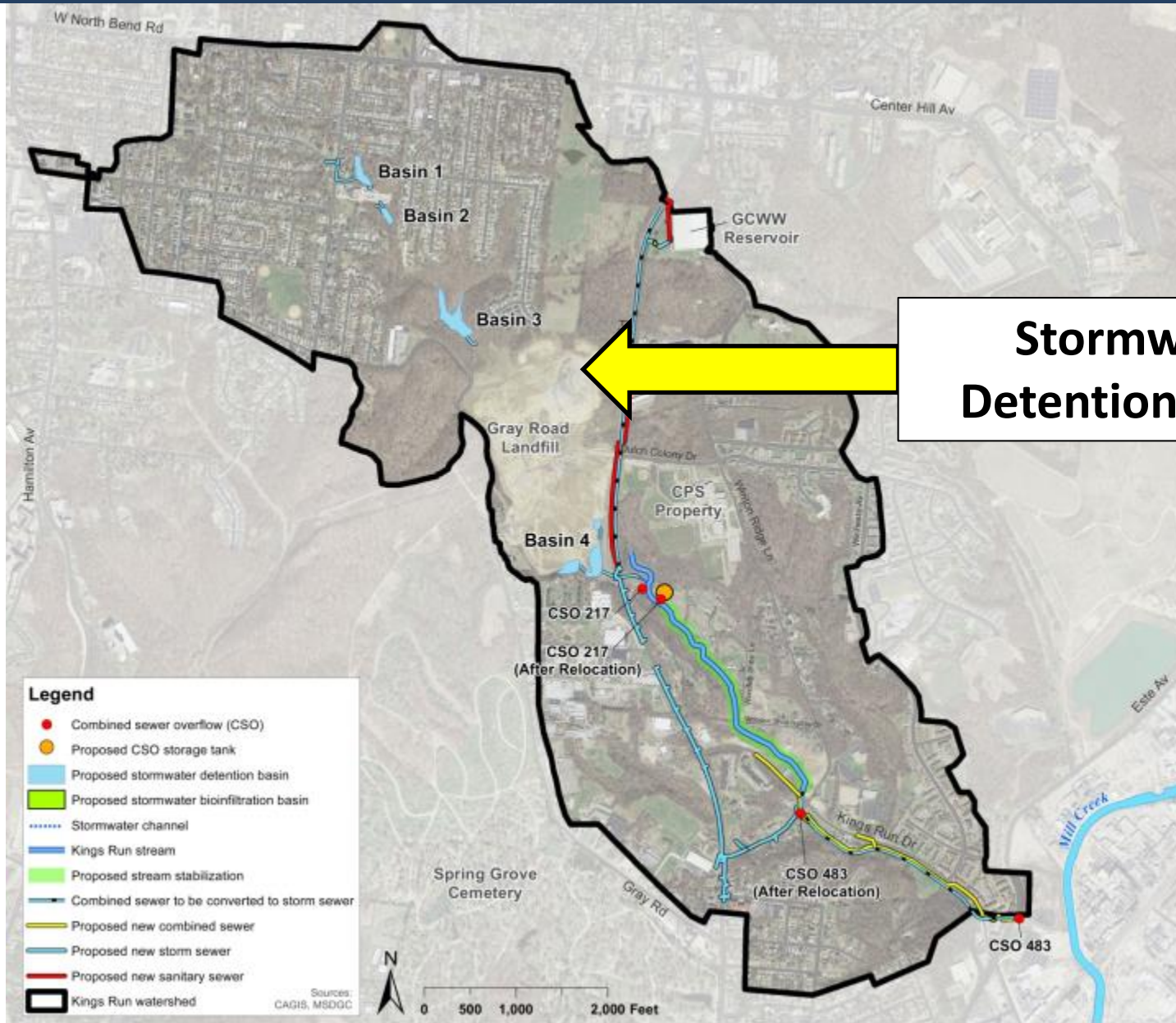
- Projects focus on managing stormwater and reducing CSOs
 - Restore historical connection between Kings Run stream and the Mill Creek
 - Reduce overflows at CSO 217 and CSO 483
 - ~90% control of combined sewer flows into the Kings Run stream
 - ~85% control of combined sewer flows into the Mill Creek

Lower Mill Creek – Kings Run Project (cont.)

- Projects include:
 - **Stormwater Detention Basins** - slow stormwater flow into the combined sewer or Kings Run stream
 - **Sewer Separation** - take stormwater flow out of the combined sewer and redirect it to Kings Run stream or the Mill Creek
 - **CSO Storage Tank** – capture and store CSO flows to reduce overflows into the Kings Run stream
 - **Stream Stabilization** – slow flow of water and reduce erosion in the Kings Run stream



Lower Mill Creek - Kings Run Project Map



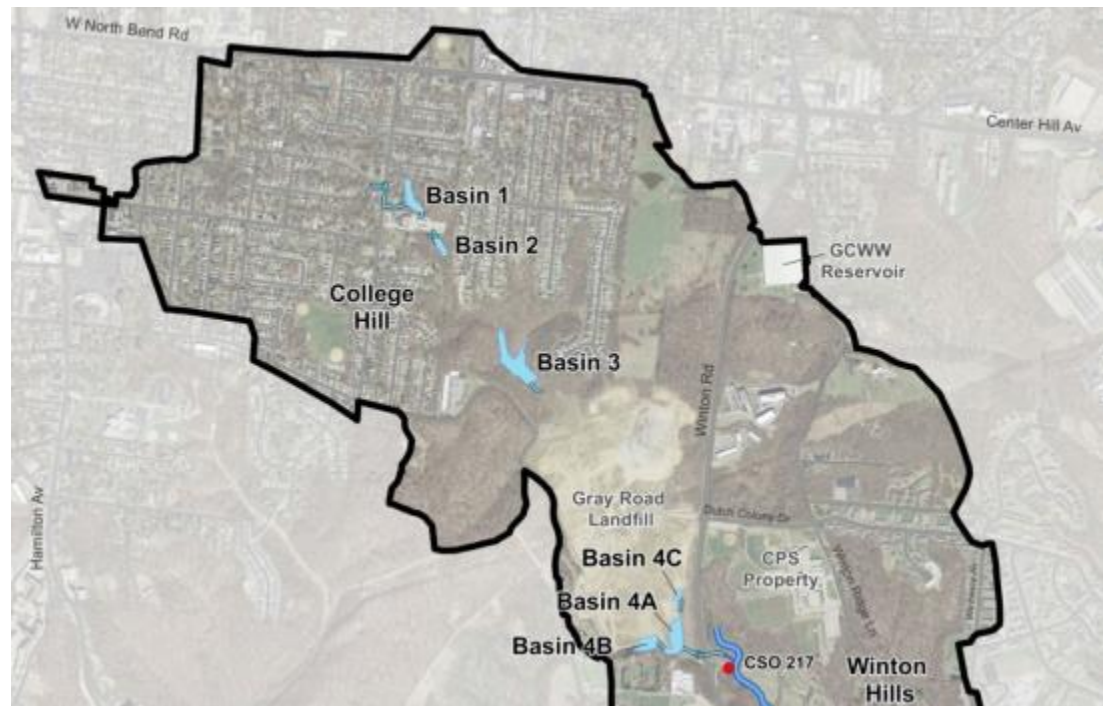
**Stormwater
Detention Basins**



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Stormwater Detention Basins

- Four basins in College Hill and Winton Hills
- Capture and hold stormwater; slowly release it
- Dry between rain storms; will rarely fill up



Basin 1 Description

- Existing low spot
- 0.6 acres
- Sloped sides, ~8 feet deep
- Channel to direct low flows to outlet
- Planted with grass/native grasses
- Discharges slowly to combined sewer



Photo of Basins 1 and 2 area

Basin 2 Description

- Existing low spot
- 0.3 acres
- Sloped sides, ~10 feet deep
- Planted with grass/native grasses
- Discharges slowly to combined sewer



**Example of similar-type basin
(not actual)**

Basins 1 and 2: College Hill



Basin 3 Description

- Retrofit of existing detention basin
- 1.7 acres
- Sloped sides, ~22 feet deep
- Planted with grass/native grasses
- Discharges slowly to combined sewer



Photo of Basin 3 area



Basin 3: College Hill

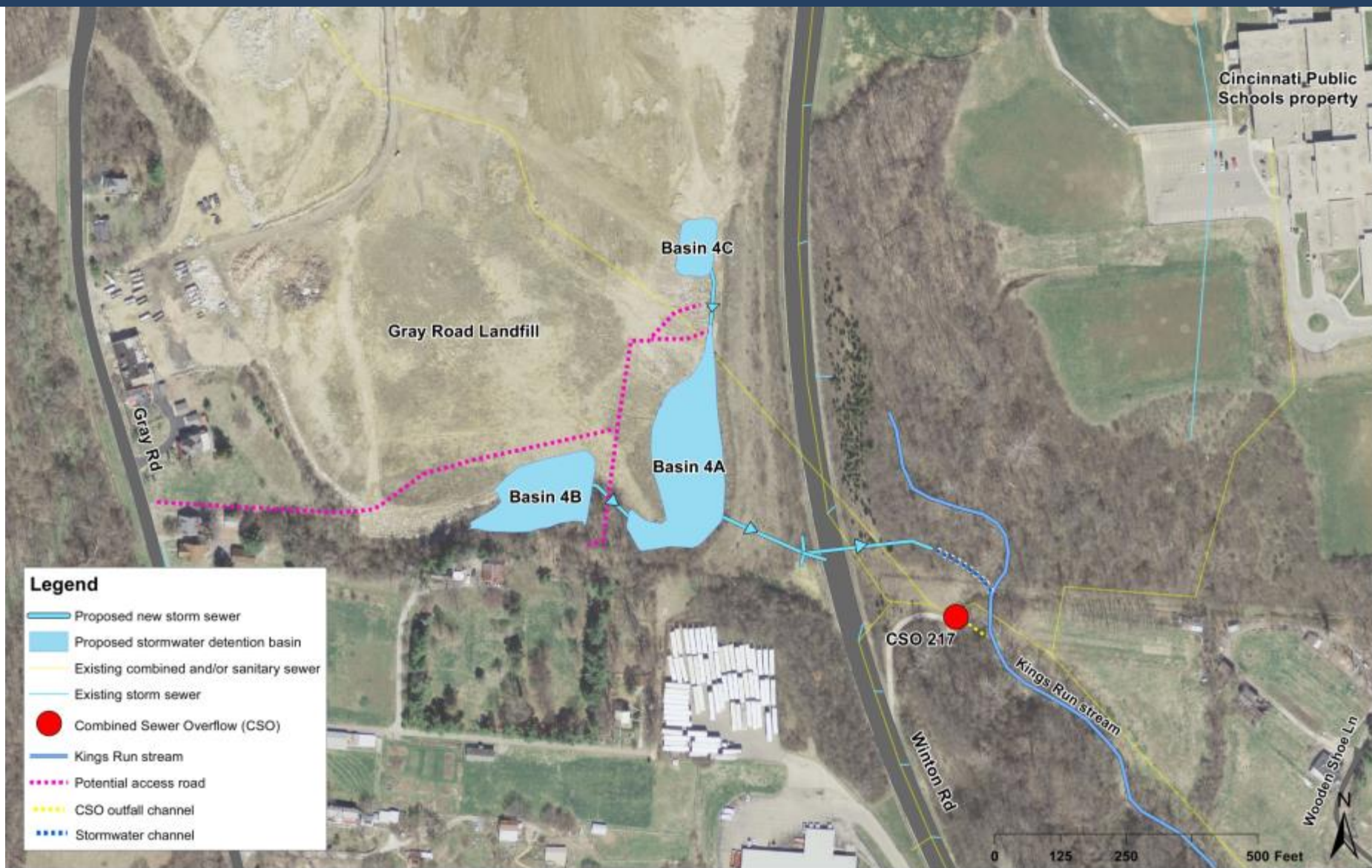


Basin 4 Description

- Basin 4 consists of three basins: 4A, 4B and 4C
- Basin 4A:
 - Existing detention basin that will be retrofitted
 - Will discharge into the Kings Run stream
 - Will mimic a wetland with native plantings for enhanced water quality
- Basins 4B and 4C:
 - Smaller basins that will be constructed to add more storage capacity
 - Will discharge into Basin 4A
 - Also used for settling of sediment



Basin 4: Winton Hills (Gray Road Landfill)



Basin 4A Description

- 1.1 acres
- Sloped sides, ~16 feet deep
- Will mimic a wetland
- Discharges slowly to Kings Run stream



Virginia Wildrye



Lake Sedge



Switch Grass

Basin 4B and 4C Description

- Description of 4B:

- 0.4 acres
- Sloped sides,
~8 feet deep
- Planted with
grass/native
grasses
- Discharges
slowly to Basin
4A

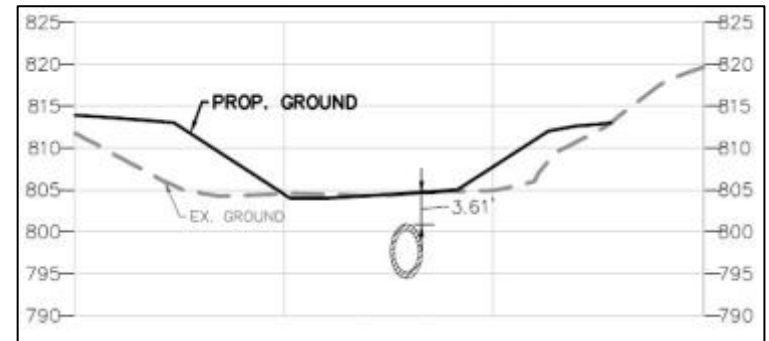
- Description of 4C:

- 0.1 acres
- Sloped sides,
~3 feet deep
- Planted with
grass/native
grasses
- Discharges
slowly to Basin
4A

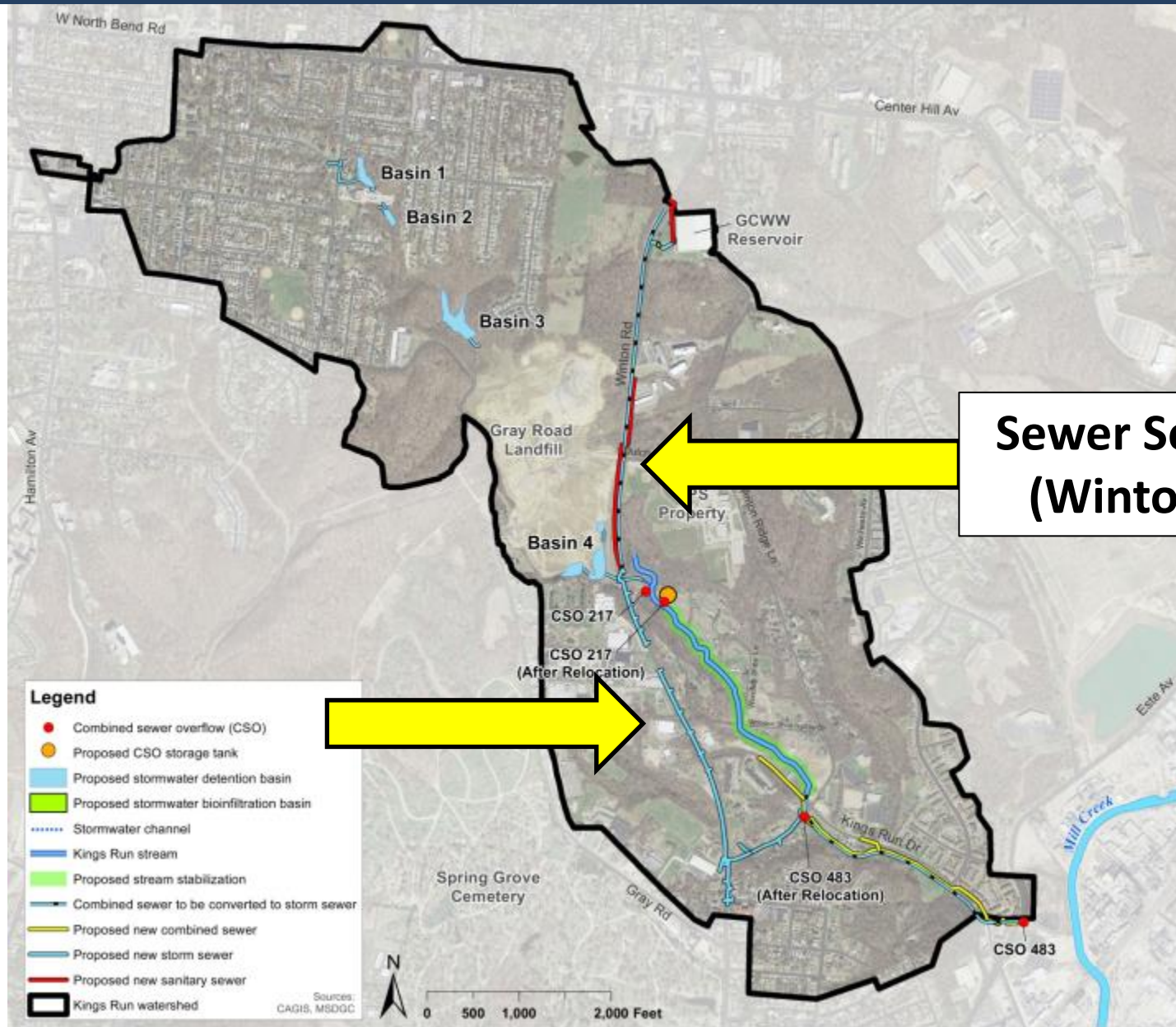


General Detention Basin Details

- Basins will not permanently hold water (with the exception of Basin 4A), so they will slowly drain out
- Basin 4A will mimic a wetland (shallow water at bottom)
- Basins 1 and 2 include a ~12-foot-wide flat buffer rim around the entire basin for improved safety
- Signage will be placed to deter access
- Basins are designed to blend into the natural space so will not be fenced



Lower Mill Creek - Kings Run Project Map



**Sewer Separation
(Winton Road)**



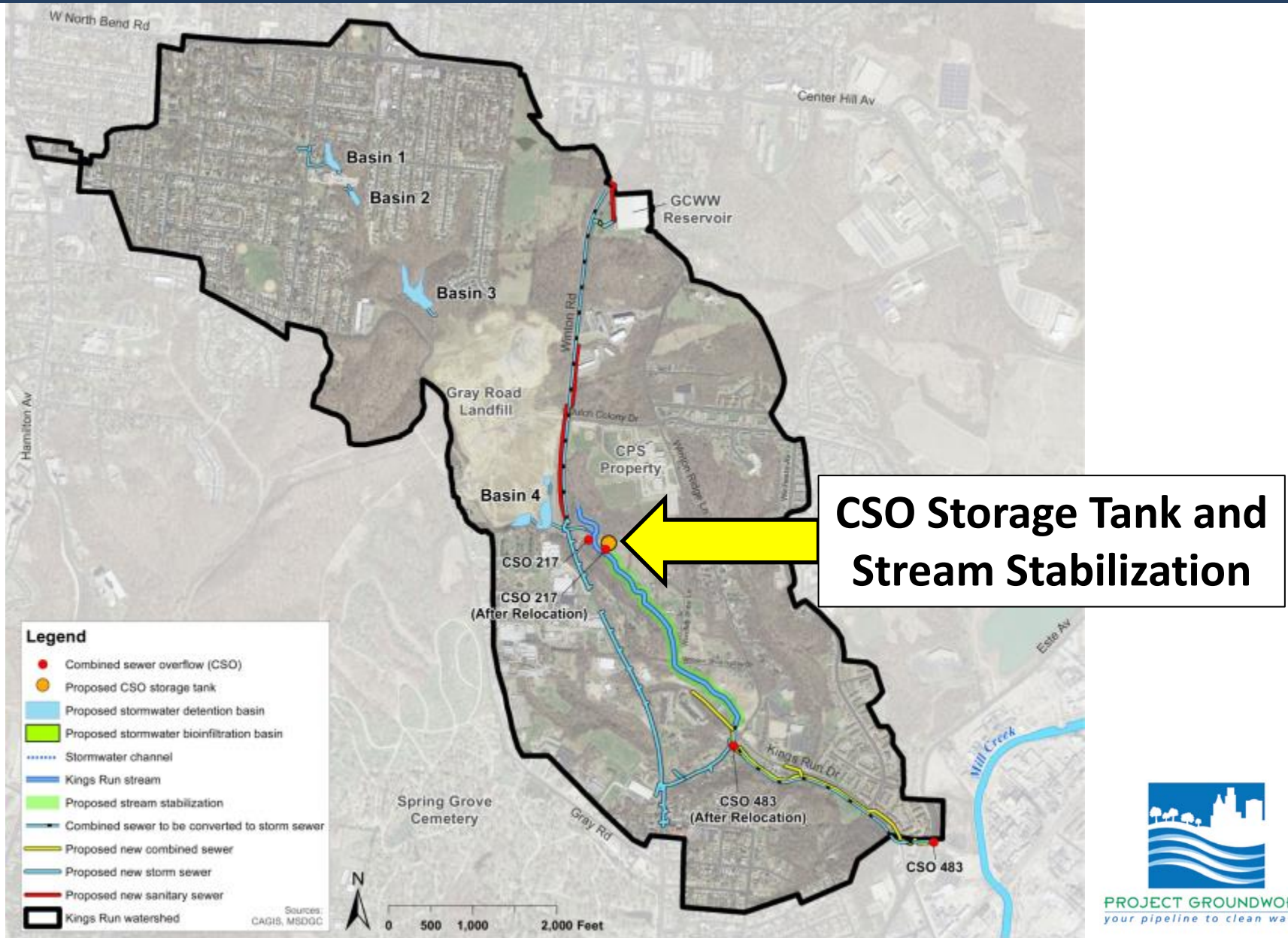
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Sewer Separation (Winton Road)

- Sewer separation in College Hill, Winton Hills and Spring Grove Village
 - ~5,600 feet of new storm sewer on Winton Road
 - ~2,700 feet of new sanitary sewer on Winton Road
 - Conversion of existing combined sewer to a storm sewer on Winton Road
- Small bioinfiltration basin (rain garden) at Water Works reservoir in College Hill

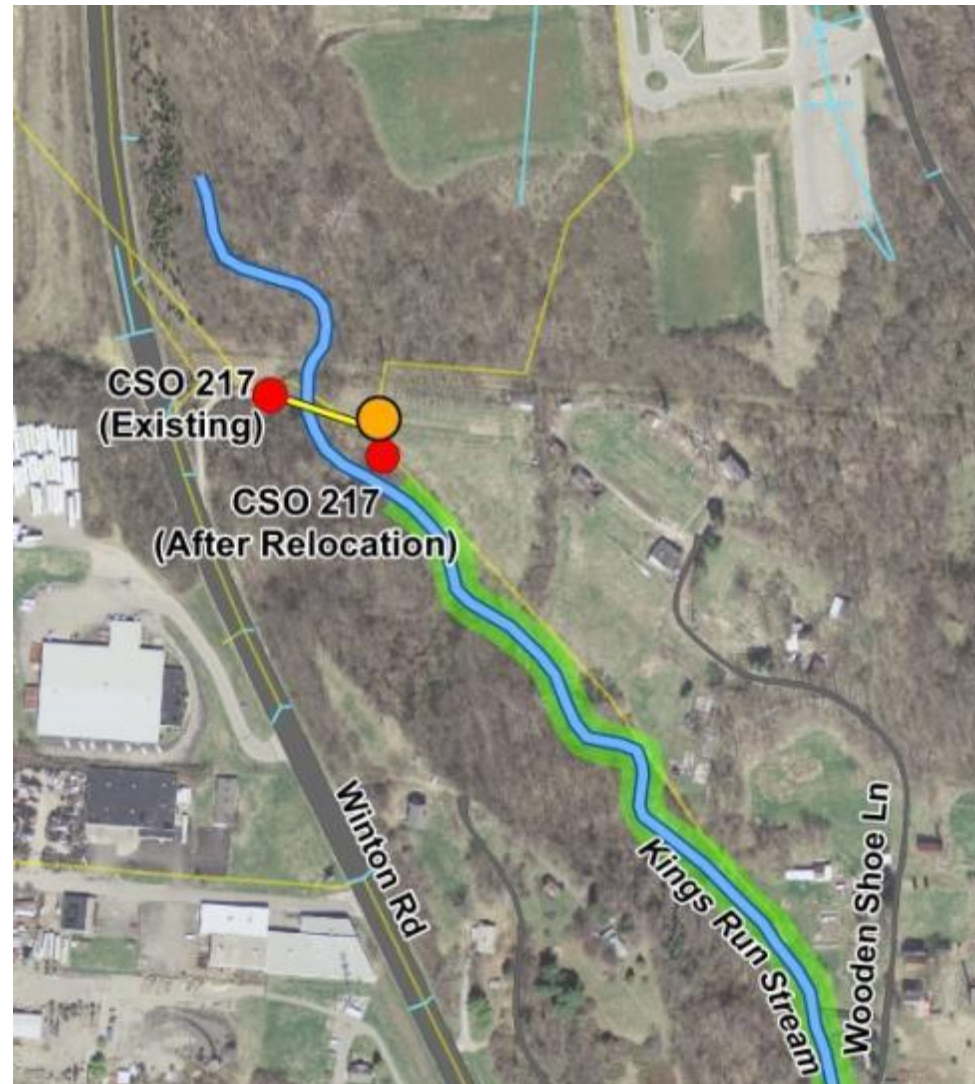


Lower Mill Creek - Kings Run Project Map



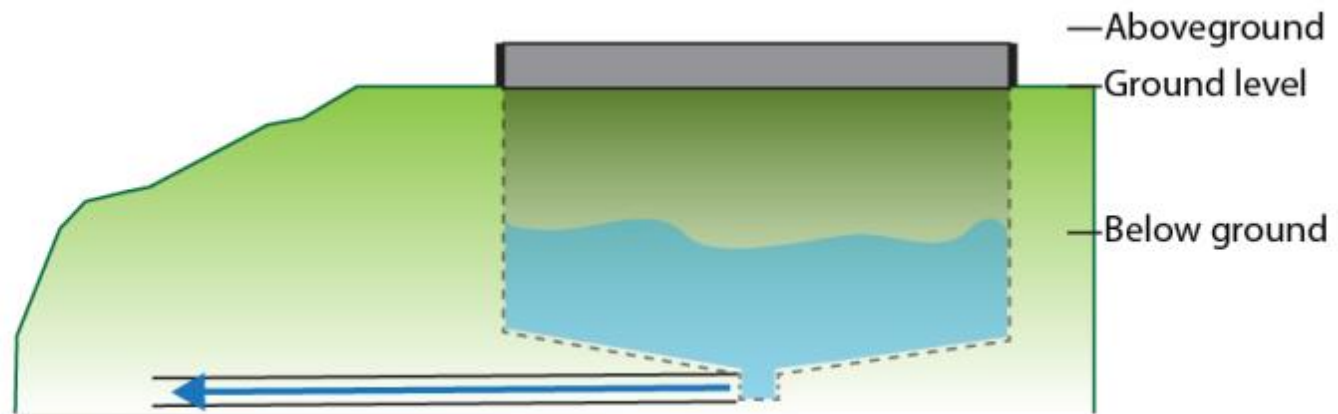
CSO Storage Tank

- Currently in planning phase
- Includes storage tank, access road and relocation of existing CSO 217
- How does it work?
 - Combined flows enter the tank
 - Stored for less than a day
 - Flows released back to combined sewer
 - Excess flows are discharged to the stream (~90% control)



CSO 217 Storage Tank (cont.)

- Will hold ~ 1.5 million gallons of combined sewage
- Probably circular in shape
- Primarily below ground (3-8 feet will remain aboveground)
- ~16-18 feet tall, ~140 feet in diameter
- Includes screening mechanism to remove debris
- Includes washing mechanism to clean out tank



Kings Run Stream Stabilization



Kings Run Stream after a heavy rain

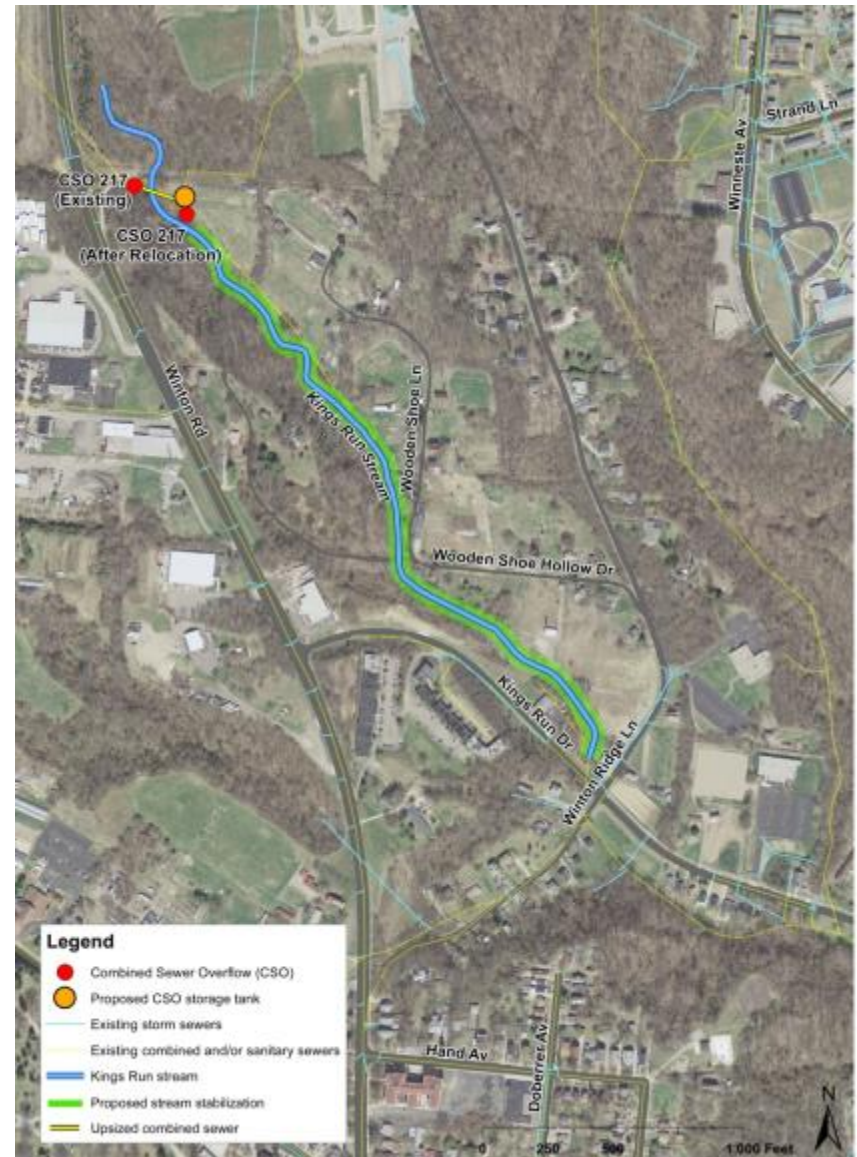
Kings Run Stream Stabilization (cont.)



Erosion of Kings Run stream

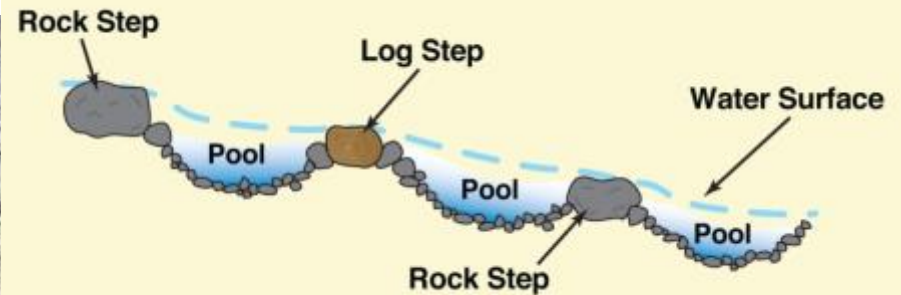
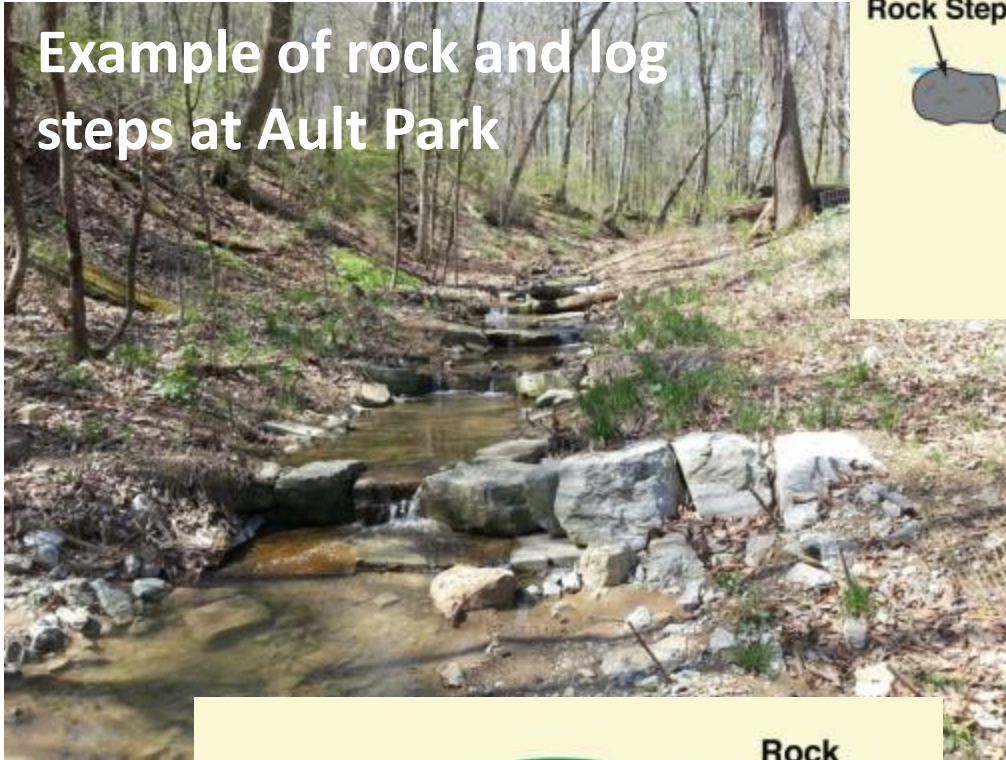
Kings Run Stream Stabilization (cont.)

- Currently in planning phase
- Identifying areas for stream stabilization along 3,000 feet of stream

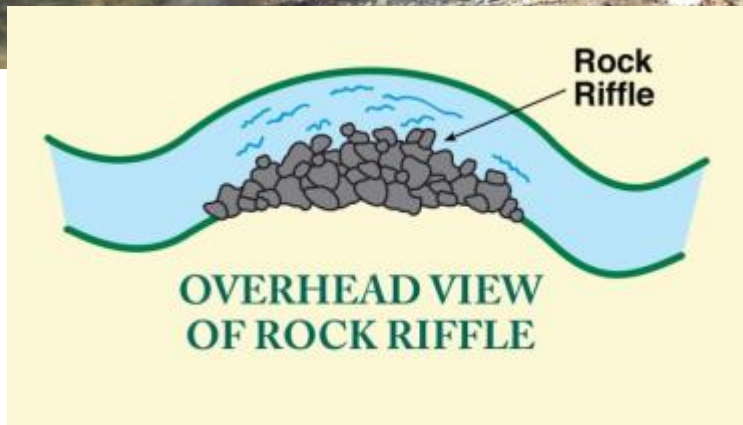


Kings Run Stream Stabilization (cont.)

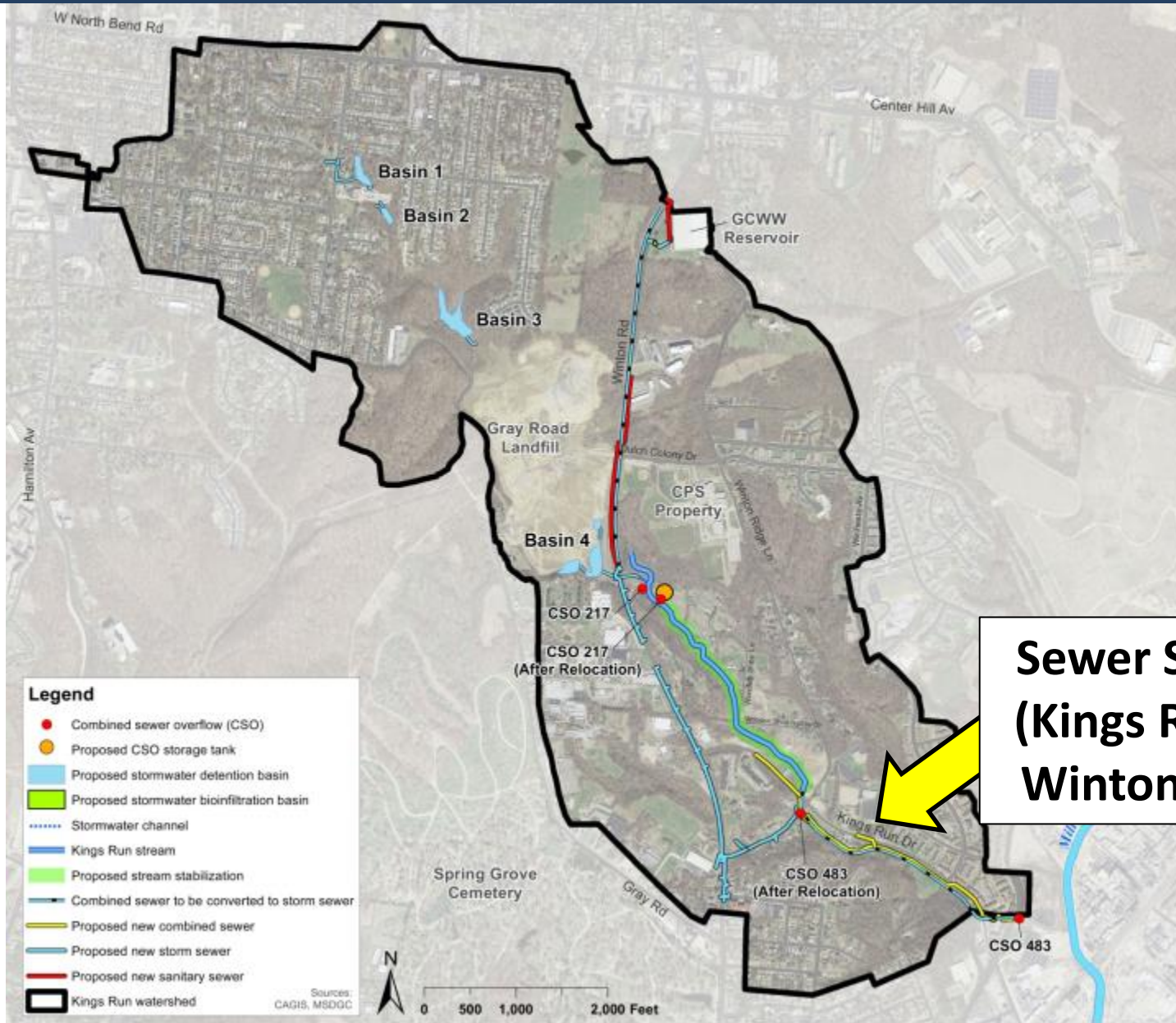
Example of rock and log steps at Ault Park



- Wetland near CSO 217
- Riffles and rock and log steps in select locations
- Stabilization of bottom and sides of stream bank in select locations
- Trees and other plantings along banks



Lower Mill Creek - Kings Run Project Map

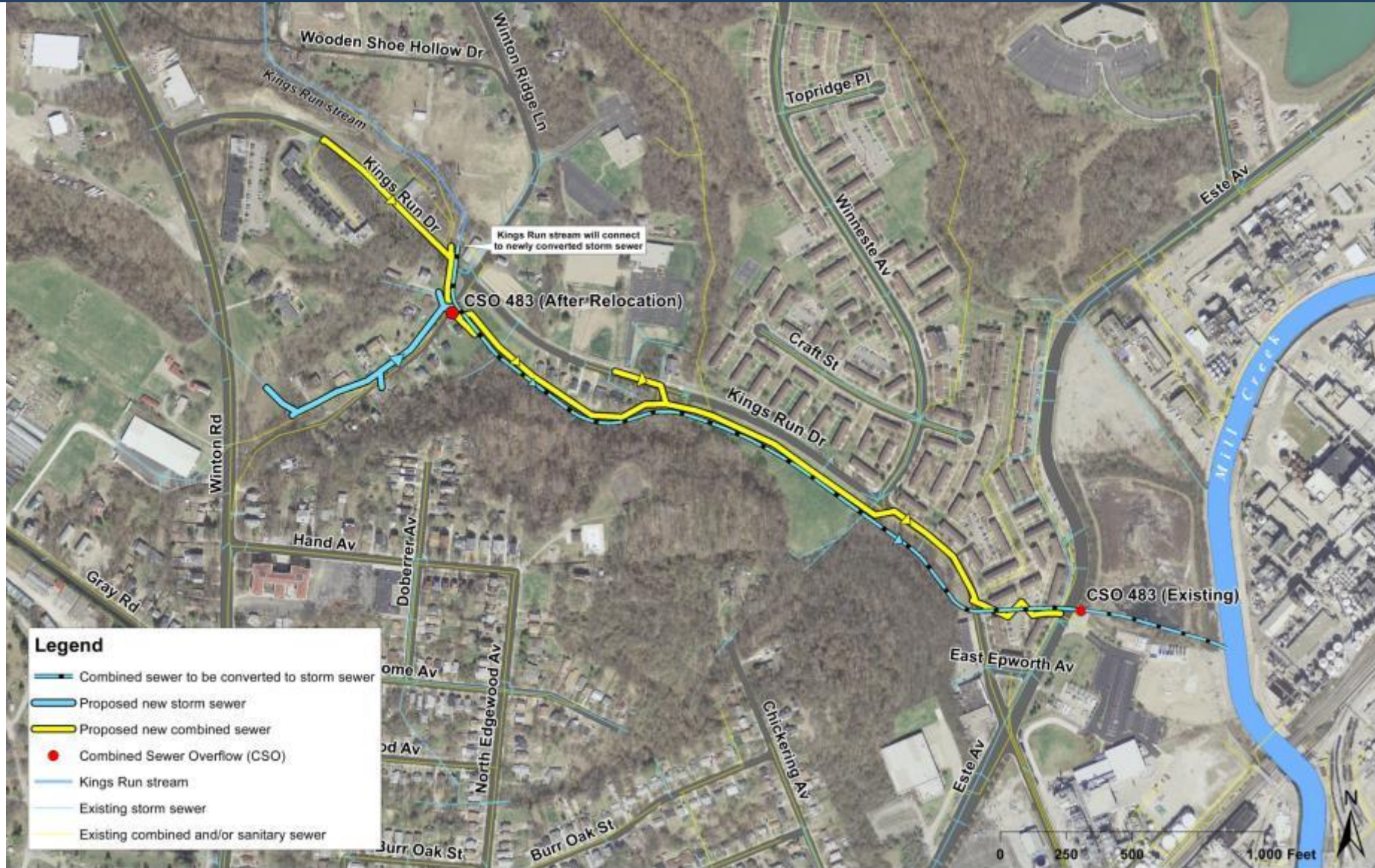


Sewer Separation (Kings Run Dr & Winton Ridge Ln)

- Sewer separation in Winton Hills and Spring Grove Village
 - ~1,000 feet of new storm sewer along Winton Ridge Lane between Kings Run Drive and Winton Road
 - ~4,300 feet of new combined sewer along Kings Run Drive between Winton Road and Este Avenue
 - Conversion of existing 14 x 8' combined sewer to a storm sewer that will discharge to the Mill Creek
 - Relocation of CSO 483
- Kings Run stream will flow into the converted storm sewer and once again connect to the Mill Creek



Sewer Separation (Kings Run Dr & Winton Ridge Ln)



Property Needed

- MSD needs to purchase private property/easements for this project:
 - Temporary/permanent easements from 43 property owners
 - Purchase portions of 10 properties
 - Purchase 2 full properties



Traffic Impacts

- Temporary construction impacts along:
 - Argus Road/Homeside Avenue
 - Winton Road
 - Winton Ridge Lane
 - Kings Run Drive
 - Este Avenue
- Lane restrictions will occur, but no detours planned
- Coordinating with Cincinnati Department of Transportation

Traffic Impacts (cont.)



Traffic Impacts (cont.)

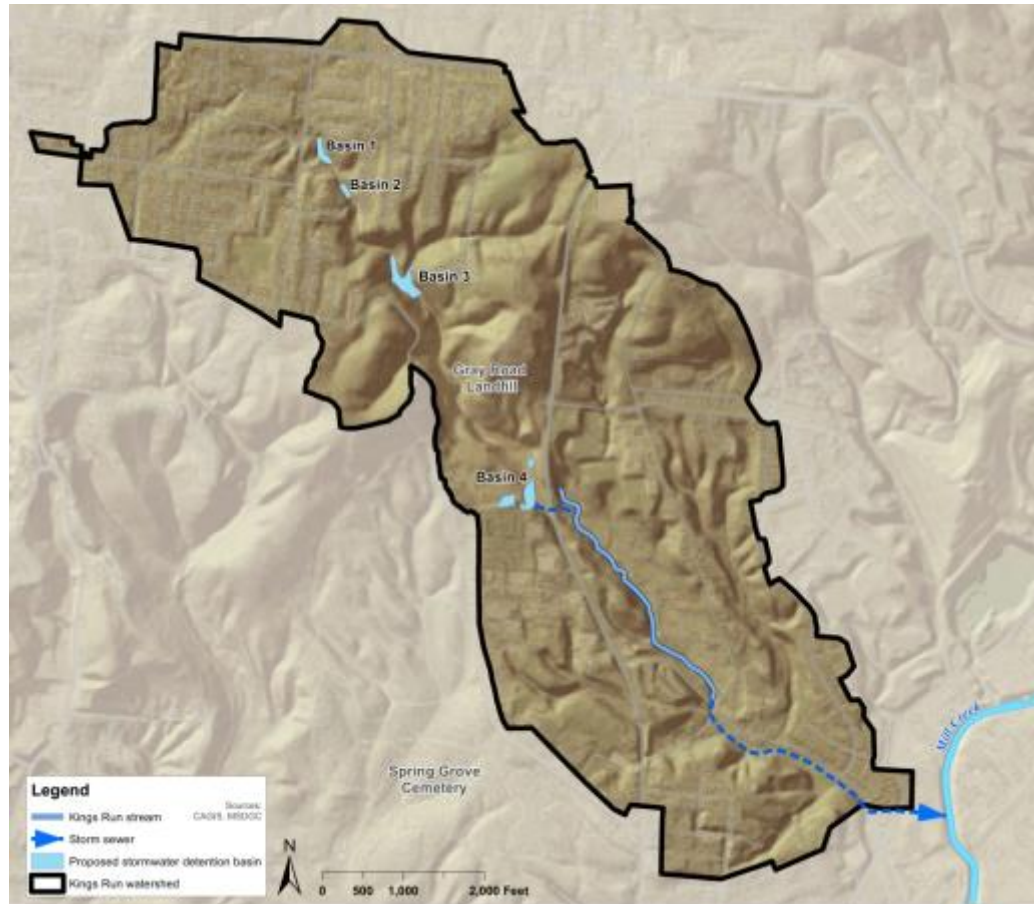


Construction Schedule

- 4 phases of construction:
 - Phase A-1: 4 Stormwater Detention Basins
Early 2016 to Fall 2016
 - Phase A-2: Sewer Separation along Winton Ridge Lane and Kings Run Drive
Summer 2016 to Summer 2017
 - Phase B: CSO Storage Tank and Stream Stabilization
2017 to 2018
 - Phase C: Sewer Separation along Winton Road
2017 to 2018



Project Summary



- Restores connection between Kings Run stream and the Mill Creek
- Reduces overflows at CSO 217 and CSO 483
 - ~90% control of combined sewer flows into the Kings Run stream
 - ~85% control of combined sewer flows into the Mill Creek

Kings Run Website:

www.projectgroundwork.org/kingsrun

MSD Customer Service:

(513) 557-3594

MSD.Communications@cincinnati-oh.gov

Questions?

Project Stations