Lick Run Project
Status Update Meeting #2

December 2, 2014

METROPOLITAN SEWER DISTRICT of greater CINCINNATI

PROJECT GROUNDWORK
your pipeline to clean water

Tonight's Agenda

- Welcome and Overview

- Lick Run Project Details
  - Flow Monitoring Update
  - Project Status
  - Related Projects
  - Valley Conveyance System (VCS)
  - Additional VCS Pre-Construction Activities
  - Next Steps

- Q&A

- Lick Run Project Stations (opportunity to talk to MSD staff and project partners)

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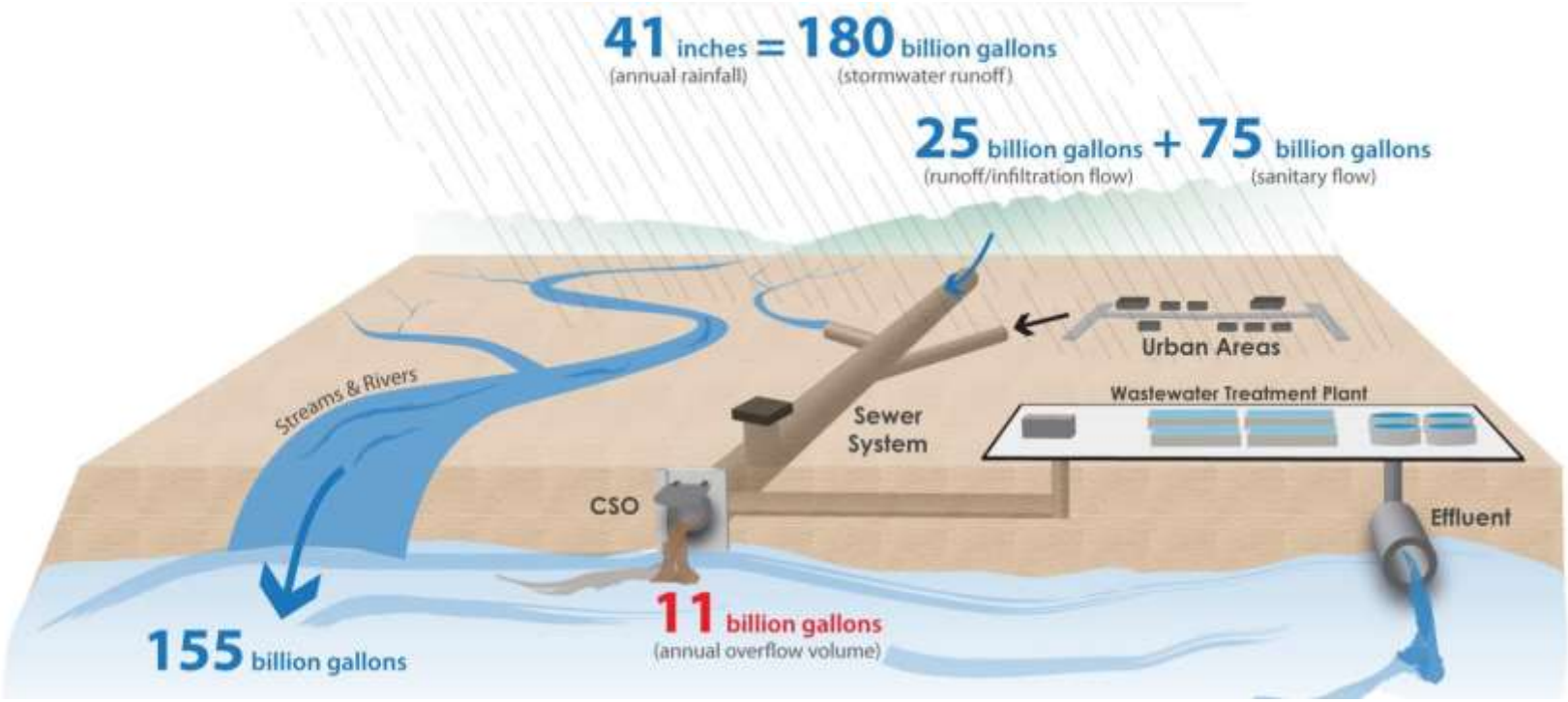
Our Challenge

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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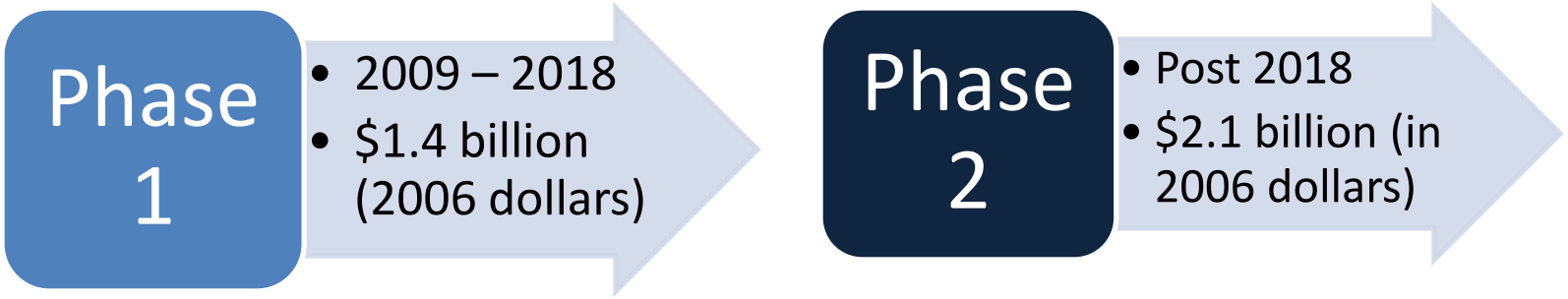
Our Solution

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



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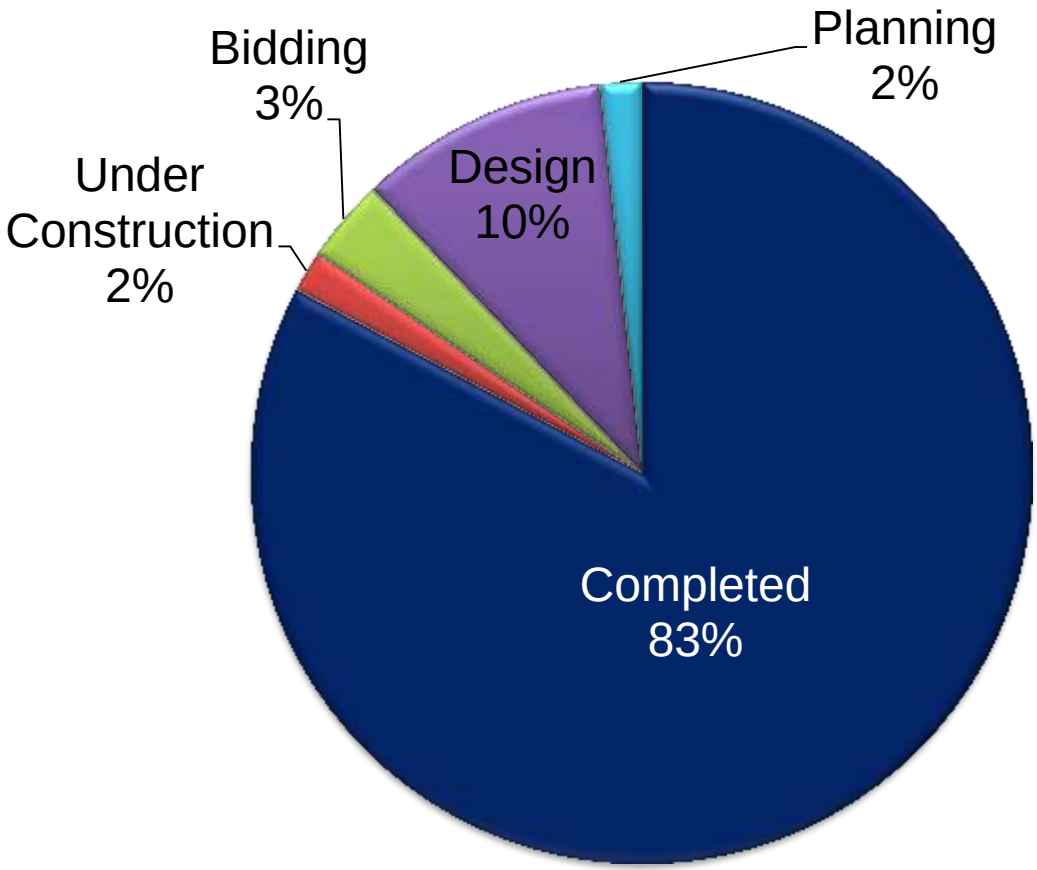
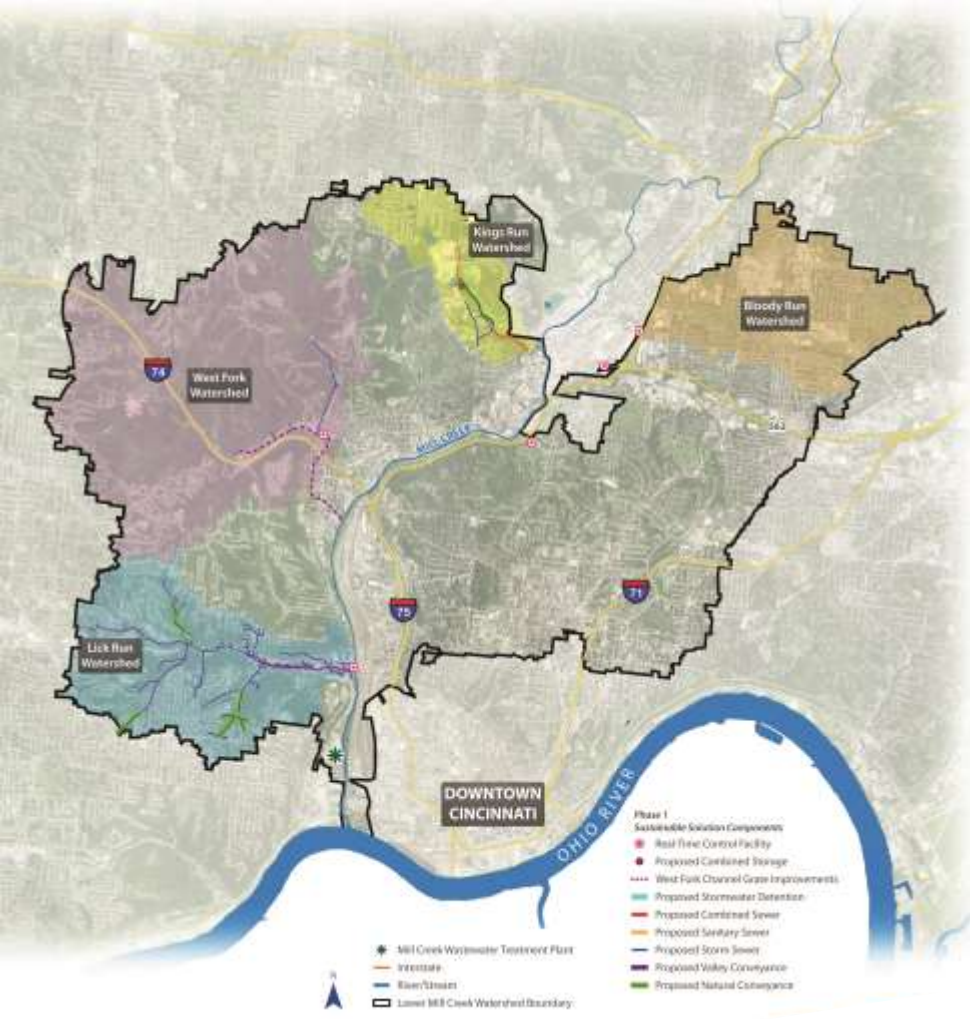
Phase 1 Program Results (continued)

- MSD has constructed 96 of the defined projects listed in Attachment 1B of the Final WWIP.

- The remaining projects are on schedule to be submitted in accordance with Consent Decree milestone dates.



Focus on Lower Mill Creek



- Under Phase 1, MSD required to substantially reduce CSOs annually into Lower Mill Creek
- Regulators approved a sustainable/hybrid, watershed based remedy in May 2013
- Cost is $244 million (in 2006 dollars), over $200 million less than the deep tunnel
- Includes a mix of green and gray projects in Lick Run, Bloody Run, Kings Run, and West Fork watersheds

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Focus on Lower Mill Creek (continued)

Added Benefits

- Improved water quality

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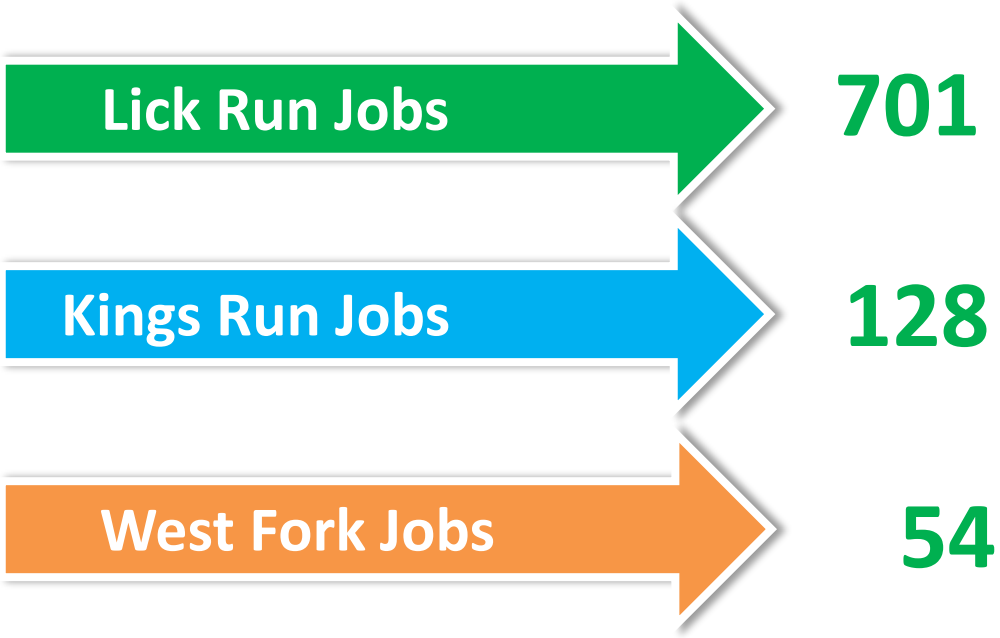
Focus on Lower Mill Creek (continued)

Added Benefits (continued)

- New jobs (construction/trade jobs)



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Focus on Lower Mill Creek (continued)

Added Benefits (continued)

- Opportunities for neighborhood revitalization

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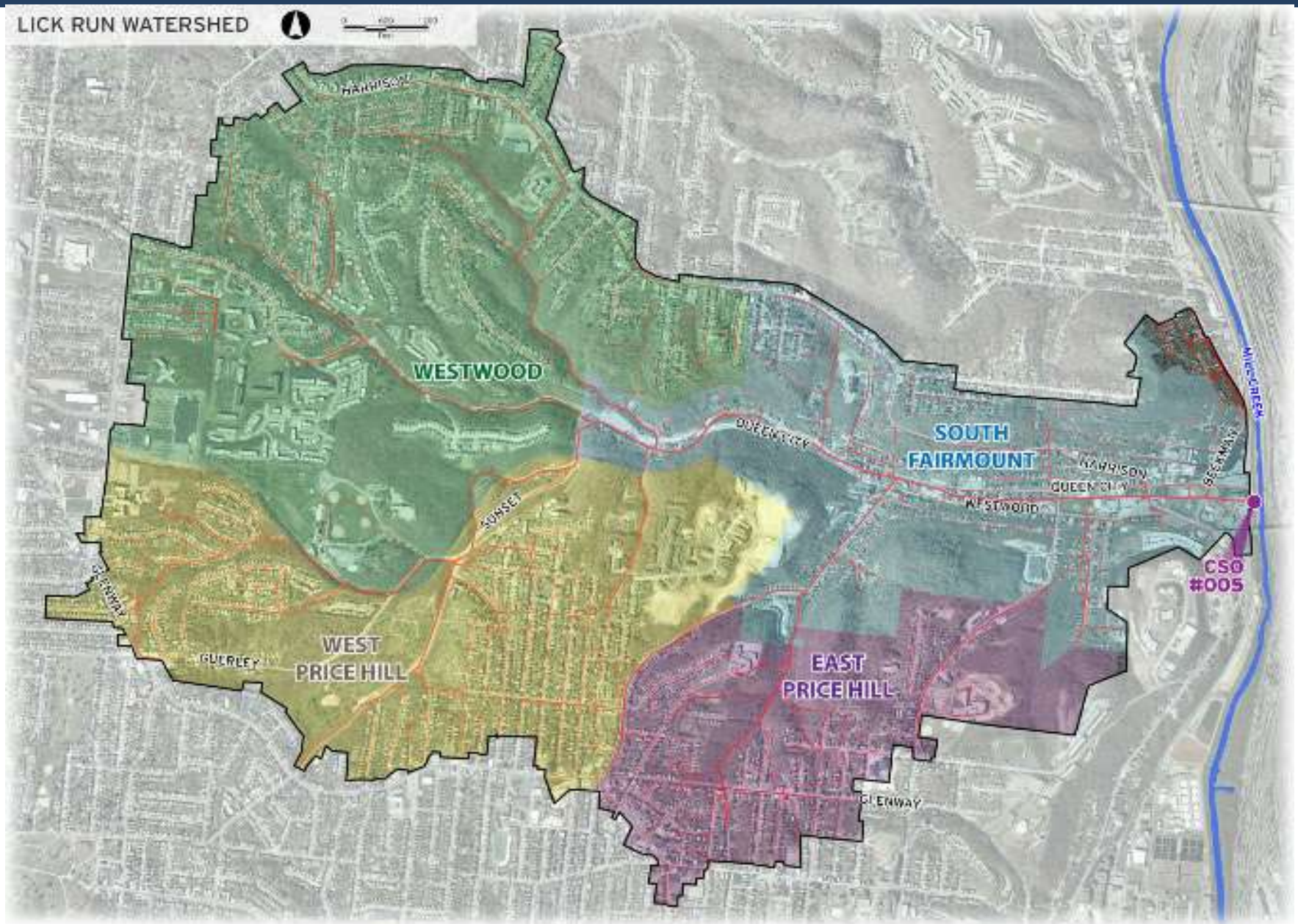
Lick Run Communities



Lick Run Project

- Includes 12 separate projects including:
  - Valley Conveyance System (VCS) in South Fairmount that will carry stormwater to the Mill Creek
  - 11 other stormwater separation projects to collect and convey stormwater to the VCS
- All together, these projects will keep nearly half a billion gallons of stormwater out of the combined sewer system
- $193 million to design and construct (2006 dollars)
- About $800,000 annually to operate and maintain (in 2012 dollars)

Flow Monitoring Update

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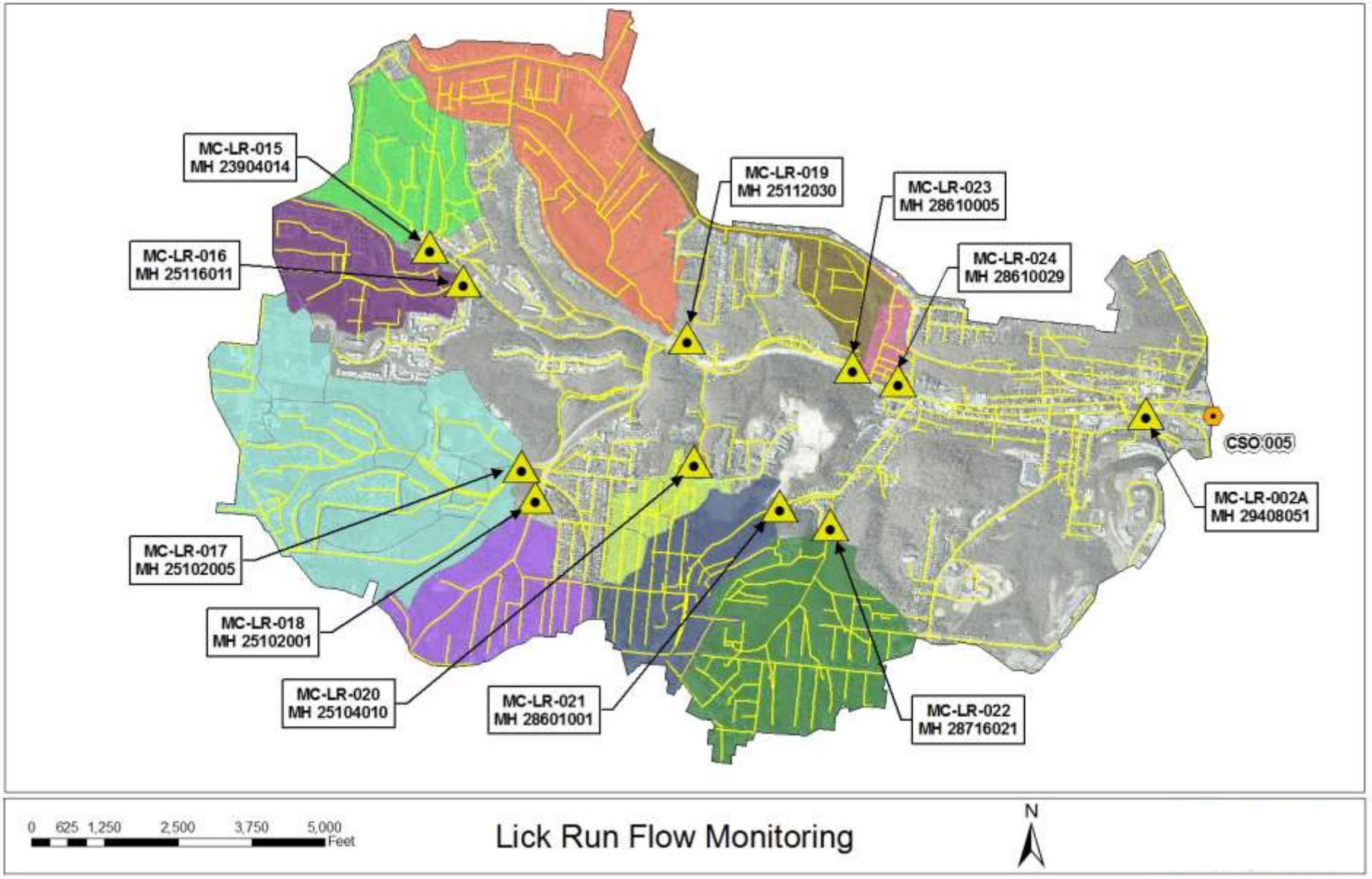
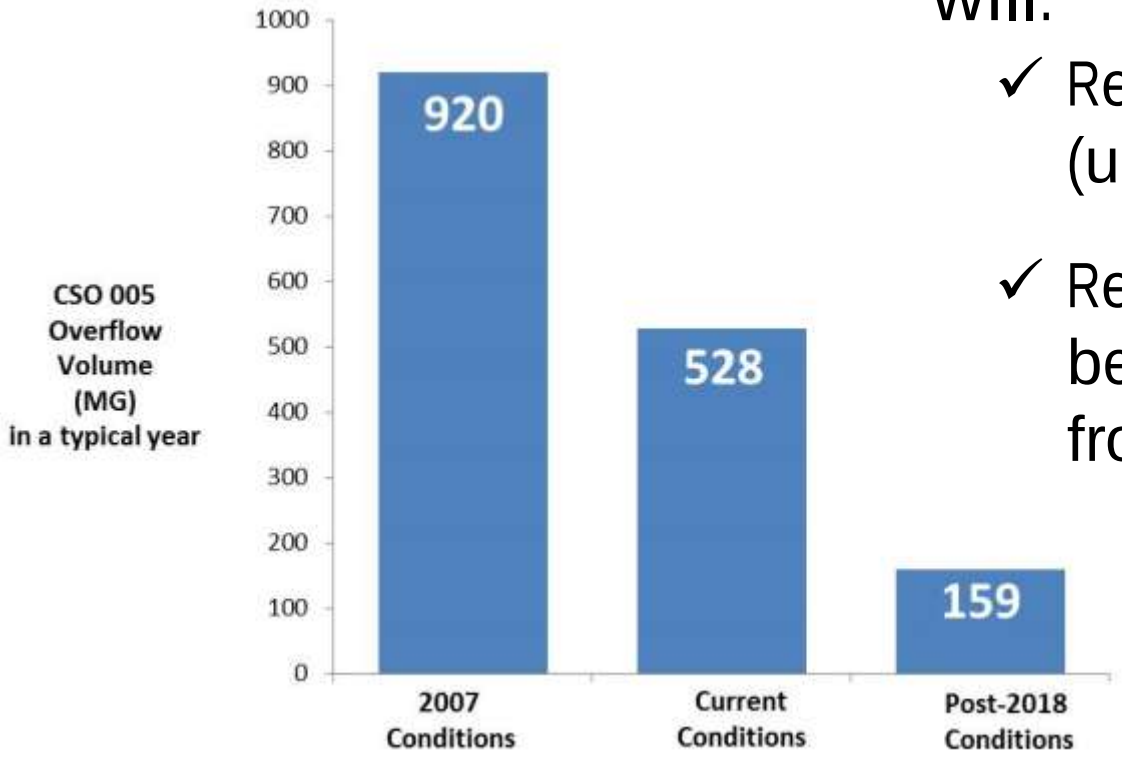
Flow Monitoring Map



Flow Monitoring Update (continued)



- Based on the new hydraulic model, the Lick Run Project will:
  - ✓ Reduces overflow by 70% (up from 62%)
  - ✓ Remaining overflow will be 159 million gallons (down from 325 million gallons)

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Lick Run Project Team Members

- Sue Pressman, Program Manager, Lower Mill Creek Partial Remedy
- Julie Schroeder, Project Manager, Queen City Avenue Phase 1 and Phase 2; Harrison Avenue Phase B; White Street; and Sunset Avenue
- Scott Willis, Project Manager, Rapid Run Park; Quebec Heights and Queen City & Cora
- Wes Wimmer, Project Manager, Quebec Road
- Melissa Holscher, Project Manager, Wyoming & Minion
- David Hafner, Project Manager, Valley Conveyance System (VCS)
- Andrew Reynolds, Project Manager, VCS Demos and Historic Property Mitigation
- Ali Bahar, VCS Construction Manager At Risk (CMAR) Project Manager

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Project Status

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Lick Run Project Map

Lick Run Project Status

12 projects include (in order of anticipated construction start):

1	Harrison Avenue Phase A	**COMPLETED**
2	Rapid Run Park	**COMPLETED**
3	Queen City Avenue Phase 1	**UNDER CONSTRUCTION**
4	Harrison Avenue Phase B	**UNDER CONSTRUCTION**
5	White Street	**STARTING SOON** Spring 2015 – Summer 2016
6	Sunset Avenue, Sunset Lane & Rapid Run Pike	**STARTING SOON** Spring 2015 – Summer 2016

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Lick Run Project Status (continued)

7	Quebec Heights	**STARTING SOON** Summer 2015 – Fall 2016
8	Valley Conveyance System (VCS)	**STARTING SOON** Summer 2015 – Summer 2018
9	Queen City Avenue, Phase 2	Winter (Dec) 2015 – Winter (Dec) 2017
10	Queen City & Cora Avenues	Summer 2016 – Summer 2017
11	Wyoming & Minion Avenues	Summer 2016 – Summer 2017
12	Quebec Road	Summer 2016 – Summer 2017

ALL PROJECTS MUST BE COMPLETED BY DECEMBER 2018

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Harrison Avenue, Phase A (COMPLETED)

- Completed in Fall 2013
- New storm sewers
- Coordinated with CDOTE
- Estimated to remove ~12 million gallons of stormwater from combined sewer (during a typical year of rain)
- Will connect to Valley Conveyance System (VCS)
- Curb-side bumpout planter at Tremont added in Spring 2014.

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STOP

Rapid Run Park (COMPLETED)

- Completed in Fall 2014
- First large-scale green project in Lick Run and includes:
  - Bioswale and two small bioretention basins
  - New storm sewers
- Fully planted (49 trees, 158 shrubs and 36,000 plant plugs)
- $200,000 in grant money from the U.S. Forestry Service
- Estimated to remove ~165 million gallons of stormwater (when connected to Sunset project)

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Before


After

Queen City Avenue, Phase 1
(UNDER CONSTRUCTION)

- New storm sewers
- Estimated to remove ~27 million gallons of stormwater
- Will connect to Valley Conveyance System (VCS)
- **Construction:**
  Fall 2013 – Spring 2015

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Harrison Avenue, Phase B
(UNDER CONSTRUCTION)

- New storm sewers
- Estimated to remove ~17 million gallons of stormwater
- Will connect to Valley Conveyance System (VCS)
- **Construction**: Fall 2014 – Spring 2015

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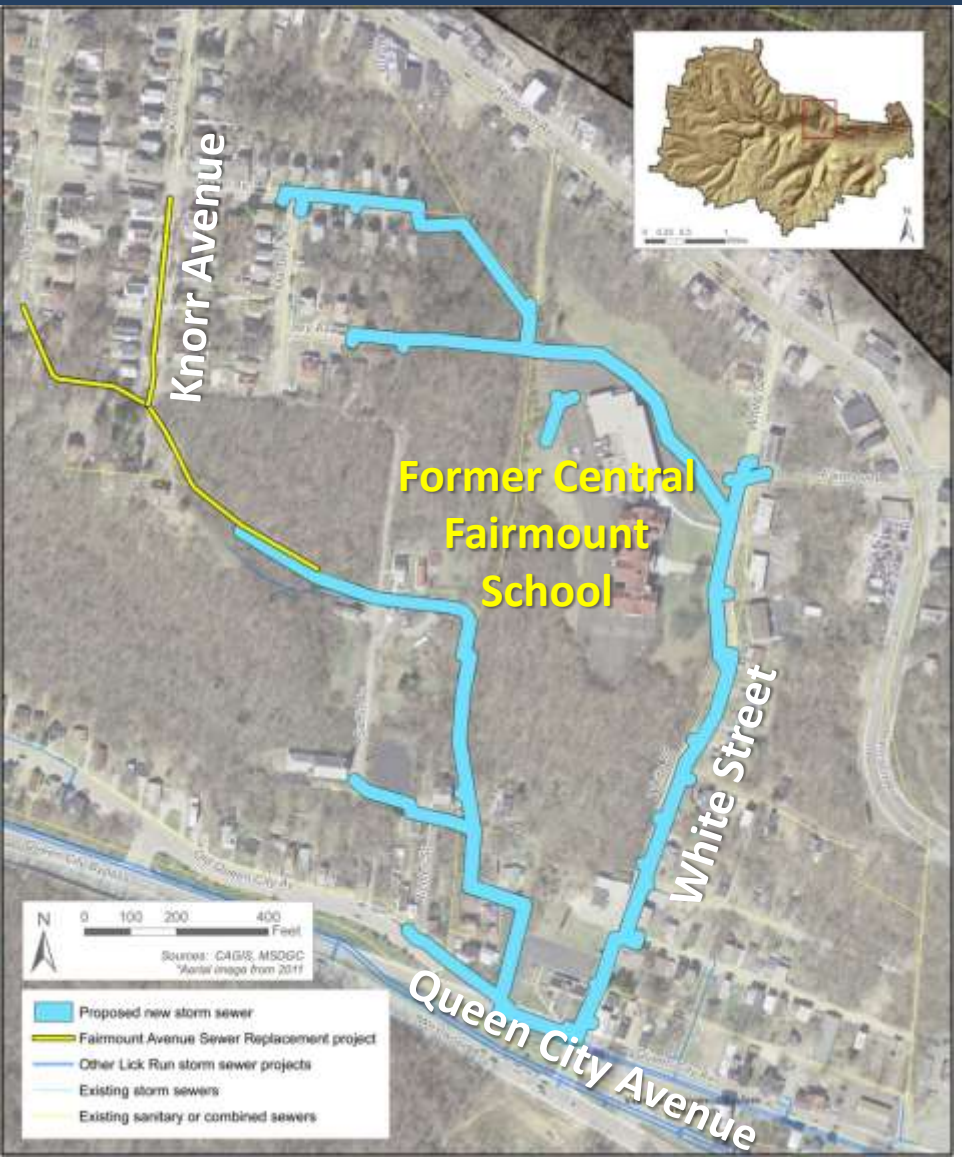
White Street **(STARTING SOON)**



- New storm sewers
- Estimated to remove ~14 million gallons of stormwater
- Will connect to the Valley Conveyance System (VCS)
- **Anticipated construction**: Spring 2015 – Summer 2016

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Sunset Avenue, Sunset Lane and Rapid Run Pike **(STARTING SOON)**

- New storm sewers and one new detention basin
- Estimated to remove ~165 million gallons of stormwater (when connected to Rapid Run)
- Will connect to Queen City Avenue storm sewers and tie in Rapid Run Park & Guerley Road Dam
- **Anticipated construction:** Spring 2015 – Summer 2016

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Quebec Heights **(STARTING SOON)**

- Green project in Glenway Woods; includes:
  - Restoration of a stream that was enclosed in a combined sewer
  - Retrofit of existing detention basin
  - New storm sewers
- $150,000 grant from U.S. Forestry Service
- Will remove ~11 million gallons of stormwater from combined sewer during a typical year
- Will connect to Quebec Road storm sewer
- **Anticipated construction**: Summer 2015– Fall 2016

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Other Related Projects

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Other Related Projects

- Guerley Road Detention Dam **(COMPLETED)**
- Roberts Academy Project **(COMPLETED)**
- Sewer Replacement Projects

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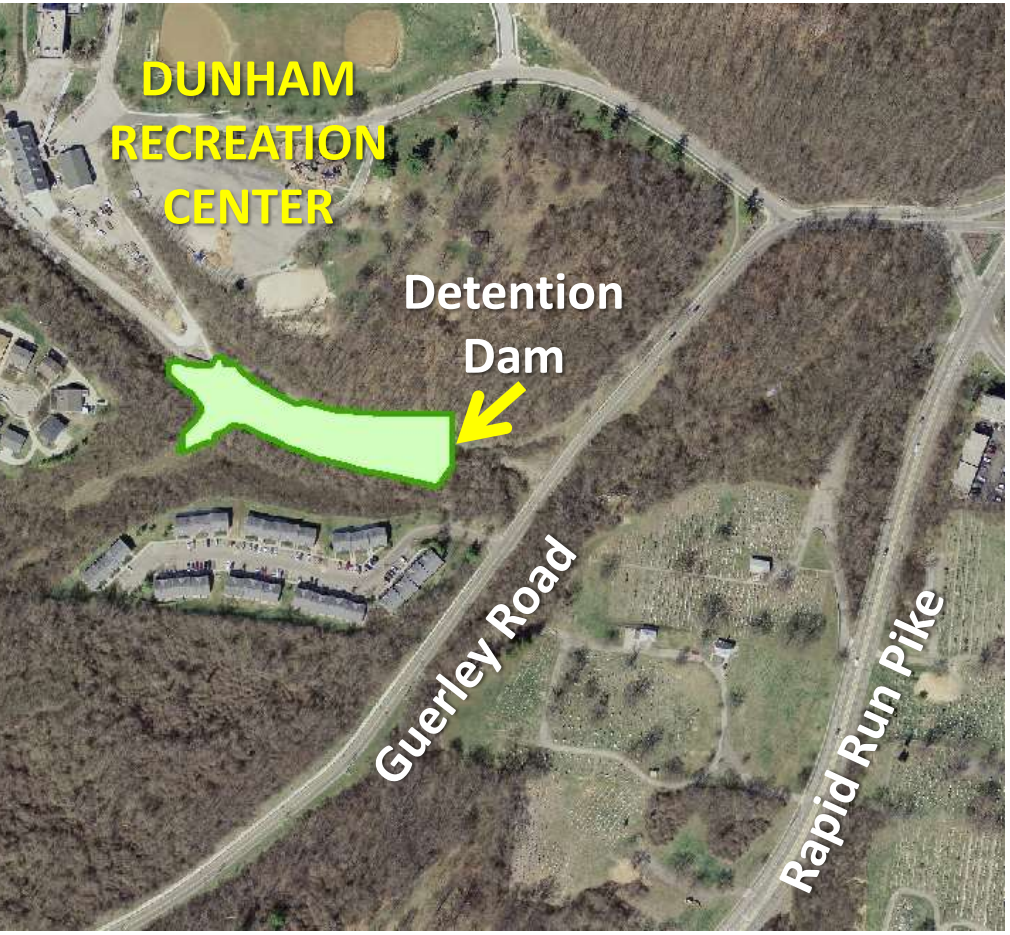
Guerley Road Dam (COMPLETED)



- Completed in Summer 2014
- Cincinnati Stormwater Management Utility (SMU) project
- Large earthen detention dam (1.4 acres)
- Helps reduce street flooding on Guerley road
- Helps reduce CSOs into the Mill Creek

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Dunham
Rec Ctr
NW

Roberts Academy in East Price Hill

- Completed in Fall 2014
- Partially funded by a grant, with matching funds from MSD and CPS
- Overseen by Mill Creek Watershed Council
- Retrofit of existing stormwater detention basin and 5 new bioinfiltration basins; removes 1.25 million gallons of stormwater

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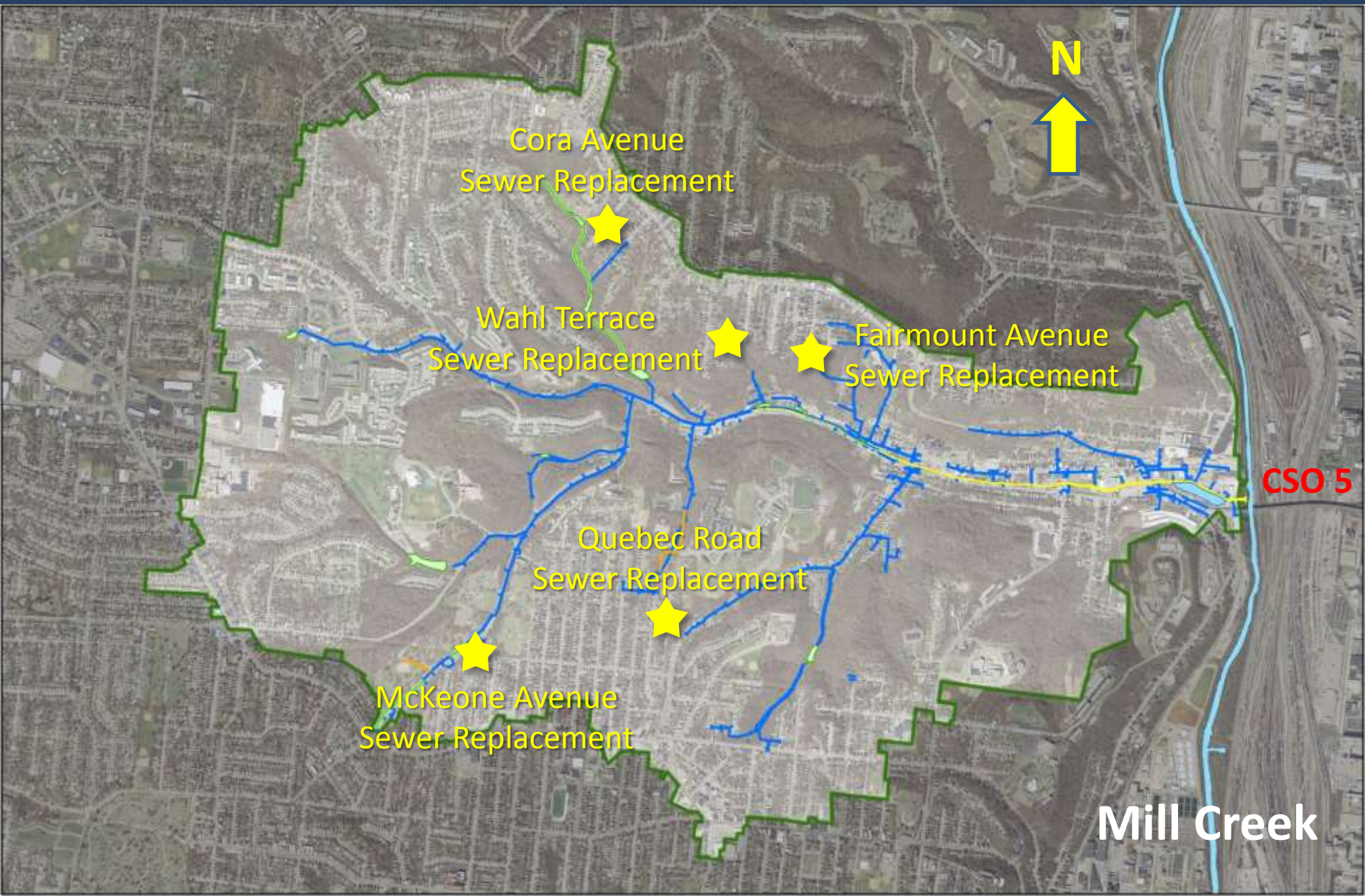
MSD Sewer Replacement Projects



Valley Conveyance System (VCS)

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Valley Conveyance System (VCS)

- Stormwater conveyance system to convey (carry) stormwater to the Mill Creek
- 1.5 miles long
  - Wetland forebay and infiltration basins
  - Headwaters (“daylighting”) area
  - 1 mile of urban waterway
  - Water Quality Pond
  - Stormwater conveyance box underneath the entire system

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VCS (continued)

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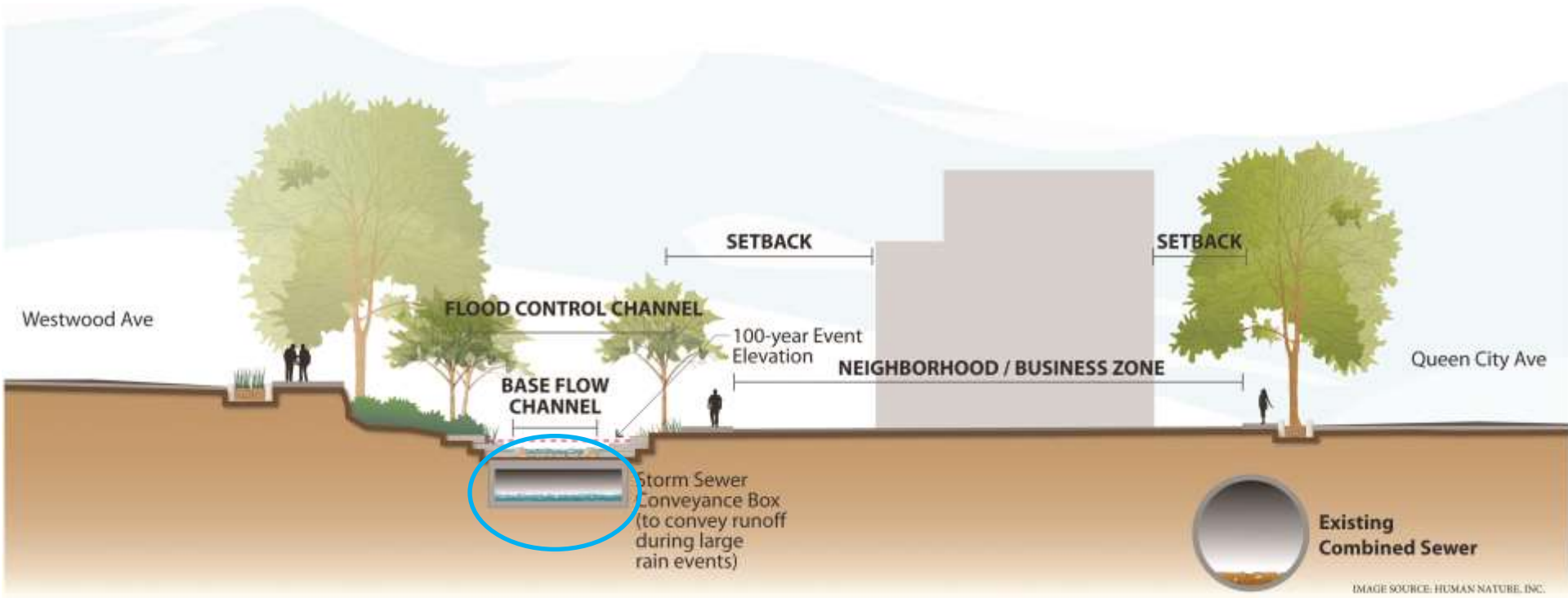
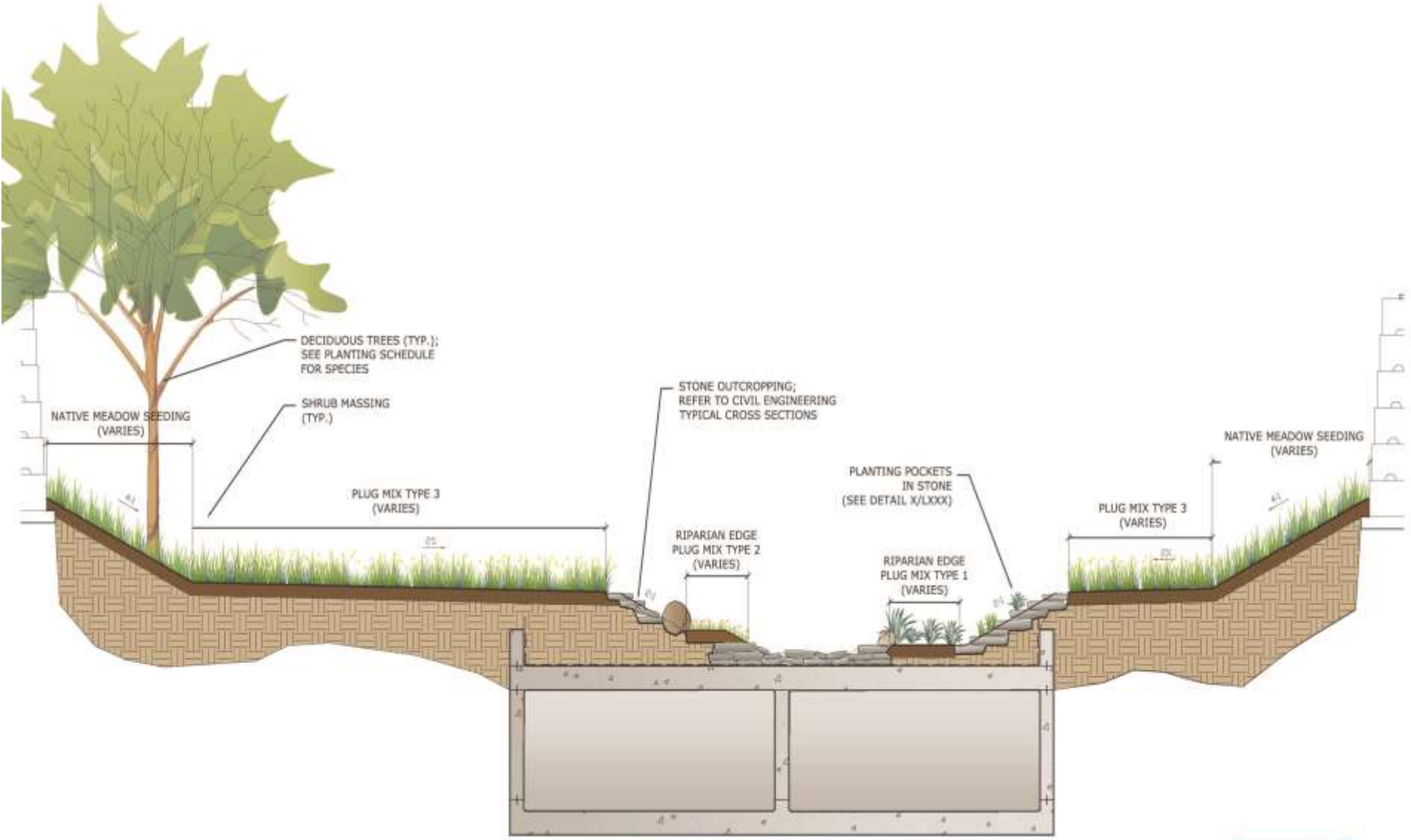
VCS (continued)



- VCS consists of a urban waterway and a stormwater conveyance box
- Concrete conveyance box runs beneath the entire system to convey runoff during large storms
- The concrete box will **NOT** be visible aboveground



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VCS (continued)

What will the urban waterway look like?

- Designed to mimic a natural waterway:
  - Meandering channel
  - Runs, pools and riffles
  - Natural stone
  - Riparian edge planted with native plants and trees

VCS (continued)

A

VCS (continued)

B

VCS (continued)

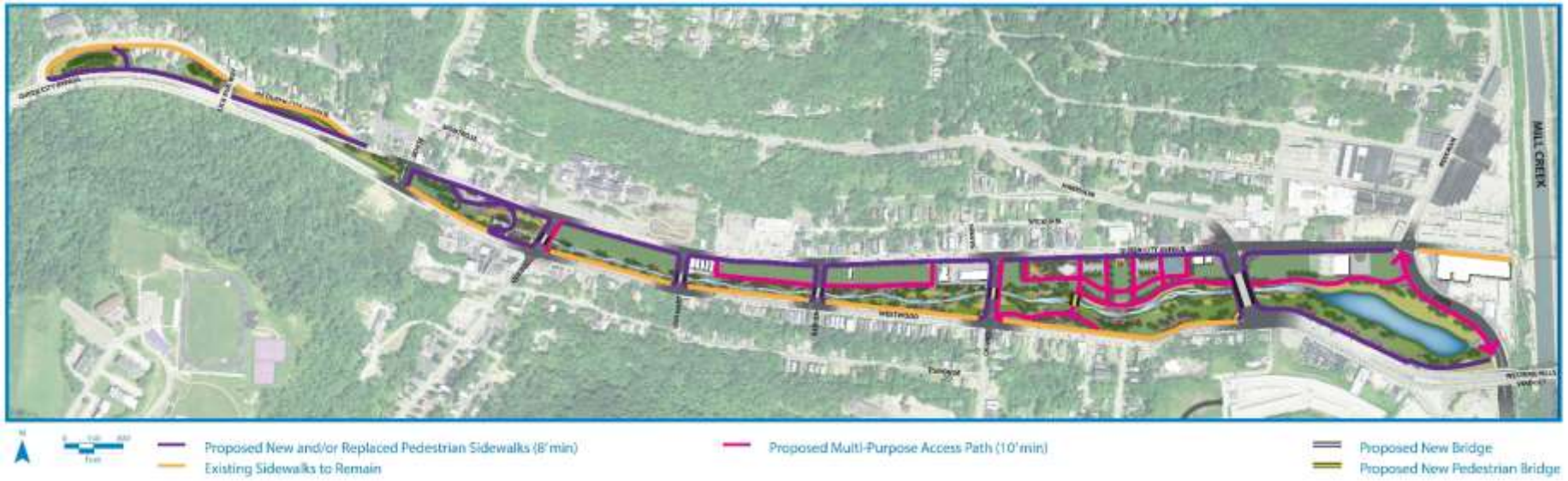
C

VCS (continued)

D

VCS (continued)

Maintenance Access Path / Multi-Use Path



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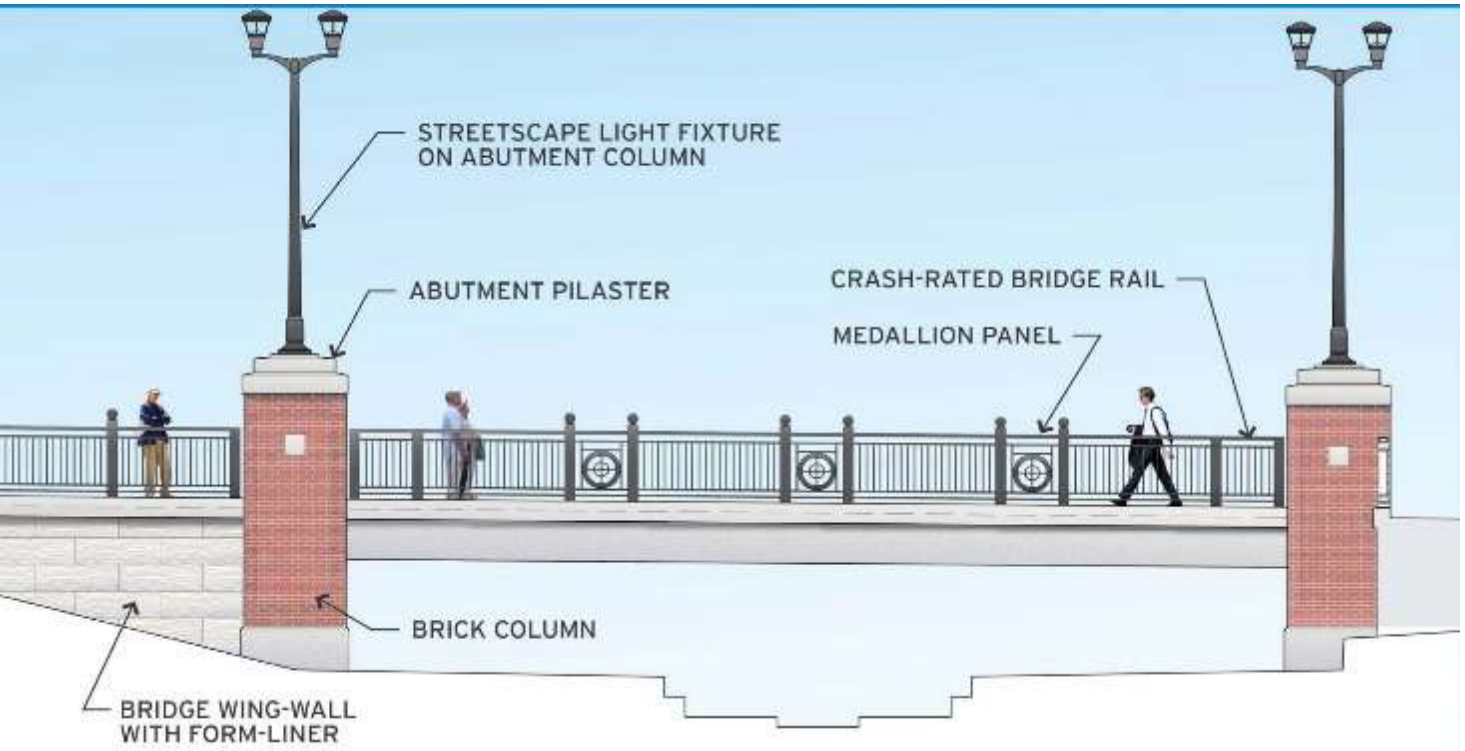
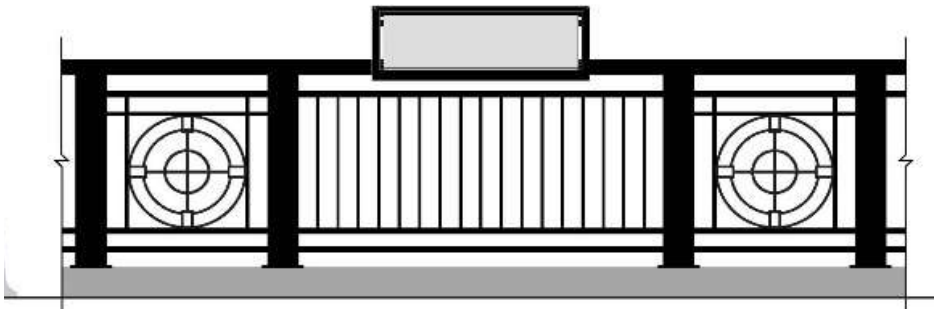
VCS (continued)

Bridges





VCS (continued)

Signage

VCS (continued)

VCS Channel Flow

- VCS has the potential to "run dry" much like a natural stream based on average weather conditions
- Desire for some level of continuous flow
- MSD is proposing to augment natural drainage by re-circulating water from the pond to the headwaters and/or using upstream sources of flow

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VCS (continued)

Water Quality Benefits

- Oxygenation (riffles)
- Nitrogen and phosphorus reduction (pools and pond)
- Channel shape and profile mimics habitat niches (e.g. fast and slow-flowing waters)
- Sediment/debris removal

Example of Pool Riffle

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VCS (continued)

Changes to the VCS (since our last meeting)

- Value Engineering (VE) Study conducted that resulted in ~$5.6 million in cost savings and design improvements:
  - Eliminated a number of retaining walls by adjusting the slope (steepness) next to the channel
  - Eliminated the open channel and bridges between the pond and the Mill Creek (~250 feet) by directing the water to the underground stormwater conveyance box.
  - Other minor changes

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VCS (continued)

Maintenance of the VCS

- Stormwater conveyance box for flood control
  - Periodic sediment and debris removal
  - Annual structural inspections
- Retaining walls
  - Annual structural inspections
  - Removal of graffiti
- Channel
  - Plant management
  - Erosion control
  - Litter/debris clearing
  - Periodic dredging of pond

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Additional VCS Pre-Construction Activities

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VCS Pre-Construction Activities

Property Purchases

- 91 project parcels needed in Lick Run corridor
  - 62 project parcels have been secured to date (68% of total)
    - ✓ 54 purchased by MSD
    - ✓ 2 under contract
    - ✓ 6 publicly owned
  - Negotiating on remaining 29 project parcels; appropriations may be necessary for some
- MSD needs about 30 partial project parcels and easements; MSD will be contacting property owners in early 2015

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VCS Pre-Construction Activities (continued)

Demolitions/Deconstruction

- 77 buildings need to be demolished
  - 24 demolished to date
  - 9 more in progress
- To date, no potentially historic buildings have been demolished
- Building Value LLC is soft stripping and deconstructing buildings for reusable building materials
- Lots seeded and maintained by Keep Cincinnati Beautiful

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1755 Queen City Ave
1755 Queen City Ave
Cincinnati, Ohio
Street View - Jun 2012
Montrose St
Wickham Alley
City Ave
Westwood Ave
Esmonde St
Westwood
Back to Map
Before
Google
Image capture: Jun 2012
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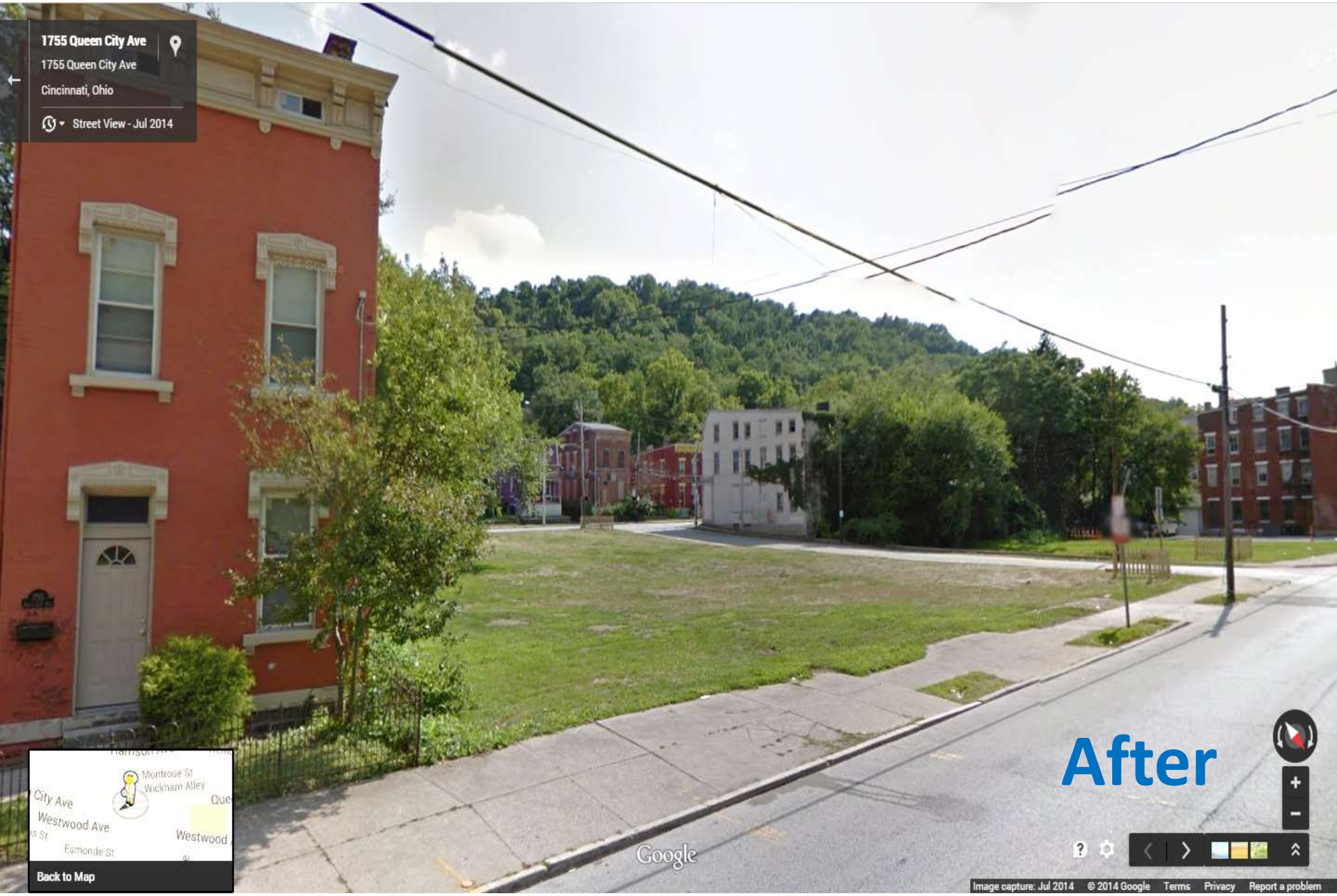
Report a problem


1755 Queen City Ave
1755 Queen City Ave
Cincinnati, Ohio
Street View - Jul 2014
Montrose St
Wickham Alley
City Ave
Westwood Ave
Esmonde St
Back to Map
After
Google
Image capture: Jul 2014
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NO
PARKIN
SNOW
EMERGEN
ANY
TIME

VCS Pre-Construction Activities (continued)

Historic/Cultural Resources

- Major infrastructure projects often require an evaluation of how historic properties will be impacted
- MSD has conducted research and mitigation work, including:
  - Community study that identified 5 properties in the path of the VCS that are potentially eligible for National Register of Historic Places (NRHP)
  - Mitigation plan to address impacts to the properties
  - Archaeological investigation
- Ohio EPA currently conducting review (Section 106) of MSD research and mitigation work

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VCS Pre-Construction Activities (continued)

Historic/Cultural Resources (continued)

- Five properties that are potentially eligible for NRHP

1786 Westwood
(Queen Anne)

1806 Westwood
(American Foursquare)

1824 Westwood (Mission)
Former Vitt & Stermer
Funeral Home

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VCS Pre-Construction Activities (continued)

Historic/Cultural Resources (continued)

1783 Queen City (Mission)

1789 Queen City
(Nun's House)

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VCS Pre-Construction Activities (continued)

Historic/Cultural Resources (continued)

- Mitigation plan available on the Lick Run website. Examples of options:
  - Video history of buildings
  - Trail signage that includes building histories
  - Relocation of buildings
  - Propagation of new "moon trees"
- External funding and project partners needed to pursue most of the options

NUMEDIACY

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VCS Pre-Construction Activities (continued)

Historic/Cultural Resources (continued)

- Archaeological investigation in Lick Run corridor
  - Used ground penetrating radar in six select areas to determine if any features were present below the ground
  - Four of the six areas were further investigated
    - ✓ Evidence of building demolition from previous decades

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Next Steps

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Next Steps

Construction Manager at Risk (CMAR)

- MSD selected Ulliman Schutte Construction and Prus Construction (Joint Venture)
    - Consultant during design phase; collaborates with design engineers
    - General contractor during construction
- Benefits of hiring a CMAR:
    - Identify and resolve risks during design
    - Improve construction schedule
    - Save time/money

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Next Steps (continued)

Schedule and Next Steps

- Design – 60%
  - Permits
  - Environmental site assessments
  - Utility coordination/relocation
- Construction
  - Summer 2015 – Summer 2018

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Lick Run Website:
www.projectgroundwork.org/lickrun

Questions?

Don’t forget to sign up for email updates