LICK RUN WATERSHED MASTER PLAN

Community Design Workshop #1

August 11, 2011

METROPOLITAN SEWER DISTRICT of greater CINCINNATI

Overview

What's the Challenge?

- Combined Sewer Overflows (CSOs)
- Impacts on our Communities

What's the Solution?

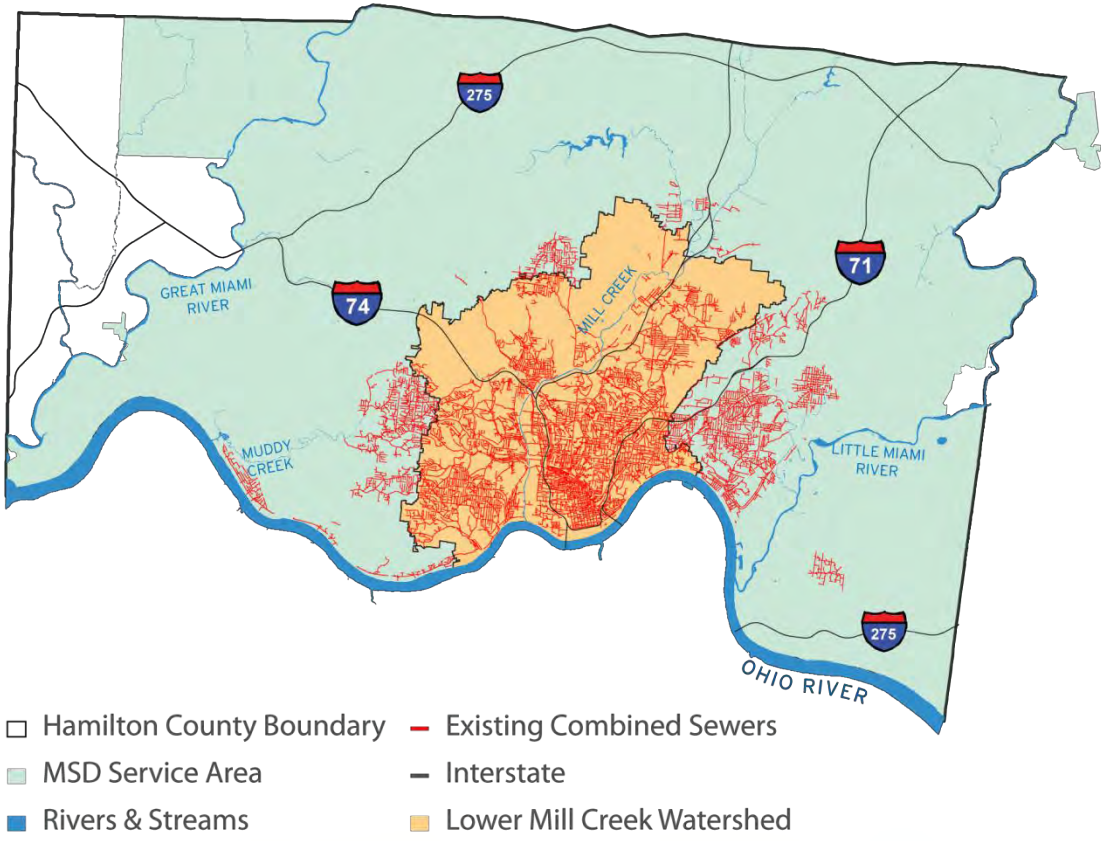
- Consent Decree & Project Groundwork
- "Default" Solution for the Lower Mill Creek (Lick Run)
- Crafting a Sustainable Solution for the Lick Run Watershed

Goals for Tonight's Meeting

- Use your ideas to inform design of the solution
- Build the Foundation for a Lick Run Master Plan

What's the Challenge?

Cincinnati is one of 772 cities in the United States with a combined sewer system.



How Great is MSD's Environmental Challenge?

Hamilton County is one of the top 5 locations in the nation for CSOs.

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Impacts on our Communities

Combined sewers can become overloaded with sewage and stormwater during heavy rains, causing sewage backups in buildings and localized flooding.

Impacts on our Communities

Overflow outlets on the sewers allow excess stormwater and sewage to discharge directly into waterways.

Overflows occur as many as 105 times a year at some locations.

Impacts on our Communities

Overflows from combined sewers:

- Threaten public health
- Negatively impact the environment
- Degrade our quality of life across the entire Cincinnati/Hamilton County community.

Consent Decree

The Consent Decree mandates that MSD:

(1) Capture, treat, or remove annual overflows from CSOs to a minimum control of at least 85%

(2) Eliminate all sanitary sewer overflows (SSOs)

PROJECT GROUNDWORK
in Your Community

Clean Streams

Neighborhood Construction Projects

- Protecting the Environment
- Partnering with our Communities
- Revitalizing the Economy
- Designing Innovative Solutions

PROJECT GROUNDWORK
your pipeline to clean water

Project Groundwork is your program.
It's an investment in your community for generations to come.

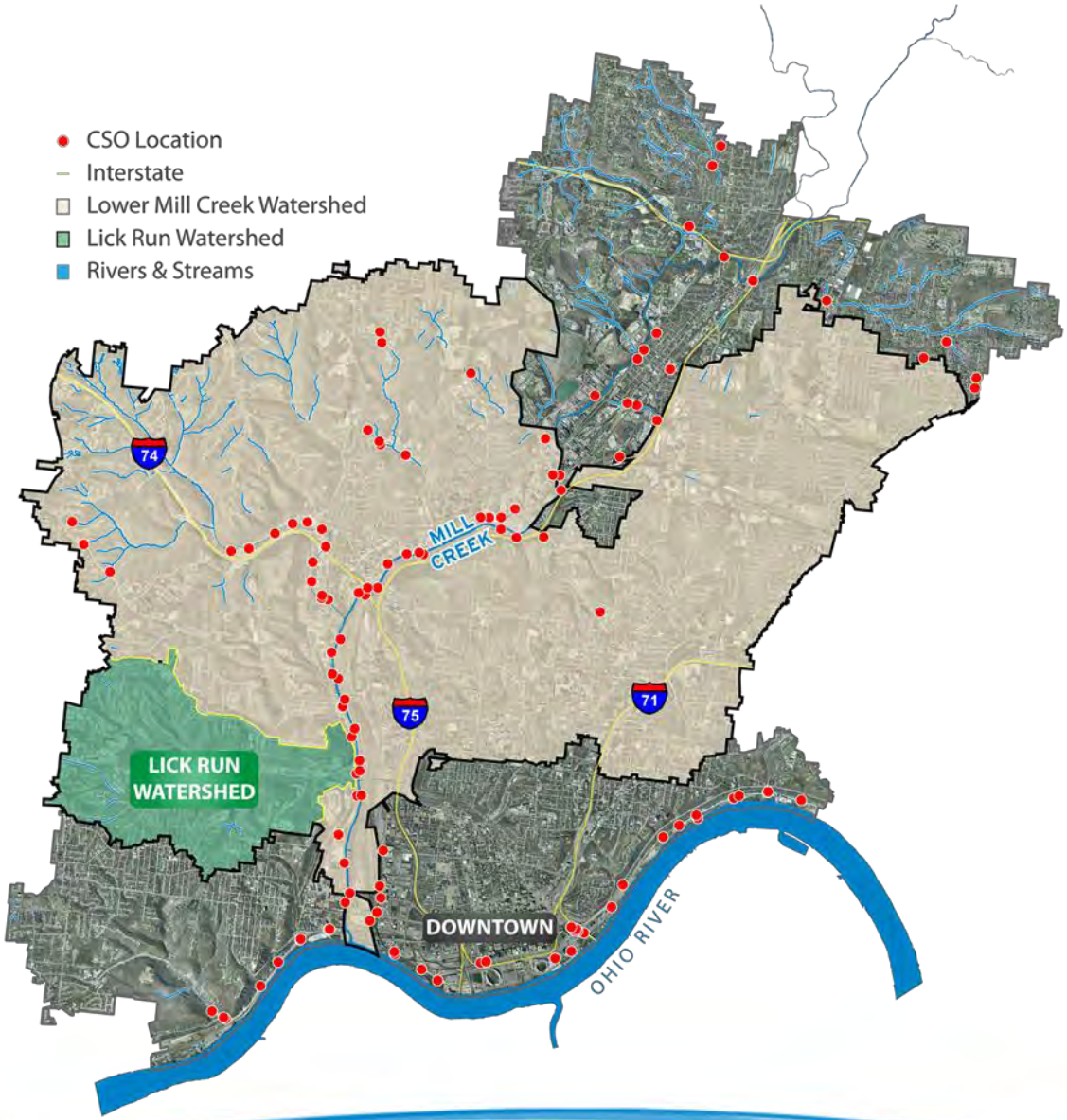
Strengthened Economy

Green Roofs

Focus on the Lower Mill Creek Watershed

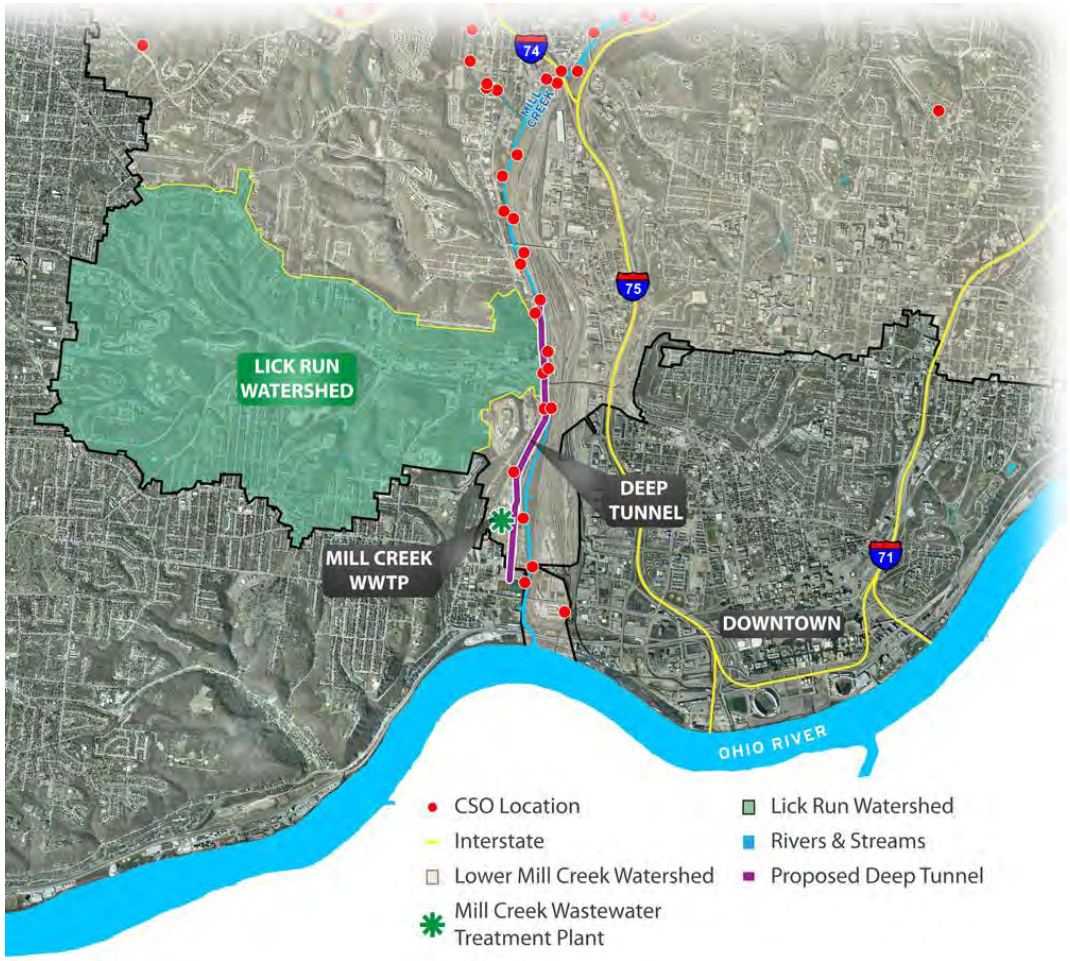
MSD is focusing on watersheds within the Lower Mill Creek that experience high volumes of combined sewer overflows (CSOs).

7.6 BG annual CSO volume



“Default” Solution

The “default” solution specified in MSD’s Consent Decree is an underground storage tunnel parallel to Mill Creek.



$244 million
Estimated cost (in 2006 dollars)

$1,100 per MG of treatment
Estimated operations and maintenance costs

547,800 megawatts
Estimated power demand of pumping 2 Billion Gallons over 10 years

377,739 metric tons
Estimated CO_2 emissions from pumping 2 Billion Gallons over 10 years

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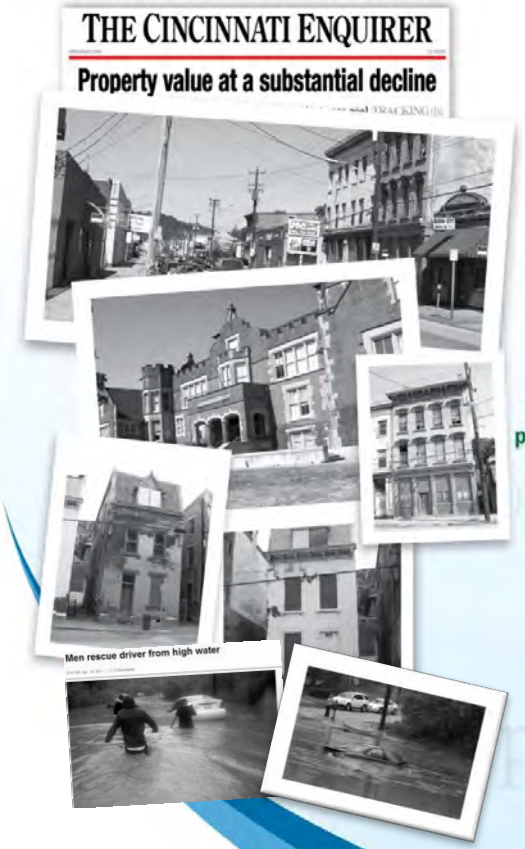
Building Communities of the Future Solutions

Current Conditions in the Community → **Leverage MSD's Investment** → **Community's Vision for the Future**

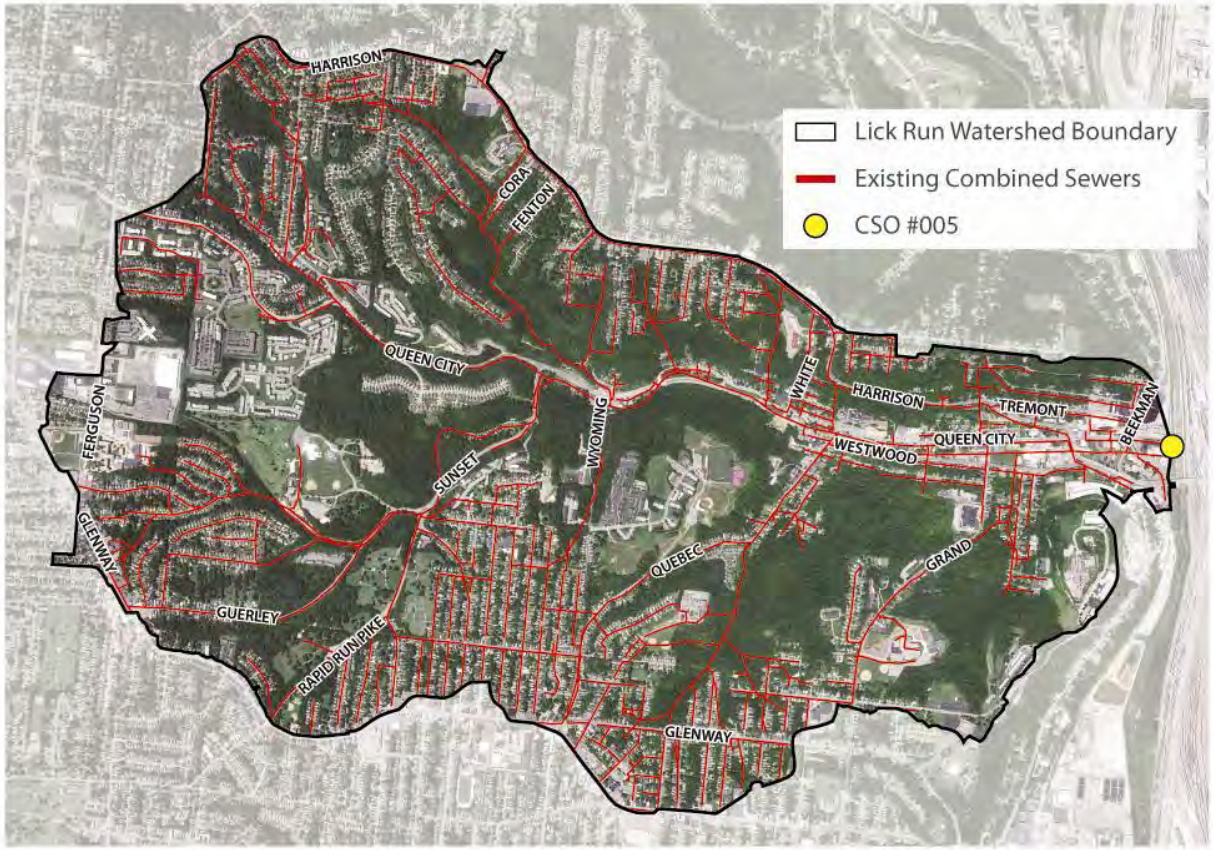


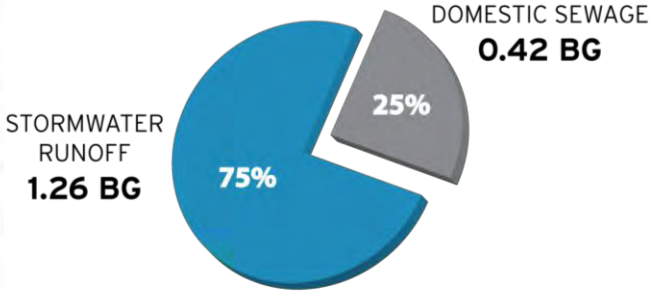
METROPOLITAN SEWER DISTRICT of greater CINCINNATI

Focus on the Lick Run Watershed

Focus on the Lick Run Watershed

The Lick Run Watershed contributes the largest volume of overflows from combined sewers of any watershed in Hamilton County.





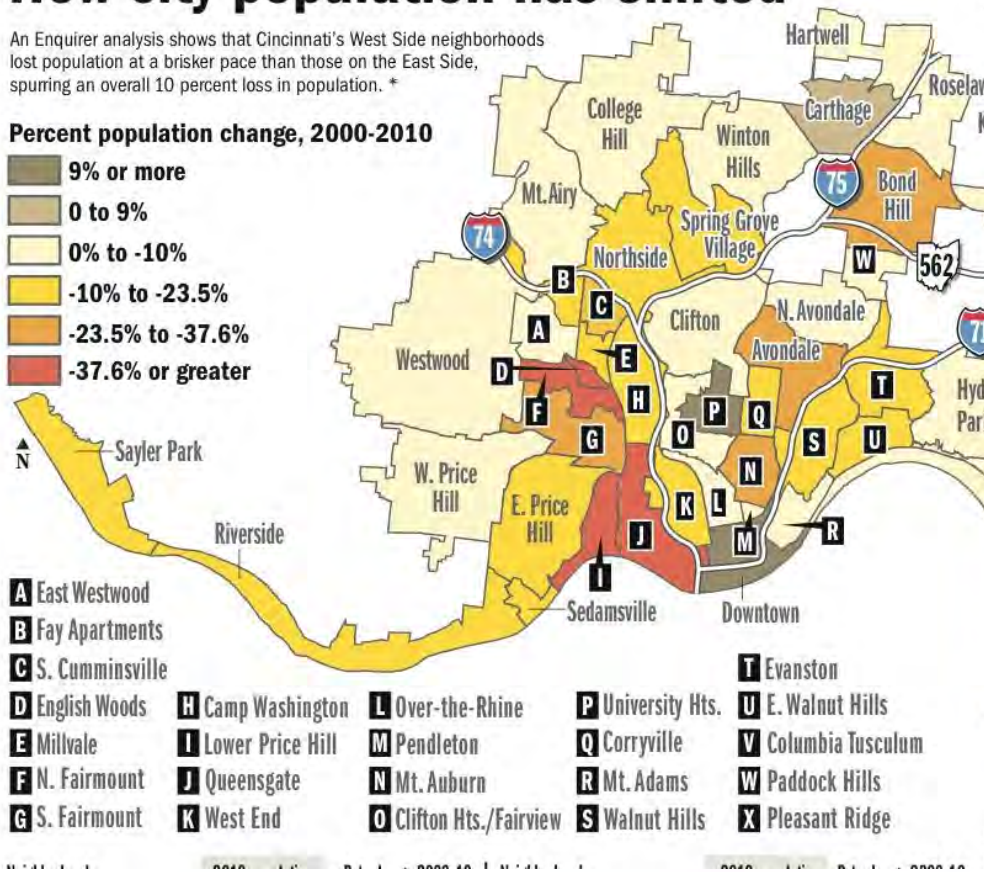
CSO #005 during wet weather

Focus on the Lick Run Watershed

West Side shrinks sharply

How city population has shifted

An Enquirer analysis shows that Cincinnati's West Side neighborhoods lost population at a brisker pace than those on the East Side, spurring an overall 10 percent loss in population. *



Demographic change most drastic there

By Dan Horn and Sharon Coolidge
dhorn@enquirer.com; scoolidge@enquirer.com

Cincinnati's West Side neighborhoods suffered the biggest population losses in the city over the past decade, shedding people significantly faster than neighborhoods on the East Side.

An Enquirer analysis of U.S. Census data found the West Side lost about 12 percent of its population while the East Side lost 9 percent.

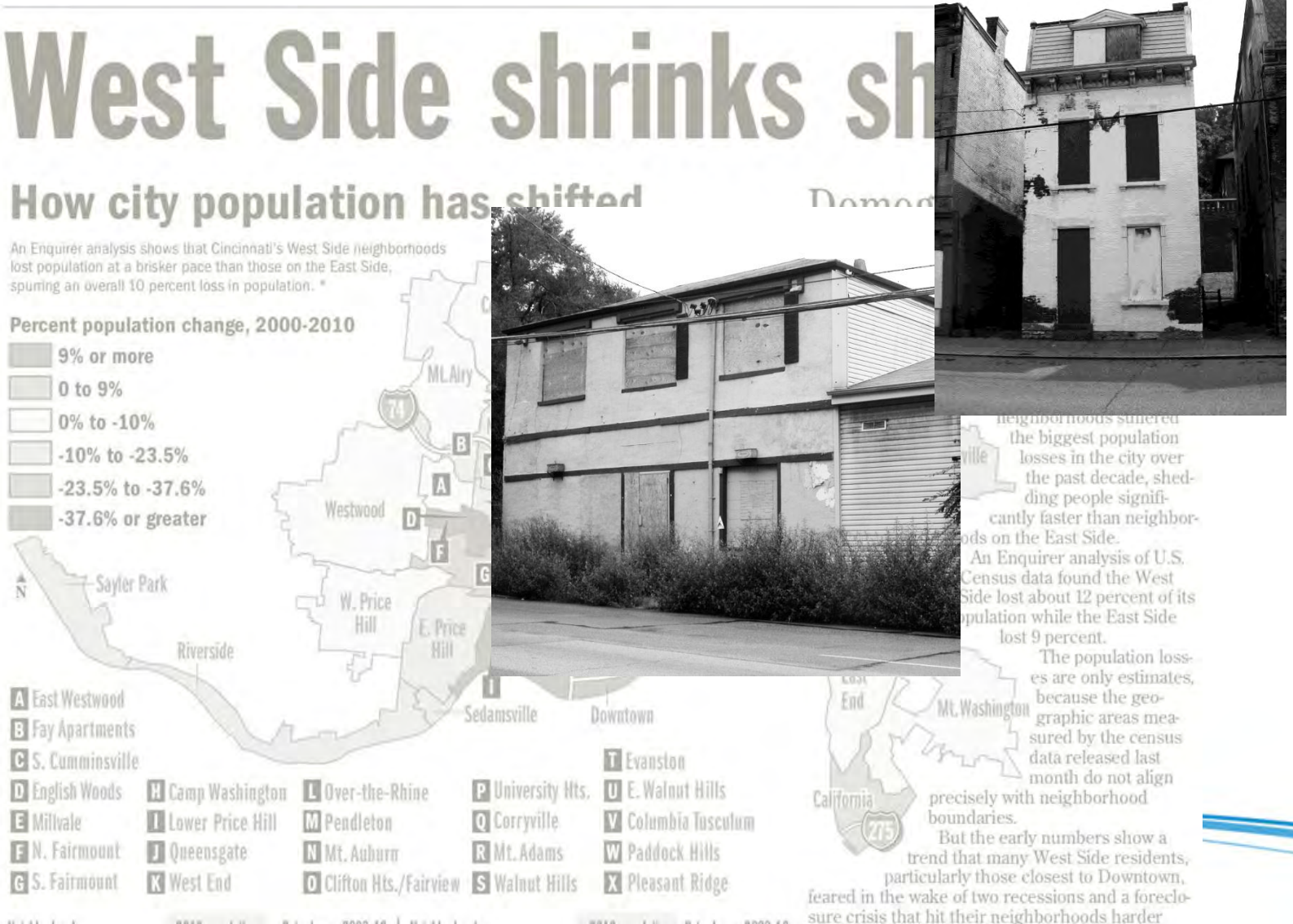
The population losses are only estimates, because the geographic areas measured by the census data released last month do not align precisely with neighborhood boundaries.

But the early numbers show a trend that many West Side residents, particularly those closest to Downtown, feared in the wake of two recessions and a foreclosure crisis that hit their neighborhoods harder

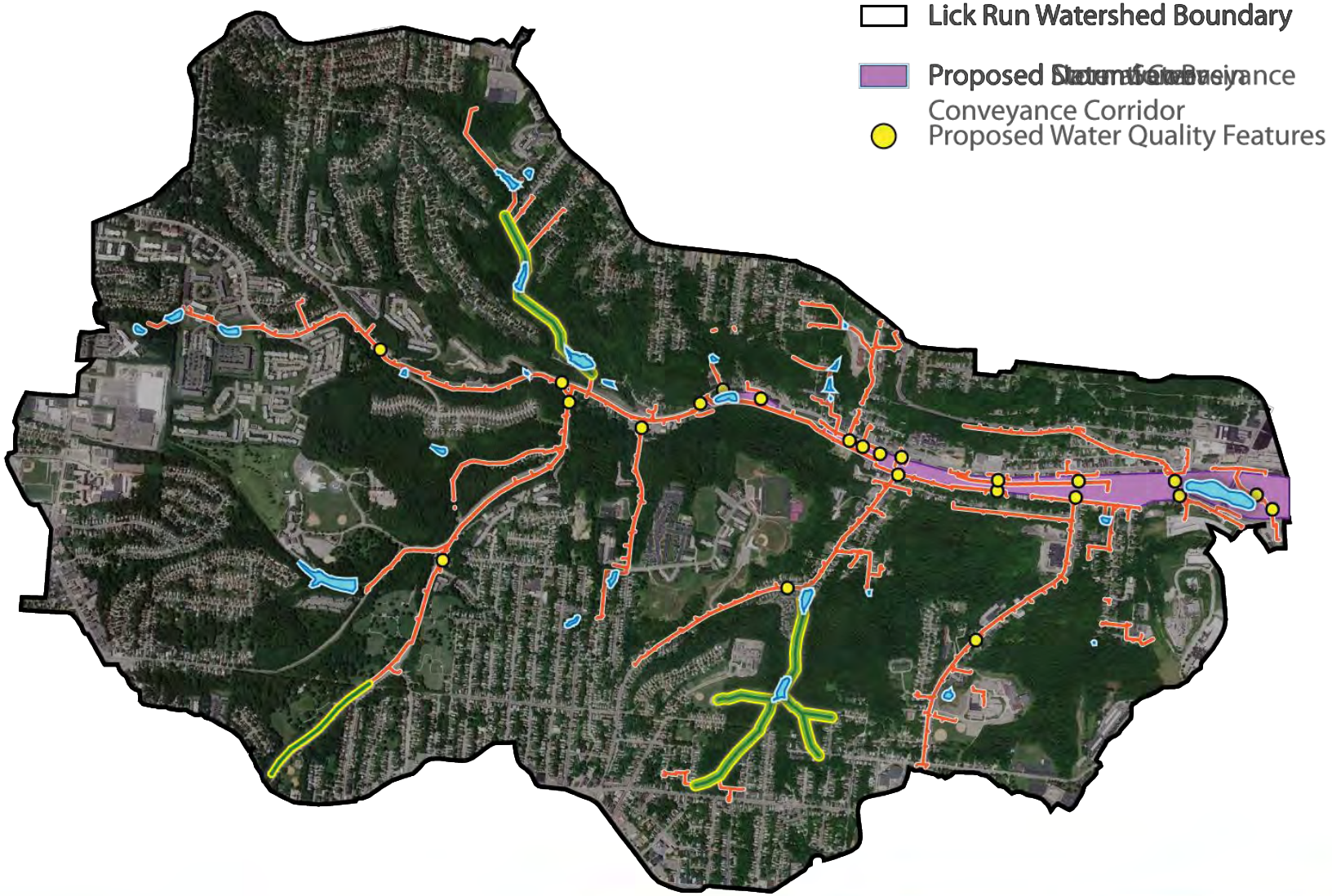
April 8, 2011 Cincinnati Enquirer

Focus on the Lick Run Watershed

Declining population and households result in physical decline, and negative economic and social impacts.



Lick Run Alternative



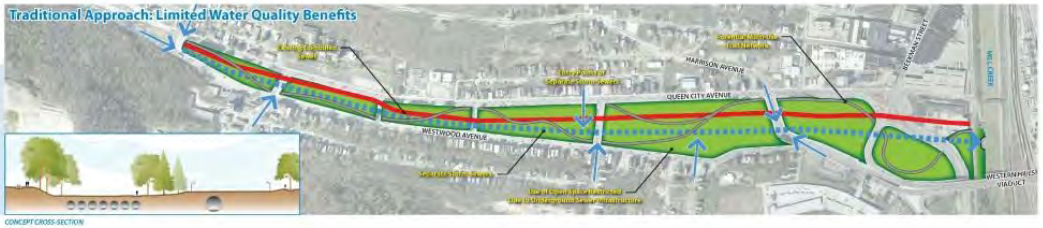
Stormwater Conveyance

WHAT ARE POTENTIAL CONCEPTS FOR LICK RUN?

Defining a source control solution for Lick Run is a complex process, but with community input this approach may provide long-term, sustainable benefits and the potential for community amenities.

1 Underground Storm Sewers with Open Space

- Series of large separate storm sewers underground
- Restricted use of open space because of underground sewer infrastructure



2 Uniform Surface Channel

- Aboveground channel
- Uniform shape and made of concrete
- Retaining walls and fencing for public safety

3 Natural Stream with Underground Storm Sewers

- Surface natural stream channel and separate storm sewers
- Flows into separate underground storm conveyance to Mill Creek

4 Natural Stream with Water Quality Feature

- Aboveground natural stream channel and separate storm sewers
- Water quality feature linked to natural stream channel and Mill Creek
- Leveraged community investments from other sources

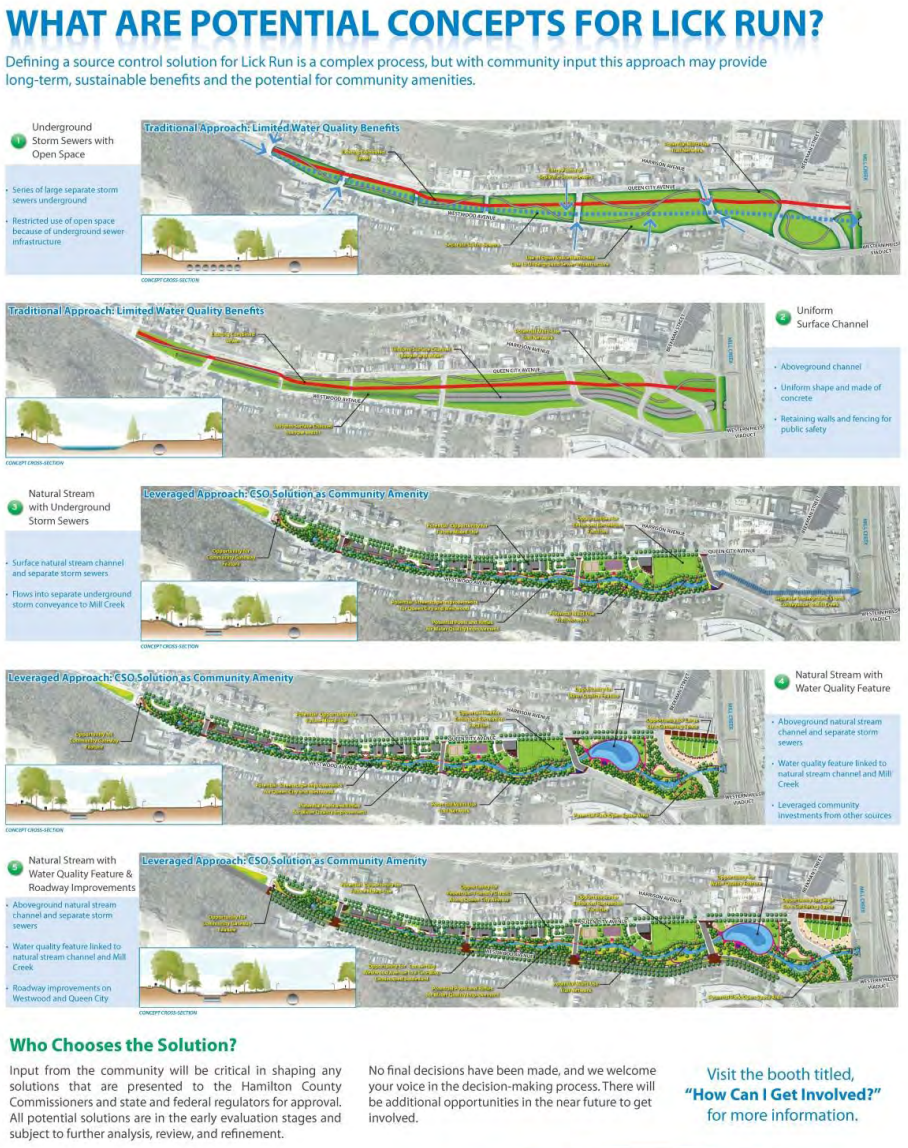
5 Natural Stream with Water Quality Feature & Roadway Improvements

- Aboveground natural stream channel and separate storm sewers
- Water quality feature linked to natural stream channel and Mill Creek
- Roadway improvements on Westwood and Queen City

Stormwater Conveyance

These concepts are <u>not</u> design plans.

Input from the community is critical in shaping any solutions that are presented to the Hamilton County Commissioners and state and federal regulators



Comparing Two Solutions

	DEFAULT DEEP TUNNEL	COMMUNITIES OF THE FUTURE SOLUTION
Reduce CSOs from the Lick Run Watershed	✓	✓
Remove stormwater runoff from the combined sewer system	✗	✓
Create more green space through development of green infrastructure	✗	✓
Provide a potential catalyst for community reinvestment	✗	✓

Your Input is Critical

Workshop #1 (August)

- Visual preference and surveys

Workshop #2 (October)

- Review alternatives and options

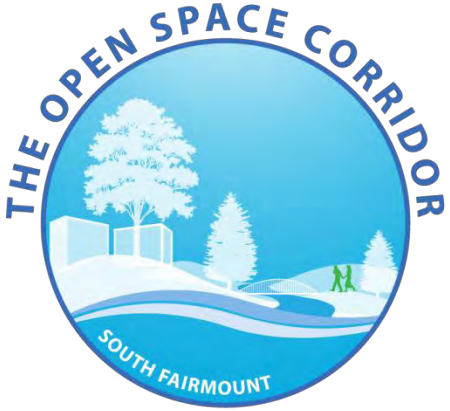
Workshop #3 (February)

- Review Preliminary Master Plan

Master Plan Draft for Submittal

Community Design Workshop #1

The Lick Run Master Plan will be organized by topics in order to fully represent the comprehensive nature of a watershed-based solution.



Break-out Sessions

Focus:

Proposed Urban Waterway

Potential Open Space & Community Amenities

Break-out Sessions

Focus:

Neighborhood Character

Building Scale and Uses

Break-out Sessions

THE HISTORIC FABRIC
SOUTH FAIRMOUNT

Focus:

Neighborhood History

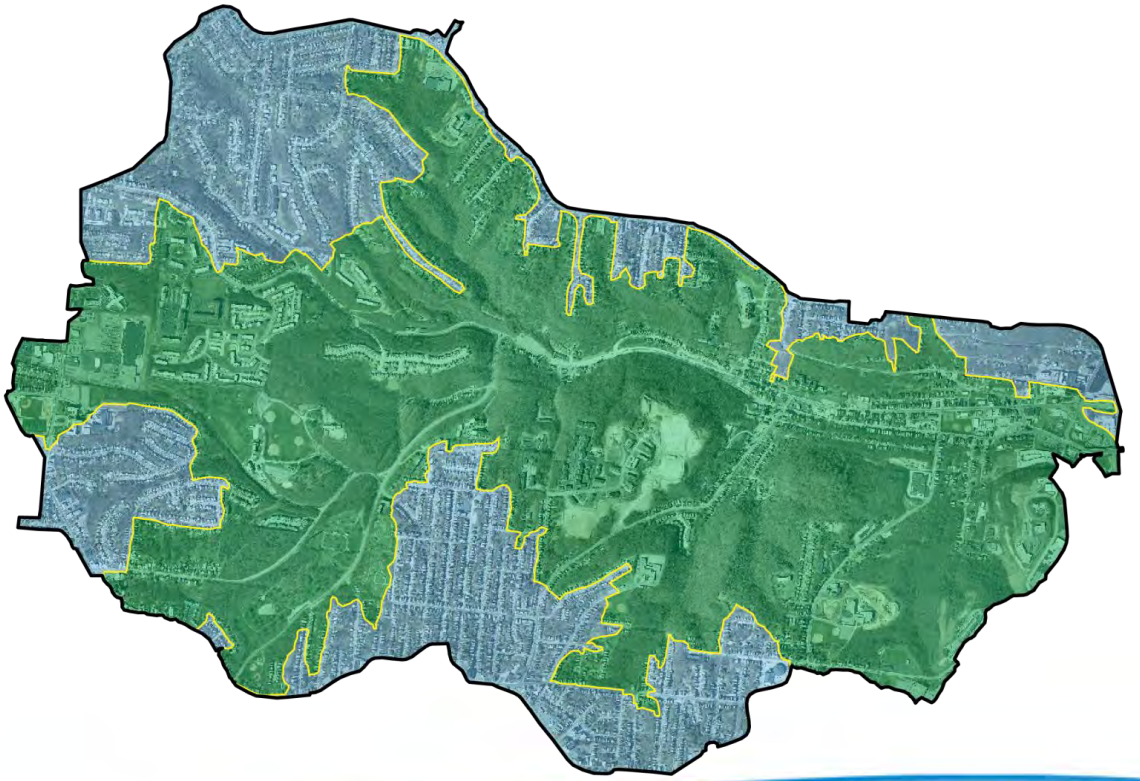
Important places, people, events

Break-out Sessions

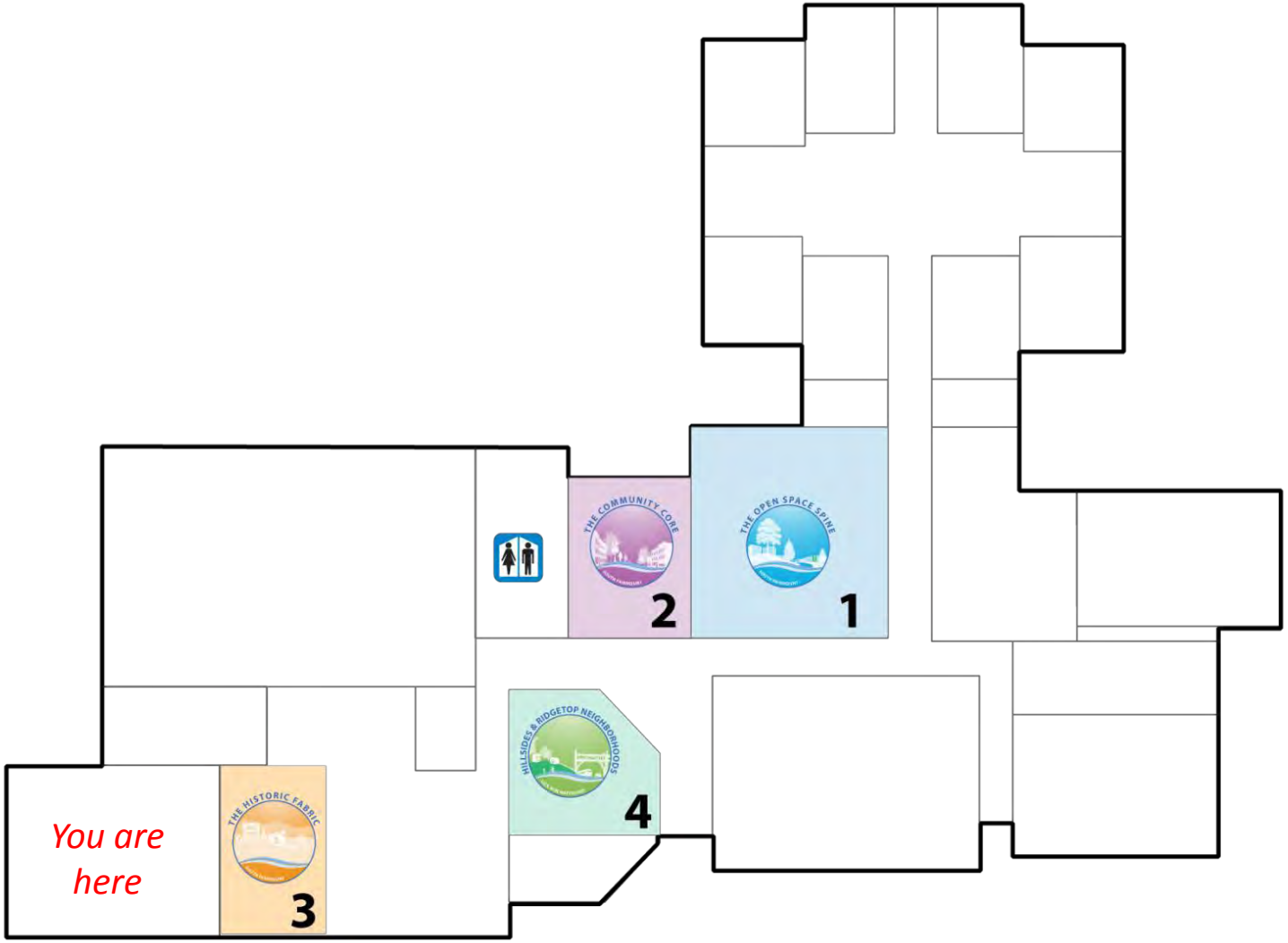
Focus:

Watershed-based Planning

Connecting People & Places



Break-out Sessions



Roberts Paideia Academy
Floor Plan

METROPOLITAN SEWER DISTRICT of greater CINCINNATI

Community Design Workshop #1

Tonight's plan for each break-out session:

Introduction (approximately 5 minutes)

- You will be given a brief overview of the content and objectives of the work session for each station

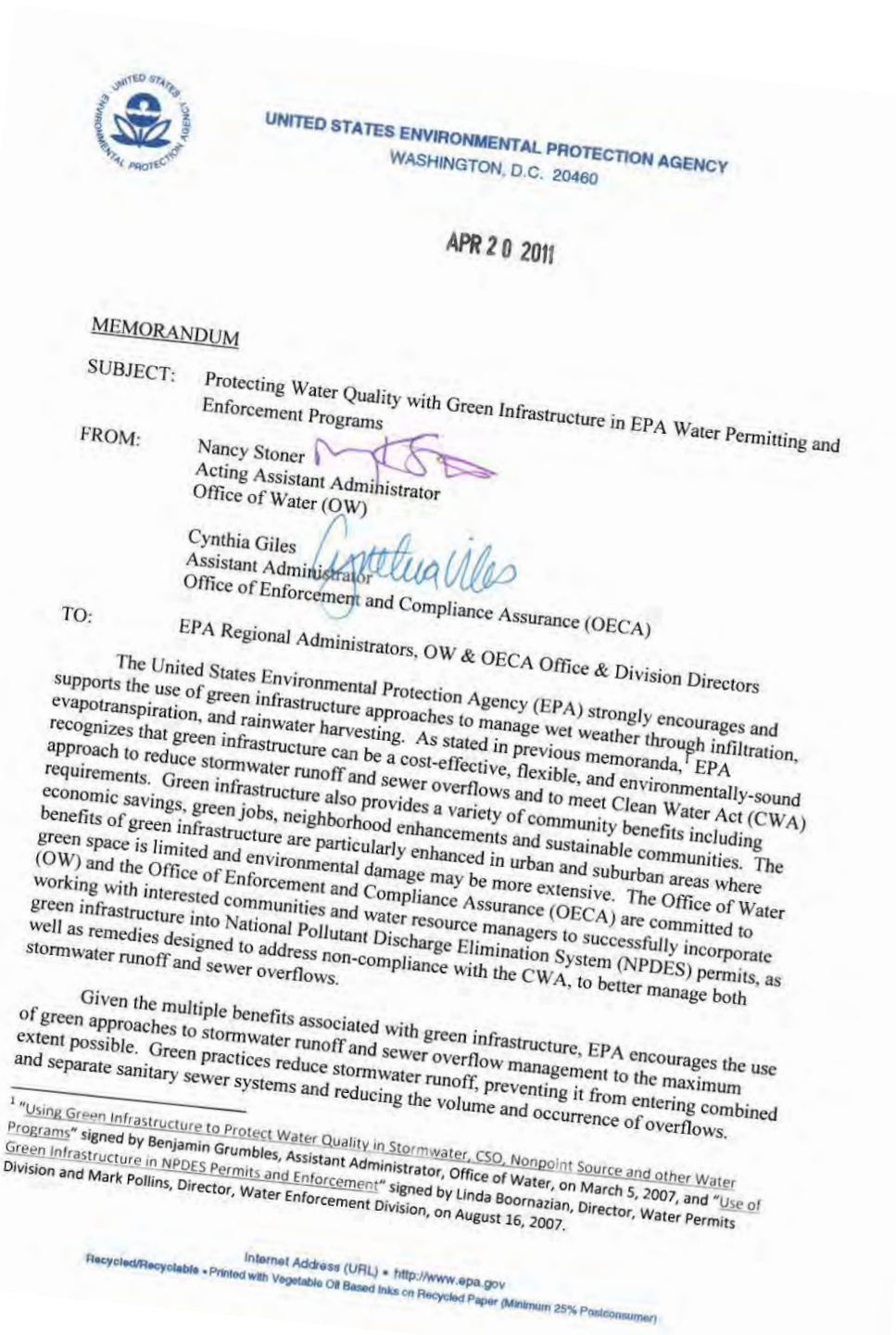
Visual Preference Survey (approximately 10 minutes)

- You will see displays containing a variety of images that show possible outcomes that represent your vision for the community in the future

Questions (approximately 10 minutes)

- We will pose a few questions to learn about your priorities, your ideas, and concerns

After approximately 25 minutes, you will move to the next work session.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 20 2011

MEMORANDUM

SUBJECT: Protecting Water Quality with Green Infrastructure in EPA Water Permitting and Enforcement Programs

FROM: Nancy Stoner
Acting Assistant Administrator
Office of Water (OW)

Cynthia Giles
Assistant Administrator
Office of Enforcement and Compliance Assurance (OECA)

TO: EPA Regional Administrators, OW & OECA Office & Division Directors

The United States Environmental Protection Agency (EPA) strongly encourages and supports the use of green infrastructure approaches to manage wet weather through infiltration, evapotranspiration, and rainwater harvesting. As stated in previous memoranda,[1] EPA recognizes that green infrastructure can be a cost-effective, flexible, and environmentally-sound approach to reduce stormwater runoff and sewer overflows and to meet Clean Water Act (CWA) requirements. Green infrastructure also provides a variety of community benefits including economic savings, green jobs, neighborhood enhancements and sustainable communities. The benefits of green infrastructure are particularly enhanced in urban and suburban areas where green space is limited and environmental damage may be more extensive. The Office of Water (OW) and the Office of Enforcement and Compliance Assurance (OECA) are committed to working with interested communities and water resource managers to successfully incorporate green infrastructure into National Pollutant Discharge Elimination System (NPDES) permits, as well as remedies designed to address non-compliance with the CWA, to better manage both stormwater runoff and sewer overflows.

Given the multiple benefits associated with green infrastructure, EPA encourages the use of green approaches to stormwater runoff and sewer overflow management to the maximum extent possible. Green practices reduce stormwater runoff, preventing it from entering combined and separate sanitary sewer systems and reducing the volume and occurrence of overflows.

[1] "Using Green Infrastructure to Protect Water Quality in Stormwater, CSO, Nonpoint Source and other Water Programs" signed by Benjamin Grumbles, Assistant Administrator, Office of Water, on March 5, 2007, and "Use of Green Infrastructure in NPDES Permits and Enforcement" signed by Linda Boornazian, Director, Water Permits Division and Mark Pollins, Director, Water Enforcement Division, on August 16, 2007.

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April 20, 2011 USEPA Memo

Office of Water
Office of Enforcement & Compliance Assurance

"Cincinnati's 2004 consent decree (CD) … opportunities to incorporate green infrastructure solutions by substituting "green for grey" on a project by project basis.

- ***"The city is currently evaluating potential green infrastructure projects and has a three year study and detailed design period to examine green solutions in the Lick Run Watershed, in Mill Creek Valley on the west side of Cincinnati.***

- ***"One promising project in the Lick Run drainage area, a corridor that includes an environmental justice community, would remove storm water flows from the combined sewer system and create a new above-ground drainage feature with surrounding park land. "***