

Land & Water:

Fixing Combined Sewers and Managing Stormwater for Clean & Abundant Fresh Water

Kyle Dreyfuss-Wells

Deputy Director of Watershed Programs

April 21, 2016



**Northeast Ohio
Regional Sewer District**



- 
- A satellite-style map of Ohio with the Cleveland area highlighted in orange. The map shows major cities like Toledo, Cleveland, Akron, Youngstown, Mansfield, Columbus, Cincinnati, and Louisville. The Great Lakes are visible at the top, and the state boundaries with Pennsylvania and West Virginia are shown.
- Political subdivision of Ohio
 - Created in 1972 by Court Order
 - Separate and distinct from the City of Cleveland and Cuyahoga County

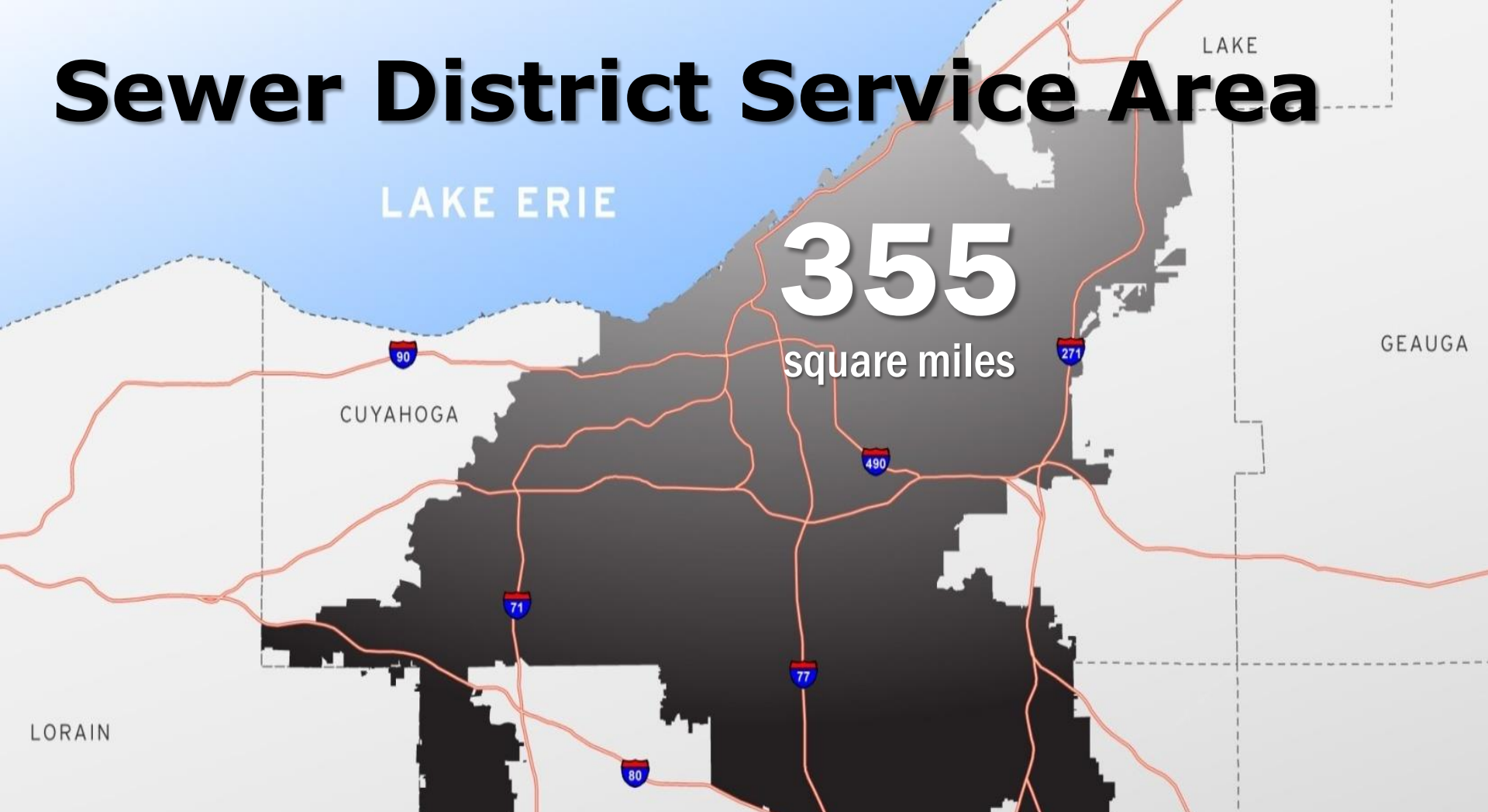


Your Sewer District Keeping our Great Lake great.



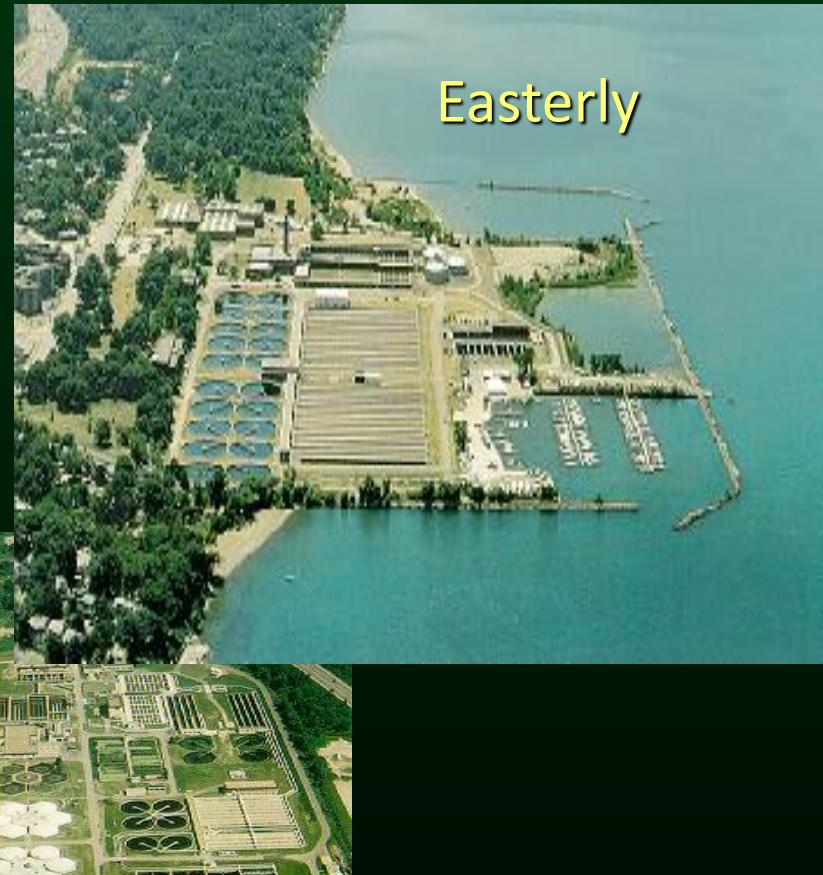
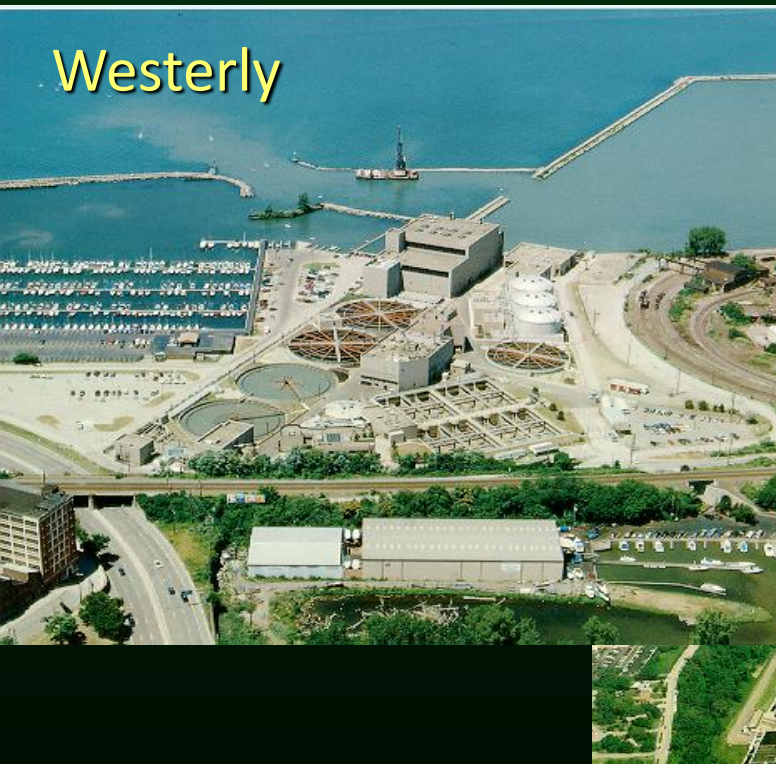
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Sewer District Service Area



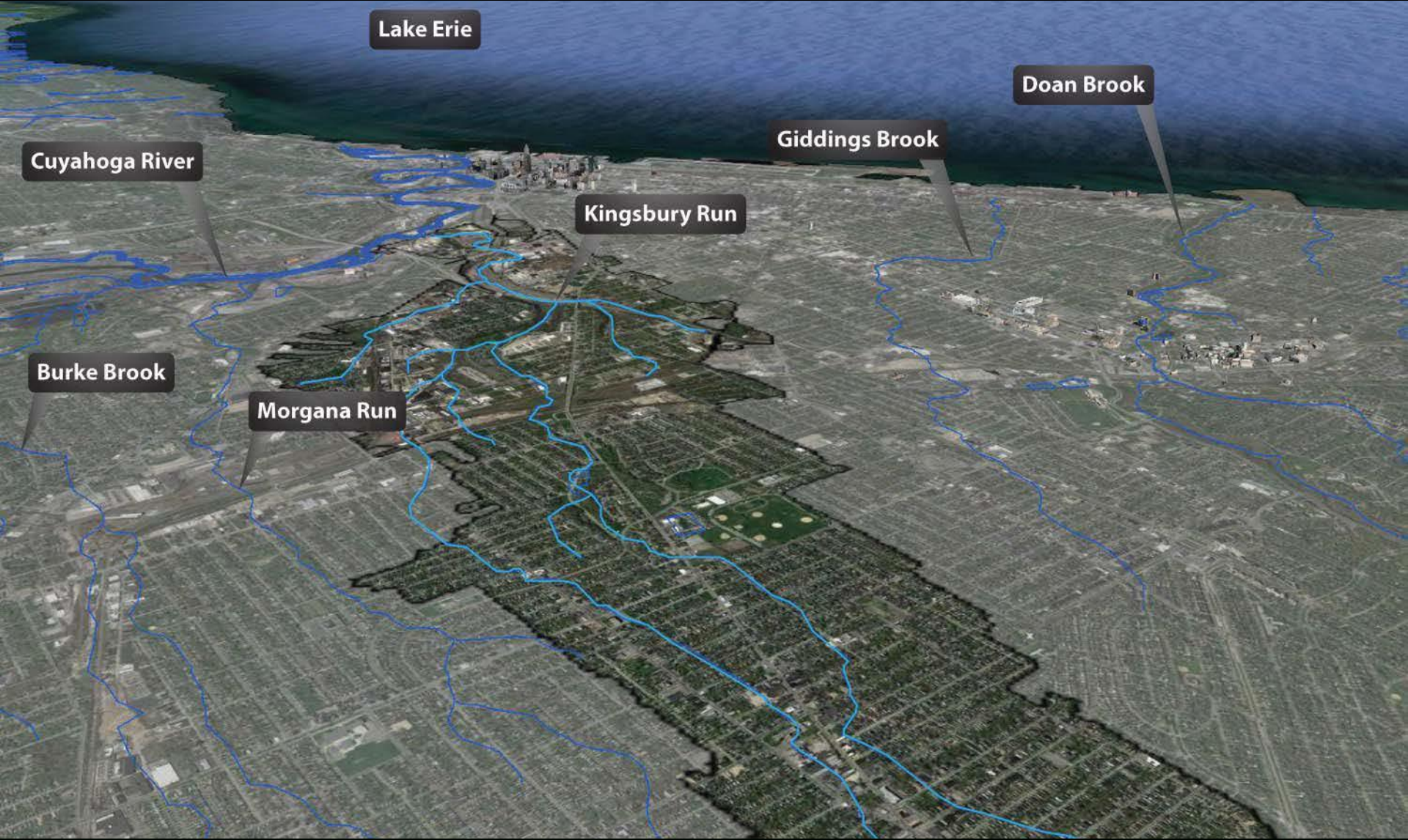
- Sanitary & regional stormwater services to Cleveland and 61 member communities
- Water quality monitoring
- Lake Erie beach monitoring and maintenance

We Own and Operate 3 Wastewater Treatment Plants



- 1 million customers
- 90+ billion gallons treated annually
- 330 miles of sewers
- 400 miles of Regional Stormwater System

Cleveland's Historic Watercourses

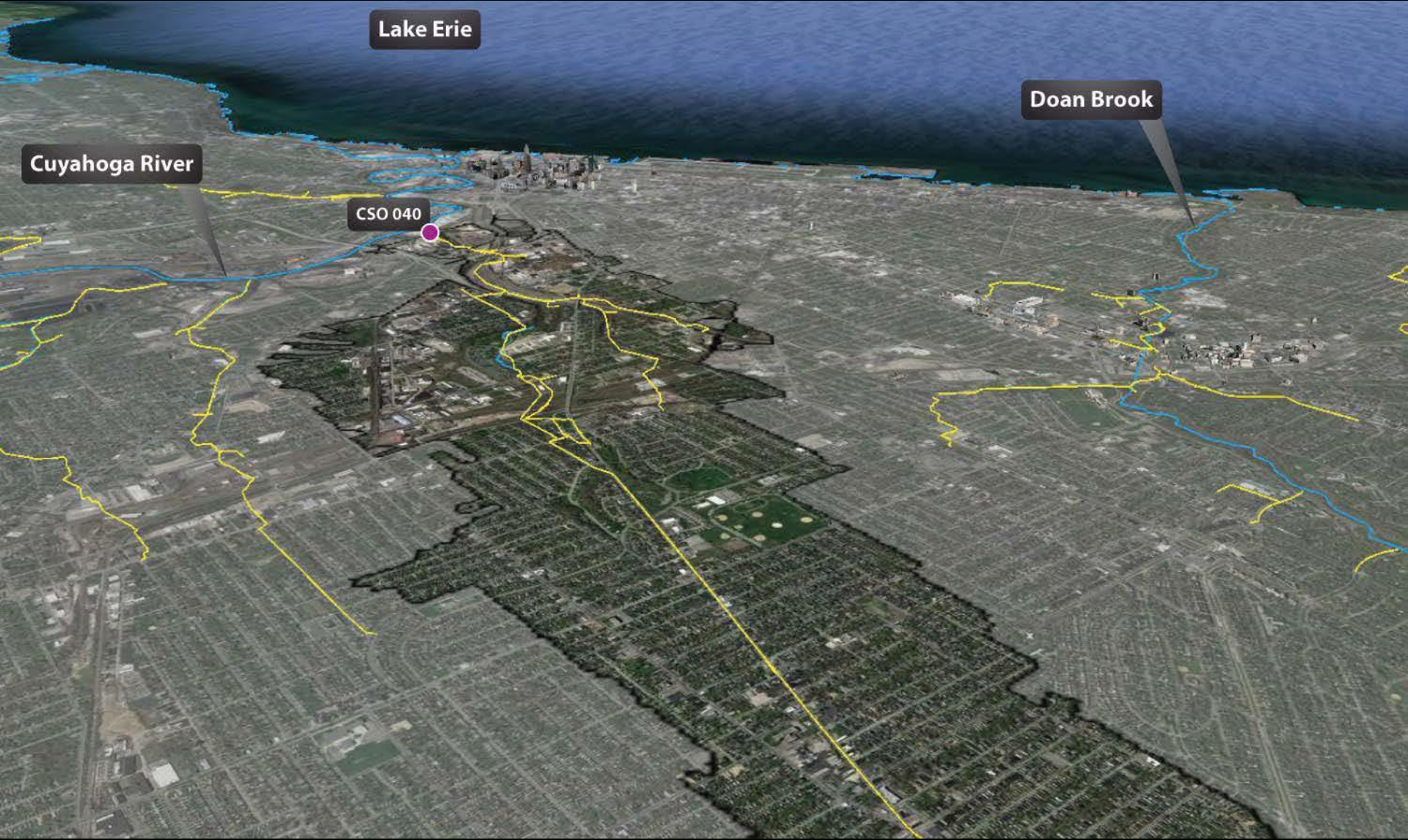


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Replaced Watercourses with Pipes & Combined Sewers



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Legacy Problems

Combined Sewer Overflow

WARNING: OVERFLOW EVENT PUBLIC ADVISORY

STORMWATER AND SEWAGE OVERFLOWED TO THIS BEACH AREA ON _____ DATE & TIME

As a result, the beach area and water may have been affected. Visitors – particularly children, the elderly, and those in ill health – are advised to avoid contact with the water and debris.

FOR MORE INFORMATION ABOUT
COMBINED SEWER OVERFLOWS (CSOs):

NORTHEAST OHIO REGIONAL SEWER DISTRICT
CSO INFORMATION HOTLINE
(216) 432-7330 | www.NEORSO.org

FOR MORE INFORMATION ABOUT
WATER-RELATED HEALTH CONCERNS:

CLEVELAND DEPARTMENT
OF PUBLIC HEALTH (216) 664-4292
OHIO DEPARTMENT
OF HEALTH (614) 456-1390

THIS SIGNAGE IS PROVIDED AS A COURTESY OF THE NORTHEAST OHIO REGIONAL SEWER DISTRICT

**WATER QUALITY
NOWCAST: POOR**

A "Nowcast" system is being tested on this beach to predict bacterial levels that may be present in the water.

**POOR WATER QUALITY
IS PREDICTED TODAY**

based on conditions observed this morning. This means that bacteria levels are likely to be high. Swimming is not advised, especially for children, the elderly, and those in ill health. Full body water contact may result in illness.

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www.NEORSO.org

For more information, call (216) 432-7330

or visit

NEORSO is a member of

the following organizations:

Ohio Department of Public Health

Cleveland Department of Public Health

Ohio Department of Health

Ohio Department of Health

Ohio Department of Health

Ohio Department of Health

Ohio Department of Health

Ohio Department of Health

Tinkers Creek Wetland – Stormwater Sink, Protecting Lake Erie



Replace Functional Landscape with Hard Surfaces: Stormwater sink to stormwater source



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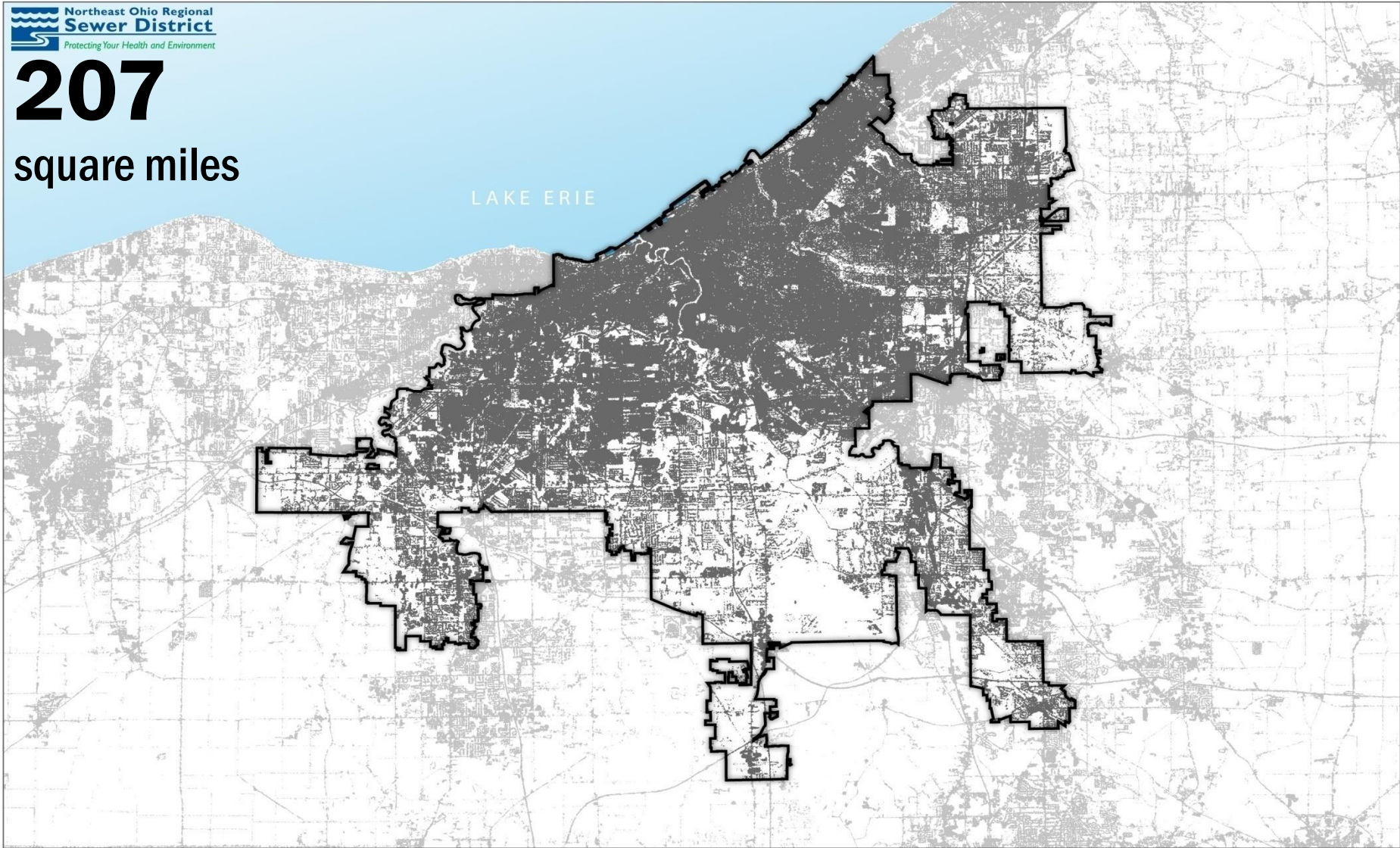


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On-Going Impacts: Impervious Surfaces

Northeast Ohio Regional
Sewer District
Protecting Your Health and Environment

207
square miles



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Stormwater problems across NE Ohio: Flooding, erosion, poor water quality



Problems cannot be solved by property owners alone.



Stream bank erosion along Stickney Creek

Northeast Ohio Regional Sewer District WET WEATHER PROGRAMS



- \$3 billion in 25 years
- Combined sewer overflow control
- Sewer fees
- \$41 million annually
- Flooding & erosion
- Impervious surface fee



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Project Clean Lake Euclid Creek Tunnel



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Project Clean Lake

Euclid Creek Tunnel

- **350 MG of CSO control annually**
- **\$215 million for construction**

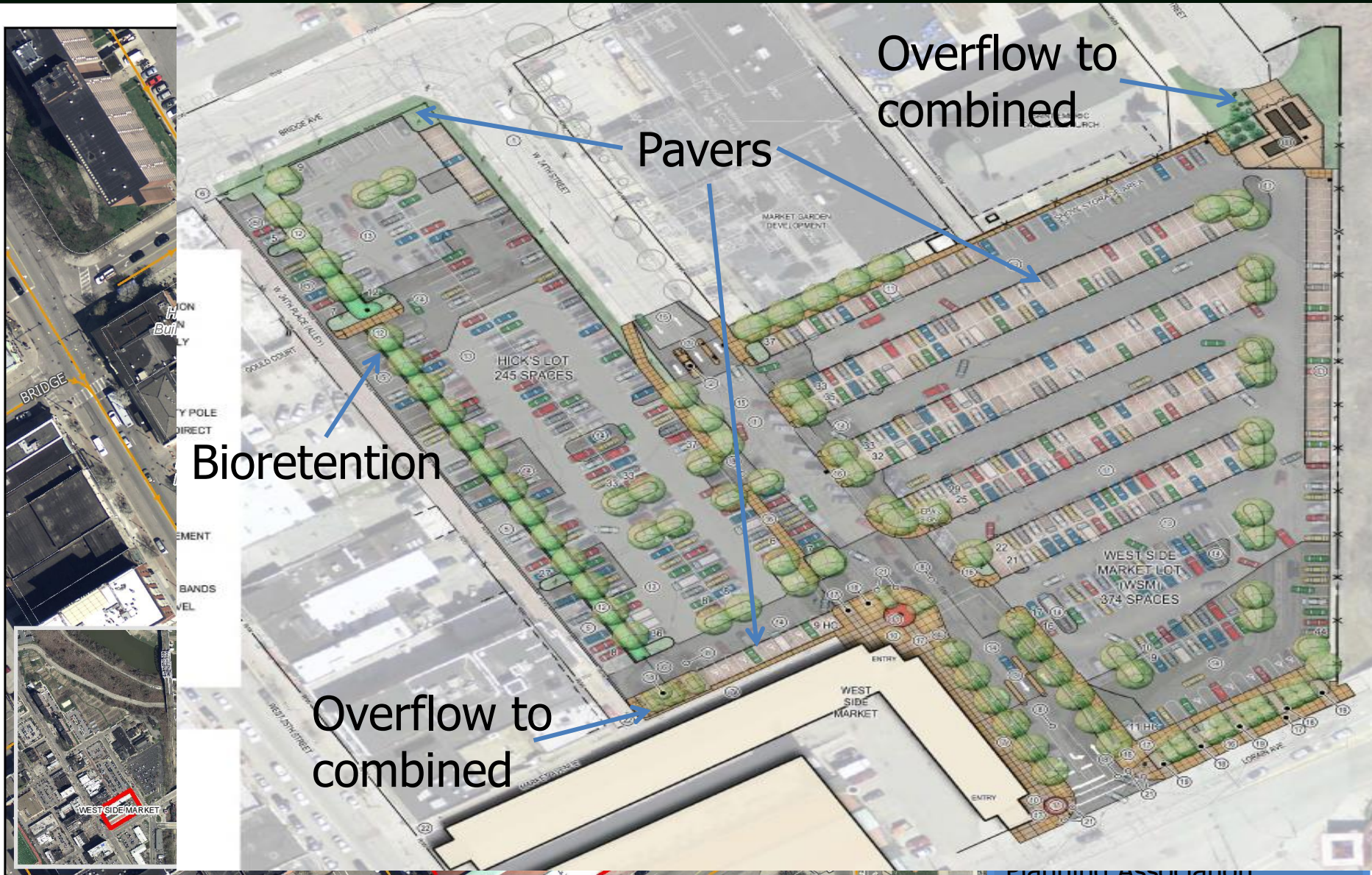


Green Infrastructure Policy

**Actively Pursue Implementation and
Maintenance of Green Infrastructure
Across Sewer District Programs**



Green Infrastructure Funding: \$500,000 to West Side Market Parking Lot Renovation, 2.6 MG of stormwater controlled annually.





REGIONAL STORMWATER MANAGEMENT PROGRAM

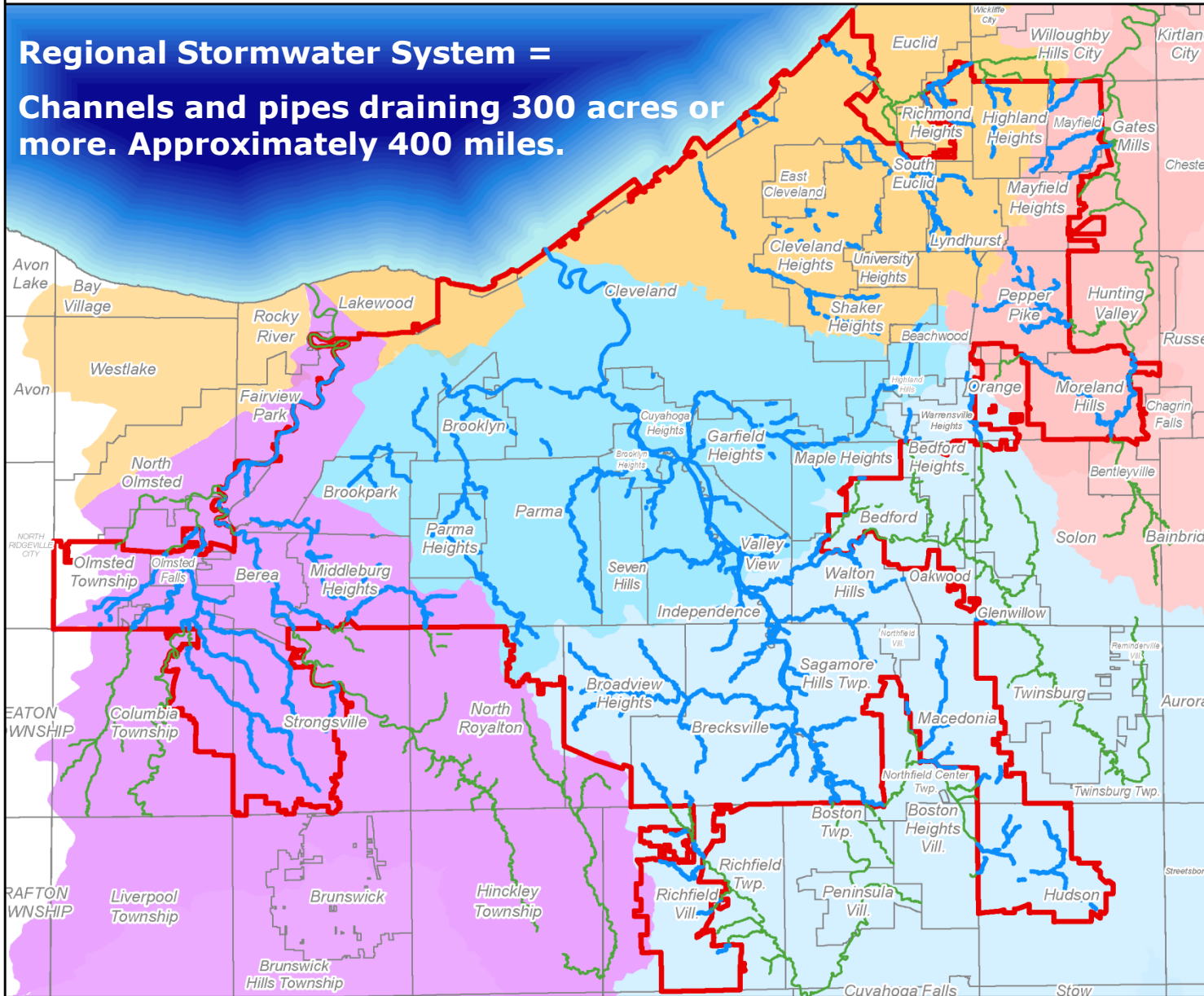
Addressing flooding, erosion, and water quality



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**Regional Stormwater System =
Channels and pipes draining 300 acres or
more. Approximately 400 miles.**



- Regional Drainage in NEORSD Service Area
- Regional Drainage not in NEORSD Service Area
- NEORSD Stormwater Service Area
- Community
- Watershed**
- Chagrin River Watershed
- Cuyahoga River North Watershed
- Cuyahoga River South Watershed
- Lake Erie Tributaries Watershed
- Rocky River Watershed

1:244,637



Coordinate System : Ohio State Plan North
Datum : NAD 1983 , NAVD 1988
Projection : Lambert Conformal Conic

Sources: NEORSD GIS, Cleveland GIS, Cuyahoga Co. GIS, Summit County GIS, Lorain Co. Auditor, Lake Co. GIS

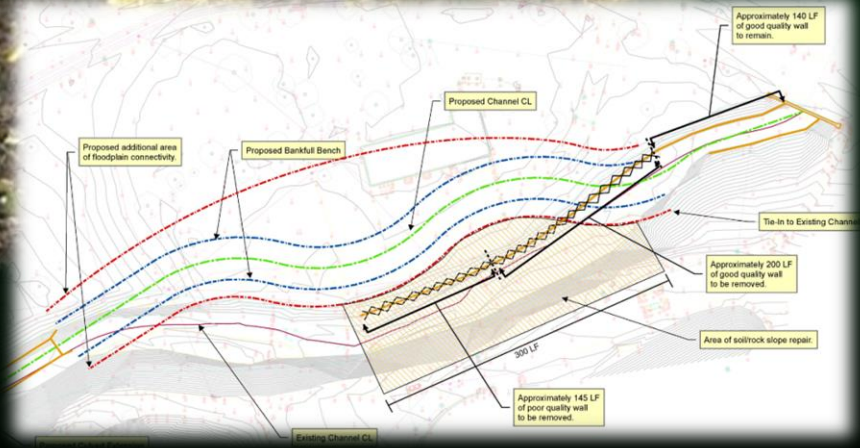
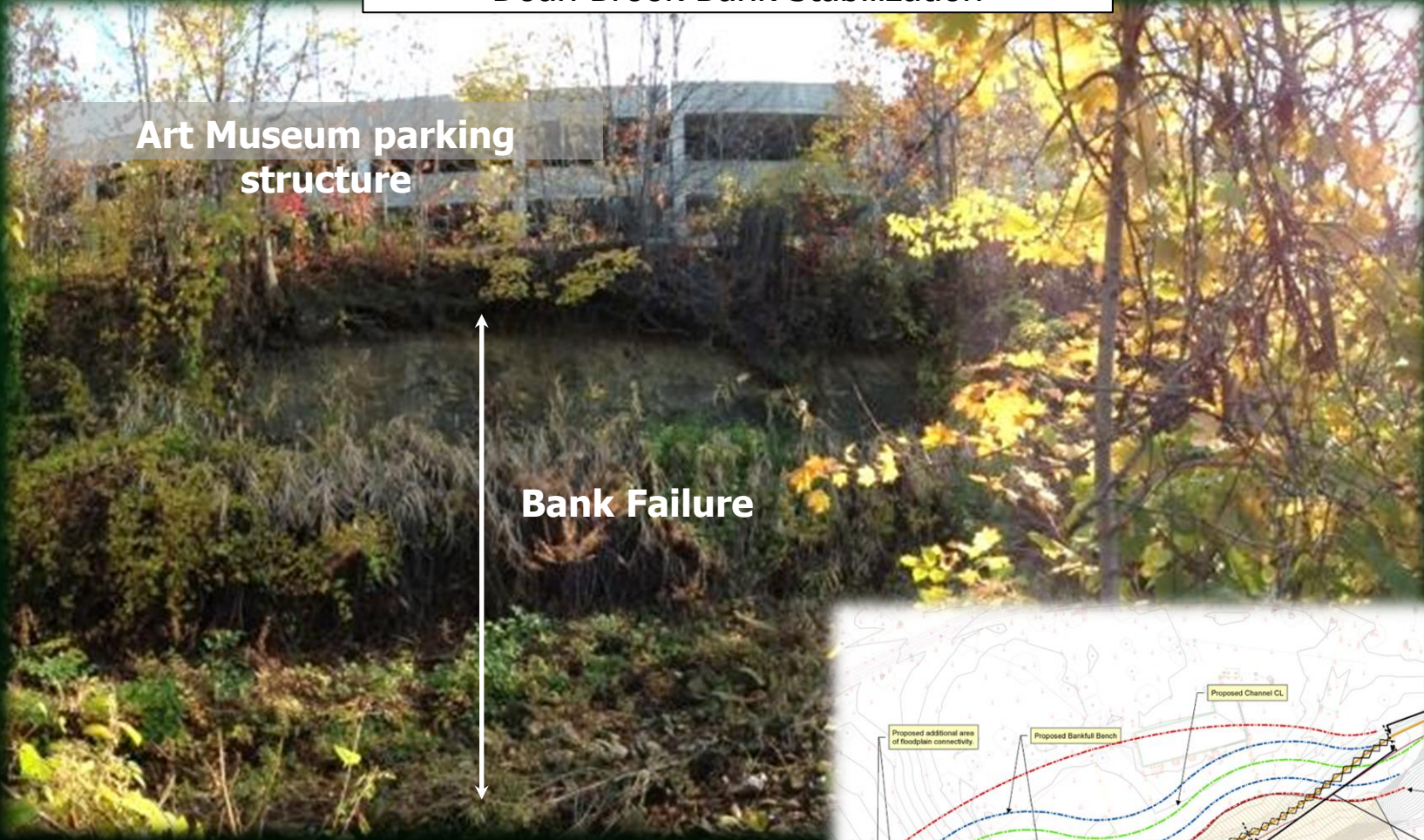
Map Created: October 2015

Notes

RSS_Watersheds.mxd

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Doan Brook Bank Stabilization



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Highland Park Golf Course Stream Restoration

Mill Creek

Highland Hills



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Stormwater Fee

**2016 Base Rate =
\$5.15 per ERU per month
Billing to begin second half 2016**

- Impervious Area (IA)
 - Billing Unit = Equivalent Residential Unit (ERU)
 - ERU = 3,000 square feet of IA

Stormwater Fee

**2016 Base Rate =
\$5.15 per ERU per month
Billing to begin second half 2016**

- Property Classification
 - SFR: Single Family Residential
 - NSFR: Non-Single Family Residential

Stormwater Fee

**2016 Base Rate =
\$5.15 per ERU per month
Billing to begin second half 2016**



SFR Property



NSFR Property

Stormwater Fee Credits

- **Stormwater Fee Credits recognize on-site Stormwater Control Measures**
 - Quantity Credit
 - Quality Credit
 - Education Credit
 - Individual Residential Credit

Stormwater Fee Credits



Raingarden



Pervious Pavement



Cistern



Detention Basin

Good Stormwater Management = Disconnection and Distribution

Retention Pond

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