

Partnering to Protect Public Health and Safety – Metro Council Budget Committee Hearing

March 1, 2018



MSD in the Past



2011 State Audit Findings and Response

Findings

- Board Policies
 - MSD Accountability
 - Procurement
 - Management and Oversight
 - Conflict Policies
 - Ethics/Conflict of Interest
- MSD Board Investment Oversight
- Internal Audits

Response

- Policy Review Committee
- Open MSD Portal
- Effective Utility Management
- Ethics Policies and Training
- Board Reconfiguration with Finance Expertise
- Enhanced Internal Staff Auditing Capacity and Authority

Drill Down on 2011 Audit

Finding:

- MSD Board Policies
 - Accountability, Management, and Oversight
 - Conflict of Interest
 - Ethics

Response:

- Policy Review Committee Established
- Open MSD
 - Financial Transactions
 - Board Meeting Minutes
 - Procurement Accountability
- Enhanced Ethics Policies
- Effective Utility Management
- Legal Counsel

Drill Down on 2011 Audit

Finding:

- MSD Board Oversight of Investments
- Internal Auditing

Response:

- Board and MSD Leadership Completely Overhauled
 - New Board with Financial Expertise
 - New Leadership of MSD
- More Robust Internal Auditing Functionality
 - Direct Reporting to Board

MSD in the Present



Current Challenges

- MSD is Striving Toward Continuous Improvements to Procedures and Policies
- Louisville is Faced with Infrastructure Issues
 - The Systems are Aging
 - Events are More Severe
 - Consent Decree Spending Limits the Bonding Capacity to do Other Work

Current Challenges

- MSD is a 24/7/365 Utility
- Like Many Utilities, MSD is Facing Workforce Issues:
 - Address Pension Challenges
 - Recruit and Retain Talent
 - Compete with Private Companies for Talent
- We **MUST** be Competitive with the Public and Private Sector

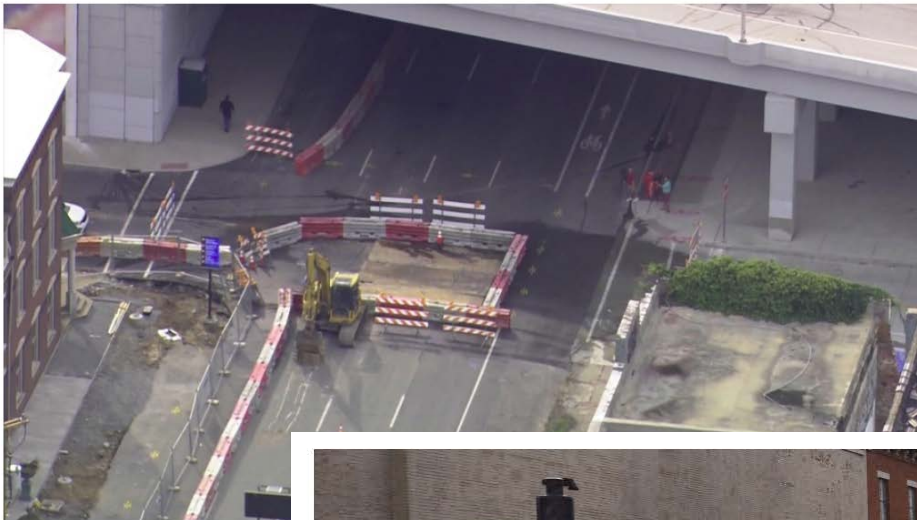
Present Infrastructure Challenges - Main Street Sewer Collapse

Sewer collapse closes streets in downtown Louisville

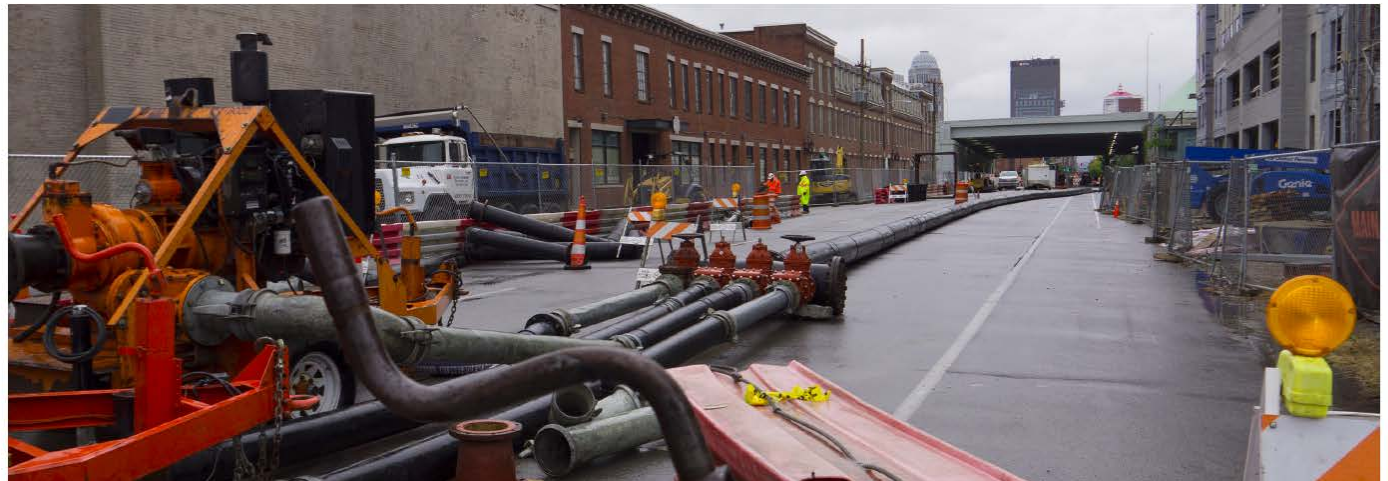
75
Shares



Updated: 5:10 PM EDT Aug 30, 2017



LOUISVILLE, Ky. — A sewer collapse



Broadway sewer - originally built in 1867



Flood Protection Challenges – More People, More Intense Storms, More Water

- Ohio River Flood Protection
 - 16 Flood Pump Stations (9 more than 65 years old)
 - 29 miles of Floodwall and Levee
 - Constructed from 1940's to 1980's
 - Continuous Improvement and Upgrade
 - 18 staff (14 unit)
 - Additional resources in Flood Season (MSD Organization)
- Still had up to 400 Homes Flood this Week

THE 2018 OHIO RIVER FLOOD

MSD's Role in Protecting Louisville



MSD maintains the area's **29-mile** flood protection system



Louisville's wettest February in **135 years**



6 floodwall closures installed by Sunday evening



All hands on deck. Even non-flood pump station MSD employees help staff flood pump stations.



More than **1,500 customer calls** for assistance in three days, mostly for drainage and sewer backups



Crews working **24/7** to clear drainage concerns



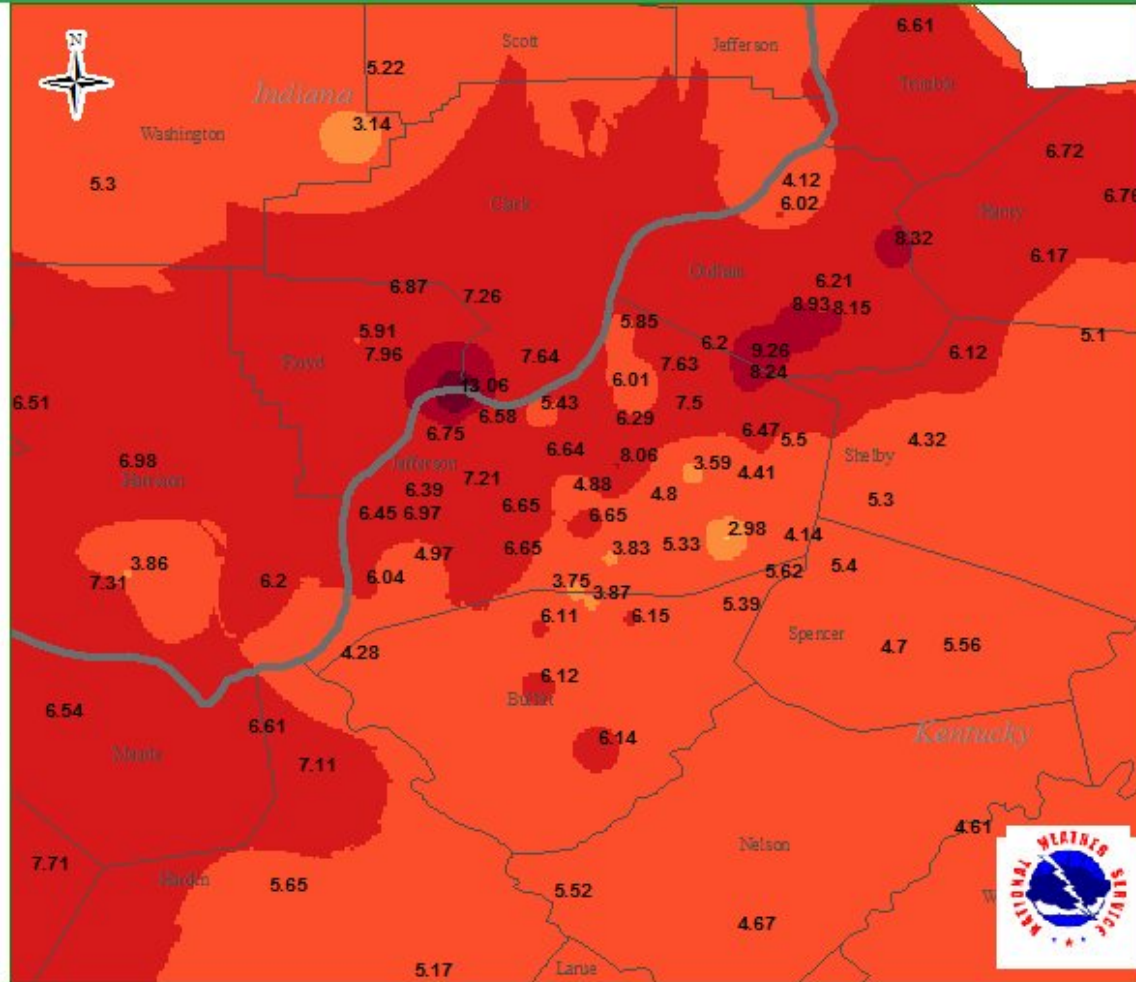
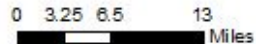
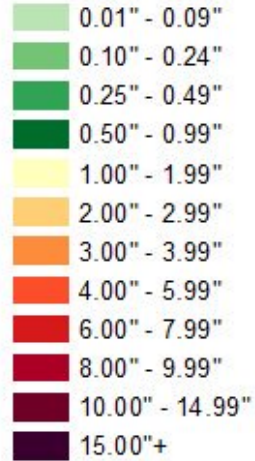
16 flood pumping stations working nonstop together, pumping **8 million gallons** of water per minute into the Ohio River



5 Day Precipitation Total Ending February 25, 2018

This map is an interpolation of actual reported values, but should be considered an estimation only. Reports are total precipitation for the month.

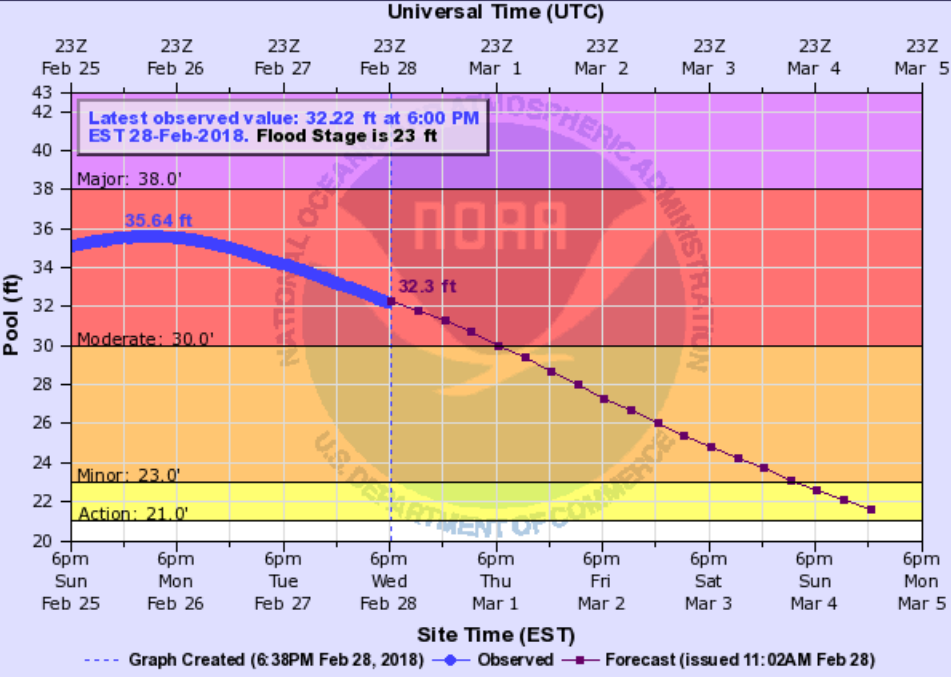
In Inches



National Weather Service
 Kentucky Mesonet
 CoCoRaHS & MSD

Created by the National Weather Service Forecast
 Office Louisville, Kentucky

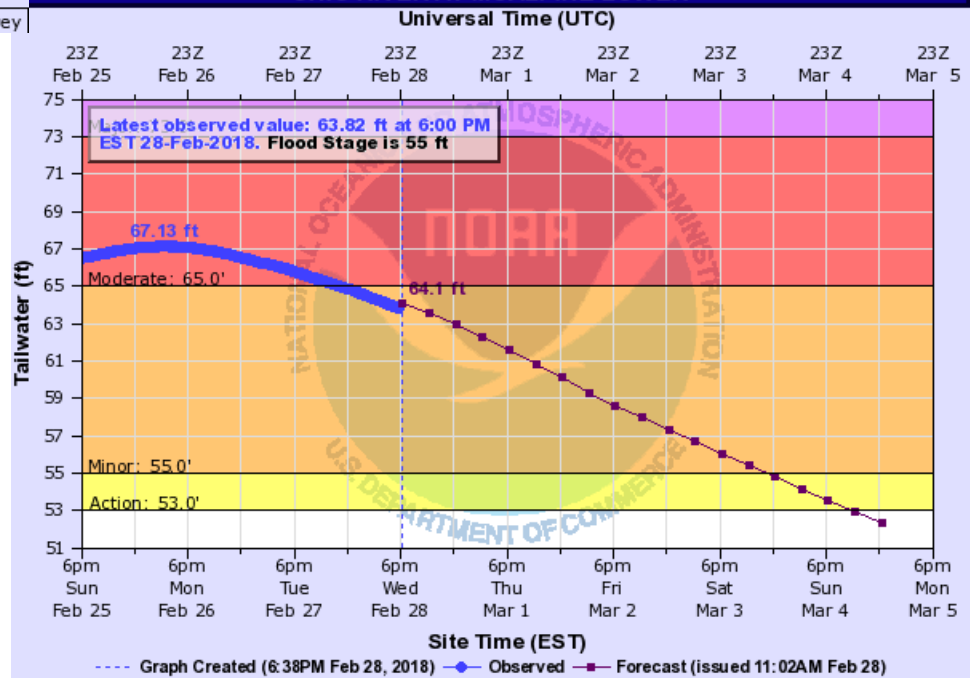
OHIO RIVER AT MCALPINE UPPER



MLUK2(plotting HPIRG) "Gage 0" Datum: 407.18' | Observations courtesy of US Geological Survey

River is Going Down, but MSD is Still Pumping Floodwaters out of our Community

OHIO RIVER AT MCALPINE LOWER



MLPK2(plotting HTIRG) "Gage 0" Datum: 373.18' | Observations courtesy of US Army Corps of Engineers



Upper River Road



105 + Million Gallons of Storage at Buechel
Basin





Zorn Avenue and River Road



LTM DRONE

Flooding under I-64



LTM DRONE

Downtown Louisville



Waterfront Park



Muncie Avenue



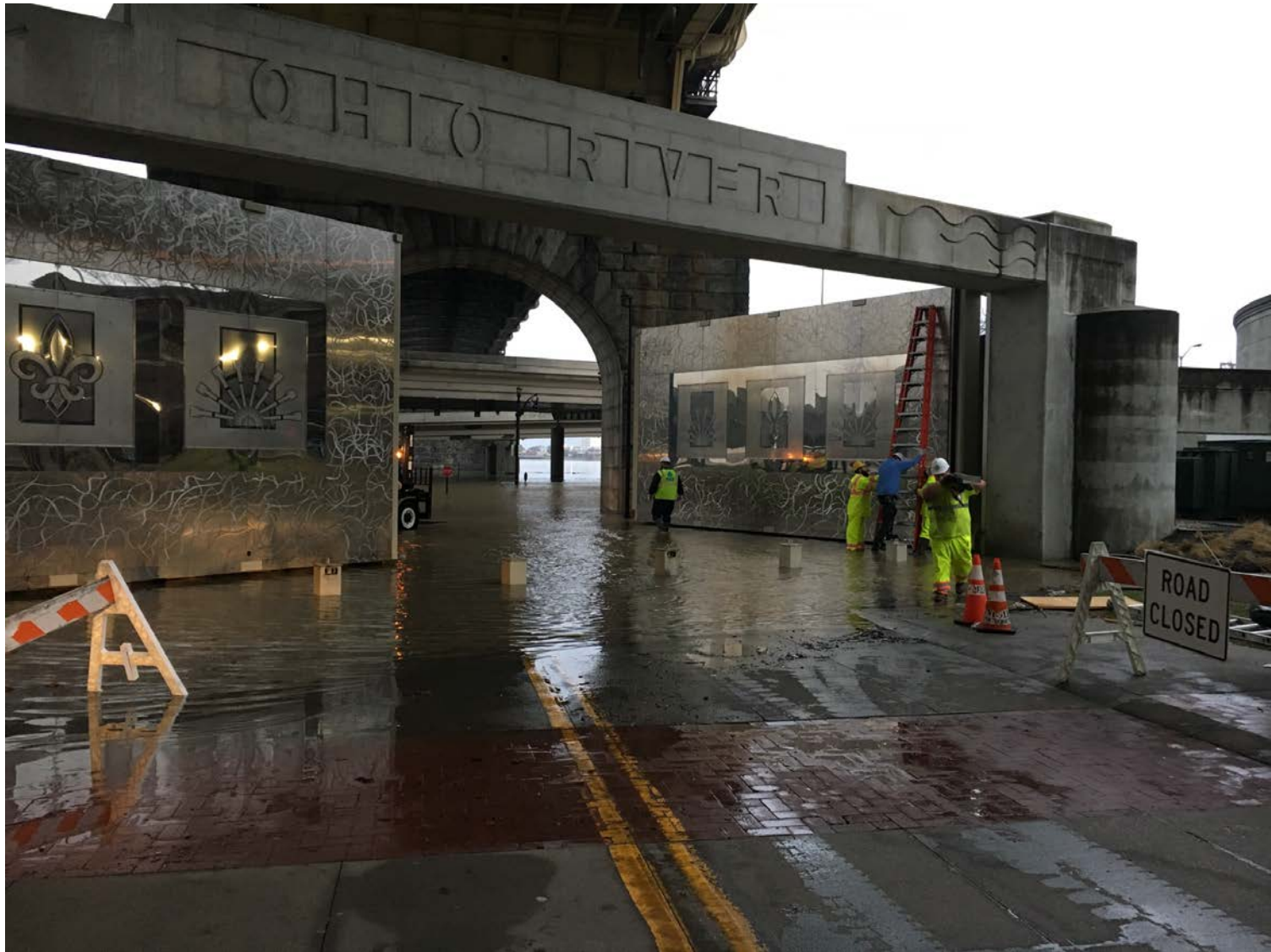
River Road



Waterfront Park



Port Road Floodwall Closure – Riverport



2nd Street Swing Gate Closure



Bingham Way Street Closure



Pond Creek Flood Pump Station – 1.8 Million
Gallons/minute

Pump Failures





Flood Inundation Model

FEBRUARY 2018

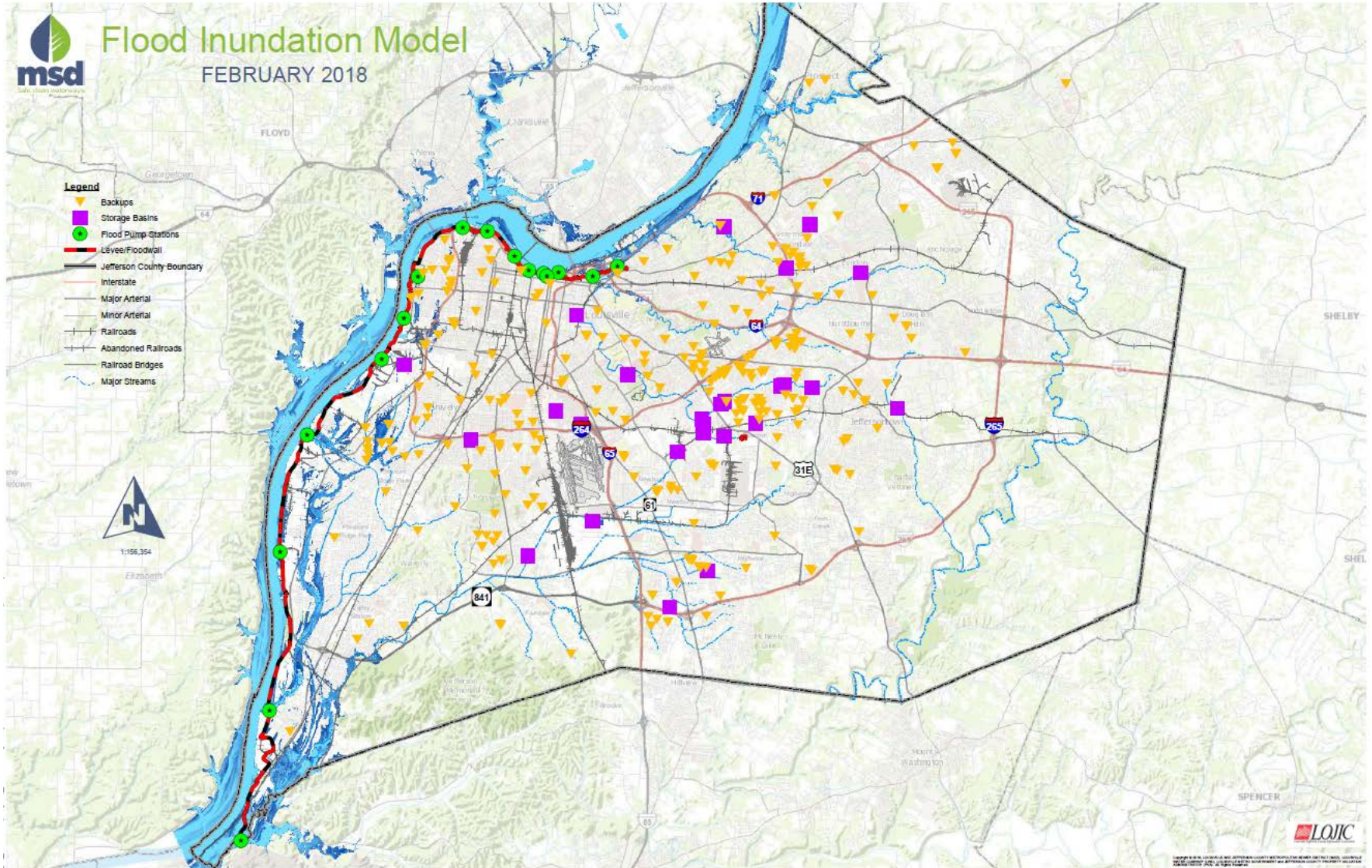
Legend

- Backups (Yellow triangle)
- Storage Basins (Purple square)
- Flood Pump Stations (Green circle)
- Levee/Floodwall (Red line)
- Jefferson County Boundary (Black outline)
- Interstate (Thick red line)
- Major Arterial (Thin red line)
- Minor Arterial (Thin grey line)
- Railroads (Black line with cross-ticks)
- Abandoned Railroads (Dashed black line with cross-ticks)
- Railroad Bridges (Black line with cross-ticks)
- Major Streams (Blue line)

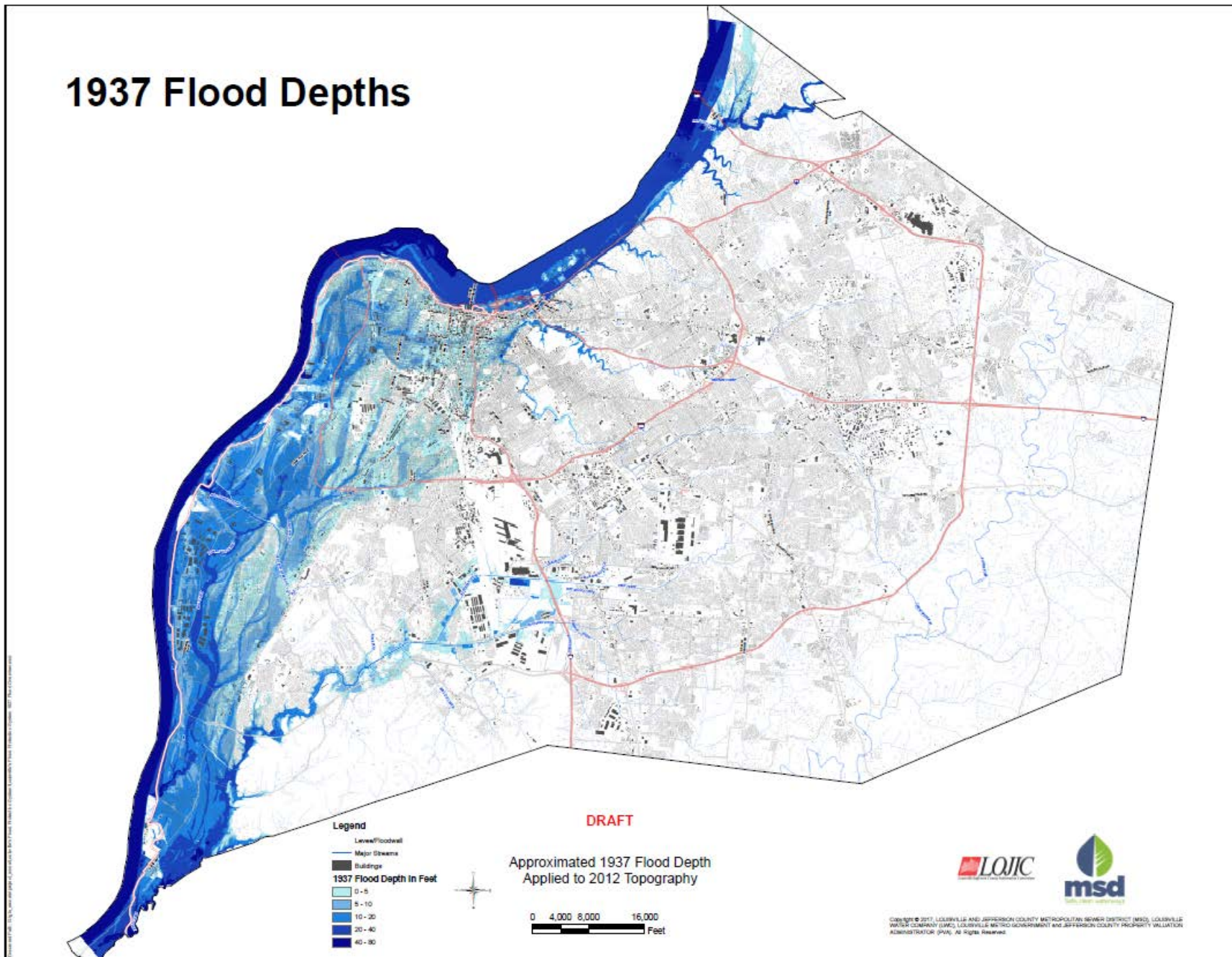


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1937 Flood Depths



Paddy's Run Flood Pumping Station

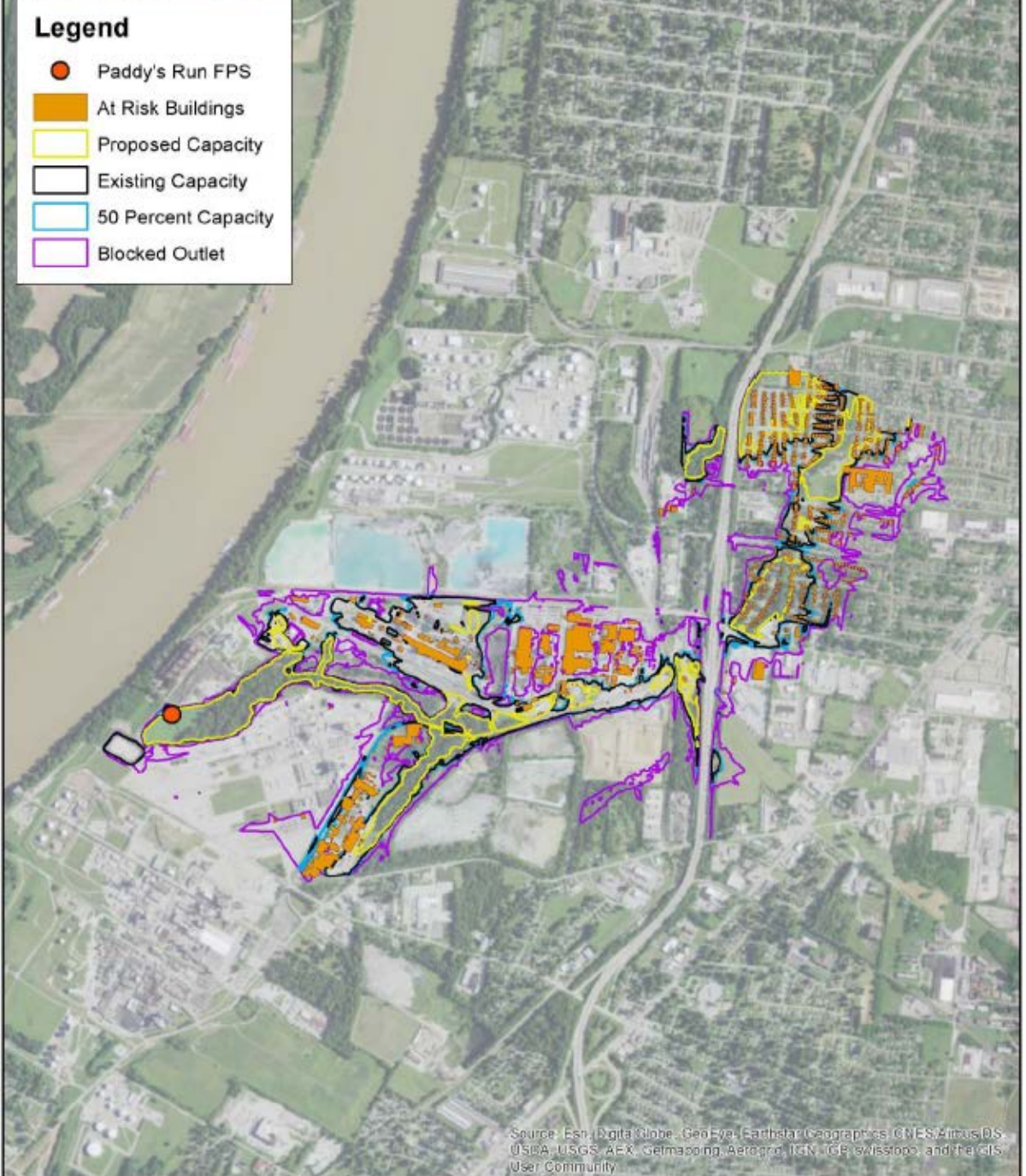


- Constructed in 1953
- Protects 35,000 individuals

Part of the larger system that protects **\$23.8 billion** in property

Paddy's Run FPS Failure

Council Districts 1, 3

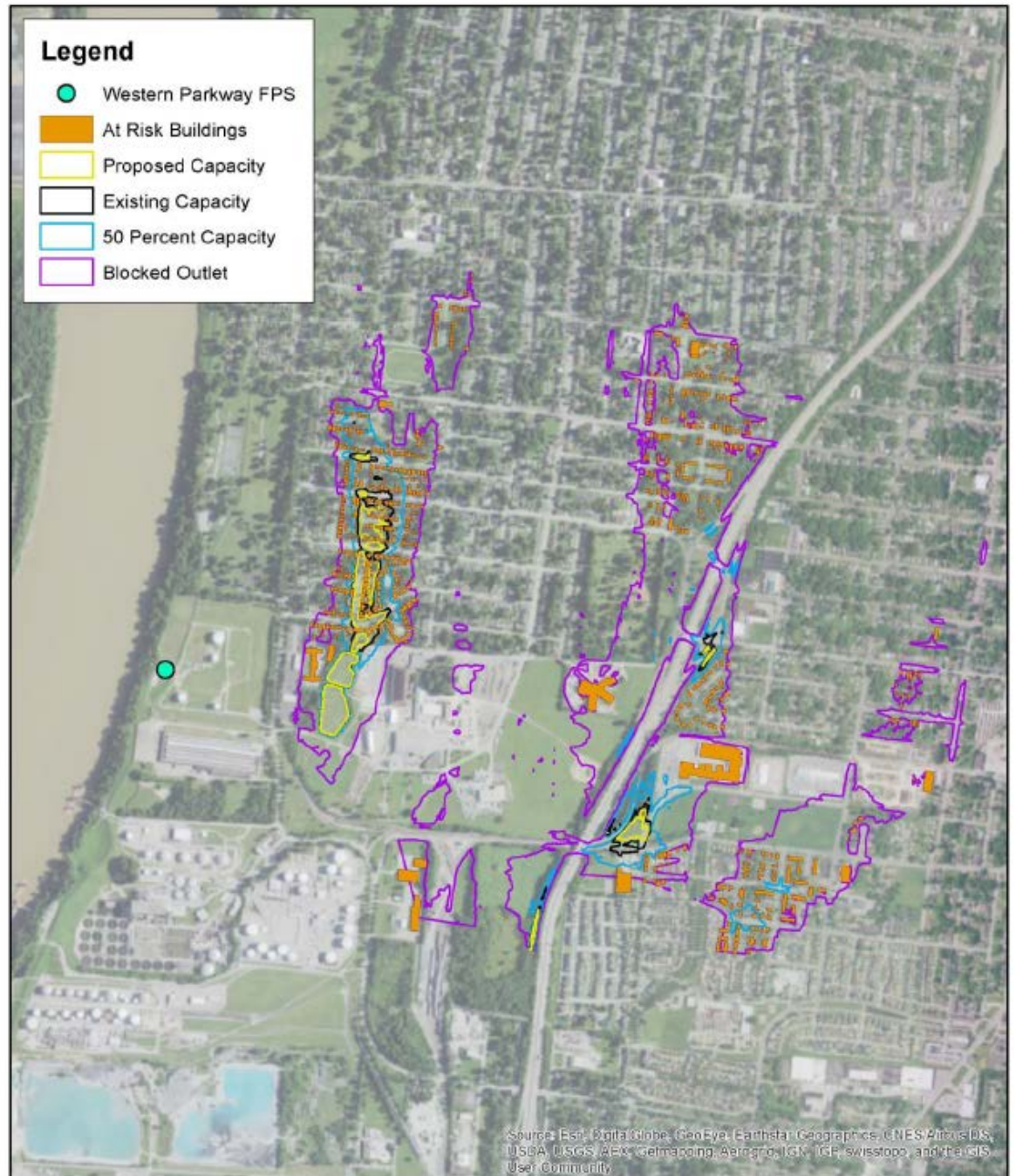


100 YEAR STORM

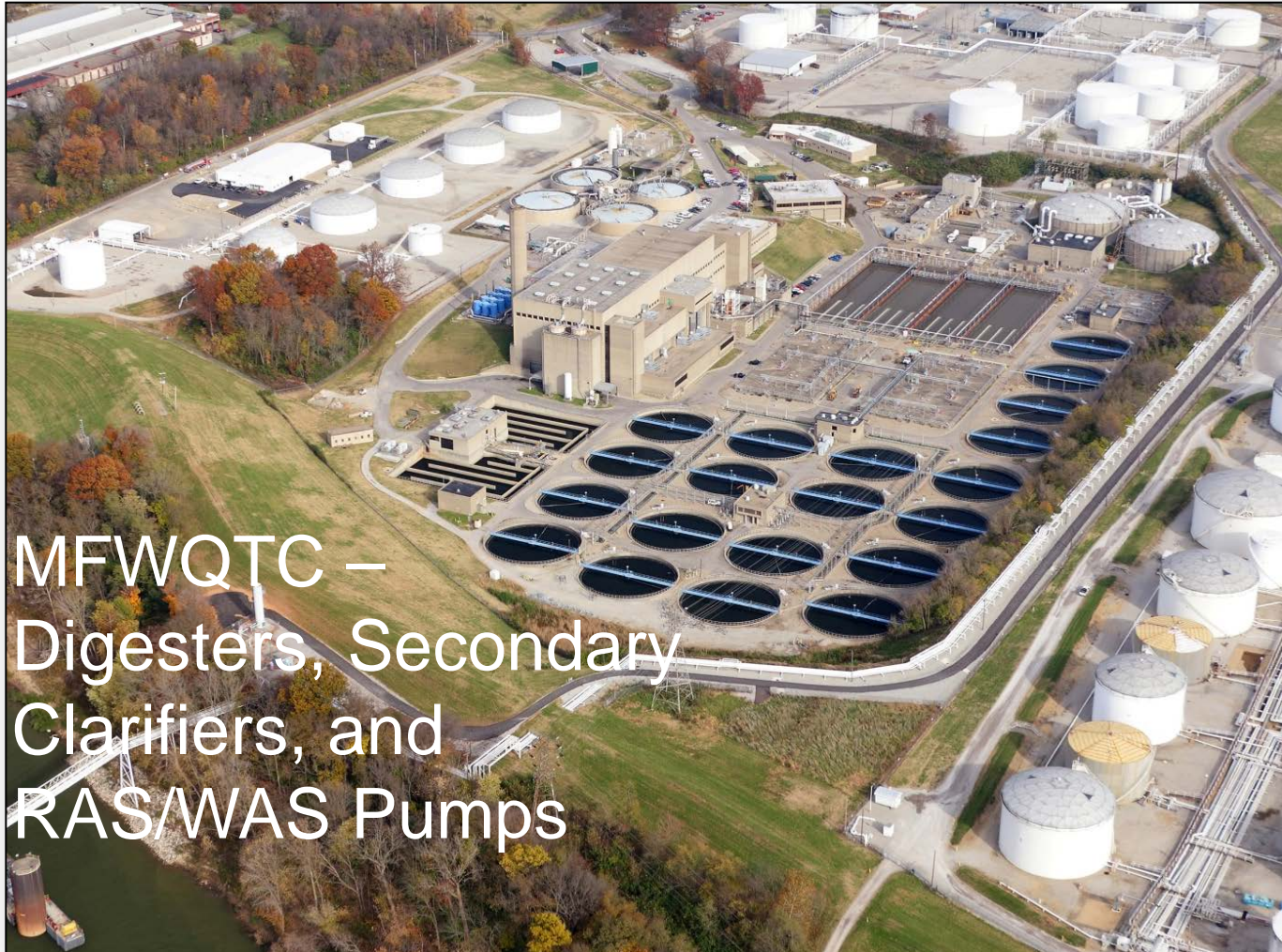


Western FPS Failure

Council Districts: 1, 3, 5



Wastewater – Morris Forman WQTC



MFWQTC –
Digesters, Secondary
Clarifiers, and
RAS/WAS Pumps

MSD in the Future:



Critical Repair and Reinvestment Plan Background - We are the Experts

**Draft for Public Review -
20-Year Comprehensive Facility Plan**
MSD's Critical Repair and Reinvestment Initiative
Volume 1 - Programmatic and Integrating Information



ch2m

HDR



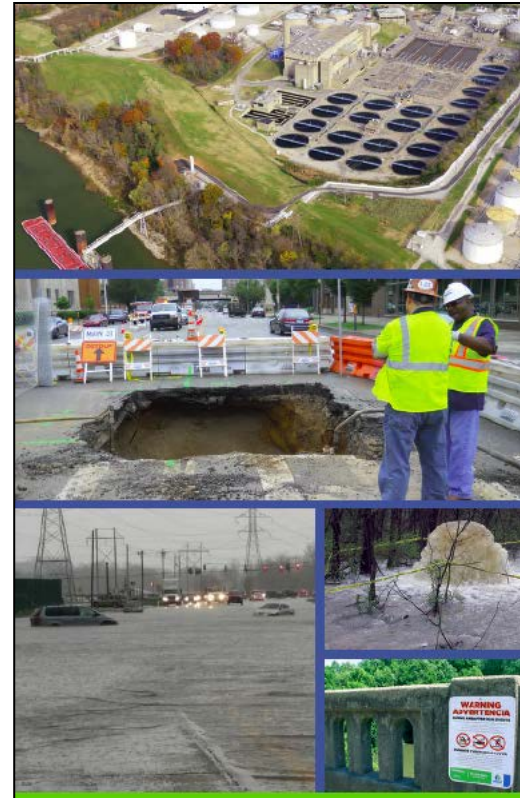
SA
STRAND
ASSOCIATES



In Association with:

NAC | K.S. Ware & Associates | RKX | Powers Engineering

December 2016



CRITICAL REPAIR &
REINVESTMENT PLAN

Community Conversation

Status Update
June 1, 2017



MSD's Critical Repair & Reinvestment Plan

Addresses Public Health and Safety Risks
Progressive, Transparent, and Accountable



Upgrade Ohio River Flood
Protection



Reduce Neighborhood
Flooding



Minimize Viaduct Flooding



Upgrade Wastewater
Treatment
Facilities



Prevent Collapsing Sewers



Comply with Consent Decree

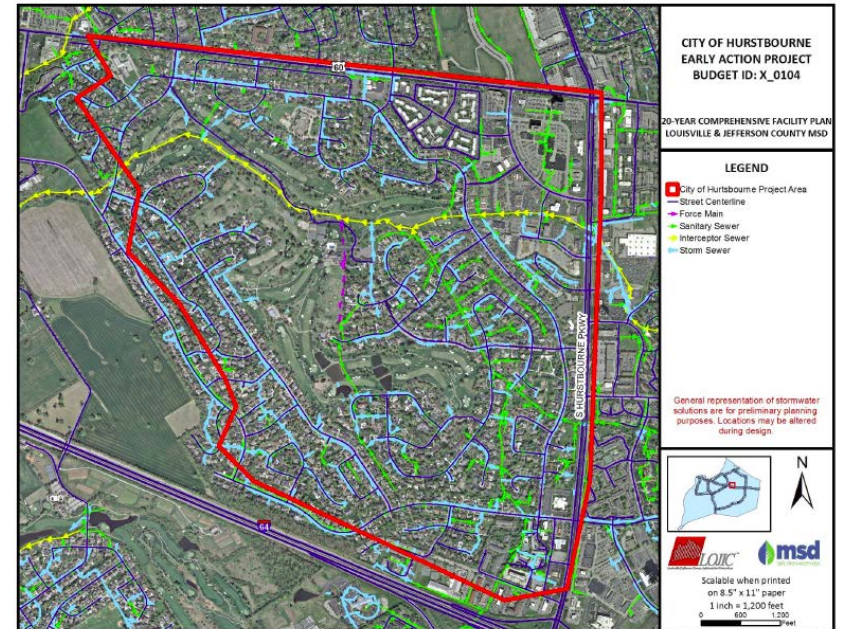
MSD infrastructure solutions

More than two years of analysis and careful planning

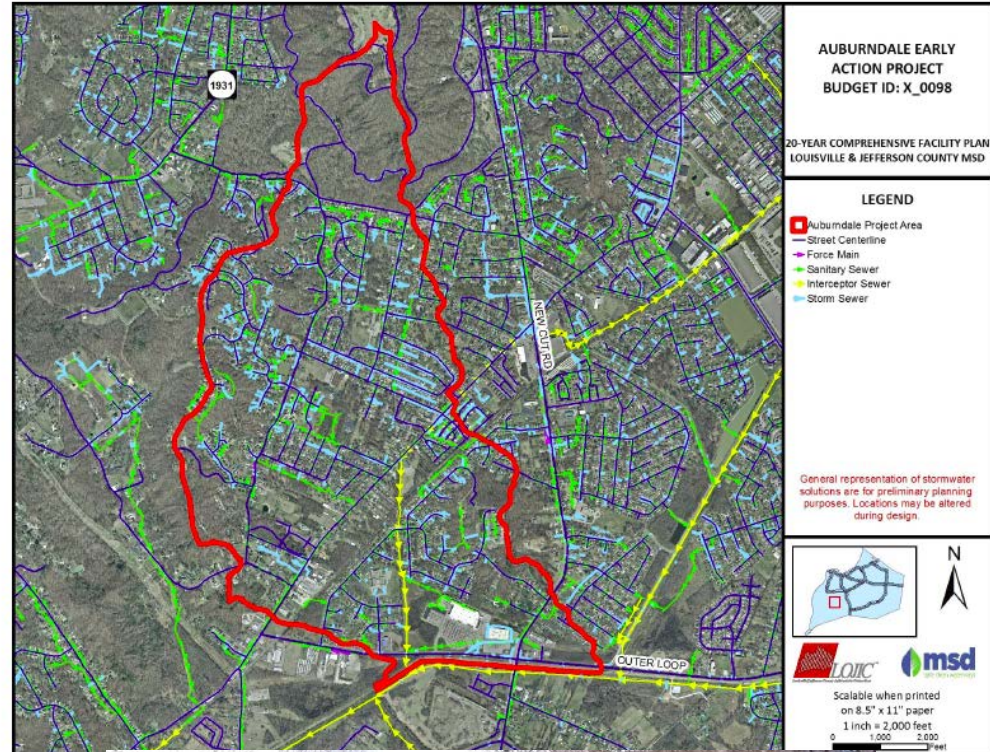
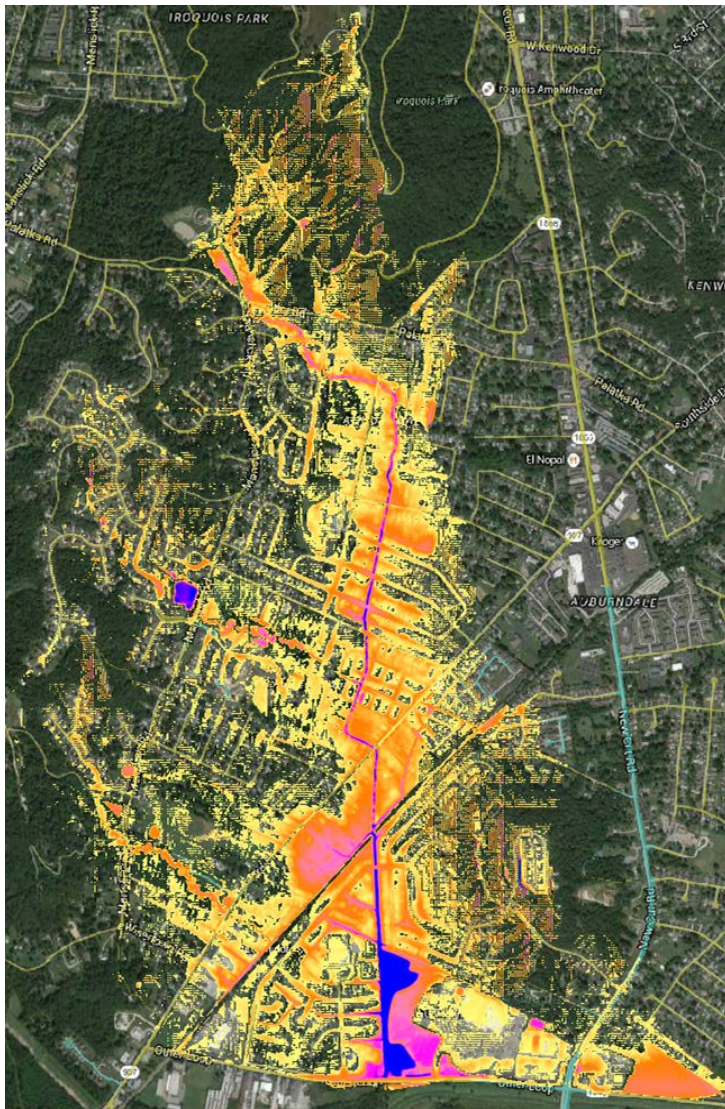


**Around
\$4 billion**

Addressing Inland Drainage and Flooding- Hurstbourne – Council District 18



Addressing Inland Flooding – Auburndale – Council District 13



Utility Infrastructure is foundational to Louisville's transformation



\$1.2 billion
investment
downtown
with 2018
projected
completion

Louisville Metro development estimated
to exceed **\$12 billion**

Louisville's prosperity depends on this vital system

Yum! Brands.



Humana.



The economic impact in Louisville will be **\$4 billion** and **3,200 jobs** over 20 years



Every \$1 we
invest = \$2.62
for local
economy

Source: U.S. Department of Commerce



BIA, GLI, GLAR, Mortgage Lenders, and Many Others Support

- Infrastructure Investments are the Backbone of Louisville's Economic Engine:

https://www.courier-journal.com/story/opinion/columnists/2018/02/27/business-leaders-louisville-flood-protection-system/378814002/

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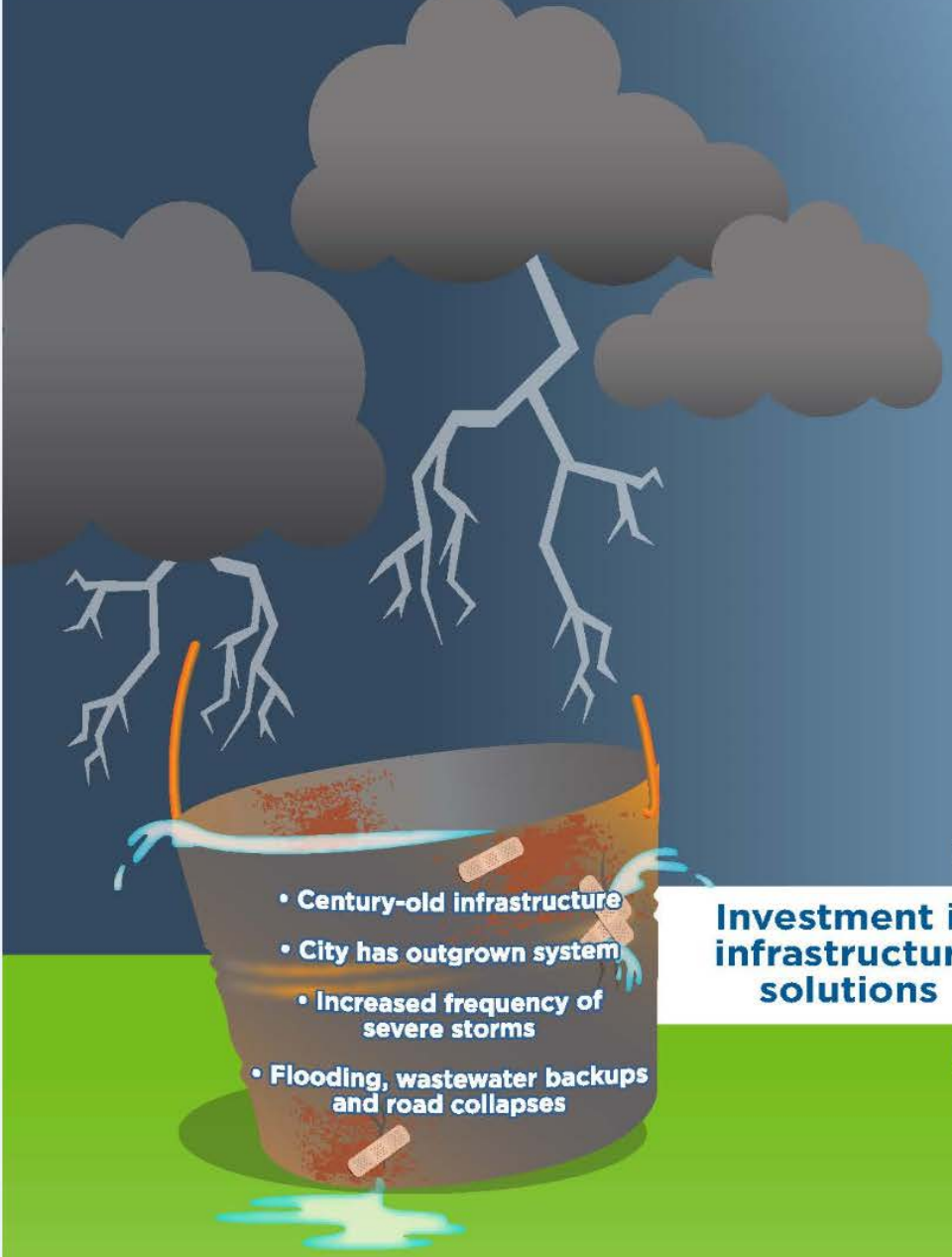
Business leaders: Future of Louisville depends on a new flood protection system

Opinion column Published 5:11 p.m. ET Feb. 27, 2018 | Updated 5:12 p.m. ET Feb. 27, 2018



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FROM THE USA TODAY NETWORK



- Century-old infrastructure
- City has outgrown system
- Increased frequency of severe storms
- Flooding, wastewater backups and road collapses

Investment in infrastructure solutions



Protecting community from flooding, sewer backups and cave-ins

- Renovating today's outdated system to serve tomorrow's Louisville
- Complying with health and environmental laws
- Innovating to provide more reliable service
- Serving as stewards of the community's investment

Resilient City

Quality of Life

Compassionate City

Economic Development

Supplier Diversity Opportunities

Community of Innovation

Job Creation

Risks to Today and Tomorrow's Louisville – We Need Your Help





What will be OUR legacy?



Parting Thoughts

- The floodwaters will rise and fall, but MSD's commitment to serve as guardian of the community's wastewater and stormwater management systems remains steady. We believe now is the time to put the Critical Repair & Reinvestment Plan into action for the future of Louisville.

QUESTIONS?