Presentation Highlights

• Louisville’s Flood Protection System
• February-March 2018 Flooding
• Disaster Declaration and FEMA Public Assistance Program
• Demo of MS Excel Tools for Managing Large Sets of Data
Louisville Metro’s Flood Protection System
Overview of Louisville Metro’s Flood Protection System

- 29 Miles of Earthen Levee & Concrete Floodwall
- 153 Flood Gates and 150 P-Gates
- 16 Flood Pumping Stations (11.5 Billion GPD of Pumping Capacity)
- 49 Movable Street Closures, 21 Sandbag Closures
- Protects 87,000 homes, over 230,000 people, and $24 Billion in property
Flood Protection System Stakeholders

• Constructor and Regulator
  – US Army Corps of Engineers
  – Completed in two sections: City Levee 1957 & Southwest Extension 1988

• Owner
  – Louisville Metro Government

• Local Sponsor and Maintainer
  – Louisville MSD since 1987
    • Transferred via lease agreement with Jefferson Co & former City of Louisville
Flood Protection System - Major Challenges

Aging: 30 to 60 years old
Flood Protection System - Major Challenges

• Limited Resources
  – Staffing: Retaining Skilled Workforce
  – Funding: Rate Capacity & Rising Utility Costs

• System Capacity
  – Upstream Development
  – More frequent severe storms
2018 Ohio River and Severe Storms Flooding
Top Ten Floods In Louisville Metro

1. 1937 52.15’
2. 1945 42.10’
3. 1884 41.70’
4. 1964 41.20’
5. 1883 39.50’
6. 1913 39.40’
7. 1997 38.76’
8. 1907 36.40’
9. 1948 36.00’
10. 2018 35.64’

- Upper gauge readings at McAlpine Lock and Dam
2018 Ohio River Flood at McAlpine Lock & Dam

- Rain (in)
- River Stage (ft)
- 1 FPS in Service
- 16 FPS in Service

FEMA Incident Period

2/17/2018 to 4/30/2018
### MSD Flood Pumping through 2/25/18

#### Upper McAlpine Gauge

- **Beargrass** – 5.15 Billion
- **Starkey** – 1.72 Billion
- **Bingham** – 8 Million
- **4th Street** – 31 Million
- **5th Street** – 5 Million
- **10th Street** – 8 Million
- **17th Street** – 4 Million
- **27th Street** – 110 Million
- **Total Upper** – 7.03 Billion

#### Lower McAlpine Gauge

- **34th Street** – 42 Million
- **Shawnee** – 933 Million
- **Western** – 732 Million
- **Paddy’s Run** – 2.03 Billion
- **Upper Mill Creek** – 1.06 Billion
- **Riverport** – 23 Million
- **Lower Mill Creek** – 1.08 Billion
- **Pond Creek** – 8.60 Billion
- **Total Lower** – 14.50 Billion

#### Overall Total

- **21.5 Billion**
Pond Creek Flood PS
Clifton Heights
CSO Basin
Southwestern Pump Station
Disaster Declaration and FEMA Public Assistance Program
Disaster Declaration
FEMA DR 4361 KY

Declared on 4/26/18

- Type of Disaster: Severe Storms, Flooding, Landslides, and Mudslides
- 34 Counties in KY including Jefferson
- Incident Period 2/21 – 3/21/18

Deadlines

- Damage Inventory: 09/07/18
- Debris Cleanup and Emergency Protective Measures Cat A & B Completion of Work: 10/26/2018
- Permanent Work Cat C-G Completion of Work: 10/26/2019

Cost Sharing:
75% Federal, 12% State, 13% Local (MSD)
Major Challenges

• Data Gathering
  – MSD has multiple systems that had to be mined for info and documentation
  – Multiple departments, contractors and vendors
• FEMA’s new Public Assistance Delivery Model and Grants Portal system
• Juggling FEMA and Insurance Claims
• Major Repairs to Flood Pump Stations
  – Procurement
  – Capable vendors
  – Timing
**FEMA’s Public Assistance Program**

### Understanding the Public Assistance Responsibilities

<table>
<thead>
<tr>
<th>FEMA</th>
<th>Recipient (State)</th>
<th>Subrecipient (Applicant)</th>
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<tbody>
<tr>
<td>- Coordinates with all Federal, State, Local agencies</td>
<td>- Educates subrecipients</td>
<td>- Requests assistance</td>
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<tr>
<td>- Establishes Joint Field Office</td>
<td>- Works with FEMA to manage Public Assistance Program</td>
<td>- Identifies damaged facilities</td>
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<tr>
<td>- Collects project and cost data</td>
<td>- Collects project and cost data</td>
<td>- Provides information to support request</td>
</tr>
<tr>
<td>- Approves grants and obligates funds</td>
<td>- Disburses grants to applicants (Ex: Community, county, local public entity)</td>
<td>- Maintains accurate documentation</td>
</tr>
<tr>
<td>- Provides Technical Assistance</td>
<td>- Monitors and manages use of grants by subrecipients</td>
<td>- Performs necessary work (repairs, debris, etc.)</td>
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- Louisville MSD is a sub-applicant to Louisville Metro
- RA Consultants hired through RFQ Process by MSD to be Project Mgr.
FEMA's New PA Application Process

- Streamlined Delivery Model
- New Grants Portal System
- Alternative Procedures
FEMA Alternative Procedures and Pilot Programs

• Direct Administrative Costs
  – MSD opted for 5% of total damages, not project by project based

• Pilot Program for Debris Removal
  – Reimbursement of straight time labor
  – Accelerated Removal: Increased Federal Cost Share
  – Recycling Revenue: Keep $ from recycling
  – Debris Management Plan Incentive

• Project Thresholds
  – Small: under $125,500 (2 projects) – Self Certify
  – Large: above $125,000 (12 projects)
Insurance Coverage

• Any insurance proceeds are deducted from FEMA reimbursements

• Louisville Area Governmental General Insurance Trust (LAGGIT)
  • $100,000 Deductible Per Occurrence
  • Damage must be within 1,000’ of Schedule Site
  • If not tied directly to the flood each site constitutes an additional occurrence for breakdowns and failures.
  • Excess coverage is through FM Global Insurance
Damages Breakdown

- **FEMA Damage Inventory and Total Claim Value**

  - Category A - Debris: $291,796.20
  - Category B - Emergency Measures: $535,731.32
  - Category D - Permanent Work - Water: $5,808,839.65
  - Category G - Permanent Work - Parks: $800,000.00

  **Damages Total**: $7,436,367.16

  - 5% Direct Admin Costs: $371,818.36

  **Total Claim**: $7,808,185.52

  - Federal 75%: $5,856,139.14
  - State 12%: $936,982.26
  - Local (MSD) 13%: $1,015,064.12

- **Potential Insurance Claim: $4,883,938**
  - Not including deductibles, actual insurance proceeds deducted from FEMA Claim
RA Consultants’ PM Role

- Coordination with FEMA and Insurance
- Manage and Monitor Repair Projects
- Developed MS Excel based dashboard to manage and filter claim data
- Captured and pulled documentation for:
  - 887 Work Orders & 1053 Individual Cost Items
  - 182 employees time for 12,334 hours
  - 71 employees special event pay
  - 164 unique pieces of equipment used for 8,649 hours
Dashboard Demo

If we have time and the computer cooperates…….
Current Status and On-Going Tasks

• Damage Inventory submitted on 9/7/18
• Currently completing all EEIs (essential elements of information) for the projects
  – All Cat A & B work complete by 10/26/18
  – All Cat C-G work complete by 10/26/19
• Upon EEI completion projects are submitted and reviewed by FEMA
  – MSD will have to respond to Requests for Information (RFIs) within 10 days.
• Project Closeout
  – Reimbursement paid on per project basis
  – DAC 1% withheld until closeout
Lessons Learned and Tips

- Collaboration is key. Portals and file sharing sites are a must.
- FEMA is the government and yes they really are there to help.
- Documentation during the event is often times difficult but key in post-event activities.
- Have patience but be ready to move quickly.
Questions?

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“Service to others is the rent you pay for your room here on earth.”
- Muhammad Ali

msd
Safe, clean waterways
Federal Funding Sources

McConnell Announces Federal Funding for Louisville Flood Disaster Recovery & Prevention July 12, 2018

WASHINGTON, D.C. – U.S. Senate Majority Leader Mitch McConnell announced today the U.S. Army Corps of Engineers (USACE) has approved $3 million in funding for the Louisville Metropolitan Sewer District (MSD). The funding, which will be used for a feasibility study to determine what repairs will need to be made to Louisville’s aging flood protection system, is a result of the Bipartisan Budget Act of 2018, which Senator McConnell negotiated and shepherded to enactment. That legislation provided disaster recovery money to states that suffered more than one flood related disaster in the past few years – Kentucky was one of the states eligible.

“This funding is welcome news for the City of Louisville,” Senator McConnell said. “Earlier this year, severe weather hit the city and caused flooding and extensive damage to the region. This announcement will bring much-needed resources to help improve Louisville’s flood control infrastructure and to prevent future damage.”

“The $3 million in funding for a study of the flood protection system in Louisville, as outlined in the USACE’s recently published Long Term Disaster Recovery Investment Plan list, is the first critical step in providing an overhaul to 65 year old facilities. This system protects thousands of homes and businesses in Louisville when the Ohio River rises, but still depends on 1950’s era technology,” said Tony Parrott, Executive Director of Louisville Metropolitan Sewer District. “We are thankful for Leader McConnell’s support to secure the funding to help keep the Louisville Community safe. Louisville MSD looks forward to working with the Leader’s office and the Corps on this study, and implementing the projects that will provide a safe and healthy Louisville for future generations.”

In April, Senator McConnell met with MSD employees, including Executive Director Tony Parrott, to discuss MSD’s work on this issue regarding the severe weather.
Damages Breakdown

<table>
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<th>Cost Type</th>
<th>Amount</th>
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<tr>
<td>MSD FA Labor Costs</td>
<td>$530,610.61</td>
</tr>
<tr>
<td>MSD Equipment</td>
<td>$242,628.83</td>
</tr>
<tr>
<td>Contract and Materials</td>
<td>$6,663,127.73</td>
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## The 2018 Ohio River Flood
MSD’s Role in Protecting Louisville

<table>
<thead>
<tr>
<th>MSD maintains the area’s <strong>29-mile</strong> flood protection system</th>
<th>Louisville’s wettest February in <strong>135 years</strong></th>
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<td><strong>6 floodwall closures</strong> installed by Sunday evening</td>
<td><strong>All hands on deck.</strong> Even non-flood pump station MSD employees help staff flood pump stations.</td>
</tr>
<tr>
<td>More than <strong>1,500 customer calls</strong> for assistance in three days, mostly for drainage and sewer backups</td>
<td>Crews working <strong>24/7</strong> to clear drainage concerns</td>
</tr>
<tr>
<td><strong>16 flood pumping stations</strong> working nonstop together, pumping <strong>8 million gallons</strong> of water per minute into the Ohio River</td>
<td></td>
</tr>
</tbody>
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