Agenda

• Introductions
• Getting to Know You
• Consent Decree Overview
• Project Overview
• Ohio River Tunnel Projects
• Project Schedule
• Cost Estimate
• Keeping Each Other Informed
• Feedback
Getting to Know You
Public Engagement Tools: “Clickers” and Online Polling

“Clickers” for Public Meetings

• Simple To Use
• Anonymous (No One Knows Your Answers)
• Simultaneous (We All See the Results At the Same Time)
• Equal Voice for All

Online Polling for Those Who Can’t Attend Public Meetings

http://tinyurl.com/OhioRiverTunnel

msdprojectwin.org
How Young Are You?

1. 0-19
2. 20-29
3. 30-39
4. 40-49
5. 50-59
6. 60-69
7. 70-79
8. 80+
Gender?

1. Male
2. Female
Consent Decree Overview
History of Louisville’s Sewers and Overflows

Undeveloped Land & Streams
1796 Map of Louisville

Old swamp map

Victor Collot, A Journey in North America (1796)
Development Occurs
What is a Combined Sewer?

What is a combined sewer?

– Both storm water and wastewater conveyed in the same pipe

Original Combined Sewers discharged directly to rivers and streams

Wastewater treatment added in 1958. Dry weather flow treated. Some wet weather flow discharged to prevent flooding.
Sewer Overflow Locations

- Community-wide sewer overflows
- New pipeline, storage, pumping and treatment
- $850 million cost to community
How Do We Control Overflows?

Source Control Projects
- Green infrastructure
- Downspout disconnections
- Sump pump disconnections
- Sewer rehabilitation

Gray Infrastructure Projects
- Pipeline projects
- Pump station expansions
- Wastewater treatment plant expansions
- Storage Basins
Consent Decree Program Status

Overflow Occurrences

- 2007
- 2009
- 2011
- 2013
- 2015
- 2017
- 2019
- 2021
- 2023

- Separate Sewer System Projects
- Treatment Center Elimination Projects
- Combined Sewer System Projects
- Separate Sewer System Projects

$400M
Basins Projects per Consent Decree
What is a CSO Basin?

- A CSO Basin provides temporary storage for wet weather overflows that would otherwise flow directly to creeks, streams and rivers
- Released back into the collection system for treatment when system capacity is available
Frequently Asked Questions

• Will it create potential for back-ups?
  – No, the high-water elevation will be below basement elevations
  – Also will not eliminate the potential of back-ups

• What happens when the basin is full?
  – The system will function as it does today with the overflows being discharged to South Fork Beargrass Creek

• Will this project reduce flooding?
  – The basin will increase capacity of the combined sewer system during wet weather events

• Will the basin be visible?
  – No; underground, covered facility
  – There will be a control building and a screened generator
  – Access points/hatches may be visible
Frequently Asked Questions

• What about odor?
  – Highly diluted flow (mostly storm water)
  – Basin is underground and covered
  – Basin will be equipped with flushing equipment
  – Typically, odor control is not necessary with these types of facilities
  – MSD is being pro-active
    • Performing odor control monitoring/testing
    • Basin will be designed to accommodate a future odor control system
Project Overview
Ohio River Tunnel Overview

A project to combine the volume of 3 individual Combined Sewer Overflow (CSO) basins into a single deep rock tunnel

September 30, 2016 approval by MSD’s Board to move forward with design

Three basins will be eliminated by the consolidated tunnel solution
Careful consideration resulted in the new solution

Variety of factors considered:

– Discussions with Community Leaders
– Input from public meetings
– Traffic disruptions along key commercial corridors
– Economic impacts to downtown businesses and the emerging Butchertown district
– Consent Decree mandates for completion by December 2020
– Technological advances of deep tunnel construction over the last decade have reduced costs
– Eliminates challenges of construction and final land use planning on a brownfield site
Meetings to Date: Community

<table>
<thead>
<tr>
<th>Project Phase</th>
<th>Butchertown</th>
<th>Irish Hills</th>
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<tbody>
<tr>
<td>Conceptual Design</td>
<td>February 10, 2016</td>
<td>April 26, 2016</td>
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<tr>
<td>Update</td>
<td>October 11, 2016</td>
<td>October 18, 2016</td>
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<tr>
<td>Update</td>
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<td>July 11, 2017</td>
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# Meetings to Date: Louisville Downtown Partnership

<table>
<thead>
<tr>
<th>Group</th>
<th>Date</th>
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<tbody>
<tr>
<td>Lou. Downtown Partnership</td>
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<td>February 24, 2017</td>
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<tr>
<td>Lou. Downtown Partnership</td>
<td>March 1, 2017</td>
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<tr>
<td>KY. Science Center &amp; Ali Center</td>
<td>April 26, 2017</td>
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Ohio River Tunnel: An Innovative Alternative to 3 CSO Basins
Project Background

• Divided into four (4) separate projects
  – Ohio River Tunnel
  – Rowan Pump Station
  – Lexington & Payne CSO Interceptor
  – Downtown CSO Interceptor

• Consent Decree Deadline of December 31, 2020
Ohio River Tunnel – Project Alignment
Ohio River Tunnel – Project Facts

• Parameters
  • 13,400 linear feet in length (main tunnel)
  • 1,200 linear feet in length (bifurcation)
  • 200 feet below ground to invert
  • 20 feet minimum internal diameter

• Volume
  • Required - 33.7 million gallons
  • Provided - 37.0 million gallons
  • Rock Removal – 300,000 CY or 30,000 trucks
Ohio River Tunnel - Dig INDY Site Visit
Ohio River Tunnel - Dig INDY Site Visit
Ohio River Tunnel - Dig INDY Site Visit
Ohio River Tunnel – Shaft Locations

- Pump Station Shaft
- Working Shaft
- Drop Shaft 1
- Drop Shaft 2
- Drop Shaft 3
- Drop Shaft 4 / Retrieval Shaft
Rowan Pump Station
Rowan Pump Station – Project Alignment
Rowan Pump Station – Project Alignment

Pump Station Shaft  Working Shaft
Rowan Pump Station – Project Facts

- Pump Station Building
  - 120 foot x 72 foot
- Pump Station Shaft
- Loading/Maintenance Area
- Elevated Electrical/Control Room

- Wet Well
  - 10 submersible pumps (3,500 gpm each)
  - 2 grit pumps (1,000 gpm each)
  - 60 inch gravity sewer to Ohio River Interceptor (ORI)
Rowan Pump Station – Draft Rendering
Lexington & Payne
CSO Interceptor
Lexington and Payne CSO Interceptor – Project Alignment

Drop Shaft 4 / Retrieval Shaft
Lexington and Payne CSO Interceptor - Project Facts

• Sewer line to capture overflows from nine (9) existing CSOs and convey that flow to the tunnel
• Interceptor will be below the concrete channel of South Fork Beargrass Creek
• Approximately 5,000 linear feet in length
  – From E Broadway to E Main Street
  – Pipe size ranging from 36-inch to 102-inch diameter
Example Project - Logan CSO Interceptor
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Example Project - Logan CSO Interceptor
Downtown CSO Interceptor
Downtown CSO Interceptor – Project Alignment
Downtown CSO Interceptor - Project Facts

• Sewer lines to capture overflows from twelve (12) existing CSOs and convey that flow to the tunnel
• Approximately 2,000 linear feet total in multiple segments
• 12-inch to 60-inch diameters
• Street Impacts
  • Rowan Street between 10th & 13th Streets
  • Washington Street between 6th & 8th Streets
  • 6th Street between Main & Washington Streets
  • Main Street between 5th & 6th Streets
Downtown CSO Interceptor – Rowan Street

Drop Shaft 1

CSO155

CSO050

ROWAN ST

N 11TH ST

N 10TH ST

I 64 RAMP

CSO052

msd
Safe, clean waterways
Downtown CSO Interceptor – 6th Street
Story and Main Connector – Project Alignment

Drop Shaft 3
Story and Main Connector - Project Facts

• Sewer line to capture overflows from two (2) existing CSOs and convey that flow to the tunnel
• Approximately 200 linear feet in length
  – Near the intersection of Franklin Street and Buchanan Street
  – Pipe size: 48-inch diameter
Project Schedule
# Ohio River Tunnel – Schedule

<table>
<thead>
<tr>
<th>Milestone</th>
<th>Ohio River Tunnel</th>
<th>Lexington &amp; Payne CSO Interceptor</th>
<th>Downtown CSO Interceptor</th>
<th>Rowan Pump Station</th>
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</thead>
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Cost Estimate
## Ohio River Tunnel – Construction Costs

<table>
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<tr>
<th>Project</th>
<th>Construction Cost Estimate</th>
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<tbody>
<tr>
<td>Ohio River Tunnel</td>
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<tr>
<td>Lexington &amp; Payne CSO Interceptor</td>
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<tr>
<td>Downtown CSO Interceptor</td>
<td>$15,000,000</td>
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<tr>
<td>Rowan Pump Station</td>
<td>$25,000,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$200,000,000</strong></td>
</tr>
</tbody>
</table>
Keeping Each Other Informed
MSD Wants to Keep You Informed, and We Want to be Informed

The tunnel will greatly reduce surface disturbance and construction impacts, and the tunnel boring will not be heard, but...

- Some streets will be closed for interceptor installations at different times over the next three years
- There will still be significant construction traffic and impacts

- MSD will create information resources to keep you up to date, help you plan for any possible construction impacts, and help you keep us informed about impacts we should be aware of.

- We’d like your opinion on the best ways to accomplish this.
How Would You Like to Learn About MSD’s Ohio River Tunnel Progress?  

1. Public Meetings  
2. Local Mainstream Print or Broadcast Media  
3. Metro Council District Newsletters  
4. MSD Website  
5. Dedicated MSD Project Website  
6. MSD Email List  
7. @LouisvilleMSD (Twitter)  
8. Facebook Updates  
9. Text Messages to Your Phone  
10. Louisville Downtown Partnership Website
What Types or Styles of Information Exchange Would be Most Useful During the Project? (5)

1. Real Time Animation Of Tunnel Or Construction Progress
2. Moderated Discussion / Message Board
3. 800 Number for Questions
4. FAQ Derived from items 2 and 3
5. MSD and Project Event Announcements / Calendar
6. Weekly Update / Map of Construction Impacts
7. URL’s to Related Project Resources
THANK YOU!

Next Steps

• Ohio River Tunnel and Lexington and Payne CSO Interceptor
  – Board Award in 3rd Quarter 2017
  – Construction in 4th Quarter 2017

• Downtown CSO Interceptor
  – Board Award in 4th Quarter 2017
  – Construction in 1st Quarter 2018

• Rowan Pump Station
  – Board Award in 1st Quarter 2018
  – Construction in 2nd Quarter 2018
Discussion
For *general information or emergencies* regarding the MSD system, call: 502-587-0603

**Your Call Will be Answered**

- By an MSD Staff Member
- Around the Clock
- Every Day of the Year