

CPAC Meeting Water Reclamation January 28, 2019



TWI Current Status Summary January 2019



Control Combined Sewer Overflows LTCP Progress Status Summary - Jan 2019



City of Toledo Toledo Waterways Initiative Segment 3 - CSO LTCP Implementation Progress

Number	Project	LTCP Study	Facility Site Planning	Preliminary Design	Final Design			Construction
					60%	90%	100%	
1	O-1 Lockwood/Devilbiss SSES	Done	n/a	n/a	n/a	n/a	n/a	n/a
2	O-2 Lockwood/Devilbiss Sewer Separation	Done	Done	Done	Done	Done	Done	Done
3	W-1 Ash/Columbus Storage Pipeline	Done	Done	Done	Done	Done	Done	Done
4	E-6 Wheeling Area SSES and Sewer Separation	Done	Done	Done	Done	Done	Done	Done
5	S-3 Highland Area SSES and Sewer Separation	Done	Done	Done	Done	Done	Done	Done
6	S-4 Woodsdale Area SSES & Inflow Reduction	Done	Done	Done	Done	Done	Done	Done
7	W-2 Ash Area SSES & Sewer Separation	Done	Done	Done	Done	Done	Done	Done
8	W-5 Williams/Knapp Area SSES & Inflow Reduction	Done	Done	Done	Done	Done	Done	Done
9	W-7 New York Area SSES & Inflow Reduction	Done	Done	Done	Done	Done	Done	Done
10	W-6 Maumee Storage Basin	Done	Done	Done	Done	Done	Done	Done
11	E-7 Bay View Grit Facility	Done	Done	Done	Done	Done	Done	Done
12	O-3 Ayers/Monroe Storage/Conveyance Pipeline	Done	Done	Done	Done	Done	Done	Done
13	E-5 Oakdale Storage Basin	Done	Done	Done	Done	Done	Done	Done
14	S-1A Swan Creek North Tunnel Optimization	Done	Done	Done	Done	Done	Done	Done
15	S-2A Swan Creek South Tunnel Optimization	Done	Done	Done	Done	Done	Done	Done
16	W-4A Downtown Tunnel Optimization	Done	Done	Done	Done	Done	Done	Done
17	O-4A Ottawa River Storage Facility (Conveyance)	Done	Done	Done	Done	Done	Done	Done
18	O-4B Ottawa River Storage Facility (Basin)	Done	Done	Done	Done	Done	Done	Done
19	E-2 Dearborn Storage Pipeline	Done	Done	Done	Done	Done	Done	Done
20	E-3 International Park Storage Basin	Done	Done	Done	Done	Done	Done	Ongoing
21	S-1B Swan Creek North Sewer Separation	Done	Done	Done	Done	Done	Done	Ongoing
22	W-4C Downtown Storage Basin	Done	Done	Done	Done	Done	Done	Ongoing
23	S-2B Swan Creek South In-System Storage	Done	Done	Done	Done	Done	Done	Ongoing
24	E-1 Paine Regulator Modifications	Done	Done	Done	Done	Done	Done	Ongoing
25	E-4 Fassett Regulator Modifications	Done	Done	Done	Done	Done	Done	Ongoing

Progress Through Jan 15, 2018

Control Combined Sewer Overflows



Where are we today?

CSO Storage in the System will be significant!

- *95 MG Combined Sewer System storage at completion*
 - *20 MG of tunnel storage completed in 1990s*
 - *15 MG of storage in 5 projects*
 - *36 MG of storage Joe E. Brown*
 - *7 MG of storage Int'l Park*
 - *17 MG of storage in construction – Downtown*

Control Combined Sewer Overflows



Where are we today?

- ***Design 99% complete & Construction 90% complete***
- ***7 of 8 CSO outfalls eliminated....1 to go***
- ***470 MG /year on average will be eliminated when complete***
 - ***8 Inflow reduction & sewer separation projects complete***
 - ***3 Optimization projects for ex. CSO Storage Tunnels complete***
 - ***6 Storage/conveyance projects complete***
 - ***2 Storage & 1 sewer separation project under construction***
 - ***2 Regulator projects under construction***

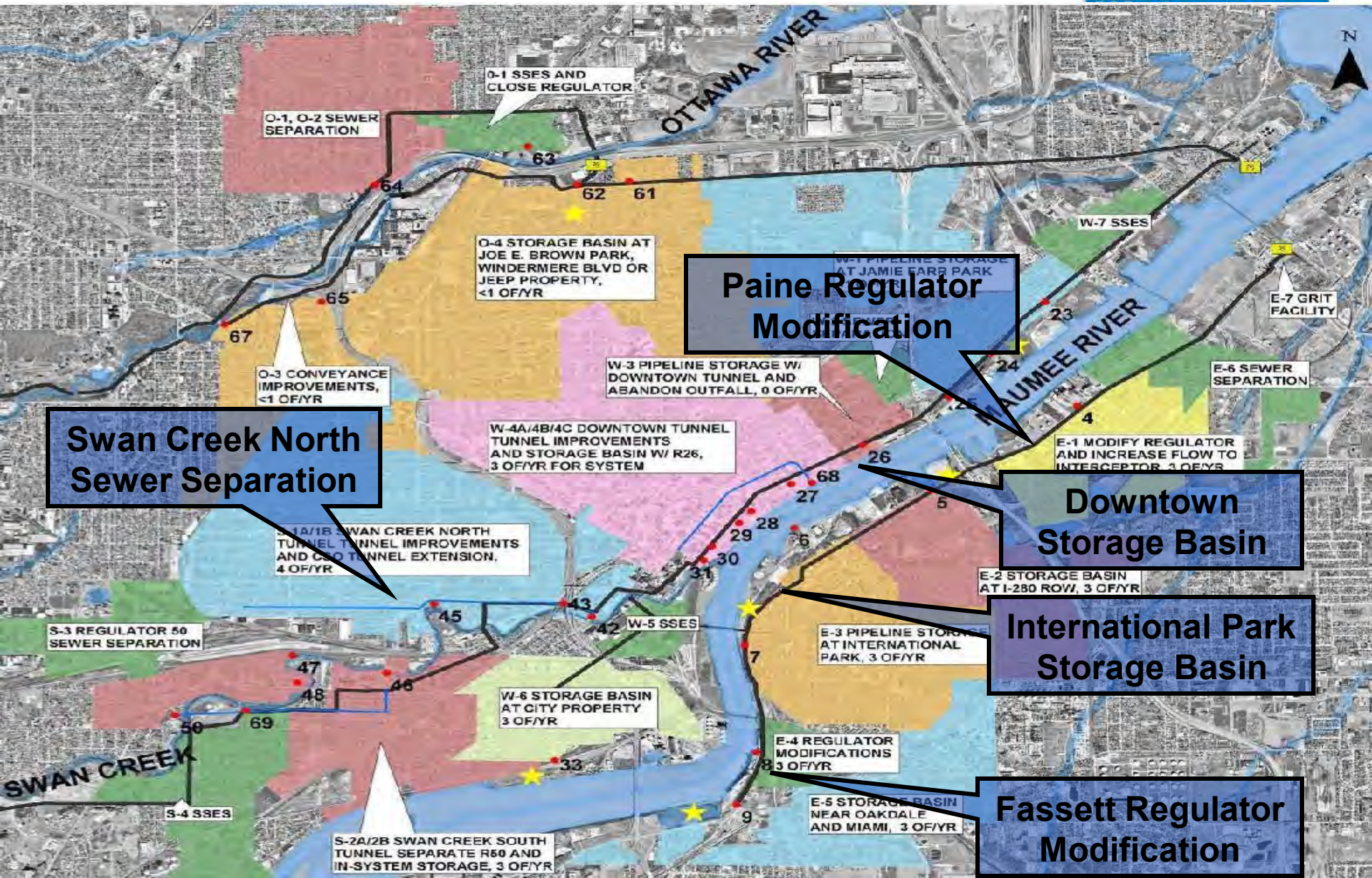
CSO LTCP Construction Safety December 2019



PHASE 2 LTCP PROGRAM-TO-DATE (105 Months - from 02/10 to 12/18)							
Contract	Total PH Worked	Recordable Injury/Illness Rate (IIR)	IIR Frequency Rate (2) x 200K / (1)	Lost Work Day Injury (LWDI)	Days Lost Due To LWDI	LWDI Frequency Rate (4) x 200K / (1)	Severity Rate (5) x 200K / (1)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
O-2A	11,191	0	0.0	0	0	0.0	0.0
O-2B	48,140	0	0.0	0	0	0.0	0.0
O-2C	19,948	0	0.0	0	0	0.0	0.0
O-3	24,735	0	0.0	0	0	0.0	0.0
W-1	32,594	0	0.0	0	0	0.0	0.0
E-7	74,288	1	2.7	0	0	0.0	0.0
W-6	38,519	1	5.2	1	6	5.2	31.2
E-5	86,491	2	4.6	1	13	2.3	30.1
W-4A/S-1A/S-2A	69,837	1	2.9	0	0	0.0	0.0
W-4A (Madison)	1,598	0	0.0	0	0	0.0	0.0
E-2	51,070	0	0.0	0	0	0.0	0.0
O-4A/O-4B	451,439	8	3.5	2	25	0.9	11.1
E-3	120,944	4	6.6	1	11	1.7	18.2
W-4C	143,940	3	0.0	0	0	0.0	0.0
PROGRAM TOTAL	1,174,735	20	3.4	5	55	0.9	9.4

- **1,175,000 const. hours + 359,000 eng. hours = 1.534 M total**
- **20 recordable injuries. 3.4 IIR. Nat. avg. is 3.5**
- **5 lost workdays due to injuries. 0.9 LWDI. Nat. avg. is 1.1**

Control Combined Sewer Overflows Map of TWI CSO Projects in Construction



International Park Storage Basin – Nov 2018

Main St Crossing – Pipe Installation & Backfill



International Park Storage Basin – Nov 2018

Main St Chamber - Placing Water Proofing



International Park Storage Basin – Nov 2018

84” Sewer Installation – Sheet Pile Removal



International Park Storage Basin – Nov 2018

Park Roadway – North End Subbase Prep



International Park Storage Basin – Nov 2018

Park Roadway – North End Paving Base Course



International Park Storage Basin – Dec 2018

Control Building – Temp Fencing



International Park Storage Basin – Dec 2018

Unicast Site Restoration – Brick Removal



Downtown Storage Basin – Nov 2018

Jefferson Drop Shaft – Brick Restoration



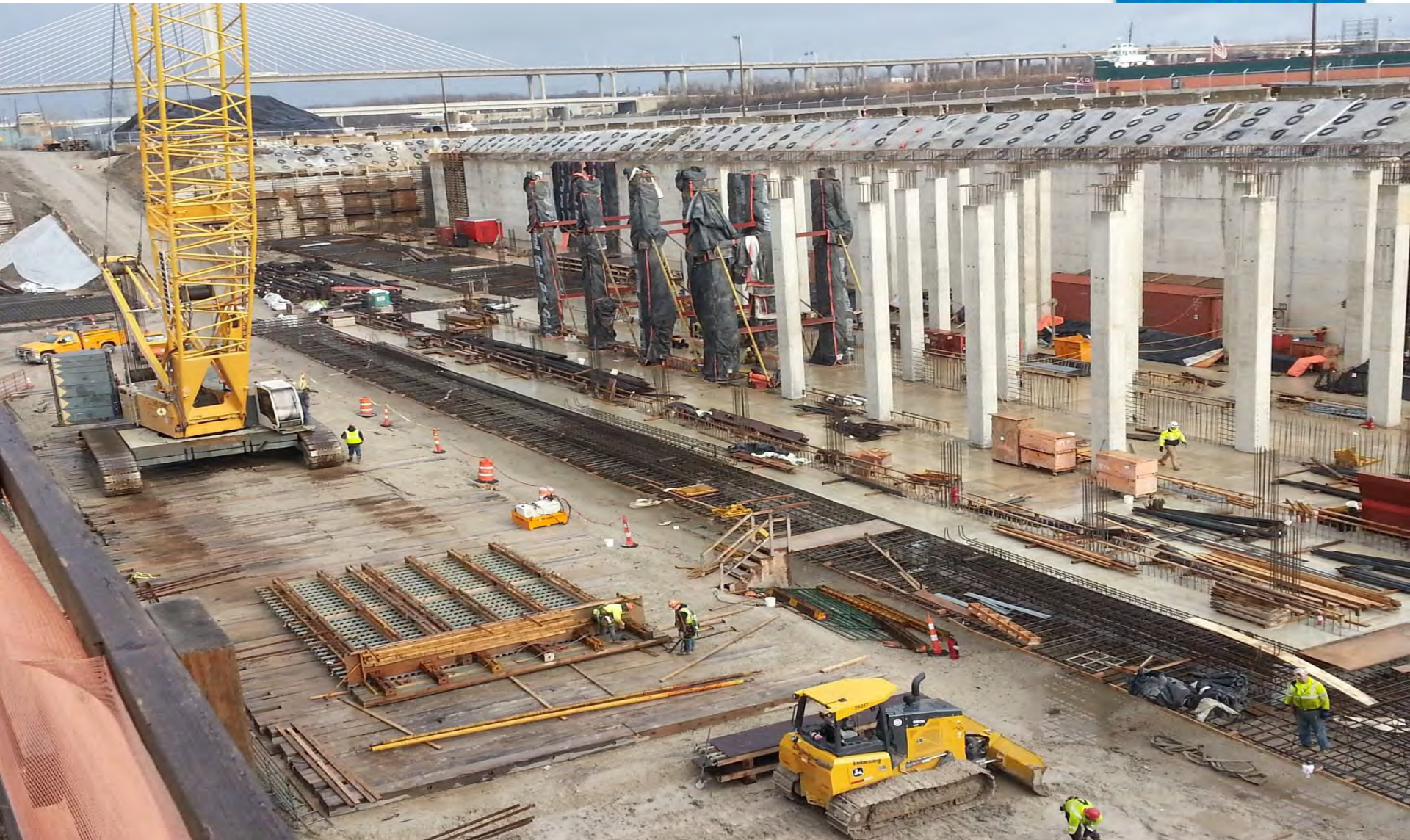
Downtown Storage Basin – Nov 2018

Jefferson Drop Shaft – Asphalt Restoration



Downtown Storage Basin – Dec 2018

Basin – Base Slab, Walls and Column Install



Downtown Storage Basin – Dec 2018

Basin - Installing Base Slab and Wall Re-steel



Downtown Storage Basin – Dec 2018

Basin-Pump Station – Form Removal



Downtown Storage Basin – Dec 2018

LaGrange Structure – Installing Base Slab



Downtown Storage Basin – Dec 2018

Locust St - 48" SS Sleeve Brick/Concrete



Downtown Storage Basin – Dec 2018

Locust St Diversion Chamber - Connection



Swan Creek North/South – Nov 2018

Green Infrastructure – Hamilton St



Green Infrastructure - Hamilton St. at City Park Ave.

Swan Creek North/South – Nov 2018

Green Infrastructure – Biocell



Green Infrastructure - Swan Creek Biocell T3

Swan Creek North/South – Nov 2018

Green Infrastructure – Biocell



Green Infrastructure - Swan Creek Biocell T3

Welcome to Swan Creek Biocell T3



What is a Biocell?
When rain falls on roadways, roofs, and other hard surfaces, it picks up pollutants from these surfaces and washes them into the storm sewer system. Water that enters the storm sewer system goes directly to area streams without being treated. Bioretention cells or "biocells" are a type of green infrastructure that collects stormwater in a low area and uses vegetation and special soils to remove pollutants and keep our river and streams cleaner.

Biocell Profile Diagram

1. **Soil** - 18 inch layer of topsoil and 18 inch layer of sand
2. **Water Plants** - Tall grasses, shrubs, and trees that filter the soil
3. **Permeable Soil** - This layer allows water to infiltrate the ground
4. **Gravel Layer** - This layer allows water to infiltrate the ground
5. **Stone Layer** - This layer allows water to infiltrate the ground
6. **Underdrain** - This layer allows water to infiltrate the ground

How Do Biocells Work?
These biocells hold stormwater during rain events and let it slowly percolate through the soil. The plants and special soil help to remove pollutants and keep it out of the storm sewer system. These biocells reduce water runoff to 50% or less. They filter pollutants coming in the water, grasses and soil, dirt, bacteria, and debris. This also filter our nitrogen and phosphorus, which feed algae blooms. With every inch of rain that falls in a watershed, these biocells capture and treat about 20,000 gallons of stormwater that would otherwise flow directly into the storm sewer system and on to Swan Creek.



Project Background
The biocell was constructed in 2018 by the City of Toledo as part of the Toledo Waterways Initiative Swan Creek North Sewer Separation project. The project included a total of 7 biocells and basins to remove oil from the road.



Swan Creek North/South – Nov 2018

Harper St – Paving

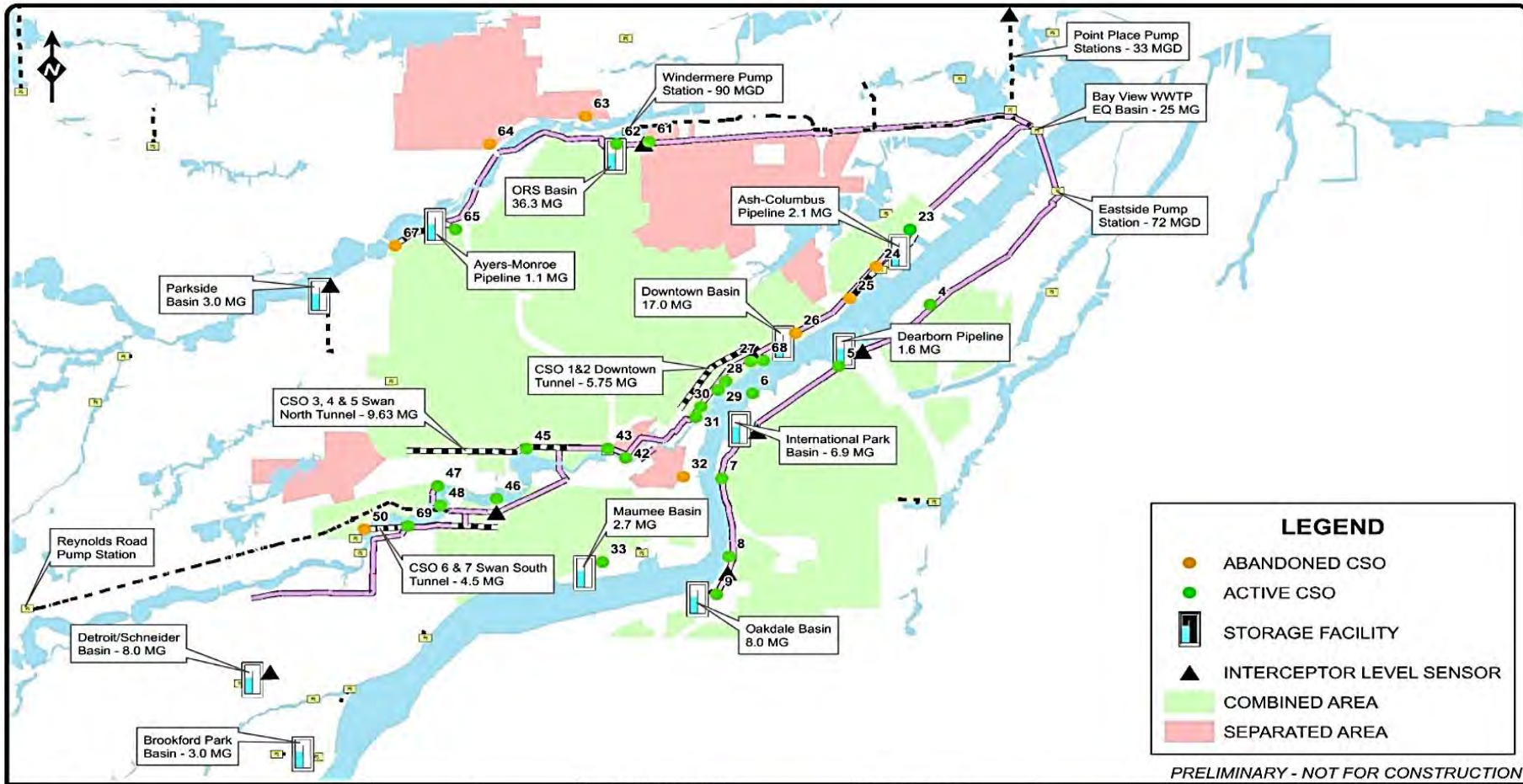


Harper St. - Asphalt Intermediate Course Placed

Pipeline Install – Conflicts



Bay View Water Reclamation Service Area Sewer System Storage Facility Map



LEGEND

- ABANDONED CSO
- ACTIVE CSO
- STORAGE FACILITY
- INTERCEPTOR LEVEL SENSOR
- COMBINED AREA
- SEPARATED AREA

PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REVISIONS AND RECORD OF ISSUE	SHEET	NO. BY	CHK.	APP.

DESIGNED: J. BRESOL	ENGINEER:
CHECKED: J. BRESOL	
APPROVED: J. BROZ	PROGRAM MANAGER:
DATE: 5/25/2016	

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TOLEDO WATERWAYS INITIATIVE
SYSTEM-WIDE STORAGE DEWATERING PLAN
SEWER SYSTEM STORAGE FACILITY MAP

PROJECT NO. XXXXXX	SCALE: 1" = 4,167'
SHEET	1 OF 1

TWI – Total Program...

Where are we today?



The Program is over 93% complete & on schedule:

- ***All 152 Consent Decree milestones to date have been met***
- ***66 on Phase 1 and 86 on Phase 2***

Out of 45+ projects, 40 are complete 5 are under construction

TWI – Total Program....

Where are we today?



Program cost @ complete projection: \$527 M

1. Eliminate WWTP Bypasses - \$135 M & 12 projects

Done! Zero bypasses since 2006 144 MG/yr. removed

2. Eliminate Sanitary Sewer Overflows - \$71 M & 8 projects

Done! Completed in 2014/2017 36 MG/yr. removed

3. Control Combined Sewer Overflows - \$321 M; 25 projects

Design 99% complete & Const. ~90% complete

When complete 470 MG/yr. removed

TWI Program Participating Planning/Design/CM/PR Firms



The Black & Veatch Team



Jones & Henry



Tetra Tech



Stantec

- ***TTL***
- ***Hull & Associates***
- ***Vision Design Group***
- ***G Stephens***
- ***Northwest Consultants***
- ***Funk Lutke Skunda***
- ***Hart Associates***

- **Barton Malow**
- **Mosser**
- **ES Wagner**
- **Gleason**
- **Anderzack Pitzen**
- **Crestline**
- **Salenbien**
- **Inland Waters**
- **Miller Brothers**
- **PHC**
- **Ed Kelly & Sons**
- **Irish**
- **Kokosing**
- **Doetsch**
- **Hank's Plumbing**
- **Underground Utilities**
- **L. D'Agostini & Sons**



TWI Program Participating General Contractors



Questions??

Please visit: toledowaterwaysinitiative.com



Public Relations and Community Engagement

CPAC Meeting
January 28, 2019

Why Public Engagement?



Long Term Control Plan:

“Toledo is committed to active public participation and consultation during the planning, design and construction of CSO control projects. Future public participation will be designed to educate the public about the status of the program, communicate progress in implementing the program to neighborhood residents before, during and after construction, and report on the progress in reducing CSOs and improving water quality as a result of the program.”



Program-Wide Communications

Transparency in program status and progress

Website



Improving Our Sewer System
Toledo
Waterways
Initiative

Search Toledo Waterways Initiative **SEARCH**

HOME ABOUT ▾ NEWS PROJECT MAP TECH DATA CONTACT

Side Cut Metropark, Maumee

HART Toledo Waterways Initiativ...
HOW DOES OUR SEWER SYSTEM WORK?

See how TWI is cleaning up our waterways.

LEARN MORE

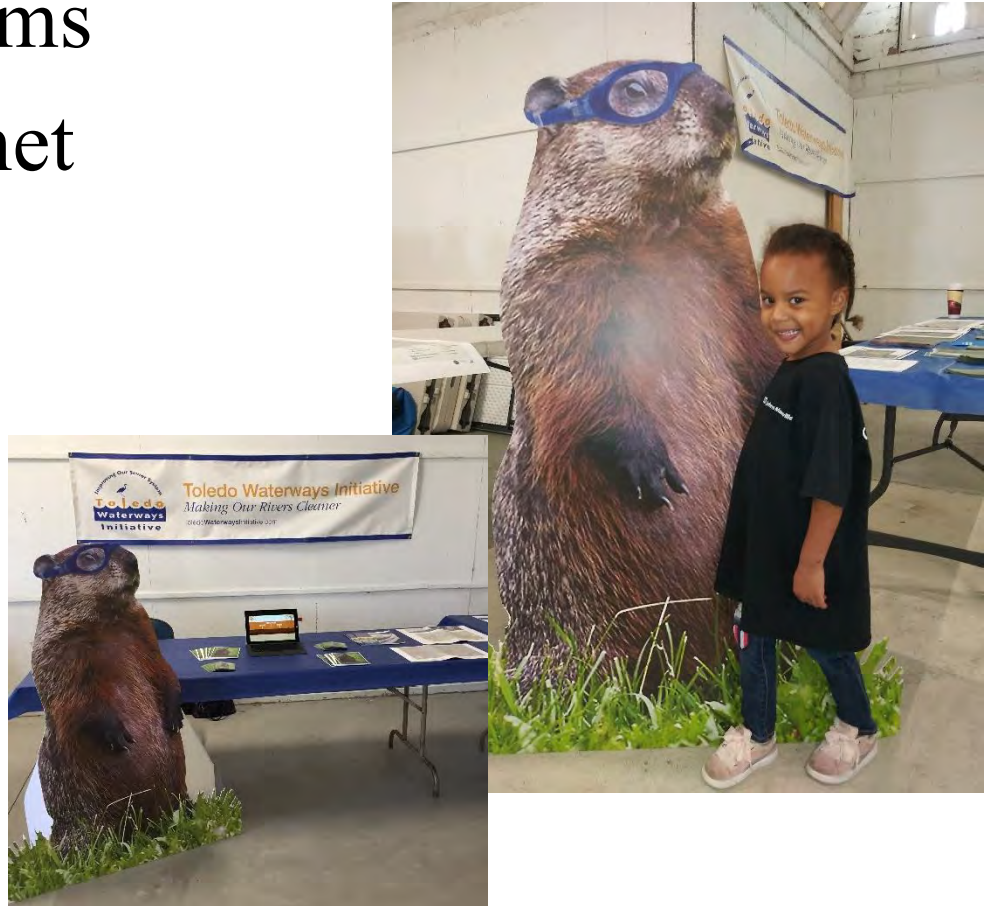
MAKING OUR RIVERS CLEANER. **CONSTRUCTION IMAGES**

The City of Toledo constructed its first sewer collection system in the late 1890s, consisting of underground brick

Community Events



- Clean Your Streams
- Party for the Planet
- Drinking Water Week events



CPAC



Community Program Advisory Committee

- Appointed by Mayor during LTCP creation
- Continued for program oversight, appointed by Program Administrator

“Selected to reflect a cross section of community interests and geographic areas.”



Project-Specific Communications

Notification of construction and its impacts

Public Meetings



- Beginning of project
- Notify nearby residents/businesses of:
 - Program goals
 - Project goals
 - Project timeline
 - Project impacts

NACs and BACs



Neighborhood/Business Advisory Committees

- Composed of engaged neighbors
- Explain project impacts
- Solicit input on restoration, when possible

Resident Response



- Website contact form
- Hotline
- Team availability
- Other activities as warranted

PR Goals



- Transparency
- Availability
- Maintain neighborhoods