

GOTTA BE A BETTER WAY

MSDGC'S USE OF TECHNOLOGY AND TRAINING FOR GI MAINTENANCE

Ohio Stormwater Conference

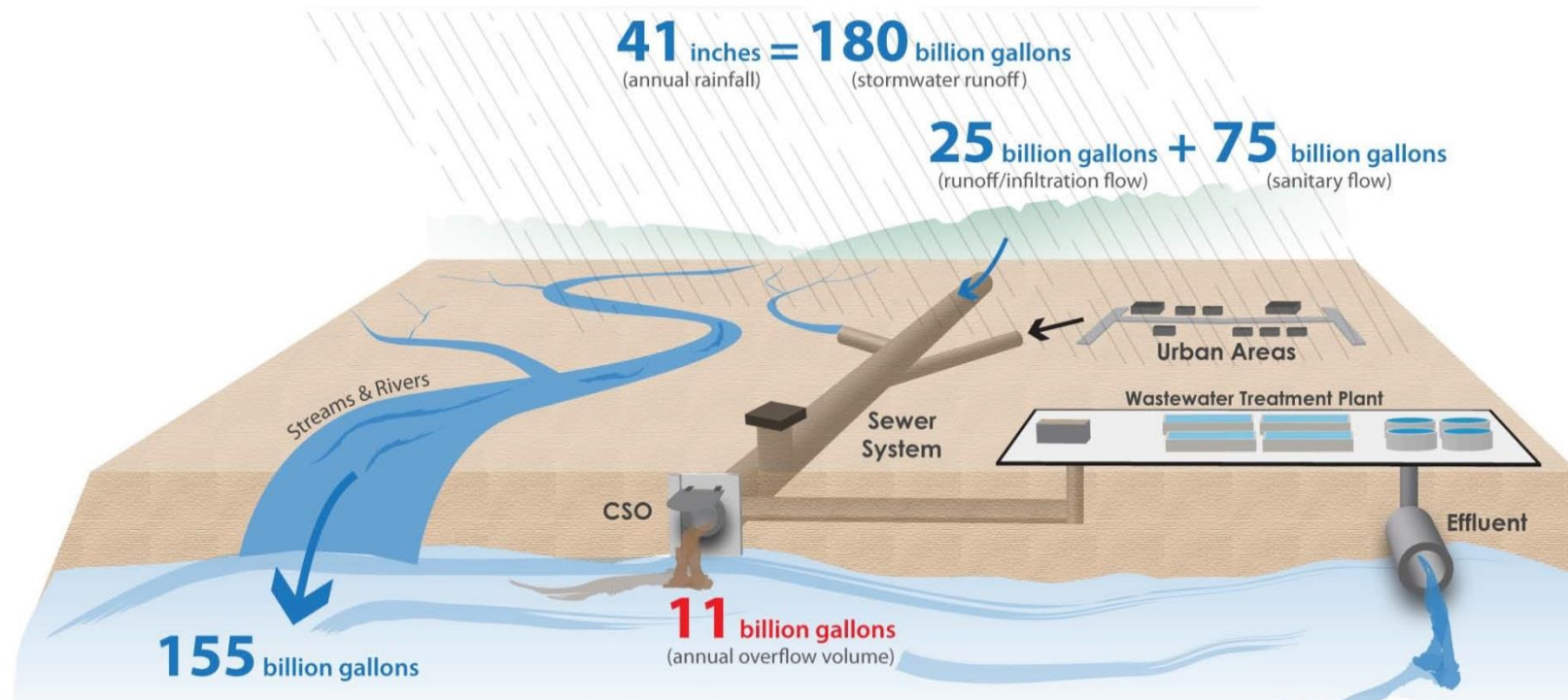
MAY 11, 2018

Agenda

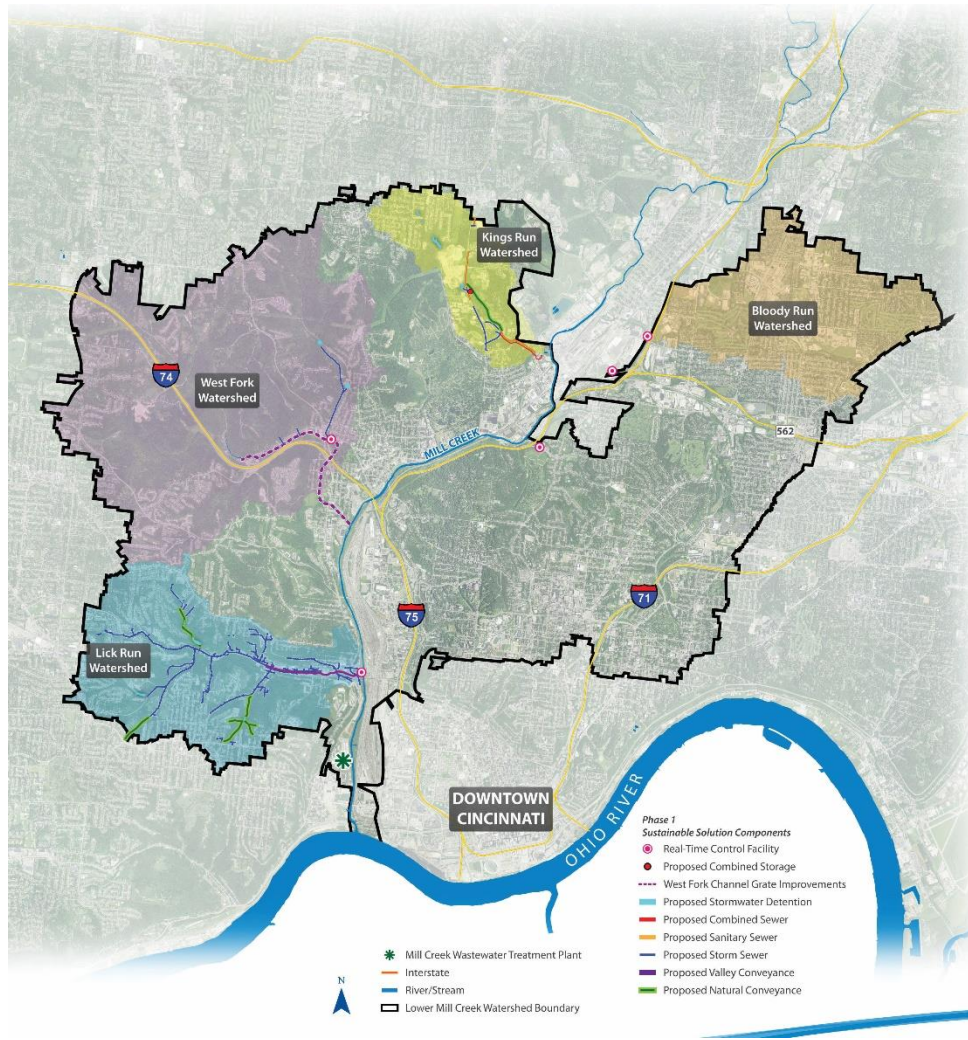
- Background
- Performance and Maintenance Goals
- Inspection Program
- Maintenance Program
- Continuous Improvement
- Training a Workforce

Background

MSD is under a federal mandate (Consent Decree) to reduce sewer overflows into local streams and rivers.



Background

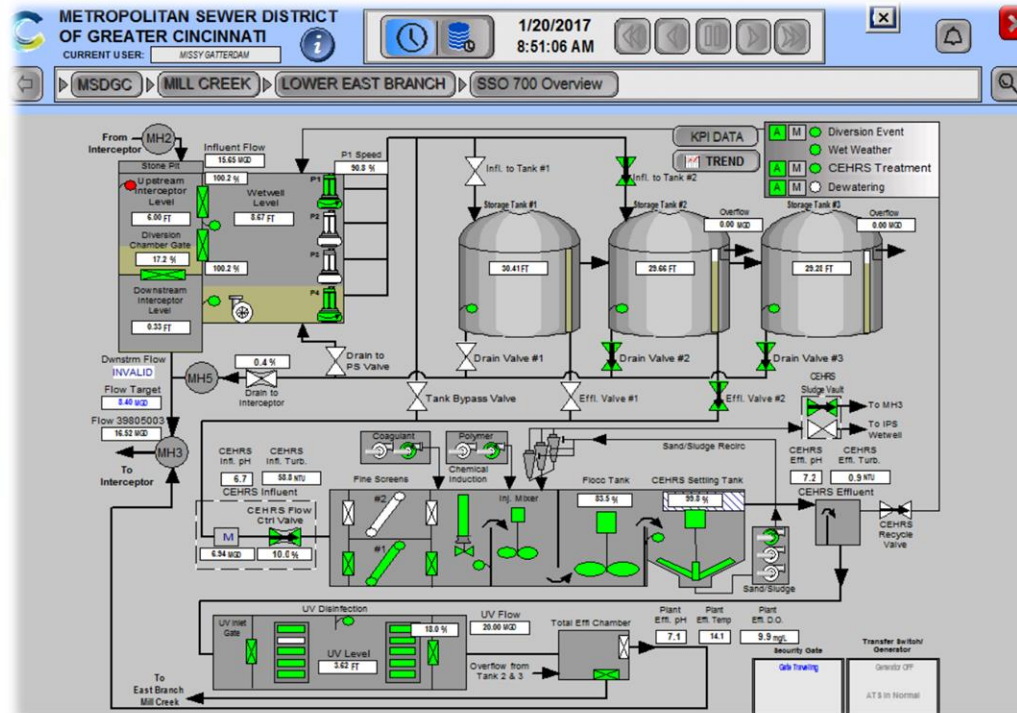


- Under Phase 1, MSD required to substantially reduce CSOs annually into Lower Mill Creek (1.78 billion gallon/yr)
- Regulators approved a sustainable/hybrid, watershed based remedy in May 2013
- Cost is \$244 million (in 2006 dollars), over \$200 million less than the deep tunnel
- Added benefits include improved water quality, new jobs, & opportunities for redevelopment

Background

Watershed Operations:

Division dedicated to the operations, maintenance, and performance of wet weather facilities



- Real Time Control facilities
- Enhanced High Rate Treatment facilities
- Storage facilities
- Stormwater Control Measures
- Modeling
- Operational Optimization

SCM Performance and Maintenance Goals

Overall Goals...

- Function
- Safe
- Aesthetically acceptable

Internal Goals...

- Data to flow seamlessly from inspection to maintenance
- Maintenance frequencies to be data driven
- Eliminate all paper forms
- Skilled labor at all levels



Inspection Program

You've probably heard this before....

Inspection is the key to keeping SCM's functioning at peak performance.

What MSDGC is doing now:

- Inspect each asset monthly
- Use internal labor
- Use electronically and separate photos
- ➤ Modeled after CSO inspection program
- Each Issue was separate but not distinct
- Issues driven
- Information manually transferred to CMMS



Rapid Run Park Summer 2017



Inspection Program

How MSDGC is getting it done:

- Set up as a routine maintenance work order
- Flowfinity app on smartphone

Cityworks DOMAIN INBOX New Work Order New Inspection Project Manager

Select Template

Entity Group: MSD WVE Category: Planned Preventative

Feature Object

Start General Inspection

Site Info

Site: Rapid Run Upper

Inspector: Leslie Schehl leslie.schehl@cincinnati-oh.gov

Inspection Start Time: 4/11/2018 9:35 AM

Reason For Inspection: Scheduled

Asset Located: ☒ Yes ☐ No

Weather: Cloudy

Physical danger/threat or perceived risk that would prohibit inspection at this time.

Area appears safe? ☒ Yes ☐ No

Terminate inspection and report security concern to MSD

Comment

Optional Picture of Issue

No data

Paths, benches, signs, or other features not pertinent to function, but may be associated with MSD, in good condition.

Site in good condition? ☐ Yes ☒ No

Severity: Average

Comment: Park issues. Can not say (no idea) what they consider acceptable.

Picture

No data

Take at least one photograph of the site to best document conditions.

Address:

Location:

Status: Waiting to

Requested By: SCHEHL, L

Submit To: TRAN, HAI

Stage: Actual

Comments:

Instructions:

Create a work order for: A

Facility Type: Bioinfiltration

Problem:

Comment:

Location:

Pictures: 0 records

Damage by vehicles/plows

Damage from rodents or other animals

Erosion/scouring

Evidence of contamination

Forebay not operating

Foul odors present

Harmful insects present

Inlet flow compromised

Outlet blocked

Overland flooding

Pipes/structures in poor condition

Ponding water on surface

Sediment accumulation

Slopes/berms in poor condition

Sparse vegetation

Site: Rapid Run Upper

Inspector: Leslie Schehl leslie.schehl@cincinnati-oh.gov

Inspection Start Time: 4/3/2018 12:09 PM

Reason For Inspection: Scheduled

Asset Located: ☒ Yes ☐ No

Weather: Cloudy

Physical danger/threat or perceived risk that would prohibit inspection at this time.

Area appears safe? ☒ Yes ☐ No

Terminate inspection and report security concern to MSD

Comment

Optional Picture of Issue

No data

Paths, benches, signs, or other features not pertinent to function, but may be associated with MSD, in good condition.

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Take at least one photograph of the site to best document conditions.

SitePicture

Site Pictures

(1 record)

(1 record)

Results

Inspection field time decreased by 15%.

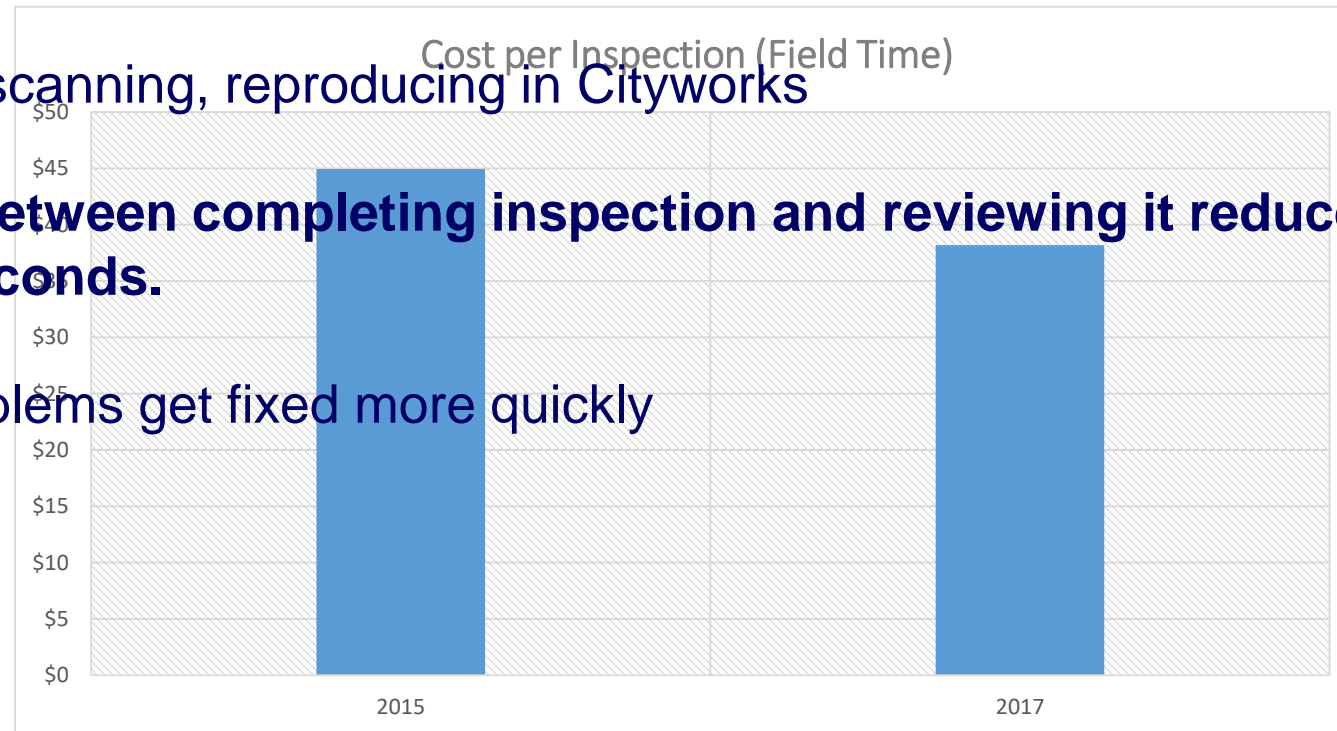
- Larger assets had more significant decrease
- Issues driven inspections benefit larger areas

Inspection processing in the office decreased by over 50%.

- No scanning, reproducing in Cityworks

Lag time between completing inspection and reviewing it reduced from days to seconds.

- Problems get fixed more quickly



Maintenance Program

Maintenance Program for GI used existing MSDGC Collection Division processes/procedures for work order creation/tracking.

But...

It's still different!

- Tasks
- GIS Depiction
- Tools
- Materials



Maintenance Program

How MSDGC is getting it done:

- Frequency/tasks are outlined in maintenance manual
- **ALL** labor is contracted (seasonal, on demand)
 - Create the schedule
 - Use inspection app in the field
- Manually enter labor and materials
- Tracked in CMMS
 - Routine v. Non-routine \$\$\$
 - Hot spots

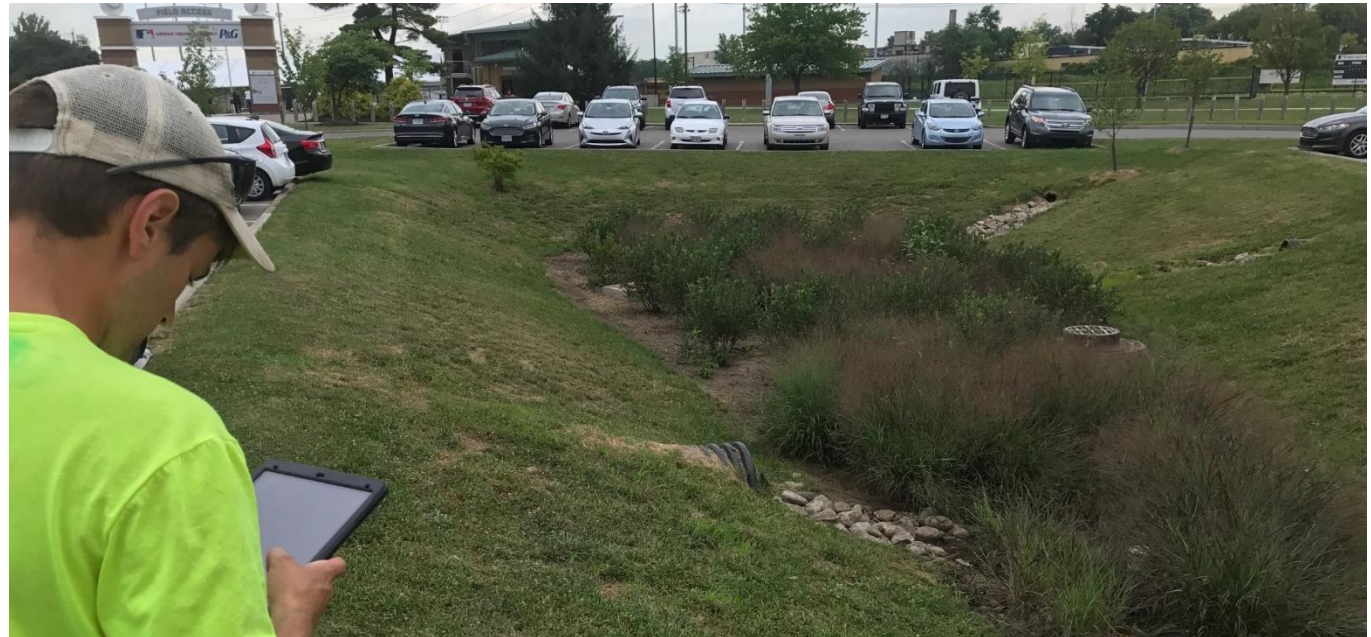


Stock Street Biobasins Summer 2017

Continuous Improvement

What's next for MSDGC?

- Creating a maintenance app for contractors
- Push pertinent data to Cityworks from app
- Interactive map for work orders
- Create lists for materials/equipment in CMMS
- Site specific inspections



Training a Workforce

National Green Infrastructure Certification Program (NGICP)

Program developed by WEF and DC Water for the certification in construction, maintenance, and inspection of green infrastructure

- MSDGC became a Partner in 2016
- Pilot training program in Fall 2017
- Continue to Partner through 2019



Training a Workforce

NGICP Cincinnati Training

- Partnered with Civic Garden Center for facility
- Offered 45 contact hours (35 minimum)
 - Field trips to local GI sites
- 35 trainees – 100% exam passage rate



Questions?

Leslie Schehl, PE, MBA, PMP

Supervising Engineer

Metropolitan Sewer District of Cincinnati

Phone: 513.557.7048

Leslie.Schehl@Cincinnati-oh.gov