REVITALIZING YOUNGSTOWN:
Feasibility Analysis of a Community-Based P3 to Implement Green Infrastructure

October 18, 2018
AGENDA

The City’s Story
P3 Framework
Community Based P3
Feasibility Analysis
YOUNGSTOWN’S STORY
City of Youngstown Collection System

728 miles of combined sewer, 100 CSOs

Drainage Area Contributing to WWTP

22,000 ac 15,000 ac 35,000 ac

Youngstown Mahoning and Trumbull Counties Total

Consent Decree Initiated October 1997, Finalized 2002
Pre-LTCP Planning Efforts

Phase 1: CSS Characterization
- Start: 7/97
- CSS Characterization Report: 6/00 - 9/01

Phase 2: Develop CSO Controls

Phase 3: Implement CSO Controls
- Combined Sewer System Operational Plan: 12/03 – Approval Pending
- Orchard Meadow Overflow Eliminated: Completed 6/06

EPA Negotiations: 2001-2013

Post-Construction Compliance Monitoring Plan:
- 5/06 – Approval Pending

USEPA/OEPA Tentatively Accepted Technical Report:
- 12/13

Other Activities:

Financial Assessment and Implementation Schedule Report:
- 1/03 – Approval Pending

Draft - Technical Report Submitted: 12/11
Revised - Technical Report Submitted: 5/13

Current: 12/13
# City of Youngstown Long Term Control Plan

<table>
<thead>
<tr>
<th>PHASE 1:</th>
<th>Schedule</th>
<th>Cost</th>
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<tbody>
<tr>
<td>WWTP Improvements</td>
<td>2014-2020</td>
<td>$37M</td>
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<tr>
<td>100 MGD WWF</td>
<td>2016-2029</td>
<td>$62M</td>
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<tr>
<td>New plant influent sewer from CSO 6057</td>
<td>2018-2033</td>
<td>$47M</td>
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<tr>
<td>Mill Creek Sewer Interceptor</td>
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<table>
<thead>
<tr>
<th>PHASE 2:</th>
<th>2032-2037</th>
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<tbody>
<tr>
<td>Provide storage for CSOs 6015, 6016, 6017</td>
<td>$33M</td>
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<tr>
<td>Provide storage at CSO 6043</td>
<td>$15M</td>
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<tr>
<td>Green Infrastructure Plan</td>
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Mill Creek Park

First Park District in Ohio
Over 2,658 acres
Mill Creek tributary to the Mahoning River

Fish kill at Mill Creek Park blamed on heavy rainfall
*Posted: Jul 01, 2015 6:12 AM EDT*

Sewage in Lake Newport contributed to fish kill in Mill Creek Park
*Posted: Jul 06, 2015 12:35 PM EDT*
City of Youngstown & Greenprint Partners

The Opportunity to Finance Diverse Green Infrastructure Strategies in Youngstown through Impact Investment

A proposal for: GREENPRINT PARTNERS

Our CBP3 will work closely with local partners and will receive expert management from Greenprint Partners.
Community - Based Public Private Partnership
Greenprint Partners is a green infrastructure delivery partner that helps cities build high-impact, community-driven green infrastructure at scale.
Massive infrastructure investment needs are especially painful for cities facing decline

**ECONOMIC**

The public sector needs to invest $298B in water infrastructure by 2025

- **$105B**
  - Needed
- **$193B**
  - Committed

This $105B gap will cause:

- **$896B** lost sales
- **$508B** lost GDP
- **489K** lost jobs

**NEEDED COMMITTED**

**NEEDED COMMITTED**

**REGULATORY**

The public sector needs to prevent 7.2T gallons of raw sewage from discharging into waterways

- **~860** CSO permits in 771 cities
- **~500** Consent decrees
- **~2K** NPDES permits

Stormwater regulations demand that cities end CSOs; non-compliance opens cities to lawsuits

[CONFIDENTIAL]
THE YOUNGSTOWN MODEL: “AVAILABILITY PAYMENT” P 3

This structure can help cities like Youngstown achieve high-impact, citywide GSI faster.

- **PHASE**
  - **Partnership Initiation**
  - **Pre-Development**
  - **Design, Build, + Validate**
  - **Long Term O+M**

Availability Payments Begin only after green infrastructure is functioning as promised.
PUBLIC-PRIVATE PARTNERSHIP
Availability payment P3 vs. traditional delivery model

**Figure 1**
Differences in Contracting and Financing Structure

- **Public Owner** → **Tax-Exempt Public Debt**
- **Designer** → **Builder** → **Operator or Public Owner**
- **Concession (DBOM)**
  - **Public Owner**
  - **Equity Investors** → **Concessionaire** → **Lenders**
  - **D/B Contractor** → **Operator**

**Figure 2**
Profile of Sample Project Costs

- Years of Inflation Adjusted Dollars

**Figure 3**
Profile of Sample Availability Payments (made by Public Sector to Concessionaire)

- Years of Inflation Adjusted Dollars
PUBLIC-PRIVATE PARTNERSHIP

P3s offer the most efficient delivery model.

TRADITIONAL PUBLIC WORKS PROJECT DEVELOPMENT

1. Need identification & scoping + RFP Development
2. Funding sourcing - bonds, loans, grants, budget
3. Issue planning/design RFP & select vendor
4. Complete design & develop construction RFP

GREENPRINT PARTNERS PROJECT DEVELOPMENT

1. Relationship Development & Pitch
2. Public Procurement for P3
3. Predevelopment & Financing
4. Design-Build-Validate
5. Long-term operations & maintenance
6. City pays annual service fee
7. Infrastructure Revitalization as a Service

City pays annual service fee
City takes over operations & maintenance
Construction completed
Issue construction RFP and select contractor
Funding sourcing - bonds, loans, grants, budget
Funding sourcing - bonds, loans, grants, budget

City
Private Partner
P3s allows us to offer municipalities like Youngstown...

- More Efficient, Scalable Delivery
- Reduced Risk for Public Sector
- Predictable Life-cycle Costs
- Maximized Co-Benefits
OUR BLUEPRINT

TARGET FOR IMPACT
Identify program and project opportunities that enable multi-benefit, equitable green infrastructure projects.

STRUCTURE
Structure client partnerships to address their unique needs and facilitate affordable green infrastructure at scale.

ENGAGE + EDUCATE
Engage public and community stakeholders to inform design, gain buy-in, and mitigate project risk.

DESIGN FOR BENEFIT
Lead benefits-driven design process to prioritize and maximize benefits to the community.

BUILD
Provide full-service, risk-managed project delivery, from design and engineering through construction and validation.

IMPACT TRACKING
Measure performance of assets and monitor and reporting on impact.

ms consultants, inc.
engineers, architects, planners

THE CITY OF YOUNGSTOWN
GREENPRINT PARTNERS
COMMUNITY EDUCATION

- Led two green infrastructure tours, in Pittsburgh and Youngstown.
- Launched a citywide #GreenisGood social media and PR campaign which secured 80K+ Facebook impressions and 250K+ media impressions.
- Educated residents at local fairs, festivals, and concerts.
COMMUNITY AUTHORSHIP

We used city-wide workshops to gather input on siting and design preferences for GSI and formed a Stakeholder Advisory Group through which a group of committed leaders provide guidance.
THE IMPACT WE SEEK

STRENGTHENED COMMUNITY
Our projects include community oriented designs and programming, which increases pride and engagement among community members.

SHARED PROSPERITY
Projects improve the health and livelihood of residents, create new jobs in the green economy, catalyze further investment activity, and lead to cost reductions and tax revenue increases for municipalities.

ECOLOGICAL HEALTH
Our turnkey green stormwater infrastructure projects improve water, soil and air quality while helping communities manage flooding and other impacts.

YOUNGSTOWN’S PRIORITIES

- COMMUNITY PRIDE
- CRIME REDUCTION
- ACTIVE LIVING IMPROVEMENT
- ECONOMIC DEVELOPMENT
- JOB CREATION
- FLOOD REDUCTION
- CSO VOLUME REDUCTION
- IMPROVE MILL CREEK PARK WATERWAY HEALTH
### Feasibility Analysis Timeline

<table>
<thead>
<tr>
<th>Spring 2016: Greenprint approaches City</th>
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<tr>
<td>• Team is formed to review feasibility of GI</td>
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<td>• Review LTCP to determine cost savings potential</td>
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<td>• Review existing data to determine impacts to wet weather flows</td>
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<tr>
<td>• Review economic development strategies and existing projects for cost savings potential</td>
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<table>
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<th>Fall 2016: Team presents findings to City officials</th>
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<tr>
<td>• More information is needed to accurately determine GI potential</td>
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<tr>
<td>• Unknown: wet weather flow coming to system from County (existing data no longer relevant)</td>
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<tr>
<td>• Team agrees that in addition to providing stormwater management, green infrastructure could be used for economic development and neighborhood revitalization</td>
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<th>Spring 2017: Pre-development Agreement is Drafted</th>
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<td>• Agreement includes 3 phases to give City opportunity to opt out, should data indicate that GI cannot provide desired benefit</td>
</tr>
<tr>
<td>• Agreement includes investigation of both stormwater management impact and revitalization efforts</td>
</tr>
<tr>
<td>• Change in administration gives opportunity to team to engage officials and staff on scope of work</td>
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<th>Spring 2018: Agreement is signed to begin pre-development work</th>
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<td>• Schedule is shifted to accommodate new timeline</td>
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<tr>
<td>• Flow monitoring delayed to capture peak RDII conditions, scheduled March - May 2019</td>
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<tr>
<td>• Co-benefits analysis and project prioritization begins</td>
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Mill Creek Interceptor

Eliminates CSOs in Mill Creek Park for Design Storm

- 2300 lf of 36”
- 9500 lf of 48”
- 6400 lf of 5’ x 10’ box culvert

Possibility to right-size MCI with Green Infrastructure
**Predevelopment Scope of Work**

### PHASE 1

**POTENTIAL PROJECTS: FEASIBILITY AND COST-BENEFIT ANALYSIS**

- Feasibility investigations and cost-benefit estimates completed for all areas, leading to choice of priority focus for further phases.

- **Goal refinement and early stakeholder engagement**
  - Area 1: Mill Creek
  - Area 2: Neighborhoods with Action Plans
  - Area 3: Commercial & Downtown Corridors

- Prioritization and refined scope/budget for Phases 2-3

### PHASE 2

**PRIORITIZED PROJECTS: DRAFT DESIGN AND EVALUATION**

- Preliminary designs and planning level due diligence completed.

- Draft selection of sites & preliminary design

- Site geotechnical analysis

- Determine land control arrangements

- Draft co-benefits evaluation plan

- Continued stakeholder engagement

**GI PLAN NEEDS DISCOVERY**

- Research scope of work necessary to complete the GI Plan called for in LTCP

### PHASE 3

**PRIORITIZED PROJECTS: IMPLEMENTATION PLAN**

- Implementation plans created based on findings in Phase 2 and Project Agreement is scoped and submitted.

- Site designs refined

- Planning

- Procurement Planning

- O&M Planning

- Cost-benefit analysis updated

**GI PLAN SCOPING**

- Define scope toward completing the GI Plan to be included in Project Agreement

- Site designs refined

- Planning

- O&M Planning

- Cost-benefit analysis updated

- Project Agreement drafted and submitted
KEY MILESTONES FOR PHASE 1

- Revitalization goals/research methodologies developed
- Stakeholder Advisory Group (SAG) formed and functioning
- High level analysis completed for neighborhood revitalization initiatives
- Data gathered on wet weather flows for Mill Creek Interceptor
- Complete sewershed calculations to show reduction in CSO flow/volume
- Cost-benefit analysis for up to 3 GI scenarios completed, and integrates revitalization and storm water estimated benefits
- Confirmation of U.S. EPA and Ohio EPA support for the use of GI for Youngstown
Scheduled for March-May 2019

FLOW MONITORING EFFORT

217.8 MG during 2.05” rain in April

134.3 MG during 2.4” rain in July
Lessons Learned

• Prepare for changes in administration or other staff changes
• Add contingency into schedule
• It only rains in August if you don’t have meters in
• Timing is everything

Our Successes

• Community Ownership/Authorship
• Engage Public Early
• Building Relationships with Community Organizations
• Securing Local and National Funding Sources
• Technical Team includes local experts
• Education highlights local projects