



# 15<sup>th</sup> & Walnut Streets

**CSO Separation and GSI Project at  
the Urban Artists Exchange**

March 5, 2025

Delaware Resilient and Sustainable Communities League 2025 Summit



# Agenda



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## **1) Introduction**

Overview of Speakers and Agenda

## **2) City of Wilmington**

Wilmington's LTCP and Approach to  
Green Infrastructure

## **3) Urban Artists Exchange**

A Look Back at Project Site's History

## **4) SW/GI Approach**

SW/GI as an Asset

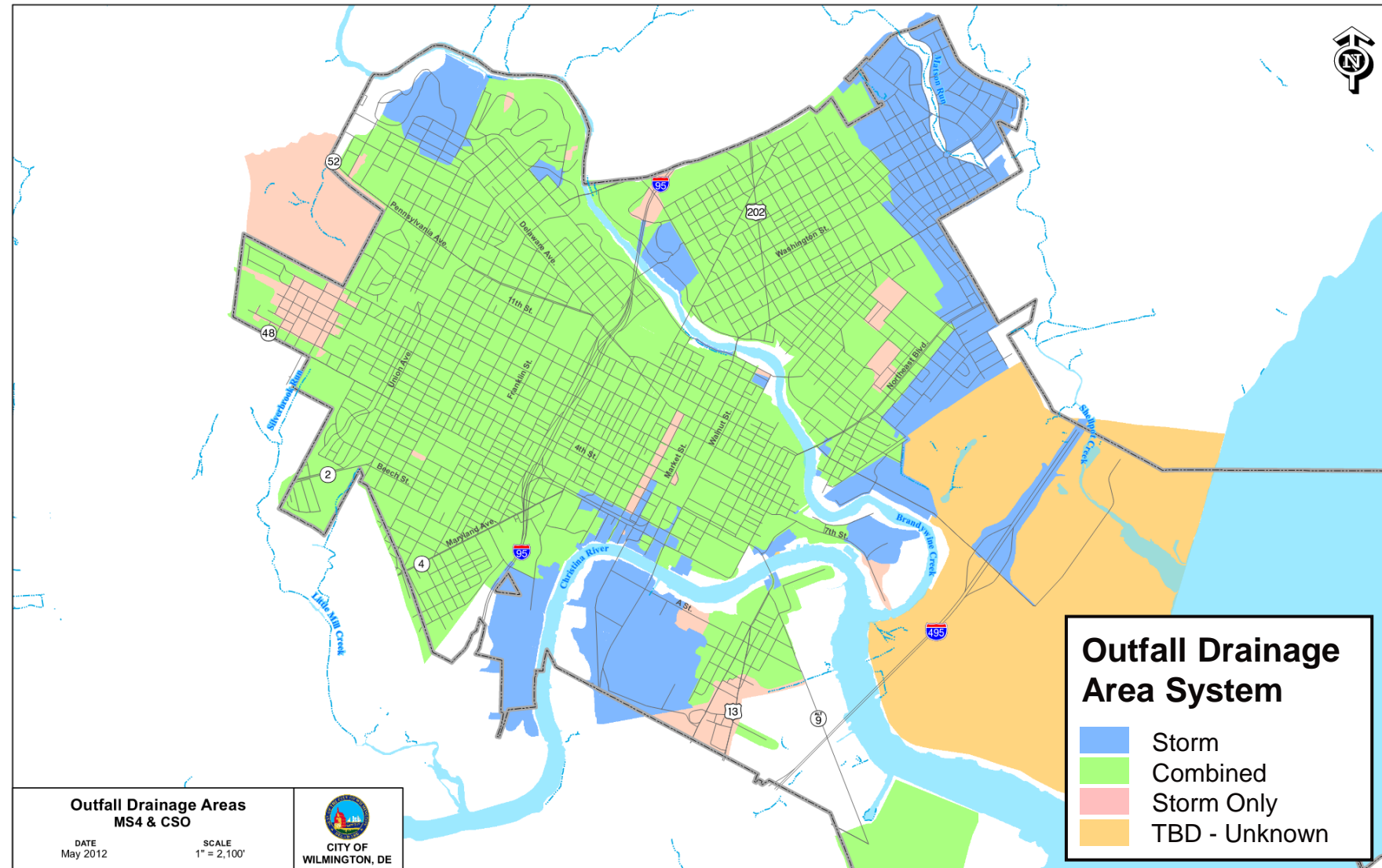
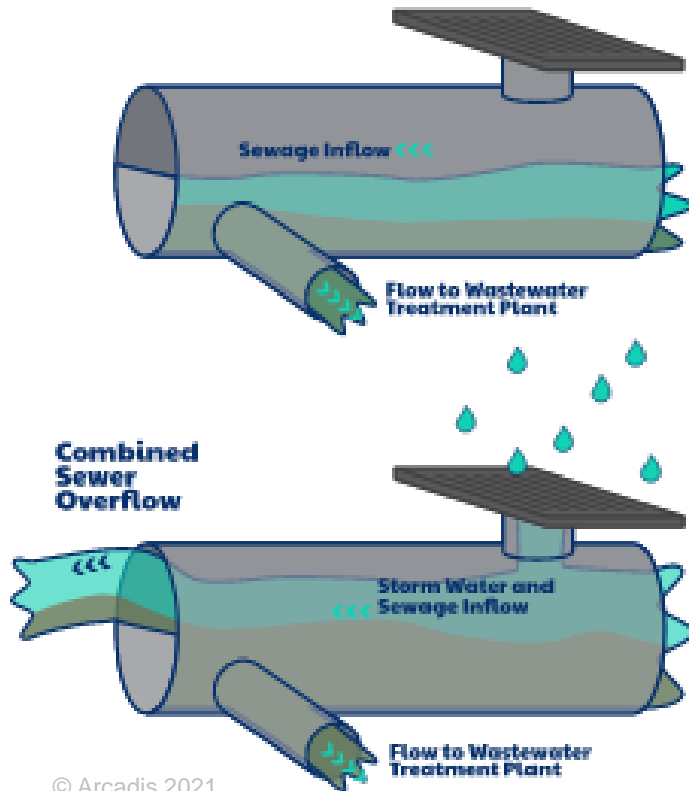
## **5) Landscape Design**

Insights into Design Approach and  
bridging Project Goals

## **6) Acknowledgements**

# City of Wilmington

- Sewage Treatment began in 1954
- LTCP est. 2003
- CSS: ~94% of Service Area



Map Image: "MS4 & CSO Outfall Drainage Area Map" - <https://www.wilmingtonde.gov/government/city-departments/public-works/clean-waterways-wilmington/information-resources>



# City of Wilmington

## Why GI?

- Reimagine GI/SW management as an asset
- Find Opportunities to Collaborate

## City Projects Featuring GI:

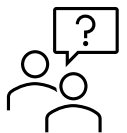
- Cool Spring Park
- Rodney Square
- Urban Artists Exchange (Current Location!)



~90% of Storms Result in 1"-2" of Runoff



Utilize GI to manage frequent Storms and minimize impacts to sewers



More information on CSO  
<https://cso.wilmingtonde.gov/>





# Urban Artists Exchange

## Background

- Abandoned City-owned parcel utilized by:
  - Fire Department (previous use)
  - Urban Bike Project
- Surrounding Stakeholder Projects
  - City Fest
  - Walnut Ridge Development
  - Walnut Place Development
  - 15<sup>th</sup> Street Widening



Photos from: Arcadis Staff; Architectural Alliance; and [stories.opengov.com/wilmingtonde](https://stories.opengov.com/wilmingtonde)



# Urban Artists Exchange

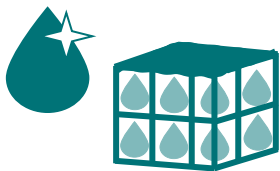
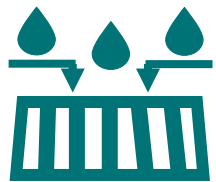


Photos by Architectural Alliance



# SW/GI Approach

1. Capture / Manage both on & offsite runoff
2. Partner with Stakeholders
3. Complement Site Programming/Uses
4. Provide Aesthetic Public Greenspace
5. Engage/Educate Community



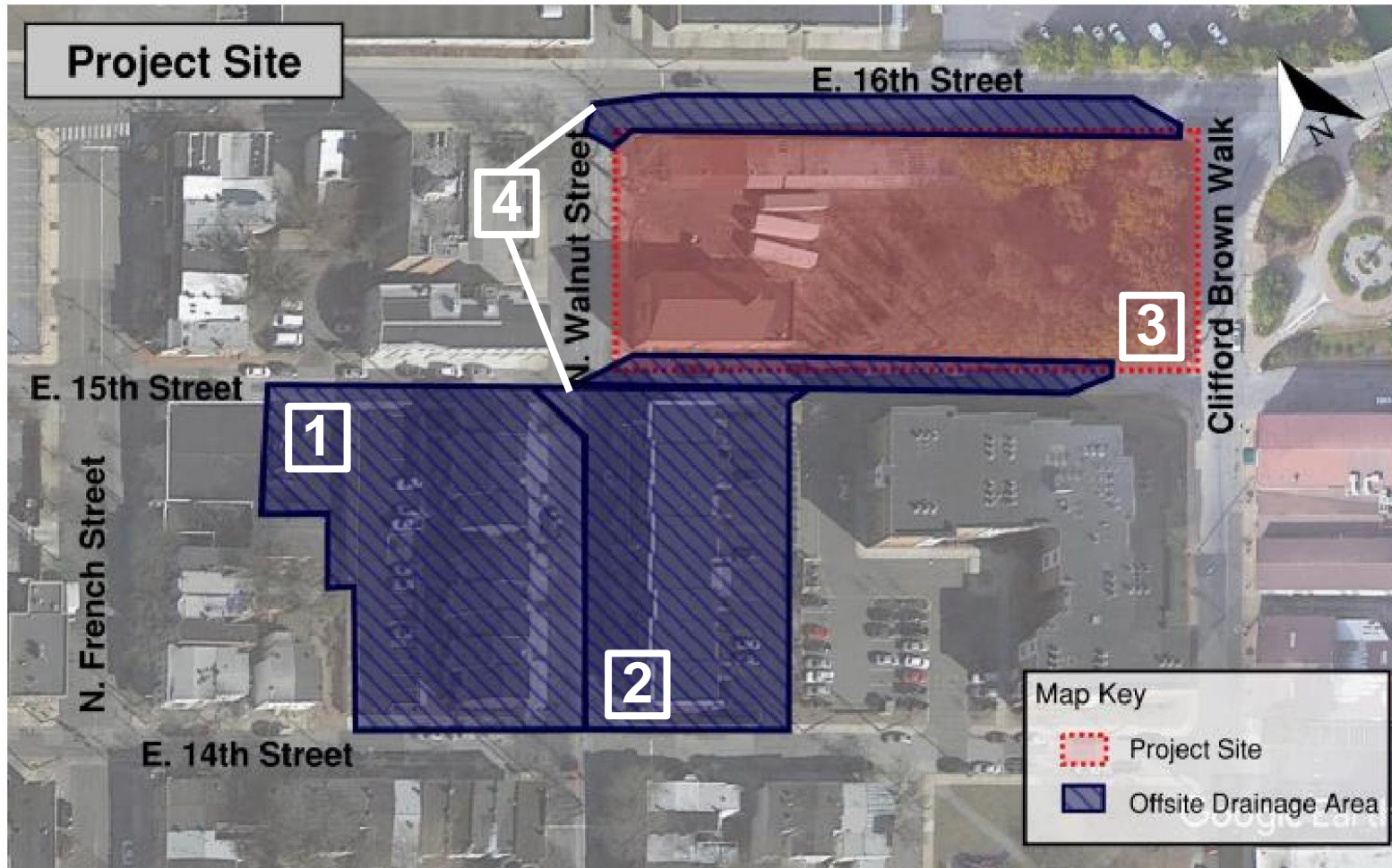
cityfestwilmde  
Wilmington, Delaware



cityfestwilmde  
Wilmington, Delaware



# SW/GI Approach



1. Runoff from Walnut Ridge housing
2. Runoff from Walnut Place housing
3. Runoff from impervious surfaces onsite
4. Runoff from 15<sup>th</sup> & 16<sup>th</sup> St.



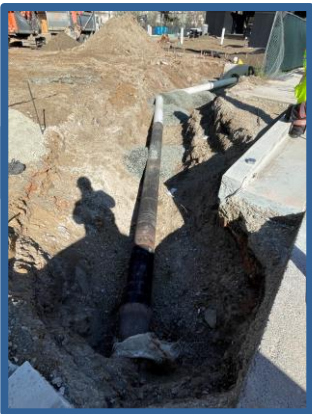
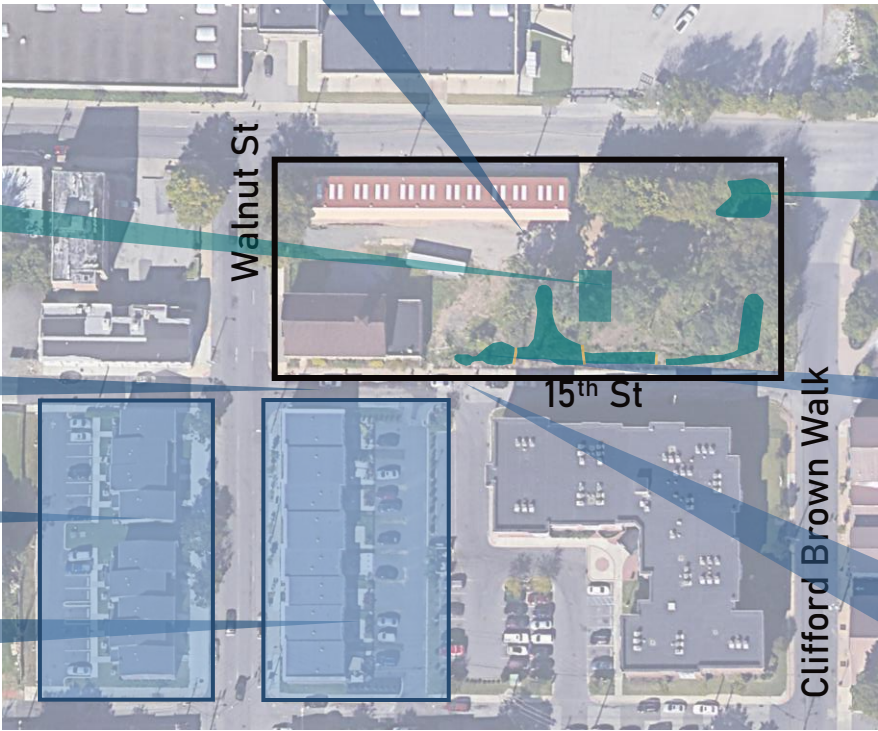
# SW/GI Approach

UAE  
Redevelopment



15<sup>th</sup> Street  
Re-paving

Walnut Ridge  
and Walnut  
Place Housing  
Developments



HOUSING SW  
SEPARATION

STABLES DESIGN

CONS

PAVING DESIGN

CONS

AMPHITHEATER DESIGN

CONSTRU  
CTION

GI PLANNING

GI DESIGN

CONSTR  
UCTION

2015-2017    2018    2019    2020    2021    2022-2023



# Stakeholder Engagement + Combined Vision & Resources = Greater Results

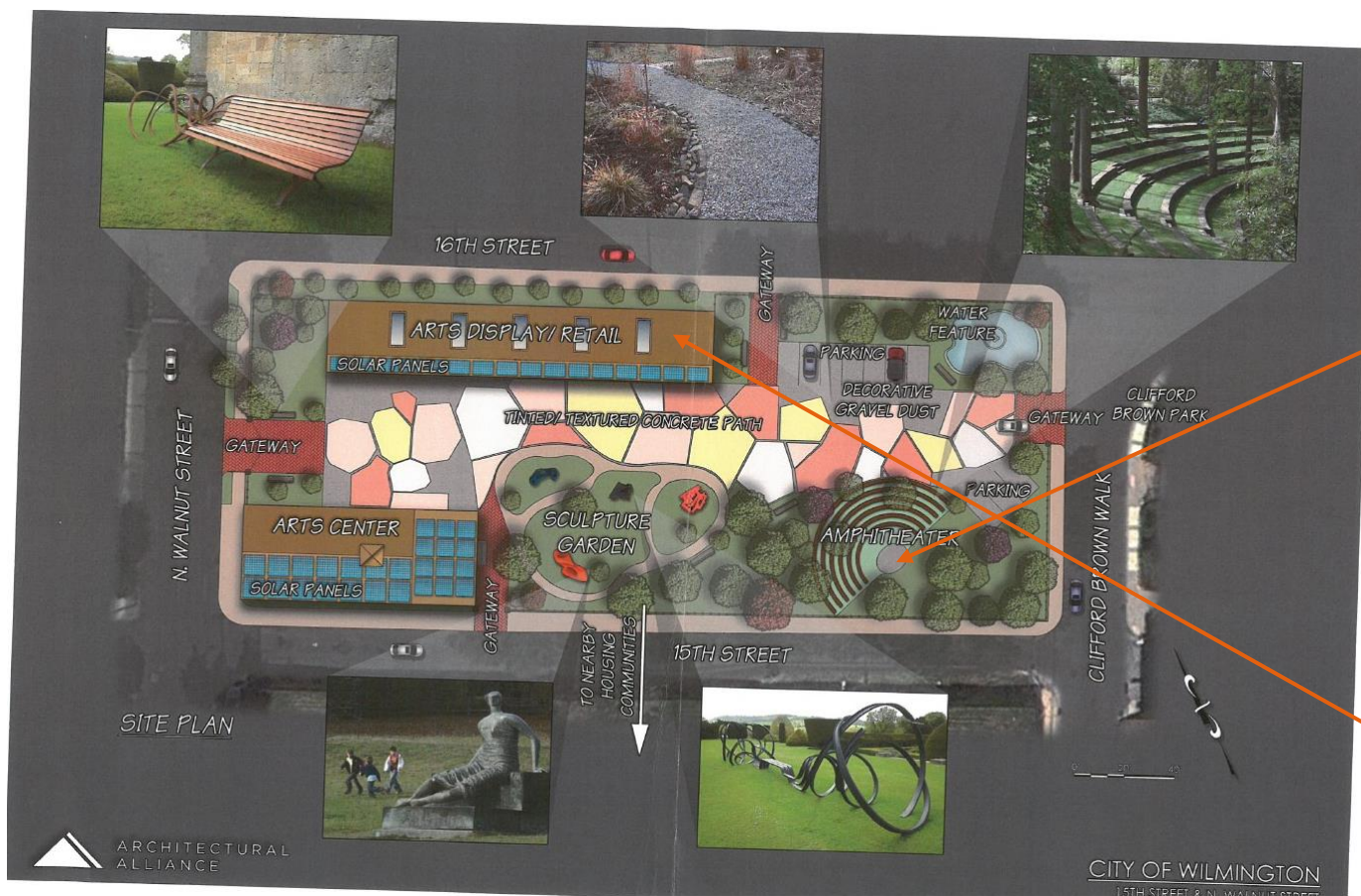


Exhibit developed by Architectural Alliance



# Stakeholder Engagement + Combined Vision & Resources = Greater Results

- EPA Grant Funding
- CWSRF Financing
- Private Fundraising

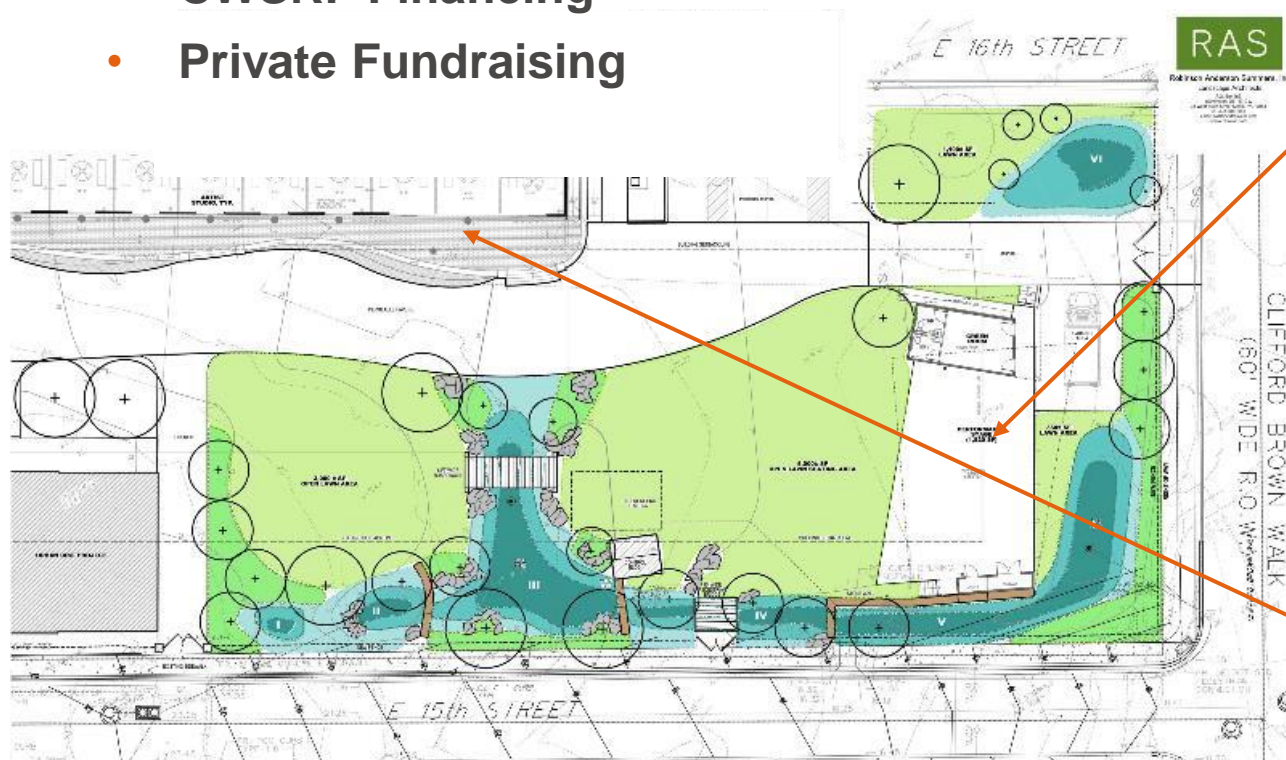


Exhibit developed by RAS Landscape Architects





# 15<sup>th</sup> and Walnut CSO Separation Green Infrastructure Installation

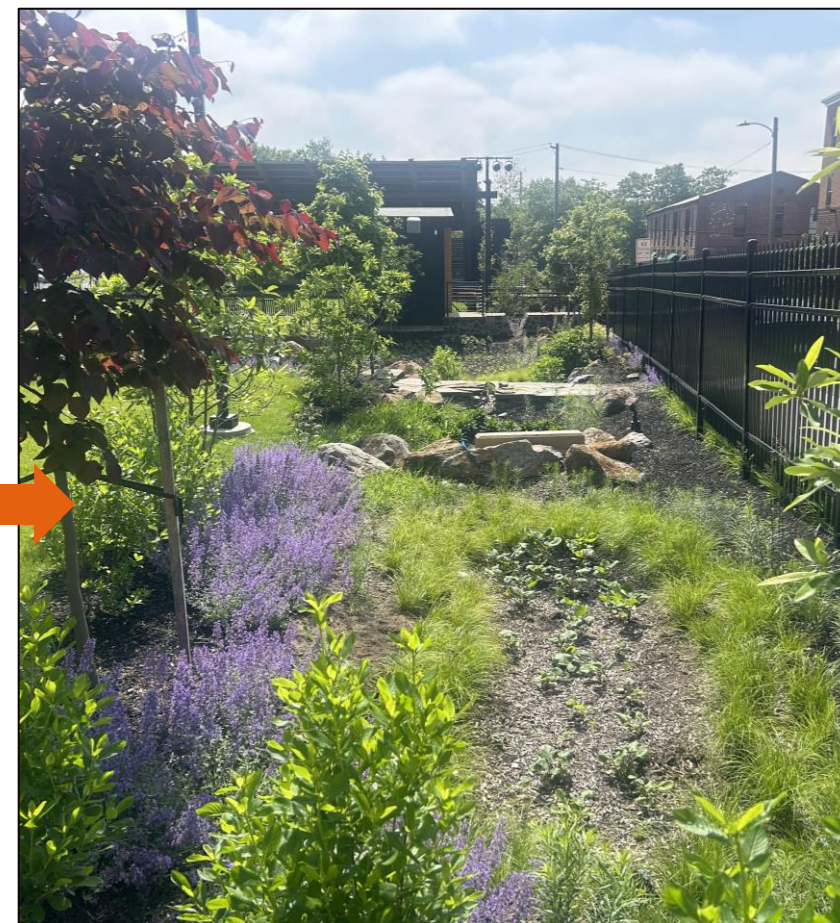
## 15<sup>th</sup> Street Pipe Diversion



**1: Pipe stub diverting offsite flow to park area**



**2: Pipe installation entering park area through rain garden 1 to headwall**



**3: Rain gardens 1 and 2 backfilled with bio-soil and plantings**



# 15<sup>th</sup> and Walnut CSO Separation Storm Sewer Installation

## 15<sup>th</sup> & Walnut St. Storm Sewer Piping & Structures



1: Inlets to capture runoff on Walnut St.



2: Inlet to capture runoff on 15<sup>th</sup> St.



3: Storm sewer installation to connect these inlets to the existing pipe stub entering park.



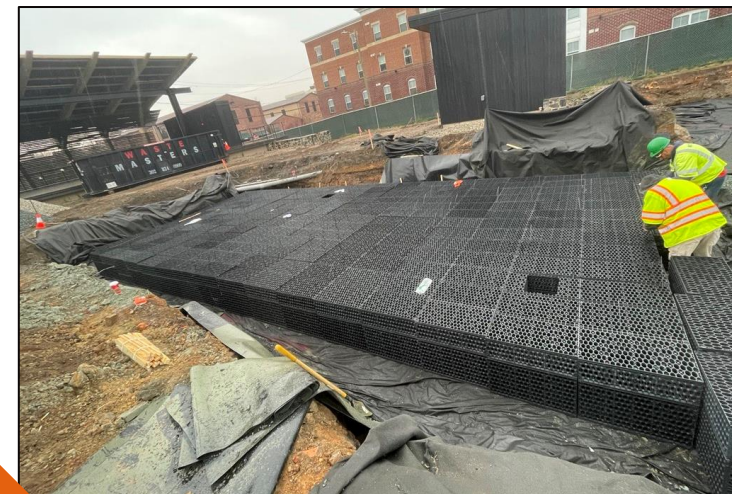
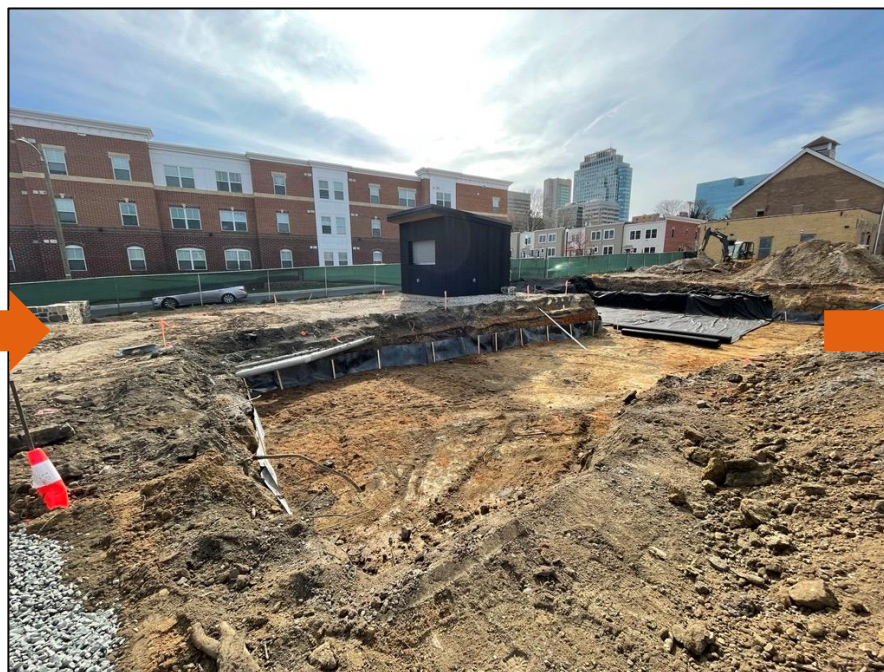
# 15<sup>th</sup> and Walnut CSO Separation Green Infrastructure Installation

## R-Tanks



1: Designated R-tank location

2: Excavation



3: Installation of R-tanks



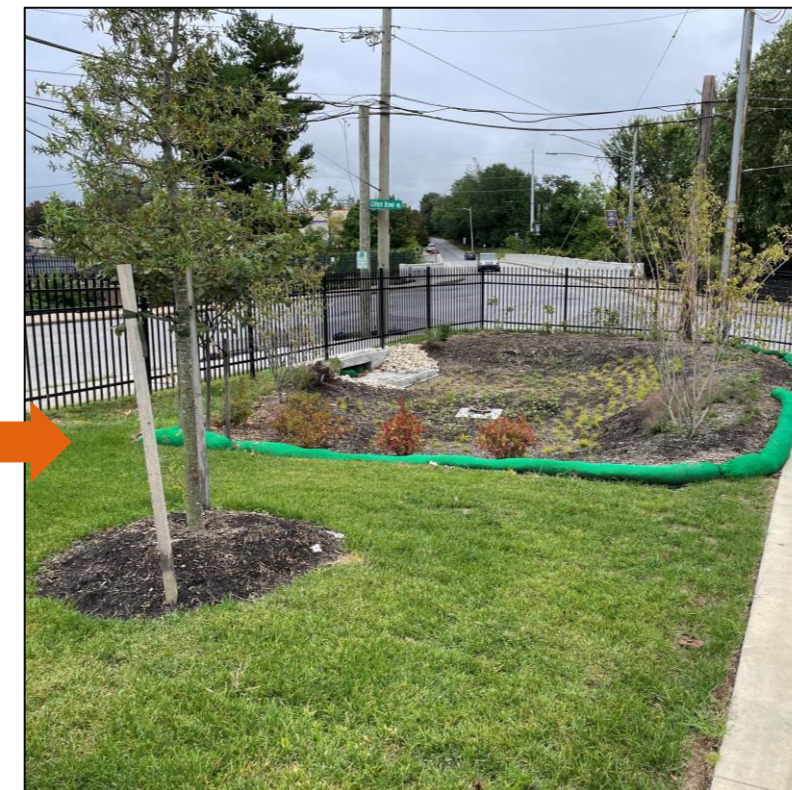
# 15<sup>th</sup> and Walnut CSO Separation Green Infrastructure Installation

## Rain Gardens



**1: Unused region selected as rain garden 6 location**

**2: During construction**



**3: Completed Rain Garden 6 with sod and finished plantings.**

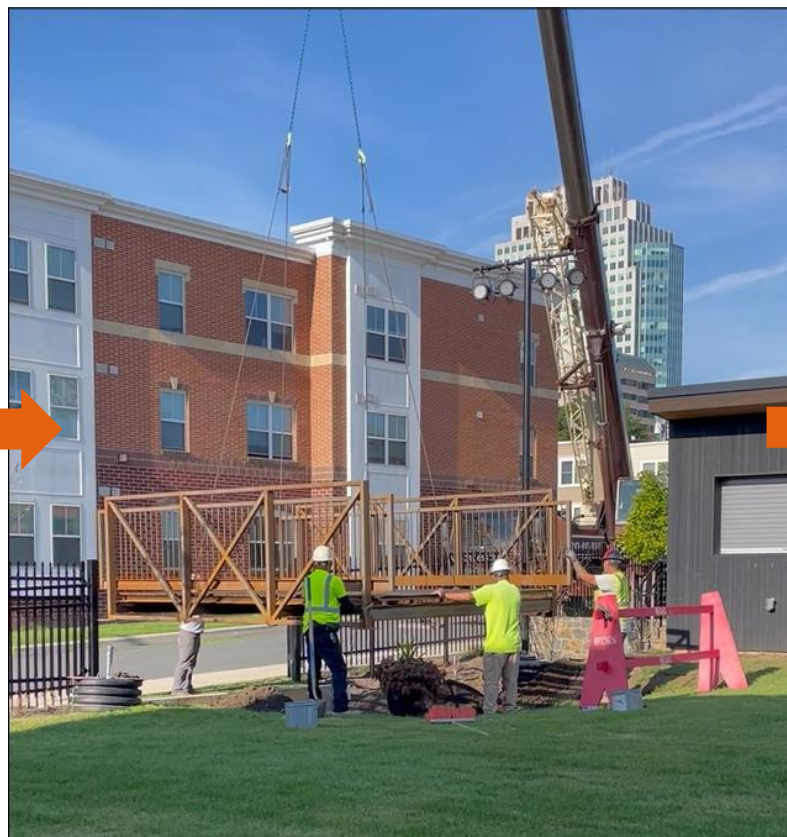


# 15<sup>th</sup> and Walnut CSO Separation Green Infrastructure Installation

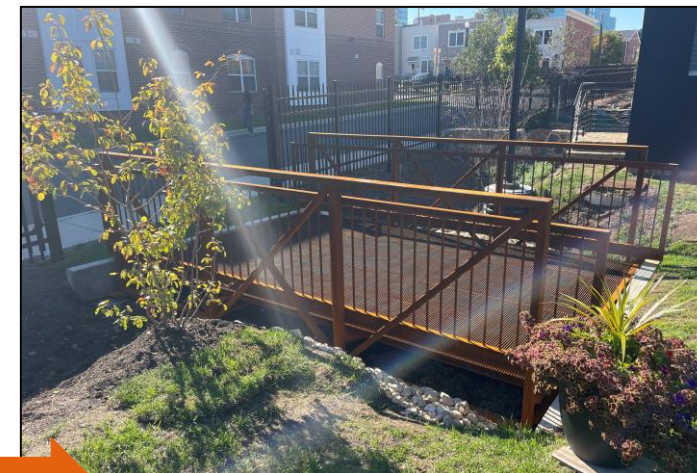
## Pedestrian bridge & boardwalk



**1: Installation of bridge & boardwalk foundations**



**2: Installing the bridge via crane.**

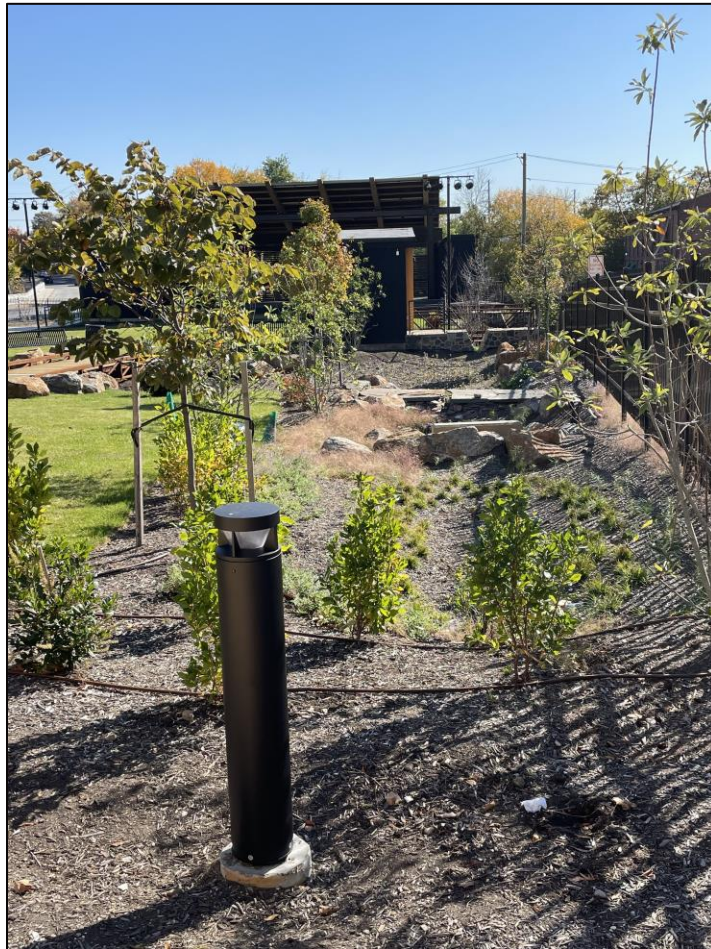


**3: Installed bridge & boardwalk with finished plantings.**



# 15<sup>th</sup> and Walnut CSO Separation Green Infrastructure Installation

Cascading rain gardens adjacent to amphitheater, pedestrian walkways





# Landscape Design





# Landscape Design





# Landscape Design





# Landscape Design





# Landscape Design





# Landscape Design





# SW/GI Approach

## PROJECT NUMBERS AT-A-GLANCE



 **~123,000 SF**  
TOTAL MANAGED  
DRAINAGE AREA

 **~100,000 SF**  
IMPERVIOUS AREA  
DISCONNECTED FROM CSO

 **~38,000 GAL.**  
VOLUME MANAGED  
FROM 1" STORM

**6 RAIN GARDENS**  
**1 SUBSURFACE STORAGE**





# Acknowledgements

Thank you to RASCL for Showcasing the Urban Artists Exchange!!!



DELAWARE DEPARTMENT OF  
**NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL**



**GSI PARTNERS**  
REIMAGINING STORMWATER

A Sustainable Business Network of Greater Philadelphia Initiative 



CHALLENGE  
PROGRAM



**AND MORE....**