Northeast Ohio
Regional Sewer District

Northeast Ohio Regional Sewer District

PROTECTING PUBLIC HEALTH AND WATER QUALITY

Green Infrastructure Grants Program for the Combined Sewer Collection System Area

Northeast Ohio Regional Sewer District

Pre-proposal Workshop for the 2024 GI Grant Funding Round

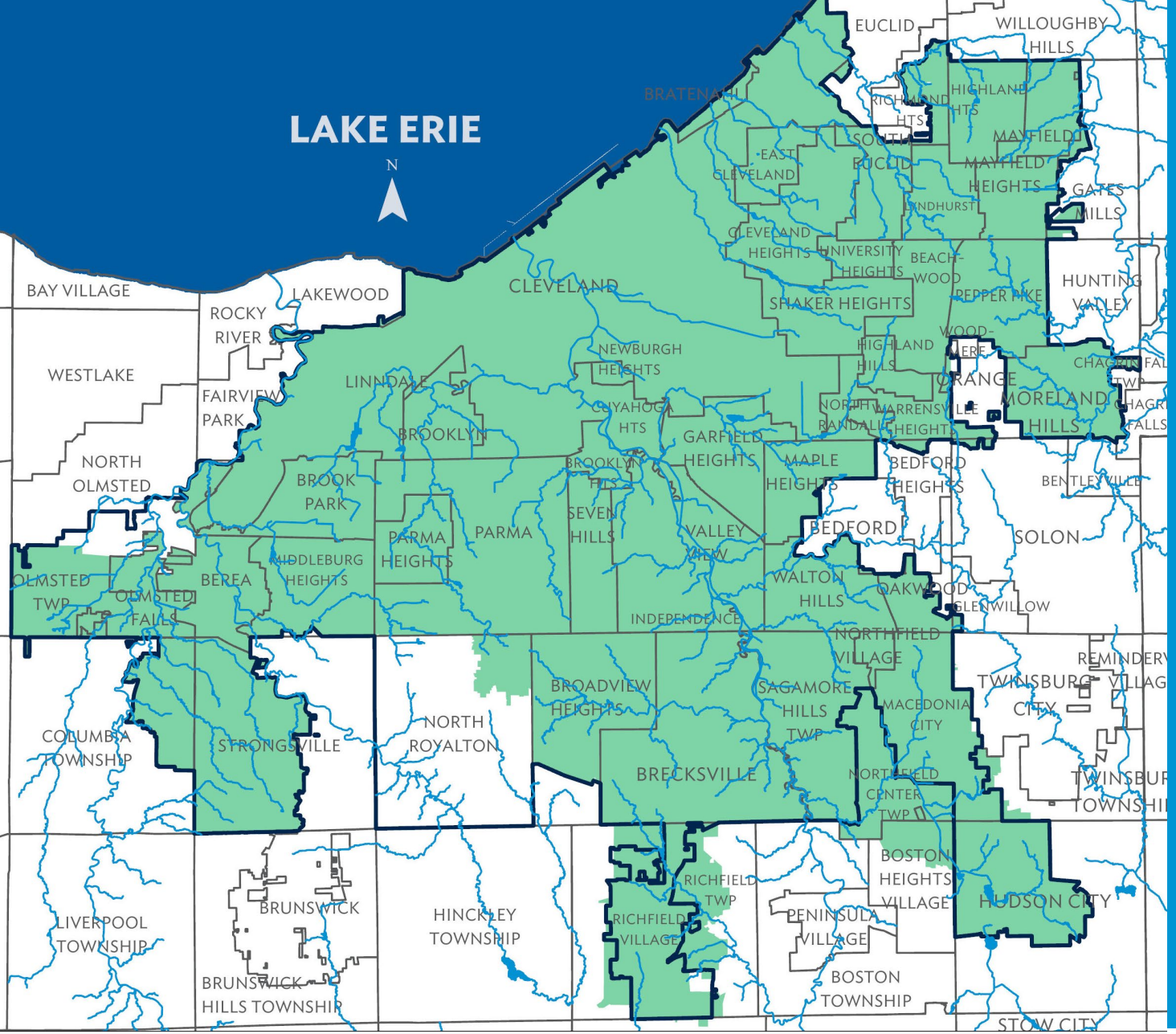
Jessica Cotton

GRANT PROGRAMS ADMINISTRATOR – WATERSHED PROGRAMS DEPARTMENT

Agenda

- District and Green Infrastructure Grants Program Overview – Jessica
- Contract Agreements, Property Ownership – Anka
- Grant Eligibility – Rob
- Grant Submittal of Application – Chris
  - Criteria
  - Technical Requirements
- Awarded Funded Projects Document Submittal Process – Jessica

WHO ARE WE



- Created in 1972 by Court Order
- Servicing all or part of 62 member communities
- 1 million customers
- 90+ billion gallons wastewater treated each year with 3 award winning treatment plants.
- 487 miles of regional streams

Northeast Ohio Regional Sewer District

GREEN INFRASTRUCTURE GRANTS PROGRAM OVERVIEW

Northeast Ohio Regional Sewer District

Jessica S. Cotton, Grant Programs Administrator Watershed Programs Department

Green Infrastructure is an approach to stormwater management

- protects, restores, or mimics the natural water cycle
- increase resiliency of infrastructure by reducing stress on we-weather drainage and collection systems
- increase co-benefits in support of healthy environments and strong communities

The Green Infrastructure Grants Program (GI Grant) focus is funding GIG implementation and long-term maintenance projects to remove stormwater runoff from the combined sewer collection system that protects, preserves, enhance, and restores natural hydrologic functions within the District's combined sewer service area.

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"What we practice at the small scale sets the pattern for the whole system"
- Adrienne Maree Brown

Overview

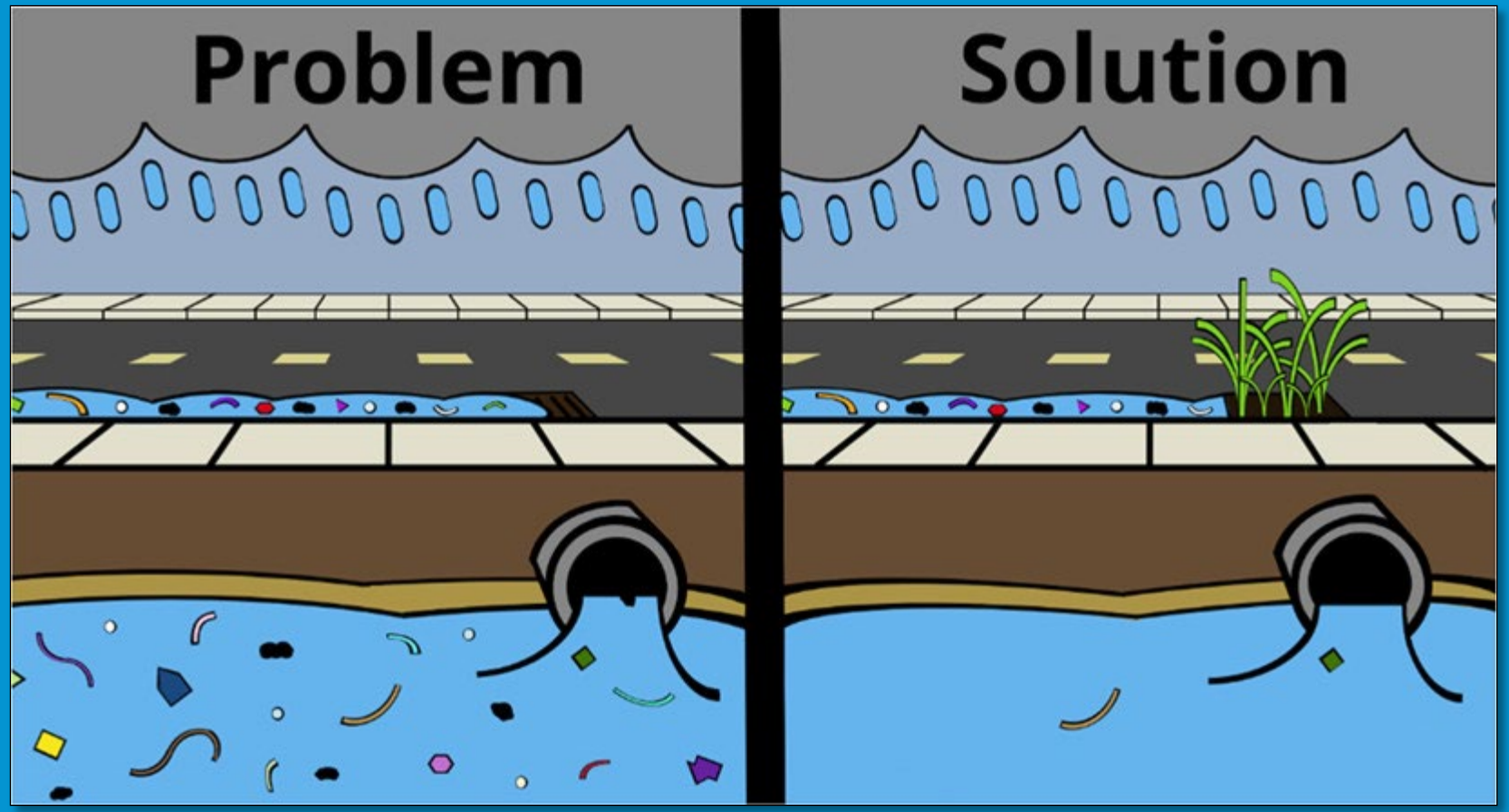
NATURAL PROCESSES INTACT

NATURAL PROCESSES REMOVED

NATURAL PROCESSES RESTORED

NATURAL PROCESSES RESTORED

Overview



Overview

Funding options increased 20%

GI Grant Options and what's new!

- Design–Only (concept)
  - Was $25,000
  - **Now $30,000**

- Design and/or Construction
  - Was $250,000
  - **Now $300,000**

Overview

Terms of Funding

- The GI Grant is exclusively a reimbursement grant
- Reimbursement will be made on project specific invoices as related to the awarded project
- No schedule for Reimbursement
- Typically, around Quarterly Progress Reports are due

Overview

Funding Round	Award Recommendations Total	Runoff Reduction gallons/year Total
2014 GIG PROGRAM	$1,746,274	7,138,890
2016 GIG PROGRAM	$1,974,747	9,658,777
2018 GIG PROGRAM	$799,130	1,730,668
2019 GIG PROGRAM	$1,908,361	4,906,083
2020 GIG PROGRAM	$1,907,656	3,888,596
2021 GIG PROGRAM	$895,432	2,978,459
2022 GIG PROGRAM	1,500,000	2,356,946
2023 GIG PROGRAM	2,125,0000	3,620,423
GRAND TOTAL	**$12,856,600**	**32,658,439**

Determine Project Eligibility

Is the project eligible for grant funding through this program?

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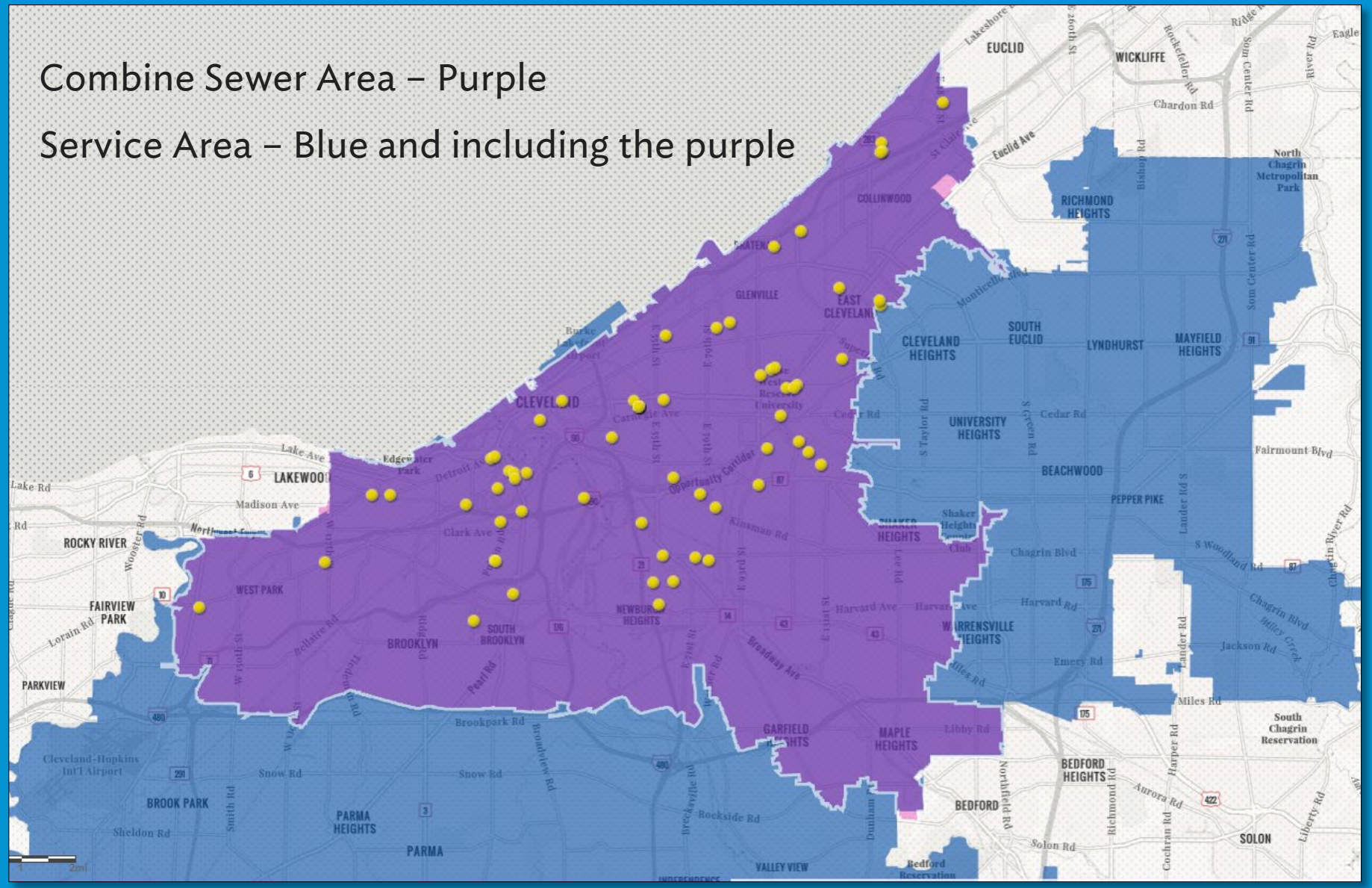
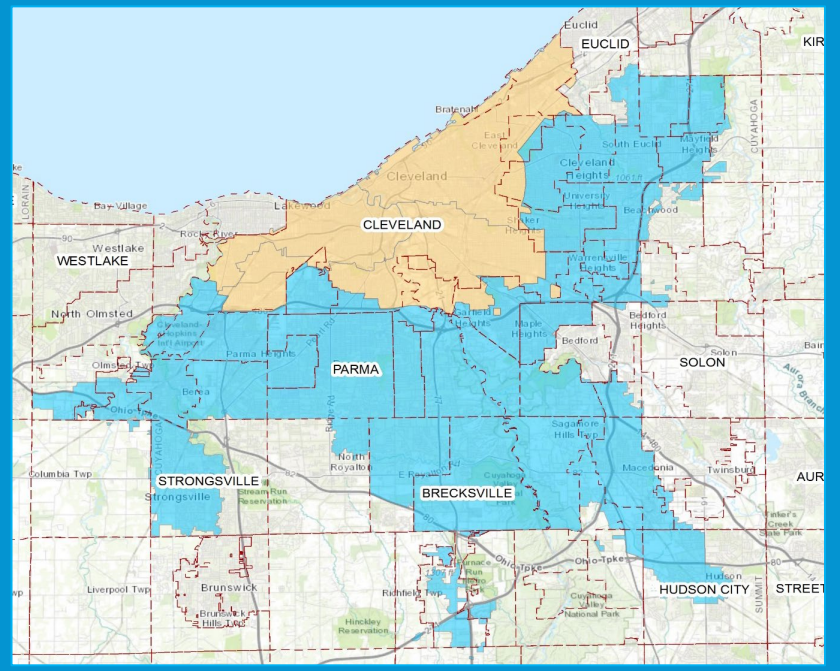
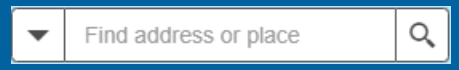
Determine Project Eligibility



Determine Project Eligibility

- Applicant must represent
  - Member Community
  - Governmental Entity
  - Non-Profit 501(c)(3)
  - Business working in partnership with their community
- Must be in the Combined Sewer Collection System
  - Remove or eliminate stormwater runoff from the combined sewer collection system within the District's combined sewer service area.



TIP: Use Search Tool 

on the Combined Sewer Area Map @ Combined Sewer Area (arcgis.com)

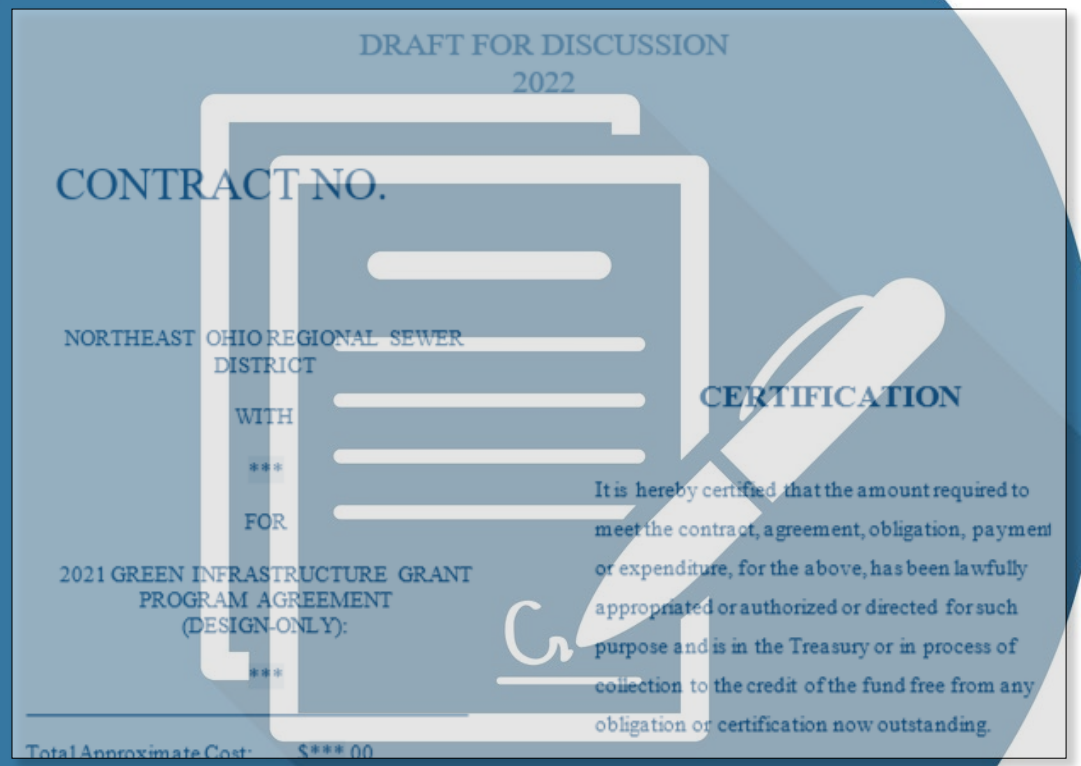
Anka Davis

ASSISTANT GENERAL COUNSEL – LEGAL DEPARTMENT

CONTRACTUAL AGREEMENT

Northeast Ohio
Regional Sewer District

Anka Davis, Assistant General Counsel – Legal Department


DRAFT FOR DISCUSSION
2022

CONTRACT NO.

NORTHEAST OHIO REGIONAL SEWER DISTRICT

WITH

***

FOR

2021 GREEN INFRASTRUCTURE GRANT PROGRAM AGREEMENT (DESIGN-ONLY):

***

Total Approximate Cost: $*** 00

CERTIFICATION

It is hereby certified that the amount required to meet the contract, agreement, obligation, payment or expenditure, for the above, has been lawfully appropriated or authorized or directed for such purpose and is in the Treasury or in process of collection to the credit of the fund free from any obligation or certification now outstanding.

GREEN INFRASTRUCTURE GRANT PROGRAM

AGREEMENT BY AND BETWEEN

- Contracting Process
- Ownership and Partners
- Affidavit of Facts
- Key Contract Provisions
- Legal Review by Attorney Prior to submitting Grant Application

ised Code, pursuant to the authority of Resolution No._____, adopted by the District's

rd of

tees on (Exhibit "A"), and **** ("Grantee"), a [*501(C)(3) non-profit*

Northeast Ohio
Regional Sewer District

Robert Stoerkel

COMMUNITY DISCHARGE PERMIT PROGRAM SPECIALIST

Sewer Types and Function

SEPARATE SANITARY SEWER

SEPARATE STORM SEWER

COMBINED SEWER

The First Sewers

- During the 1800s, growing cities-built storm sewers to prevent street flooding.
- 1880s-90s: Sanitary sewers from houses connected to existing storm drains creating numerous water quality problems

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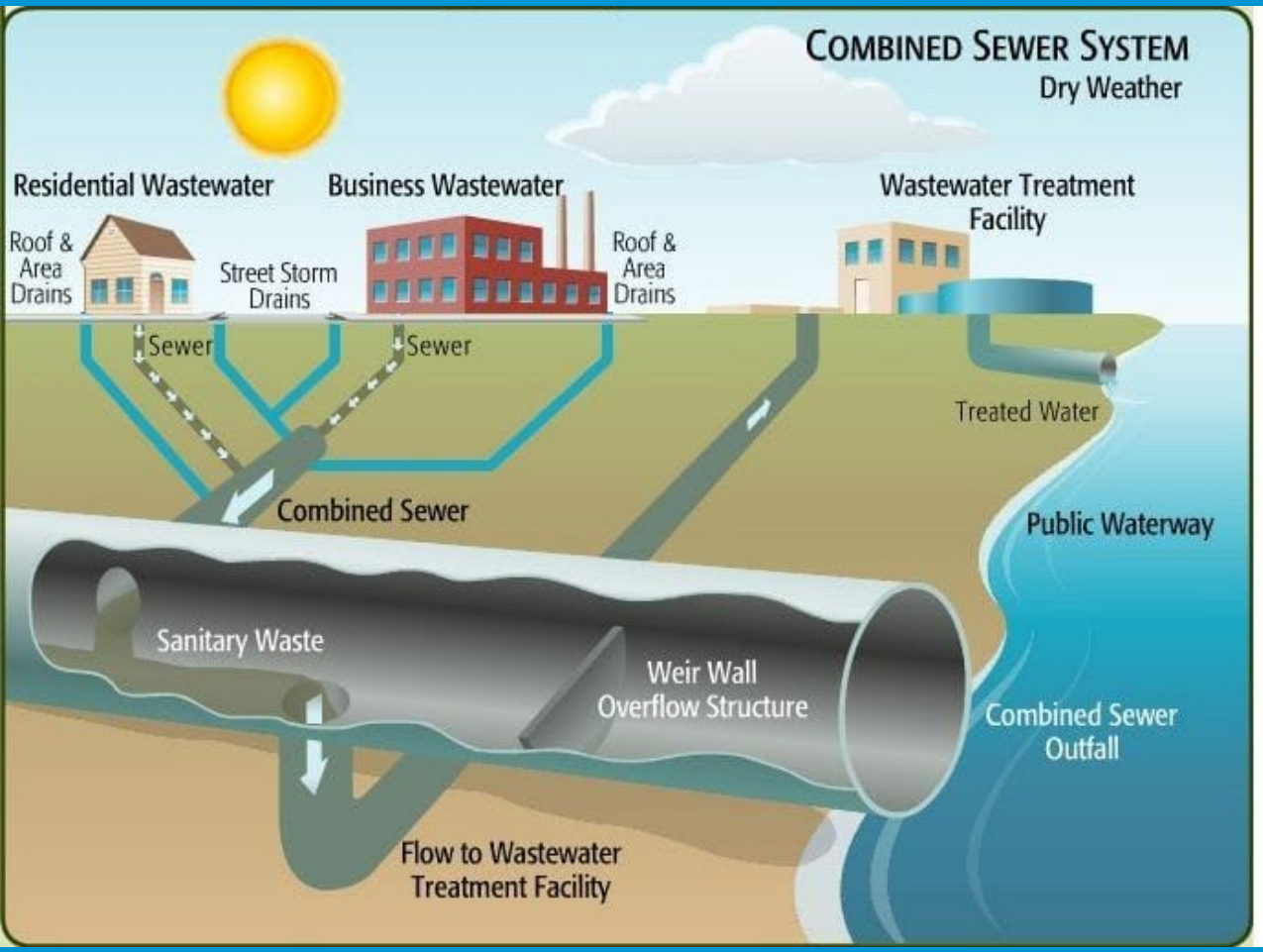
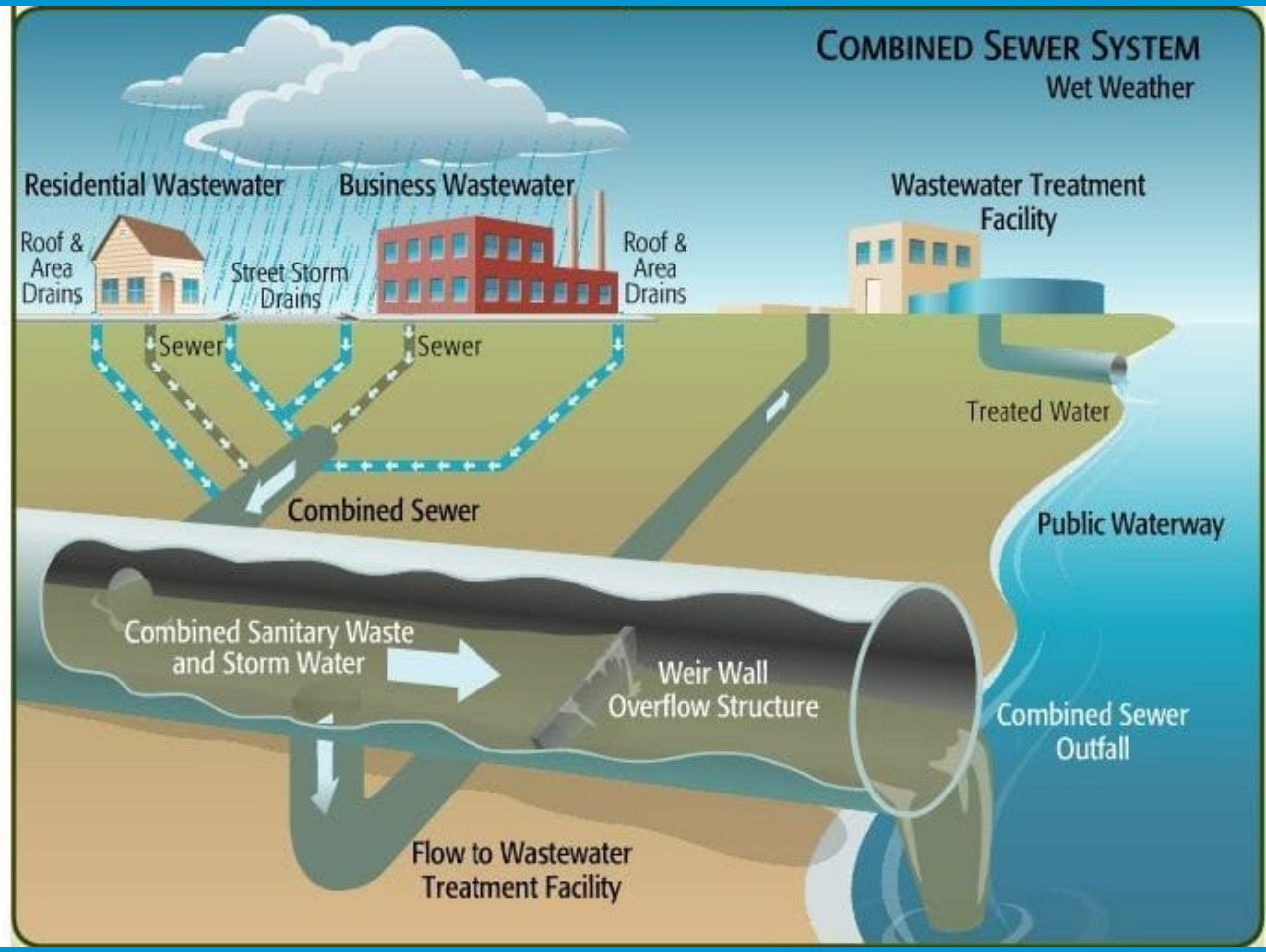
Combined Sewer and combined sewer overflow (CSO) control





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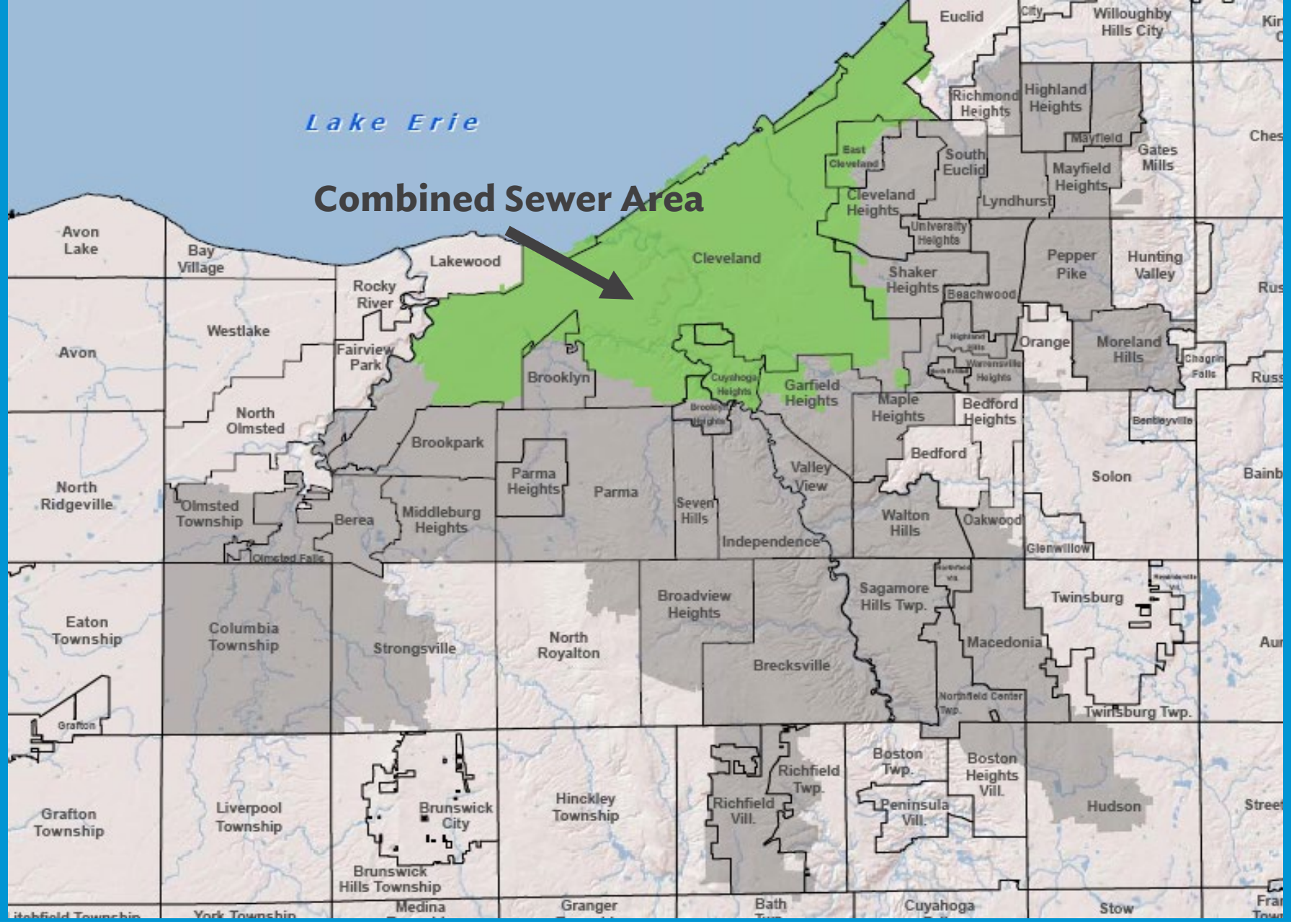

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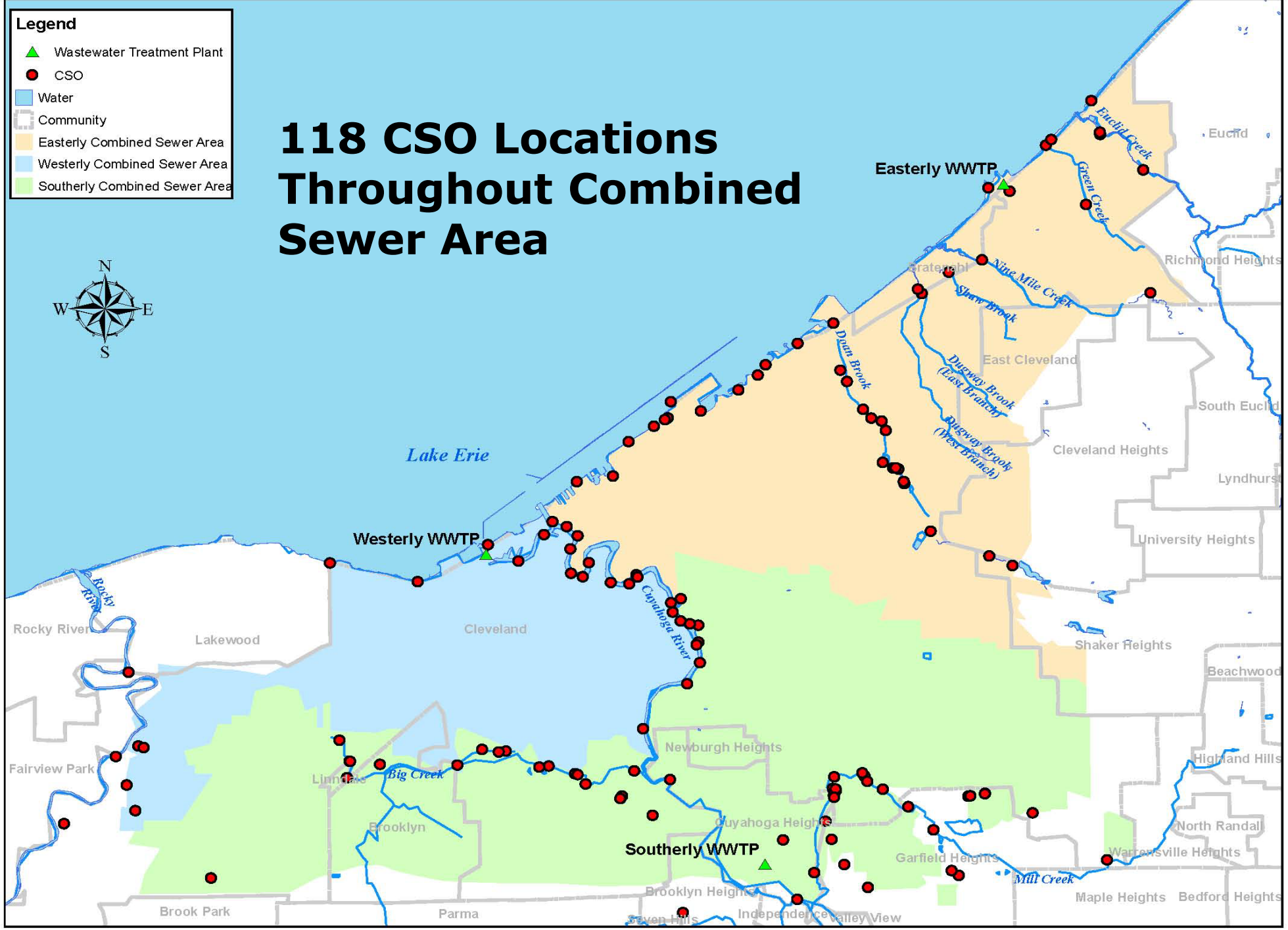
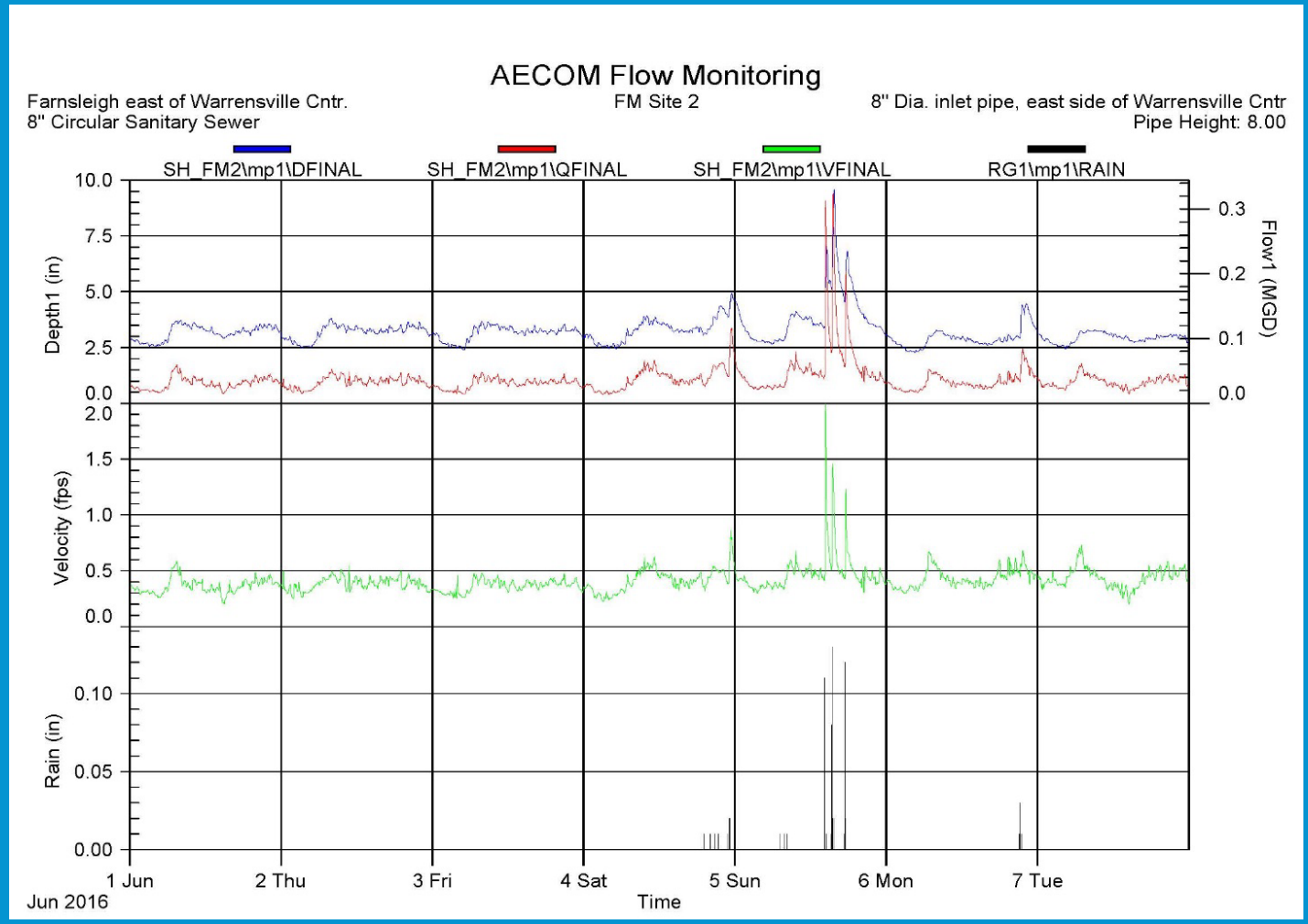

Legend
Wastewater Treatment Plant
CSO
Water
Community
Easterly Combined Sewer Area
Westerly Combined Sewer Area
Southerly Combined Sewer Area
118 CSO Locations Throughout Combined Sewer Area
N
W
E
S
Easterly WWTP
Westerly WWTP
Southerly WWTP
Lake Erie
Euclid Creek
Green Creek
Nine Mile Creek
Shaw Brook
Dugway Brook (East Branch)
Dugway Brook (West Branch)
Dam Brook
Cuyahoga River
Big Creek
Rocky River
Euclid
Richmond Heights
Gateway
East Cleveland
South Euclid
Cleveland Heights
Lyndhurst
University Heights
Shaker Heights
Beachwood
Highland Hills
North Randall
Warrensville Heights
Maple Heights
Bedford Heights
Mill Creek
Garfield Heights
Cuyahoga Heights
Brooklyn Heights
Independence
Valley View
Seven Hills
Parma
Brook Park
Brooklyn
Linndale
Newburgh Heights
Cleveland
Lakewood
Rocky River
Fairview Park

Determine Your Eligibility

Infiltration and Inflow

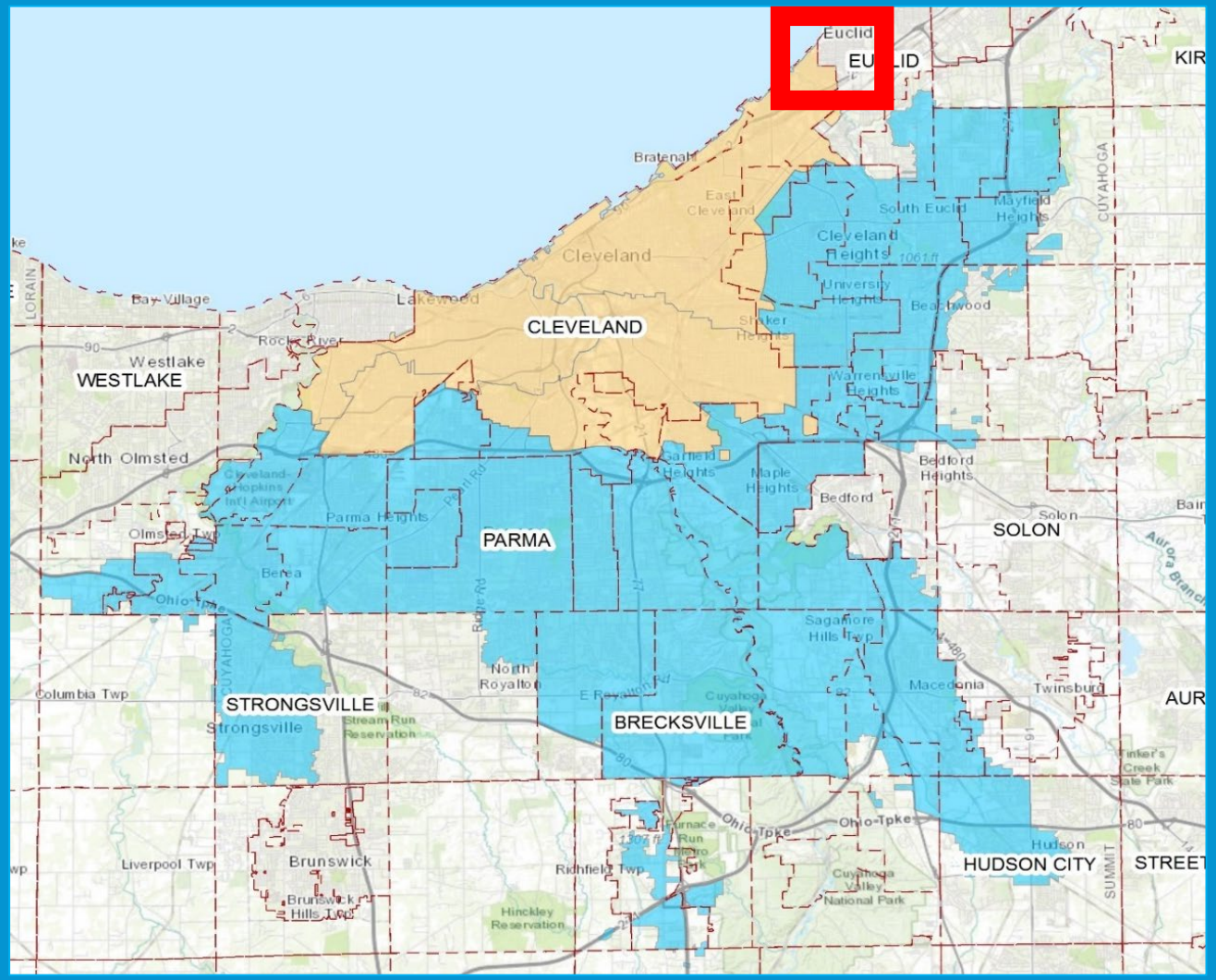
I&I



Determine Your Eligibility

Location

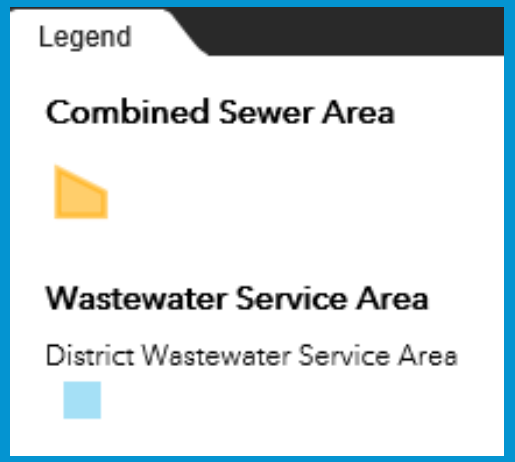
Example #1: although in combined area, some storm sewers are separated

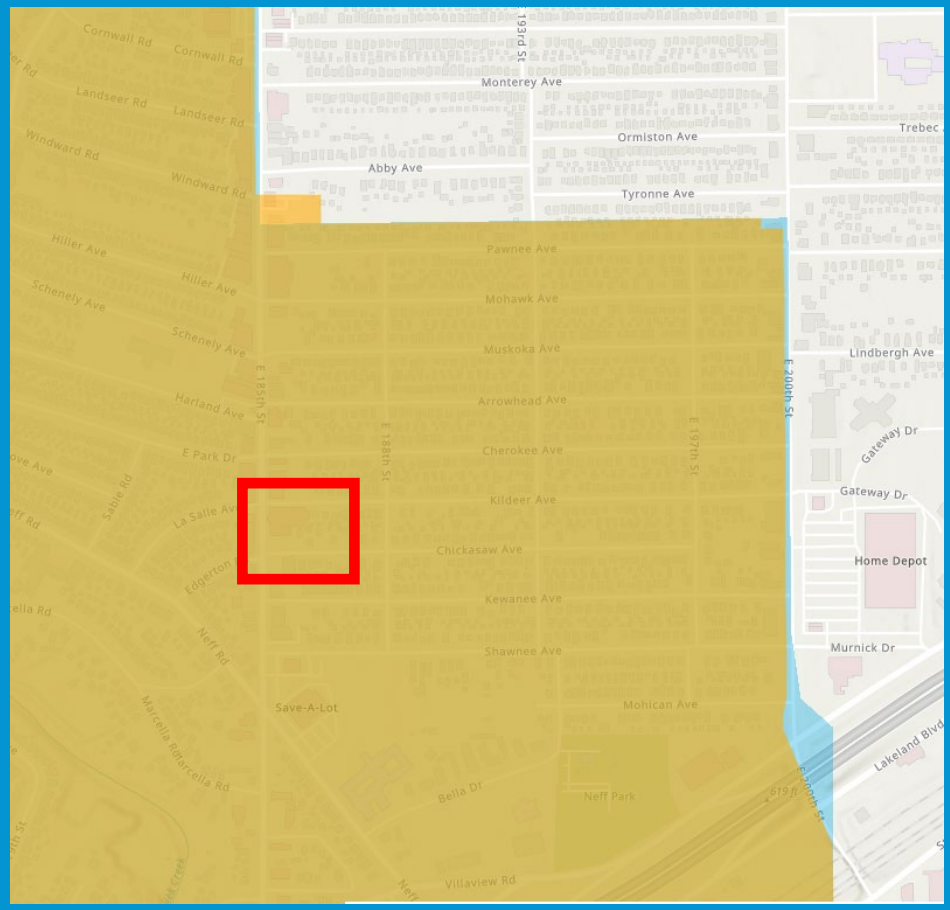


Determine Your Eligibility

Location

Example #1

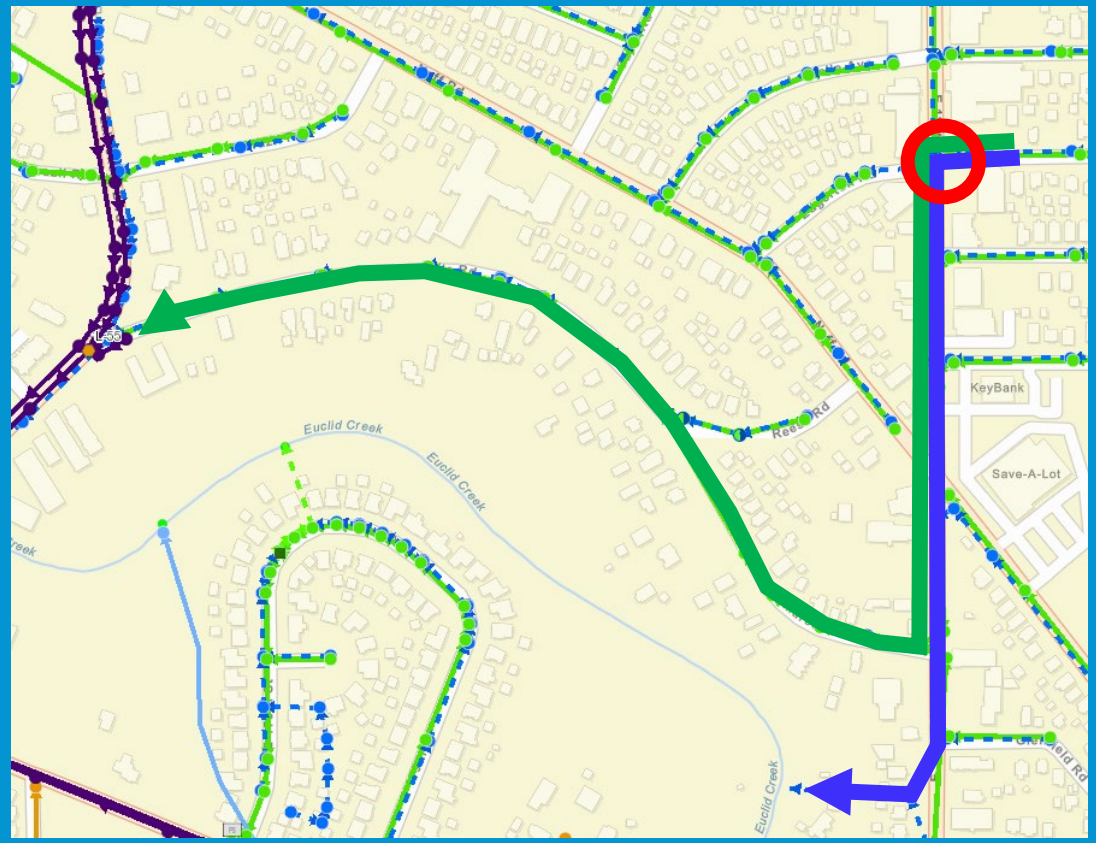




Determine Your Eligibility

Location

Example #1



Determine Your Eligibility

Location

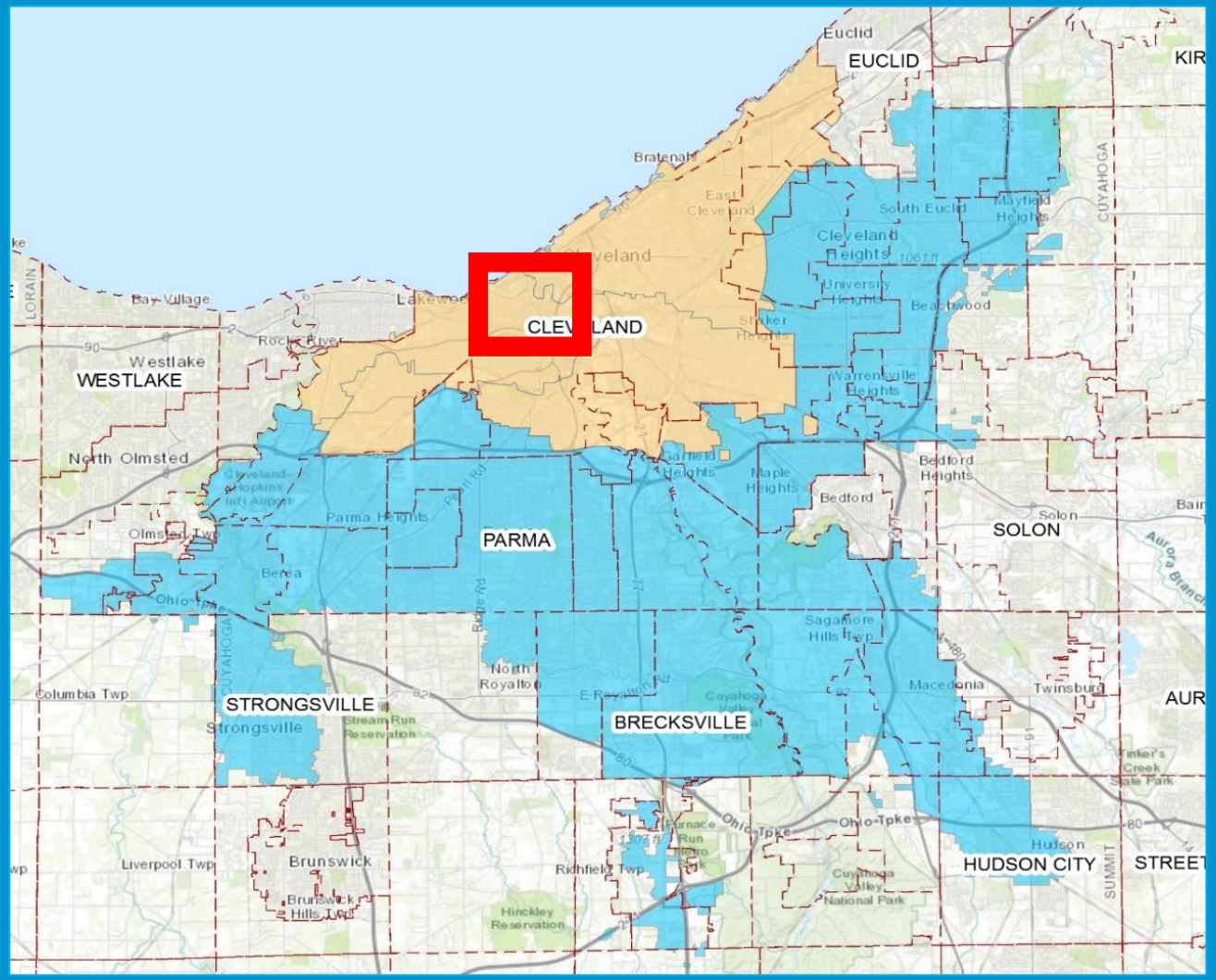
Example #1:

Storm sewers are separate from the combined sewers and discharge to the environment. Project still received a GI Grant because it was able to prove a significant reduction of inflow and infiltration (I & I) into the sanitary system, which is tributary to the combined sewer (e.g., leaky storm and sanitary sewers were adjacent to each other…removing the source of stormwater decreased I&I).

Determine Your Eligibility

Location

Example #2: although in combined area, storm sewers are separated and directly connected to a watercourse



Determine Your Eligibility

Location

Example #2

NOT Eligible

Location

Example #2: Storm sewers are separate from the combined sewers and discharge directly to the river. Project was not eligible for a GI Grant because it was NOT able to prove a significant reduction of inflow and infiltration (I & I) into the sanitary system (tributary to the combined sewer).

GREEN INFRASTRUCTURE GRANT PROGRAM ANNUAL TIMELINE

Northeast Ohio Regional Sewer District

Jessica S. Cotton, Grant Programs Administrator Watershed Programs Department

JUNE

- ✓ Request For Proposal
  - Approved by Board of Trustees
  - RFP is pushed out to the public
- ✓ Pre-proposal Workshop

2018 Morgana Bluff Nature Preserve and Learning Center
Stormwater Wetland
6114 Broadway Avenue

JULY/AUGUST

We are your resource to prepare for a strong and completed application

- Individual Pre-proposal Meetings
- Site Visits
- Questions
- Review documentation

SEPTEMBER/OCTOBER

Application Review Process

- Deadline **September 1st**
- Team to review all application
- Score application with Rubric Criteria
- Reach out to applicants for clarification

2020 Providence House West Campus Parking Lot

2050 West 32nd Street

NOVEMBER/DECEMBER

- Recommended Project is presented to the Board of Trustees
  - All applicants are notified
  - Agreements are sent out to grantees to review and sign

2016 Towpath Trail Stage 3
Clark Avenue and Mary Court

JANUARY/FEBRUARY

Funded Projects

- Agreements are signed
- Submit for reimbursement
- Mandatory Kick-off Meeting
    - Overview of expectations

GI GRANT APPLICATION OVERVIEW

Northeast Ohio
Regional Sewer District

What makes a GOOD application and project?

Use of Green Infrastructure

Project must demonstrate on-site stormwater control measures using green infrastructure

Striebinger Block Living Wall - Hingetown

The Applicant

Site Control

Applicant must be able to demonstrate permanent control of the project site

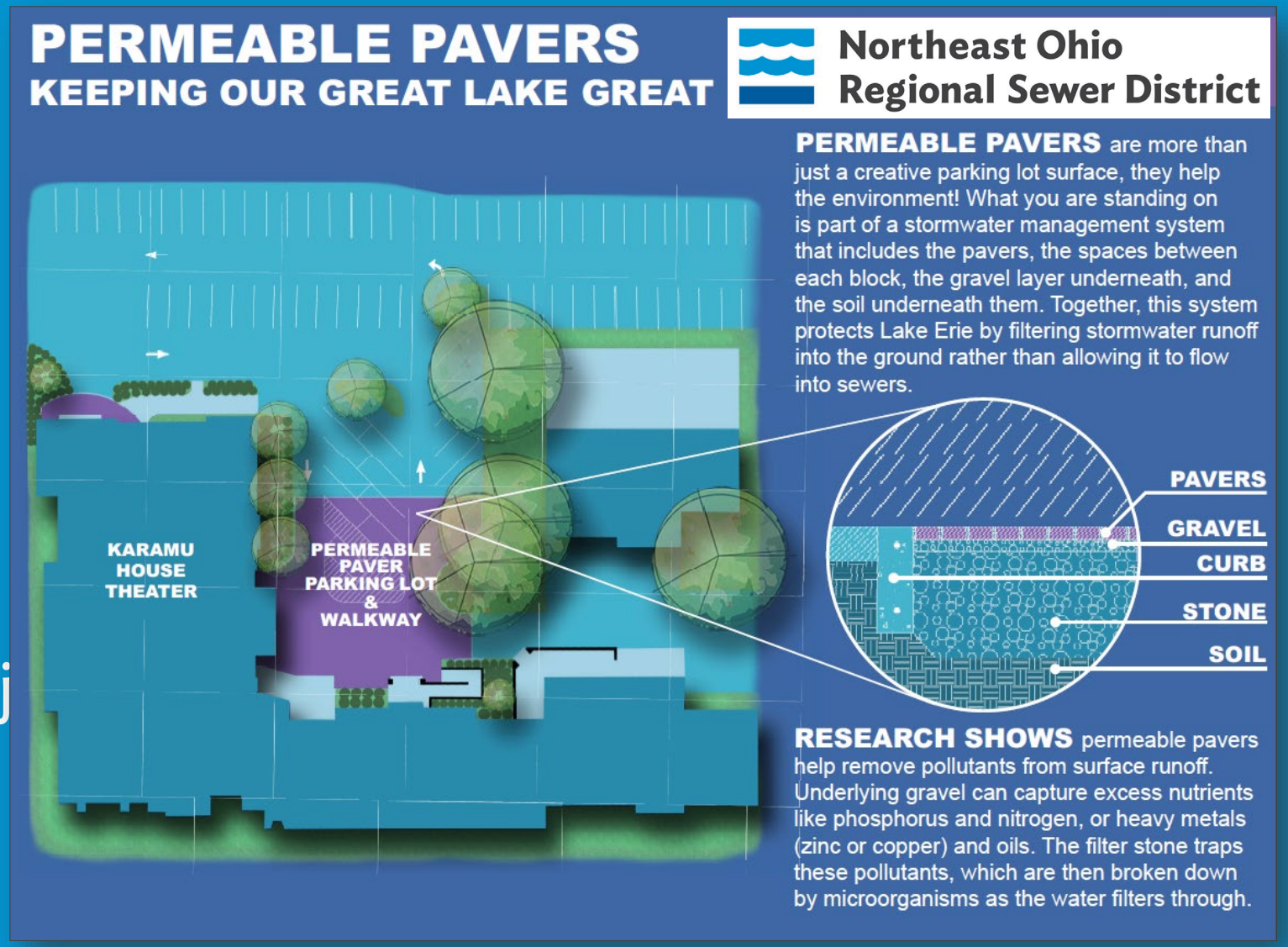
The Applicant

Signage

- Sign design
- Signage post
- Guidelines

Annual Inspection

- Individual Awarded Proj
- NEORSD



2023 Karamu House

The Applicant

2021 INTRO

The Applicant

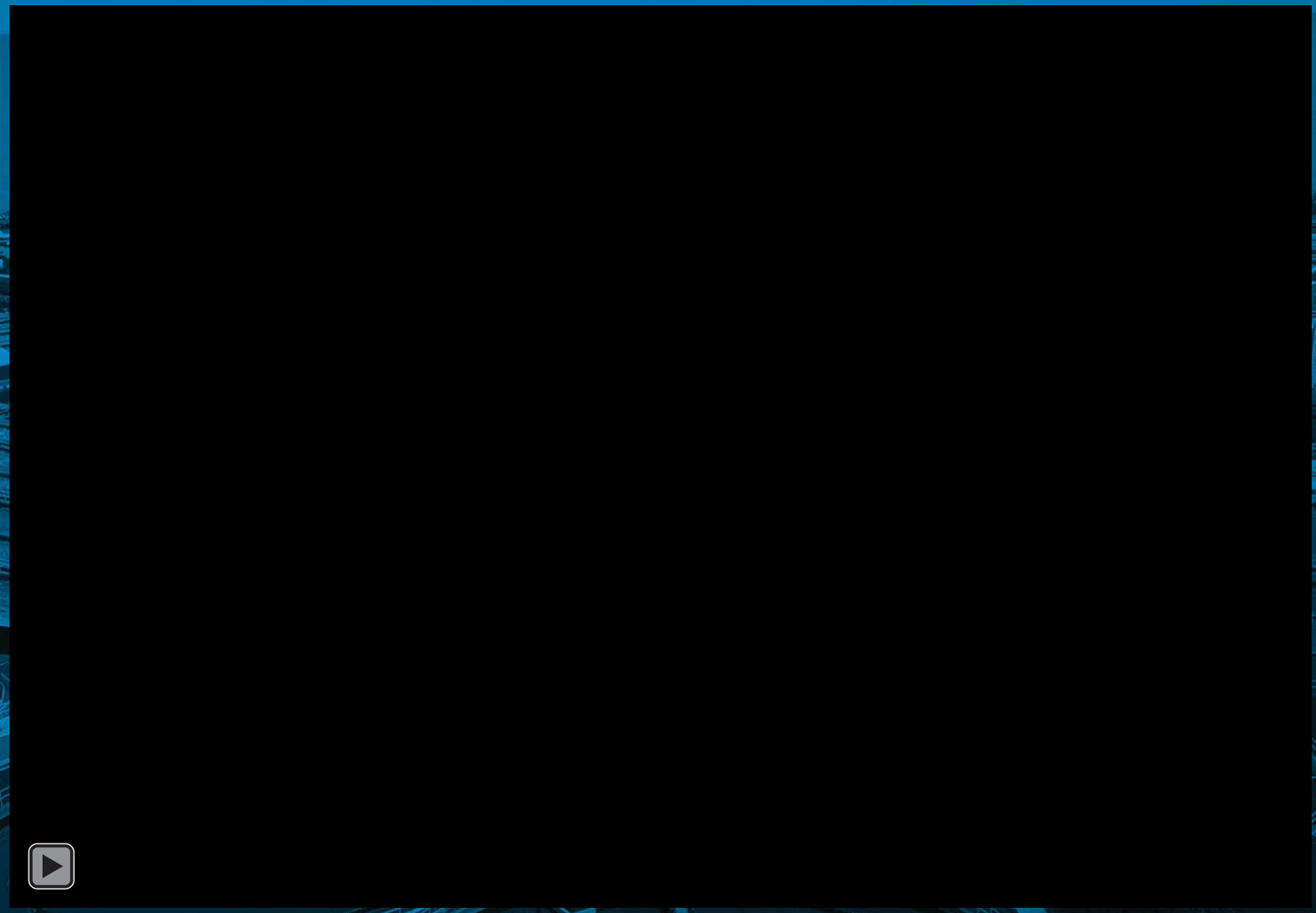
Template Example

QUESTIONS?

- Overview
- Contract
- Eligibility
- Timeline: June – January
- Application

NEORSD Green Infrastructure Grant Program

Preproposal Workshop for the 2024 GI Grants funding round



Christopher Hartman

STORMWATER TECHNICAL SPECIALIST – WATERSHED PROGRAMS DEPARTMENT

GI GRANT APPLICATION, EVALUATION CRITERIA AND TECHNICAL REQUIREMENTS

Northeast Ohio
Regional Sewer District

Project Information

Project Information

* Project Title

* Project Address:
ie. 1234 Main St., City, State zip code. Note: If there is no address for the project, please use the adjacent address or the nearest intersection street names.

* Project Property Parcel Number(s):

* Project Start Date

* Project Completion Date
Do not account for the first-year maintenance period

* Requested Grant Amount

List each individual GI stormwater control measure (SCM) separately even if there are multiple of the same SCM type. i.e., BIORETENTION 1, BIORETENTION 2, GREEN ROOF, and etc.

GI SCM #1:

GI SCM #2:

GI SCM #3:

GI SCM #4:

GI SCM #5:

GI SCM #6:

GI SCM #7:

GI SCM #8:

GI SCM #9:

GI SCM #10:

Applicant Information

* Organization Applying for the GI Grant Funding

Co-Applicant Organization

Executive Officer (EO) First Name

EO Last Name

EO Position Title

* EO Address:
ie. 1234 Main St., City, State zip code. Note: If there is no address for the project, please use the adjacent address or the nearest intersection street names.

* EO Phone

EO Extension

* EO Email

* Project Manager (PM) First Name

* PM Last Name

* PM Position Title:

* PM Address:
ie. 1234 Main St., City, State zip code. Note: If there is no address for the project, please use the adjacent address or the nearest intersection street names.

* PM Phone

PM Extension

* PM Email

OWNERSHIP VERIFICATION

Who is the current owner of the property parcel(s) where the GI Grant project will be located?

Who will be the long term owner of the property parcel(s) where the GI Grant project will be located?
Note: This could refer to a different entity than the owner.

Who has long term control of the property parcel(s) where the GI Gant project will be located? This will be the entity who will sign the agreement if awarded grant funding. If different than the long-term owner listed above, please provide supporting documentation.

Browse... No file selected.

Upload

Which best describes your GI project:

1 - A retrofit of existing conditions to incorporate GI features with no net increase in impervious area (Title IV requirements do not apply).

2 - A new or re-development project of at least 0.5-acre disturbance that will result in a net increase of impervious area (Title IV requirements apply).

-Select One-

Submit

Green Infrastructure SCM's Data. ROUTE 1

Because your project does not need to meet the District's Title IV requirements, you must provide applicable information for three (3) separate runs of the USEPA Stormwater Calculator mode (the Calculator). You have the option to forego running the Calculator altogether, and only providing the data the District needs to run the Calculator on your behalf. By following the steps below, you will provide all information the District will need to run the Calculator. However, if you choose to not run the Calculator, please note you will not have all information you need to complete a self-scoring of your application prior to submitting it. There is no penalty to how your application will be scored by the District if you choose to forego running the Calculator.

* We will forego running the Calculator and prefer the District complete this on our behalf (select YES or NO):

- ○ YES - Items you would not need to submit are identified by a double asterisk (**).
- ○ NO – Please provide all applicable Calculator information described below.

EXISTING CONDITIONS

UNDEVELOPED CONDITIONS

PROPOSED GI CONDITIONS

Existing Conditions

Existing Conditions - determine your average annual runoff for your project area with all existing forest, meadow, lawn, and impervious areas accounted for.

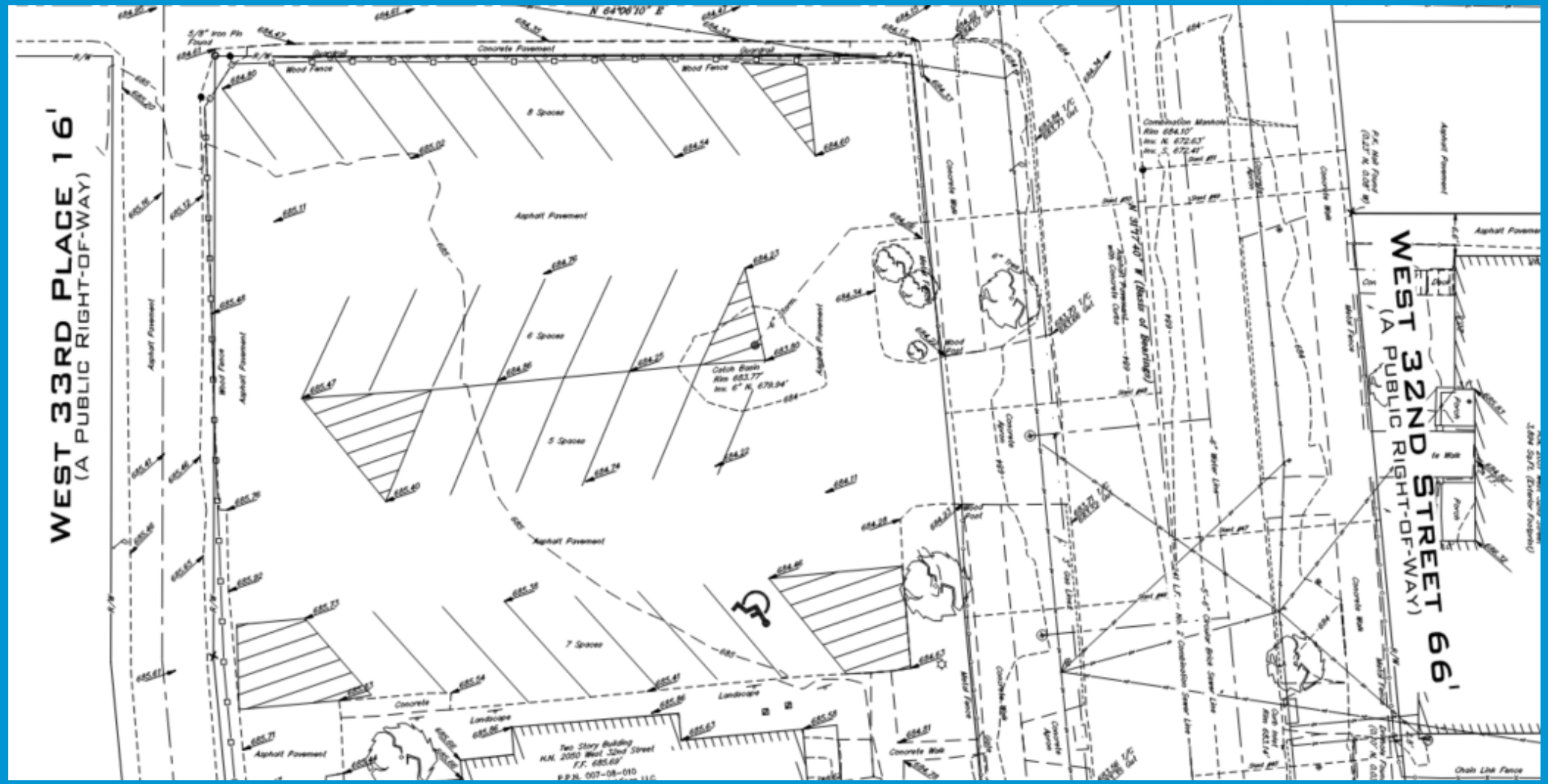
* Upload an Existing Conditions project drawing

Browse... No file selected.

Upload

* Upload the completed "Existing Conditions Worksheet", found here

Existing Conditions



Northeast Ohio
Regional Sewer District

Existing Conditions

US EPA Stormwater Calculator Worksheet

Existing Conditions

Project Title:

1. Project area size (the total disturbed area or the total drainage area treated, whichever is larger): _____ acres

2. What is the predominant Hydrologic Soil Group (HSG) of the soils in which your stormwater control measures (SCMs) will be situated?
   - ☐ HSG A - Sand (Low Runoff)
   - ☐ HSG B - Sandy Loam (Moderately Low)
   - ☐ HSG C - Clay Loam (Moderately High)
   - ☐ HSG D - Clay (High Runoff)

3. How was this determined?
   - ☐ National Stormwater Calculator default value and/or Web Soil Survey
   - ☐ Field testing verification
   - ☐ Other (Explain)_____

Existing Conditions

Instructions for obtaining your HSG via the Web Soil Survey

https://websoilsurvey.nrcs.usda.gov/app/

1. Select "Start WSS", and you will default to the "Area of Interest" (AOI) tab.
2. Within the "Area of Interest Interactive Map", either zoom into your site using the navigation buttons, or enter the project address under the "Address" option under "Quick Navigation" (near top left)
3. Using either of the navigation buttons labeled "AOI" (define by rectangle or by polygon), outline the general boundary of your project area (the area you outlined will revert to a blue hatching).
4. Select the "Soil Map" tab, and on the left of the screen there will be a breakdown of the soil map units within your AOI. Click on the soil map unit name that best represents your project site (there may be more than 1 listed).

4. How fast does rainwater infiltrate pervious areas of your site (if unknown, select the default value provided for your HSG)?

- ☐ ≤ 0.01 in/hr (HSG D)
- ☐ >0.01 to ≤ 0.1 in/hr (HSG C)
- ☐ >0.1 to ≤ 1 in/hr (HSG B)
- ☐ >1 in/hr (HSG A)
- ☐ Other (provide supporting documentation)_____ in/hr

Existing Conditions

5. What is the predominant slope of your project area:

- ☐ Flat (2% Slope)
- ☐ Moderately Flat (5% Slope)
- ☐ Moderately Steep (10% Slope)
- ☐ Steep (Above 15% Slope)

6. What is the existing Land Cover breakdown of your project area (must total 100%)?

____ % Forest (Stands of trees with adequate brush and forested litter cover)

____ % Meadow (Non-forested natural areas, scrub, and shrub rural vegetation)

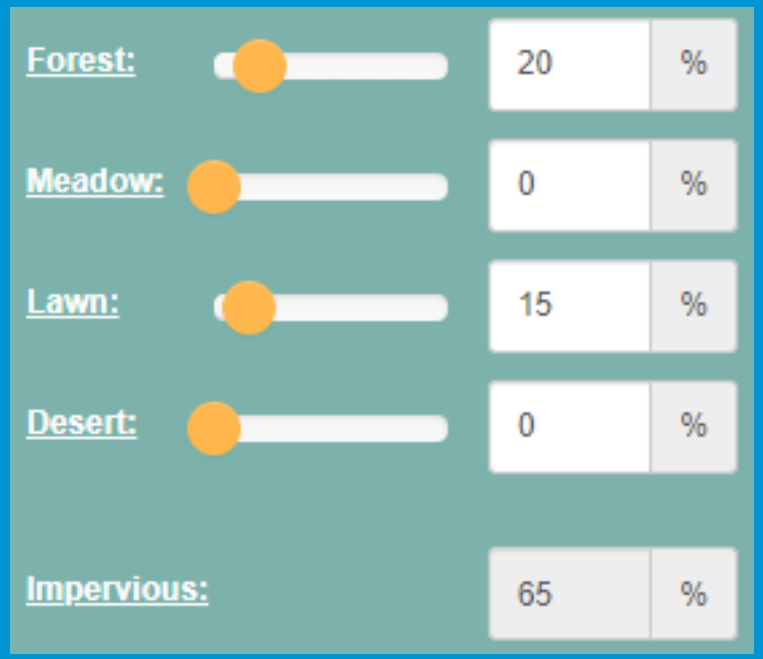
____ % Lawn (Sod lawn, grass, and landscaped vegetation)

____ % Impervious (Roofs, roads, sidewalks, parking lots and driveways…this should equal 100% less the sum of the above percentages)

NOTE: You will use the same exact data above when you run the USEPA Stormwater Calculator model for "Undeveloped Conditions". However, your percentage for "Impervious" must be added to and accounted for as "Lawn". The purpose of this is to mimic the results for a completely undeveloped site.

Existing Conditions

Upload the Calculator results for Existing Conditions **



Project size is 1.25-acres

Statistic	Current Scenario
Average Annual Rainfall (inches)	32.32
Average Annual Runoff (inches)	17.55

EXAMPLE

Northeast Ohio
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Existing Conditions

Existing Conditions average annual runoff (inches) **

17.55 inches

Existing Conditions average annual runoff volume (gallons) **

Gallons = (Project size in acres)(inches runoff)(325,851)

1.25 acres X 17.55 inches X 325,851 = 7,148,356 gallons

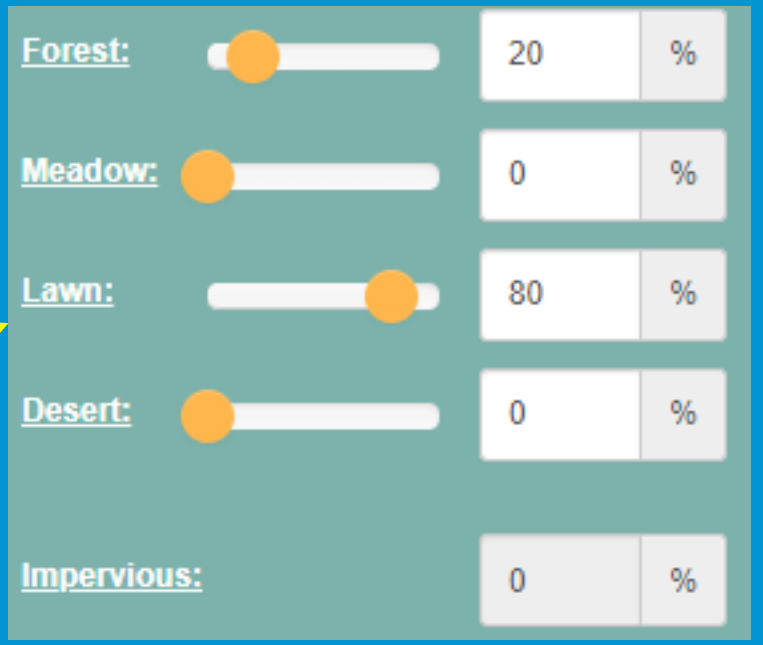
Undeveloped Conditions

Undeveloped Conditions – determine your average annual runoff for your project area with all existing forest, meadow and lawn areas accounted for, including all existing impervious areas accounted for as "lawn". Refer to the previously completed "Existing Conditions Worksheet" if running the Calculator (simply account for the impervious area percentage from this worksheet as "lawn"). This Calculator model run is needed to determine your "Flood Resilience" co-benefit score.

Upload the Calculator results for Undeveloped Conditions **

Undeveloped Conditions

All IMPERVIOUS is assumed to be LAWN



Statistic	Current Scenario	Baseline Scenario
Average Annual Rainfall (inches)	32.32	32.32
Average Annual Runoff (inches)	0.09	17.55

Undeveloped Conditions

Undeveloped Conditions average annual runoff (inches) **

0.09 inches

Undeveloped Conditions average annual runoff volume (gallons) **

Gallons = (Project size in acres)(inches runoff)(325,851)

1.25 acres X 0.09 inches X 325,851 = 36,658 gallons

Proposed GI Conditions

Proposed GI Conditions - determine your average annual runoff for your project area once all GI SCMs have been accounted for, including all proposed forest, meadow, lawn, and impervious areas.

* Upload the concept plan or the complete set of plan design sheets

Browse... No file selected.

Upload

* Upload the completed "GI SCM Proposed Conditions Worksheet", found here

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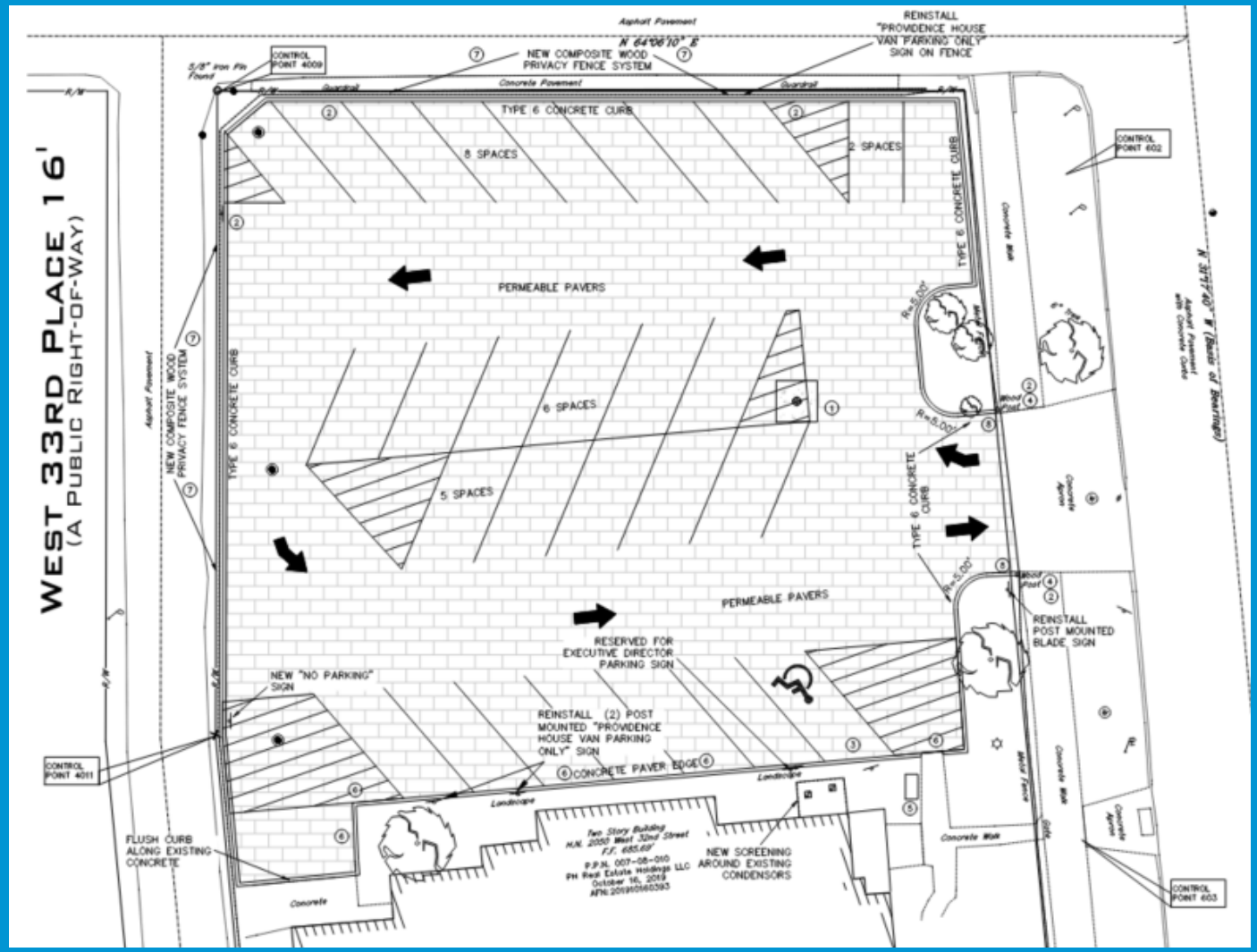
Upload

Proposed GI Conditions



Northeast Ohio
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Proposed GI Conditions

US EPA Stormwater Calculator Worksheet

GI SCM Proposed Conditions

Project Title:

What is the proposed land cover? **Note:** the footprints of green roof and permeable pavement areas should be accounted for as impervious.

_____% Forest (Stands of trees with adequate brush and forested litter cover)

_____% Meadow (Non-forested natural areas, scrub, and shrub rural vegetation)

_____% Lawn (Sod lawn, grass, and landscaped vegetation)

_____% Impervious (Roofs, roads, sidewalks, parking lots and driveways…should be 100% less the sum of the above percentages)

Proposed GI Conditions

List out and identify all proposed individual stormwater control measures (SCMs) for your project. If any type of SCM is proposed in multiple locations, provide a unique identifier for each (Example: 2 bioretention cells could be identified as BC-1 & BC-2). Refer to these identifier numbers on respective SCM worksheets. Use a separate worksheet for each unique SCM identifier.

Example: A project proposes a green roof (GR) and 2 distinct bioretention cells (BC). Flow off the green roof is discharged into one of the bioretention cells.

Example identifiers	Provide identifiers for your SCMs here:	
A. GR	A. _____	F. _____
B. BC-1	B. _____	G. _____
C. B-2	C. _____	H. _____
	D. _____	I. _____
	E. _____	J. _____

Proposed GI Conditions

Are you proposing a Treatment Train? (if applicable): Using the letters that correspond to your applicable SCM identifiers, describe how captured runoff is conveyed from one SCM to another (explain what drains to what). In the example above, A drains to B, and C has its own unique drainage area.

Proposed GI Conditions

From Project Information section

List each individual GI stormwater control measure (SCM) separately even if there are multiple of the same SCM type. i.e., BIORETENTION 1, BIORETENTION 2, GREEN ROOF, and etc.

GI SCM #1:	GI SCM #2:
GI SCM #3:	GI SCM #4:
GI SCM #5:	GI SCM #6:
GI SCM #7:	GI SCM #8:
GI SCM #9:	GI SCM #10:

GI SCM Proposed Conditions Worksheet

List out and identify all proposed individual stormwater control measures (SCMs) for your project. If any type of SCM is proposed in multiple locations, provide a unique identifier for each (Example: 2 bioretention cells could be identified as BC-1 & BC-2). Refer to these identifier numbers on respective SCM worksheets. Use a separate worksheet for each unique SCM identifier.

Example: A project proposes a green roof (GR) and 2 distinct bioretention cells (BC). Flow off the green roof is discharged into one of the bioretention cells.

Example identifiers

A. GR

B. BC-1

C. B-2

Provide identifiers for your SCMs here:

A. _____	F. _____
B. _____	G. _____
C. _____	H. _____
D. _____	I. _____
E. _____	J. _____

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Proposed GI Conditions

Upload a completed worksheet for each proposed GI SCM, found here- please provide the correct SCM ID * for each individual SCM listed on the "GI SCM Proposed Conditions Worksheet", found here, and merge all applicable worksheets into a single PDF file

Proposed GI Conditions

US EPA Stormwater Calculator Worksheet

Permeable Pavement

SCM ID: _____

Project Title:

What is the percentage of your project area's impervious area that will be conveyed to this SCM? Note: the actual footprint of your permeable pavement footprint should be considered impervious; also account for any other impervious areas that are conveyed to the permeable pavement footprint: _____%

What will be the pavement thickness (maximum of 12")? _____

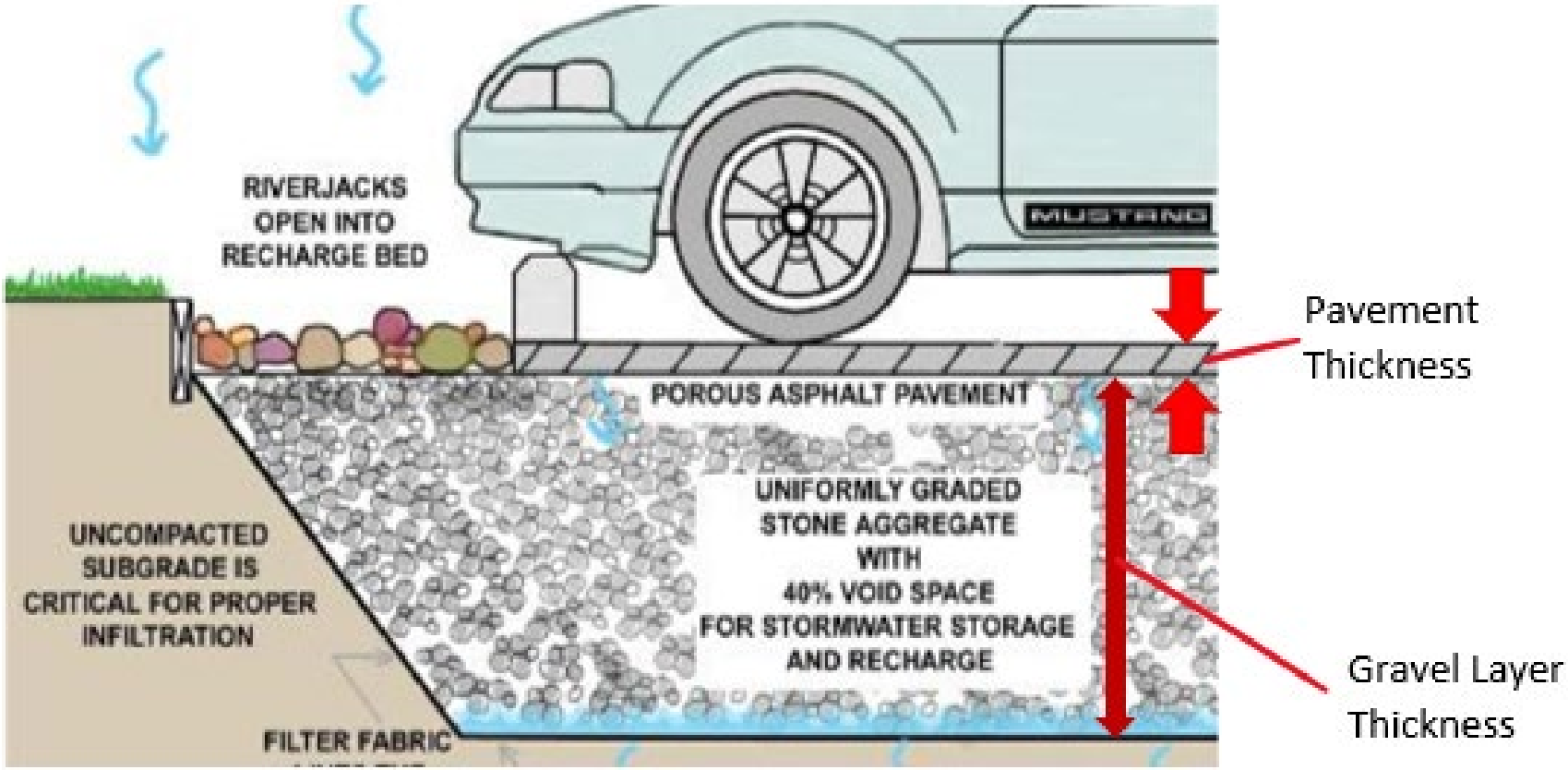
What will be the gravel layer thickness (maximum of 36")? _____

Capture ratio:

- What is the square footage of the SCM? _____Sq.Ft. (A)
- How much impervious area is draining to the SCM? _____Sq.Ft. (B)
- Calculate your capture ratio [(A/B) x 100] = _____%

Will pre-treatment of the runoff occur before entering the Permeable Pavement (YES or NO...if yes, please briefly explain)? _____

Proposed GI Conditions



Proposed GI Conditions

US EPA Stormwater Calculator Worksheet

Street Planters (Bioretention)

SCM ID: _____

Project Title:

What is the percentage of your project area's impervious area that will be conveyed to this SCM? _____%

What is the ponding height (distance from top of mulch to the first overflow...maximum of 24")? _____

What is the soil media thickness (maximum of 36")? _____

What is the soil media conductivity (maximum of 20 inches/hour)? _____

- Note: Meeting the soil media specifications in Ohio's Rainwater & Land Development Manual results in an estimated conductivity of up to 4 in/hr

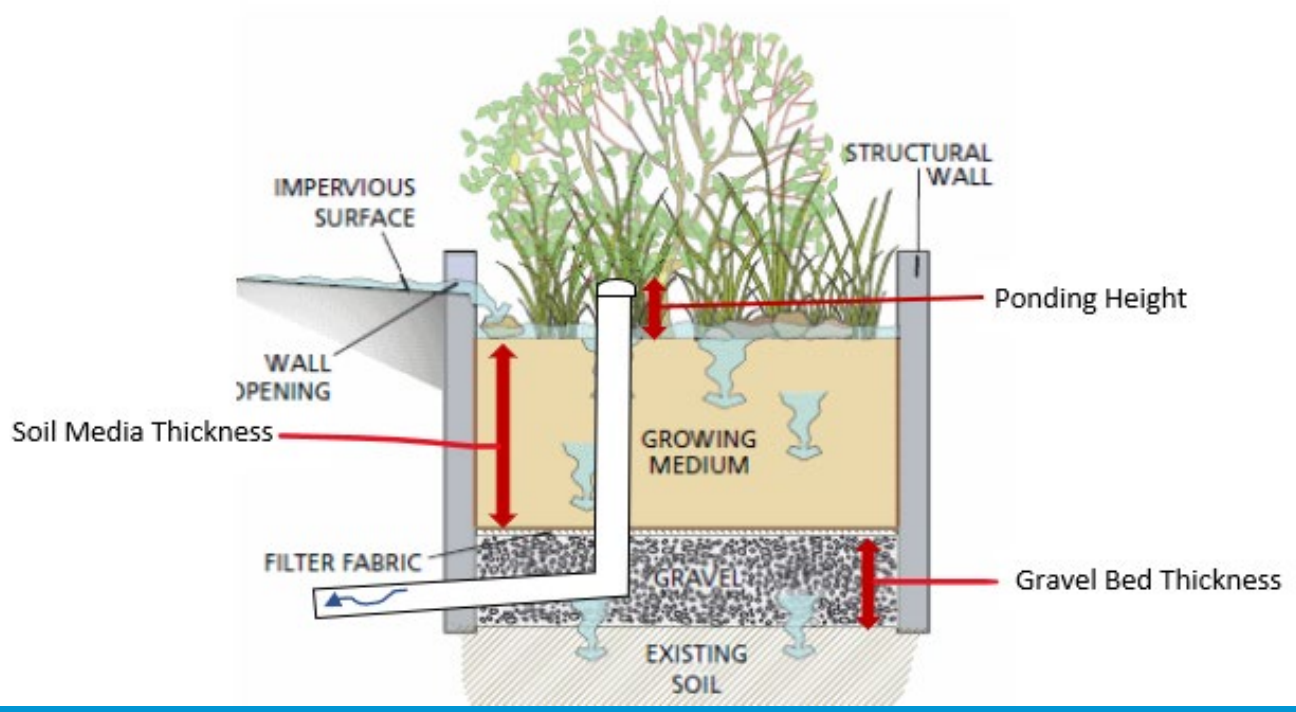
What is the gravel bed thickness (maximum of 36")? _____

Capture ratio:

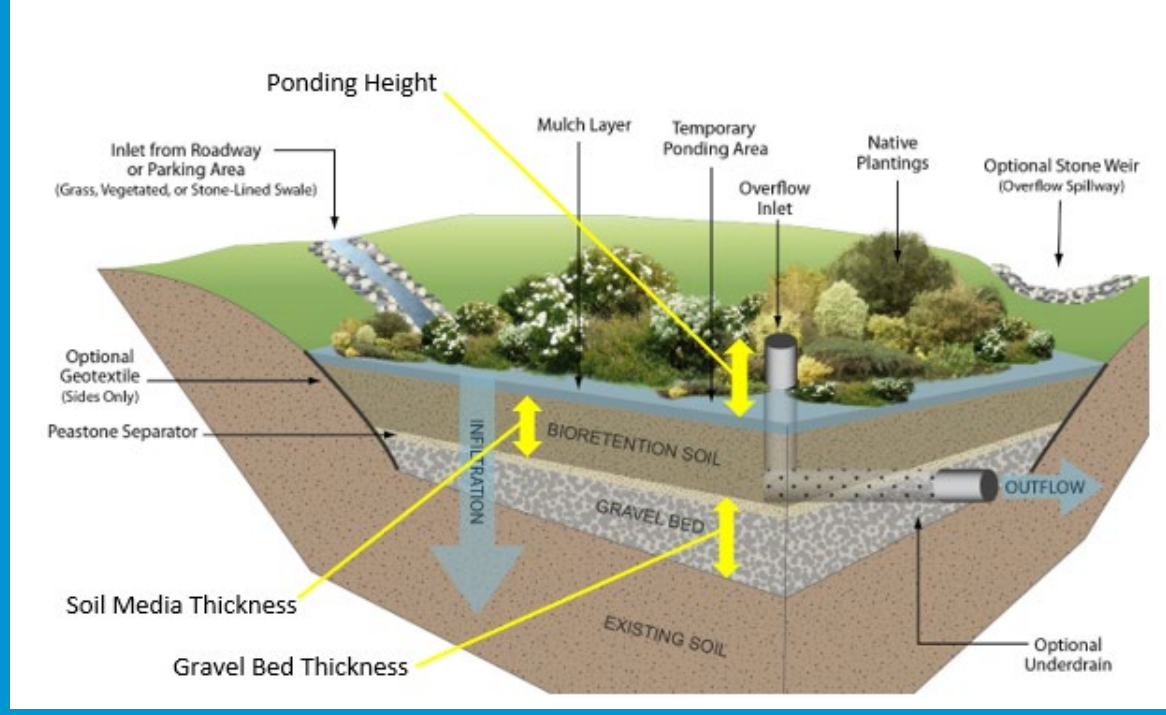
- What is the square footage of the SCM? _____Square Feet (A)
- How much impervious area is draining to the SCM? _____Square Feet (B)
- Calculate your capture ratio [(A/B) x 100] = _____%

Proposed GI Conditions

Street Planter Detail



Bioretention Cell Detail



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Proposed GI Conditions

Worksheet for each proposed SCM

US EPA Stormwater Calculator Worksheet

Street Planters (Bioretention)

SCM ID: _____

Project Title:

What is the percentage of your project area's impervious area that will be conveyed to this SCM? _____%

What is the ponding height (distance from top of mulch to the first overflow...maximum of 24")? _____

What is the soil media thickness (maximum of 36")? _____

What is the soil media conductivity (maximum of 20 inches/hour)? _____

- Note: Meeting the soil media specifications in Ohio's Rainwater & Land Development Manual results in an estimated conductivity of up to 4 in/hr

What is the gravel bed thickness (maximum of 36")? _____

Capture ratio:

- What is the square footage of the SCM? _____Square Feet (A)
- How much impervious area is draining to the SCM? _____Square Feet (B)
- Calculate your capture ratio [(A/B) x 100] = _____%

GI SCM Proposed Conditions Worksheet

List out and identify all proposed individual stormwater control measures (SCMs) for your project. If any type of SCM is proposed in multiple locations, provide a unique identifier for each (Example: 2 bioretention cells could be identified as BC-1 & BC-2). Refer to these identifier numbers on respective SCM worksheets. Use a separate worksheet for each unique SCM identifier.

Example: A project proposes a green roof (GR) and 2 distinct bioretention cells (BC). Flow off the green roof is discharged into one of the bioretention cells.

Example identifiers	Provide identifiers for your SCMs here:	
A. GR	A. _____	F. _____
B. BC-1	B. _____	G. _____
C. B-2	C. _____	H. _____
	D. _____	I. _____
	E. _____	J. _____

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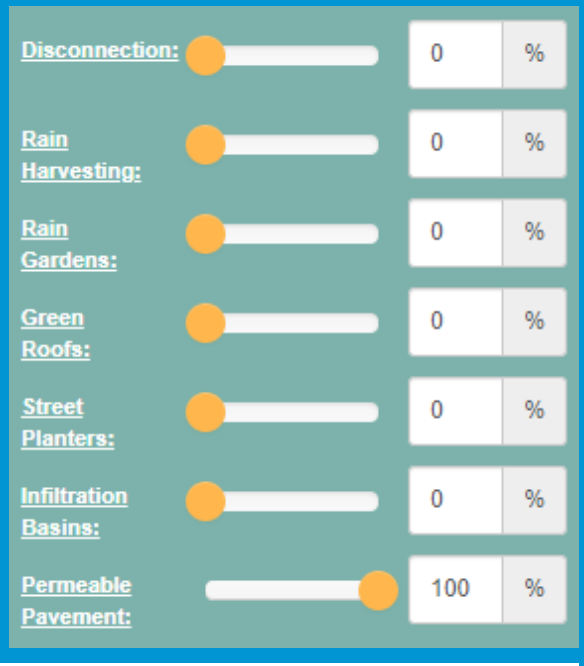
Proposed GI Conditions

Upload the Calculator results for Proposed GI Conditions **

EXAMPLE



Statistic	Current Scenario	Baseline Scenario
Average Annual Rainfall (inches)	32.32	32.32
Average Annual Runoff (inches)	0.02	17.55

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Proposed GI Conditions

Proposed GI Conditions average annual runoff (inches) **

0.02 inches

Proposed GI Conditions average annual runoff volume (gallons) **

Gallons = (Project size in acres)(inches runoff)(325,851)

1.25 acres X 0.02 inches X 325,851 = 8,146 gallons

Flood Resiliency Determination

- 2 of the possible 3 points
- The project prevents the post-development average annual runoff from exceeding the pre-development (i.e., undeveloped) average annual runoff, as determined by the USEPA Stormwater Calculator. For the purpose of mimicking an undeveloped pre-development condition, all existing impervious areas must be accounted for as "lawn"

Post-development average annual runoff (with all GI SCMs)

0.02 inches

2 points awarded!!!

Pre-developed average annual runoff (undeveloped conditions)

0.09 inches

Stormwater Captured by GI SCMs

- Determine how much runoff volume is removed from the combined sewer system

Post-development average annual runoff (with all GI SCMs)

0.02 inches

Existing Conditions average annual runoff

17.55 inches

Gallons = (Project size in acres)(Ex.Cond. inches – w/GI SCMs inches)(325,851)

1.25 acres X (17.55 - 0.02 inches) X 325,851 = 7,140,210 gallons

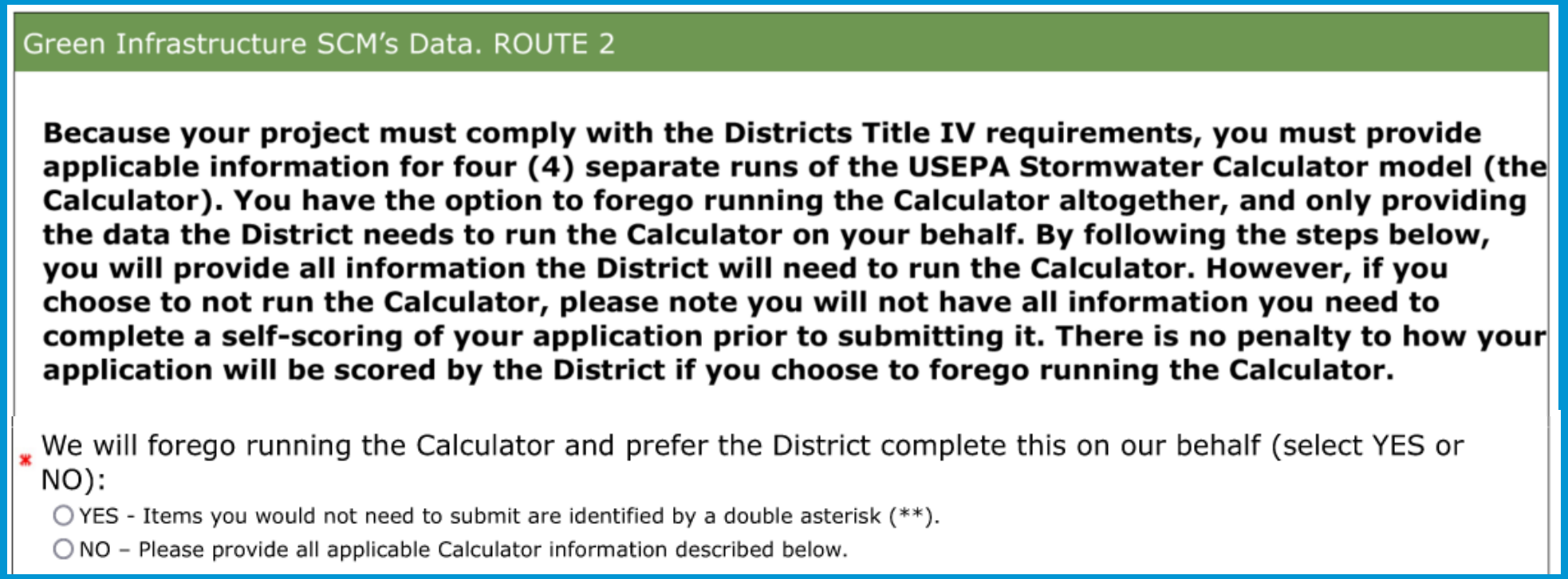
Which best describes your GI project:

1 - A retrofit of existing conditions to incorporate GI features with no net increase in impervious area (Title IV requirements do not apply).

2 - A new or re-development project of at least 0.5-acre disturbance that will result in a net increase of impervious area (Title IV requirements apply).

-Select One-

Submit



EXISTING CONDITIONS

UNDEVELOPED CONDITIONS

PROPOSED TITLE IV CONDITIONS

PROPOSED GI CONDITIONS

Proposed Title IV Conditions

Proposed Title IV Conditions - determine your average annual runoff for your project area's proposed improvements, including all proposed forest, meadow, lawn, and impervious areas. This will be used to determine the estimated amount of stormwater runoff that will result without the benefit of any GI SCMs (Title IV only requires the rate of discharge be managed, not the volume)

* Upload the concept plan or the complete set of plan design sheets
  NOTE: Although these sheets will show proposed GI SCMs, this run of the Calculator model will assume they are not included

* Upload the completed "Title IV Proposed Conditions Worksheet", found here

Proposed Title IV Conditions

US EPA Stormwater Calculator Worksheet

Title IV Proposed Conditions

Project Title:

What is the proposed land cover?

____% Forest (Stands of trees with adequate brush and forested litter cover)

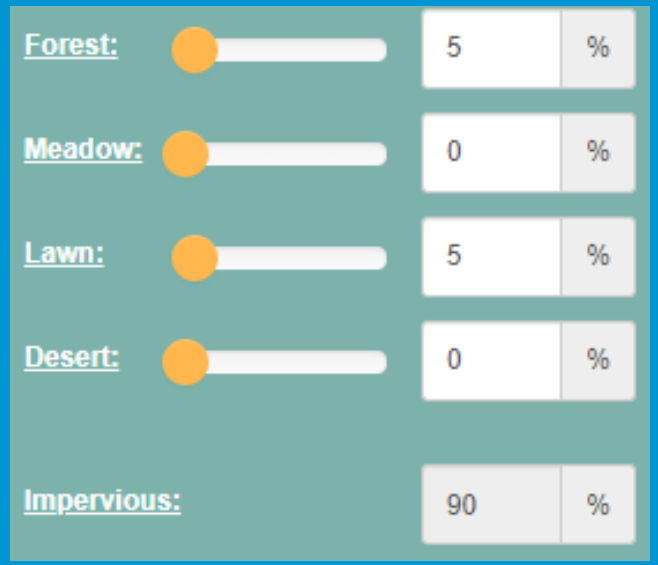
____% Meadow (Non-forested natural areas, scrub, and shrub rural vegetation)

____% Lawn (Sod lawn, grass, and landscaped vegetation)

____% Impervious (Roofs, roads, sidewalks, parking lots and driveways...should be 100% less the sum of the above percentages)

NOTE: NEORSD's Title IV Code only requires the project to manage the rate of stormwater discharge (e.g., slow release of captured volume), not the volume discharged. Therefore, it can be assumed the proposed land covers summarized above will result in the maximum volume of stormwater runoff even if the stormwater is conveyed to a detention facility prior to discharge. Your subsequent run of the USEPA Stormwater Calculator model using the "GI SCM Proposed Conditions Worksheet" will account for volume-reducing green infrastructure SCMs.

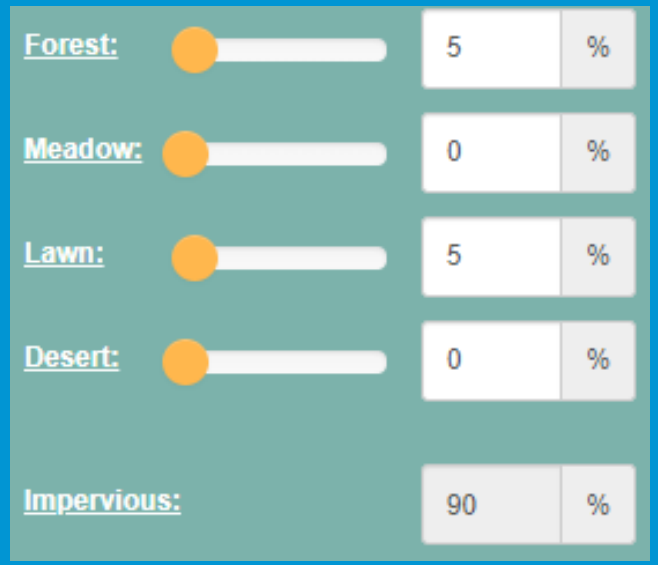
Proposed Title IV Conditions



- Increase in impervious area triggers the need to meet Title IV requirements
- Represents full site improvements, but ignores impact of any GI SCMs

Statistic	Current Scenario	Baseline Scenario
Average Annual Rainfall (inches)	32.32	32.32
Average Annual Runoff (inches)	24.23	17.55

Proposed Title IV Conditions



- We assumed 50% of the proposed impervious area would be permeable pavers

Statistic	Current Scenario	Baseline Scenario
Average Annual Rainfall (inches)	32.32	32.32
Average Annual Runoff (inches)	12.12	17.55

Flood Resiliency Determination

- 2 of the possible 3 points
- The project prevents the post-development average annual runoff from exceeding the pre-development (i.e., undeveloped) average annual runoff, as determined by the USEPA Stormwater Calculator. For the purpose of mimicking an undeveloped pre-development condition, all existing impervious areas must be accounted for as “lawn”

Post-development average annual runoff (with all GI SCMs)

12.12 inches

Pre-developed average annual runoff (undeveloped conditions)

0.09 inches

2 points not awarded

Stormwater Captured by GI SCMs

- Determine how much runoff volume is removed from the combined sewer system (fully improved site with and without GI SCMs)

Post-development average annual runoff (with all GI SCMs)

12.12 inches

Post-development average annual runoff (without GI SCMs)

24.23 inches

Gallons = (Project size in acres)(without GI inches – with GI SCMs inches)(325,851)

1.25 acres X (24.23 – 12.12 inches) X 325,851 = 4,932,570 gallons

Project Narrative

Project Narrative

Project Schedule

* Project Introduction

Introduction (500 word maximum)Provide a brief introduction to the organization that would be delivering the proposed GIG project.

* Project Summary

Describe the GIG project and include the following information:

- Objectives and expected outcomes
- Proposed project area improvements, and the anticipated function(s) of the GI SCMs
- Expected benefits (i.e., amount of treated impervious area, estimated volume of stormwater captured annually, etc.). **NOTE:** You are not required to run the USEPA Stormwater Calculator model, so only include results here as applicable.
- Any additional details that make the project unique (e.g., nearby complimentary projects, how the project supports local planning goals, etc.)

Project Schedule

* Upload a detailed schedule of remaining work to be done (i.e., project tasks and deliverables), up to and including the end of the first-year maintenance period.

Project Schedule

* Describe all known and anticipated permitting requirements for the project (e.g., building permit, sidewalk permit, zoning restrictions, etc.)

A building permit from the local jurisdiction typically includes:

- Zoning review
- Public Works review (Water Pollution Control in Cleveland)
- Traffic review
- Planning review
- Councilperson review
- NEORSD review

For projects situated in Cleveland:

- Water Pollution Control (WPC)
- Neighborhood Planning Review Committees
- City of Cleveland Planning Commission
- Coordination with FirstEnergy or Cleveland Public Power
- Traffic/Transportation
- Tree preservation plan

Other Permits:

- **Temporary ROW permit**
- **Sidewalk permit**
- **Floodplain permit**
- **Ohio EPA NPDES CGP**

Project Team

* List all team members and their professional credentials

* For each team member, describe and/or provide a list of completed GI projects they have been involved in, and briefly summarize their role in each project.

Project Photos

* Upload current photos of the project site. Please provide photos as PDFs and merge all photos into a single PDF file prior to uploading.

Provide proposed project renderings(if available)

Ability to Provide Long-Term Maintenance

* Describe who owns the land (current and/or future) and who will have long-term control of the property and therefore be responsible for short and long-term maintenance of the GI SCMs (the party who will sign

* Provide a summary of anticipated maintenance needs for proposed GI SCMs (i.e., annual hours, necessary skills and equipment, etc.)

Bioretention Cell Maintenance	
Annual hours	• 192 hours (2 people @ 8 hours each/month)
Skills needed	• Plant identification (weeds vs desired species) • Plant care (watering, pruning, splitting, winterizing) • Digging/mulching/re-planting
Equipment needed	• Basic hand tools (shovel, rakes, pruners, etc.) • Wheelbarrows • Small loader • Dump truck/trailer

If volunteers will be relied on for on-going maintenance of the GI SCMs, describe your plan to recruit, train and sustain a volunteer base.

If there is an existing volunteer program, please describe past success stories. Do you plan to establish a new volunteer program? How will volunteers be recruited/replenished? What is your plan to train the volunteers on GI SCM maintenance?

* Provide the proposed Operation and Maintenance Plan for the GI SCMs

Bioretention Cell Operation & Maintenance Plan SAMPLE

Proper function of a bioretention cell is dependent on the planting soil continuing to drain as well as plant survival. Maintaining the pretreatment area and minimizing erosion will extend the function of the planting soil.

[Only include the design features that apply – customize this table as necessary]

Design Feature	Frequency of Inspection (minimum)	What to Look For
Access Easement	Annually	• Ensure there are no encroachments into or damage to the access easement that would prohibit equipment from reaching the cell to perform maintenance activities
Plant Stock	First growing season and during extended drought periods – every 2 weeks	• General health of the plants – water as necessary
	Every 2 months during growing season	• Establishment of weeds and volunteer plants – remove as necessary
	Late Winter	• Inspect plants for the need to prune and/or split for appearance
Mulch Layer	Annually	• Ensure top layer of mulch is loose, free of accumulated debris and has a minimum 3-inch uniform depth
Planting Soil	Annually	• Maintain a pH of 5.2 – 7.0 • Ensure the top of the soil layer is not clogged with debris/sediments. The presence of standing water or saturated soil 40 hours following a rain event is an indication the soil mix may be clogged and may need to be replaced.

Education and Co-Benefits

* Describe the proposed placement of on-site educational signage in relation to the location of GI SCMs.

Education and Co-Benefits

* Describe the proposed placement of on-site educational signage in relation to the location of GI SCMs.

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Education and Co-Benefits

Describe accessibility by the general public and/or property stakeholders to the GI SCMs, taking into account any site limitations (e.g., limited hours of operation, private property, where SCMs are situated, etc.)

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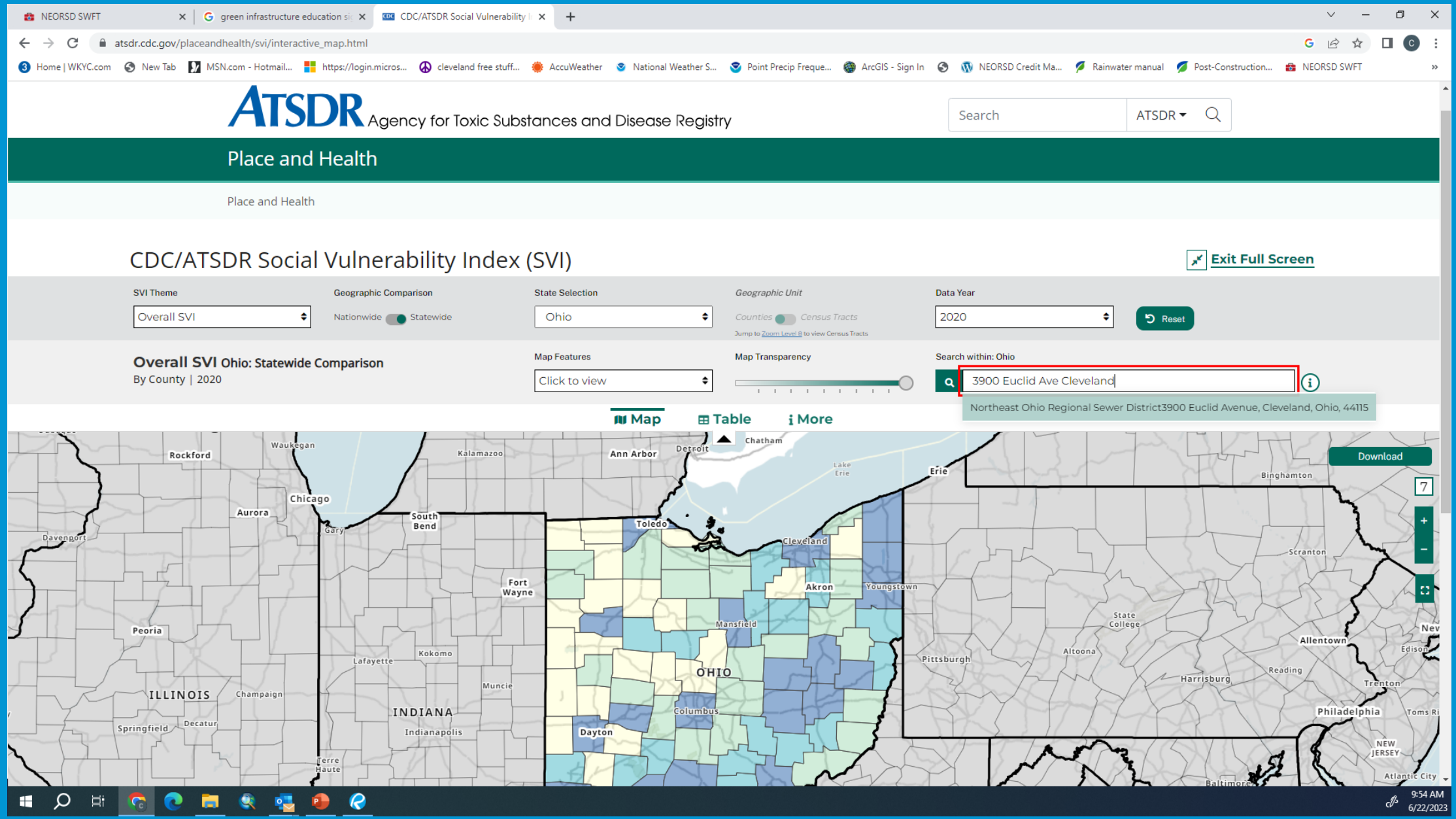
Fill out the co-benefits you believe your project will achieve and provide the suggested supporting documentation:

* Upload the Social Vulnerability Index (SVI) Score of your site:
To access the SVI map, select this link

* Upload Social Vulnerability Index (SVI) Score Screenshot

HTTPS://WWW.ATSDR.CDC.GOV/PLACEANDHEALTH/SVI/INTERACTIVE_MAP.HTML



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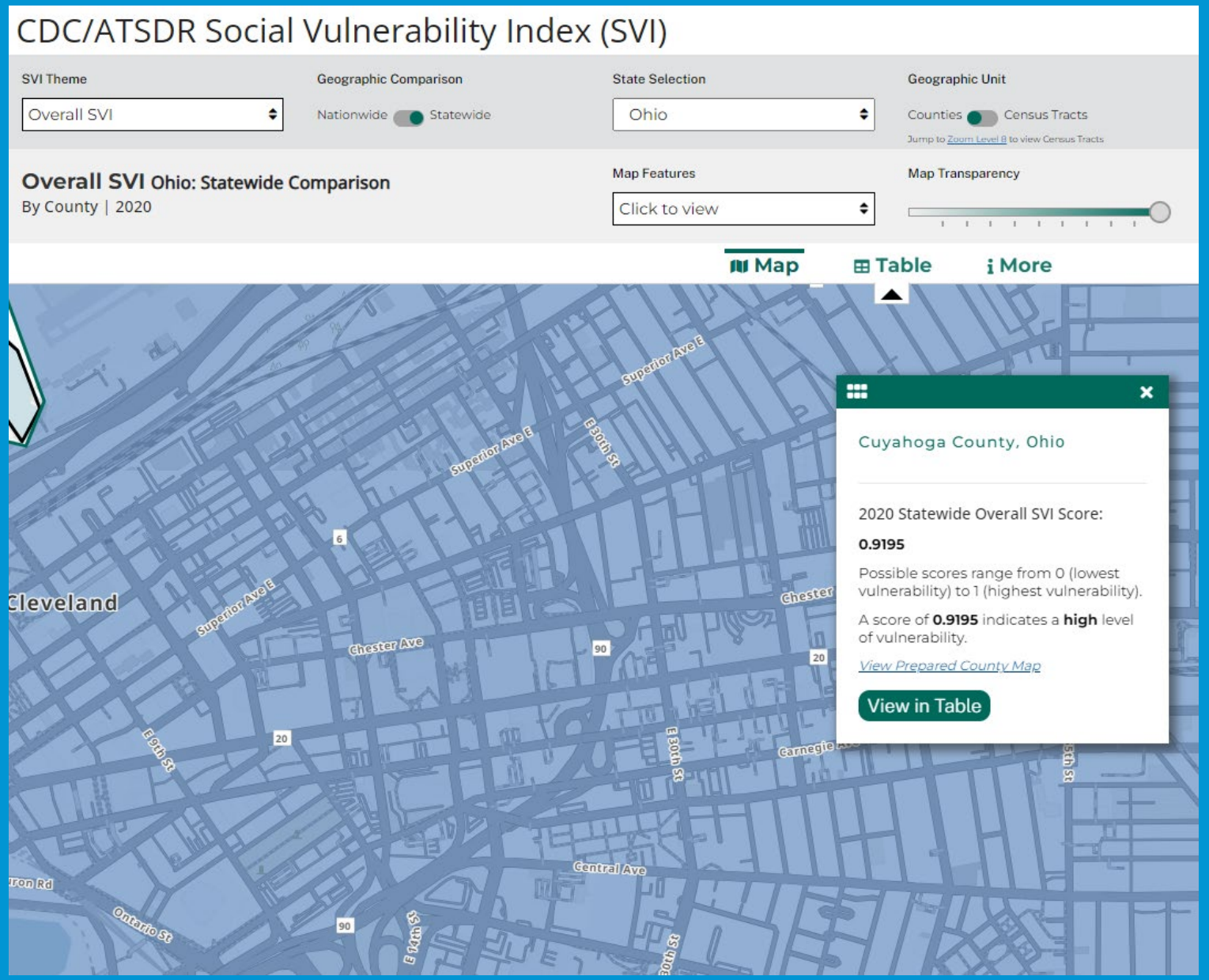

Criteria	Points
SVI score within the project area >0.75	3
SVI score within the project area >0.50 & ≤ 0.75	2
SVI score within the project area >0.250 & ≤ 0.50	1
SVI score within the project area ≤ 0.25	0

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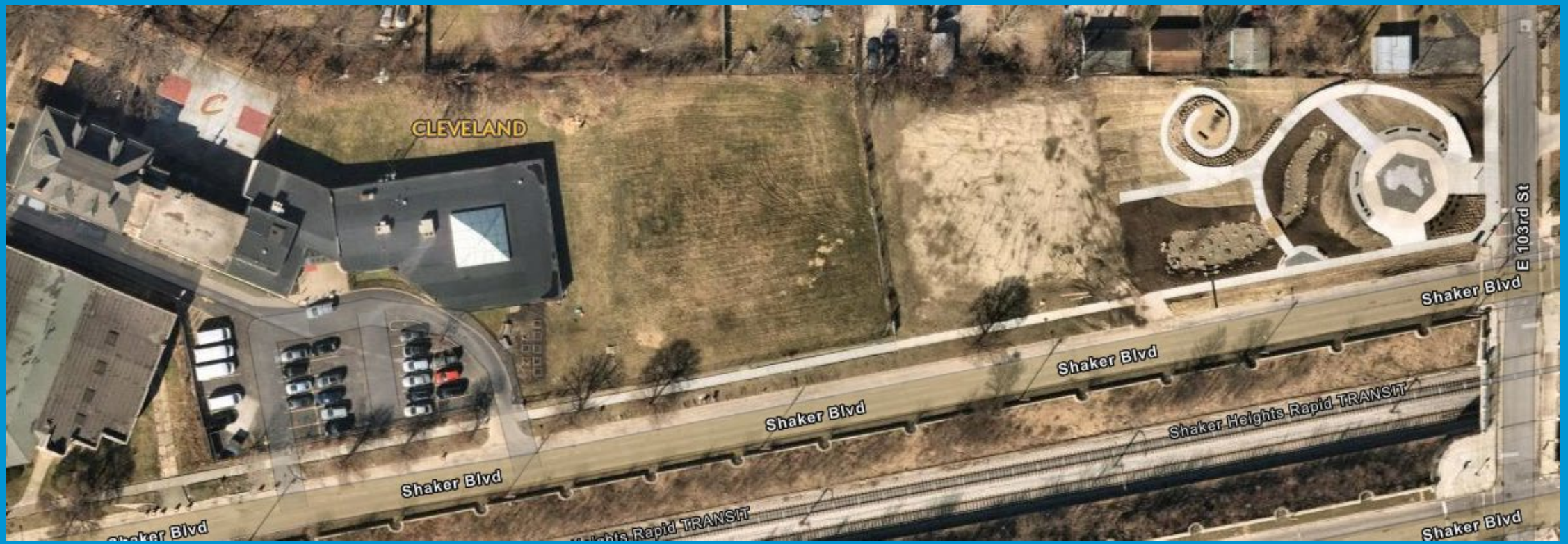
Fill out the co-benefits you believe your project will achieve and provide the suggested supporting documentation:

Public access, open space, and recreation:

Describe how public access, open space, and recreation co-benefits will be achieved. Consider how the general public will be able to access your project area and how this will be advertised (properties must be open for a minimum of 7 hours per weekend day or 3 hours per weekday). This can also be achieved by integrating public gathering spaces into project design, by enhancing an existing public space, or by creating new opportunities to socialize, gather, recreate and interact with nature in a publicly accessible space.



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Fill out the co-benefits you believe your project will achieve and provide the suggested supporting documentation:

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Fill out the co-benefits you believe your project will achieve and provide the suggested supporting documentation:

Community engagement, collaboration and placemaking:

Describe how community engagement, collaboration and placemaking co-benefits will be achieved. In addition to the property owner and technical team, consider including members from the community or property stakeholders on the grant team. Describe your strategy that prioritizes community members' input throughout the design process, including workshops, design charettes, or other outreach events that aim to integrate the community's vision and goals into the green infrastructure design.

Fill out the co-benefits you believe your project will achieve and provide the suggested supporting documentation:

GI job training: Describe how GI job training co-benefits will be achieved. Consider providing a long-term green infrastructure job training program or by serving as a training site for trainees learning about the design, construction, maintenance, or monitoring of green infrastructure. Projects that select this co-benefit must be open and accessible to trainees and their instructors for a minimum of 16 hours per year (during business hours).

Fill out the co-benefits you believe your project will achieve and provide the suggested supporting documentation:

Potable water supply:

Describe how water supply co-benefits will be achieved by collecting, treating, and using rainwater or stormwater to satisfy non-potable water demands (e.g., landscape irrigation, toilet flushing, etc.). Harvesting tanks must be able to hold the volume equal to a 1-inch rainfall from the contributing drainage area, and supporting calculations confirming there is a demand for this volume every week for at least 50% of the calendar year must be provided.

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1-inch of rainfall on a 1000 square foot roof will yield approximately 600 gallons of runoff

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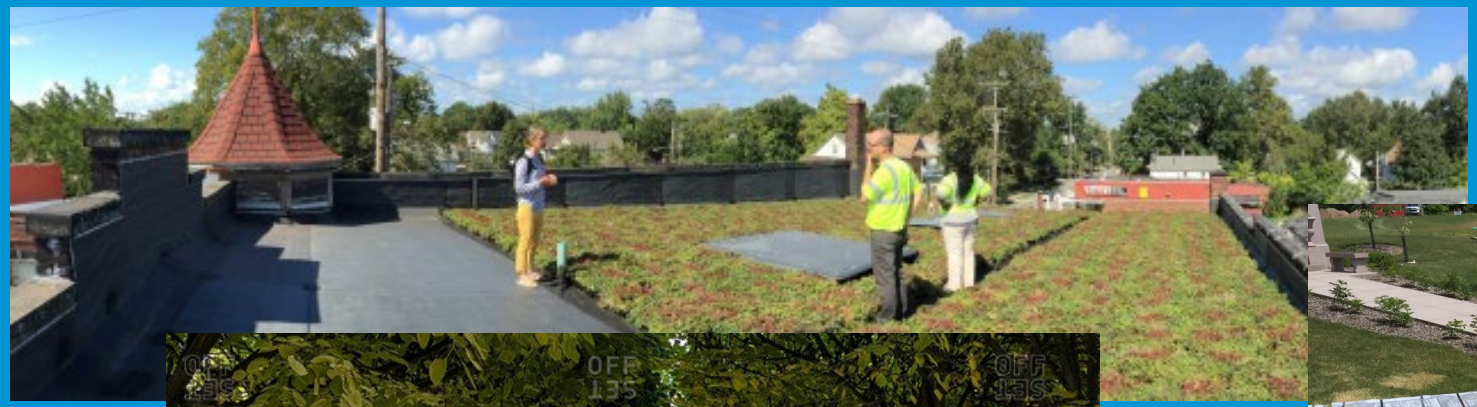
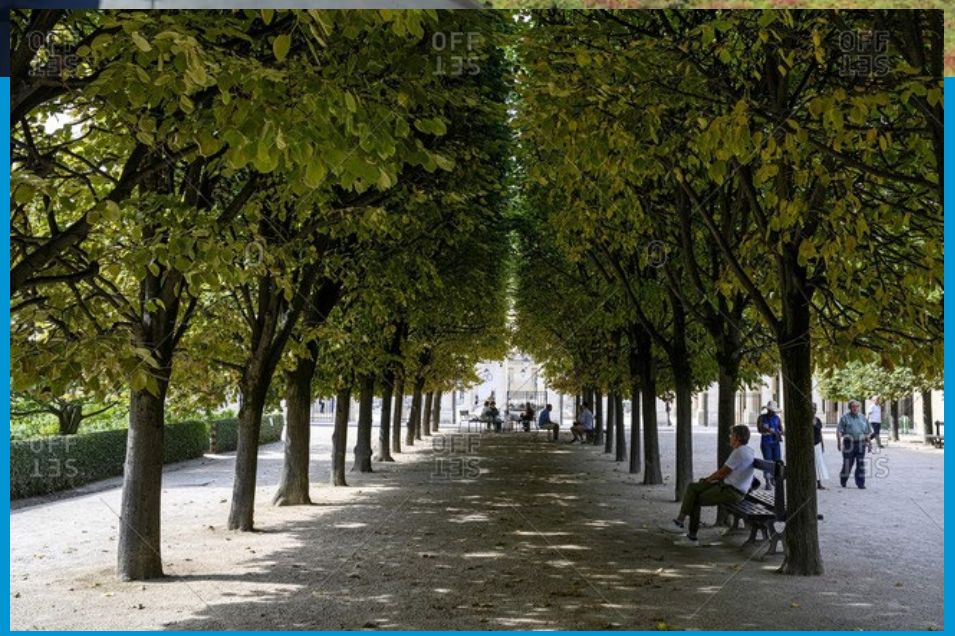
Urban Heat Resilience:

Urban Heat Resilience co-benefits can be achieved if any portion of your project area falls within a priority heat resilience area recognized by the District, by achieving a 10% net decrease in impervious surfaces, or by achieving a net increase of at least 3 shade trees from the District's approved list. To access the priority urban heat resilience map, select this link: (placeholder for map link and instructions to upload a screenshot) UPLOAD (required if selecting this co-benefit)





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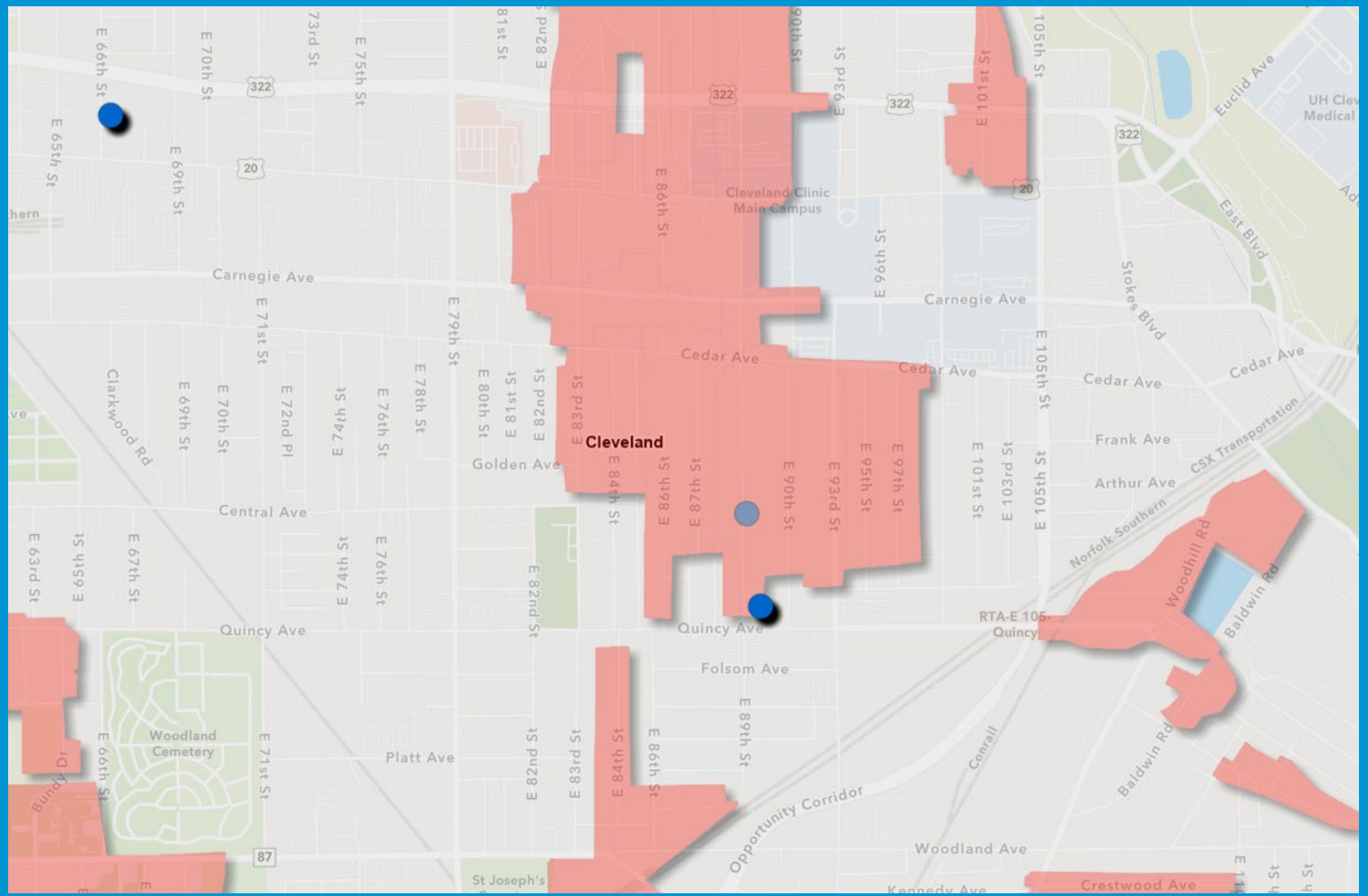
Large Trees

50' and over

Scientific Name	Common Name	Growth Rate	Spread	Form	CHARACTERISTICS: Evergreen	CHARACTERISTICS: Native to eastern N. America
Abies nordmanniana	Nordmann fir	slow	30'	△	●	
Acer x freemanii [Autumn Blaze]*	Freeman maple	fast	40'	⬭		●
Acer rubrum	red maple	moderate	40'	⬭		●
Aesculus flava	yellow buckeye	moderate	50'	⬭		●
Betula nigra [Heritage]	river birch	fast	50'	△		●
Betula nigra [City Slicker]	river birch	fast	50'	△		●
Cedrus libani var. stenocoma	cedar of Lebanon	slow	50'	△	●	

Urban Flooding Resilience:

Urban Flooding Resilience co-benefits can be achieved if any portion of your project area falls within a priority sewershed recognized by the District. To access the priority sewershed map, select this link: (placeholder for map link and instructions to upload a screenshot) UPLOAD (required if selecting this co-benefit)



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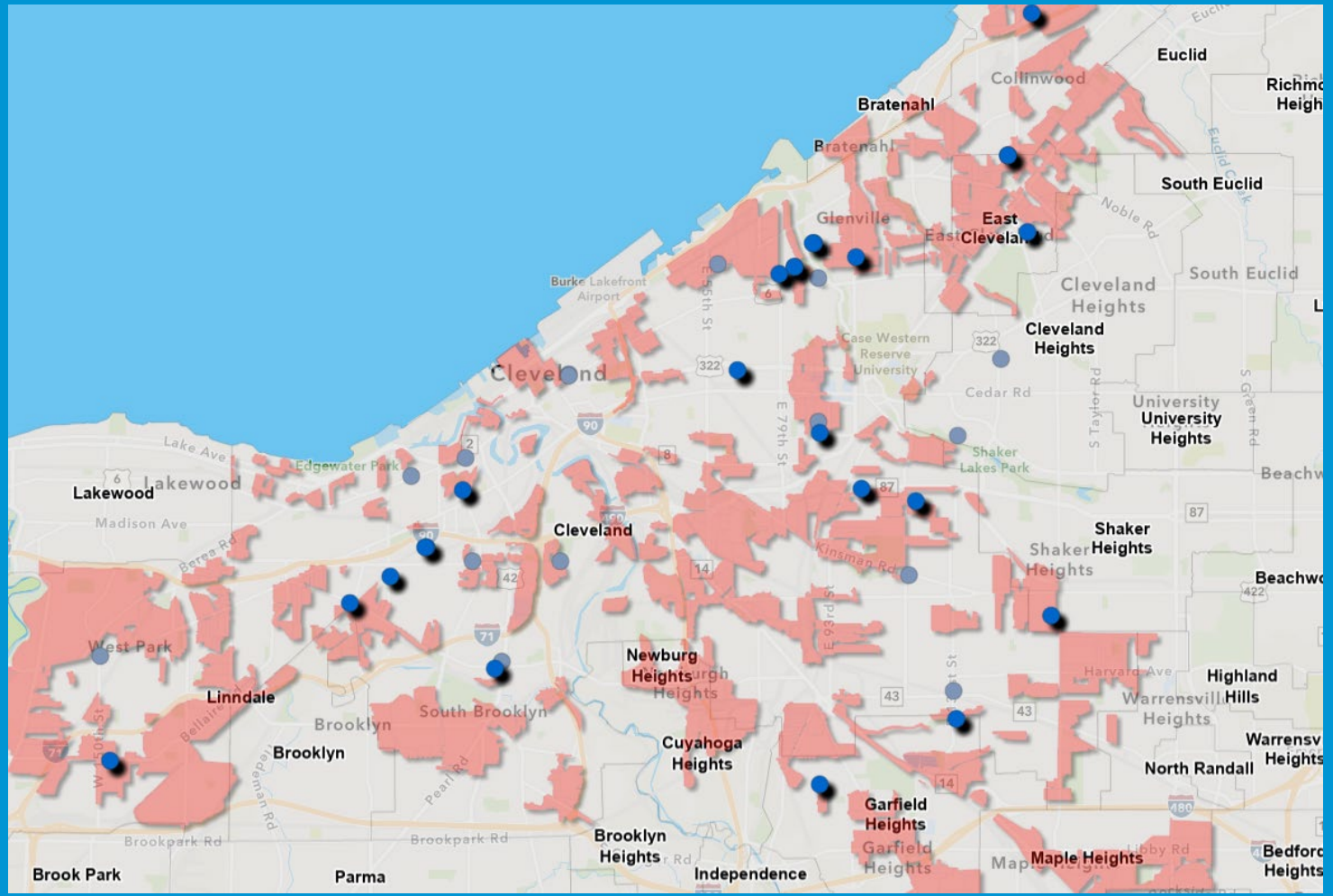

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Biodiversity:

Describe how biodiversity co-benefits will be achieved. Consider the project's landscape planting plan and how it is integrated into the design through features such as native pollinator gardens, habitat connectivity plans, and increased tree canopy. Also consider identifying specific native species that the project is designed for and providing a plant palette selected to attract that species.

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Budget

Budget Information

* Provide the requested grant amount (account for design and/or construction + 1st-year maintenance expenses; maximum of $300,000*):
The District will consider requests that exceed the maximum on a case-by-case basis.

* Provide the total cost to design and/or construct eligible expenses related to the GI SCMs of your project [If your project does not involve improvements beyond what is necessary to construct functional GI SCMs (for example, you are converting an existing asphalt parking lot to permeable pavement), your GI SCM project cost will likely equal your total project cost. However, if your project involves the construction of additional improvements with ineligible expenses (e.g., a new apartment building with a permeable parking lot), we only want to know the portion of your budget earmarked for the GI SCM (the permeable parking lot in this example), and not the entire property improvements]:

If your requested grant amount is less than your GI SCM project cost, describe the sources of funding that will make up the difference to cover the full cost of GI SCMs (including in-kind), and provide verification when these funds were secured, or the estimated time frame they will be secured.
NOTE: All funding must be secured by 12-31-23

Provide any applicable supporting documents

Browse... No file selected.

Upload

Grant funds can be used to cover all project costs related to the construction of the proposed green infrastructure facilities. Grant funds cannot be used to pay for non-green infrastructure project elements, such as play equipment or furnishings.

Eligible and ineligible costs may include, but are not limited to:

Eligible Costs

- Bid items related to green infrastructure
  - BMPs (surface and subsurface):
    - Soil
    - Aggregates (stone, gravel, sand, etc.)
    - Plants
    - Trees
    - Concrete
    - Excavation
    - Grading
    - Underdrains
    - Irrigation

Ineligible Costs

- On-going maintenance beyond first-year maintenance (including any contractor maintenance period)
- Purchase of maintenance equipment (e.g., special snowplow for pavers). Up to $500 of first-year maintenance funding can be allocated for the purchase of maintenance-related equipment, subject to District approval prior to purchase for reimbursement.
- Non-green infrastructure components, including by not limited to:
    - Decorative items
    - Benches
    - Play equipment
    - Lighting
- Structural improvements to support green roof systems (i.e., rafters & trusses)
- Monitoring or research
- Land acquisition costs

* Describe specifically what your requested GI Grant Program funding will be used for

Word count 0 of 500

* Provide your detailed design and/or construction budget:

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* Provide your detailed maintenance budget (NOTE: provide the 1st-year budget separate from the long-term maintenance budget. The long-term maintenance budget should reflect the average annual cost over the following 10 years):

Project Educational Signs	2	EA	$1,000.00	$2,000.00	$2,000.00
General Conditions & Mobilization, asphalt demo	1	LS	$5,985.00	$5,985.00	$5,985.00
SWPP	1	LS	$550.00	$550.00	$550.00
Downspout disconnection (external)	1	LS	$1,800.00	$1,800.00	$1,800.00
Downspout disconnection (internal to building)	1	LS	$2,785.00	$2,785.00	$2,785.00
Storm sewer connection to e. 185TH existing sewers	1	LS	$2,875.00	$2,875.00	$2,875.00
Underground Storage with gravel	1	LS	$28,500.00	$28,500.00	$28,500.00
Bioretention (on top of underground storage)	779	SF	$25.00	$19,462.50	$19,462.50
Excavation and Embankment, Including all Excavation Hauled)	1	LS	$7,650.00	$7,650.00	$7,650.00
Asphalt Pavement with stone	2023	SY	$32.00	$64,743.11	$64,743.11
Concrete Walk	500	SF	$6.00	$3,000.00	$3,000.00
Concrete Curb Stop	42	EA	$90.00	$3,780.00	
ADA Signage & Handicap Marker	2	EA	$200.00	$400.00	
Parking Lot Markings	1	LS	$950.00	$950.00	
Concrete drive apron	2	EA	$2,500.00	$5,000.00	
Columns	10	EA	$600.00	$6,000.00	
Fencing - Privacy	96	LF	$55.00	$5,280.00	
Fencing - parking lot	230	LF	$40.00	$9,200.00	
Landscaping	1	LS	$5,746.00	$5,746.00	$5,746.00
Lighting	2	EA	$3,500.00	$7,000.00	
			Subtotal	$182,706.61	
Contingency (20%)	1	LS	$36,541.32	$36,541.32	$36,541.32
Design & CA Support Services, including survey, design, calculations, interpretation sign design, one public O&M session, and as builts and review with the District	1	LS		$58,765.00	$58,765.00
Permits (2%)	1	LS	$3,654.13	$3,654.13	$3,654.13
			PROJECT COSTS SUBTOTAL	**$281,667.07**	
Requested construction items for Grant (items in green)					
				NEORSD GIG Grant Request	$244,057.07

Northeast Ohio
Regional Sewer District

NEORSD Green Infrastructure Grants Program

Preproposal Workshop for the 2023 GI Grants funding round

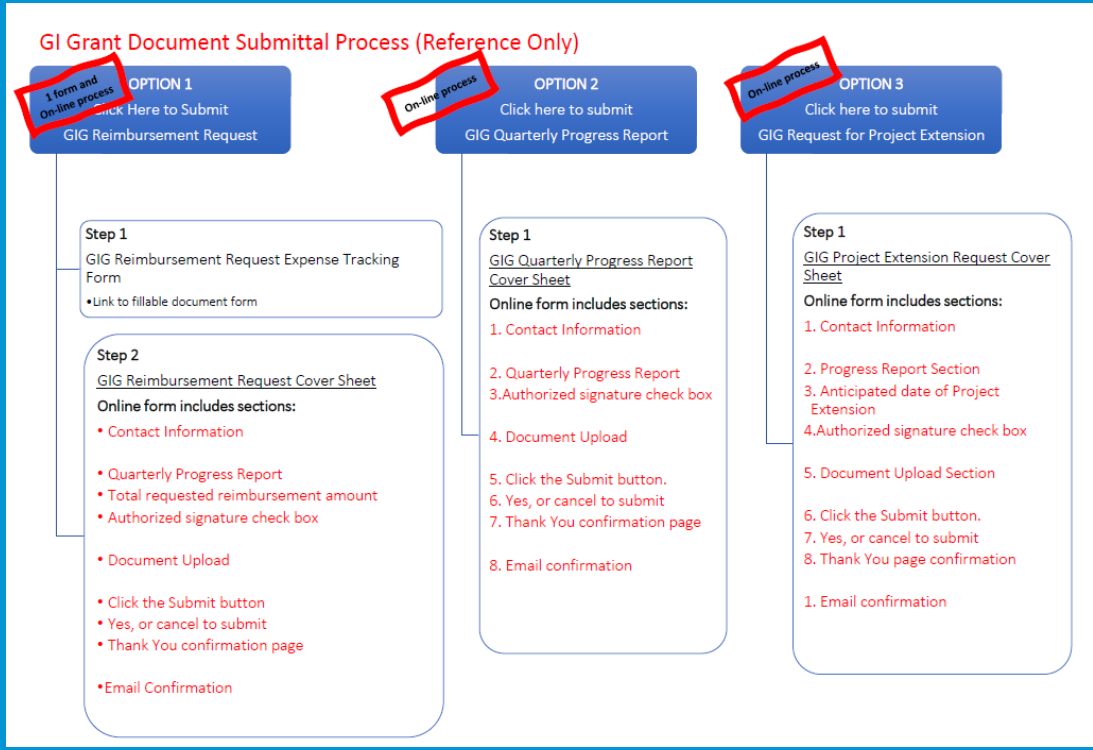
NEORSD GI Grant Document Submittal Process

Jessica S. Cotton, Grant Programs Administrator

GI Grant Program Document Submittal Process

The Green Infrastructure Grant Program Project document submittal process is required

3 options



Northeast Ohio Regional Sewer District

GI Grant Program Important Dates

- **RFP 2023 GI Grant Funding Round**
  - June 23rd
- **Pre-application Meetings (HIGHLY RECOMMENDED)**
  - July/August
  - An opportunity to meet with applicants to discuss projects prior to submission
- **Application Submission Deadline**
  - September 1, 2023
  - GI Grant Application Portal
- **Project Reviewing Period /Notifications to Applicants**
  - October and November

GI Grant Program Document Submittal Process

Let's look at the
NEORSD GI Grant Website

Questions for the Presenters?

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NEORSD Green Infrastructure website

Northeast Ohio
Regional Sewer District

Thank you