Green Infrastructure Program

Before You Begin

PLEASE READ BEFORE PROCEEDING

- **Limit your use of bullets and other formatting.**
- **Copy and paste as needed.**
- **Log into your account at https://www.GrantRequest.com/SID_5833?SA=AM to access saved and submitted requests.**
- **Add mail@grantapplication.com to your safe senders list to ensure you receive all system communications.**
- **Anticipate a notice of application receipt within 24 hours of submission**

General Information

Applicant Information

Organization
NORTHEAST OHIO AREAWIDE COORDINATING AGENCY

Executive Officer Title
EXECUTIVE DIRECTOR

Executive Officer First Name
GRACE

Executive Officer Last Name
GALLUCCI

Executive Officer Address
1299 SUPERIOR AVENUE, CLEVELAND OH 44114

Executive Officer Phone
2162412414

Executive Officer Extension
100

Executive Officer E-mail Address
ggallucci@mpo.noaca.org

Project Manager Title
MANAGER OF ENVIRONMENTALPLANNING

Project Manager First Name
JOE

Project Manager Last Name
MACDONALD

Office Address
1299 SUPERIOR AVENUE, CLEVELAND OH 44114

Office Phone
2162412414

Extension
341

Alternate Phone
2169065893

E-mail
jmacdonald@mpo.noaca.org

Project Information

Parcel Numbers
Parcels 10222037 and 10222055 (Parcel 10222055 has been consolidated by the Appraisal Department. The data concerning this parcel is now a portion of the information regarding parcel 10222037. Please contact the Fiscal Office for any questions concerning this parcel).

Green Infrastructure SCM's Proposed
PHASE I
Project A (Roof water collection with bioretention); Project B (One (1)-story building extensive green wall system)

Watershed of Project
DOAN BROOK-FRONTAL LAKE ERIE (HUC12)

Project Start Date
January 01, 2020

Project End Date
November 30, 2020

Total Project Cost
$222,000

Requested Grant Amount

$185,000

Project Title

NOACA NET ZERO COOL

Project Address

1299 SUPERIOR AVENUE, CLEVELAND OH 44114

Green Infrastructure SCM's Data.

Provide acre measurements to the nearest hundreth

List each proposed SCM and denote the square footage footprint of each (e.g., Rain Garden – 400 SF).
For "Rain Harvesting", indicate "0" square feet.

PHASE I
Project A (Roof water collection (6098 SF) with bioretention (480 SF) 6578 SF; Project B (One (1)-story building extensive green wall system) 970 SF

List each proposed SCM and denote the drainage area to each to nearest hundredth of an acre.

PHASE I
Project A (Roof water collection with bioretention) 0.07 AC; Project B (One (1)-story building extensive green wall system) 0.07 AC

Pre-Construction Impervious Acres

0.43

Post-Construction Impervious Acres:

0.29

Change in ImperviousAcres

-0.14

Impervious Acres Draining to each SCM(s)

PHASE I (BUILDING)
Project A (Roof water collection with bioretention) 0.07 AC; Project B (One (1)-story building extensive green wall system) 0.07 AC

*Pre-Construction – Average Annual Runoff (in.) of Project Area

29.88

Post-Construction - Average Annual Runoff (in.) of Project Area

0.34

Annual Runoff Reduction (gal/yr.)

(Runoff Reduction (in.) / 12 x Treated Drainage Area (acre) x 325,851.433 = gal/yr.)
112,300

Existing Conditions Results (EPA National Stormwater Calculator Report). For proposed projects that are only adding SCMs to the existing land use, this will serve as your *baseline scenario* and you do not need to upload a report for "Improvements Meeting Minimum Title IV Standards Results" (see below).

Use *Analysis using the US EPA Stormwater Calculator an upload the results here
NOACA - Existing Conditions Report.pdf

Provide the following map:

Show existing project discharge points and corresponding drainage areas and drainage patterns, including offsite areas that drain into the project area. As applicable, show the limits of existing forest, meadow, lawn, and impervious areas and the percentage of the project area comprised by each.

Existing Conditions Map

Existing Conditions and Drainage Figure 1.pdf

Improvements Meeting Minimum Title IV Standards Results (EPA National Stormwater Calculator Report). The "Existing Conditions Results" and this report must be submitted if a new or re-development project is being proposed that incorporates SCMs. This report will serve as your baseline scenario.

Use *Analysis using the US EPA Stormwater an upload the results here

Provide the following map:
Show proposed project discharge points and corresponding drainage areas and drainage patterns, including offsite areas that drain into the project area. As applicable, show the limits of existing forest, meadow, lawn, and impervious areas and the percentage of the project area comprised by each.

Post-Development Map with required Title IV SCMs only.

Improvements with Proposed SCMs Results (EPA National Stormwater Calculator Report)

Use *Analysis using the US EPA Stormwater Calculator an upload the results here

NOACA Post Development Report.pdf

Provide the following map:
Show proposed project discharge points and corresponding drainage areas and drainage patterns, including areas that drain into the project area. As applicable, show the limits of proposed forest, meadow, lawn, and impervious areas and the percentage of the project area comprised by each.
For each proposed SCM, show the following:
- The total drainage area
- The impervious drainage area, including the % of the sites total Impervious area
- The actual size of the practice (square feet)

Post-Development Map with SCMS

Proposed SCMs Figure 2.pdf

Project Narrative

Project Narrative

Project Introduction

Introduction (100 word maximum) Provide a brief introduction to the organization that would be delivering the proposed GIG project.

NOACA represents state, county, city, village, and township officials to address transportation and environmental planning needs across Cuyahoga, Geauga, Lake, Lorain and Medina Counties. The agency and its partners cooperatively develop and implement plans to ensure safe, cost-effective and environmentally sound travel throughout the region. NOACA has also been designated as an Areawide Water Quality Management Agency by the Governor of Ohio under Section 208 of the federal Clean Water Act. NOACA's vision is to strengthen regional cohesion, preserve existing infrastructure, and build a sustainable, multimodal transportation system to support economic development and enhance quality of life in Northeast Ohio.

Project Summary

Describe the GIG project. Include the following information:

- Objectives and Outcomes;
- Proposed design and installation;
- Drawings or figures of the site and GIG project;
- How the SCM will function;
- Other relevant project details; and,
- Current photos of the GIG project site. If awarded, design documents must be submitted to the District for review, comment, and approval prior to site work.

NOACA proposes "Net Zero Cool," a three-phase, comprehensive suite of stormwater control measures (SCMs) (Figures 1-2) to reduce stormwater runoff from its 100% impervious downtown Cleveland site (Figures 3-4) and mitigate runoff's harmful impacts on the Doan Brook-Frontal Lake Erie Watershed.

The objectives and outcomes for Net Zero Cool are embodied in its name. "Net Zero" refers to NOACA's ambition to capture stormwater runoff from its impervious surface area and eliminate its contribution to the combined wastewater/stormwater conveyance system. "Cool" refers to NOACA's ambition to showcase its green infrastructure elements with eye-catching, water-themed design; green wall on the sides of the building; educational placards along the sidewalk, adjacent to a proposed bioretention system with opportunity for lectures, tours and public meetings. According to the Green Infrastructure Grants Program Story on the Northeast Ohio Regional Sewer District's (NEORSD's) website, there were no green infrastructure grants (GIGs) awarded to organizations located in Downtown Cleveland (inside the Innerbelt, east of the Cuyahoga River) in the years shown (2014, 2016, 2018, 2019). Net Zero Cool would make NOACA a true vanguard for NEORSD-funded green infrastructure implementation; a marquee to illuminate the tremendous benefits of green infrastructure in Downtown Cleveland.

NOACA hired a design/engineering team to explore opportunities through site visits, preliminary design proposals and stormwater modeling. NOACA staff and its team collaboratively created a suite of SCMs with phased implementation.

PHASE I (CURRENT GRANT YEAR)

Project A (Former PHASE I, Project B: Three-story roof water collection with bioretention (Figure 7)) - A system to collect and convey roughly 70% of the roof water from the three-story building. This water will be partially diverted through a bioretention system along the east side of the site and partially through an above-ground cistern (1,000 gallons) located in the southeast corner of the parking lot, near the south end of the bioretention system. The water stored in the cistern will be available for on-site irrigation. The project includes a retrofit of the existing three-story roof drainage system so runoff descends the exterior of the east façade via a pipe. The conveyance pipe system will include a diversion so approximately 50% of the captured roof runoff will enter the cistern for irrigation, while the other 50% will enter the bioretention system. The concrete bioretention cells will contain soil media, mulch and vegetation to filter pollutants. The soil media will consist of layers of sand, pea gravel and gravel within the depression, which enable ponded stormwater runoff to be treated and filtered before it enters an underdrain pipe. The underdrain pipe will convey water to an existing catch basin in the northeast corner of the parking lot. Native plantings will be recommended by the Horticulture and Conservation Department of Holden Arboretum.

Project B (Former Phase III, Project A: One-story building extensive green wall system ((Figure 7)) - Extensive (vines on walls) green wall system for the east wall of the one-story building. Irrigation water will come from the cistern identified in Phase I, with the water sourced from the roof of the three-story building. The cistern and irrigation pump will be placed above ground in the southeast area of the parking lot. The design will include heat tracing to protect the system from freezing; however, winterizing the system is part of the maintenance plan (see Ability to Provide Long-Term Maintenance). NOACA will route irrigation piping underground to the green wall.

PHASE II (POTENTIAL FUTURE FUNDING)

Project A (Former Phase I, Project A: One-story extensive green roof system with usable outdoor space accessible via second floor (Figures 5-6)) - An extensive, partially occupiable green roof for the existing one-story building addition to intercept precipitation; slow and reduce rooftop runoff through storage and evapotranspiration; and provide educational opportunity and visibility. Structural improvements to support the green roof and occupiable space include a new roof membrane and reinforcements to support the soil and plant medium. NOACA will coordinate with the utility companies to relocate the pole-mounted transformer adjacent to the building and the existing cable/telephone wires strung over the one-story roof. NOACA will also identify and design lighting for night uses. Access will be from conversion of an existing window to a door on the second floor of the three-story building.

Project B (Former Phase III, Project B: Three-story building mural ((Figure 7)) - An artist will conceptualize and create a mural that wraps around the eastern and northern facades of the three-story building. NOACA staff will work with the artist to develop the "story" and images for the building mural. The mural should incorporate the eastern façade drainage system that transports roof runoff from the three-story building to the bioretention system and cistern.

PHASE III (POTENTIAL FUTURE FUNDING)

Project A (Former Phase II, Project A: Parking Lot Porous Paving/Center Drive Aisle (Figure 6)) – Develop a permeable pavement section in the center aisle of the parking lot in accordance with the latest edition of Ohio's Rainwater and Land Development Manual, pending soil investigation. Sawcut the existing asphalt pavement in the drive isle between the proposed carports (Project IIB) and remove to subgrade. Replace with a permeable pavement section to match existing grade (no grade changes anticipated). The proposed permeable pavement area will include an underdrain that connects to the existing catch basin located in the northeast corner of the site. The site slopes slightly from south to north, with an elevation difference of about 2 feet (643' MSL to 641' MSL). This slope facilitates

drainage of excess water to the catch basin.

Project B (Former Phase II, Project B: Carport structures with extensive green roof ((Figures 5-7)) - Two extensive green roof carport structures with foundation and lighting to cover the vehicles parked on both sides of the existing parking lot (Single-bay of parking on the east side and double-bay of parking west side). The carport structures will cover approximately 24 parking spaces in total. Structure footings will be located to avoid existing utilities. The permeable pavement (Project IIA) will be in the parking aisle between the two carport structures. Excess water from the carport structure green roofs will drain to the permeable pavement in the parking aisle.

Project Summary Photos

Upload a zip or pdf file containing up to five(5) photos

PROJECT_NARRATIVE FIGURES 3-7.pdf

Ability to Provide Long Term Maintenance

Describe the plans for long-term maintenance, addressing ALL the following questions:

- Who owns the land where the GIG project will be located? Does the applicant have site control?
- What is the anticipated design life expectancy of the green infrastructure features for which GIG funding is requested?
- Who is responsible to provide on-going maintenance for the design life of the project and how will maintenance be ensured?
- Provide an anticipated list of routine maintenance tasks/activities, schedule, and estimated annual cost to ensure continued performance of the GIG project.

NOACA owns and controls the entire site that will contain all proposed SCMs. The design life expectancy of each project varies somewhat (e.g. 20 years for concrete walls and bioretention; 10-15 years for irrigation system), but NOACA is committed to both routine and non-routine maintenance to ensure each SCMs' optimal performance. Maintenance tasks and costs (see *Engineer's Estimate*) will be in NOACA's annual budget, akin to other line items for housekeeping services, snow removal, heating/cooling inspection, etc. NOACA will house legal obligations for operation, maintenance, inspection and repair of SCMs in an Inspection and Maintenance Agreement (see Northeast Ohio Stormwater Training Council's *Maintaining Stormwater Control Measures: Guidance for Private Owners and Operators)*.

Routine maintenance may include removal of accumulated sediment; removal of debris to clear inlets or outlet pipes; pruning or replacing plant material. Some routine maintenance may have a seasonal frequency requirement such as leaf debris removal, mulching or plant material maintenance (e.g. pruning, mowing, transplanting, replacement).

Non-routine maintenance may include repair or replacement of key components such as specialized soil mixes, damaged inlets, outlets or drain pipes; or removal of significant amounts of accumulated sediment and debris that clog and compromise SCM functionality.

Particular maintenance needs and signs of maintenance for the PHASE I SCMs include:

Cistern: regular inspection (and periodically during a rain event) to ensure all openings and connections are clear of debris with free flow. Winterize cistern by draining all water inside and diverting flow to prevent ice damage or leaks. The manufacturer will have recommendations for sediment removal and pump or filter maintenance.

Bioretention Area: standing water visible 48 hours after a rain event; erosion visible; vegetation, sediment or debris blocks inlets or outlets; vegetation wilting, discolored or dying; foul odors; sediment has accumulated over the mulch/soil media.

Green Wall: replant wilting, discolored or dying vegetation. Maintenance of cistern (including pumps or filters) ensures irrigation system for green wall remains functional.

Visibility and Public Outreach

What audiences will be exposed specifically to the green infrastructure components of this project (neighbors, students, community groups, public)?

- Describe how these audiences will interact with the GIG project and include methods of exposure, frequency, and education components.

NOACA is a sound investment due to its location and role as a regional public entity. Representatives from a broad spectrum of communities and constituencies comprise NOACA's Board of Directors. As previously stated, NOACA may be the first location within Downtown Cleveland to receive a Green Infrastructure Grant. NOACA occupies an increasingly visible location at the corner of East 13th Street and Superior Avenue, with growing pedestrian and vehicular traffic due to increasing residential and commercial activity. NOACA also hosts a plethora of public meetings and looks to welcome a new slate of audiences, both virtually and in person, to increase exposure of its commitment to water resource protection and higher quality of life throughout Northeast Ohio.

There are several opportunities beyond quarterly meetings of NOACA's Board, Committees, Subcommittees and Advisory Councils. In addition to the educational placards NEORSD will provide to complement free viewing of its projects by drivers, pedestrians, cyclists and residents (particularly low-moderate income residents in Allerton, Bohn Tower, St. Clair Place and Reserve Square), NOACA staff will: 1) create a video about the projects, including a virtual tour; 2) host a television show on-site (e.g. Good Morning Cleveland or equivalent taped at NOACA with personnel available for interviews); 3) host a City Club Forum with NOACA representatives alongside NEORSD and city representatives; 4) schedule a spot or develop a panel discussion on Ideastream (National Public Radio); 5) host a press conference and provide media access; 6) promote SCMs at conferences (American Planning Association, American Society of Landscape Architects, Cuyahoga Restoration, Cleveland Sustainability Summit, Ohio Stormwater Conference, etc.); 7) provide educational materials in the NOACA building lobby for visitors (project background, diagrams, site map); and 8) offer guided site visits and tours to interested citizen and educational groups (elementary, middle, high schools and local colleges and universities).

Tasks and Deliverables

Submit a schedule of GIG project tasks and deliverables with start dates and end dates for the significant benchmarks with project completion date defined.

PROJECT NARRATIVE_Tasks and Deliverables_FINAL.docx

Letters of Support

- Applications must include one letter of support from the applicable councilperson.
- Applications must include a letter of support from each non-municipal project partner named in the application. Please note this applies to non-municipal partners only. Please do not include letters of support from various municipal departments unless specifically required.

- Applications proposing work on publicly-owned property, including within the right-of-way, must include a letter of support from the applicable public office with control over the property. For the City of Cleveland, a GIG project in the right-of-way in the City of Cleveland must include a support letter from the Mayor's Office of Capital Projects.
- Do not include any letters of support beyond those specified above. The Sewer District does not want extraneous letters of support.

Letters of Support_Combined.pdf

Budget

Budget Information

Budget Summary

The Budget Summary and Budget represent the green infrastructure components of the project exclusively. Include details on the provider for all in-kind services and/or materials including specific material cost and hourly rate. If there is a volunteer component, please identify the source of volunteers.

NOACA estimates the total project cost (feasibility, design and build) at $222,000, based on an engineer's estimate of $185,000 build cost (disregard estimates from Page 6 of Stormwater Calculator Report); NOACA's estimate of $25,000 design cost; and NOACA's contract for $12,000 toward feasibility study and conceptualization. NOACA commits to a $37,000 total cost match (feasibility and design). The remaining $185,000 (build cost) is the total request by NOACA of NEORSD.

PHASE I ($185,000)
Project A (Roof water collection with bioretention) - $150,000

Project B (One-story building extensive green wall system) - $35,000

NOACA understands that the current proposal must be completed within the timeframe agreed upon by NOACA and NEORSD. NOACA also provides its proposed Maintenance Plan and Cost Estimate for a full implement of the projects in all three phases. In addition, NOACA has obtained and provides an estimate to resurface its parking lot should there be no future implementation of its GIG parking lot-focused projects (see *Engineer's Estimate* for both Maintenance Plan and Cost Estimate and Parking Lot Resurface Estimate).

GIG PROJECT INCOME

NEORSD Anticipated

185000

NEORSD Committed

0

NEORSD Total

185000

NEORSD Description

Build Costs (all projects)

Foundations Anticipated

0

Foundations Committed

0

Foundations Total

0

Foundations Description

na

Government Grants or Contracts Anticipated

0

Government Grants or Contracts Committed

0

Government Grants or Contracts Total

0

Government Grants or Contracts Description

na

Organizational Budget Anticipated

25000

Organizational Budget Committed

12000

Organizational Budget Total

37000

Organizational Budget Description

Feasibility, Design and Build (part) Costs

In-kind Support Anticipated

0

In-kind Support Committed

0

In-kind Support Total

0

In-kind Support Description

na

Other Anticipated

0

Other Committed

0

Other Total

0

Other Description

na

GIG PROJECT EXPENSES

Professional Services

NEORSD Request

Other Funding

Total

Line Item Description
(see Budget Summary for Engineer's Estimate of costs by phase and project)

Labor

NEORSD Request

Other Funding

Total

Line Item Description
(see Budget Summary for Engineer's Estimate of costs by phase and project)

Plants

NEORSD Request

Other Funding

Total

Line Item Description
(see Budget Summary for Engineer's Estimate of costs by phase and project)

Equipment Rental

NEORSD Request

Other Funding

Total

Line Item Description
(see Budget Summary for Engineer's Estimate of costs by phase and project)

Materials

NEORSD Request

Other Funding

Materials Total

Line Item Description
(see Budget Summary for Engineer's Estimate of costs by phase and project)

Other

NEORSD Request

Other Funding

Other Total

Line Item Description
(see Budget Summary for Engineer's Estimate of costs by phase and project)

Upload Engineer's Estimate (If applicable)
190904 NOACA Net Zero Cool - Maintenance Plan_Osborn_MKSK.pdf

CISTERN

UPPER BUILDING ROOF AREA (0.14 acres) TO DRAIN TO BIORETENTION AND CISTERN

DISCHARGE LOCATION
CATCH BASIN TO ROCKWELL AVE.

Subject
Brick Building

N JJ°55'50"W. 132.54' CALC.

Adjoinec'•

PHASE I

- STORY EXTENSIVE GREEN ROOF SYSTEM
APPROX. 1,500 SF (0.034 AC)
BIORETENTION - APPROX. 480 SF (0.011 AC)
ROUTE STORMWATER FROM 3/4 OF UPPER ROOF 6,098 SF (0.14 AC)

PHASE II

PERMEABLE PAVEMENT
APPROX. 1,800 SF (0.041 AC)
GREEN ROOF CARPORT
APPROX. 4,100 SF (0.094 AC)

PHASE III

1-STORY BUILDING EXTENSIVE GREEN WALL SYSTEM

3-STORY BUILDING MURAL

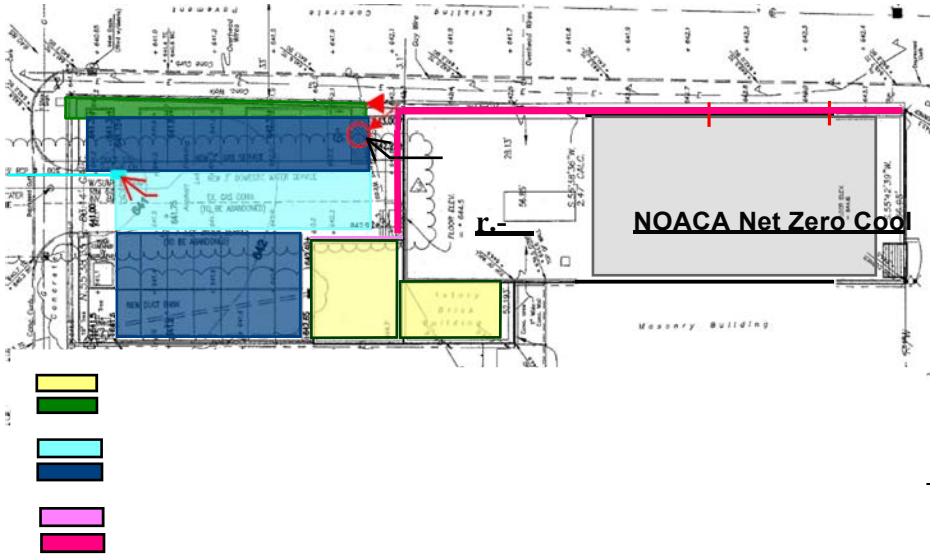
NOTES *Lh*

1) THE NEW GAS SERVICE SIZE IS 3" AS RECOMMENDED BY EAST (
2) EXISTING I 1/2" WATER SERVICE TO BE ABANDONED IN A CORD CITY OF CLEVELAND WATER DEPARTMENT REQUIREMENTS, WI ICH DISCONNECTION AT CORPORATION STOP.

FIGURE 2
PROPOSED SCMs

t GRAD ING & UTILITIES PLAN I

SCALE : 1" 20'


NOACA Net Zero Cool

Existing Conditions

BUILDING ENTRANCE ON
NORTH SIDE

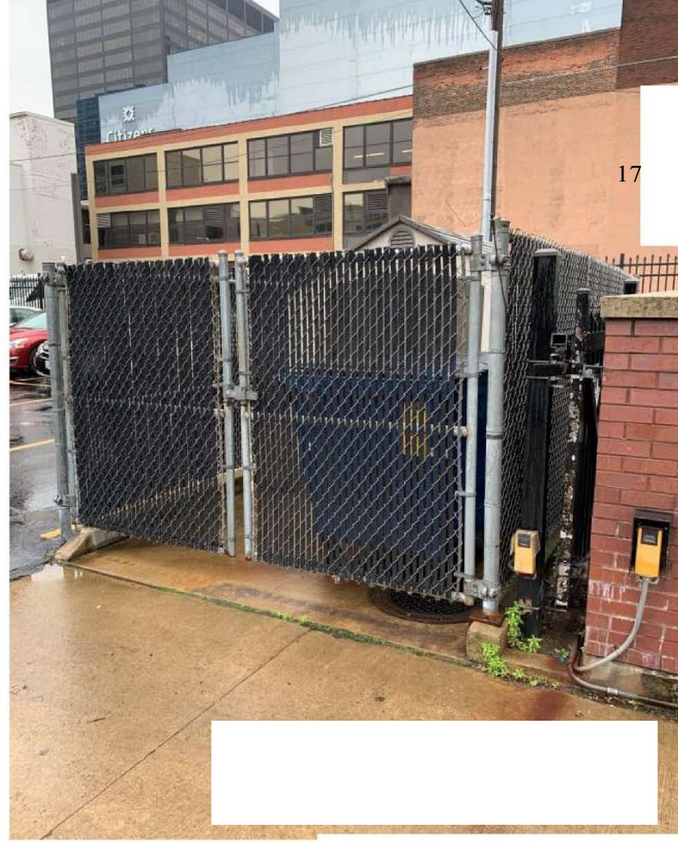
DUMPSTER ENCLOSURE IN
NORTH SIDE PARKING LOT ALONG
ROCKWELL AVE.

EAST BUILDING FACE

SIDEWALK ALONG
EAST BUILDING FACE

FIGURE 3
EXISTING CONDITIONS
PHOTOGRAPHS


12299



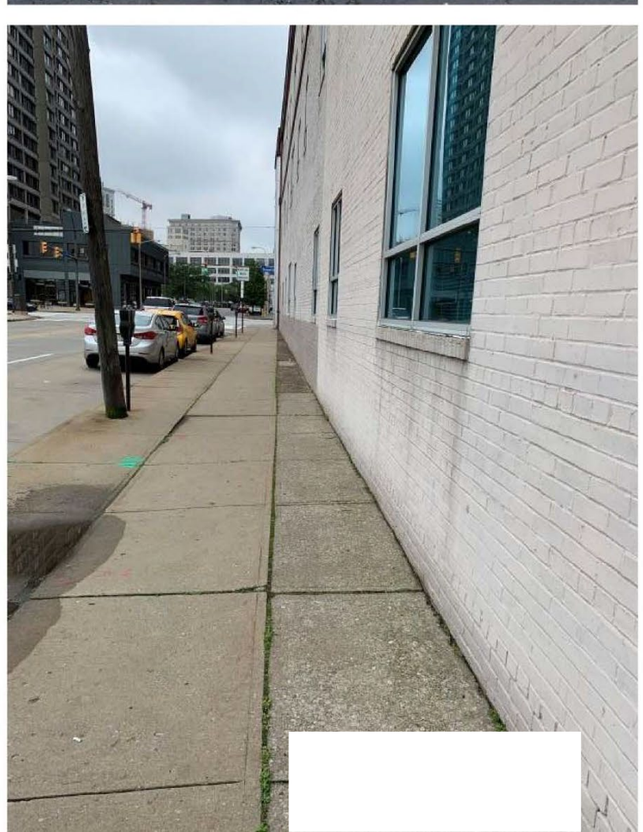


FIGURE 4
EXISTING CONDITIONS
PHOTOGRAPHS

FIGURE 5
OVERALL VIEW

FIGURE 6
PLAN VIEW

FIGURE 7
STREET VIEW

CITY OF CLEVELAND
Office of the Council
www.clevelandcitycouncil.org

Basheer S. Jones COUNCIL MEMBER, WARD 7

COMMITTEES: Safety • Health & Human Services • Development, Planning & Sustainability
Workforce & Community Benefits

August 26, 2019

Kyle Dreyfuss-Wells, Executive Director
Northeast Ohio Regional Sewer District
McMonagle Administration Building
3900 Euclid Avenue
Cleveland, Ohio 44115

Dear Ms. Dreyfuss-Wells,

I am writing to express my support for the Net Zero Cool project proposed by NOACA for a 2020 Green Infrastructure Grant (GIG) from the Northeast Ohio Regional Sewer District (NEORSD). NOACA's office building is located in my ward, and I am pleased to lend my support to this innovative project, which could become an inspiration for green infrastructure projects throughout downtown and other Cleveland neighborhoods.

NOACA's proposed project would demonstrate the feasibility of "greening" a Cleveland office building in a way that blends practicality with aesthetics. The project would demonstrate to other businesses that they, too, can reduce rainwater runoff on their own properties -- reducing the load on our storm sewers, and reducing overflows into Lake Erie. As a councilperson for the City of Cleveland, representing a ward that stretches just south of the Lake Erie shoreline, I believe that we must make cost-effective investments that will keep Lake Erie clean for my constituents – now and into the future. This project will help fulfill the goals of the Sustainable Cleveland Municipal Action Plan. Net Zero Cool also furthers NOACA's Regional Strategic Plan goals to strengthen regional cohesion; preserve existing infrastructure; and enhance quality of life in Northeast Ohio.

I support this proposal and urge NEORSD's support of this project. Thank you for your time and consideration.

Sincerely,

Basheer Jones
Council Member, Ward 7

City Hall 601 Lakeside Avenue N. E., Room 220, Cleveland, OH 44114 • **Phone** (216) 664-2908 • **Fax** (216) 664-3837
Email bjones@clevelandcitycouncil.org

City of Cleveland
Frank G. Jackson, Mayor

Office of the Mayor
Cleveland City Hall
601 Lakeside Avenue, Room 202
Cleveland,Ohio 44 11 4
216/ 664-399 0 • Fax 216/420-8766
www.cleveland-oh.gov

September 6, 2019

Kyle Dreyfuss-Wells
Executive Director
Northeast Ohio Regional Sewer District
McMonagle Administration Building
3900 Euclid Avenue
Cleveland, Ohio 44115

Dear Ms. Dreyfuss- Wells,

I am writing in support of the Net Zero Cool project proposed by NOACA for a 2020 Green Infrastructure Grant (GIG) from the Northeast Ohio Regional Sewer District (NEORSD). NOACA's Net Zero Cool project improves NEORSD's implementation and long-term maintenance of green infrastructure. This project aims to protect, preserve, enhance, and restore natural water function in areas with combined storm and sanitary sewers.

The Net Zero Cool project is in line with goals set forth in the Sustainable Cleveland Municipal Action Plan given its focus of improving Lake Erie water quality. The project goals are to reduce combined sewer overflows in heavy rain events by reducing stress and volume on our drainage and collection system, thereby supporting healthy environments and strong communities. Net Zero Cool also furthers NOACA's Regional Strategic Plan goals to strengthen regional cohesion, preserve existing infrastructure, and enhance quality of life in Northeast Ohio.

Net Zero Cool will contribute to the protection of storm water infrastructure and climate resiliency in the City of Cleveland. If you have any questions regarding my support for NOACA's request for Green Infrastructure Grant funding, please contact Valarie J McCall, Chief of Communications, Government, and International Affairs via email at vmccall@city.cleveland.oh.us. Thank you for your consideration.

Sincerely,

Frank G Jackson
Mayor

NORTHEAST OHIO REGIONAL SEWER DISTRICT (NOACA)

NET ZERO COOL: SCHEDULE OF TASKS AND DELIVERABLES

SCHEDULE OF GIG PROJECT TASKS AND DELIVERABLES WITH START DATES AND END DATES FOR THE SIGNIFICANT BENCHMARKS WITH PROJECT COMPLETION DATE DEFINED

SEPTEMBER 6, 2019:	NOACA Net Zero Cool proposal submitted to Northeast Ohio Regional Sewer District (NEORSD)
SEPTEMBER 18, 2019:	NOACA Request for Proposals (RFP) for Net Zero Cool Design-Build released (contract conditional on NEORSD award)
OCTOBER 18, 2019	Proposals for Net Zero Cool Design-Build due to NOACA
OCTOBER 21-24, 2019:	Interview selected candidates for Net Zero Cool Design-Build contract
NOVEMBER 8, 2019:	NOACA Finance & Audit Committee Meeting (approval needed to forward candidate and proposed contract to Board of Directors for action)
NOVEMBER, 2019:	NEORSD announces 2020 Green Infrastructure Grant (GIG) awards. If selected, NOACA will proceed as follows:
DECEMBER 13, 2019:	NOACA Board of Directors Meeting (action needed to approve candidate and proposed contract for Net Zero Cool Design-Build)
DECEMBER 16, 2019:	Net Zero Cool design begins
JANUARY 1, 2020:	NEORSD GIG award begins
JANUARY 31, 2020:	Net Zero Cool design-build firm submits complete design to NEORSD for review
FEBRUARY, 2020:	NEORSD provides suggested revisions to NOACA and Net Zero Cool design-build firm
MARCH 13, 2020:	NOACA Board of Directors Meeting (action needed to approve final design and proposed build plan)
MARCH, 2020:	Net Zero Cool construction begins
DECEMBER, 2020:	Net Zero Cool construction concludes

CONSTRUCTION PHASE I:

PROJECT A (THREE-STORY ROOF WATER COLLECTION WITH BIORETENTION)

MARCH 2020	Bioretention system and roof drainage design
JUNE 2020	Construct bioretention system
SEPTEMBER 2020	Install plants in bioretention cells and modify three-story roof drainage system including construction of new downspout and stormwater pipe to bioretention system

PROJECT B (ONE-STORY BUILDING EXTENSIVE GREEN WALL SYSTEM)

MARCH 2020	Design extensive green wall system
JUNE 2020	Install cistern
JULY 2020	Install irrigation system and planter beds
SEPTEMBER 2020	Install plants

NOACA Net Zero Cool Project

Yearly Maintenance Tasks and Costs

Date Prepared: September 4, 2019

	Frequency	Estimated Annual Cost	Notes:
Bioretention			
Remove trash, debris and fine sediment. Weed and prune bioretention vegetation. Check for clogged pipes and clean out debris.	Four times per year	$ 900.00	3 hrs. of labor @ $75/hr. per site visit.
Replenish bioretention mulch layer	Annually	$ 700.00	2 hrs. of labor $75/hr. 10 yards of mulch, $40/yd, $150 delivery.
Subtotal Bioretention		***$ 1,600.00***	
Extensive Green Wall			
Irrigation:			
Regular watering the first year (1"/week including rainfall)	Yearly	N/A	Automated irrigation system
Plant Maintenance:			
Spring:	Quarterly	$ 150.00	2 hrs. of labor $75/hr.
– Prune plants; ensure that any dead stems and leaves are removed			
– Apply new fertilizer to promote plant growth			
– Replace any dead plants			
– Adjust irrigation as required			
– Replenish mulch layer		$ 75.00	1 hrs. of labor $75/hr.
		$ 80.00	2 cu. yds @ $40/yd
Summer:	Quarterly	$ 150.00	2 hrs. of labor $75/hr.
– Review the irrigation process to ensure plant growth is at full capacity			
– Remove any weeds and fertilize if necessary			
– Replace any dead plants			
Fall:	Quarterly	$ 150.00	2 hrs. of labor $75/hr.
– Prune plants; ensure that any dead stems and leaves are removed			
– Apply new fertilizer to promote plant growth			
– Flush and shut down the irrigation system			
– Monitor snow loads on roof system			
Weed Control			
Remove weeds by hand	Monthly	$ 450.00	12 months x 1/2 hrs. of labor $75/hr.
Pest Control			
Integrated Pest Management	Monthly	$ 450.00	12 months x 1/2 hrs. of labor $75/hr.
Subtotal Extensive Green Wall		***$ 1,505.00***	
Irrigation System			
Spring:	Quarterly	$ 450.00	3 hrs. of labor $75/hr.
– Start-up Irrigation System			
– Adjust irrigation as required			
Summer:	Quarterly	$ 75.00	1 hrs. of labor $75/hr.
– Review the irrigation process to ensure plant growth is at full capacity			
Fall:	Quarterly	$ 450.00	3 hrs. of labor $75/hr.
– Flush and shut down the irrigation system			
Winter:	Quarterly	$ -	
– N/A			
Subtotal Extensive Irrigation System		***$ 975.00***	
Subtotal Yearly Maintenance Costs		***$ 4,080.00***	
Urban Condition Markup (10%)		$ 408.00	
Total Yearly Maintenance Costs		**$ 4,488.00**	

BUCKEYE
Surface Maintenance
5915 E. Schaaf Road • Independence, OH 44131 • (216) 328-1322
Online: www.buckeyesurface.com

Estimate

Date	Estimate #
8/22/2019	10089

Name / Address	Job Location
NOACA SUSANNA MERLONE 1299 SUPERIOR AVE. CLEVELAND, OH 44114	

FINANCING NOW AVAILABLE FOR COMMERICAL AND RESIDENTIAL PROJECTS!
CALL US FOR MORE INFORMATION

Estimate valid for fourteen (14) days from the date issued.
Please note all items, guarantees & warnings.
****Late season sealcoating work cannot be warranteed or guaranteed*****

Terms	Rep
Due on receipt	NL

Description	Total
2" ASPHALT RESURFACING: Approximately 6,821 square feet. Mill or cut headers as needed to ensure smooth transitions. Clean area to be resurfaced using forced air or mechanical broom. Apply a tack coat of SS-1 emulsion @ approximately .05 gallon per square yard to ensure proper bonding. Install an ODOT leveling course as needed and compact. Install a surface course using ODOT type 448-1 asphalt at a depth of 2 inches. Seal transitions of resurfaced area using parking lot grade hot rubberized sealant. **Cannot guarantee against water ponding or puddling**	12,526.00
LINE STRIPE: Re-stripe as per existing design in YELLOW. Striping shall include all ADA markings, arrows and stencil work. Painting of bollards, guardrails, wheel stops, pole, ...etc are not included unless specified.	375.00

****PLEASE NOTE** Estimate does not include charge for permits and/or registration fees that may be required in your city. Charges to dump spoils hauled from site are also not included. Any fees incurred for**

permits/registrations or dumping fees will be added to final invoice. Any return trips to finish job (at no fault of ours, ie. job site is not accessible, cars in the way, ect.) will also be added to final invoice.

Total $12,901.00

Sign_____ Date_____

PLEASE SIGN & RETURN TO ACCEPT BID & AUTHORIZE BUCKEYE TO COMPLETE WORK.

Lawyer fees & court costs will be added to any unpaid bills when necessary to pursue this procedure.
A service charge of 25% per month will be charged on all past due accounts.

Phone #	Fax #	Email	Web Site
2163281322	216-328-1362	nick@buckeyesurface.com	WWW.BUCKEYESURFACE.COM

			US EPA National Stormwater Calculator							
A		C	D	E	F	G	H (Column D - Column F)	I (Column E - Column G)	J (353,418 -Column I)	K
SCM PROJECT DESCRIPTION	Impervious Area Draining to Each SCM (ac)	Total Drainage Area (ac)	Pre-Construction Average Annual Runoff (in.)	Pre-Construction Average Annual Runoff (gal/yr.)	Post-Construction Average Annual Runoff (in)	Post-Construction Average Annual Runoff (gal/yr.)	Post-Construction Annual Runoff Reduction (in)	Post-Construction Annual Runoff Reduction (gal/yr.)	Post-Construction Total Annual Runoff Remaining (gal/yr.)	Notes:
Baseline Site: Average Annual Rainfall Runoff due to evaporation and infiltration. **Pre-Construction - Average AnnualRunoff**	0.440	0.440	**36.71** **7.13** **29.58**	**438,607** **85,188** **353,419**						**19.42% Runoff due to evaporation and infiltration.**
Project IIA: Parking Lot Porous Paving - Center Drive Aisle	0.041	0.440	36.71	438,607	**26.92**	321,637	9.79	116,970	236,449	33.10% of total runoff reduction 9% of total site area, 0.9" rain event.
Project IA: 1-Story Occupiable Extensive Green Roof System	0.034	0.440	36.71	438,607	**28.95**	345,891	7.76	92,716	260,703	26.23% of total runoff reduction 7.8% of total site area.
Project IIIA: 1-Story Building Extensive Green Wall System	0.070	0.440	36.71	438,607	**29.04**	346,967	7.67	91,640	261,779	25.93% of total runoff reduction 16% of site, 3 gal/day, 1000 gal tank
Project IIIB: 3-Story Building Mural	0.000	0.000	36.71	0	**0.00**	0	0.00	0	353,419	0.00% of total runoff reduction N/A
Project IB: 13th Street Bioretention Basin (Runoff from upper roof)	0.070	0.440	36.71	438,607	**24.85**	296,905	11.86	141,702	211,717	40.09% of total runoff reduction 16% of total site area (runoff from upper roof), 16% capture (0.011/0.07)
Project IIB: Carport Structures w/Extensive Green Roof	0.094	0.440	36.71	438,607	**27.87**	332,988	8.84	105,619	247,800	29.89% of total runoff reduction 21% of total site area, 4" media depth
Combined Projects	0.309	0.440	36.71	438,607	**19.57**	233,820	17.14	204,787	148,632	**57.94%** of total runoffreduction 70% of total site area

Note: The infiltration and evaporation rates are not linear and will change based on the model scenario. Therefore, the combination of projects does not simply yield the cumulative runoff reductions of each individual SCM model run. The row at the bottom of the Excel table reflects the combined SCM scenario.

National Stormwater Calculator Report

Results

Site Description

NOACA Cistern/Green wall/biocell

Parameter	Current Scenario	Baseline Scenario
Site Characteristics		
Site Area (acres)	0	0
Hydrologic Soil Group	C	C
Hydraulic Conductivity (in/hr)	0.1	0.1
Surface Slope (%)	2	Flat (2% Slope)
Precip. Data Source	CLEVELAND WSFO AP	CLEVELAND WSFO AP
Evap. Data Source	CLEVELAND WSFO AP	CLEVELAND WSFO AP
Climate Change Scenario	None	None
Land Cover		
% Forest	0	0
% Meadow	0	0
% Lawn	0	0
% Desert	0	0
% Impervious	100	100
LID Controls		
% Disconnection	0	0
% Rain Harvesting	49 / 4	0
% Rain Gardens	0	0
% Green Roofs	0	0
% Street Planters	50 / 16	0
% Infiltration Basins	0	0
% Permeable Pavement	0	0
Analysis Options		
Years Analyzed	20	20
Ignore Consecutive Wet Days	False	False
Wet Day Threshold (inches)	0.1	0.1

National Stormwater Calculator Report

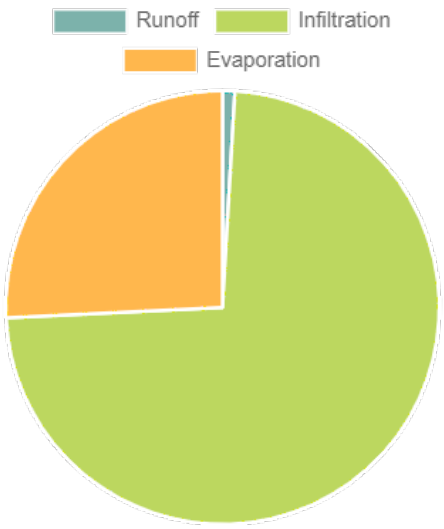
Results

Site Summary

NOACA Cistern/Green wall/biocell

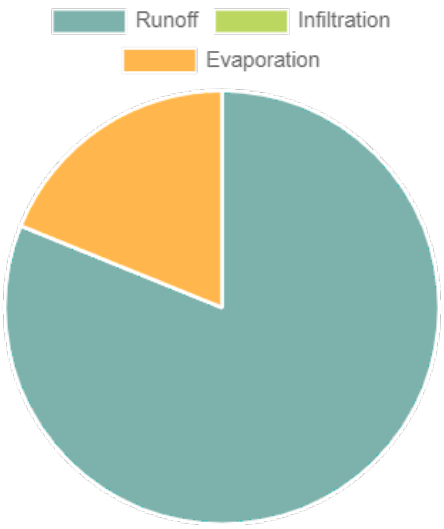
Current Scenario

Annual Rainfall: 36.71 in.



Baseline Scenario

Annual Rainfall: 36.71 in.



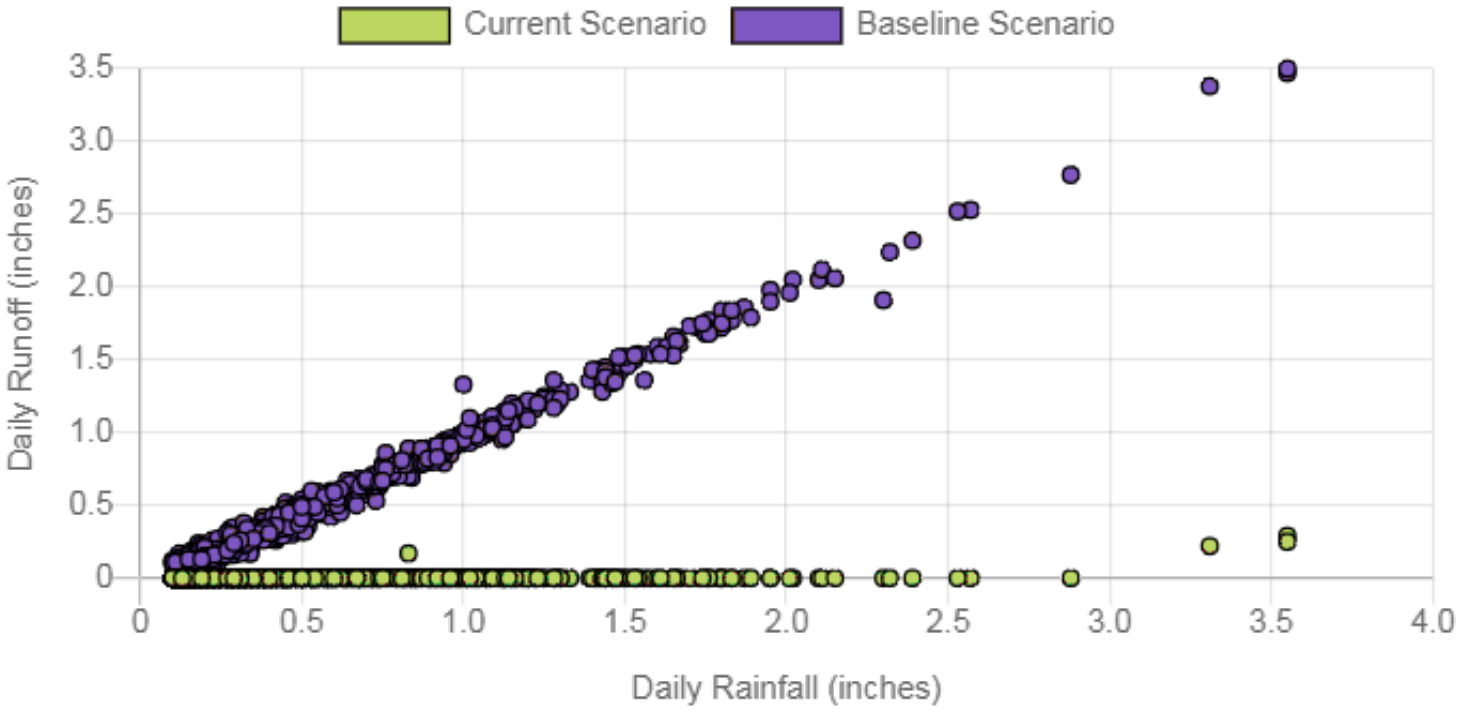
Statisic	Current Scenario	Baseline Scenario
Average Annual Rainfall (inches)	36.71	36.71
Average Annual Runoff (inches)	0.34	29.88
Days per Year with Rainfall	80.44	80.44
Days per Year with Runoff	0.20	63.51
Percent of Wet Days Retained	99.75	21.06
Smallest Rainfall w/ Runoff (inches)	0.83	0.10
Largest Rainfall w/o Runoff (inches)	2.88	0.22
Max Rainfall Retained (inches)	3.30	0.39

National Stormwater Calculator Report

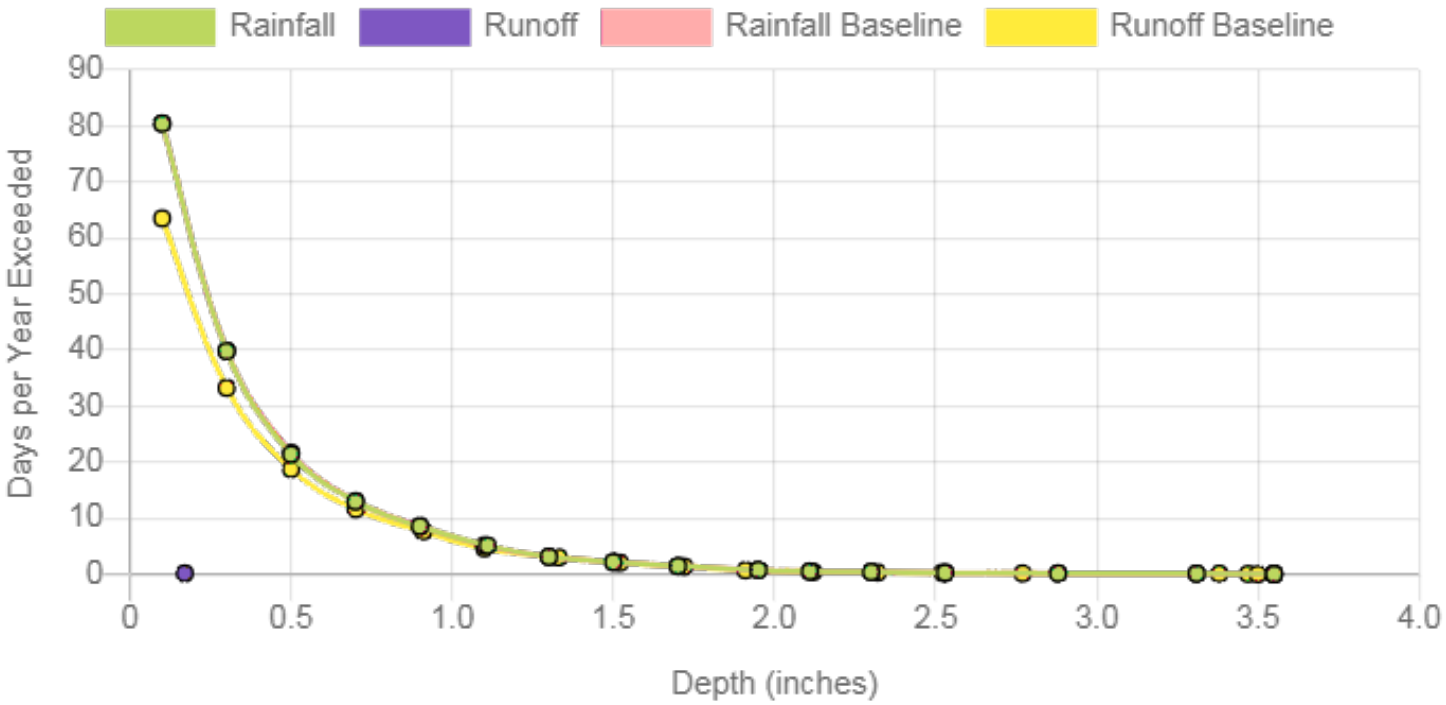
Results

NOACA Cistern/Green wall/biocell

Rainfall / Runoff Events



Rainfall / Runoff Exceedance Frequency

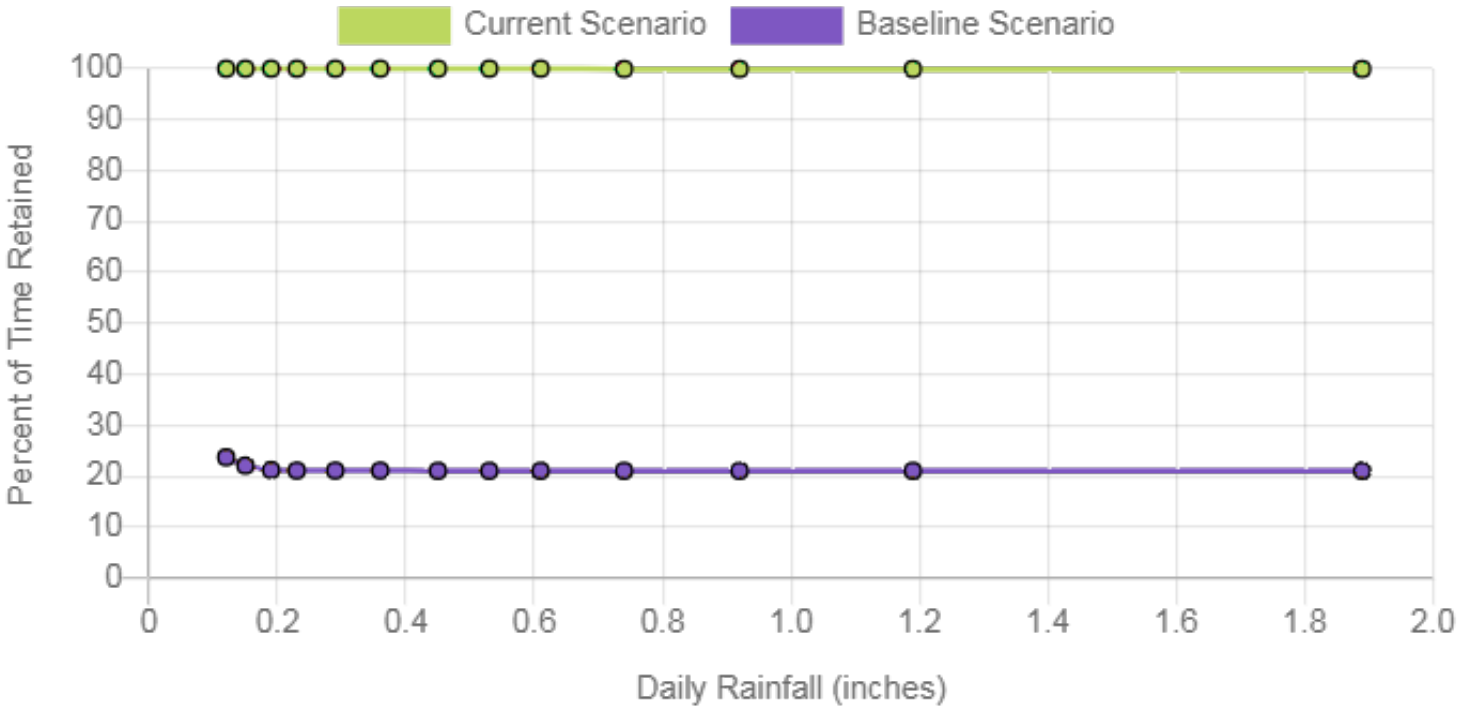


National Stormwater Calculator Report

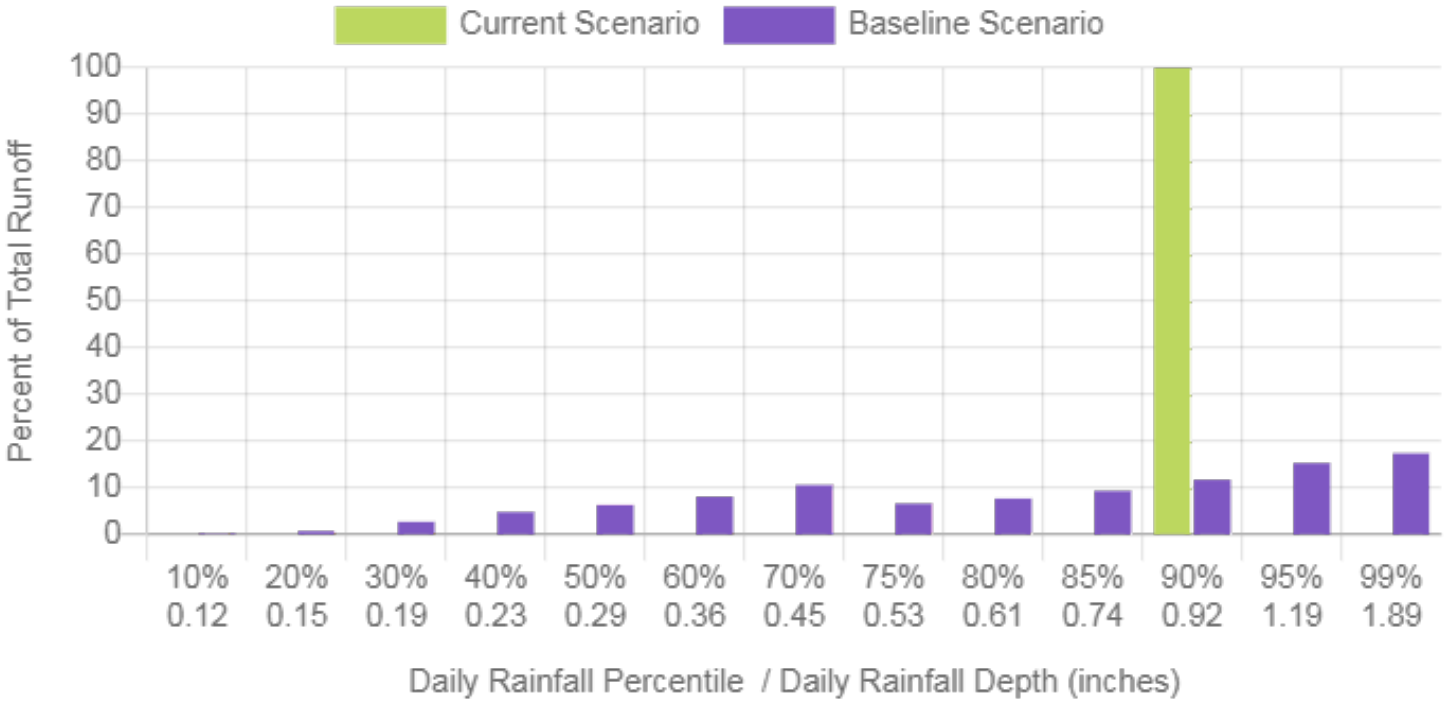
Results

NOACA Cistern/Green wall/biocell

Rainfall Retention Frequency



Runoff Contribution by Rainfall Percentile



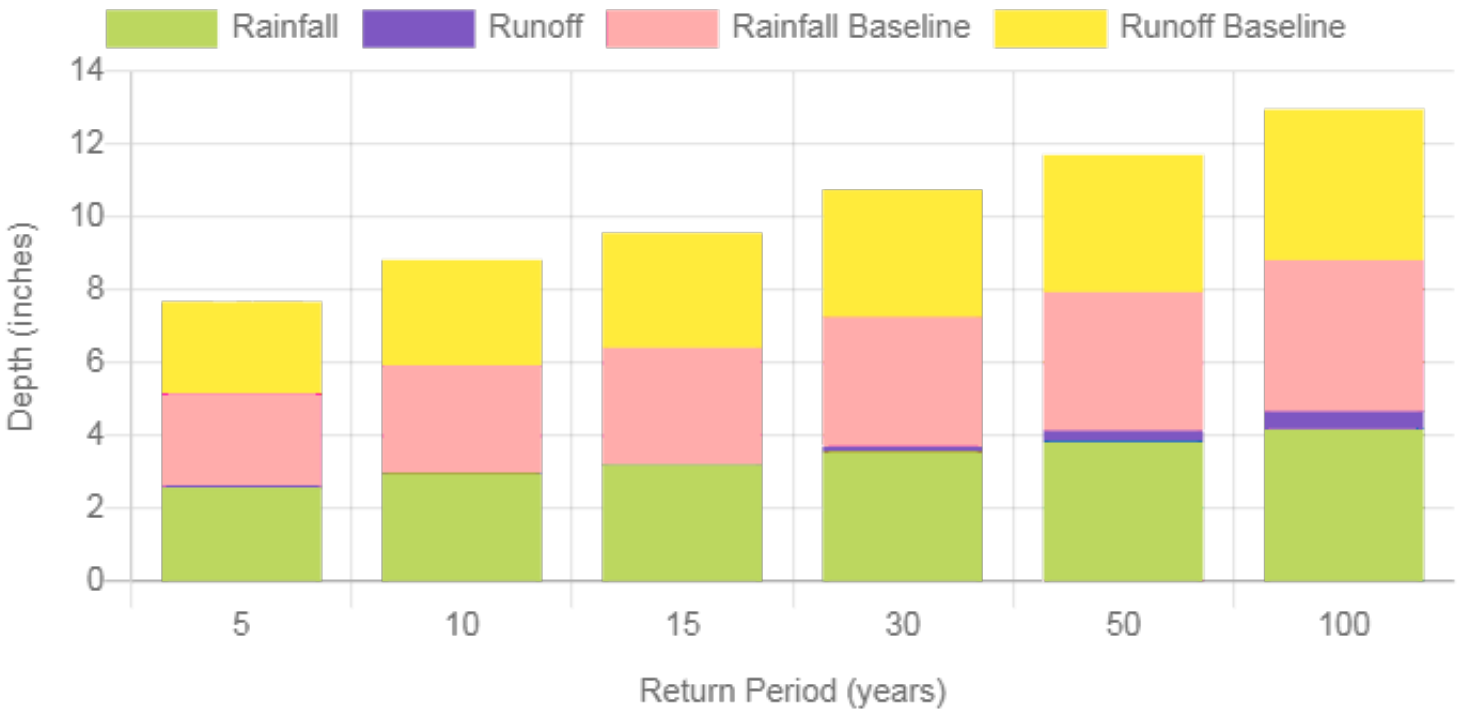
National Stormwater Calculator Report

Results

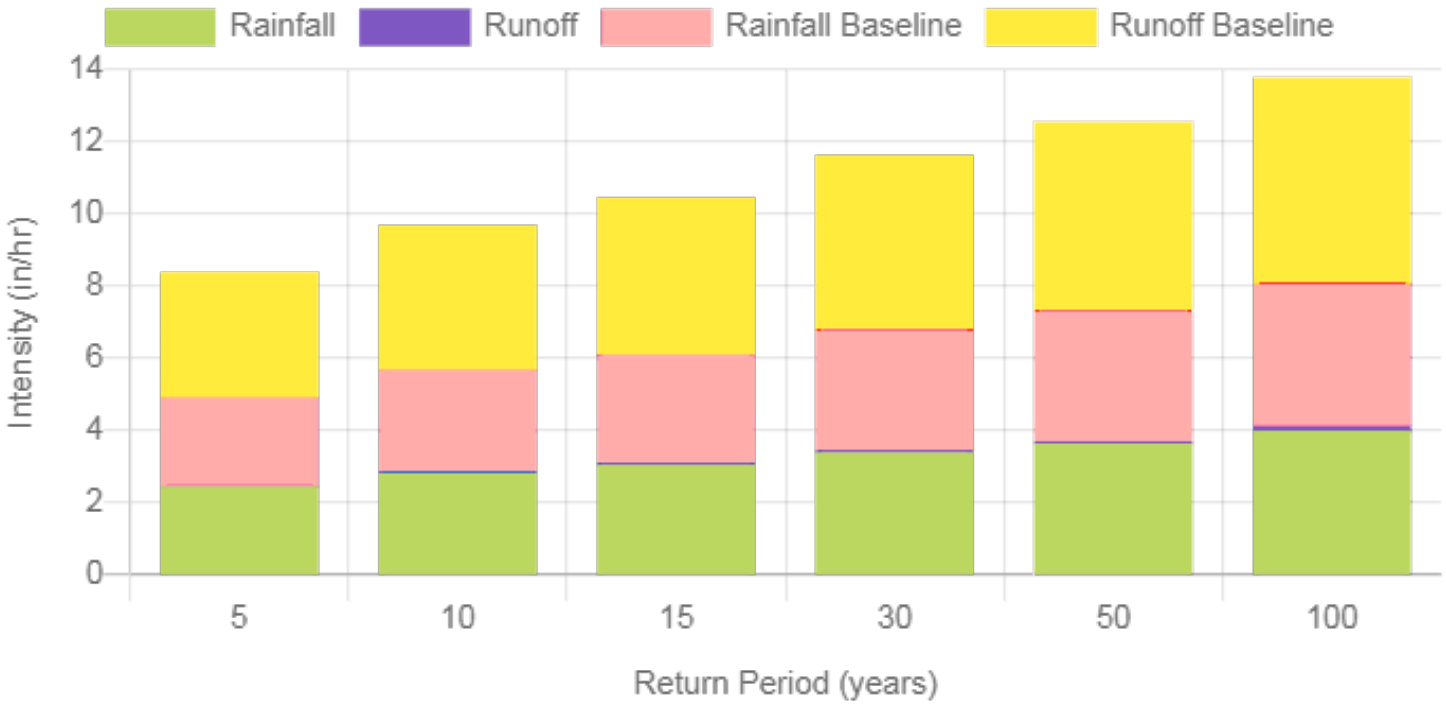
NOACA Cistern/Green wall/biocell

Extreme Event Rainfall / Runoff

Extreme Event Rainfall / Runoff Depth



Extreme Event Peak Rainfall / Runoff



National Stormwater Calculator Report

Results

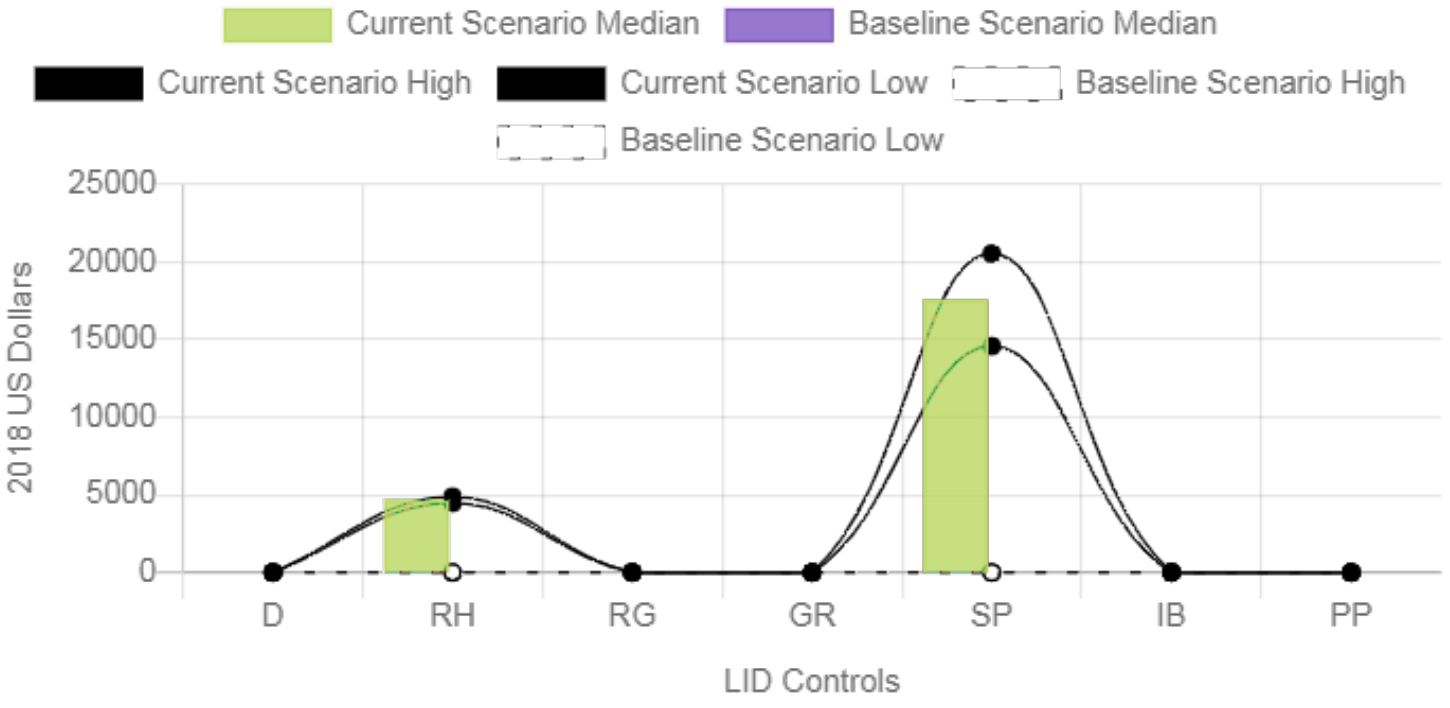
NOACA Cistern/Green wall/biocell

Cost Summary

Estimate of Probable Capital Costs (estimates in 2018 US.$)

	Drainage Area %	Has Pre-Treatment?	Area Treated (C)	Area Treated (B)	Difference (C-B)
D	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
RH	49 (C) / 0 (B)	NA (C) / NA (B)	$4481.37 - $4886.24	$0.00 - $0.00	$4481.37 - $4886.24
RG	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
GR	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
SP	50 (C) / 0 (B)	NA (C) / NA (B)	$14590.72 - $20557.64	$0.00 - $0.00	$14590.72 - $20557.64
IB	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
PP	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00

Key	LID Control
D	Disconnection
RH	Rain Harvesting
RG	Rain Gardens
GR	Green Roofs
SP	Street Planters
IB	Infiltration Basins
PP	Permeable Pavement



National Stormwater Calculator Report

Results

NOACA Cistern/Green wall/biocell

Cost Summary

Estimate of Annual Probable Maintenance Costs

	Drainage Area %	Has Pre-Treatment?	Area Treated (C)	Area Treated (B)	Difference (C-B)
D	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
RH	49 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
RG	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
GR	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
SP	50 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
IB	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00
PP	0 (C) / 0 (B)	NA (C) / NA (B)	$0.00 - $0.00	$0.00 - $0.00	$0.00 - $0.00

Key	LID Control
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RH	Rain Harvesting
RG	Rain Gardens
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SP	Street Planters
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