

**2014 NORTHEAST OHIO REGIONAL SEWER DISTRICT GRANTS PROGRAM
DOAN BROOK GREEN INFRASTRUCTURE GRANTS**

Application

Name of Project: Western Reserve Historical Society

Community: University Circle

Project Manager: Mary Thoburn, CPA, Sr. V. P.

Mailing Address: 10824 East Boulevard
Cleveland, OH 44106

Phone Number: 216-721-5722 ext 1104

Email: mthoburn@whrs.org

Location of Proposed Project
(address): same as above

Parcel(s) Number: 12017006

Current Drainage Area
of Project Site (sq. ft.): 51,000 square feet

SCM(s) to be Implemented
(list a all types): Porous pavement/bioretention/pvmnt removal

Approximate Square Footage of
SCM(s): 19,000 square feet

Drainage area Impacted by the
SCM(s) (sq. ft.) 51,000 square feet

Impervious Area to be Managed by
the SCM(s) (sq. ft.) 46,000 square feet

Gallons of Stormwater Controlled
and/or removed from Combined
sewer system by the SCM(s): 50,000 gallons based on 5 year storm/24hr duration

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Project Start Date:	<u>March 1, 2015</u>
Project End Date:	<u>August 31, 2015</u>
Estimated Total Project Cost:	<u>\$1,024,360</u>
Value of Match:	<u>\$775, 860</u>
Amount Requested:	<u>\$248,500</u>

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ATTACHMENT TO GRANT APPLICATION

INTRODUCTION

The Western Reserve Historical Society (WRHS) is a nonprofit institution whose mission is to inspire people to discover the American experience by exploring the tangible history of Northeast Ohio. WRHS provides an educational resource for school children, the general public and scholars. The History Center, located in the vibrant University Circle cultural district, is anchored by the historic Hay-McKinney and Bingham-Hanna Mansions, extensive Library/Archives, and the Euclid Beach Carousel Glass Pavilion. The restored, operational Euclid Beach Carousel is scheduled to open to the public in November, 2014. The History Center offers a multitude of exhibits and programming, attracting a variety of visitors on a daily basis. The fusion of modern architecture combined with historic buildings offers a unique experience, whether one is looking for an exciting event or seeking an educational experience. At WRHS, history lives and breathes through historical collections and programming that tie the past to the present. This project is Phase I of improvements identified in the WRHS **'Sustainable Landscape Plan'** and represents the organization's long-term commitment to environmentally sensitive and sustainable design.

PROJECT SUMMARY

The Western Reserve Historical Society (WRHS) is in the process of upgrading the visitor arrival experience to the facility. This effort presents an opportunity to implement Storm Water Control measures that will impact over 50,000 square feet of existing impervious pavement. The attached **'Phase 1 Project Area – Existing Conditions'** and accompanying photographs illustrate the extent of the project and the existing conditions.

Three Storm Water Control measures will be utilized, as follows:

Pervious Pavements

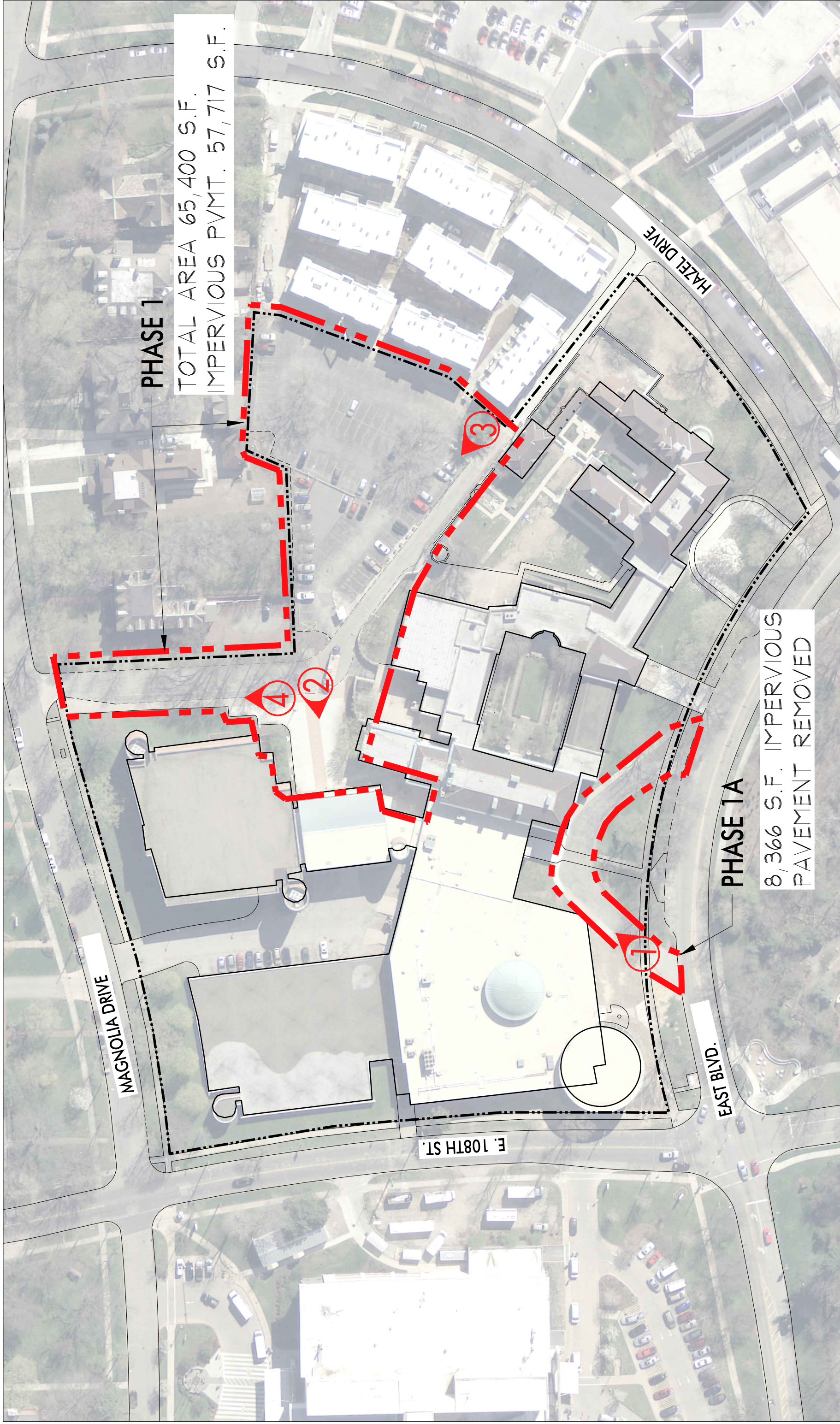
This SCM will be installed in both vehicular (existing entry drive and parking lot) and pedestrian (entry plaza) areas.

Bioretention Areas

This SCM will be constructed in two areas adjacent/within the parking lot.

Removal of Impervious Pavement

Phase 1 includes the removal of 8,400 square feet of impervious asphalt and concrete at the East Boulevard entrance and converting it to turf. The area is almost level and highly pervious due to sand substrata and will therefore almost completely eliminate any runoff.



PHASE 1

TOTAL AREA 65,400 S.F.
 IMPERVIOUS PVMT. 57,717 S.F.

MAGNOLIA DRIVE

E. 108TH ST.

PHASE 1A

8,366 S.F. IMPERVIOUS
 PAVEMENT REMOVED

HAZEL DRIVE

KEY

PHOTO # AND
 DIRECTION TAKEN



Scale:
 0 20' 40' 60'

behnke
 LANDSCAPE ARCHITECTURE

PHASE 1 PROJECT AREA - EXISTING CONDITIONS

WESTERN RESERVE HISTORICAL SOCIETY

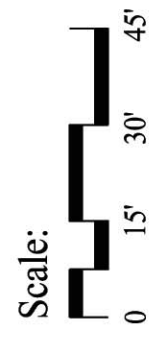
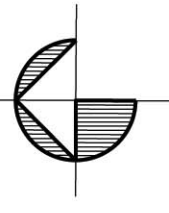




PHASE 1 PROJECT AREA IMPROVEMENTS

WESTERN RESERVE HISTORICAL SOCIETY

PERMEABLE PAVERS



Site Conditions

This entire site sits on a layer of pervious sand. The average coefficient of soil permeability of the in-situ soil on an immediately adjacent site is 0.030 feet per minute. Based on that we believe we can rely on exfiltration to handle the quantity of water required to be infiltrated within 48 hours. The potential for ground water pollution is also very low.

The attached '**Phase 1 Project Area**' depicts the location and extent of the Storm Water Control Measures.

Storm Water Calculations – See Appendix 'A'

VISIBILITY AND PUBLIC OUTREACH

The project is part of a capacity-building capital project upgrading the History Center to provide modernized, welcoming facilities for the public, with improved access to historic landscapes and urban green space within a pedestrian-friendly University Circle community. The History Center Transformation is part of a broader redevelopment effort in University Circle, which has seen an explosion of residential, retail, and business space, as well as capital projects at the Cleveland Museum of Art, the Museum of Contemporary Art, Case Western Reserve University, UH Case Medical Center, and the Cleveland Institute of Art. In the first phase, our parking area and entrance will be enhanced by new lighting, landscaping, green infrastructure and signage; this entire welcoming area is the focus of this project.

Last year, WRHS had over 54,000 visitors. Thanks to a new partnership with the Cleveland Metropolitan School District, nearly 6,000 students will visit the History Center annually. With the opening of the Euclid Beach Carousel, we are projecting a significant increase of nearly 8,000 visitors. Our visitors include paid admissions, school children, and researchers, and also those attending private events such as weddings, receptions and corporate events. In addition, our parking facility will be frequently used by others, such as Cleveland Institute of Music, the Music Settlement, Hawken School and Montessori High School, and the Louis Stokes VA Center.

Every visitor to the History Center will be exposed to visible green infrastructure and be able to see interpretative signage explaining the benefits of storm water control. In addition to external signage, a fact sheet will be available at the desk for every visitor.

WRHS has identified stewardship of the land as an important interpretive theme, focusing on rural and urban land use/planning, for industrial and post-industrial Cleveland. Educational programming can be adapted to integrate the goals and objectives of the green infrastructure, for public and school programs offered at WRHS.

ABILITY TO PROVIDE LONG TERM MAINTENANCE

The History Center site consists of nearly 8 acres, all which is owned and controlled by WRHS. WRHS will provide on-going maintenance, the cost of which will be incorporated into the annual operating budget of the organization. WRHS will celebrate its 150th anniversary in 2017, and just concluded the fifth consecutive year with an operating budget surplus.

See Appendix 'B' for a maintenance schedule.

TASKS AND DELIVERABLES

Submit NEORS D Grant Application	August 31, 2014
Topographic Survey	Completed
Grant Notification Date (Estimated)	Nov 7, 2014
Design Development Documents	Dec 5, 2104
Construction Dwgs/Bid Documents	Jan 9, 2015
Bids Due	Jan 30, 2015
Begin Construction	Mar 2, 2015
Complete Construction	July 31, 2015

LETTERS OF SUPPORT

See Appendix 'C'

BUDGET SUMMARY

The following 'Phase 1 Project Budget' is a detailed list of all items to be included in the project. It also summarizes cost allocation between WRHS and NEORS D as well as a listing of in-kind services provided by WRHS. The NEORS D 'DBGIG Budget' is also attached.

Professional services are being provided by **Behnke Associates**, Landscape Architects and Planners, 1215B W 10th Street, Cleveland, Oh. Phone 216-589-9100

With support from

Denk Associates, Electrical Engineering

GPD, Civil Engineering (Matt Neff, P.E.)

WESTERN RESERVE HISTORICAL SOCIETY
PHASE 1 PROJECT BUDGET
BEHNKE ASSOCIATES INC 8/28/2014

#	ITEM	QUAN	UNIT	UNIT COST	WRHS TOTAL COST	NEORSR REQUEST
1	GENERAL CONDITIONS	1	LS	\$ 50,000	\$ 50,000	
2	DEMOLITION INCL ASPHALT PVMNT, INCL BASE & CURBS & E BLVD ENTRY DRIVE; CONCRETE WALKS; WALLS INCL FOUNDATIONS; PAVERS INCL BASE; LIGHTS; FLAG POLE (REUSE); PARKING CONTROLS; TREES AND OTHER VEGETATION; AND MISC PER DRAWINGS.	1	LS	\$ 49,000	\$ 12,500	\$ 36,500
3	BASE REPAIR	6000	SF	\$ 4	\$ 24,000	
4	ASPHALT SURFACE 1-1/2" INCL FABRIC & TC	35500	SF	\$ 1	\$ 35,500	
5	PAINT STRIPING	1	LS	\$ 1,500	\$ 1,500	
6	CONCRETE CURBS	1340	LF	\$ 30	\$ 40,200	
7	CONCRETE WALKS	3400	SF	\$ 6	\$ 20,400	
8	POROUS PAVERS INCL BASE - VEHICULAR	8000	SF	\$ 15		\$ 120,000
9	POROUS PAVERS INCL BASE - PEDESTRIAN	3750	SF	\$ 12		\$ 45,000
10	COLORED CONCRETE - 9"	2500	SF	\$ 10	\$ 25,000	
11	PARKING CONTROLS-ENTRY/EXIT PLAZA	1	LS	\$ 85,000	\$ 85,000	
12	LIGHTING - PARKING	10	EA	\$ 5,000	\$ 50,000	
13	LIGHTING - PEDESTRIAN	6	EA	\$ 3,000	\$ 18,000	
14	LAWNS/PLANTING - NON RAINGARDEN)	1	LS	\$ 50,000	\$ 50,000	
15	BIORETENTION CELLS COMPLETE	1000	SF	\$ 25		\$ 25,000
16	BOLLARDS	34	EA	\$ 600	\$ 20,400	
17	SIGNAGE	1	LS	\$ 3,000	\$ 1,000	\$ 2,000
18	MISC FURNITURE - TRASH/BENCHES/BIKES	1	LS	\$ 5,000	\$ 5,000	
19	FENCES AND GATES	1	LS	\$ 10,000	\$ 10,000	
20	CONCRETE RETAINING WALL	45	LF	\$ 300	\$ 13,500	
21	WALL CAP - EVENT SPACE	90	LF	\$ 300	\$ 27,000	
22	WALL CAP - DRYING COURT	160	LF	\$ 300	\$ 48,000	
23	TREE PRUNNING	1	LS	\$ 5,000	\$ 5,000	
24	TEMPORARY PARKING	1	LS	\$ 10,000	\$ 10,000	
25	TRAFFIC MAINTENANCE	1	LS	\$ 15,000	\$ 15,000	
SUBTOTAL					\$ 567,000	\$ 228,500
CONTINGENCY					\$ 113,400	\$ 20,000
FEES FOR PROFESSIONAL SERVICES					\$ 95,460	\$ -
TOTAL					\$ 775,860	\$ 248,500
GRAND TOTAL					\$ 1,024,360	

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DBGIG Budget

DBGIG Project Income	Anticipated (include date)	Committed as of 10/1/14	Total	Line Item Description
Northeast Ohio Regional Sewer District	\$248,500 11/7/14		\$248,500	*
Foundations				
Government Grants or Contracts	\$750,000	\$750,000	\$750,000	
Organizational Budget (i.e.: individual contributions, fundraising events/products, membership/fees/earned income, endowed income)	\$2,860	\$2,860	\$2,860	
In-kind Support	\$23,000	\$23,000	\$23,000	Project Management
Other				
TOTALS	\$1,024,360	\$775,860	\$1,024,360	

DBGIG Project Expenses	Northeast Ohio Regional Sewer District Request	Other Funding	Total	Line Item Description
Professional Services	-0-	Design Fees by WRHS		*
Labor				*
Materials				*
Equipment Rental				*
Plants				*
Other				*
TOTALS	\$248,500	\$	\$248,500	*

*See attached Project Budget

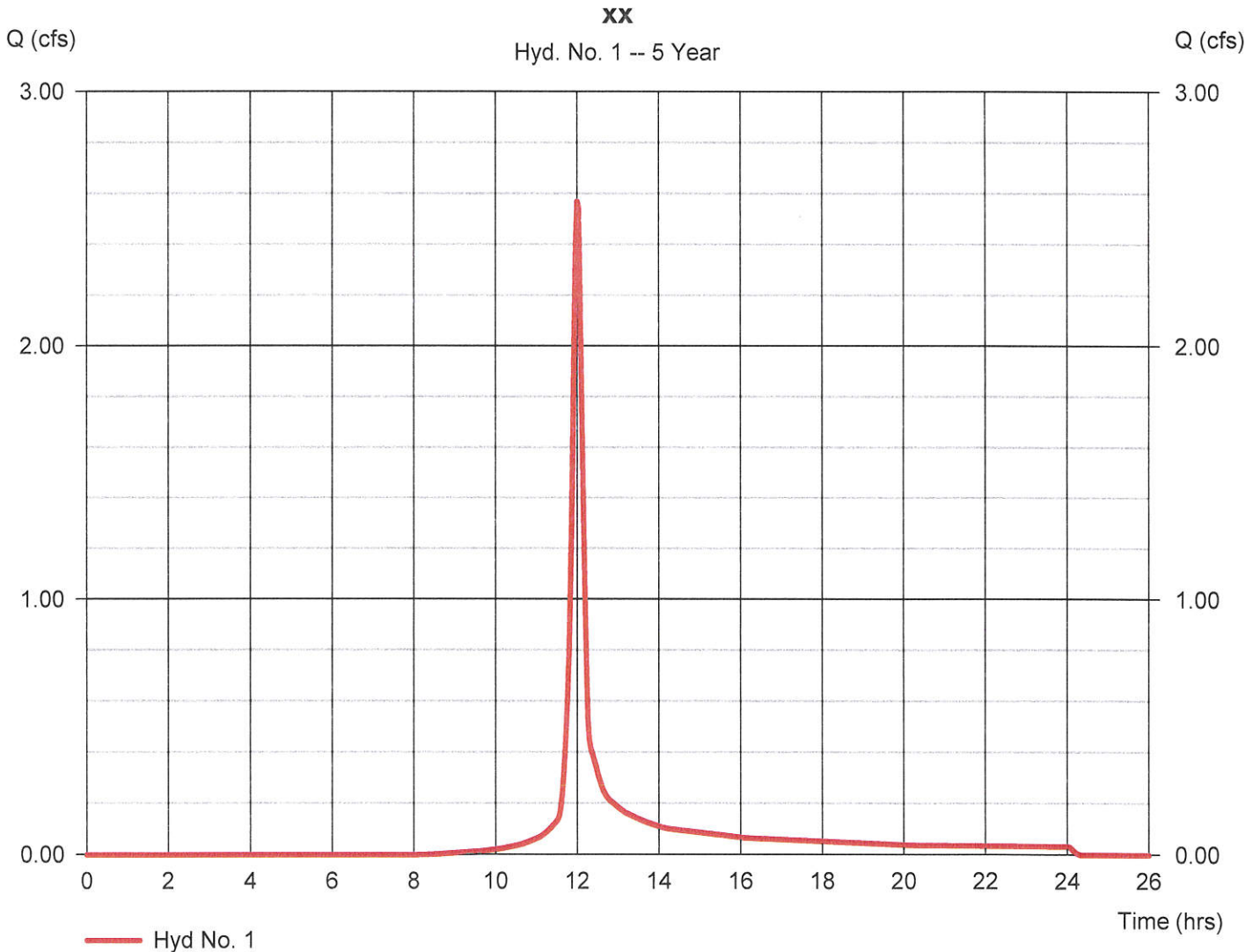
Appendix A

Hydrograph Report

Hyd. No. 1

xx

Hydrograph type	= SCS Runoff	Peak discharge	= 2.570 cfs
Storm frequency	= 5 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 6,663 cuft
Drainage area	= 1.170 ac	Curve number	= 85
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 10.00 min
Total precip.	= 2.92 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Appendix B

MAINTENANCE SCHEDULE FOR BIORETENTION BASIN

Description	Method	Frequency	Time of the year
SOIL			
Inspect and Repair Erosion	Visual	Monthly	Monthly
ORGANIC LAYER			
Remulch any void areas	By hand	Whenever needed	Whenever needed
Remove previous mulch layer before applying new layer (optional)	By hand	Once every two to three years	Spring
Any additional mulch added (optional)	By hand	Once a year	Spring
PLANTS			
Removal and replacement of all dead and diseased vegetation considered beyond treatment	See planting specifications	Twice a year	3/15 to 4/30 and 10/1 to 11/30
Treat all diseased trees and shrubs	Mechanical or by hand	N/A	Varies, depends on insect or disease infestation
Watering of plant material shall take place at the end of each day for fourteen consecutive days after planting has been completed	By hand	Immediately after completion of project	N/A
Replace stakes after one year	By hand	Once a year	Only remove stakes in the spring
Replace any deficient stakes or wires	By hand	N/A	Whenever needed
Check for accumulated sediments	Visual	Monthly	Monthly

In addition to routine maintenance, non-routine maintenance may be required if water remains on the surface for more than 48 hours. This could require cleaning underdrains, removing sediment, replacing some or all of the soil media or installing sand wicks.

MAINTENANCE & CLEANING OF PERMEABLE PAVERS

Cleaning

- Keep pavement clean of leaves and debris.
- Sweep every spring. Perform in dry weather to remove encrusted sediment.
- Sweeper types:
 - Conventional broom sweeper
Acceptable for removing crust when joints/apertures are accessible to brushes
- Regenerative air sweepers
Best option for maintaining permeable pavements
- Pure vacuum machines
Best for restoration if clogged
- Do **NOT** pressure wash pavement as water jet can drive residue into the setting bed and base below.

General Maintenance

- Replenish aggregate in joints/voids as needed. Use correct size stone-sand to sweep into cleaned openings.
- Remove or spray weeds that grow in pavement openings with a biodegradable herbicide.
- Maintain groundcover around the perimeter of the pavement to filter run-off overflow and reduce sediment running onto the pavement.
- If overflow openings in curbing are present, keep clean of debris.
- Visually inspect pavement once a quarter and within 24 hours after storm events greater than 1.0 inch in a 24 hour period. Check outflow from observation well if installed. Retain records of inspection and maintenance.
- Repair ruts or deformations exceeding ½”.
- Remove and replace broken pavers that compromise structural integrity of surface.

Appendix C



August 27, 2014

Ms. Kelly Falcone-Hall
President/CEO
Western Reserve Historical Society
10825 East Boulevard
Cleveland, OH 44106

Dear Ms. Falcone Hall:

On behalf of University Circle Inc. (UCI), I am writing to share my support for the Western Reserve Historical Society Public Amenity Green Infrastructure project to visibly demonstrate on-site stormwater control measures using green infrastructure. Thank you for informing me of your proposed submission to the Northeast Ohio Regional Sewer District Grants Program for a 2014 Green Infrastructure Grant for the Combined Sewer Area.

University Circle is a premier urban neighborhood, regional economic center and world-class visitor destination home to top educational, healthcare, and arts and cultural institutions. As a cultural institution focused on education, the Western Reserve Historical Society is ideally suited to leverage this grant to create educational programming opportunities that meet the goals of your organization and the Northeast Ohio Regional Sewer District, and to bring greater visibility to water conservation issues in Northeast Ohio.

In 2013, the Northeast Ohio Regional Sewer District partnered with UCI and The Snavely Group on a green infrastructure project at the Courtyard by Marriott University Circle. The project has been successful in both reducing the amount of water entering the sewer system, and raising awareness and understanding of green infrastructure.

We appreciate your commitment to expanding green infrastructure and educational programming within University Circle, and offer our strong support of your application to the 2014 Green Infrastructure Grant from the Northeast Ohio Regional Sewer District.

Best regards,

Chris Ronayne
President

UNIVERSITY CIRCLE INC

Development Service Advocacy

10831 Magnolia Drive Cleveland, OH 44106-1887

» 216.791.3900 » 216.791.3935 www.universitycircle.org



Senator Nina Turner
25th District

Ohio Senate
Statehouse
1 Capitol Square
Columbus, Ohio 43215
Phone 614-466-4583
Fax 614-644-6164
turner@ohiosenate.gov

15 August 2014

Ms. Kelly Falcone-Hall
President/CEO
Western Reserve Historical Society
10825 East Boulevard
Cleveland, OH 44106

Dear Ms. Falcone-Hall:

Thank you for informing me of your proposed application for a 2014 Green Infrastructure Grant to the Northeast Ohio Regional Sewer District for the Combined Sewer Area. As I understand it, the NEORS D program is designed to fund projects that visibly demonstrate on-site stormwater control measures using green infrastructure.

After reviewing your proposal, it is apparent that your project is perfectly suited for this special funding opportunity. As a cultural institution focused on experiential education, the Western Reserve Historical Society is ideally suited to leverage this grant into educational programming that meet the goals of the organization and NEORS D, bringing greater visibility to water conservation issues in Northeast Ohio. Raising awareness and increasing public understanding of the critical nature of water management issues should be a shared goal of all Northeast Ohio residents and anchor institutions.

For nearly 150 years, your organization has commanded the respect of citizens and civic leaders in Greater Cleveland, and I expect nothing less than excellence in all endeavors of the Western Reserve Historical Society. As such, I express my unqualified support for your Public Amenity Green Infrastructure project.

All the best,

A handwritten signature in blue ink, appearing to read "Nina Turner", with a large, stylized flourish extending to the right.

NINA TURNER
STATE SENATOR
25TH DISTRICT



**SENATOR
SHIRLEY SMITH**
21ST DISTRICT

Committees

State Government Oversight & Reform -
Ranking Member

Finance

Criminal Justice

Public Utilities

Agriculture

Correctional Institution Inspection Committee

August 18, 2014

Ms. Kelly Falcone-Hall
President and CEO, Western Reserve Historical Society
10825 East Boulevard
Cleveland, Ohio 44106

Dear Ms. Falcone-Hall,

I am writing in support of Western Reserve Historical Society's request for funding from the Northeast Ohio Regional Sewer District (NEORS) Green Infrastructure Grant to be used for the renovation of the Society's parking facility surface.

The NEORS program is designed to fund projects that visibly demonstrate on-site stormwater control measures using green infrastructure. The proposed renovation will replace the current parking facility surface with permeable paving materials, which will allow stormwater to move through the surface and reduce runoff, trap suspended solids, and filter pollutants from the water.

As a cultural institution focused on education, the Western Reserve Historical Society is ideally suited to leverage this grant into educational programming opportunities that collectively meet the goals of the Western Reserve Historical Society and NEORS. It will also bring greater visibility to water conservation issues in Northeast Ohio.

I have witnessed firsthand the impact that the Western Reserve Historical Society has had on our community. I urge strong consideration of the organization's request for a Green Infrastructure Grant and believe the residents of Cuyahoga County will be proud of the initiative taken to be environmentally friendly.

Please do not hesitate to contact me should you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Shirley A. Smith".

Shirley A. Smith
State Senator, 21st District

Columbus Office: Ohio Statehouse • Room 052 • Columbus, OH 43215

Email: Smith@ohiosenate.gov

Phone: 614-466-4857 • Facsimiles: 614-466-4120

Cleveland Office: 216-451-2276



Representative Bill Patmon
10th District

August 14, 2014

Ms. Kelly Falcone-Hall
President/CEO
Western Reserve Historical Society
10825 East Boulevard
Cleveland, OH 44106

Ms. Falcone-Hall:

Thank you for informing me of your proposed submission to the Northeast Ohio Regional Sewer District Grants Program for a 2014 Green Infrastructure Grant for the Combined Sewer Area. As I understand it, the NEORS D program is designed to fund projects that visibly demonstrate on-site stormwater control measures using green infrastructure.

As a cultural institution focused on education, the Western Reserve Historical Society is ideally suited to leverage this grant into educational programming opportunities that meet the goals of your organization and NEORS D, and to bring greater visibility to water conservation issues in Northeast Ohio.

As such, I express my unqualified support for your Public Amenity Green Infrastructure project.

Respectfully,

A handwritten signature in black ink, appearing to read "Bill Patmon".

Representative Bill Patmon
10th House District

Committees:

- Ways and Means
- State and Local Government
- Transportation, Public Safety and Homeland Security

www.ohiohouse.gov
77 S. High Street, Columbus, Ohio 43215-6111

Contact Information:

Office: 614-466-7954
FAX: 614-719-0010
Email: rep10@ohiohouse.gov
Twitter: @RepBillPatmon