COMMUNITY COST-SHARE AGREEMENT BY AND BETWEEN THE NORTHEAST OHIO REGIONAL SEWER DISTRICT AND CITY OF HUDSON

This Agreement is made and entered into this day of,
2017, by and between the Northeast Ohio Regional Sewer District (District) acting pursuant to
Resolution No. 114-13, adopted by the Board of Trustees of the District on May 16, 2013
(Exhibit "A"), and the City of Hudson (City) acting pursuant to Ordinance/Resolution No.
, adopted on, 20 (Exhibit "B").

Recitals

WHEREAS, the District, as a component of implementing a regional stormwater management program, manages a financial account termed the "Community Cost-Share Account" that is for the aggregation and dissemination of funds derived from revenues collected from the Stormwater Fee; and

WHERAS, the purpose of the Community Cost-Share Account is to provide funding to assist the City with District-approved projects through the Community Cost Share Program; and

WHEREAS, the Community Cost-Share Program funds are used for construction, operation, and maintenance of the Local Stormwater System, including administrative costs directly associated with such projects as well as costs related to repair or upgrade; and

WHEREAS, the District supports the Community Cost-Share Brandywine Creek Watershed Study project (the "Project") as a Community Cost-Share project proposed by the City; and

NOW THEREFORE, in consideration of the foregoing, the payment and the mutual promises contained in this Agreement, the parties agree as follows:

Article 1.0 City Obligations

- 1.1 The City agrees to perform as follows:
 - 1.1.1 Complete work as detailed in the District approved Community Cost-Share application. (Exhibit "C")
 - 1.1.2 Complete and submit Progress Reports when submitting Request for Payment as needed, or within 30 days of close of the Project, per Section 5.0 of the *Community Cost-Share Program Policy*.

- 1.1.3 Notify the City's Watershed Team Leader at least 7 business days prior to the start of the Project.
- 1.1.4 Meet with District staff when requested to review the Project status.
- 1.1.5 Obtain all necessary legal agreements with affected property owners to perform the Project and to bind any successor in title to maintain compliance as specified in this Agreement between the District and the City for the Project.
- 1.1.6 Comply with all applicable local, state and federal requirements. This may include, but is not limited to, U.S. Army Corp of Engineers Section 404, Ohio EPA Section 401 water quality certification, and Ohio Department of Natural Resources Dam Safety Laws.
- 1.1.7 If the City fails to maintain the Project in accordance with this Agreement, the City shall be liable for the full amount of any Community Cost-Share Program funds paid for the Project. Such amount shall be offset against the City's Community Cost-Share Account.
- 1.1.8 Submit requests for approval to modify the budget, deadline, deliverables, or other components of the Project to the City's Watershed Team Leader at least 30 business days prior to the desired date of execution of the modification.
- 1.1.9 Acknowledge the District on any public advertisement or outreach efforts including all publications and signage related to the Project which shall include the following disclaimer:

This project was funded in part or totally through the Northeast Ohio Regional Sewer District (NEORSD) Community Cost-Share Program in coordination with City, under the provisions of the NEORSD Regional Stormwater Management Program. The contents and views, including any opinions, findings, or conclusions or recommendations, contained in this publication are those of the authors and have not been subject to NEORSD review and may not necessarily reflect the views of NEORSD, and no official endorsement should be inferred.

- 1.1.10 Provide the District the opportunity to have design approval for any signage or public education and outreach efforts related to the Project.
- 1.1.11 Permit the District to photograph the Project and to incorporate the Project into the District's overall public education and outreach efforts for stormwater management.
- 1.2 Failure to meet any of the requirements listed in Article 1.1 may result in termination of this Agreement and reimbursement of disbursed funds to the District.

Article 2.0 District's Obligations

- 2.1 The District agrees to perform as follows:
 - 2.1.1. Allocate \$61,332.00 to the City for the Project from the City's Community Cost-Share Account.
 - 2.1.2. Provide reimbursement of funds up to \$61,332.00 to the City within 60 days of receipt of a complete Request for Payment from the City, detailing costs related to the Project.
 - 2.1.3. Timely review and approval or disapproval of requests to modify the budget, deadline, deliverables, or other components of the Project.
 - 2.1.4. Acknowledge the City in presentations or publications related to the Project.

Article 3.0 Dispute Resolution

- 3.01 The Parties shall continue the performance of their obligations under this Agreement notwithstanding the existence of a dispute.
- 3.02 The Parties shall first try to resolve the dispute at the level of the designated representatives as follows:

District Representative	City Representative
Senior Watershed Team Leader	Thomas J. Sheridan, P.E., P.S.,
	Assistant City Manager – City Engineer

If the Parties are unable to resolve the dispute at that level within ten (10) working days, the Parties shall escalate the dispute to the following level to resolve the dispute:

District Representative	City Representative
Director of Watershed Programs	{Insert Representative(s)}

3.03 If the Parties remain unable to resolve the dispute within an additional ten (10) working days, the Parties shall proceed to mediation upon request by either party. The mediator shall review all documents and written statements, in order to accurately and effectively resolve the dispute. The mediator shall call a meeting between the Parties within ten (10) working days after mediator appointment, which meeting shall be attended by at least the respective representatives listed in paragraph 3.02 above. The Parties shall attempt in good faith to resolve the dispute. The Parties agree to follow the Uniform Mediation Act, Chapter 2710 of the Ohio Revised Code. The Parties shall share the cost of the mediator

equally.

3.04 Such mediation shall be non-binding between the Parties and, to the extent permitted by law, shall be kept confidential. If the dispute is resolved and settled through the mediation process, the decision will be implemented by a written agreement signed by both Parties. If the dispute is unable to be resolved through mediation, the Parties agree to submit the dispute to the appropriate jurisdiction as per Article 4, Remedies, below.

Article 4 Remedies

4.01 The Parties agree that, after exhausting the dispute resolution process outlined above, all claims, counter-claims, disputes and other matters in question between the Parties arising out of or relating to this Agreement, or the breach thereof, will be decided at law. This Agreement shall be governed by and interpreted according to the law of the State of Ohio.

Article 5 Counterpart Signatures

5.01 This Agreement may be executed in counterparts, each of which shall be deemed to be an original, but which counterparts when taken together shall constitute one Agreement.

Article 6 Governing Law

6.01 The terms and provisions of this Agreement shall be construed under and governed by the laws of Ohio (to which all Parties hereto consent to venue and jurisdiction).

Article 7 Disclaimer of Joint Venture

7.01 This Agreement is not intended to create a joint venture, partnership or agency relationship between the Parties, and such joint venture, partnership, or agency relationship is specifically hereby disclaimed.

Article 8 Authority to Execute

8.01 Each person executing this Agreement represents and warrants that it is duly authorized to execute this Agreement by the party on whose behalf it is so executing.

Article 9 Exhibits

The following exhibits are attached hereto and incorporated herein:

Exhibit "A" – District Resolution

Exhibit "B" – City Ordinance/Resolution

Exhibit "C" – District Approved Community Cost Share Application

The parties have executed this Agreement on the day and year first above written.

NORTHEAST OHIO REGIONAL SEWER DISTRICT

	BY:	
		Kyle Dreyfuss-Wells
		Chief Executive Officer
	ANID	
	AND	
	BY:	
		Darnell Brown, President
		Board of Trustees
		CITY OF HUDSON
	By:	
	Title:	
		Federal Taxpayer I.D. Number
The Legal Form and Correctness of this		
Instrument is hereby Approved:		
CITY OF HUDSON		
Assistant/Director of Law	-	

Each party agrees that this Agreement may be executed and distributed for signatures via email, and that the emailed signatures affixed by both parties to this Agreement shall have the same legal effect as if such signatures were in their originally written format.

This Instrument Prepared By:

Northeast Ohio Regional Sewer District

Assistant General Counsel

Katarina K. Waag

CONTRACT NO.

NORTHEAST OHIO REGIONAL SEWER DISTRICT

WITH

WITH	
CITY OF HUDSON FOR COMMUNITY COST-SHARE PROJECT: BRANDYWINE CREEK WATERSHED STUDY	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
Total Approximate Cost: \$61,332.00	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.
The legal form and correctness of the within instrument are hereby approved.	CHIEF FINANCIAL OFFICER
CHIEF LEGAL OFFICER	Date
Date	

CERTIFICATION

EXHIBIT A

NORTHEAST OHIO REGIONAL SEWER DISTRICT RESOLUTION NO. 114-13

Authorizing the Executive Director to enter into Regional Stormwater Management Program Community Cost-Share Program Agreements with Member Communities.

WHEREAS, the Code of Regulations of the Northeast Ohio Regional Sewer District, Title V – Stormwater Management Code Chapter 9 outlines the Community Cost-Share Program developed to provide funds to District Member Communities for construction, operation and maintenance activities of community-specific stormwater management projects; and

WHEREAS, under the Community Cost-Share Program, 25% of the annual collected stormwater revenue from each Member Community will be held by the District in a Community Cost-Share account, whereby Communities, with review and approval by the District, through specific applications outlining the community-specific stormwater work to be performed can access reimbursement of their funds; and

WHEREAS, the District is seeking authority to enter into Regional Stormwater Management Program Community Cost-Share Program Agreements with Member Communities for the purpose of detailing and memorializing responsibilities of the District and Member Communities under specific applications to the Community Cost-Share Program;

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF TRUSTEES OF THE NORTHEAST OHIO REGIONAL SEWER DISTRICT:

Section 1. That this Board finds that for the reasons stated in the preamble hereof it is in the best interests of the District to enter into Regional Stormwater Management Program Cost-Share Program Agreements with Member Communities to memorialize responsibilities of the District and Member Communities under specific applications to the Community Cost-Share Program.

Section 2. That this Board hereby authorizes the Executive Director to enter into Regional Stormwater Management Program Cost-Share Agreements with Member Communities to memorialize responsibilities of the District and Member Communities under specific applications to the Community Cost-Share Program under such terms and conditions that are satisfactory to the Director of Law and in the best interests of the District.

Section 3. That this Board authorizes the Executive Director to execute all documents and do all things necessary to effect the terms and conditions of the Stormwater Management Program Direct Billing Agreements with Member Communities.

Section 4. That this Board declares that all formal actions of the Board concerning and relating to the adoption of this resolution and that all deliberations of the Board and any of its committees that resulted in said formal action were conducted in meetings open to the public and in compliance with all legal requirements, including Section 121.22 of the Ohio Revised Code.

On motion of Mayor Starr seconded by Mr. O'Malley, the foregoing resolution was unanimously adopted on May 16, 2013.

Sheila J. Kelly, Secretary

Board of Trustees

Northeast Ohio Regional Sewer District



Community Cost-Share Program APPLICATION

Member Community Information

Community:	City of Hudson, Ohio					
Primary Project Contact:	Thomas J. Sheridan, P.E., P.S.					
(Name & Title)	Assistant City Manager-City Engineer					
Mailing Address:	115 Executive Parkway, Suite 400					
	Hudson, Ohio 44236					
Phone Number:	330-342-1770					
Email:	tsheridan@hudson.oh.us					
Project Information						
Project Title:	Brandywine Creek Watershed Study					
Address or Location of Project:	Brandywine Creek, Brandywine Creek					
	Tributary and Part of Local Storm System					
Project Start Date:	May, 2017					
Project End Date:	February, 2018					
Community Cost-Share Fund Request:	\$61,332					
Submission Date:	March 16, 2017					



Project Narrative

- 1) Project Summary (1,000 word maximum)
 - Describe the Project and include the following information, as applicable:
 - Describe the Project and deliverables; provide a map if applicable
 - Submit a deliverable worksheet listing tasks and deliverables with start dates and end dates for the significant benchmarks.
 - List permitting requirements necessary to initiate and complete project and how the requirements will be met.
- Project Description and Deliverables: The project will be a joint watershed study between NEORSD and the City of Hudson. The study will expand the NEORSD's Cuyahoga River South (CRS) Storm Water Master Plan to address local storm water system issues in the Brandywine Creek watershed. Upon completion of the study, the consultant will provide NEORSD and the City a report outlining the findings of the study which will be used by the City for future planning and budgeting of capital improvement projects. Reference attached CDM Smith "Proposed Scope of Work for Brandywine Creek Stormwater Master Plan" dated 01/31/2017 for further reference.
- Deliverables worksheet with start dates and end dates: See table 2 in the attached "Proposed Scope of Work for Brandywine Creek Stormwater Master Plan". The study is expected to begin March, 2017 and finish in early 2018.

The goal of the study is (task 1) collect and review the City's existing plans, studies and other existing infrastructure data and field visits to review the infrastructure, (task 2) develop a new hydrologic and hydraulic model for the regional components of the Brandywine Creek Watershed and the City's local storm water components, (task 3) evaluate the identified problem areas or proposed areas of improvement within the storm water system model and develop solutions for each and (task 4) compile findings and report for all evaluated components.

- Permitting requirements: No permitting requirements are anticipated for this study.



- 2) Ability to Provide Long Term Maintenance (500 word maximum)

 Describe the plans for long-term maintenance, addressing the following question:
 - Who is responsible to provide on-going maintenance for the project and how will maintenance be ensured?
 - Provide documentation of scheduled maintenance and operation for completed storm water project(s).

Not applicable.



- 3) Visibility and Public Outreach: (500 word maximum)
 Public outreach is required if appropriate for your project.
 - What audiences will be exposed to this Project (neighbors, students, community groups, general public)?

The City of Hudson staff presented the study to Hudson City Council on February 21, 2017.

Once a date of the inspection is established, notification letters will be provided to affected residents describing the crews conducting the necessary field study. The letter will provide the applicable City contact information.

Information regarding the study and contact information will be posted on the City of Hudson website at: www.hudson.oh.us/442/Construction-Projects.



4) Budget Summary (500 words maximum)

The Budget Summary and Project Budget (see page 3) represent the Community Cost-Share Project components exclusively. Include details on the provider of all services such as design, engineering, construction management and materials including specific material cost, equipment, and hourly rate.

If an engineer's estimate is included with the application, indicate which line items are included in the Community Cost-Share Project application.

See table 3 in attached CDM Smith "Scope of Work for Brandywine Creek Watershed Storm Water Master Plan"



Vendor Registration

Prior to submission, ensure that the Member Community is a registered vendor with the District. Vendor Registration can be done by accessing http://www.neorsd.org/isupplier_homepage.php and completing the New Vendor Registration. If unsure of the Member Community vendor status, by initiating the New Vendor Registration a message of active registration will appear if currently registered as a vendor.

Project Budget

Project Expenses	Community Cost- Share Expense	Line Item Description
Professional Services	\$61,332	
Personnel (Member Community staff only)	\$0	N/A
Subcontract	\$0	N/A
Equipment	\$0	N/A
Materials	\$0	N/A
Other	\$0	N/A
TOTAL	\$61,332	



Memorandum

To: Thomas Sheridan (City of Hudson)

From: Julie McGill (CDM Smith)

Date: January 31, 2017

Subject: Proposed Scope of Work for Brandywine Creek Stormwater Master Plan

After reviewing and refining with the Northeast Ohio Regional Sewer District (District) and the City of Hudson (City) the actions needed in response to the City's request to expand the Cuyahoga River South (CRS) Stormwater Master Plan (SWMP) to address local stormwater system issues in the Brandywine Creek watershed, we have prepared the following proposed scope of work for the services to be performed for the City.

Project Understanding

This scope of work is based on CDM Smith's initial assessment of the inventory data and previous studies provided by the City, and will be performed under a separate agreement between CDM Smith and the City. The City identified 22 problem locations in the Brandywine Creek watershed (Exhibit 1 located at the end of this memo). As shown in the first half of Table 1, thirteen of the 22 problems will be modeled and assessed as part of the CRS SWMP being prepared for the District. While most of the thirteen are within the regional stormwater system (RSS), it is important to note that problem areas 1 and 15 are within Hudson's local stormwater system (LSS), but likely to have solutions that are related to or could benefit the RSS. Therefore, CDM Smith has recommended through a separate memo to the District that the District address these areas under the CRS SWMP study's specific allowance for LSS problem areas:

- City of Hudson problem area 1 considers additional stormwater detention to benefit the RSS.
- City of Hudson problem area 15 involves flooding in the local drainage system at an RSS crossing.

The second half of Table 1 list the other nine problems, grouping them into four larger, LSS problem areas that not currently addressed by the CRS SWMP because they are outside of the District's RSS. **Exhibit 2** shows the locations of these four new LSS problem areas. To develop a Brandywine Creek SWMP that addresses the four new, LSS problem areas would expand the level of effort beyond CDM Smith's "base scope of work" with the District. The right-hand columns of Table 1 list the estimated number of additional catchments and LSS hydraulic elements that would be added to the

hydrologic/hydraulic model. Additional alternative solutions for the four new problem areas would also be developed, evaluated, and documented in a local community SWMP report. The remainder of this memo discusses a proposed scope of work.

Table 1. Identified LSS Problem Areas and Corresponding Additions to SWMP

aš.	LSS Pr	oblems Identifie	ed by City of Hudson		Proposed	New LSS Prob Elements fo	lem Areas and Model or SWMP
City of Hudson Problem ID	Location	Infrastructure Type	City of Hudson Notes	Available Data	New LSS Problem Area	Additional Model Catchments	Additional Hydraulic Elements in LSS
A A SAMPLE	THE STATE OF	P	roblem Areas Being Addre	ssed by CRS 51	WMP		
1	Colony Park Detention Ponds	Storage	2 of 3 modeled ponds have been constructed. City would like to know if 3rd pond would be beneficial.	Plans and Study			
2	Ravenna Street Culvert (1) at 270 Ravenna Street	Culvert	Existing 52"x84" culvert under Ravenna St. carries large drainage area next to residential homes. Is it sized correctly to meet City of Hudson Engineering Standards?	GIS Info Only			
3	Barlow Community Center (40 S. Oviatt Street) Upper Lake	Storage and Dam		Plans, Study and Inspection Report		Problem Areas Being Addressed by CRS SWMP	
4	Barlow Community Center Lower Lake	Storage and Dam	improvements to meet	Plans, Study and Inspection Report			
5	Brandywine Creek Trib., west of Fire Station at 41 S. Oviatt Street	Storage	The existing infrastructure in the area may be undersized and/or prone to surcharge. Can the existing creek and surrounding area able to be modified to provide additional storage?	GIS Info Only			

	LSS Problems Identified by City of Hudson				Proposed	New LSS Prob Elements fo	lem Areas and Model or SWMP
City of Hudson Problem ID	Location	Infrastructure Type	City of Hudson Notes	Available Data	New LSS Problem Area	Additional Model Catchments	Additional Hydraulio Elements in LSS
7	Ravenna Street Culvert (2) at 34 Ravenna Street.	Culvert	Existing 36" culvert under Ravenna St. carries flow from Barlow Community Center Ponds before entering commercial business area. Is the culvert sized correctly to meet Hudson Engineering Standards?	-			
15	W. Streetsboro Road (SR 303) Culvert/ Bridge	Bridge	Bridge/roadway has overtopped even though FEMA SFHA is captured within bridge. Bridge and surrounding drainage to be evaluated to determine why flooding still occurring.	Plans			
16	Owen Brown Street Culvert/Bridge	Bridge	Bridge/roadway is undersized to carry the 100-year flood. Size of new bridge to be determined along with flood limits for other storm events.	Plans		Problem Areas Being Addressed by CRS SWMP	
18		Storage / Erosion	Erosion including 5' of downcutting, approximately 8'-10' into embankment at residential properties. Is this area suitable for regional detention?	GIS Info Only			
19	Hudson Hills/Winston Manor Retention Pond near 9 Blackberry Orive	Maintenance	Existing pond is filling with sediment. Solutions for sediment control at upstream locations possible?	Plans			
20	Private property flooding at 6956 Post Lane	Culvert	Resident has experienced flooding on private property.	GIS Info Only			

	LSS Pr	oblems Identifie	ed by City of Hudson		Proposed	New LSS Prob Elements f	lem Areas and Model or SWMP
City of Hudson Problem ID	Location	Infrastructure Type	City of Hudson Notes	Available Data	New LSS Problem Area	Additional Model Catchments	Additional Hydraulic Elements in LSS
21	Future Valley View/OTIC Regional Storage Pond	Storage	For information only - City is developing plan to provide storm water storage and water quality improvements as part of OTIC Grant under separate contract.		FQ		
22	Pine Lake		Existing lake is filling with sediment. Solutions for sediment control at upstream locations possible?	Study			
		New LSS F	Problem Areas Not Current	ly Addressed l	by CRS SWN	ИP	
8	Behind Rosewood Grill building, 36 E. Streetsboro Road		the existing creek and		1	5	1,800 LF culverted stream; possibly some open channel; limits to be determined (TBD)
9	49 E. Streetsboro Street		100-year flood path needs evaluated to verify potential flood limits	GIS Info Only			
10	74 Church Street		100-year flood path needs evaluated to verify potential flood limits	GIS Info Only			1,500 LF culverted
11	73 Division Street	Storm Sewer	100-year flood path needs evaluated to verify potential flood limits	GIS Info Only	2	4	stream; possibly some open channel (limits TBD);
12	2 Ellsworth Court		100-year flood path needs evaluated to verify potential flood limits	GIS Info Only			floodplain mapping; potential facility evaluation.
13	Hudson Middle School, 77 N. Oviatt Street		If existing building is removed/rebuilt, is site suitable to provide additional regional storage?	GIS Info Only			

	LSS Problems Identified by City of Hudson				Proposed	New LSS Prob Elements f	lem Areas and Model or SWMP	
City of Hudson Problem ID	Location	Infrastructure Type	City of Hudson Notes	Available Data	New LSS Problem Area	Additional Model Catchments	Additional Hydraulic Elements in LSS	
6	Storm Sewer behind HPP Electric Substation at 95 S. Main Street	Storm Sewer	Existing 30" storm sewer and adjacent culvert under railroad tracks is prone to blockage. Is storm sewer sized correctly and/or is design available for better maintenance.	GIS Info Only	3	T m		3,600 LF culverted
14	5. Main Street (SR 91) Culvert/ Bridge	Bridge	Bridge/roadway has overtopped even though FEMA SFHA is captured within bridge. Bridge and surrounding drainage to be evaluated to determine why flooding still occurring.	Plans		8	stream; 4,000 LF open channel	
17	Norfolk Southern Railroad Culvert	Culvert	City has developed plans to construct new 36" culvert under NS tracks to alleviate flooding at upstream properties. Would other improvements provide better solution at this location?	Plans and Study	4	1	1,000 LF open channel; 30 acre/100% impervious commercial development, SR 303 drainage elements TBD; local system limits and elements TBD.	

Proposed Scope of Work

The following general scope of work describes the additional tasks that need to be performed to incorporate Hudson LSS problem areas 1, 2, 3, and 4 into the District's Brandywine Creek SWMP. **Appendix A** presents a detailed scope of work. This scope of work adapts three major tasks of the scope of work for the District's CRS SWMP to the four LSS problem areas described in Table 1:

- Operational Performance Evaluation Task 1 Supplemental Data Collection and Task 2
 Model Development and Application will use field data and hydraulic modeling to
 characterize existing conditions and problems.
 - a. For the Brandywine Creek SWMP, the project team will conduct a thorough inventory and review of the LSS assets within the Brandywine Creek watershed. A project team member will also conduct field visits to the four LSS problem areas to better understand existing conditions. Having one or more City of Hudson staff that are knowledgeable about the problems participate in the field visit will

- provide valuable city staff insight. Where available from the city's asset management program, the project team also requests any field condition assessments of the structural, sediment, and debris conditions of the LSS assets.
- b. Under the base scope of work for the District, the project team is developing and calibrating a new hydrologic and hydraulic model of the Brandywine Creek watershed using SWMM. Under the scope of work for the city, this same model will be extended upstream of the RSS to include the additional model catchments and hydraulic elements listed in Table 1. CDM Smith plans to use the City's existing GIS inventory and record drawings and available digital elevation model data to develop the SWMM model of the LSS. Therefore, current proposed costs do not include surveying or additional field data collection. If data gaps are identified, City staff will collect the required data. If it is recommended to collect surveyed elevations or cross section at critical location, CDM Smith will prepare a proposed cost for that service.
- c. Using the SWMM model, the project team will simulate the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour, design storms; and prepare inundation maps for the 10-, 100-year, and two additional design storms. Under the scope of work for the city, the project team will use the same design storm results and inundation maps prepared under the base scope of work, but will add inundation mapping for the LSS model components for the 5-, 10, and 100-year design storms.
- 2. Alternative Development and Evaluation Task 3 Alternative Development and Evaluation will systematically develop a comprehensive set of solutions to existing and projected future stormwater problems that consider watershed-wide effects.
 - a. For each of the four LSS problem areas, the project team will formulate a number of alternative solutions involving the strategic selection of one or more stormwater control measures (SCMs) known to be effective. Starting with Level 1 baseline SCMs (e.g., operations and maintenance, floodplain protection), the alternatives will add Level 2 flow controls where feasible, and supplement with Level 3 conveyance improvements to achieve the acceptable level of risk (ALR). Where it appears infeasible or not cost-effective to achieve the ALR, Level 4 SCMs may be added (e.g., purchase or floodproof properties). These alternatives will consider opportunities for local and regional storage and may include preliminary results for potential early action/near term projects in the LSS.
 - b. According to the current project schedule for Phase II subwatersheds that includes Brandywine Creek, the project team anticipates that these preliminary alternatives will be complete by July 25, 2017. At this point in the project, the project team will meet with the City of Hudson to review the findings and

- preliminary alternatives for City feedback and to select two alternatives for each problem area for further development and evaluation.
- c. Using the model developed under Task 2, the project team will size and evaluate the SCMs for two alternative scenarios, to be selected in coordination with the City. SCMs will be sized according to the City's Engineering Standards. The project team will also apply the model to characterize the benefits and potential adverse impacts of the alternative on flooding, erosion, and water quality throughout the watershed.
- d. The project team will also prepare a conceptual capital estimate, estimate life cycle O&M costs, and identify opportunities for cost-effective enhancements that could positively influence the business case for the recommendations.
- 3. Development of a Stormwater Master Plan Under Task 4 of the base scope of work with the District, the project team will prepare a CRS SWMP report and compile findings into local community reports for the watersheds within each jurisdiction. Under this scope of work, the City of Hudson's local community report will include the four additional LSS problem areas in the Brandywine Creek SWMP section.
 - a. The project team will discuss implementation priorities with the City to identify a prioritized list of projects in the Brandywine Creek LSS and recommend a SWMP for the Brandywine Creek subwatershed that includes a sequenced list of construction projects, a list of maintenance inspection activities and projects, preservation recommendations and policy recommendations for implementation.
 - b. The project team will prepare a Project Definition Statement for each recommended near-term construction project that consists of a general description of the project, photos of existing conditions, concept plans (anticipated 10 percent design level of detail), lifecycle costs, and a summary of implementation issues.
 - c. If authorized, the report will also describe the business case for each recommended alternative, developed in close coordination with the City.

As part of this scope of work, the project team will participate in bi-monthly progress calls with the City of Hudson, and one in-person meeting to review preliminary alternatives under Task 3. Between meetings, the project team and District will communicate progress and findings to the City via periodic phone calls and emails. The base scope of work with the District also includes opportunities for stakeholder feedback on the RSS alternatives during Fall 2017. If authorized, the project team will also participate in additional meetings with the City of Hudson and/or prepare and deliver a presentation of the Brandywine Creek findings and recommendations under Task 6.

Thomas Sheridan (City of Hudson) January 31, 2017 Page 8

Deliverables

Table 2 lists the project deliverables that will include the LSS information and alternatives developed under this scope of work. The technical memorandums (TMs) developed under Tasks 1, 2, 3, and 4 will be formatted as SWMP report sections, to be compiled into the overall CRS SWMP and local community reports under Task 4.

Schedule and Estimated Level of Effort

Table 3 presents proposed hours and costs for this scope of work. CDM Smith will present preliminary LSS alternatives formulated under Task 3 to the City by July 25, 2017 and will submit the draft Brandywine Creek SWMP to the District and City for review November 22, 2017, per the current project schedule for Phase II subwatersheds that include Brandywine Creek.

Cc: Brad Kosco (City of Hudson) Lita Laven (NEORSD) Rachel Webb (NEORSD)

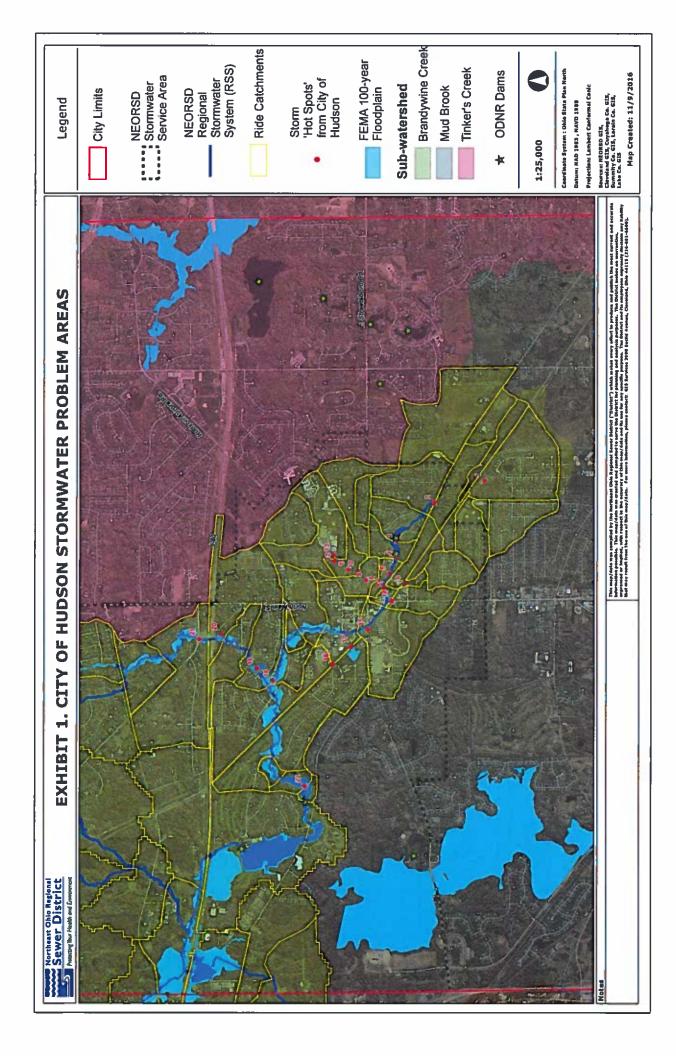
Table 2. Project Deliverables

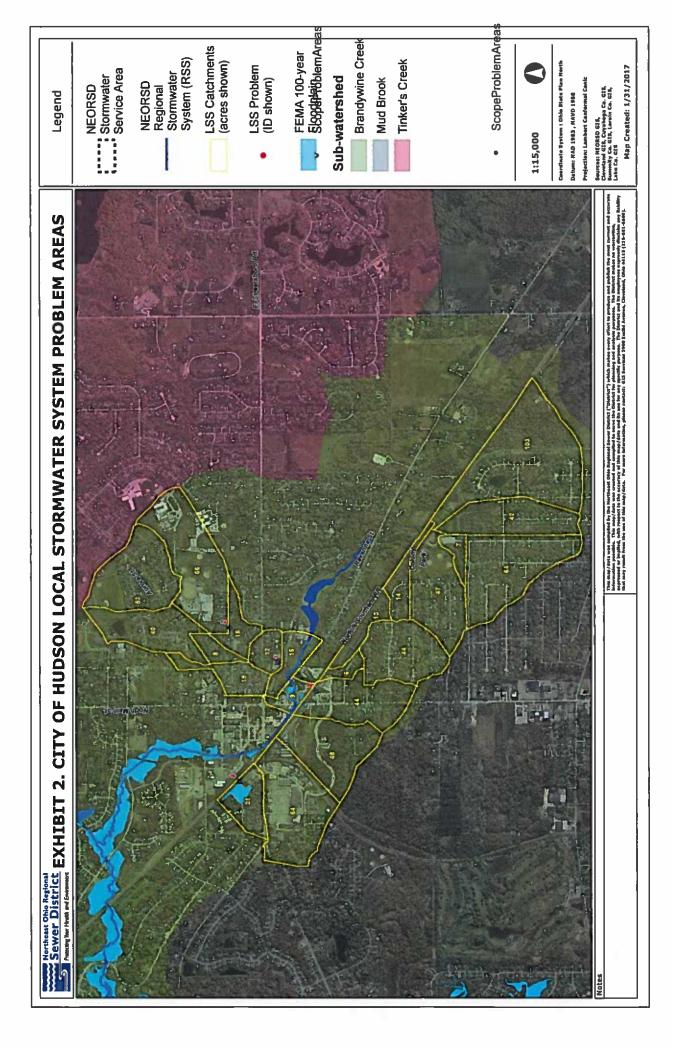
Task & Deliverable	Туре
Task 1: Supplemental Data Collection	
Data Summary TM	TM
Field survey (cross sections and spot elevations) (IF AUTHORIZED)	Data
Task 2: Model Development and Application	
Model Calibration/Validation TM	TM
Hydrologic / hydraulic (H&H) model	Data
Model application results (1, 2, 5, 10, 25, 50, and 100-year design storms)	Data
Model Application TM, including inundation maps	TM
Task 3: Alternative Development and Evaluation	
H&H models and results from alternatives development and evaluation	Data
Alternatives Development TM	TM
Alternatives Evaluation TM	TM
Task 4: Stormwater Master Plan Recommendations	
Business Case Summary TM presenting triple-bottom line metrics on a problem area, stream reach, local community, and sub-watershed basis (OPTIONAL)	TM
Implementation Plan presenting a prioritized, phased program of construction projects, maintenance activities, and policy recommendations	Section
Project Definition Statements for near-term construction projects	Data
Inspection, Maintenance and Performance Assessment Plan	Section
Local Community Report summarizing the stormwater management issues and a prioritized list of recommended solutions for the Brandywine Creek watershed	Report
TASK 6. Stakeholder Support	
Materials for local presentation (OPTIONAL)	Various

Thomas Sheridan (City of Hudson) January 31, 2017 Page 9

Table 3. Estimated Level of Effort

			CDW	CDM Smith		Ì			8	TOTALS	
TASK DESCRIPTION	Project Manager	Senior Tech Advisor	Senior Task Leader	Engineer	Engineer Technician	Admin	Hours	Labor Cost	¥	Expenses, Allowances	Task Sub Total
Task 1: Supplemental Data Collection			The state of					TO STATE OF			
Task Subtotal		2		52	7	2	36	\$ 4,2	4,204.00	\$ 40.00	\$4,244.00
1.2 Existing Asset Owner Data Collection & Review	4	2		16	2	2		1 10		-	
1.4 Field Investigations				10	8						
Task 2: Model Bevelopment and Application									100		
Task Subtrotal	2		9	36	36		18	16 5	9,778.00	\$	S 9,778.0
2.1 Hydraulic Model Development	2	2	7	20	20		1000	Spine services			
2.2 Hydraulic Model Application		2	2	36	16				10		
Task 3: Alternative Development and Evaluation	100	2000									
Task Subtotal	10	10	16	128	40	100	ίοz	\$ 23,9	23,904.00 \$	185.00	\$ 24,089.0
3.1 Formulate Alternatives	60	9	4	3	20			1000	100		
3.2 Size & Evaluate Alternatives	7	7	12	35	20		3.0				大大大田治
Task 4: Stormwater Master Plan Recommendations			Spirit S							Sec. Sec. Sec.	
Task Sebtotal	36	9		72	42	8	144	\$ 16,7	16,704.00	\$	\$ 16,704.0
4.1 Define Business Case (TBL) (OPTIONAL)	2	2		20	4		1000000	Mary Land			
4.2 Define Implementation Priorities / Phasing	7			0 0	2				6		
4.3 Define Near-Term Actions						-	The State of the S		nic.		
Prepare Project Definition Statement for near-term projects	4	7		28	12	4	Merch 1				
Prepare Policy Recommendations tailored to each subwatershed	2	2		4	80		1				A State of Section
Prepare Inspection, Maintenance & Performance Assessment Plan	7		U	4	80						
4.4 Prepare SWMP Report	7			8	60	4		-		400	
Task & Stakeholder Support											
Task Subtotal	16		-	DZ.	1	8	43	\$ 6,1	6,147.00 \$	\$ 370.00	\$ 6,517.00
6.1 Stakeholder Support (OPTIONAL)		-			8		1		H		
Develop & deliver presentation	80	2		11		2	St. annual	100	100	THE THE PER	10000
Extra Meeting	80	2		w		1					
Total Basic Services	30	92	z	242	116	10	440	\$ 51,310.00	\$ 000	225.00	\$ 51,535.00
Total Ontional Services		,	•	40	,		7.1	\$ 9.427.00	\$ 00°	370.00	¢ 9.797.00





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Thomas Sheridan (City of Hudson) January 31, 2017 Page 12

Appendix A – Detailed Scope of Work

The following is a detailed scope of work. References to the "base scope of work" indicate tasks that will be performed under CDM Smith's contract with the District. The task numbering follows the base scope of work and excludes task that are unaffected. It also identifies those tasks that are potentially optional and would only be performed if authorized by the City.

Task 1: Supplemental Data Collection

1.2 Existing Asset Owner Data Collection & Review

The City has provided available inventory and condition information for portions of the LSS within the Brandywine Creek study area for CONSULTANT review. The CONSULTANT will conduct a thorough inventory and review of the LSS assets within the Brandywine Creek watershed, following District SWMP Standards and relevant District data collection and management protocols. The CONSULTANT will perform the following:

- Consolidate collected information into DISTRICT data management systems and/or the project electronic library.
- Prepare a draft Data Summary Technical Memorandum (TM) that assesses existing data and identifies data collection priorities and gaps, if any.
- Finalize Data Summary Technical Memorandum based on District and City review comments.

1.4 Field Investigations

- The CONSULTANT will conduct field visits to the four LSS problem areas and/or critical stormwater infrastructure or environmental features of the subwatershed to better understand existing conditions prior to model development, condition assessment, and alternatives development (4 additional problem areas).
- Elevations and inverts of hydraulic features and nearby building, transportation, and
 utility assets will be based on available inventory data and topographic mapping. If
 field surveys of critical features are needed, an estimated cost would be prepared for
 this additional service and it would only be performed if authorized.

Task 2: Model Development and Application

2.1. Hydraulic Model Development

The CONSULTANT will develop and calibrate a new SWMM model of the additional LSS components of the Brandywine Creek subwatershed according to the District's Modeling Strategy Standard:

- **Define Conduits and Junctions.** The model level of detail will be extended into the LSS based on the recommendations under Task 1.2. The level of effort is based on approximately 5,000 LF of open channel and 6,900 LF of closed conduits.
- Compile Cross-Section Data. Elevation and cross-section data will be developed based on the information collected in Task 1, supplemented by delineations from LiDAR data available during this project phase and task.
- Review/Delineate Hydrologic Units. Up to 18 additional hydrologic catchment units
 will be delineated, and their hydrologic parameters defined. Impervious area data will
 be refined using DISTRICT stormwater billing data, supplemented by delineation of
 non-billed impervious area in transportation rights-of-way based on available aerial
 photographs and/or LiDAR.
- Under the base scope of work, the CONSULTANT will perform quality control and sensitivity runs with the models, model calibration/validation, and report documentation of this task and will finalize the Model Calibration/Validation TM based on District and City review comments. Under this scope of work, the CONSULTANT will also calibrate/validate the model to available high water mark data in the LSS.

2.2. Hydraulic Model Application

Run Design Storms and Characterize Hydraulic Performance Condition Ratings.
 The CONSULANT will use the Brandywine Creek SWMM subwatershed model to identify areas of potential flooding in the modeled LSS, with results compared to the District's defined acceptable level of risk (ALR) goals and the City's Engineering Standards.

The flow capacity of modeled LSS assets will be compared to simulated stages and flows for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour, design storms using an NRCS (formerly SCS) Type II rainfall distribution. Flood summary tables will be developed for existing and anticipated future land use condition to identify potential impacts to peak stages, velocities and flows.

Under the base scope of work, flood inundation will be graphically shown on GIS layers for the 10 year and 100-year design storms, and up to two additional design storms. The level of effort assumes that one of the additional flood inundation maps will be for the 5-year design storm, to be completed within the base scope of work.

 Under the base scope of work, the CONSULTANT will prepare a Model Application TM summarizing the findings of the hydraulic performance condition ratings, which will include the four new problem areas.

3. Task 3: Alternative Development and Evaluation

3.1. Formulate Alternatives

Alternative formulation involves the strategic selection of one or more stormwater control measures (SCMs) known to be effective at solving each problem area. The CONSULTANT will formulate alternatives for each of the four additional LSS problem areas identified by the City. The following actions will be taken.

- Identify opportunities and constraints for each problem area. First, the CONSULTANT will identify the source and cause of each problem area based on the findings of Task 2.2. Next, the CONSULTANT will identify opportunities for (e.g., unused capacity in RSS assets, available open space, related future projects) and constraints to (e.g., existing encroachment into floodplains, conflicts with existing infrastructure) potential stormwater control alternatives for each problem area. These opportunities and constraints will be based on screening-level hydraulic modeling, information collected in Task 1, and input from the City.
- Define Level 1 Baseline Maintenance, Repair, Policies, and Benefits. The
 CONSULTANT will define Level 1 baseline SCMs for the Brandywine Creek
 subwatershed, including O&M activities and development/redevelopment policy
 recommendations. Stormwater models would be used to quantify the effectiveness of
 maintenance and regulatory compliance strategies on achieving the ALR under the
 buildout land use scenario. For the LSS problem areas, the CONSULTANT will
 coordinate with the City to identify appropriate Level 1 SCMs.
- Formulate Two (2) Alternatives for Each Problem Area. If the level of service is not met by the Level 1 baseline SCMs, the CONSULTANT will formulate a limited number of stormwater management alternatives by strategically adding Level 2 Flow Control SCMs (e.g., runoff reduction, decentralized green infrastructure, stream/floodplain restoration and LSS storage) and Level 3 RSS and LSS SCMs (e.g., additional regional storage, enhanced conveyance and daylighting of culverted streams). A screening process will be applied to identify SCMs that (a) address the problem and (b) are feasible to implement. The CONSULTANT will then conduct model simulations, spatial analyses, and calculations to determine the effectiveness of selected SCMs at achieving the desired ALR.
- Consider Level 4 ALR Alternatives if Other SCMs are Infeasible/Not Cost Effective. The CONSULTANT will examine alternate SCMs (e.g., reduced design storm frequency, purchase/floodproof property) in areas of the LSS where it may be infeasible and/or cost-prohibitive to meet the District's desired ALR or the City's Engineering Standards. In such situations, the CONSULTANT will examine a range of sizes under varying ALR levels, and will define cost-effective breakpoints.

- Refine Preliminary Alternative Formulation Per Feedback from District/
 Communities/Asset Owners. The CONSULTANT will adjust the alternative
 formulation as necessary based on feedback from the City, District and provided by
 the District from affected stormwater asset owners.
- Under the base scope of work, the CONSULTANT will prepare an Alternatives
 Development TM summarizing the findings of this task. The level of effort for this
 scope of work assumes additional alternative solutions would be documented for the
 four new problem areas.

3.2. Size & Evaluate Alternatives

- Size SCMs, Define Zones of Effectiveness, and Identify Integration Opportunities. The CRS subwatershed SWMM and GIS spatial evaluation tools will be used to size SCMs formulated under Task 3.1, and characterize the benefits and potential adverse impacts on flooding, erosion, and water quality throughout the watershed. Each alternative will be compared to the existing condition to identify the flood improvement benefits versus the costs for the 1-, 2-, 5-, 10-, 25-, 50-, and 100-year, 24-hour, design storms. In addition, the CONSULTANT will seek opportunities to integrate alternatives on a sub-watershed-wide basis through cost/benefit comparisons and phasing to provide multi-objective benefits in a timelier manner. For example, synergistic effects of the SCMs may improve (or worsen) upstream/downstream conditions. Integration may reduce costs or increase benefits if a single SCM is able to solve multiple problems or avoid siting constraints.
- Perform Conceptual Capital Cost Evaluation. The CONSULTANT will prepare a conceptual capital estimate of the cost to implement each alternative evaluated under this task, as well as examine the cost-effectiveness of each alternative.
- Estimate Annual Operation and Maintenance Costs the CONSULTANT will estimate life cycle O&M costs for each alternative over the design life.
- Examine Multi-Benefit Options. Reduced LOS goals will be examined in areas
 where it may be infeasible and/or cost-prohibitive to meet watershed-wide LOS
 Goals. In such situations, a range of sizes will be examined, and cost-effective
 breakpoints determined. In evaluating each project site, the CONSULTANT will also
 identify opportunities for cost-effective enhancements that would positively influence
 the business case and intangible benefits for that site (such as parks), while avoiding
 options that yield less favorable social and/or environmental benefits.
- Under the base scope of work, the CONSULTANT will prepare an Alternatives
 Evaluation TM summarizing the findings of this task. The level of effort for this
 scope of work assumes additional alternative solutions would be documented for the
 four new problem areas.

4. Task 4: Stormwater Master Plan Recommendations

4.1. Define Business Case (TBL) (OPTIONAL)

- Tabulate TBL Metrics on a Problem Area, Stream Reach, Community, and Subwatershed Basis. In close coordination with the City, the CONSULTANT will perform a business case evaluation of each alternative in the LSS. The alternative evaluation will screen SCMs based upon watershed opportunities and constraints, and integrate feasible options into one consistent plan to achieve watershed-wide LOS goals. This will test the cost-effectiveness of stormwater improvements and incorporate enhancements that maximize multi-objective benefits. Alternative evaluations will include a triple bottom line (TBL) consideration.
- Prepare Draft Business Case Summary. Under the base scope of work,
 CONSULTANT will prepare a summary of the results of the TBL analysis for
 District and Watershed Advisory Committee (WAC) review. The summary will
 include the alternatives evaluated for the four problem areas in the LSS, and identify
 alternatives that potentially benefit the RSS. The CONSULTANT will adjust the TBL
 ratings as necessary based on feedback from the District and (as provided by the
 District) the WAC and the affected member communities, including the City of
 Hudson.

4.2. Define Implementation Priorities / Phasing

- Develop Recommended Project Priorities, Phasing. Under the base scope of work, the CONSULTANT will discuss implementation priorities with the District and recommend a SWMP to address problems in the Brandywine Creek RSS. Under this scope of work, the CONSULTANT will also discuss implementation priorities with the City to identify a prioritized list of projects in the Brandywine Creek LSS based upon affordability, benefits attained, and the risk reduction achieved. Based on these discussions, the CONSULTANT will then define a recommended LSS SWMP for the Brandywine Creek subwatershed that includes a sequenced list of construction projects, a list of maintenance inspection activities and projects, preservation recommendations and policy recommendations for implementation.
- Prepare Lifecycle Implementation Costs. The CONSULTANT will prepare a planning-level estimate of the cost to implement and maintain the recommended LSS alternatives.
- Prepare Draft Implementation Plan. The CONSULTANT will prepare a Draft
 Brandywine Creek LSS Implementation Plan for City and District review. The
 CONSULTANT will revise the Draft LSS Implementation Plan based on City and
 District feedback.

4.3. Define Near-Term Actions

- Prepare Project Definition Statement for Near-Term Construction Projects. The CONSULTANT will prepare a Project Definition Statement for each recommended near-term construction project to address the four identified problem areas in the LSS. The Project Definition Statement will consist of a general description of the project; photos of existing conditions; concept plans (anticipated 10 percent design level of detail); lifecycle costs; the TBL BCE (if authorized); and summary of implementation issues. The concept plans will be flexible enough to allow changes to meet the broader regional and/or community goals and objectives.
- Prepare Inspection, Maintenance and Performance Assessment Plan (IMPAP). The
 CONSULTANT will define LSS-specific inspection, cleaning, and renewal
 frequencies and schedules based on the condition and criticality ratings established
 under the operational performance evaluation. Ultimately, the compiled information
 will assist with identifying where the "hot spots" are located within the watershed, and
 where frequent maintenance may be required or where chronic maintenance issues may
 require a project.

4.4. Prepare SWMP Report

- Compile LSS Subwatershed Findings into Draft Local Community Reports. Under the base scope of work, the CONSULTANT will integrate the LSS findings of the previous tasks into a Local Community Report for the City of Hudson. This Local Community Report will include a detailed description of LSS SWMP recommendations that are either within the jurisdiction's corporate limits or, based upon the alternative evaluation, benefits the local community.
- Finalize Local Community Reports. The CONSULTANT will work closely with DISTRICT staff and the City to facilitate the City of Hudson, Brandywine Creek LSS SWMP Report review and finalization.

6. Task 6: Stakeholder Support (OPTIONAL)

6.1. Stakeholder Support

- Presentation to local community. Under this scope of work, the CONSULTANT will
 provide one Brandywine Creek SWMP presentation for the City of Hudson (City
 Council, City staff and/or the public).
- Additional meeting. Tasks 1 through 5 include monthly progress meetings over the
 estimated twelve-month effort. The level of effort for this task includes hours for an
 additional meeting.



Community Cost-Share Program APPLICATION

Member Community Information

Community:	City of Hudson, Ohio
Primary Project Contact: (Name & Title)	Thomas J. Sheridan, P.E., P.S.
	Assistant City Manager-City Engineer
Mailing Address:	115 Executive Parkway, Suite 400
	Hudson, Ohio 44236
Phone Number:	330-342-1770
Email:	tsheridan@hudson.oh.us
Project Information	
Project Title:	Brandywine Creek Watershed Study
Address or Location of Project:	Brandywine Creek, Brandywine Creek
	Tributary and Part of Local Storm System
Project Start Date:	May, 2017
Project End Date:	February, 2018
Community Cost-Share Fund Request:	\$61,332
Submission Date:	March 16, 2017



Project Narrative

- 1) Project Summary (1,000 word maximum)
 - Describe the Project and include the following information, as applicable:
 - Describe the Project and deliverables; provide a map if applicable
 - Submit a deliverable worksheet listing tasks and deliverables with start dates and end dates for the significant benchmarks.
 - List permitting requirements necessary to initiate and complete project and how the requirements will be met.
- Project Description and Deliverables: The project will be a joint watershed study between NEORSD and the City of Hudson. The study will expand the NEORSD's Cuyahoga River South (CRS) Storm Water Master Plan to address local storm water system issues in the Brandywine Creek watershed. Upon completion of the study, the consultant will provide NEORSD and the City a report outlining the findings of the study which will be used by the City for future planning and budgeting of capital improvement projects. Reference attached CDM Smith "Proposed Scope of Work for Brandywine Creek Stormwater Master Plan" dated 01/31/2017 for further reference.
- Deliverables worksheet with start dates and end dates: See table 2 in the attached "Proposed Scope of Work for Brandywine Creek Stormwater Master Plan". The study is expected to begin March, 2017 and finish in early 2018.

The goal of the study is (task 1) collect and review the City's existing plans, studies and other existing infrastructure data and field visits to review the infrastructure, (task 2) develop a new hydrologic and hydraulic model for the regional components of the Brandywine Creek Watershed and the City's local storm water components, (task 3) evaluate the identified problem areas or proposed areas of improvement within the storm water system model and develop solutions for each and (task 4) compile findings and report for all evaluated components.

- Permitting requirements: No permitting requirements are anticipated for this study.



2) Ability to Provide Long Term Maintenance (500 word maximum)

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

- Who is responsible to provide on-going maintenance for the project and how will maintenance be ensured?
- Provide documentation of scheduled maintenance and operation for completed storm water project(s).

Not applicable.



- 3) Visibility and Public Outreach: (500 word maximum)
 Public outreach is required if appropriate for your project.
 - What audiences will be exposed to this Project (neighbors, students, community groups, general public)?

The City of Hudson staff presented the study to Hudson City Council on February 21, 2017.

Once a date of the inspection is established, notification letters will be provided to affected residents describing the crews conducting the necessary field study. The letter will provide the applicable City contact information.

Information regarding the study and contact information will be posted on the City of Hudson website at: www.hudson.oh.us/442/Construction-Projects.



4) **Budget Summary** (500 words maximum)

The Budget Summary and Project Budget (see page 3) represent the Community Cost-Share Project components exclusively. Include details on the provider of all services such as design, engineering, construction management and materials including specific material cost, equipment, and hourly rate.

If an engineer's estimate is included with the application, indicate which line items are included in the Community Cost-Share Project application.

See table 3 in attached CDM Smith "Scope of Work for Brandywine Creek Watershed Storm Water Master Plan"



Vendor Registration

Prior to submission, ensure that the Member Community is a registered vendor with the District. Vendor Registration can be done by accessing http://www.neorsd.org/isupplier_homepage.php and completing the New Vendor Registration. If unsure of the Member Community vendor status, by initiating the New Vendor Registration a message of active registration will appear if currently registered as a vendor.

Project Budget

Project Expenses	Community Cost- Share Expense	Line Item Description
Professional Services	\$61,332	
Personnel (Member Community staff only)	\$0	N/A
Subcontract	\$0	N/A
Equipment	\$O	N/A
Materials	\$0	N/A
Other	\$0	N/A
TOTAL	\$61,332	