MCRPC

MILWAUKEE COUNTY RESEARCH PARK CORPORATION

Technology Innovation Center

Wisconsin Department of Natural Resources

2013 Urban Nonpoint Source & Storm Water Program Construction Grant Application

State of Wisconsin
Runoff Management Section-WT/3
Department of Natural Resources
101 South Webster Street
Madison, WI 53703 or
P.O. Box 7921
Madison WI 53707-7921

Urban Nonpoint Source & Storm Water (UNPS&SW)Program Construction Grant Application

Form 8700-299 (R 3/13)

Notice: This application form template was created by the Wisconsin Department of Natural Resources. Application is hereby made to the Wisconsin Department of Natural Resources, Bureau of Watershed Management, for grant assistance consistent with s. 281.65, Wis. Stats., and Chapters NR 153 and NR 154, Wis. Adm. Code. Collection of this information is authorized under the authority of s. 281.65, Wis. Stats. Personal information collected will be used for administrative purposed and may be provided to requesters to the extent required by Wisconsin's Open Records Law [ss. 19.31 - 19.39, Wis. Stats.]. *Unless otherwise noted, all citations refer to Wisconsin Administrative Code.*

Please read the instructions prior to completion of this form. Complete all sections as applicable.

Applicant Information

Calendar Year of Grant Start 2013

Project Name

Stream Bed and Wetland Plant Restoration

Applicant (governmental unit applying; name and type, e.g. Madison, City of)

Milwaukee County Research Park Corporation as Agent of Milwaukee County

Name of Authorized Representative (First Last)	Name of Governmental Contact Person (First Last) (if different)
Guy Mascari	William Ryan Drew
Title	**Title**
Director of Development	Executive Director
Area Code + Phone Number	**Area Code + Phone Number**
(414) 778-1400	(414) 778-1400
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(414) 778-1178	(414) 778-1178
E-Mail Address	**E-Mail Address**
gtm@mcrpc.org	wrd@mcrpc.org
Mailing Address - Street or Route	**Mailing Address - Street or Route**
10437 Innovation Drive, Suite 123	10437 Innovation Drive, Suite 123
City / State / ZIP Code	**City / State / ZIP Code**
Wauwatosa / WI / 53226-4815	Wauwatosa / WI / 53226-4815

Project Information

A. Location of Project

County Milwaukee

State Senate District #: 5

State Assembly District #: 13 (found at: http://legis.wisconsin.gov/ltsb/redistricting/districts.htm)

Minor Civil Division (city, town, village, e.g., Wrightstown, Village of)	Township (N)	Range	E or W	Section	Quarter	Quarter-Quarter	Latitude (North, 4 to 7 decimal places)	Longitude (West, 4 to 7 decimal places)
City of Wauwatosa	07 N	21	E	29	NE	NW	43.0424456	-88.042456
	N							
	N							

Method for Determining Latitude & Longitude (check one)

○ GPS ○ DNR WebView or Surface Water Data Viewer

○ Other (specify):

B. Project Summary and Description

Sub-project 2. Stream Bed and Buffer Restoration
The Milwaukee County Research Park Campus provides a high-quality natural greenway that ribbons throughout the campus, centered around a series of ponds which are connected by a stream. The Campus has constructed a walking path within this greenway and has maintained the natural beauty for both campus employee and visitor enjoyment. Every year, the Campus removes invasive species and replaces them with native plants as budget allows. In 2013, The Wisconsin Department of Transportation will be re-routing the stream as part of the Zoo Interchange project and widening of Mayfair Road/Highway 100. The Campus has been working closely with WisDOT to ensure the new stream alignment has the correct alignment, bank stabilization, and native plantings. MCRP would like to extend these improvements toward the east to compliment the Zoo Interchange construction. Improvements include stream bank plantings to reduce erosion into the stream, which flows into Underwood Creek, as well, as invasive planting removal and native plant installation. MCRP will hire a landscape architect to provide a design and plant species list. The estimated project cost is $33,000 ($5,000 design and construction management and $28,000 installation).

Sub-project 3. Wetland Plant Restoration
As part of the Campus greenway system Underwood Creek tributary, a wetland is located between the un-named creek and Mayfair Road/Highway 100. This highly visible site is prime to be a public demonstration site for proper wetland restoration. As this site will also be affected by the WisDOT Zoo Interchange Project, the timing is immediate for invasive plant removal and native plant restoration. Milwaukee County Research Park will hire a landscape architect to prepare a restoration plan including appropriate plant species and locations. Typical wetland plant mix of forbs, sedges, and aquatics cost around $12,000 per acre. The area is approximately 1.2 acres is size. The estimated project cost is $20,000 ($3,000 design and $17,000 installation).

Sub-project 5. Stormwater Pond Monitoring Well
The Milwaukee County Research Park prides itself on providing a high quality green space that is open to the public. This space includes a trail network along an un-named creek which flows into the Underwood Creek. Many campus employees and community residents enjoy these trails both during and after work hours. The open space provides a quality environmental oasis for work day breaks. The open space contains a series of three stormwater ponds which retain campus stormwater. Lately, campus workers and visitors have noticed an oil sheen on the southern pond which has negatively affected their open space experience. MCRP would like to sire a hydrological engineer to install a monitoring well to collect pollutant data. The southern pond receives off-site stormwater from Wisconsin Avenue and the residential area to the south. This data collection will be the basis for an engineer to analyze the information to determine pattern in pollution during storm events and non-storm event periods. This information will determine whether a larger stormwater management study and strategy should be conducted in the future. The estimated project cost is $20,000 including monitoring well installation, data gathering and preliminary analysis.

Please see Exhibit E - Project Description and Site Photographs for further details of the project.

Note: Wisconsin DNR site identification results attached hereto as Exhibit D.

C. Watershed, Waterbody, and Pollutants See Attachment A and Surface Water Data Viewer (SWDV) at: http://dnrmaps.wi.gov/imf/imf.jsp?site=SurfaceWaterViewer for assistance in completing this question. (For example: Watershed Name: Oconomowoc River; Watershed Code: UR09; Primary Waterbody Name: Oconomowoc River; Nearest Water body: Flynn Creek.)
Note: If the project is in more than one watershed, submit a separate application for each watershed, unless this application is for a high-efficiency street sweeper.

Watershed Name	Watershed Code	Primary Waterbody Name	Nearest Waterbody Name
Menomonee River	5035805	Underwood Creek	Un-named Stream

12-digit Hydrologic Unit Code (HUC): 200024817

Nonpoint Source Pollutant(s) Controlled by the Project
☐ Nutrients ☒ Sediment ☐ Other, specify:

D. Pro-Rating for Existing versus New Development

☒ Check this box if the project will serve existing development only. *Existing means in existence on or before October 1, 2004.* If not, provide attachments and the following:

100% Percentage of design volume from *existing* development. The default is 100%. Please change the percentage as necessary.

E. Request for Funding of Land Acquisition or Easements

☐ Check this box if requesting funding for either land acquisition or purchase of easements as part of this application to support a structural urban best management practice (BMP). If yes, you must attach the property acquisition proposal, as defined in Attachment F, to the completed application form.

F. Request for Retroactive Funding for Design

☐ Check this box if requesting reimbursement for design costs that have been, or will be, incurred before issuance of the grant. See Instructions for required design approval process.

G. Request for Funding for Force Account Work

☒ Check this box if requesting reimbursement for technical services to be performed by governmental unit staff (force account).

H. Endangered and Threatened Resources, Historic Places and Properties and Wetlands
Check the appropriate box for each question based on what the governmental unit knows to occur where the project disturbs land:

☐ 1. There are endangered or threatened resources as identified in s. 29.604, Wis. Stats., and ch. NR 27 in the project area.

☐ 2. There are archaeological sites, historical structures, burial sites, or other historic places identified in s. 44.45, Wis. Stats., in the project area.

☐ 3. There are wetlands in the project area that are governed by water quality standard provisions of ch. NR 103. (Answer with the SWDV map layer **Wetland Indicators** at http://dnrmaps.wi.gov/imf/imf.jsp?site=SurfaceWaterViewer.wetlands)

I. Alternative Funding Possibilities

☐ Check this box if applicant requests that the DNR also submit a copy of this application to the Clean Water Fund Program or the Small Loan Program.

J. Environmental Hazards Assessment

☐ Check this box if this project includes excavation or purchase of land or easement.

☐ Check this box if a completed copy of the Environmental Hazards Assessment Form (required for a project that includes excavation or the purchase of land or an easement) is attached to this application. (See Attachment H and http://dnr.wi.gov/files/pdf/forms/1800/1800-001.pdf)
If this is a project that includes excavation or the purchase of land or an easement, consult the Bureau of Remediation and Redevelopment (R&R) Site Map and answer the following questions using a map scale of 1:8529 or larger:

☐ 1. There is one or more open (ongoing cleanup) R&R sites on the same property where the excavation is planned

☐ 2. There is one or more closed (completed cleanup) R&R sites on the same property where the excavation is planned.

☐ 3. There is one or more open (ongoing cleanup) R&R site on an adjacent property.

☐ 4. There is one or more closed (completed cleanup) R&R site on an adjacent property.

Part I. Screening Requirements

A. Maps and Photographs

Yes

☒ An 8.5" x 11" topographic map from USGS or the DNR data/map viewers, showing the project area and locations of proposed Best Management Practices (BMPs), is attached

☒ Aerial photo maps and project area photos are also included.

B. Best Management Practices (BMPs) For Which Funding Is Requested (check all that apply):
Note: Storm water treatment practices on navigable waters or in wetlands are *not* eligible for funding under this program

☒ **Detention Basin**
☒ Wetland Basin
☐ Filtration Practice
☐ Infiltration Practice
☐ Property Acquisition - Fee Title
☐ Property Acquisition - Easement
☐ Accelerated or High-Efficiency Street Sweeper

☒ Shoreline Habitat Restoration for Developed Areas
Streambank or Shoreline Protection:
- ☒ Rip-Rapping
- ☒ Shaping and Seeding
- ☒ Other Streambank or Shoreline Protection (including Bio-engineering) - Specify below.

☐ Other (Specify)

C. Filters *Note: The applicant must be able to check "Yes" to questions 1 through 8 below to be eligible for a grant. Check "Yes" to questions 9 through 14, if applicable. Applicants who answer "Yes" to Question 11 must check a, b, or c for Question 11.*

Yes

☒ 1. Project is in an urban area as identified in Attachment B.

☒ 2. Project will be completed within 24 months of the start of the grant period.

☒ 3. Staff and contractors designated to work on this project have adequate training, knowledge, and experience to implement the proposed project.

☒ 4. Staff or contractual services, in addition to those funded by this grant, will be provided if needed.

☒ 5. Best management practices constructed under this grant will not work at cross-purposes to and are consistent with non-agricultural performance standards under ch. NR 151 (see Attachments C & D).

☒ 6. The local DNR District Nonpoint Source Coordinator has been contacted and the project was discussed. See contacts at: http://dnr.wi.gov/topic/nonpoint/NPScontacts.html.

Name of the District Nonpoint Source Coordinator Contacted	Date Contacted	Subject of Contact
Jamie Lambert	04/11/2013	Introduction of applicant and review of project.

☒ 7. Construction Ordinance: Local regulations are in place to administer and enforce construction erosion controls in the governmental unit consistent with the non-agricultural performance standards in s. NR 151.11.

☒ 8. Post-Construction Ordinance: Local regulations are in place to administer and enforce post-construction runoff from areas of new development and re-development in the governmental unit consistent with the non-agricultural performance standards in s. NR 151.12.

☐ 9. Navigable Waters Determination: If this project will install an urban storm water treatment practice, the applicant has determined that the practice will not be located in any intermittent or perennial waterway shown on a map from the DNR's Surface Water Data Viewer identified below. Check the box to indicate the map has been consulted:

☐ Surface Water Data Viewer Map, 24K Hydro Layer at:
http://dnrmaps.wi.gov/imf/imf.jsp?site=SurfaceWaterViewer

☐ 10. Wetlands Determinations: If this project will install an urban storm water treatment practice, the applicant has determined that the practice will not be located in any wetland based on consulting both the Wisconsin Wetland Inventory and Wetland Indicators maps. Check the box to indicate both map layers have been consulted.

☐ Wisconsin Wetland Inventory and Wetland Indicators at:
http://dnrmaps.wi.gov/imf/imf.jsp?site=SurfaceWaterViewer.wetlands.

or

A wetland delineation completed by a qualified person shows the BMP will not encroach upon a wetland.

☐ Provide the name and phone number of the wetland delineator.

Name:	Phone Number:

☒ 11. This is a proposed urban project which requires that the applicant have control of the property. If "Yes," please check the applicable statement below:

◉ a. The applicant is stating that it currently owns the property or has control of the property through an easement or a construction and maintenance agreement.

○ b. The applicant has attached documentation to this application that states that the current owner of the property is willing to enter into a construction and maintenance agreement with the grant applicant prior to the award of the grant.

○ c. The applicant proposes purchasing the property (fee title) or an interest in the property (easement), and the applicant has attached documentation (*e.g.*, option to purchase or offer to purchase) that the sale will be completed prior to the award of the grant.

☒ 12. Applicant declares that *one* of the two statements below is **TRUE**. Please check the box to indicate that the statement is true.

◉ a. The applicant is not the University of Wisconsin Board of Regents.

○ b. The applicant is the University of Wisconsin Board of Regents and the project will develop recommendations for a UW Campus area located in a municipality that meets **both** of the following criteria:

☐ i. The applicant is required to obtain a permit under subchapter I. of ch. NR 216; and

☐ ii. The municipality is located either in a priority watershed or lake area identified under s. 281.65, Wis. Stats., or in an area of concern as identified by the International Joint Commission under the Great Lakes Water Quality Agreement.

13. This application is:

☐ a. a joint application among local units of government, and

☐ b. a DRAFT Inter-Governmental Agreement is attached (see Attachment I).

14. This applicant currently has:

☐ a. existing Runoff Management grants,

☐ b. and the applicant hereby certifies that all such grant projects shall be completed within the applicable grant period for each.

Part II. Competitive Elements

Question 1. Fiscal Accountability

A. Timeline and Source of Staff
For each applicable milestone listed below, fill in the appropriate data.

Milestone	Target Completion Date (month/year)	Source(s) of Staff
Completion of design	08/2013	Third party landscape design firm.
Obtaining required permits	09/2013	TBD
Landowner contacts	09/2013	Research Park staff.
Bidding	10/2013	Third party landscape design firm.
DNR approvals	11/2013	Third party landscape design firm.
Contract signing	11/2013	TBD
BMP construction	03/2014	TBD
Site inspection and certification	06/2014	TBD
Project evaluation	07/2014	TBD
Purchase street sweeper	N/A	
Other (specify)		

B.1. Adequate Financial Budget
Provide the following information for the project. The state share may not exceed 50% of eligible costs. The grant amount is capped at $150,000 for the installation of eligible BMPs and a maximum of $50,000 for property acquisition.

FINANCIAL BUDGET TABLE

A Project Activity for Which DNR Funding is Requested Construction Components:	B Estimated Total Cost ($)	Amount from Column B Eligible for DNR Cost Sharing ($)
Sub-project 2: Stream Bed and Buffer Restoration	28,000.00	28,000.00
Sub-project 3: Wetland Plant Restoration	17,000.00	17,000.00
Sub-project 5: Storm Water Pond Monitoring Well	20,000.00	20,000.00
1. Construction Subtotal	65,000.00	65,000.00
2. Design, Construction Management and Inspection	8,000.00	8,000.00
3. Storm Sewer Reroute		
4. Structure Removal		
5. Subtotal: (add rows 1 through 4)	73,000.00	73,000.00
6. Property Acquisition (Fee Title & Easement)		
7. Grand Total: (add rows 5 and 6)	73,000.00	73,000.00

B.1. (continued) Cost Sharing Worksheet

Eligible Costs:	Prorate %	Cost-Share %	
8. Construction and Design	100 %	50 %	$ 36,500.00
9. Property Acquisition: Fee Title and Easement	100 %	50 %	$

	Cap Test:
10. Construction and Design (Row 8 or $150,000, whichever is less)	$ 36,500.00
11. Property Acquisition (Row 9 or $50,000, whichever is less)	$
12. Maximum State Share (sum of Rows 10. + 11.)	$ 36,500.00

	State and Local Share:
13. Requested State-Share Amount (= Requested Grant Amount)	$ 36,500
14. Local-Share Amount (Row 7, Column B, less Row 13)]	$ 36,500.00

Local-Share Source(s)

Milwaukee County, Milwaukee County Research Park Corporation (MCRPC), MCRP Occupants' Association, Inc.

B. 2. Method used to Calculate Cost Estimates: Check the appropriate box.

- ○ 1. Project costs are based on completed design and competitive bid on the project. Construction components and costs above should be detailed. Provide documentation attached to this application.
- ○ 2. Project costs are based on completed design with materials and labor costs based on similar, recently bid projects. Construction components above should be detailed. Provide documentation in this application.
- ◉ 3. Project design is not complete; however, the proposed project and costs are based on similar and recent projects and costs. Provide as much construction detail above as possible. Provide documentation for this method in this application
- ○ 4. Project design is not complete and the cost estimate is based on an average or a range of projects and costs. Provide as much construction detail above as possible. Provide documentation for this method in this application.
- ○ 5. Project and costs are less specific than choices above. Provide an explanation for cost estimates attached to this application.

C. Cost-Effectiveness. Please provide narrative answers to Parts C.1. and C.2. You are advised to answer Part C.3., though you are not required to do so.

1. Describe the environmental benefits this project will achieve.

Giving the stream bed the correct alignment, bank stabilization, and introduction of native plants will reduce erosion into the stream, which flows into Underwood Creek, and capture sediment before it can enter the local watershed. Removal of invasive species and native plant installation will reduce the amount of noxious plants in the area. Wetland plant restoration will filtrate storm water runoff, slow the flow into the local watershed reducing flooding, and provide additional retention in the research park. These projects would provide replicable green infrastructure techniques that could be used in other industrial and business parks. There would also be aesthetic aspects of this project that would give the urban ecosystem much needed interaction with the natural environment. This highly visible site is primed to be a public demonstration site for proper wetland restoration. Certain aspects of the U. S. Fish and Wildlife Service Springhouse Run Stream Restoration in Washington, DC will be studied for inclusion in our plan. Information about this project in included herein as Exhibit G.

2. Describe why the proposed management measures are a reasonable means to attain the project benefits based upon such factors as cost, effectiveness, site feasibility, available technical standards, and practicality.

The land that will be used for this project is part of the Milwaukee County Research Park nature preserve that is managed now by the MCRP Occupants' Association that has an annual maintenance budget of approximately $100,000 and has hired various professionals to properly maintain the park. Therefore the resources are already in place to maintain the proposed green infrastructure improvements to the research park. However, currently there are few if any funds to make the type of "capital" improvements proposed by this project. The Occupants' Association has hired the MCRPC to manage the extensive common areas of the park (as described by Exhibit C). In addition, certain cost effectiveness benefits can be achieved because the MCRPC was recently awarded a $65,000 grant by the Milwaukee Metropolitan Sewerage District that will be matched by MCRPC with possible assistance from Milwaukee County and the Occupants' Association. Details of the MMSD grant are included herein as Exhibit F. MCRPC already controls the land by virtue of a land lease with Milwaukee County (as evidenced by Exhibit B) and easements with various other land owners in the park.

3. If you evaluated one or more alternative management measures, describe why the alternative(s) is not being recommended.

The unique nature of the Milwaukee County Research Park Corporation a quasi-public entity and as agent for Milwaukee County in the development on County land of a cluster of technology-based companies also provides a unique singular management structure that precludes any serious or productive evaluation of alternative management measures. This coupled with the involvement of park occupants (land owners, developers, tenants, and building owners) in the MCRP Occupants' Association ensures effective management of the park. In addition, MCRPC has access to the public works and sustainability assets of Milwaukee County and the City of Wauwatosa. The cooperation between the County, the City, and the MCRPC has been outstanding - both as an economic development initiative and a land management endeavor. All of the stake-holders in the research park would benefit from the implementation of the proposed project and we can expect their unreserved cooperation. MCRPC has also been assisted in preparing this project by Vandewalle & Associates of Madison, Wisconsin.

Question 2. Project Evaluation Strategy

A. Modeling and Measures of Change

Pre- and post-project evaluation measures used to ensure success in meeting project goals.

The applicant *must* agree to provide a description of the modeled results or changes in pollution potential in the final project report submitted for the project, and will provide their modeling and analysis to the storm water permit specialist responsible for their community. The project evaluation strategy will be based on comparing pre- and post-project changes in modeled pollutant loading to water resources or will be based on the quantity of units managed.

Check all that apply in the table below.

Priority for Developed Urban Area		Units of Measure		Recommended Measurement Method
☐ 1.	20-40% Reduction in Total Suspended Solids (TSS)	a.	Pounds TSS reduced	SLAMM, P-8
		b.	% TSS reduction	
☐ 2.	Infiltration	a.	% Pre-development stay-on volume	Recarga, SLAMM, P-8
		b.	Cubic feet stay-on volume	
☐ 3.	Peak Flow Discharge	a.	Change in cubic feet per second	TR-55 or equivalent

☒ 4.	Protective Areas	a.	Feet of bank protected	Count
☐ 5.	Fueling and Maintenance Areas	a.	Oily sheen presence	Visual assessment
☒ 6.	Streambank	a.	Tons of bank erosion reduced	NRCS bank erosion formula
		b.	Feet of bank protected	Count
☐ 7.	Other (specify)			

B. Water Quality Monitoring (not eligible for cost sharing at this time)
If, in addition to the above, the project evaluation strategy includes evaluating BMP effectiveness and/or pre- and post-project water resource monitoring, and the information will be provided to DNR.in the final project report, check all that apply below.

☐ 1. A one-page summary of the monitoring strategy is attached.

☒ 2. The project will evaluate the in-stream physical habitat, fisheries, biological, or chemical conditions.

☒ 3. The project will evaluate BMP pollution reduction effectiveness (e.g. inlet/outlet monitoring).

☒ 4. The applicant is willing to participate with the Department to do monitoring in the project area should funding become available.

Question 3. Evidence of Local Support
For A., check the applicable situation that exists at the time of application. One or both boxes under B. may be checked.

A. Budget

◉ 1. Adopted Budget: The municipal governing body or utility board has included the Local Share cost of this project within the municipal operating budget or utility district budget. If yes, provide details.
Some funds were included in the 2013 MCRP Occupants' Association budget.

○ 2. Capital Budget: The municipality or utility has included this project's anticipated costs within its adopted Capital Improvement Plan. If yes, provide details

○ 3. Proposed Budget: The Public Works Department has or will include the costs for this project within its preliminary budget proposal to be submitted to committee. If yes, provide details.

B. Public Information

☒ 1. The applicant has already conducted public outreach activities about the proposed project with property owners in the immediate project area. . If yes, provide details.
The intent to make grant applications was made at the annual meeting of the Occupants' Association.

☒ 2. This project has been discussed at a governmental meeting open to the public. . If yes, provide details.
This project was presented to the MCRPC board of directors and County supervisors.

Question 4. Water Quality Needs (check one, A through G)

The project must be consistent with at least one of the following seven watershed priorities. Check the one water quality category which best identifies the water quality need(s) which the project **directly deals** with: (check only one)
Note: For border waters where a State of the Basin Report does not exist, another governmental document acceptable to the Regional Nonpoint Source Coordinator may be used to identify the water quality need.

Surface Water Considerations

○ **A. Clean Water Act section 303(d) List of Impaired Waters**
A water body (lake or stream) on the latest Clean Water Act (CWA) section 303(d) List of Impaired Waters, where the cause of the water quality impairment is nonpoint source pollution ***and this project*** will reduce the type of nonpoint source pollutants for which the water is listed. (See Attachment A)

Name of Applicable Impaired Water:

Name of Pollutant Causing Impairment:

○ **B. Outstanding or Exceptional Resource Waters or Other Areas of Special Natural Resource Interest**
Prevention of degradation due to nonpoint sources of outstanding resource waters (ORW) (per s. NR 102.10) or exceptional resource waters (ERW) (per s. NR 102.11) or other areas of special natural resource interest (ASNRI) To locate ASNRI using DNR's Surface Water Data Viewer go to http://dnrmaps.wi.gov/imf/imf.jsp?site=SurfaceWaterViewer.deswaters.
For more information about ASNRI go to http://dnr.wi.gov/topic/surfacewater/datasets/designated_waters/asnri.html

Name of Applicable ORW/ERW or ASNRI:

○ **C. Not Fully Supporting Uses or NPS Ranking of High or Medium**
A water body (lake or stream) identified in a DNR-approved Basin/Watershed Plan as not supporting designated uses due to nonpoint sources, but is not on the section 303(d) List. In newer plans, these waters are categorized as "supporting" (as opposed to "fully supporting") designated uses; in plans prior to 2010 they were labeled as "partially meeting" designated uses. Or, the project is located in watershed, lake watershed, or other area ranked high or medium on the NPS Rankings List, where the goals of the project are directly associated with the reason for the ranking on the NPS Rankings List.

◉ **D. Surface Water Quality**
Prevention of surface water quality degradation due to nonpoint sources. Waters in this category are not high quality, recreationally significant waters.

Groundwater Considerations For assistance with this section, please consult the DNR District Drinking Water and Groundwater Specialist at http://dnr.wi.gov/topic/drinkingwater/contact.html or the County Extension office.

○ **E. Exceeds Groundwater Enforcement Standard**
Groundwater within the project area where representative information indicates there are levels for NPS contaminants that exceed groundwater enforcement standards.

○ **F. Exceeds Groundwater Preventive Action Limit**
Groundwater within the project area where representative information indicates there are levels for NPS contaminants that exceed groundwater preventive action limits.

○ **G. Groundwater Quality**
The project area is within a geological area defined in s. NR 151.015(18) as susceptible to groundwater contamination. (See Attachment G)

Drinking Water Bonus Points

Yes ☐ Check this box if the project water quality goals identified above relate to the reduction of nonpoint source contaminants in community or non-community public drinking water supplies. This includes municipal water supplies governed by chs. NR 809 and 811; other-than-municipal (OTM) water supplies governed by chs. NR 809 & 811; non-transient water supplies governed by chs. NR 809 and 812; and transient water supplies governed by chs. NR 809 and 812.

1. If your project will reduce nonpoint source contaminants in community or non-community public drinking water supplies and you checked box E, F, or G in the "Groundwater Considerations" section above, please chose a, b or c below and move on to Question 5. (You will need assistance from your DNR District Grant Coordinator or Water Supply Specialist to answer.)

○ a. Check this box if the project is located: within the wellhead protection area of a municipal well, or within 1,200 feet of a municipal well for which a wellhead protection area is not delineated, or within 1,200 feet of an OTM water supply well, or within 1,200 feet of a transient water supply well.

○ b. Check this box if the project is located within 200 feet of transient water supply well.

○ c. Check this box if neither a nor b applies

2. If your project will reduce nonpoint source contaminants in community or non-community public drinking water supplies and you checked box A, B, C, or D in the "Surface Water Considerations" section above, please place a check mark next to the drainage area where the project is located: (See Attachment E)

- ☐ Pike River and Creek
- ☐ Root River
- ☐ Oak Creek
- ☐ Milwaukee River
- ☐ Sauk Creek
- ☐ Sheboygan and Onion Rivers
- ☐ Manitowoc River
- ☐ Twin Rivers
- ☐ Kewaunee and Ahnapee Rivers
- ☐ Menominee River
- ☐ Fish Creek
- ☐ St. Louis and Nemadji Rivers
- ☐ Lake Winnebago

Question 5. Extent of Pollutant Control

A. Ch. NR 151 Performance Standard for Total Suspended Solids

☒ Check this box if this project focuses on meeting a ch. NR 151 total suspended solids (TSS) reduction performance standard in urban runoff that enters waters of the state.

B. Other Water Resources Management Priority

☐ Check this box if the proposed project addresses a water resources management priority other than the ch. NR 151 performance standard in Part A., above.

If checked, describe the priority and how the project addresses this priority.

C. Planning Data And Source Targeting

☐ Check this box if the applicant has quantitative planning information that ranks pollution sources from highest to lowest in severity *and* the proposed project will manage a pollution source contained in the top 50% of the ranked list. If "Yes," provide the following information:

1. Summary of the targeting analysis that justifies the proposed project and provides the project's ranking from that analysis.

2. Name of document(s):

3. Date(s) published:

4. Pertinent page number(s):

5. A copy of non-state department document(s) is available (check all that apply):

- ☐ At this website: http://
- ☐ Attached to this application for:
- ☐ Contact this person: Name: Phone

Question 6. Consistency with Resource Management Plans And Supporting Regulations

A. Consistency with Resource Management Plans

☐ Check this box if the proposed project implements a water quality recommendation from a locally approved resource management plan. Examples include Smart Growth plans, Legacy Community plans, Water Star plans, local Storm Water Management plans, wellhead protection, lake management, regional water quality plans, Remedial Action plans and other watershed-based nonpoint source control plans.

(This question does not include a TMDL report, TMDL implementation plan, or County Land and Water Resource Management Plan.)

If checked, cite the name and date(s) of publication of the document. Attach pertinent page(s) or provide URL. Summarize the water quality recommendation(s) and describe how it relates to the goals of this proposed project.

B. Supporting Regulations

Check the box for the statement that applies to this project. The project is located within an area which has:

- ☐ 1. One or more regulations that implement the non-agricultural performance standards for developed urban areas under s. NR 151.13;
- ☒ 2. Other regulations designed to reduce the impact on water quality from new development, other than construction site erosion control or a storm water ordinance.

Describe the regulations indicated above in relation to the goals of this project.

Question 7. Use of Additional Funding

☐ Check this box if the applicant is requesting less state share on Row 13 of Question 1B (Cost-Sharing Worksheet) than it was offered on Row 12 of that section.

Question 8. City of Racine

☐ Check this box if this is an application from the City of Racine for a project that is necessary for the city to comply with state storm water permitting requirements.

Part III. Eligibility for Multipliers

Completion of this part of the application is optional. However, an applicant can increase the final project score by qualifying for a project multiplier.

Local Implementation Program

Yes	N/A		
☒		A.	The governmental unit is implementing a pollution prevention information and education program targeted for property owners and other residents.
☐	☐	B.	The governmental unit is implementing a nutrient management plan for municipally-owned properties of at least five acres of pervious area where nutrients are applied
☒		C.	The governmental unit is implementing a tracking of storm water permitting activity (construction and post-construction) in the governmental unit and can make summary information available to the DNR upon request.

Optional Additional Information

Carefully review your answers to all of the questions above. Is there additional information that will add to the department's understanding of this project? If so, describe here.

Applicant Certification

A Responsible Municipal Representative must sign and date the application form prior to submittal to the DNR. All four copies must include the signature of the Responsible Municipal Representative.

Signature of Responsible Municipal Representative	Date Signed

Name (*Please Print*)	Title
Guy Mascari	Director of Development

☐ Check this box if a Completed Governmental Responsibility Resolution (see Attachment J) is attached

Submittal Directions

To be considered for funding, provide the following for each application submitted:

- One copy of the completed application form [DNR Form 8700-299 (R 3/13) with original signature in blue ink;
- Three additional copies of the completed, signed application form;
- One electronic copy of the completed application form in PDF format only plus all attachments and maps on CD.

All application materials must be postmarked by midnight **April 15 of the same calendar year**.

Mail to: State of Wisconsin
Runoff Management Section-WT/3
Department of Natural Resources
101 South Webster Street
Madison, WI 53703

or PO Box 7921
Madison WI 53707-7921

EXHIBIT A

LEGAL DESCRIPTION OF PROPERTY AND AERIAL PHOTOGRAPH

EXHIBIT A

MILWAUKEE COUNTY RESEARCH PARK CORPORATION

SOUTHWEST QUADRANT PARCEL

PREMISES

LEGAL DESCRIPTION

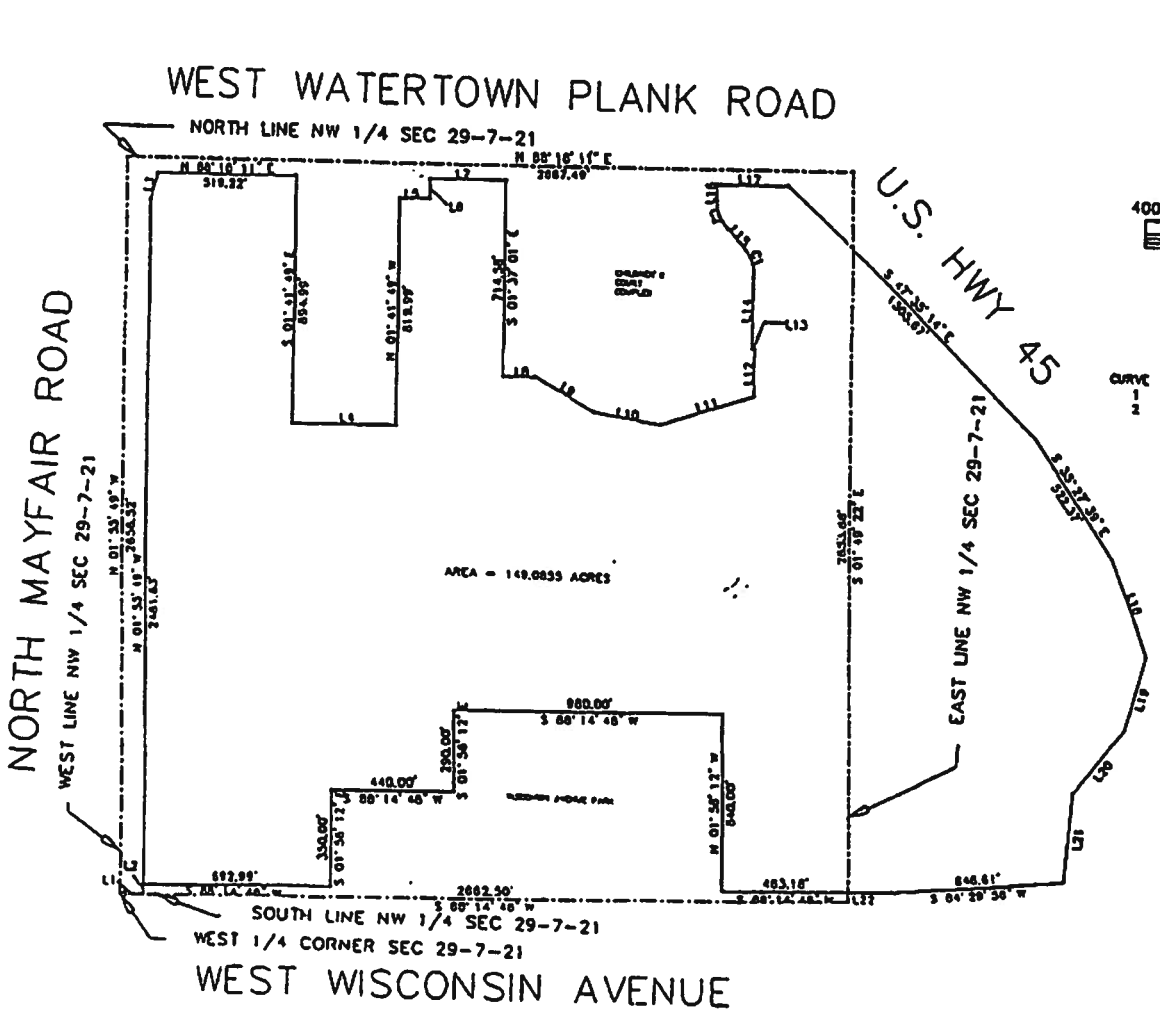
That part of the NW 1/4 and the NE 1/4 of Section 29, T7N, R21E, in the City of Wauwatosa, Milwaukee County, Wisconsin, which is bounded and described as follows:

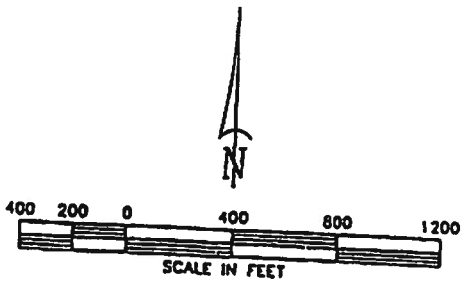
Commencing at the West 1/4 corner of said Section: Thence N 88°14'48.0"E for 87.00 feet along the south line of the NW 1/4 of said Section to a point; Thence N 01°55'49.0"W and parallel with the West line of the NW 1/4 of said Section for 40.00 feet to the Point of Beginning, said point being the intersection of the north line of W. Wisconsin Ave. with east line of N. Mayfair Road; Thence continuing N 01°55'49.0"W along the east line of N. Mayfair Road and parallel with the west line of the NW 1/4 of said Section for 2461.63 feet to a point; Thence N 13°44'11.0"E for 103.53 feet to a point on the south line of W. Watertown Plank Road, said line being 55.00 feet south of and parallel to the north line of the NW 1/4 of said Section; Thence N 88°18'11.0"E along said south line of W. Watertown Plank Road for 519.22 feet to a point; Thence S 01°41'49.0"E 894.99 feet to a point; Thence N 88°18'11"E 371.51 feet to a point; Thence N 01°41'49"W 819.99 feet to a point; Thence N 88°18'11"E 110.00 feet to a point; Thence N 01°41'49"W 75.00 feet to a point on the south line of W. Watertown Plank Road, said line being 55.00 feet south of and parallel to the north line of the NW 1/4 of said Section; Thence N 88°18'11"E 272.89 feet along the south line of W. Watertown Plank Road to a point; Thence S 01°37'01"E 714.58 feet to a point; Thence N 87°46'46"E 118.52 feet to a point; Thence S 62°42'37.0"E for 250.20 feet to a point; Thence S 82°28'02.0"E for 250.20 feet to a point; Thence N 71°04'12.0"E for 356.68 feet to a point; Thence N 01°41'04.0"W for 170.00 feet to a point; Thence S 88°18'56.0"W for 10.00 feet to a point; Thence N 01°41'04.0"W for 278.21 feet to the beginning of a curve; said curve having central angle of 40°24'30", radius 123.00 feet, chord bearing N 21°53'19.0"W, and chord distance 84.96 feet; Thence along the arc of said curve for a distance of 86.75 feet to the end of the curve; Thence N 42°18'12.0"W for 101.34 feet to the beginning of a curve, said curve having central angle of 40°24'57", radius 164.00 feet, chord bearing N 21°54'19.0"W, and chord distance 113.39 feet; Thence along the arc of said curve for a distance of 115.68 feet to the end of the curve; Thence N 01°41'49.0"W for 58.00 feet to a point on the south line of W. Watertown Plank Road, said line being 55.00 feet south of and parallel to the north line of the NW 1/4 of said Section; Thence N 88°18'11.0"E along said south line of W. Watertown Plank Road for 259.63 feet to a point on the westerly right-of-way line of U.S. Highway "45"; Thence S 47°35'14.0"E along said westerly right-of-way line for 1305.67 feet to a point; Thence S 35°27'39.0"E along said westerly right-of-way line for 522.37 feet to a point; Thence S 21°03'37.0"E along said westerly right-of-way line for 379.31 feet to a point; Thence S 14°58'48.0"W along said westerly right-of-way line for 277.89 feet to a point; Thence S 38°31'14.0"W along said westerly right-of-way line for 295.50 feet to a point; Thence S 03°57'18.0"W along said westerly right-of-way line for

325.30 feet to a point; Thence S 84°29'56.0"W for 646.61 feet to a point on the north line of W. Wisconsin Ave.; Thence S 88°28'48.0"W along the north line of W. Wisconsin Ave. for 160.09 feet to a point; Thence S 88°14'48.0"W along the north line of W. Wisconsin Ave. and parallel with the south line of the NW 1/4 of said Section for 463.18 feet to a point; Thence N 01°56'12.0"W for 640.00 feet to a point; Thence S 88°14'48.0"W parallel with the south line of the NW 1/4 of said Section for 980.00 feet to a point; Thence S 01°56'12.0"E for 290.00 feet to a point; Thence S 88°14'48.0"W parallel with the south line of the NW 1/4 of said Section for 440.00 feet to a point; Thence S 01°56'12.0"E for 350.00 feet to a point on the north line of W. Wisconsin Ave.; Thence S 88°14'48.0"W along the north line of W. Wisconsin Ave. and parallel with the south line of the NW 1/4 of said Section for 692.99 feet to the Point of Beginning.

Said parcel containing 149.0855 Acres more or less.

DEPARTMENT OF PUBLIC WORKS
PROFESSIONAL SERVICES DIVISION
11/9/90 GGH
REVISED 10/29/91 GGH
REVISED 11/21/91 GGH





CURVE	DELTA	RADIUS	ARC	CHORD	TANGENT	CHORD BRG
1	49° 24' 30"	123.00	84.75	84.99	45.27	N 21° 53' 19" W
2	49° 24' 37"	164.00	113.60	113.36	60.37	S 21° 54' 19" E

LINE	BEARING	DISTANCE
1	[illegible]	[illegible]
2	N 01° 35' 49" W	40.00'
3	N 13° 44' 11" E	103.53'
4	N 88° 16' 11" E	371.51'
5	N 88° 16' 11" E	110.00'
6	N 01° 41' 49" W	73.00'
7	N 88° 16' 11" E	272.09'
8	N 87° 48' 46" E	118.52'
9	S 82° 42' 37" E	250.20'
10	S 82° 28' 02" E	250.20'
11	N 71° 04' 12" E	338.69'
12	N 01° 41' 04" W	170.00'
13	S 88° 16' 56" W	10.00'
14	N 01° 41' 04" W	278.31'
15	N 42° 18' 12" W	101.34'
16	N 01° 41' 49" W	50.00'
17	N 88° 16' 11" E	350.83'
18	S 21° 03' 37" E	378.31'
19	S 14° 58' 48" W	372.86'
20	S 36° 31' 14" W	295.50'
21	S 03° 57' 18" W	323.30'
22	S 88° 28' 48" W	160.09'

[illegible]
RESEARCH PARK
SOUTHWEST QUADRANT
DATE: 11/21/01 · SCALE: 1" = 400' · SHEET: 1 of 1 · DRAWN BY: JW

EXHIBIT B

GROUND LEASE BETWEEN MILWAUKEE COUNTY AND MILWAUKEE COUNTY RESEARCH PARK

316WTS:WP 12/27/91

GROUND LEASE

Between

MILWAUKEE COUNTY

AND

MILWAUKEE COUNTY RESEARCH PARK

TABLE OF CONTENTS

316WTS:WP 12/27/91

GROUND LEASE

THIS LEASE is dated as of March 24, 1992 between MILWAUKEE COUNTY, a municipal corporation ("Lessor") and MILWAUKEE COUNTY RESEARCH PARK CORPORATION, a Wisconsin nonstock, nonprofit corporation ("Lessee").

RECITALS

Lessor and Lessee acknowledge the following:

A. Lessor's Board of Supervisors desires to foster and encourage the development of a research and technology park on a portion of the County Institution Grounds (the "Research Park"). To accomplish this end, a Blue Ribbon Task Force on the Disposition of Milwaukee County Institution Lands was formed and prepared a Final Report that was transmitted to the County Executive on September 23, 1985 (the "Final Report").

B. Lessor's Board of Supervisors, by resolutions (file nos. 84-947 and 86-64), adopted the findings of the Blue Ribbon Task Force as set forth in the Final Report, except to the extent modified by said resolutions (the "Resolutions"). The Resolutions further provided that the site for the Research Park shall include: (1) approximately 158 acres consisting of

the southwest quadrant plus the Watertown Plank Road Park and Ride lot, except for lands used for Wisconsin Avenue Park, Children's Court Center, Wauwatosa Fire Station, County Nursing Home; and (2) approximately 15 acres of the northeast quadrant known as the former agricultural school site, as specified in adopted resolution file no. 81-1107(a), which includes buildings S-1 through S-6. This land and the improvements thereon as of the Effective Date of this Lease, as defined below, together with such other land and improvements that Lessor and Lessee shall agree in writing is subject to this Lease, are referred to in this Lease as the "Premises."

C. The Final Report and the Resolutions recommend that the responsibility for the creation, development, management and operation of the Research Park be vested in Lessee and that the Premises be leased by Lessor to Lessee pursuant to a long-term ground lease to assist in accomplishing the purpose of establishing a Research Park on the Premises.

D. The State of Wisconsin in 1989 Wisconsin Act 265 effective May 4, 1990 (Wisconsin Statutes section 59.07(149) (the "Statute") has authorized Lessor to participate in the development of a research and technology park under the conditions stated in the Statute.

E. Lessor, acting through its County Board, has made the necessary determinations required by the Statute.

F. Lessor and Lessee hereby desire to enter into this Lease in order to transfer a leasehold estate in the Premises to Lessee for the purposes set forth in the Final Report, the Resolutions and the Statute and to retain, create and attract science-based business and help develop and diversify the economic base of Milwaukee County and the State of Wisconsin.

G. Lessor and Lessee hereby desire to set forth the terms and conditions for Lessee's establishment, development, management and operation of the Research Park.

H. Concurrently with the execution of this Lease, the Premises are being subjected to a Declaration of Covenants, Conditions and Restrictions (the "Declaration").

AGREEMENTS

In consideration of the Recitals and the mutual agreements which follow, Lessor and Lessee agree as follows:

1. Premises. Lessor does hereby lease to Lessee and Lessee does hereby lease from Lessor the Premises which are

legally described in **Exhibit** A attached hereto. In addition, Lessor anticipates that certain land and improvements (including, without limitation, those lands depicted on **Exhibit** B attached hereto) may be added to the definition of the Premises, following removal of the Milwaukee County Nursing Home from the building commonly known as M-1 and the removal of the residents, if any, from the property commonly known as M-13 and M-14 (the "M-13 and M-14 Lands") when needed for development of the Research Park. It is anticipated that the Milwaukee County Nursing Home shall be removed after July 1, 1992, and the residents, if any, of the M-13 and M-14 Lands shall be removed within 180 days after notice from Lessee to Lessor of its intent to use such lands for development purposes. All such additional land and improvements shall be subject to all the terms and conditions of this Lease and may be subleased to any party permitted by this Lease. The addition of such land and improvements shall be effective as of the date and subject to the conditions of Lessor's resolution adding such land and improvements to this Lease. Lessor hereby recognizes and acknowledges the overall Master Plan for development of the Research Park (attached hereto as **Exhibit** C), and Lessor shall consider the overall Master Plan

in its future decisions regarding the use of lands outside the Premises.

2. Term. This Lease shall be for a term commencing on the date first above written (the "Effective Date") and continuing for a period of 100 years from the Effective Date, unless terminated earlier as provided for herein (the "Initial Term").

3. Rent.

(a) Initial Rent. Lessee hereby covenants and agrees to pay to Lessor as the Initial Rent for the Premises the sum of $1.00 per year for each year of the Initial Term of this Lease. The Initial Rent for the Initial Term of this Lease shall be paid in advance and Lessor acknowledges receipt of $100 as payment of the Initial Rent for the Initial Term of this Lease.

(b) Initial Funding and Additional Rent.

(i) Lessor and Lessee agree that the economic benefits to be derived from developing the Premises, together with the other income obtained by Lessee (including, without limitation, (1) any ground rent under any leases or

PAGES 6 TO 71 AVAILABLE UPON REQUEST

Services and Mental Health Complex Administration ("DHHS") describing the scope of the work (and any public safety aspects) and shall receive permission for same. Such permission shall be based solely upon (i) public safety concerns, (ii) access concerns, and (iii) continuation of DHHS programs without undue interruption; and any request for permission shall be acted upon promptly and permission shall not be unreasonably withheld by DHHS.

(o) Parking for Children's Court Center. Lessor reserves certain parking rights within the Premises for the benefit of the Children's Court Center which is located adjacent to the Premises. The terms and conditions of these rights and related obligations of Lessor and the related grant and obligations of Lessee are deemed a part of this Lease and are stated in a Parking Agreement which is attached hereto and incorporated herein by this reference. This Parking Agreement shall be executed by Lessor and Lessee concurrently with the execution of this Lease.

MILWAUKEE COUNTY

BY D.F. Schulz
David F. Schulz, County Executive

BY
Rod Lanser, County Clerk

3/24/92
APPROVED FOR EXECUTION
CORPORATION COUNSEL
File No. 91-809

316WTS:WP 12/27/91

MILWAUKEE COUNTY RESEARCH
PARK CORPORATION

BY Ellen Taylor
Its Chairman

Attest: Leila Hanser
Its Secretary

State of Wisconsin)
) SS
Milwaukee County)

This instrument was acknowledged before me on March 24, 1992 by David F. Schulz, as County Executive, and Rod Lanser, as County Clerk, of Milwaukee County,

[SEAL]

Andrea L. Kunsek
( )
Notary Public, State of Wisconsin
My commission is permanent

State of Wisconsin)
) SS
Milwaukee County)

This instrument was acknowledged before me on March 24, 1992 by Ellen Taylor, as Chairman, and Leila Hanser, as Secretary, of Milwaukee County Research Park Corporation.

[SEAL]

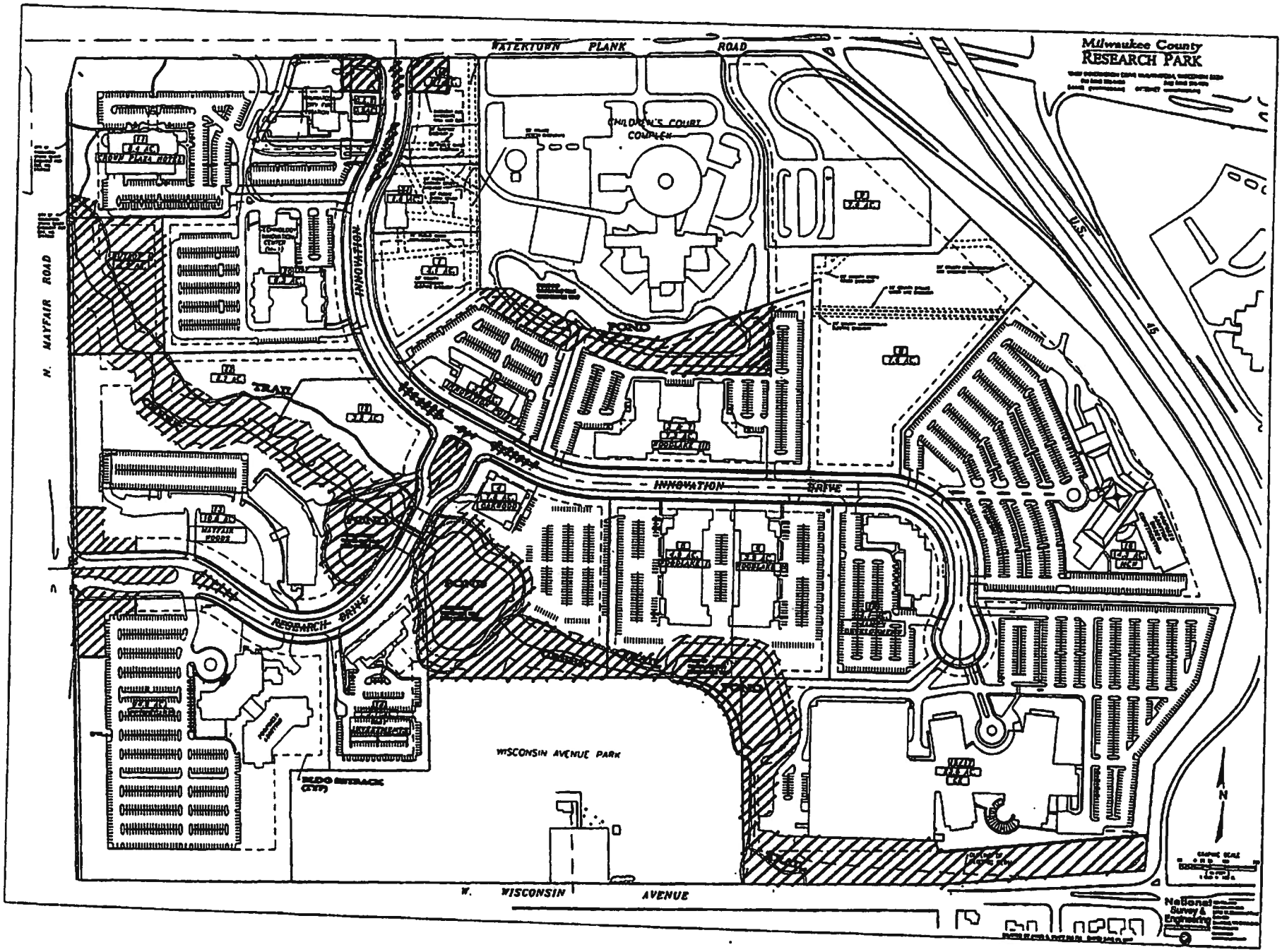
Andrea L. Kunsek
( )
Notary Public, State of Wisconsin
My commission is permanent

This document was drafted by and after recording should be returned to:

Allen N. Rieselbach, Esq. and
Michael H. Simpson, Esq.
Reinhart, Boerner, Van Deuren,
Norris & Rieselbach, s.c.
1000 North Water Street,
Suite 2100
Milwaukee, WI 53202

EXHIBIT C

COMMON AREAS OF THE MILWAUKEE COUNTY RESEARCH PARK

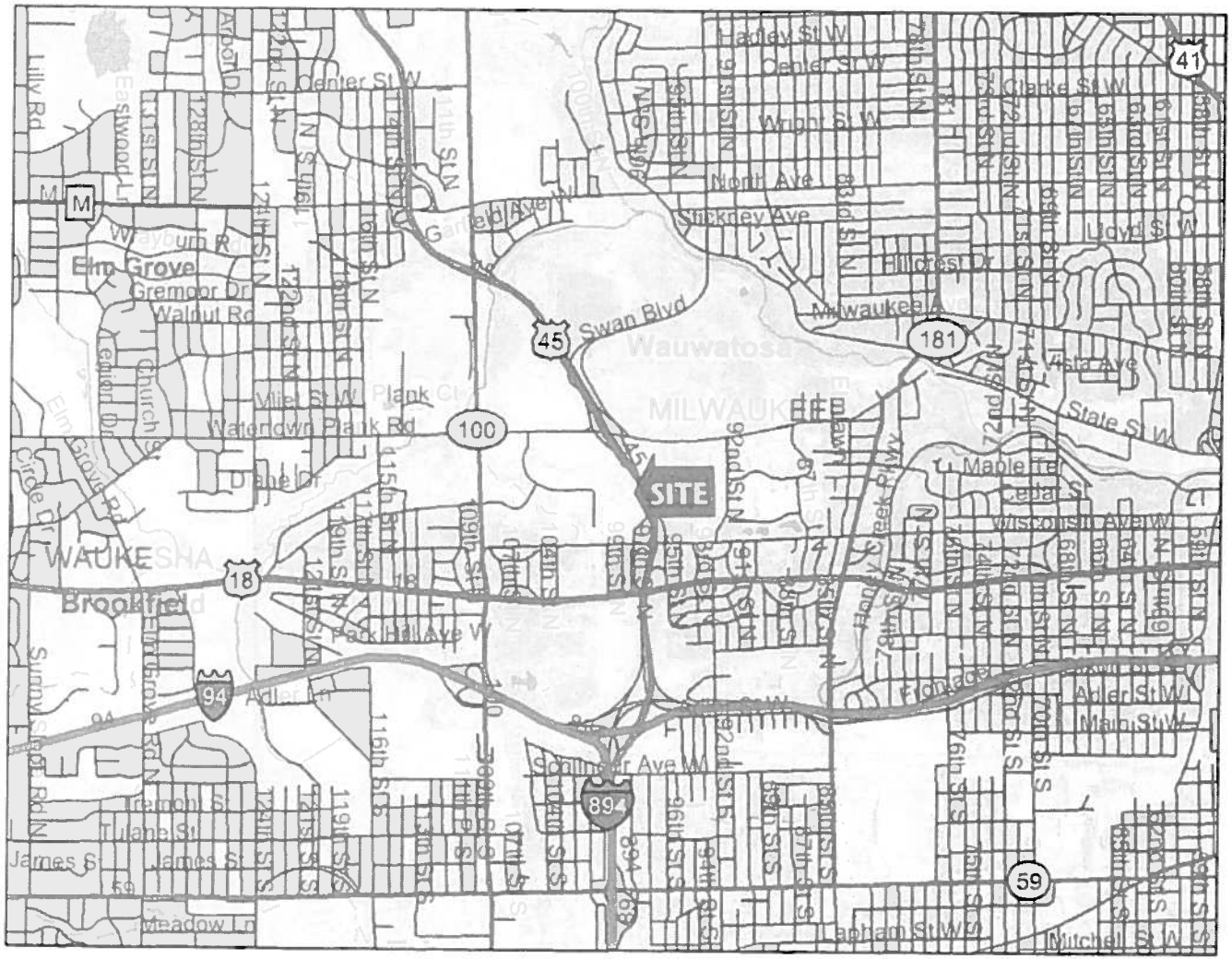


COMMON AREAS AS OF 1/1/11

EXHIBIT D

WISCONSIN DNR – SITE IDENTIFICATION RESULTS

Map Created on Apr 11, 2013



0 4500 9000 13500 ft.

Legend

Major Highways
- Interstate
- State Highway
- U S Highways
- County Roads
- Local Roads

24K County Boundaries

Civil Towns

Civil Town

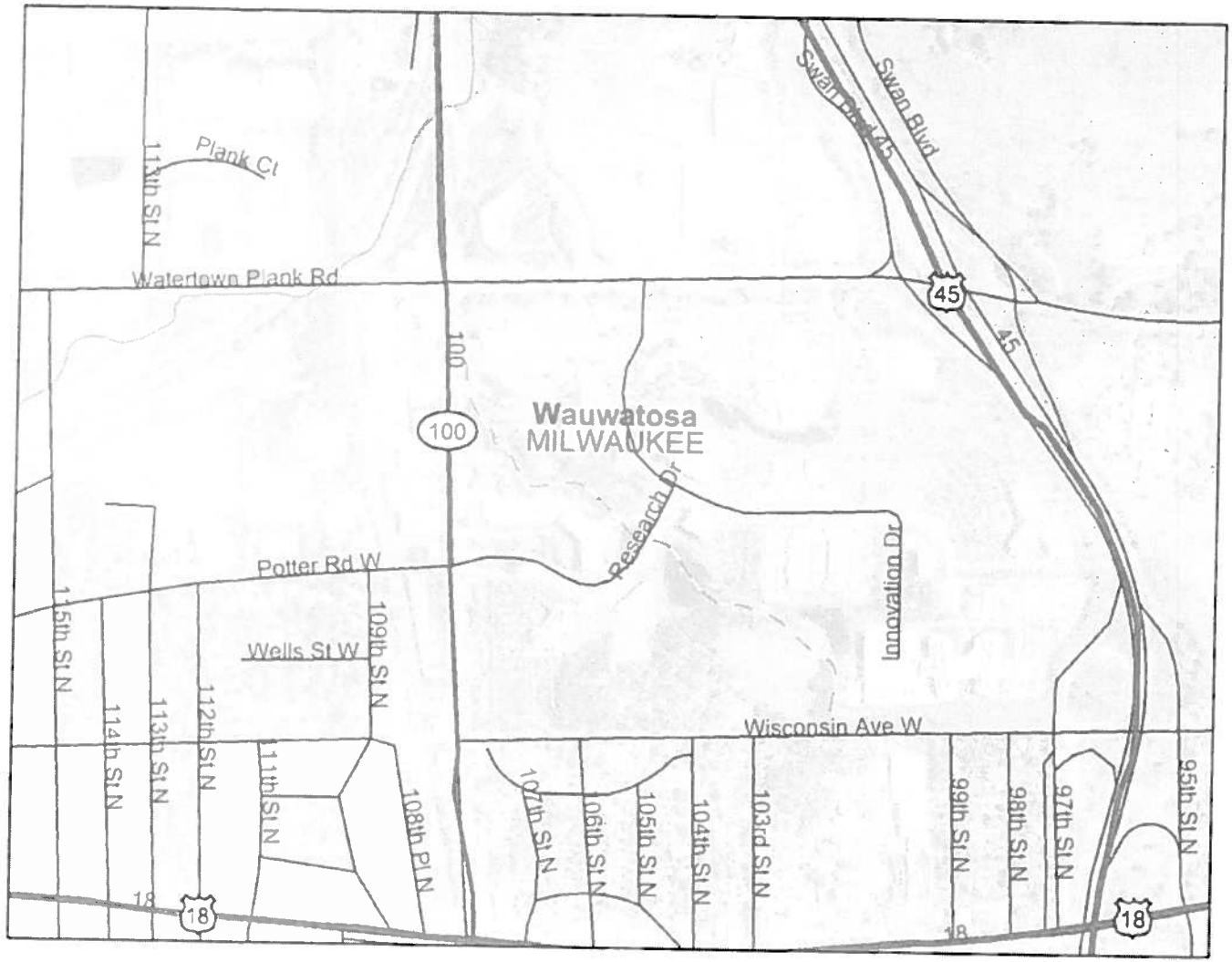
24K Open Water

24K Rivers and Shorelines
- Intermittent
- Fluctuating
- Perennial

Cities and Villages
- Village
- City

Scale: 1:46,161

Map Created on Apr 11, 2013



Legend

Major Highways

- Interstate
- State Highway
- U.S. Highways
- County Roads
- Local Roads

24K County Boundaries

Civil Towns

Civil Town

24K Open Water

24K Rivers and Shorelines

- Intermittent
- Fluctuating
- Perennial

Cities and Villages

Village

City

Scale: 1:11,540

Wisconsin DNR - Identify Results

Report generated April 11, 2013 - 09:30 AM

Send to Printer

Coordinate Position

Lat/Lon:	43° 2' 32.8" N, 88° 2' 44.6" W
Decimal Lon/Lat:	-88.045738, 43.042456
UTM 16N:	414822, 4766060
WTM91 (x,y):	679181, 287382

Cities and Villages

MCD Fips Code:	84675
Name:	Wauwatosa
City Class Code:	2
Area (Sq. Miles):	13.27322112
MCD Type Code:	C

24K Rivers and Shorelines

Water Body Name:	Unnamed
Register of Waterbodies Name:	Unnamed
River System WBIC:	5035805
Flow and Duration:	PrimaryFlowOverLandIntermittent
Line Type:	Stream/River, single-line
Stream Order:	1
Source Data Year:	1994
Hydro Geodatabase ID:	200024817
Surface Water Line No.:	43205271

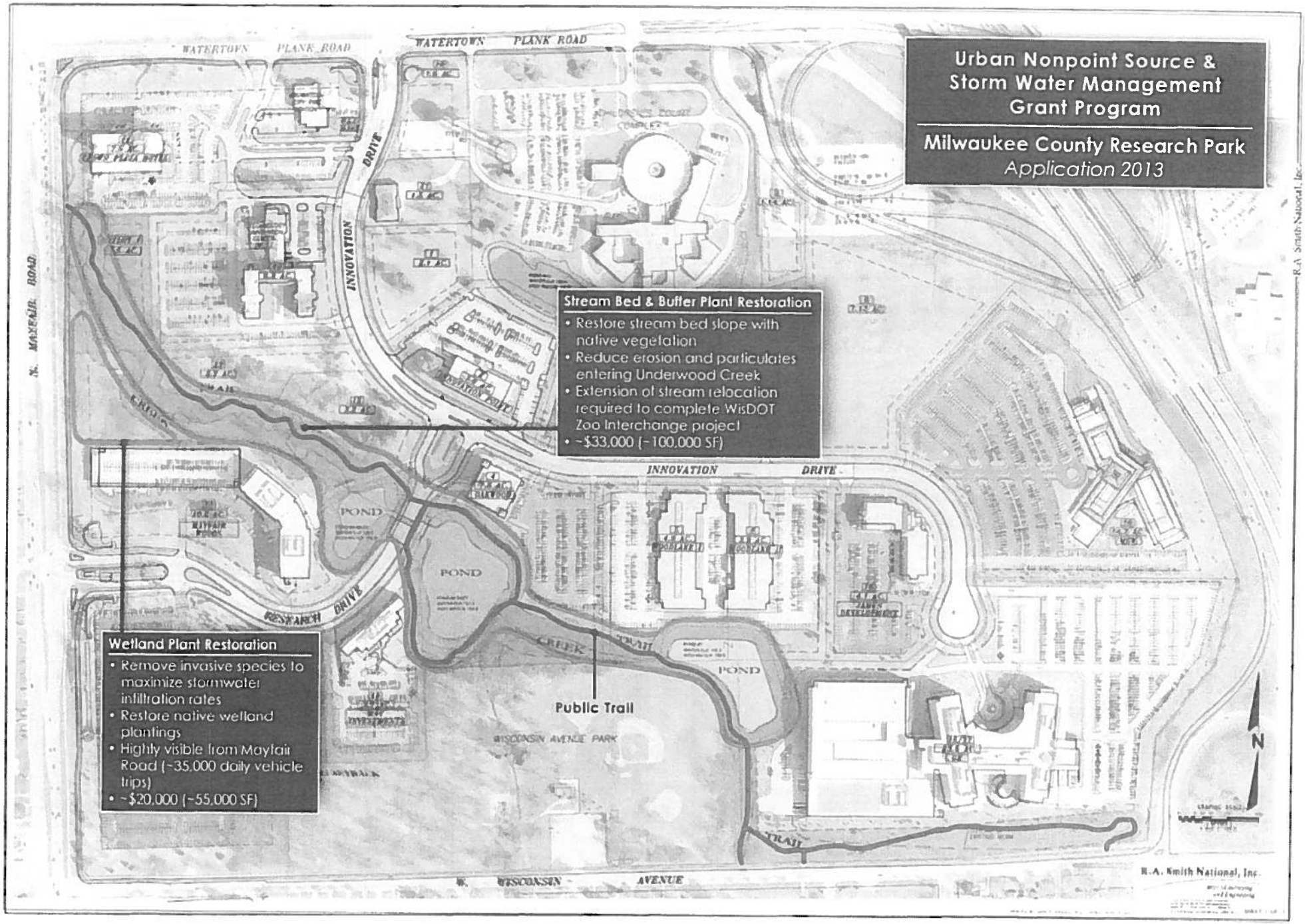
County Boundaries

Name:	Milwaukee
County FIPS Code:	79
DNR County Code:	41
DNR Region:	Southeast Region

[Close Report Window]

EXHIBIT E

PROJECT DESCRIPTION AND SITE PHOTOGRAPHS


Urban Nonpoint Source & Storm Water Management Grant Program
Milwaukee County Research Park
Application 2013
Stream Bed & Buffer Plant Restoration
• Restore stream bed slope with native vegetation
• Reduce erosion and particulates entering Underwood Creek
• Extension of stream relocation required to complete WisDOT Zoo Interchange project
• ~$33,000 (~100,000 SF)
Wetland Plant Restoration
• Remove invasive species to maximize stormwater infiltration rates
• Restore native wetland plantings
• Highly visible from Mayfair Road (~35,000 daily vehicle trips)
• ~$20,000 (~55,000 SF)
Public Trail
WATERTOWN PLANK ROAD
INNOVATION DRIVE
RESEARCH DRIVE
WISCONSIN AVENUE
POND
N
R.A. Smith National, Inc.

PROJECT DESCRIPTION – PART OF EXHIBIT E

Sub-project 2. Stream Bed and Buffer Restoration

The Milwaukee County Research Park Campus provides a high-quality natural greenway that ribbons throughout the campus, centered around a series of ponds which are connected by a stream. The Campus has constructed a walking path within this greenway and has maintained the natural beauty for both campus employee and visitor enjoyment. Every year, the Campus removes invasive species and replaces them with native plants as budget allows.

In 2013, The Wisconsin Department of Transportation will be re-routing the stream as part of the Zoo Interchange project and widening of Mayfair Road/Highway 100. The Campus has been working closely with WisDOT to ensure the new stream alignment has the correct alignment, bank stabilization, and native plantings. MCRP would like to extend these improvements toward the east to compliment the Zoo Interchange construction. Improvements include stream bank plantings to reduce erosion into the stream, which flows into Underwood Creek, as well, as invasive planting removal and native plant installation. MCRP will hire a landscape architect to provide a design and plant species list.

The estimated project cost is $33,000 ($5,000 design and construction management and $28,000 installation).

Sub-project 3. Wetland Plant Restoration

As part of the Campus greenway system Underwood Creek tributary, a wetland is located between the un-named creek and Mayfair Road/Highway 100. This highly visible site is prime to be a public demonstration site for proper wetland restoration. As this site will also be affected by the WisDOT Zoo Interchange Project, the timing is immediate for invasive plant removal and native plant restoration.

Milwaukee County Research Park will hire a landscape architect to prepare a restoration plan including appropriate plant species and locations. Typical wetland plant mix of forbs, sedges, and aquatics cost around $12,000 per acre. The area is approximately 1.2 acres is size.

The estimated project cost is $20,000 ($3,000 design and $17,000 installation).

Sub-project 5. Stormwater Pond Monitoring Well

The Milwaukee County Research Park prides itself on providing a high quality green space that is open to the public. This space includes a trail network along an un-named creek which flows into the Underwood Creek. Many campus

employees and community residents enjoy these trails both during and after work hours. The open space provides a quality environmental oasis for work day breaks. The open space contains a series of three stormwater ponds which retain campus stormwater. Lately, campus workers and visitors have noticed an oil sheen on the southern pond which has negatively affected their open space experience. MCRP would like to sire a hydrological engineer to install a monitoring well to collect pollutant data.

The southern pond receives off-site stormwater from Wisconsin Avenue and the residential area to the south. This data collection will be the basis for an engineer to analyze the information to determine pattern in pollution during storm events and non-storm event periods. This information will determine whether a larger stormwater management study and strategy should be conducted in the future.

The estimated project cost is $20,000 including monitoring well installation, data gathering and preliminary analysis.

MILWAUKEE COUNTY RESEARCH PARK
2013 WISCONSIN DNR URBAN NONPOINT SOURCE & STORM WATER (UNPS&SW) PROGRAM CONSTRUCTION GRANT APPLICATION
PROJECT 2– STREAM BED & BUFFER PLANT RESTORATION

MILWAUKEE COUNTY RESEARCH PARK
2013 WISCONSIN DNR URBAN NONPOINT SOURCE & STORM WATER (UNPS&SW)
PROGRAM CONSTRUCTION GRANT APPLICATION
PROJECT 3– WETLAND PLANT RESTORATION

MILWAUKEE COUNTY RESEARCH PARK
2013 WISCONSIN DNR URBAN NONPOINT SOURCE & STORM WATER (UNPS&SW) PROGRAM CONSTRUCTION GRANT APPLICATION
PROJECT 5– STORM WATER POND QUALITY MONITORING

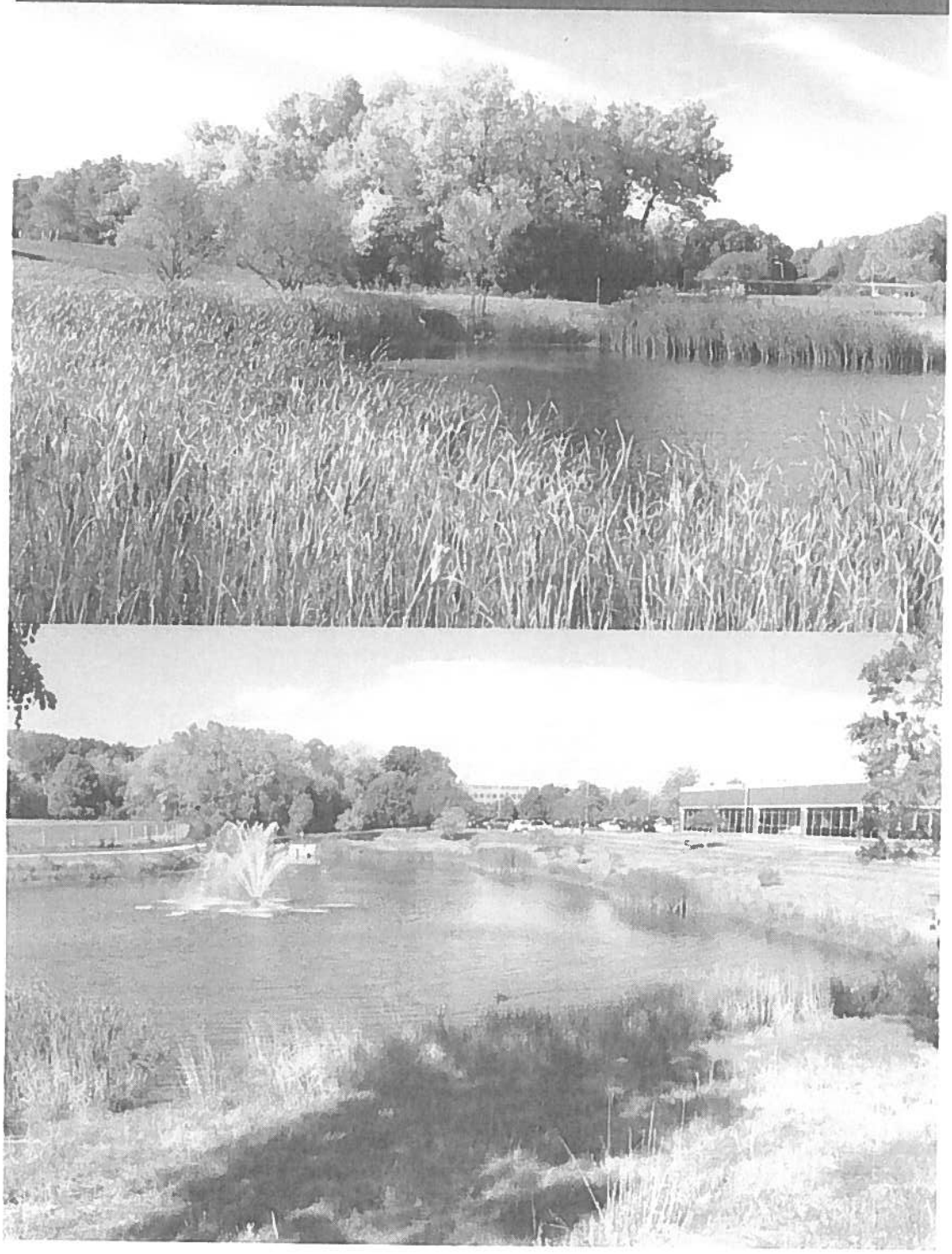


EXHIBIT F

DETAILS OF AWARD OF GRANT FROM
THE MILWAUKEE METROPOLITAN SEWERAGE DISTRICT
2012 GREEN INFRASTRUCTURE PARTNERSHIP PROGRAM
ROUIND TWO – GRANT APPLICATION

Guy Mascari

From: McDonald, Bre [BMcDonald@mmsd com]
Sent: Friday, November 09, 2012 8:17 AM
To: Guy Mascari
Subject: MMSD Green Infrastructure Partnership Program

Dear Guy,

You should be receiving a letter in the mail shortly announcing that your proposal was selected for funding through the Green Infrastructure Partnership Program. I will be in contact with you soon to work out the details of a funding agreement. MMSD approved $64,000 in funding for your project for the porous pavement and rain garden portions of your application. The letters will be sent out on Tuesday, but I wanted to let you know early. Should you have any questions please feel free to call me.

Congratulations.

Bre

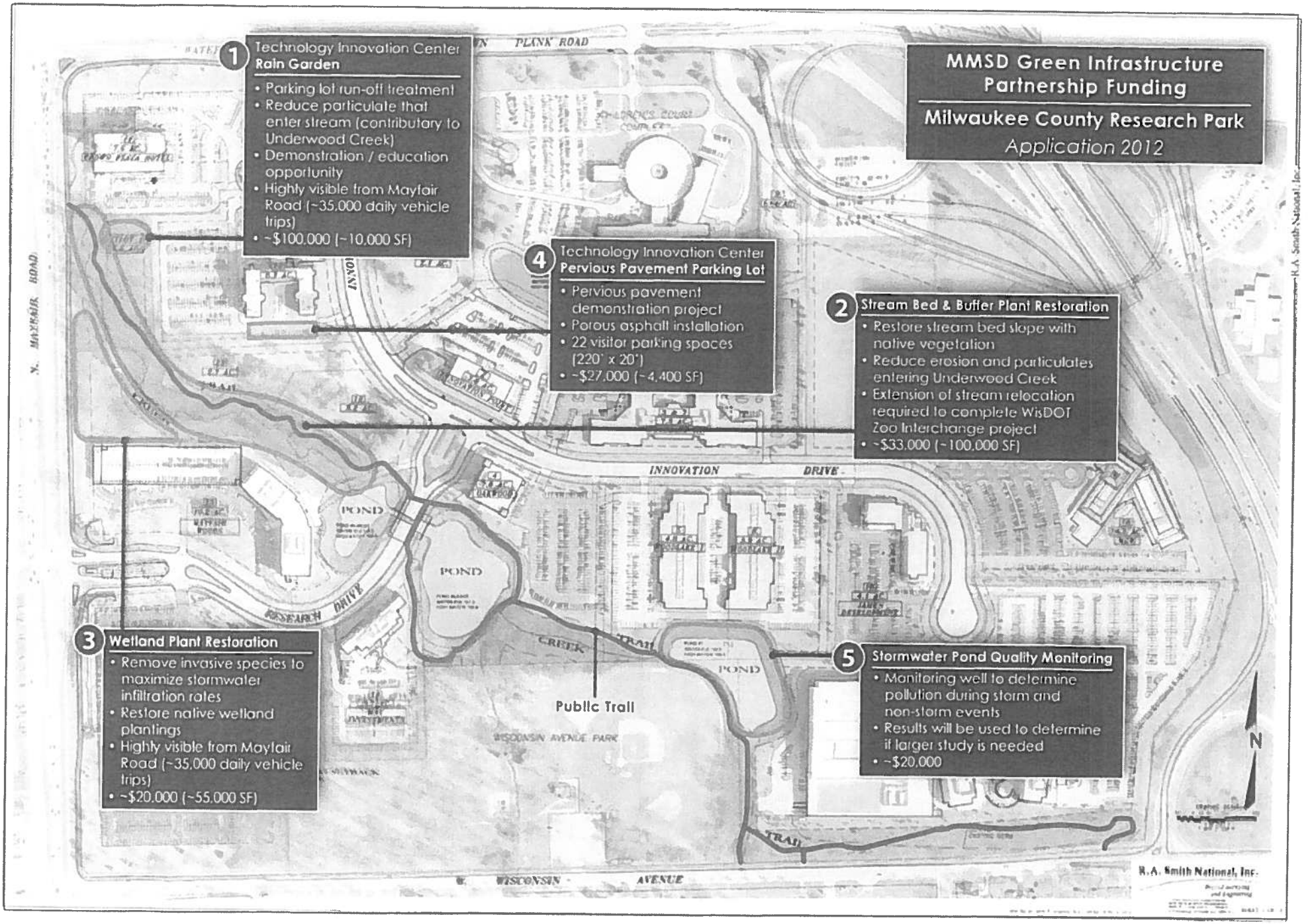
Breanne L. McDonald
Project Manager
Planning, Research & Sustainability Division
Milwaukee Metropolitan Sewerage District
260 W. Seeboth Street
Milwaukee, WI 53204

Ph: 414-225-2151
e-mail: bmcdonald@mmsd.com

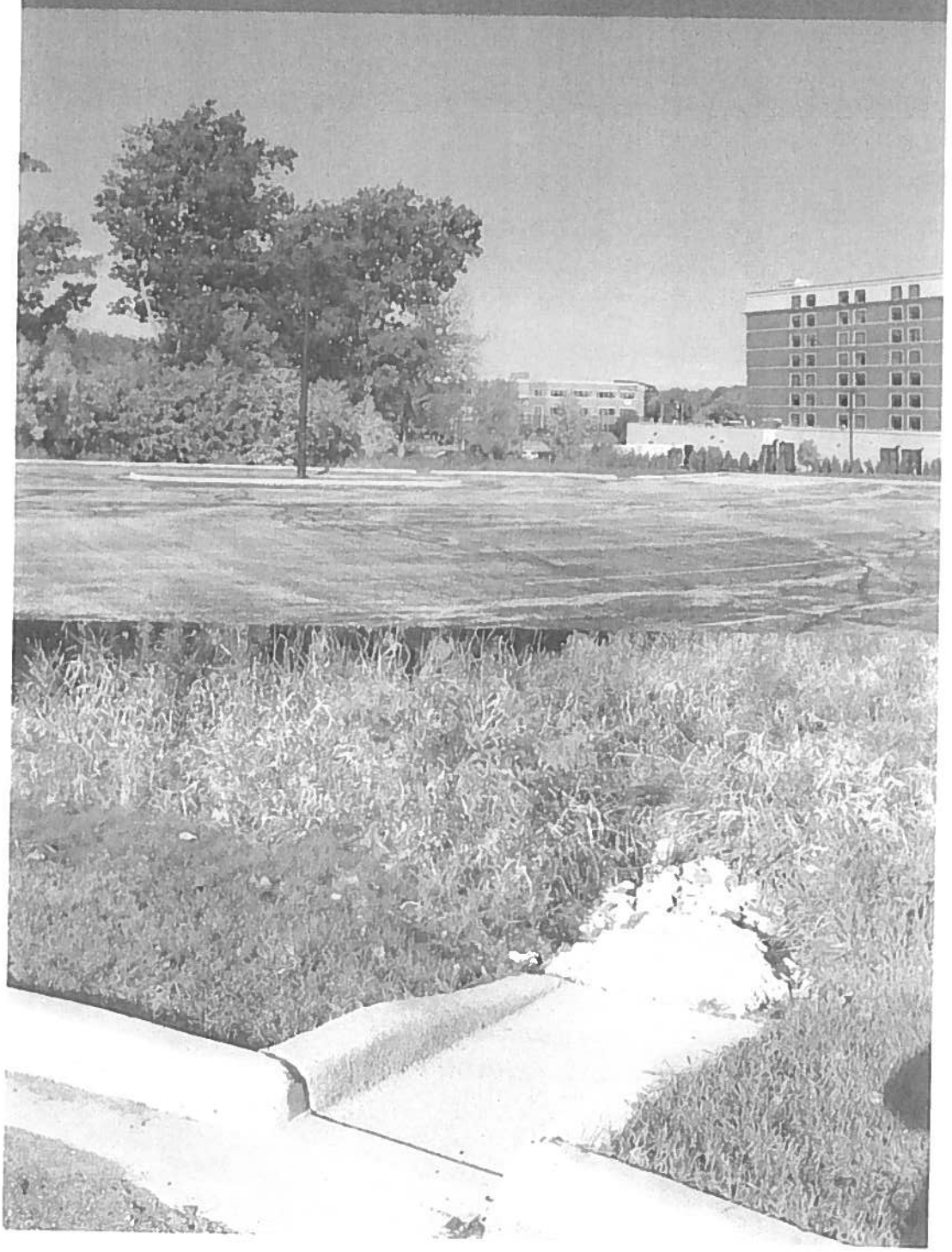
Cell: 414-426-2587

measuring greater milwaukee's future...
one drop at a time.

http://www.h2ocapture.com/en.aspx


MMSD Green Infrastructure Partnership Funding
Milwaukee County Research Park
Application 2012
1 Technology Innovation Center
Rain Garden
• Parking lot run-off treatment
• Reduce particulate that enter stream (contributary to Underwood Creek)
• Demonstration / education opportunity
• Highly visible from Mayfair Road (~35,000 daily vehicle trips)
• ~$100,000 (~10,000 SF)
2 Stream Bed & Buffer Plant Restoration
• Restore stream bed slope with native vegetation
• Reduce erosion and particulates entering Underwood Creek
• Extension of stream relocation required to complete WisDOT Zoo Interchange project
• ~$33,000 (~100,000 SF)
3 Wetland Plant Restoration
• Remove invasive species to maximize stormwater infiltration rates
• Restore native wetland plantings
• Highly visible from Mayfair Road (~35,000 daily vehicle trips)
• ~$20,000 (~55,000 SF)
4 Technology Innovation Center
Pervious Pavement Parking Lot
• Pervious pavement demonstration project
• Porous asphalt installation
• 22 visitor parking spaces (220' x 20')
• ~$27,000 (~4,400 SF)
5 Stormwater Pond Quality Monitoring
• Monitoring well to determine pollution during storm and non-storm events
• Results will be used to determine if larger study is needed
• ~$20,000
PLANK ROAD
INNOVATION DRIVE
RESEARCH DRIVE
MAYFAIR ROAD
WISCONSIN AVENUE
POND
POND
CREEK
Public Trail
TRAIL
N
R.A. Smith National, Inc.

MILWAUKEE COUNTY RESEARCH PARK
2012 MMSD GREEN INFRASTRUCTURE PARTNERSHIP PROJECT
PROJECT 1 - TECHNOLOGY INNOVATION CENTER
RAIN GARDEN



MILWAUKEE COUNTY RESEARCH PARK
2012 MMSD GREEN INFRASTRUCTURE PARTNERSHIP PROJECT
PROJECT 4 - TECHNOLOGY INNOVATION CENTER
PERVIOUS PAVEMENT PARKING LOT

EXHIBIT G

DETAILS OF
U.S. FISH & WILDLIFE SERVICE
SPRINGHOUSE RUN STREAM RESTORATION
WASHINGTON, DC

U.S. Fish & Wildlife Service

Springhouse Run Stream Restoration Washington, DC

10 percent Conceptual Design

CBFO-S07-02
October 2007

SPRINGHOUSE RUN STREAM RESTORATION, WASHINGTON, D.C.: 10 PERCENT CONCEPTUAL DESIGN

By: Christopher K. Eng and Richard R. Starr

Stream Habitat Assessment and Restoration Program
U.S. Fish and Wildlife Service
Chesapeake Bay Field Office
Annapolis, Maryland

CBFO-S07-02

Prepared in cooperation with:
District of Columbia, Department of Environment, Watershed Protection Division; and
U.S. Department of Agriculture, National Arboretum

October 2007

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A. INTRODUCTION

The District of Columbia (D.C.), Department of the Environment, Watershed Protection Division (DOE) and the U.S. Fish and Wildlife Service (Service) – Chesapeake Bay Field Office entered into a Memorandum of Understanding (MOU) (Agreement 51410-1902-0172) to implement stream and riparian habitat restoration projects within the D.C. watershed. As part of the MOU, the Service completed an assessment of the main-stem and tributaries of Hickey Run located on U.S. National Arboretum (Arboretum) and U.S. National Park Service property. The Service, in partnership with the Arboretum and DOE, is developing a stream restoration design for a 1,268-foot section of Springhouse Run, one of the tributaries to Hickey Run (Figure 1).

The goal of stream restoration is to return Springhouse Run to a stable, self-maintaining state while meeting the aesthetic goals of the Arboretum. Stream stability is not a static state but a dynamic process with a tendency towards equilibrium between stream discharge, sediment transport, and channel dimension, plan form, and longitudinal profile. Restoring a stream to this stable state and restoring its riparian buffer will address a number of aquatic and riparian habitat concerns. A successful stream restoration will also address some water quality issues including reducing sediment and nutrients, which are significant issues for the Chesapeake Bay and its natural resources.

The first task in developing the restoration plans was to conduct a watershed and stream assessment. The Service presented the findings and recommendations of this assessment in the *Hickey Run, Washington, D.C.: Watershed and Stream Assessment* (Starr and McCandless, 2005). Based on the watershed and stream assessment, the Arboretum, DOE, and Service selected Springhouse Run as a stream restoration demonstration project. In 2007, the Service completed the Springhouse Run topographic survey, which augmented the existing topographic data provided by the Arboretum.

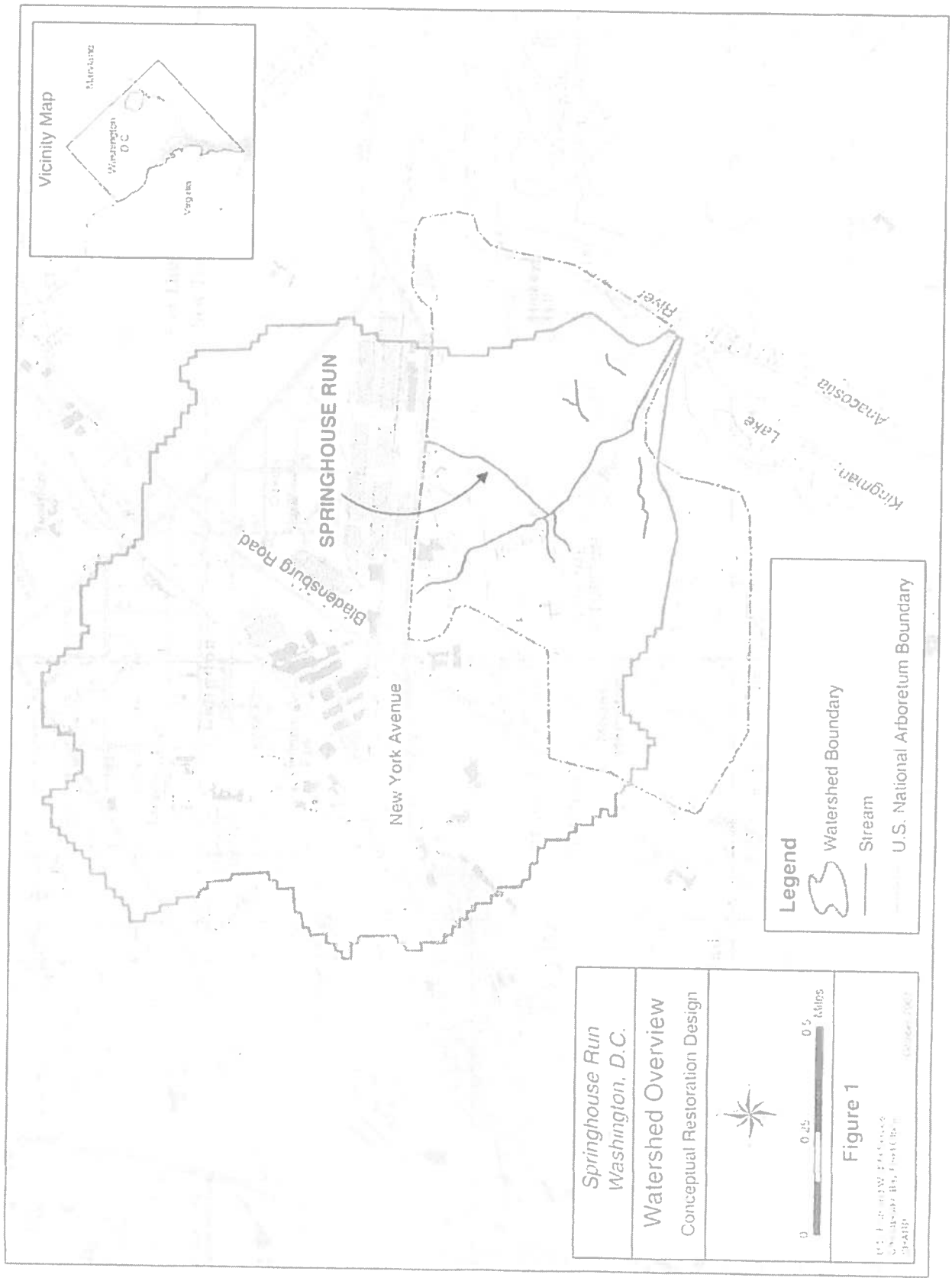
The purpose of this report is to present the ten percent conceptual stream restoration (10%) design developed by the Service, through cooperation with the Arboretum and DOE. The 10% design report briefly presents the design methodology, restoration strategies, and restoration alternatives. The 10% design plans show the existing conditions and the conceptual stream alignment.

B. 10 PERCENT DESIGN DEVELOPMENT

This section presents a brief summary of the methods used by the Service to develop the 10% design. The Service uses a natural channel design approach that uses stable reference stream characteristics as a template for restoring the impaired stream.

1. Natural Channel Design Methodology

The Service used natural channel design methodology to design the stream cross section, planform, and profile for restoring Springhouse Run. Natural channel design methodology


Vicinity Map
Maryland
Washington D.C.
Virginia
SPRINGHOUSE RUN
Bladensburg Road
New York Avenue
River
Anacostia
Lake
Kingman
Legend
Watershed Boundary
Stream
U.S. National Arboretum Boundary
Springhouse Run
Washington, D.C.
Watershed Overview
Conceptual Restoration Design
0
0.25
0.5
Miles
Figure 1

employs geomorphic measurements from stable streams as a template for restoring the impaired stream. Measurements from the stable streams are converted to dimensionless ratios by dividing by various bankfull characteristics, which allows the Service to apply characteristics from references streams of difference sizes to the impair stream.

The objective of natural channel design is to make adjustments in stream cross section, planform, and longitudinal profile such that the restored stream will accommodate the flow regimes and sediment supply without creating excessive erosion or deposition in project area, or upstream or downstream of the project area.

For the 10% design, the Service used cross section and planform dimensionless ratios to develop the conceptual stream alignment. In subsequent design phases, the Service will further develop cross section and profile design using additional dimensionless ratios.

2. Restoration Objectives

The Service developed restoration objectives based on input from the Arboretum and DOE, and Service mission statements. The conceptual phase of the design is the time to refine, add or delete any of the objectives. The objectives are the primary criteria that will guide the design process and influence the final design. Therefore, it is critical for the Arboretum, DOE and the Service to finalize the objectives before moving forward with the restoration design

- Restore a natural, self-sustaining stream
- Apply natural channel design principles
- Improve instream habitat (i.e., diversity and quality)
- Maintain Arboretum landscape, aesthetics, and infrastructure
- Improve water quality (e.g., reduce temperatures and sediment)
- Require low maintenance
- Establish a native riparian buffer
- Address infrastructure (e.g., terracotta drainage) and contaminant constraints

3. Natural Channel Design for Springhouse Run

The Service divided the restoration area into two project areas (Figure 2). Project Area 1 is approximately 279 feet and is located between the confluence of Springhouse Run and Hickey Run, and Beechwood Road. Project Area 2 is approximately 989 feet and is located between Beechwood Road and Springhouse Pond.

a. Restoration Strategy

The Service proposes to use two restoration strategies for Springhouse Run (Table 1). Project Area 1 is a Priority 3 restoration and Project Area 2 is a Priority 2 restoration. For Project Area 1, the Service will create a moderately entrenched stream with an increased floodprone area, within or near the existing channel, because of site constraints (i.e., Heart Pond and Meadow Road). For Project Area 2, the Service will create a meandering stream with a wider floodplain, at the existing bankfull elevation.

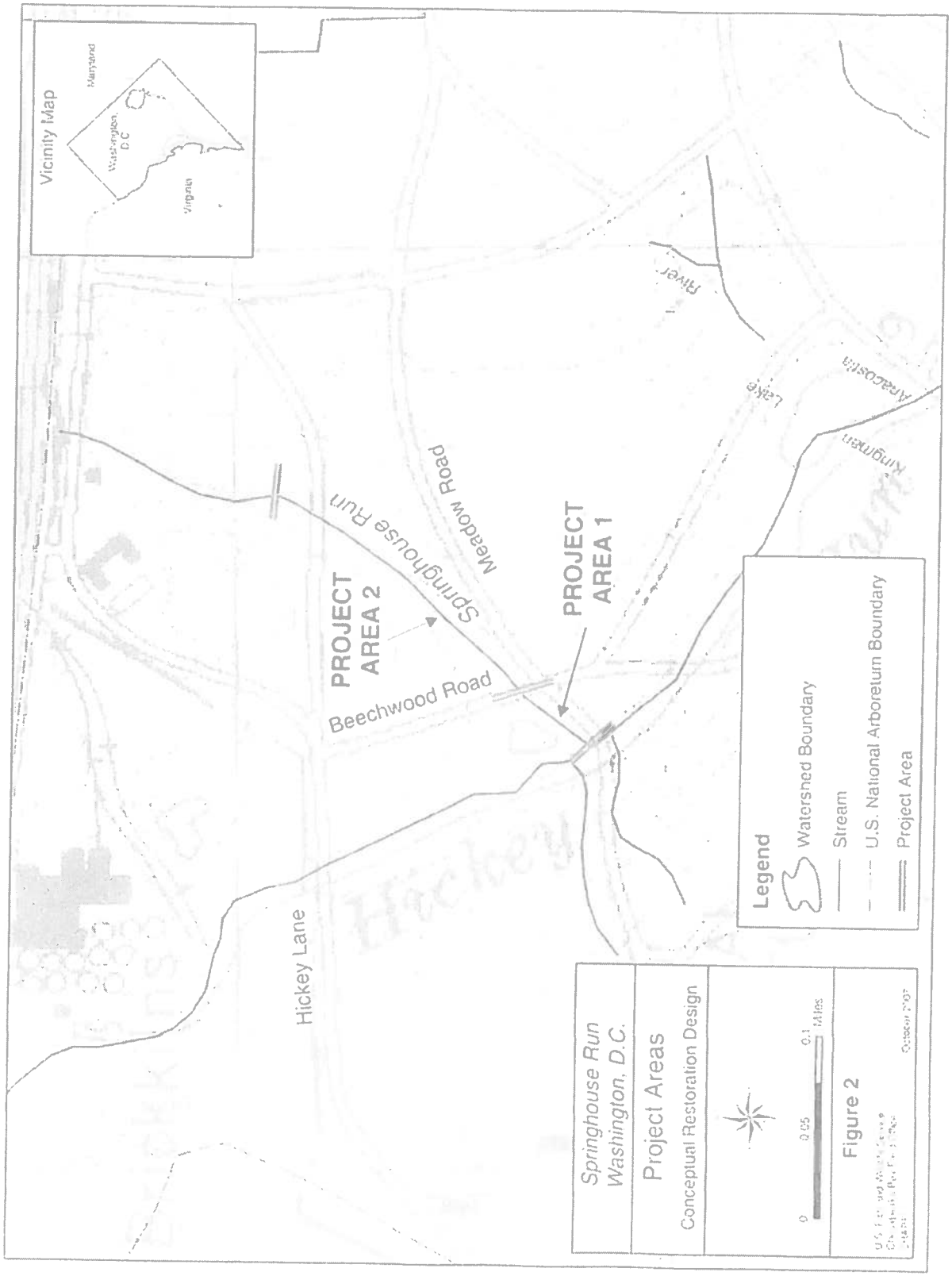

Vicinity Map
Maryland
Washington, D.C.
Virginia
PROJECT AREA 2
PROJECT AREA 1
Springhouse Run
Meadow Road
Beechwood Road
Hickey Lane
Anacostia River
Lake
Kingman
Legend
Watershed Boundary
Stream
U.S. National Arboretum Boundary
Project Area
Springhouse Run
Washington, D.C.
Project Areas
Conceptual Restoration Design
0
0.05
0.1 Miles
Figure 2

Table 1. Restoration Strategy
Priority 2: Establishment of a Stream and Floodplain within the Existing Stream
This strategy establishes a new stream dimension, pattern, and longitudinal profile within the existing degraded stream. Excavation of the existing degraded stream may be required to create the proper meander pattern. The floodplain is either created at the existing grade or the elevation of the stream bed is raised to allow access to an abandoned floodplain. Although the floodplain is narrower than restoring the stream to the original floodplain, the presence of a reduced floodplain still attenuates flow velocities, and bank and bed shear stresses during higher flows. This alternative also relies more on bank vegetation to stabilize the stream but may require additional bank stabilization methods.
Priority 3: Establishment of a Stream with an Increased Floodprone Area within the Existing
This strategy stabilizes the stream within the existing degraded stream. While this option does not require the creation or establishment of a floodplain, it does require the creation of a floodprone area for energy dissipation. The new stream dimensions will decrease the width/depth ratio and increase the entrenchment of the stream. This alternative relies more on grade control structures to stabilize the stream and dissipate the energy of the stream than the previous alternative. This option reduces land required to establish a stable stream and reduces the need to relocate adjacent land uses encroaching on the floodplain. Additional material costs are required and this alternative does not create a diverse aquatic habitat. This alternative has a lower success rate than the first alternative and may require some maintenance.
Modified from Rosgen, 1996

Both restoration strategies will have similar channel cross section conversions that involve creating a low flow active channel bench, and increasing the width of the bankfull floodplain. The difference between the two strategies will be in the floodplain widths. The floodplain for Project Area 1 will be narrower and created, within the existing channel, by excavating the top of existing stream banks. Figure 3a illustrates the cross section conversion. For Project Area 2, fixed control points, such as the bed elevations at road crossings, prevented the Service from reconnecting the stream to its original floodplain. However, an adequate floodplain can be created, at the existing bankfull elevation, by excavating in the abandoned floodplain (Figure 3b).

b. Restoration Stream Type

The Service selected two Rosgen stream types (Rosgen, 1996) to develop the restoration design criteria for Springhouse Run, based on the valley type and site constraints (e.g., channel confinement and control elevations). The Service selected a B4 Rosgen stream type for Project Area 1 (see 10% design plans). Several factors influenced the decision to create a less sinuous, moderately entrenched stream with an increased floodprone area. First, the proximity of the existing stream to Heart Pond and Meadow Road limited the beltwidth required to designing a meandering stream. Second, creating a high sinuous channel for the highly incised stream would require significant excavation. Finally, creating a meandering stream between two fixed control points (i.e., culvert and confluence) over such a short distance is very difficult.
For Project Area 2, a C4 or E4 Rosgen stream type typically exists in this valley type. These stream types are the most stable stream types in this landscape, and provide excellent habitat.

However, an E4 stream type would require significant floodplain excavation to create the proper sinuosity. Therefore, the Service selected a C4 stream, which requires a lower sinuosity and beltwidth, resulting in less earth work (see 10% design plans).

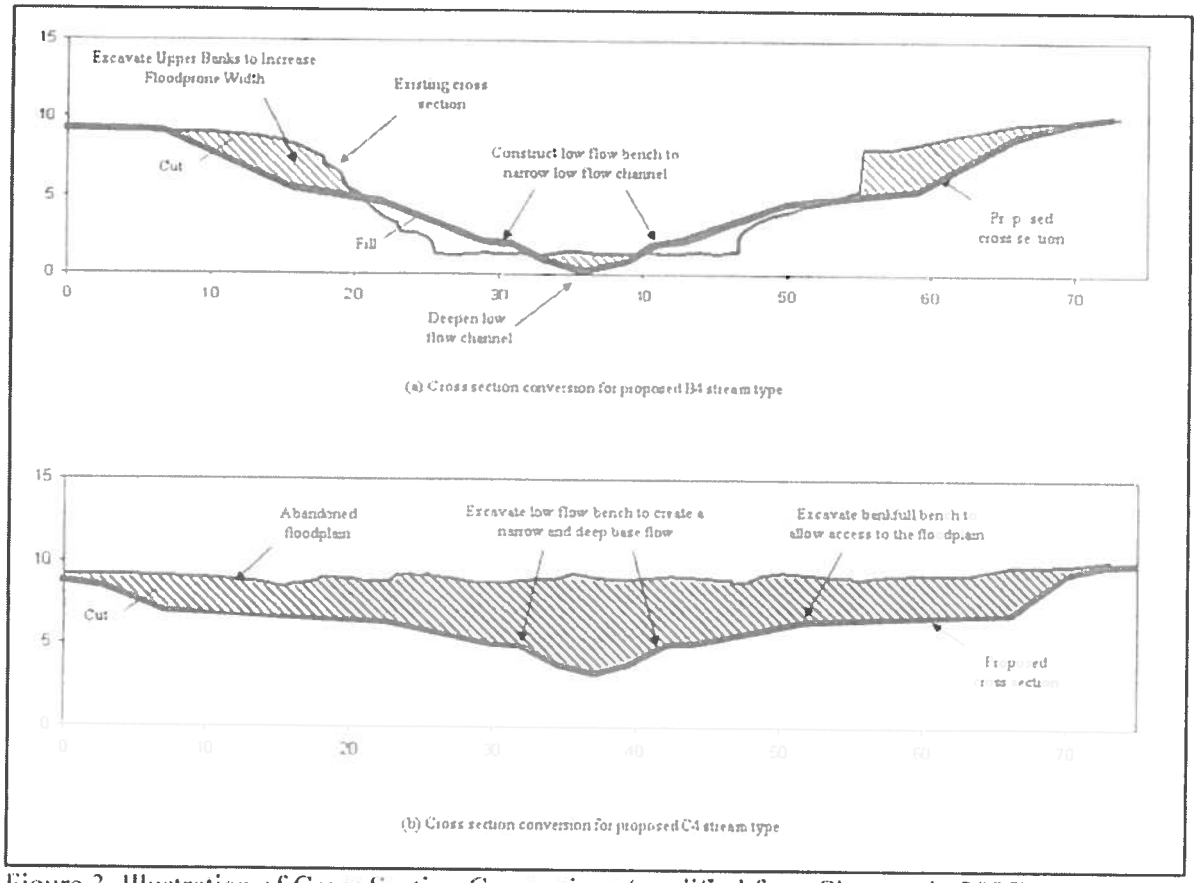


Figure 3. Illustration of Cross Section Conversions (modified from Shea et al., 2005)

c. Reference Reach

A suitable reference reach should possess similar hydrologic, geologic, and physiographic characteristics to the restoration reach. The shape of a particular stream represents the balance between erosive forces applied to a stream by water flowing down a slope and the resistive forces supplied by native stream substrate and streambanks. Streams formed in differing types of alluvium or rock respond differently to the same hydrology. Likewise, streams of the same lithology and geology exhibit differing forms if subjected to differing hydrologic regimes. For example, compare two streams within the same area, one of which possesses an undeveloped watershed and the other possessing an urbanized watershed.

Urbanization changes the timing and volume of stormflows causing urban streams to have an enlarged cross section. Because of differences in the response of streams to differences in boundary conditions (*i.e.*, stream flow, vegetation, geology, and lithology), it is important to select a reference reach with similar hydrophysiographic characteristics. Generally, this would

be a stream located in the same general area with similar land use, physiography, valley characteristics, and lithology.

Finding reference reaches for urban stream restoration is difficult. It is rare to locate a stream that possesses both an urban discharge regime and stable stream characteristics. If a suitable reference reach cannot be located, streams from remote locations may be used for reference reaches if there is close similarity in physiographic conditions (Hey, 2006). The Service was unable to locate a reference reach (*i.e.*, a stable stream) near Springhouse Run. Therefore, the Service compiled data for C4 reference reaches from streams with similar physiographic conditions in Washington, D.C., Maryland, and North Carolina. The B4 reference reaches were from streams in a different physiographic condition; however, the existing site conditions and constraints allow this to be appropriate.

Natural channel design methodology employs the characteristics of stable streams as a template for designing restored streams. Selection of a Rosgen stream type identifies the broad characteristics for the restored stream, but does not provide sufficient design parameters to develop stream restoration plans. Additional geomorphic measurements must be collected from stable streams that fully detail the characteristics of a stable stream's cross section, planform, and profile. A stream possessing stable characteristics is termed a "reference reach." The geomorphic characteristics of the reference reach are used as a template for designing stream restoration projects. The primary requirement of a reference reach is that the stream reach is stable. The reference reach is not required to be in a natural, undisturbed state. As in the case with Springhouse Run, the Service selected stable reference reaches with stream characteristics that are common to urban, coastal plain streams (e.g., less sinuous and narrower beltwidth).

d. Bankfull Determination

The bankfull discharge is the discharge (or range of discharges) which is responsible for the formation and maintenance of the stream channel dimensions, plan form, and longitudinal profile. The stream typically develops bankfull indicator(s), such as a significant slope break and floodplain feature, along the stream banks at the bankfull stage. An accurate determination of the bankfull indicator(s) is one of the most critical aspects of assessing and restoring a stream because surveyors will base the entire survey, assessment, and restoration on its determination.

The Service identified bankfull during the field assessment and surveyed a representative cross section (Table 2). The Service presents a more detailed discussion of the bankfull determination for Hickey Run and its tributaries in *Hickey Run, Washington, D.C.: Watershed and Stream Assessment* (Starr and McCandless, 2005). The process used by the Service to validate the bankfull determination is present in *Upper Watts Branch Stream Restoration - 30 Percent Concept Design* (Shea, 2006).

Table 2. Representative Bankfull Characteristics	
Bankfull Characteristics	**Representative Cross Section**
Area (ft^2)	17.1
Width (ft)	11.7
Mean Depth (ft)	1.5
Discharge (cfs)*	31.6
* Determined by Manning's equation using Manning's n by stream type	

e. Restoration Techniques

The Service selected three stream restoration techniques based on the restoration objectives and the stability problems identified during the watershed and stream assessment. The Service only considered restoration alternatives based on natural channel design (NCD) principles. Therefore, such alternatives like riprap revetments, concrete channels, and bioengineering techniques were not included in the alternative analysis.

1) Soil Fabric Lifts

The Service proposes to use soil lifts in situations where fill is required to create the low flow, active channel and bankfull benches (Photographs 1 and 2). Soil fabric lifts are layers of soil held temporally in-place with a bio-degradable fabric. The soil lifts are typically vegetated with a grass seed mix and live cuttings are place in between the soil layers. Roots from the grass and live cutting establish and naturally maintain the soil layers, replacing the degrading fabric. Adjustments to the vegetation plan can be changed to accommodate Arboretum objectives.

2) Rock and Log Instream Structures

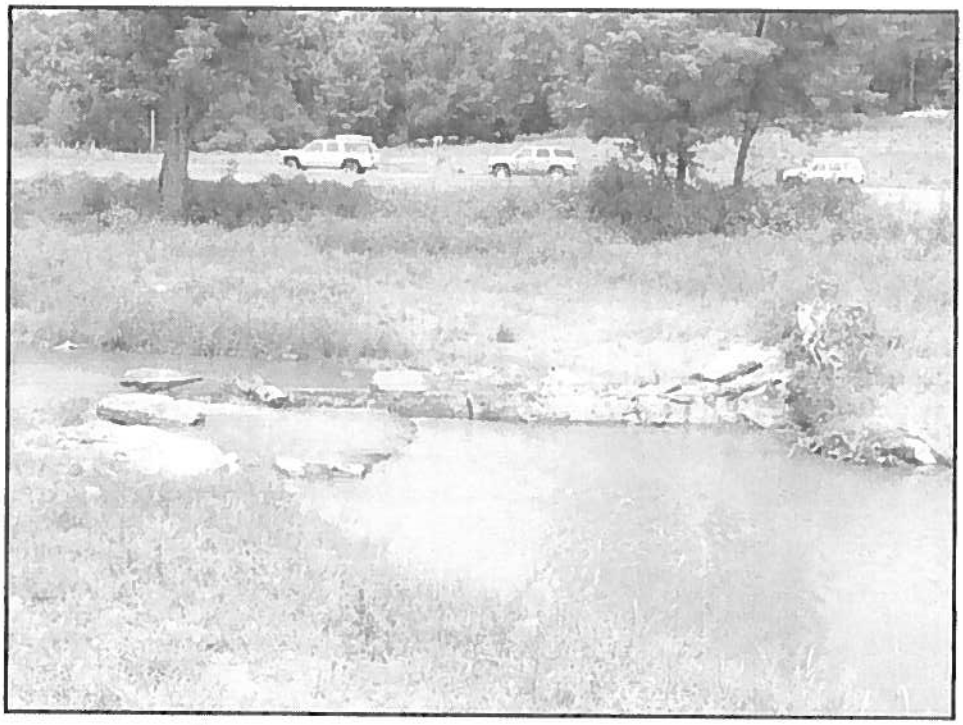
Rock and log structures are instream structures, made of rocks and logs, used to divert erosive stream flows away from streambanks and maintain streambed elevations. The most typical rock and log structures used from stream restoration are cross vanes, J-hook vanes, vanes, and step pools (Photographs 3, and 4). The instream structures are designed to redirect the flow through tight bends, dissipate energy through turbulence, and prevent high shear stress on streambanks. The rock and log structures provide streambed and bank stability and allow the streambed to naturally armor and the riparian vegetation to establish. In addition, provide excellent instream habitat and convey stream flows through constricted bridge crossings.

3) Riparian Buffer

The instream structures and soil fabric lifts provide a skeleton for the stream, but in the long-term, the riparian plantings will maintain the stability of the stream (Figure 4). Riparian plantings will provide rooting to increase the strength of streambanks, riparian habitat, and increase stream roughness that will slow down stream stormflow velocities. No planting occurs within the low flow or active channel. The active channel area is where stream gravel transport occurs.

Photograph 1. Soil fabric lifts under construction.

Photograph 2. Soil fabric lifts 17 months after construction.



Photograph 3. Example of a log/rock j-hook.

Photograph 4. Example of a rock cross vane.

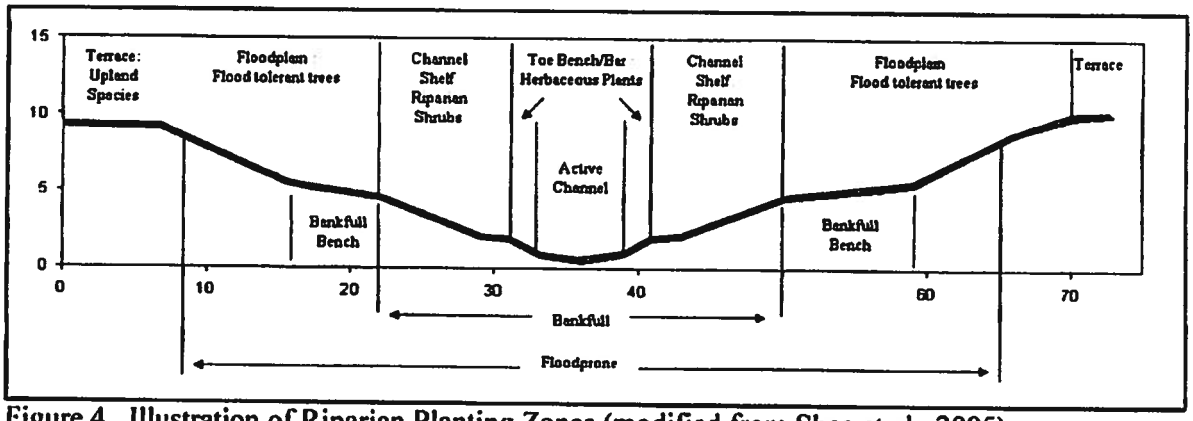


Figure 4. Illustration of Riparian Planting Zones (modified from Shea et al., 2005)

The low flow benches are located between the top of the active channel and bankfull depth. The top of the low flow benches is a frequently flooded area located below bankfull elevation

Riparian vegetation that can withstand frequent flooding and have a dense root system will be planted in this zone. The floodplain zone starts above bankfull. This area will contain riparian shrubs or trees that can withstand occasional inundation. The bankfull bench is a flat or shallowly sloped zone above bankfull that slows high velocity flows during flows above bankfull. Flow velocities at the outer edge of the bankfull bench will be too slow to erode the steeper banks connecting the bench to the flood-prone area.

C. CONCEPTUAL DESIGN SUMMARY

The development of a restoration design is an iterative process and the 10% design is the first step. The proposed stream alignment and riparian buffer is the Service's first attempt at developing a design that meets all the partners' objectives. As a partner in the restoration of Springhouse Run, the Service encourages the Arboretum and DOE to continue to provide suggestions and constructive critiques of the restoration project. It is the goal of the Service, to develop the best restoration design, which fulfills all the objectives of the Arboretum, DOE and the Service.

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