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

Targeted Runoff Management (TRM) Grant Program
Large-Scale Agricultural Application

Form 8700-333 (R 1/15)

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 purposes 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. Tab to each section or click in answer space.

Applicant Information

Calendar Year of Grant Start: 2016

Project Name: Fenwood Creek Watershed Project

Governmental Unit Applying (name and type) (example: Dane County Land and Water Resources Department): Marathon County Conservation Planning & Zoning Department

Governmental Unit Web Site Address: http://www.co.marathon.wi.us/Departments/ConservationPlanningZoning.aspx

Name of Government Official - Authorized Signatory (First Last)	Name of Government Official - Grant Contact Person (First Last) (if different)
Rebecca J. Frisch	Andrew Johnson
Title: CPZ Director	Title: Conservation and Planning Analyst
Area Code + Phone Number: (715) 261-6000	Area Code + Phone Number: (715) 261-6002
E-Mail Address: Rebecca.Frisch@co.marathon.wi.us	E-Mail Address: Andrew.Johnson@co.marathon.wi.us
Mailing Address - Street or PO Box: 210 River Drive	Mailing Address - Street or PO Box: 210 River Drive
City: Wausau; State: WI; ZIP Code: 54403	City: Wausau; State: WI; ZIP Code: 54403

Part I. Project Information

A. Project Category: Total Maximum Daily Load (TMDL) or Non-TMDL
*You must be able to check either Question 1 **or** Question 2 and provide the documentation requested. If you answer "No" to both questions or omit the documentation requested, the application will not be scored.*

○ 1. **TMDL Project:** The project must meet all the following criteria:
- The project is in a geographical area covered by an EPA-approved TMDL.
- The project addresses the agricultural nonpoint pollutants identified in the TMDL document.
- The project addresses the most critical nonpoint pollution sources in the the project area.

◉ 2. **Non-TMDL Project:** The project must meet all of the following criteria:
- The project implements water resource goals included in a DNR-approved watershed plan or strategy.
- The watershed project area is between 8 and 39 square miles (HUC 12 size).
- The project addresses the most critical nonpoint pollution sources that are significant based on relative contribution to impairment and can be cost-effectively controlled.
- The project addresses NR 151 agricultural performance standards and prohibitions.

Provide the title of the TMDL report or watershed plan that this project implements. (TMDL link: http://dnr.wi.gov/topic/tmdls/tmdlreports.html).

Provide a link to the report, if available.

TRM Grant Project Name:
Fenwood Creek Watershed Project

List the critical nonpoint source pollutants the project will control.
Total phosphorus (soluble and particle based), nitrogen and organics (biological oxygen demand)

Provide the document page number(s) that address the pollutants and sources.
NA

B. Location of Project

County	State Senate District number:	State Assembly District number:
Marathon	29	86

Name of Township(s), Center Point(s)	Township (N)	Range	E or W	Section	Latitude (North, 4 to 7 decimal places)	Longitude (West, 4 to 7 decimal places)
Town of Rietbrock	29 N	4	E	32	44.9554000	-90.0513000
Town of Wien	28 N	4	E	22	44.8977000	-90.0245000
Town of Cleveland	27 N	4	E	11	44.8322000	-90.0029000
Town of Emmet	27 N	5	E	7	44.8406000	-89.9509000
Town of Cassel	28 N	5	E	31	44.8655000	-89.9486000

Method for Determining Latitude & Longitude (check one)

○ GPS ◉ DNR Surface Water Data Viewer - (http://dnrmaps.wi.gov/SL/?Viewer=SWDV)

○ Other (specify): _____

C. Waterbody and Watershed Information (see Attachment A and SWDV http://dnrmaps.wi.gov/SL/?Viewer=SWDV for items 1 through 6 and 10)

1. Name of Targeted Waterbody	2. Name of Watershed	3. Watershed Code
Big Eau Pleine River and Reservoir	Lower Big Eau Pleine River	CW17
4. 12-digit Hydrologic Unit Code (HUC) Code:	**5. 12-digit HUC Subwatershed Name:**	**6. Watershed or Subwatershed Project Drainage Area (square miles):**
070700021602	Fenwood Creek	37 square miles
7. Estimated Number of Cropland Acres in Project Area	**8. Number of WPDES-Permitted Livestock Operations in Project Area**	**9. Estimated Number of Other Livestock Operations in Project Area**
15,400	1	64

10. ◉ This is a surface water project and Wisconsin Buffer Initiative (WBI) Watershed Information is available (fill in A-I below)

○ This is a surface water project and ***no*** WBI Watershed Information is available for this area

○ This is a groundwater project (do not fill in A-I below)

A. WBI Watershed ID:	12265
B. Stream at Watershed Outlet:	Lower Big Eau Pleine River
C. County at Watershed Outlet:	Marathon
D. Watershed Area (square miles):	37 square miles with Rocky Run sub watershed
E. WBI Highest Group Rank:	89-F
F. Stream Water Quality Component Rank:	382
G. Fish Habitat Component Rank:	137
H. Lake Water Quality Component Rank:	9999
I. WBI Composite Rank:	147

D. Maps and Photographs

Yes

☒ An 8.5" x 11" map from the DNR Surface Water Data Viewer. (link to http://dnrmaps.wi.gov/SL/?Viewer=SWDV).

☐ Aerial photo maps and photographs showing the critical project area(s) of the subwatershed are attached.

E. Endangered and Threatened Resources, Historic Properties, and Wetlands

Check the appropriate box for each question based on what the ***governmental unit knows*** to occur where the project disturbs land. If you have no evidence of the items below, leave check box blank.

☒ 1. There are endangered or threatened resources, as identified in s. 29.604, Wis. Stats., and NR 27 in the project area. (Refer to http://dnr.wi.gov/topic/erreview/publicportal.html?tm_source=featureimage&utm_medium=homepage&utm_campaign=20140929_nhiportal for assistance.)

☒ 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 NR 103. (Answer with the SWDV map layer **Wetland Indicators** at: http://dnrmaps.wi.gov/SL/Viewer.html?Viewer=SWDV&runWorkflow=Wetlandland.)

F. Filter Questions (Check the appropriate box for each question.)

*Note: The applicant **must** be able to answer "Yes" to filter questions 1 through 10 and "Yes" or "NA" to questions 11 and 12. In addition, provide additional documentation as required by questions 5, 6, 10, 11 and 12. If any of these questions cannot be answered "Yes" or documentation is omitted, the application will not be scored.*

Yes

☒ 1. The project will control agricultural runoff.

☒ 2. The applicant certifies that funding from this grant will ***not*** be used for best management practices to bring into compliance with state standards and prohibitions any cropland, livestock facility, or significant livestock facility alteration that is created after the effective date of the applicable NR 151 performance standard or prohibition. (See Table in instructions at Project Information Part I. E. for standards, prohibitions and effective dates.)

☒ 3. The applicant certifies that funding from this grant will ***not*** be used for best management practices to bring a livestock facility or cropland back into compliance with a performance standard or prohibition in NR 151 when such compliance had previously been achieved after the effective date of the standard or prohibition.

☒ 4. The applicant certifies that funding from this grant will ***not*** be used for best management practices for which the DNR or local unit of government included a previous offer of cost sharing as part of a NR 151 notice or county notice meeting requirements of NR 151.09 or NR 151.095.

☒ 5. The county, in which the project resides, has a strategy in an approved county Land & Water Resources Management Plan (LWRMP), an updated LWRMP work plan, or an Inter-Governmental Agreement with the DNR to implement agricultural performance standards and prohibitions contained in NR 151. To answer "Yes," the strategy must include ***all*** of the key activities listed in the instructions. Identify here the document name, date approved and provide a web link to that document.

☒ 6. This project is consistent with the resource goals, objectives, or activities identified in the LWRMP, plan amendment, or workplan prepared under s. ATCP 50.12, Wis. Adm. Code. Provide the LWRMP page numbers which relate to this project.

☒ 7. Project will be completed within 36 months of the start of the grant period.

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

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

☒ 10. The local DNR Nonpoint Source Coordinator (see http://dnr.wi.gov/topic/nonpoint/NPScontacts.html) has been contacted and the project was discussed:

Name of the local DNR Nonpoint Source Coordinator Contacted	Date Contacted	Topic of Discussion
Terry Kafka, Adam Freihoefer, Tom Beneke, Corinne Billings, Ann Hirekatur	03/18/2014	Round table discussion about possibility of submitting an application for possible TMDL selection.
Terry Kafka	04/08/2014	Developing a pilot watershed project ahead of the TMDL plan to identify criteria for dis-proportionality.
Terry Kafka	02/12/2015	Informed him that we will re-apply for 2016. He was pleased to hear.

Yes N/A

○ ◉ 11. If this application is for one or more livestock facilities, an **Animal Units Calculation Worksheet** (Form 3400-25a) for existing and future livestock numbers is attached for each facility.
(Form available at: http://dnr.wi.gov/topic/AgBusiness/documents/3400025A_WT.pdf.)

○ ◉ 12. If this is a joint application among local units of government, a ***draft*** of the **Inter-Governmental Agreement** is attached.
(See Attachment F.)

G. Best Management Practices (BMPs) for which DNR TRM Funding is Requested.
Check all BMPs for which DNR funding is requested and insert the Performance Standard and Prohibition codes the BMP addresses if applicable. See instructions for table of standards and prohibition codes and effective dates.
(Also see Attachment C for additional BMP information.)

Structural Practice (Wis. Adm. Code)	*Enter Code #s: Performance Std.(s) or Prohibition(s) the BMP Addresses*	*Structural Practice (Wis. Adm. Code)*	*Enter Code #s: Performance Std.(s) or Prohibition(s) the BMP Addresses*
☒ Manure Storage Systems (NR 154.04(3)) R16	Code(s) 4,9	☒ Riparian Buffers (NR 154.04(25)) R23	Code(s) 12,13,1,2
☒ Manure Storage System Closure (NR 154.04(4)) R15	Code(s) 5	☐ Roofs (NR 154.04(26)) R25	Code(s)
☒ Barnyard Runoff Control Systems (NR 154.04(5)) R3	Code(s) 8,12	☒ Roof Runoff Systems (NR 154.04(27)) R24	Code(s) 8,12
☒ Access Roads & Cattle Crossings (NR 154.04(6)) R1	Code(s) 13	☒ Sediment Basins (NR 154.04(28)) R26	Code(s) code = 12
☒ Animal Trails and Walkways (NR 154.04(7)) R2	Code(s) 13	☐ Sinkhole Treatment (NR 154.04(30) R28	Code(s)
☒ Critical Area Stabilization (NR 154.04(10)) R6	Code(s)	☒ Subsurface Drains (NR 154.04(33)) R30	Code(s) code = 8
☒ Diversions (NR 154.04(11)) R7	Code(s) 8,12	☒ Terrace Systems (NR 154.04(34)) R31	Code(s) code = 1
☐ Field Windbreaks (NR 154.04(12)) R8	Code(s)	☒ Underground Outlets (NR 154.04(35)) R32	Code(s)
☒ Filter Strips (NR 154.04(13)) R9	Code(s) 12	☒ Waste Transfer Systems (NR 154.04(36)) R33	Code(s) 4,6,7,9,10
☐ Grade Stabilization (NR 154.04(14)) R10	Code(s)	☒ Wastewater Treatment Strips (NR 154.04(37)) R34	Code(s) code = 12
☒ Heavy Use Area Protection (NR 154.04(15)) R11	Code(s) 12	☒ Water and Sediment Control Basins (NR 154.04(38)) R35	Code(s) 8,12
☐ Lake Sediment Treatment (NR 154.04(16)) R12	Code(s)	☒ Waterway Systems (NR 154.04(39)) R36	Code(s) 1,8
☒ Livestock Fencing (NR 154.04(17)) R13	Code(s) 4,12	☐ Well Decommissioning (NR 154.04(40)) R37	Code(s)
☒ Livestock Watering Facilities (NR 154.04(18)) R14	Code(s) 13,12	☐ Wetland Development or Restoration (NR 154.04(41)) R38	Code(s)
☒ Prescribed Grazing (NR 154.04(22)) R20	Code(s) 1,12	Streambank and Shoreline Protection (NR 154.03(31)) (includes associated fencing)	
☐ Relocate or Abandon Animal Feeding Ops. (NR 154.04(23)) R21	Code(s)	☐ Stream Crossing R39C	Code(s)
Process Wastewater Handling (NR 154.04(19) & NRCS 629)		☐ Rip-rapping R39R	Code(s)
☒ Milking Center Waste Control Systems R17	Code(s) 7	☐ Shaping & Seeding R39S	Code(s)
☒ Feed Storage Leachate R52	Code(s) 8,7	☐ Fencing R39F	Code(s)
☐ Other Wastewater - specify in "Other" below	Code(s)	☐ Other Protection - e.g. bio-engineering - specify in "Other" below R39O	Code(s)
Cropping Practices		***Cropping Practices***	

Structural Practice (Wis. Adm. Code)	*Enter Code #s: Performance Std.(s) or Prohibition(s) the BMP Addresses*	*Structural Practice (Wis. Adm. Code)*	*Enter Code #s: Performance Std.(s) or Prohibition(s) the BMP Addresses*
☐ Contour Farming (NR 154.04(8)) R4	Code(s)	☐ Pesticide Management (NR 154.04(21) R19	Code(s)
☐ Cover & Green Manure Crop (NR 154.04(9)) R5	Code(s)	☐ Residue Management (NR 154.04(24)) R22	Code(s)
☐ Nutrient Management (NR 154.04(20)) R18	Code(s)	☐ Strip-Cropping (NR 154.04(32)) R29	Code(s)
☐ Other (specify)			

Part II. Competitive Elements

1. Budget and Grant Needs

A. Activities Timeline, Funding and Source of Staff

Complete the table below to identify the timing of project activities and how the local assistance activities required under this project will be funded and staffed.

Activities	Timeline	Funding Source		Source(s) of Staff
		*This Grant Local Assistance	Other	
1. Contacting farmers	2015-2017	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
2. Education/outreach	2015-2018	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
3. Inventory	2015-2017	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
4. Targeting sources	2015-2016	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
5. CSA development	2016-2018	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
6. Design & installation	2016-2018	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
7. Project management	2016-2018	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
8. Mid-term evaluation	2017	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
9. Final reporting	2019	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
10. Enforcement	2016-2018	☒	☒	Conservation, Planning and Zoning; NRCS, UW-Extension staff
11. Other		☐	☐	
12. Other		☐	☐	

** Note: State statutes prohibit DNR from reimbursing governmental units for certain activities under a local assistance grant. This includes BMP design and certain educational costs. See instructions for more information.*

B. Project Budget Complete the table below to develop budgets for the BMPs checked in Part I G. and the activities above.

Identify the estimated total project costs for all best management practice (BMP) construction and installation. Enter BMP costs into cells A1 (column A, row 1) and A2, as applicable.

If requesting local assistance, identify the total costs associated with local assistance (LA) activities. Enter LA costs into cell A4.

Enter the state share amounts being requested under the grant in Column C. Keep in mind that the total of the amounts in cells C1 + C2 + C4 must be less than or equal to $1,000,000. The total of the requested grant amounts you enter must not exceed the grant cap of $1,000,000.

Enter the state share amount(s) being requested for BMPs under the grant into cells C1 and C2, as applicable. The maximum state cost share rate is 70% for best management practices.(Contact DNR if economic hardship consideration is necessary.)

Enter the state share amount being requested for LA under the grant into cell C4. The amount that can be requested for LA may be up to 10% of the grant amount allocated for best management practices. The maximum state cost share rate for local assistance is 70%; however, the portion of the grant that can be used for local assistance activity may not exceed 10% of the grant amount allocated for best management practices (cell C3). See LA calculation examples in the instructions.

*ENSURE THAT THE GRANT REQUESTS IN COLUMN C DO NOT EXCEED $1,000,000.

		A	B	C	D
	Project Budget	Enter Estimated Total Costs	Eligible Cost Share (70% of Total Costs)	Enter Requested State Share Amounts	Local Share (auto-calculates)
	Best Management Practice				
1	Structural Practices	1,057,050	739,935	739,935	317,115
2	Cropping Practices	36,250	25,375	25,375	10,875
3	**Subtotal for BMPs**	1,093,300	765,310	765,310	327,990
4	**Local Assistance Needs**	398,250	278,775	39,825	358,425
	Totals	1,491,550	1,044,085	805,135	686,415

C. Cost-estimate Accuracy and Cost-containment Measures
Describe the quality of data used in preparing these budget estimates for cost-share need. Identify whether the needs are based on specific knowledge of the targeted farms in the project area or are based on more generalized estimation methods.
Identify the cost-containment procedures that will be used for the installation of best management practices identified in Part 1. F.
See instructions.

Budget estimates were developed with the following farm and watershed information:

1. SNAP+ field data: Marathon County has nutrient management plans on nearly 50% of farmland in the Fenwood Creek watershed. For targeted farms identified for projects, the County has nutrient management plans on nearly 80% coverage. Most importantly, the staff has soil phosphorus data, organic matter, runoff delivery channels, field mapping and soil erosion estimates.
2. NRCS and Marathon County CPZ Department conservation plans. The conservation plans from these agencies provide field specific data concerning crop rotations, soil erosion estimates and documentation of planned and implemented BMP's.
3. Bi-annual soil transect survey data. The transect survey provides data relative to land use changes, cropping rotation trends, and regional soil erosion rate trends.
4. DNR landscape data and GIS sources land use features. These mapped based data representations provide regional understanding of runoff risks of soil and manure relative to soil types, slope steepness and length, and identification of concentrated flows from field to waters.
5. Marathon County has an inventory of all BMP's implemented on targeted farms through ordinance administration, priority watershed efforts in the 1980-2000's, and landowner participation/compliance in the farmland preservation program.

The grant administrators will have very reliable and site specific farm/field data to begin education of BMP effectiveness and future resource needs. We have a fair amount of previous BMP implementation gains to credit against agricultural performance standard compliance on which to add additional treatment and management practices. The proposed pilot project should provide "targeted" enhancements to the environmental performance to previously installed practices.

Cost estimates for proposed management and structural practices are based upon average costs of implementation tracked by Marathon County annually. Each year, CPZ staff tracks installation of "bid" projects to maintain an average costs per unit of construction. The cost projections always reflect the staff's familiarity with BMP installation in this region where shallow bedrock will influence siting of projects and construction materials.

Cost containment for project implementation will be based on two (2) considerations:
1. Credit for previously installed BMP's. On many farm sites, the NRCS and CPZ have implemented conservation practices to treat soil and water resource concerns. Each project will consist of an inventory of past practice implementation to ensure that those BMP's are realizing their full potential. Project funds will not be utilized to maintain or rebuild previously funded practice work.
2. Project bidding. CPZ will utilize competitive bidding to obtain estimated costs of all BMP's. In cases where a landowner prefers to select the contractor without open, competitive bidding, the CPZ will determine costs by utilizing average cost methods.

2. Water Quality Need

Describe how the water resources within the project area are impaired or threatened by the nonpoint pollution sources that will be addressed by the project. See the instructions for the factors to address in describing "water quality need".

The Fenwood Creek subwatershed is part of the Upper Big Eau Pleine River and Reservoir system. The area is part of an important agricultural region of the state known as the Heart of America's Dairyland Agricultural Enterprise Area.

The following land use and physical characteristics of the watershed contribute to resource management concerns:
The land use primarily agriculture: 65% cropland and 25% woodland.
Many of the wetlands were drained during the 1930's to 1970's
Beginning in 1930's the cropland drained with extensive surface drainage ways which promotes runoff.
Intensive livestock operations
Increasing commodity crop production such as soybean, corn grain, corn silage.
Conventional farming and clean tillage practices (cover crops not being extensively utilized)
Heavy textured soils vulnerable to erosion
Long slopes and steep grades
Winter applied manure
Animal feedlot runoff contributes large bio-solid loading to concentrated flows
Municipal bio-solids applications during winter conditions

Runoff delivers phosphorus, nitrates, soil sediments, and organics to the surface water and reservoir.

As a result of nitrate and phosphorus loads, the reservoir has experienced dramatic fish kill since 1937, the first year of the reservoir operations. The most recent fish kills of 2005, 2009, and 2013 are just recent examples of fishery collapses.

Annual electro-fishing surveys in the spring of the year will continue by DNR to track the impact of the fishery due to low dissolved oxygen levels in late winter and spring. Low DO levels during periods of low water levels and ice cover have historical threatened the fishery and lake management activities of the reservoir. The Wisconsin Valley Improvement Company will continue to monitor DO levels in reservoir beginning in January until ice conditions become unsafe to traffic on.

Winter applied manure
Animal feedlot runoff contributes large bio-solid loading to concentrated flows
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Bonus Points: Federal NPS Program Watershed Project Funding Eligibility

☐ Check this box if the project meets **all** of the following criteria:

- The project addresses a nonpoint source impaired waterbody listed on the most current EPA-approved Section 303(d) list of impaired waters or a nonpoint source threatened unimpaired/high quality water.
- The project is located upstream of and in the same 12-digit hydrologic unit (sub-watershed) as the 303(d) listed water or the unimpaired/high quality water..
  (Refer to Attachment A and http://dnrmaps.wi.gov/SL/?Viewer=SWDV for assistance.)
- The project implements the goals and recommendations of an EPA-approved watershed-based "9 key element" plan.
- The project controls the same NPS pollutants which are impairing the 303(d) listed waterbody or threatening the unimpaired/high quality water..

The project may be eligible for Federal NPS Program (Clean Water Act Section 319) Watershed Project Funding.
(Refer to Attachment B of the application instructions for a list of eligible plans.
Link to map and plans at: http://dnr.wi.gov/water/9kemp/.)

Provide the name of the NPS-impaired 303(d) listed waterbody or NPS-threatened unimpaired/high quality water.
Big Eau Pleine River

Provide the title of the EPA-approved nine key element plan this project implements.
The Marathon County CPZ is in the process of writing a nine key element plan and by August of 2015 for approval.

3. Public Water Supply Protection Bonus: Completion of this part of the application is optional.

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 any of the following: Municipal water supplies governed by NR 809 and NR 811; Other-Than-Municipal (OTM) water supplies governed by NR 809 and NR 811; Non-Transient water supplies governed by NR 809 and NR 812; Transient water supplies governed by NR 809 and NR 812.

A. If "Yes" ***and*** this project is primarily to protect groundwater resources, then check "a" or "b" below.
(You will need assistance from your DNR District NPS Coordinator http://dnr.wi.gov/topic/nonpoint/NPScontacts.html or Water Supply Specialist http://dnr.wi.gov/topic/drinkingwater/documents/countycontacts.pdf to answer).

○ a. Check her 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 "Other-Than-Municipal (OTM)" water supply well, or within 1,200 feet of a non-transient water supply well.

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

B. If "Yes" ***and*** this project is primarily to protect surface waters, then check the box next to the drainage area where the project is located (see Attachment E for map).

☐ 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

4. Inventory and Targeting

A. Project Area: Present the rationale for why you have delineated this particular project area. Describe previous work in the project area, if applicable. Describe why the project area is (still) considered a significant contributor of pollutants or habitat impairments to the targeted waterbodies.

The Fenwood Creek was selected as the pilot project for the proposed TMDL for the following reasons:
1. The watershed supports a very typical example of a dairy agriculture watershed. Specifically, the herds are average in scale and row cropping is becoming more intense.
2. There is a positive history of farmers involvement with state and federal conservation programs
3. During the 1990's, there was a priority watershed project in this watershed where many BMP's were implemented. This would allow Marathon County to evaluate the performance compliance of existing BMP's
4. This watershed has a long history of water quality monitoring that allows Marathon County to evaluate the trends of past farming activities on water quality and to project impacts from new BMP adoption
5. Farmers and Town leaders are actively interested in the TMDL
6. Key local farm leadership lives in the watershed to help share message with peers

B. Inventory of the Critical Pollution Sources to Date:
- Describe how the project area has been assessed to identify the most critical pollution sources responsible for causing impairments or threats to water quality within and/or downstream of the project area.
- Describe the results of the inventory of critical pollution sources to date. (Also mark the critical areas needing BMPs on an aerial photo/map and include it with this application.)
- Provide an estimate of the percent of assessment and inventory that has been completed to date in the project area.

The project area was selected by the Big Eau Pleine task force which consisted of the Big Eau Pleine Citizens Organization (BEPCO), Wisconsin Valley Improvement Company (WVIC), farmers, federal and state agencies, and Marathon County:
1. Existing data was available from many years of trophic index evaluations completed by Wisconsin Valley Improvement Company.
2. Existing data available of resource concerns and BMP implementation from priority watershed work conducted by DNR and Marathon County in the 1980-1990's.
3. Watershed was the appropriate scale to conduct a pilot project.
4. Watershed is representative of Wisconsin agriculture consisting of small and large scale commodity and livestock agriculture.
5. Watershed has TMDL water quality data established.
6. Water quality monitoring continues on Fenwood Creek through grants and staffing by Big Eau Pleine Citizens Organization.
7. Natural Resource Conservation Service, UW-Extension and Marathon County Conservation, Planning and Zoning Department have many relationships established with farmers in the watershed

Furthermore, based upon TMDL monitoring as well as many academic studies of the waters, we know the Fenwood Creek is impacted by agricultural pollutants.

C. Additional Assessment and Inventory of Critical Pollution Sources:
- Describe additional project area assessment that is needed to complete the inventory of the most critical pollution sources responsible for causing impairments or threats to water quality.
- Describe the methods that will be used to conduct the assessment, including quantitative and qualitative tools that will be used.

Our partnenrship would utilize the funds and strategies of the TRM project to complete the assessment of all cropland and woodland sources of pollutants and evaluate the predicted outcomes of BMP implementation.

Methods include:
1. In field/on farm evaluations
2. BEPCO monitoring of water quality

3. DNR regional modeling
4. Geographic Information System (GIS) evaluation of land uses, demographics and cropland information.

The UW Agriculature Research Station (ARS), located in Town of McMillan, will support the project by providing research based documentation of sedimentation and pollutant runoff from cropland and pastures. The ARS has landscape, drainage systems and farming practices very comparable to the Fenwood Creek. The ARS is developing conservation cropping systems, drainage and edge of field monitoring to help this project educate landowners.

5. Project Implementation and Management Strategy

Describe your methods, strategy and timeline for: 1) contacting and educating farmers about the project; 2) conducting farm needs assessments and status reviews for performance standards and prohibitions; 3) timing and coordinating technical and financial assistance within the project period; 4) making interim progress assessments; 5) tracking and reporting progress; 6) identifying problems and making any needed adjustments.

Education and Implementation:
1. Establish farmer councils to identify conservation planning and payment incentive strategies best suited to farmers: Time line: Establish councils in 2014. Support councils 2014-2017.
2. Identify 5 individual farm leaders to work directly that represent a diversity of production types and business models: Time line 2014 (completed).
Develop education material and plan formats with these leaders to improve understanding of management goals and performance of BMP's: Time line 2014-2016.
3. BEPCO/River Alliance/NRCS/Marathon County will host a social and educational meeting in fall 2014 at the water quality monitoring area to discuss runoff changes and unique challenges and commitments of the groups
4. Farm assessments in 2014-2016 to determine current farm practice compliance with state agricultural performance standards utilizing SNAP+ and BARNY models. Provide planning to achieve increased performance with enhanced BMP implementation (2014-2016).
5. Provide landowners (10 per year) with conservation planning, financial grant administration, and technical assistance (NRCS/Marathon County): 2015-2017
6. Agricultural Research Station to develop a drainage and runoff evaluation for understanding the drainage systems relative to soil erosion and pollutant runoff (2014-2015)

Documentation of activities and progress:
1. CPZ will maintain records of education and conversation with individual landowners as well as decisions related to BMP compliance status and future BMP implementation schedules.
2. CPZ will develop and submit a monthly status report to partners and DNR of the pilot project. Quarterly, the project status will be presented to the authorized local county committees, local Town officials, and BEPCO.
3. CPZ will provide biannual and annual status reports to DNR to track farmer interaction, financial administration and distribution of funds, implementation of BMP's, water quality monitoring results, and environmental performance of implemented BMP's.

Status and adjustments: Because of the pilot nature of the project, landowners and partnerships will be assessing the effectiveness of education and implementation strategies. The status of the project will be reviewed regularly with DNR, farmer councils, and partnership to determine if strategies need to be modified and re-directed.
All changes to strategies will be submitted to DNR for approval prior to implementing changes.

Lessons learned and changes will be included in monthly and annual reports to document challenges and effectiveness of changes.
For additional detail refer to table located on pages 11-12: Question 10 - Section A. Activities Timeline, Funding and Source of Staff.

6. Enforcement

Describe how local ordinances will be used when necessary to facilitate compliance.
(Note: Your answer must be consistent with your claim for local enforcement multiplier points in Part III. of this application.)

Marathon County has the following ordinances that will be incorporated into our project implementation:

1. Zoning Ordinance: farmland preservation zoning
2. Private Sewage System Ordinance: provides regulation for the construction, maintenance, and performance of private residential and commercial waste discharges.
3. Non-metallic Mining Reclamation Code: regulates the sediment discharge from mining and dewatering activities in the watershed.
4. Livestock Facilities Siting Ordinance: regulates livestock operations greater than 500 animal units to ensure compliance with waste storage facility, barnyards, feed storage, and nutrient management activities.
5. Animal Waste and Nutrient Management Ordinance: regulates the construction of and significant modifications of waste storage facilities, as well as the closure of abandoned waste storage facilities.
6. Farmland Preservation Plan compliance: all farms participating in the farmland preservation program will be evaluated for performance standards compliance every 4 years.

7. Expected Pollutant Reduction and Water Resource Response

A. Expected Pollutant Reduction: Provide what is known about the current pollutant loads and state the expected reduction in pollutant(s) loading. Describe how this project achieves or significantly contributes toward that goal. Describe the critical source areas that will be addressed and how they will be addressed.

1. The project will focus on the reduction of soil sediment contributions by reducing erosion rates through the implementation of conservation cropping practices. We will minimize the development and contribution of ephemeral erosion by implementing three (3) Water and Sediment Control Basin practices. We will rely on the use of LiDAR to aid us in developing edge of field buffers especially where delivery of sediment is adjacent to waters of the state.
2. Waste storage facilities will be implemented on farms where winter spreading is at a high risk. This will reduce phosphorus, nitrogen, and organic loading during spring runoff periods. Storage facilities constructed will also capture milking center waste that currently discharges to waters of the state.
3. Barnyard and feedlot runoff controls will be implemented to reduce phosphorus, nitrogen, and organic loading.

Best Management Practices implementation will be prioritized according to criteria developed for watershed disproportionality. We will also utilize Manure Storage Rating Guide, BARNY, and SNAP+ models to identify high risk fields.

B. Expected Water Quality and Resource Response: Address the water quality response(s) that is(are) expected with the land management changes the project will bring about (e.g. physical, chemical, biological, bacteriological, designated uses, etc.). Discuss the sensitivity of the water resources and refer to the WBI for assistance in answering this question.

Current resource concerns:

The Fenwood Creek from TMDL monitoring discharges approximately 147 micrograms Phosphorus annually to reservoir which is nearly twice the state Water Quality Standard. The cropland contributes nearly 30,000 tons of soil sediment to edge of fields. It is unknown the exact contribution of ephemeral erosion to the sediment and pollutant load of the creek.

Please refer to attachments relative to DNR monitoring for TMDL assessment of the Big Eau Pleine reservoir system.

Average soil erosion is 2.3 tons/acre (range 0.5 - 8 tons/acre)
Average Phosphorus Index is 3.1 (range 1-12)

Project proposes to reduce soil erosion to 2.0 tons/acre/year on cropland and the average Phosphorus Index to 2.5/acre/year.

We estimate that there are approximately 8 landowners that directly discharge their milking center waste to waters of the Fenwood Creek. This accounts for an estimated 4,000 lbs of biological oxygen demand annually. This waste

stream also accounts for 520 lbs of total phosphorus, 280 lbs of soluble phosphorus, and 900 lbs of suspended solids per year.

We estimate that 436 lbs of phosphorus per year is delivered to waters of the state from winter application of semi solid and liquid manure from landowners who do not have adequate manure storage facilities.

We estimate that several barnyards that are active throughout the year contribute as much as 360 lbs of phosphorus per year to waters of the state.

8. BMP Cost-Benefit Analysis

Describe why the proposed management practices are cost-effective and reasonable means to attain water quality improvement or protection benefits. Provide quantitative and qualitative analyses and assessments of the cost-effectiveness of the proposed project activities toward meeting the water quality goals of the TMDL or watershed plans being implemented with this project. Include in this answer such factors as BMP effectiveness, site feasibility, available technical standards, practicality and other available funding sources or management efforts that may occur in conjunction with this project, as applicable.

The project will prove to be quite cost effective. Through previous landowner work with the Environmental Quality Improvement Program, priority watershed program, farmland preservation program, Livestock Facility Siting Ordinance, and Concentrated Animal Feedlot Operation permitting (WPDES), there are many conservation practices in place that control runoff that we can use as examples to evaluate effectiveness, ensure and promote the benefits of installed practices.

The project will focus on BMPs such as conservation tillage, sediment basins, and clean water diversions to achieve the proposed performance standards compliance.

The Marathon County Conservation, Planning and Zoning (CPZ) department will address any current situations where performance standards are not being met such as barnyards, overflowing waste storage facilities, manure stacking in late winter and spring, and winter spreading of manure. The most extensive work will be to improve agronomic practices with contour farming, residue management, time of tillage, edge of field buffers (ephemeral erosion), and crop rotations.

CPZ will identify and advance strategies to improve liquid manure application and distribution methods to promote immediate soil incorporation, increase soil organic matter, and reduce soil compaction. Marathon County will also develop strategies (regulatory and voluntarily) to minimize or prevent liquid manure application on snow-covered or frozen soils.

9. Project Evaluation

A. Modeling and Measures of Change: Describe the strategy that will be implemented to evaluate the pre- and post-project pollution potential, pollutant loading and receiving water quality in the project area. The applicant is required to provide in the final project report the results of a comparison of the pre- and post-project changes in modeled pollutant loading to water resources using STEPL (EPA's Spreadsheet Tool for Estimating Pollutant Load at: http://it.tetratech-ffx.com/steplweb/) or other applicable model and report the quantity of units managed.

Initial outcome:

1. Landowners and local officials will understand how farm practices and seasonal runoff loadings impact the delivery of sediment (soil and manure) to water quality
2. Landowners will understand what and how specific Best Management Practices contribute to water quality concentrations
3. Watershed agency partnership staffs will understand if/how farmers value planning, use of models (BARNY and SNAP+), technical and incentive support.

Strategies to evaluate, track progress, and report:

1. Marathon County will survey all landowners pre and post project to assess their understanding and value of the farm runoff dynamics, performance standards, and pollutant types.
2. Marathon County will provide a summary report of farmer council feedback relative to BMP adoption barriers, appropriate strategies for incentives, and alternative Best Management Practices strategies and technologies needed to provide water quality improvement.

Intermediate outcomes:

1. Identify local ordinance policy recommendations relative to winter spreading practices, promotion of governmental

support of new technology adoption (tillage, livestock feedlot treatment, and manure distribution), groundwater protection, and livestock concentration.
2. Agency partnership will develop criteria to identify areas of disproportionality in the Fenwood Creek watershed.
3. CPZ will assess landowner compliance of Agricultural Performance Standards.

Strategies to evaluate, track progress, and report:
1. CPZ and partnership will prepare a report (and journal article) that defines the criteria of disproportionality in this watershed (soils, drainage systems, land use, ephemeral erosion, seasonality of discharge, and agricultural demographics)
2. CPZ will provide a report on the extent of compliance with State Agricultural performance standards *
* Utilization of LiDAR, SNAP+, BARNY and other DNR regional modeling techniques
3. CPZ will report on the elasticity of BMP implementation and effectiveness *

B. Field Evaluation Monitoring Bonus

Yes **Monitoring** (not eligible for cost sharing under the DNR TRM Grant Program at this time)

☒ Check this box if the project evaluation strategy will provide pre- and post-project information from water resource monitoring and the information will be provided to DNR. If "Yes," check all that apply below.

☐ 1. A one-page summary of the monitoring strategy and timeline for implementation and reporting is attached. This summary must be reviewed and signed by a DNR Water Quality Biologist.

☒ 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).

10. Local Support for Project

Describe support for this project from other local, state and federal sources such as governmental units, interest groups, landowners and operators. Describe the extent to which available federal funding and other staffing and financial resources will be used. Address how the project would be improved due to support and partnerships. Include copies of letters of support, landowner commitments and letters documenting commitments to provide resources (materials, equipment, staff or financial resources) to the project.

Big Eau Pleine Task Force consisted of BEPCO, NRCS, WVIC, DATCP, Marathon County, and DNR identified the Fenwood Creek watershed as a pilot project preceding the TMDL in order to develop educational activities, BMP strategies and incentives to improve adoption and long term effectiveness of BMPs.

Link to the BEP case study: http://www.co.marathon.wi.us/Portals/0/Departments/CPZ/Documents/Exec_121009_final_v1.pdf

Link to Fenwood Creek recommendations to Marathon County Board of Supervisors: http://www.co.marathon.wi.us/Portals/0/Departments/CPZ/Documents/BEP_Fenwood_Pilot_BEPCO_11112012.pdf

☐ Copies of letters are attached.

11. Local Plan Consistency

☒ Check this box if the proposed project implements a water quality recommendation from a locally-approved resource management plan, ***other than*** a plan or report identified under Project Category (Part I. A.) or a County Land & Water Resource Management Plan. (Acceptable examples include Smart Growth plans, local storm water management plans, regional water quality plans, Water Star plans, Legacy Community plans or other watershed-based nonpoint source control plans not used to answer questions in Part I. of this application).

To receive credit for this question -
1) Provide a summary of the water quality recommendation from the local plan;
2) Briefly describe how this proposed project implements the recommendation;
3) Cite the name of the document, date(s) of publication and provide page numbers; and
4) Provide a link to the document, if available.

The Marathon County Comprehensive Plan-2006 identifies water resources within the county as a high priority for protection. The plan recommends maintaining excellent water quality as a fundamental component to the high quality of life in Marathon County.

(Conditions and Issues Report - pages 14-19), (Goals, Objectives, Policies and Implementation - pages 4-9) http://www.co.marathon.wi.us/Departments/ConservationPlanningZoning/PlanningServices/ComprehensivePlanning/CountyComprehensivePlan.aspx

The 1988 Marathon County Groundwater Plan serves as a resource of information about groundwater and other natural resources and recommends strategies to address issues to groundwater and surface water contamination. The plan also identifies livestock waste, along with manure storage and land spreading activities as threats to groundwater and surface water resource of Marathon County.

Pages 13-14; Recommendations, pages 46-55; Contamination Sources, pages 74-75; Prevention Actions, pages 85-89; Regulatory Measures.
http://www.co.marathon.wi.us/Portals/0/Departments/CPZ/Documents/grounddwaterplan2001_reduced.pdf

Part III. Eligibility for Local Enforcement Multiplier

Completion of Part III is optional. However, an applicant can increase the final project score by qualifying for a project multiplier. Check the one enforcement authority situation which best describes the local enforcement authority available and that would be used to require a livestock facility or cropland BMP being funded by this TRM grant to comply with the performance standard or prohibition. Provide an attachment or the URL for the local authority.

○ The applicant certifies that it has local authority to enforce **all** state agricultural performance standards and prohibitions at **all** sites within the local jurisdiction where such state agricultural performance standards and prohibitions apply; **and** this project addresses one or more of the enforceable standards or prohibitions. *Multiply the initial project score by a factor of 1.15.*

◉ The applicant certifies that it has local authority to enforce **some**, but not all, of the state agricultural performance standards and prohibitions **at all sites** within the local jurisdiction where such state agricultural performance standards apply; **and** this project addresses one or more of the enforceable performance standards or prohibitions. *Multiply the initial project score by a factor of 1.10.*

○ The applicant certifies that it has local authority to enforce **some**, but not all, of the state agricultural performance standards and prohibitions at **some**, but not all, of the sites within the local jurisdiction; **and**, this project addresses one or more enforceable performance standards or prohibitions on a site under local jurisdiction. *Multiply the initial project score by a factor of 1.05.*

○ Applicant has no local authority to enforce state agricultural performance standards and prohibitions within the local jurisdiction **for this proposed project**. *No multiplier is earned.*

☒ Check this box if a copy of the appropriate local authority is attached or the website is provided here. (**Required** if a multiplication factor of 1.05, or 1.1, or 1.15 is checked above.)

Optional Additional Information

Is there additional information that will add to the understanding of this project? If so, describe here.

The watershed project includes approximately 64 livestock operations with various animal types and scale. We estimate that the total animal units is approximately 5,000. We did not complete an animal unit calculation sheet for all individual

landowners.

For the consideration of extra bonus points within Part II, Question 2 for Federal NPS Program Watershed Project Funding Eligibility, Marathon County CPZ is in the process of writing an 9 key element and completion of the plan by August, 2015. If approved by EPA, all the criteria will be met to obtain these bonus points.

Applicant Certification

A Responsible Government Official (authorized signatory) must sign and date the application form prior to submittal to the DNR. The governmental official with signatory authority must be the person authorized by the Governmental Responsibility Resolution. I certify that, to the best of my knowledge, the information contained in this application and attachments is correct and true.

Signature of Authorized Government Official	Date Signed
Rebecca J. Frisch	4-14-15

Name (*Please Print*)	Title
Rebecca J. Frisch	CPZ Director

☐ The required completed Governmental Responsibility Resolution (signed in blue ink) (see Attachment G) 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 8700-333 (R 1/15)] with original signature in blue ink, plus all attachments.
- Three additional copies of the completed, signed application form plus all attachments.
- 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**.

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

or

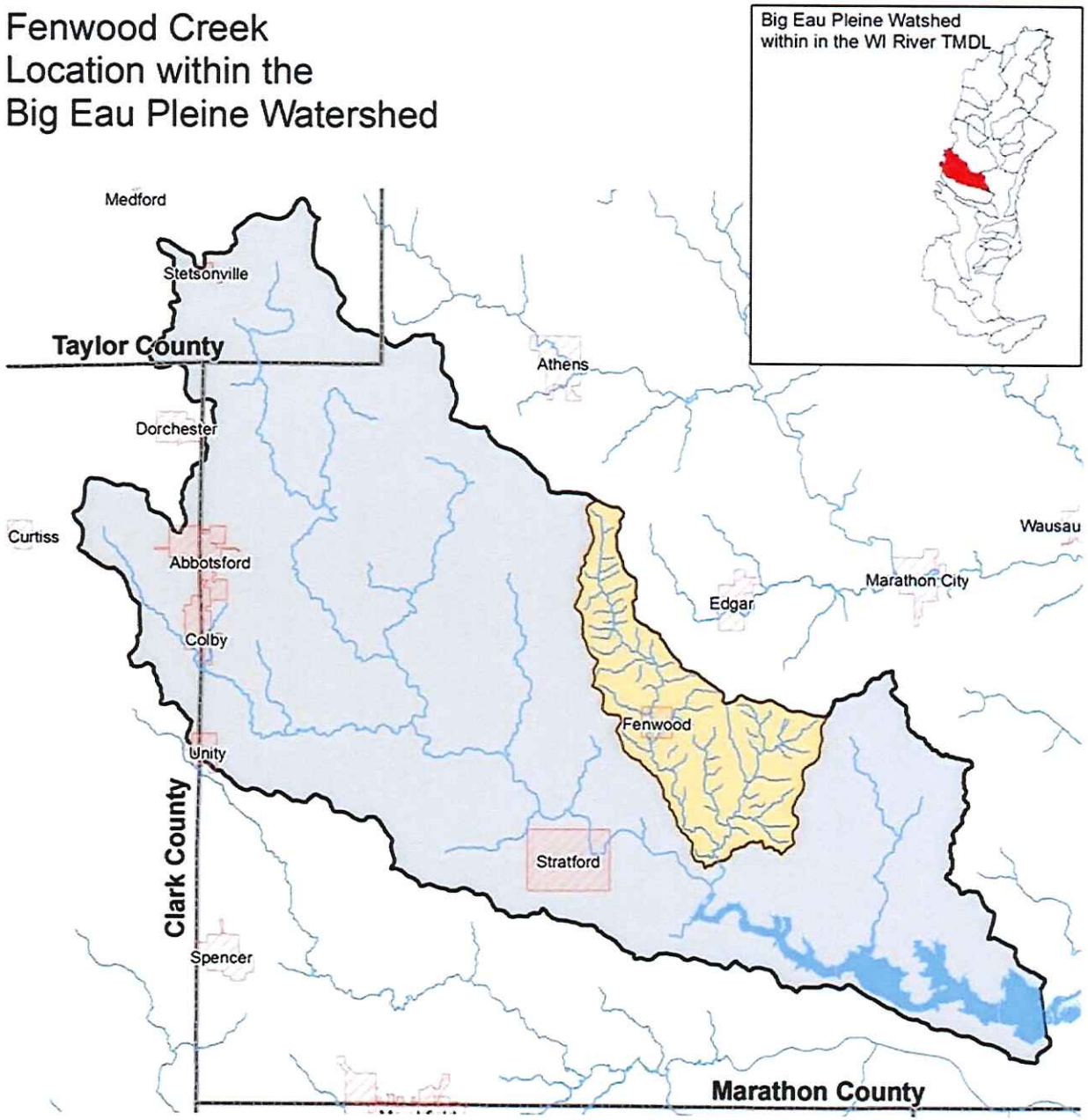
PO Box 7921
Madison WI 53707-7921

TRM Grant Project Name:
Fenwood Creek Watershed Project

Please use this page to write any constructive comment(s) you might have to improve this application.
Thank you.

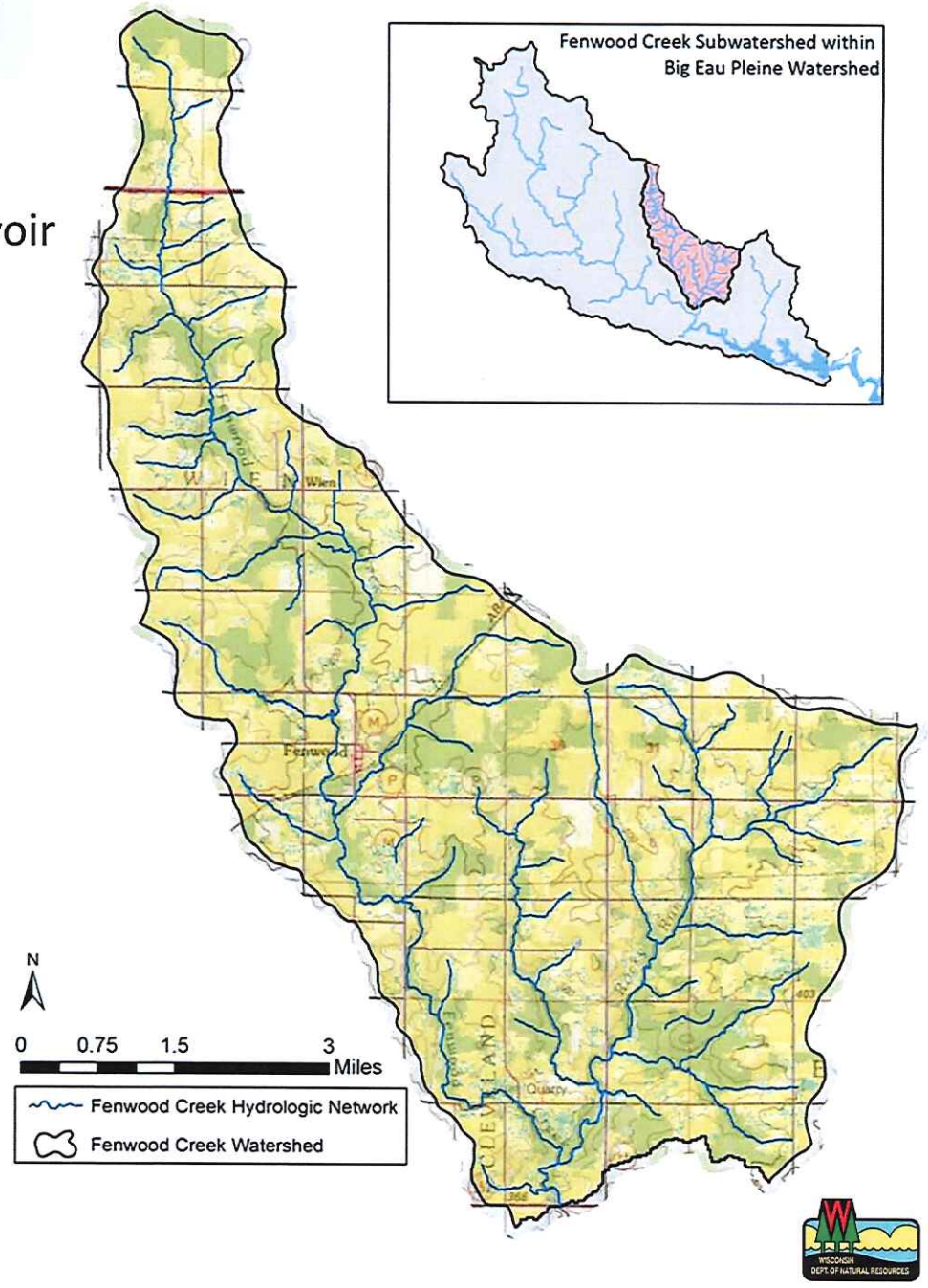
Fenwood Creek Subwatershed

Fenwood Creek
Location within the
Big Eau Pleine Watershed

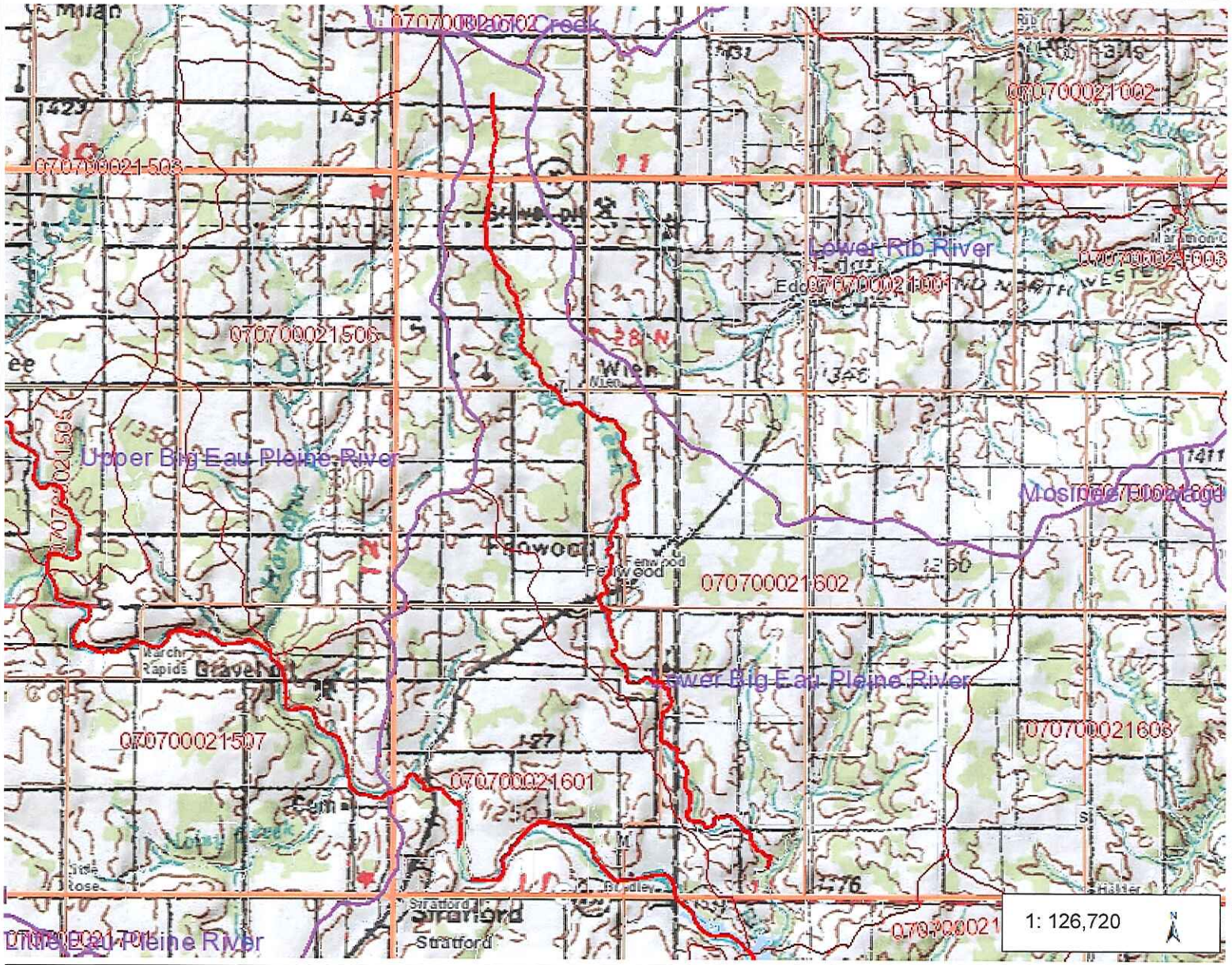


Fenwood Creek Subwatershed

- 37 square miles (HUC 12)
- Discharges above Big Eau Pleine Reservoir
- 65% of land in Fenwood is agriculture



Fenwood Creek Project



Legend

- Impaired Rivers and Streams
- Impaired Lakes

TMDL Category Lines

- Other or Multiple Factors
- Contaminated Sediment Dominatec
- Atmospheric Deposition Dominated
- Physical or Habitat Dominated
- Nonpoint Source Dominated
- Point and Nonpoint Source Blend
- Point Source
- Proposed for 303d listing

TMDL Category Areas

- Other or Multiple Factors
- Contaminated Sediment Dominatec
- Atmospheric Deposition Dominated
- Physical or Habitat Dominated
- Nonpoint Source Dominated
- Point and Nonpoint Source Blend
- Point Source
- Proposed for 303d listing

Impaired Waters River Status

- Other or Multiple TMDLs
- Proposed for List
- 303d Listed
- Addition
- TMDL Development
- TMDL Approved

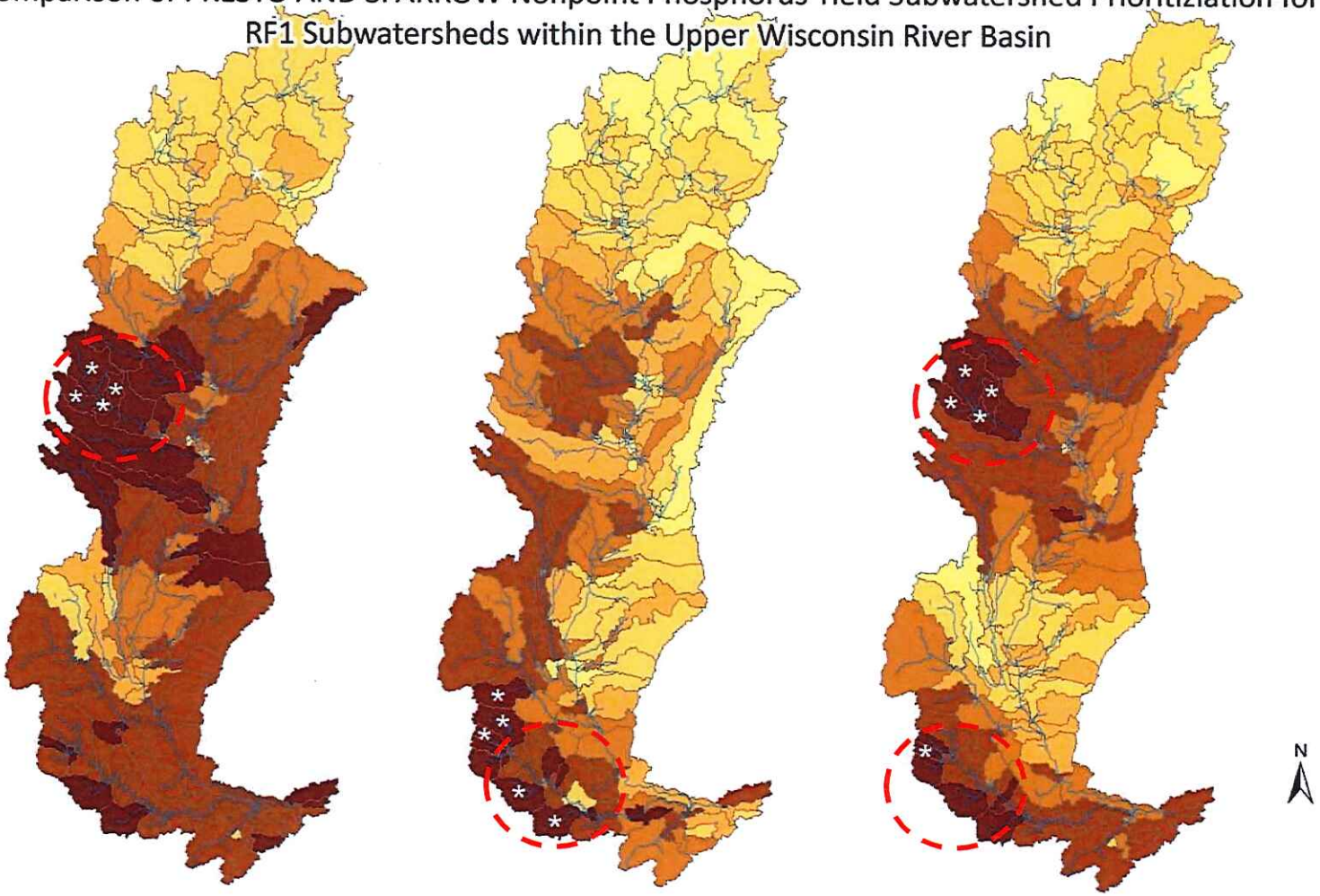
Notes

4.0 0 2.00 4.0 Miles

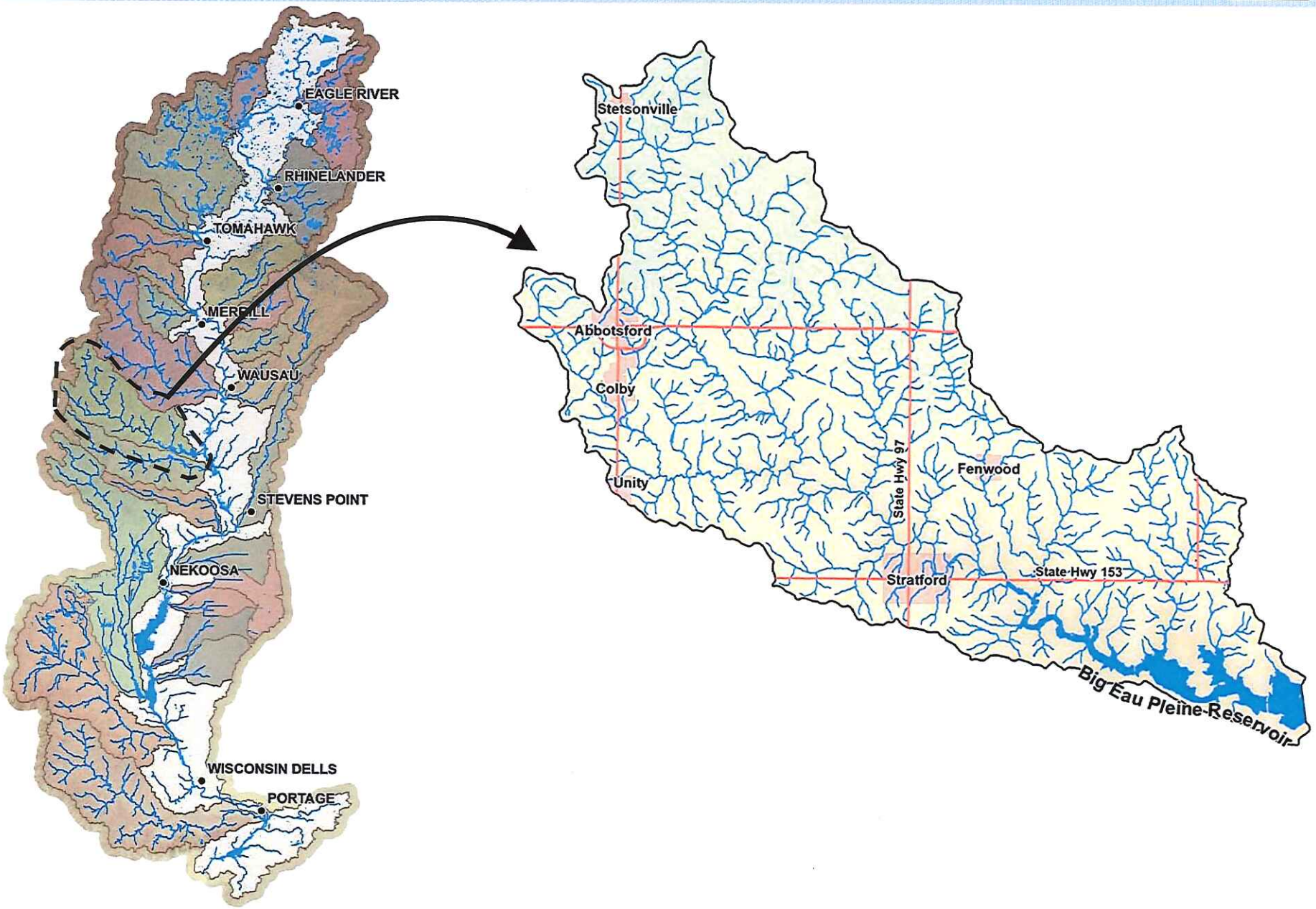
NAD_1983_HARN_Wisconsin_TM

Preliminary Assessment of P Contributions in the Basin

Comparison of PRESTO AND SPARROW Nonpoint Phosphorus Yield Subwatershed Prioritiziation for RF1 Subwatersheds within the Upper Wisconsin River Basin



The Big Eau Pleine River Watershed



Farm Demographics

- 64 livestock operations
  - 43 dairies
    - Range is 40-125 cows
    - Total 1600-2000 cows
  - 9 heifer operations (5-60 head)
  - 9 beef (10-100 head)
  - 1 horse
  - 2 undetermined

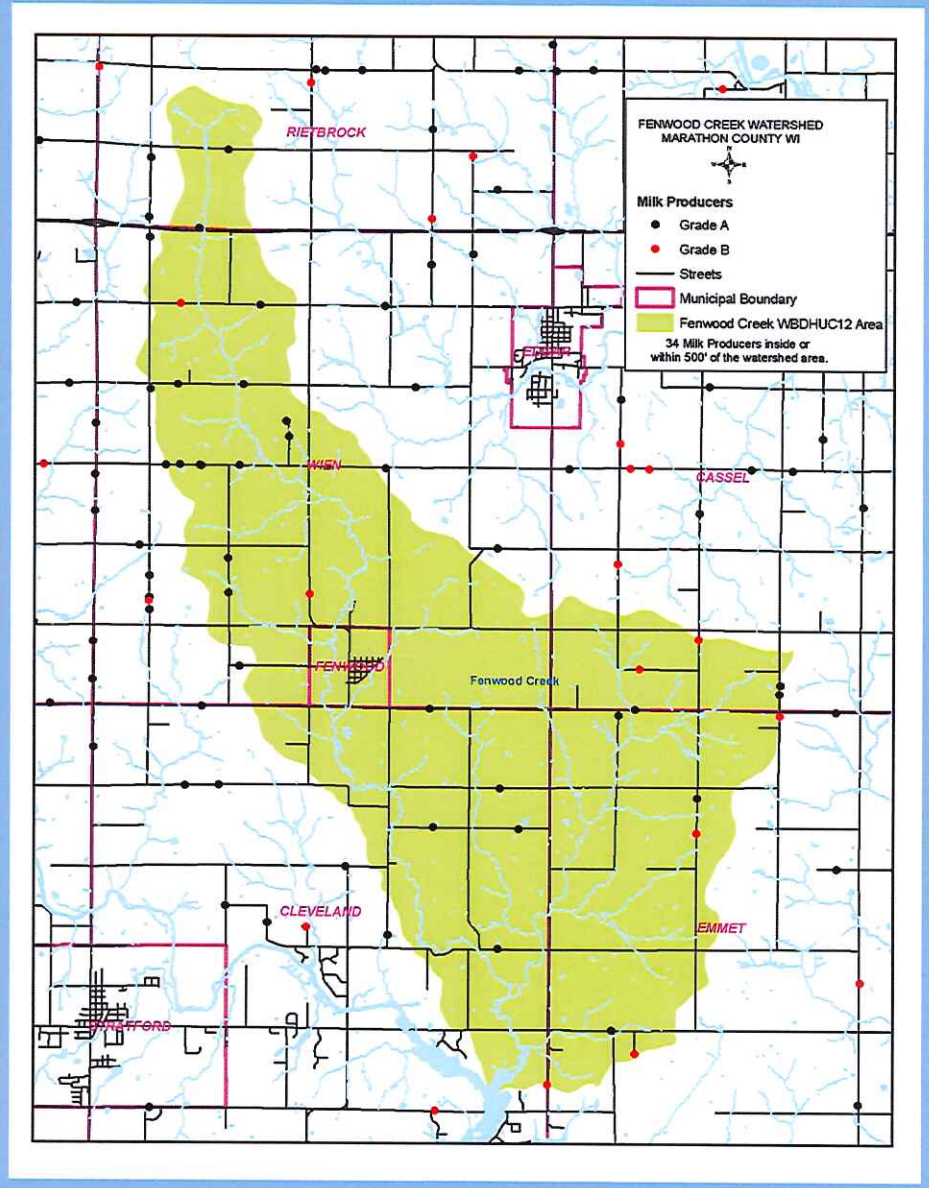
Historical Inventory

LBEP Inventory (38% of Phosphorus load)

1. Groundwater sampling – Nitrates and triazine
2. Barnyards (19 installed) – performance results
3. Waste Storage Facilities – nutrient management plans and critical acres evaluation
   - 19 new installations w/ critical acre information
   - 15 unpermitted (pre 1985)
   - 8 Closed

Land Use Classification – 2008
(25,190 acres)

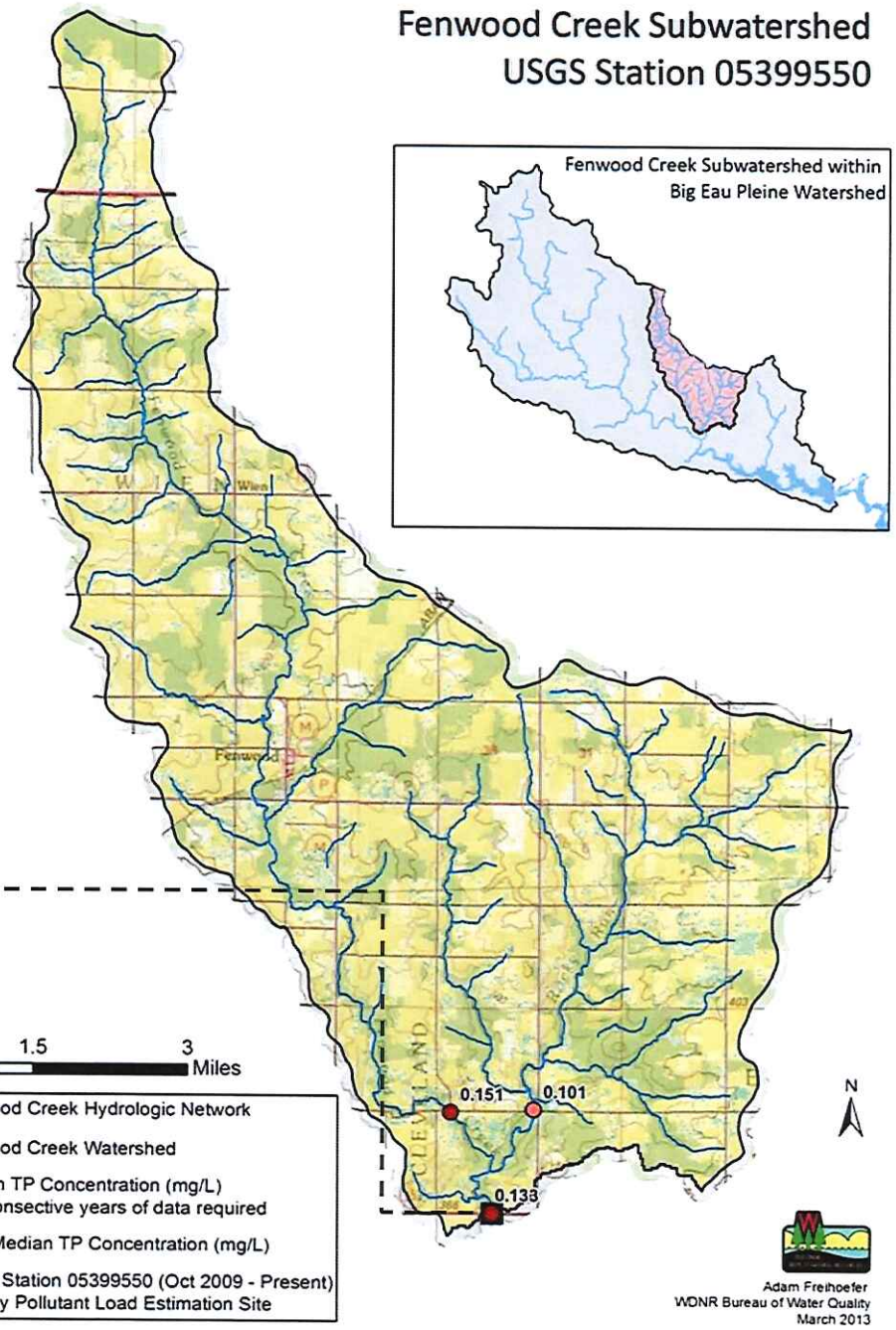
USETYPE	SUM_ACRES
BARREN	381.2909
COMMERCIAL	19.9623
CROP LAND	12668.1432
FOREST LAND	6566.42
INDUSTRIAL	0.1716
OTHER AGRICULTURE	3909.2349
PUBLIC/QUASI-PUBLIC	10.172
QUARRY	24.4084
RECREATIONAL	4.2189
SINGLE FAMILY RES	724.4361
SPECIALTY CROP	70.267
TRANSPORTATION	648.683
WATER	163.0045


FENWOOD CREEK WATERSHED
MARATHON COUNTY WI
Milk Producers
Grade A
Grade B
Streets
Municipal Boundary
Fenwood Creek WBDHUC12 Area
34 Milk Producers inside or within 500' of the watershed area.
RIETBROCK
HIGN
CASSEL
Fenwood Creek
CLEVELAND
EMMET

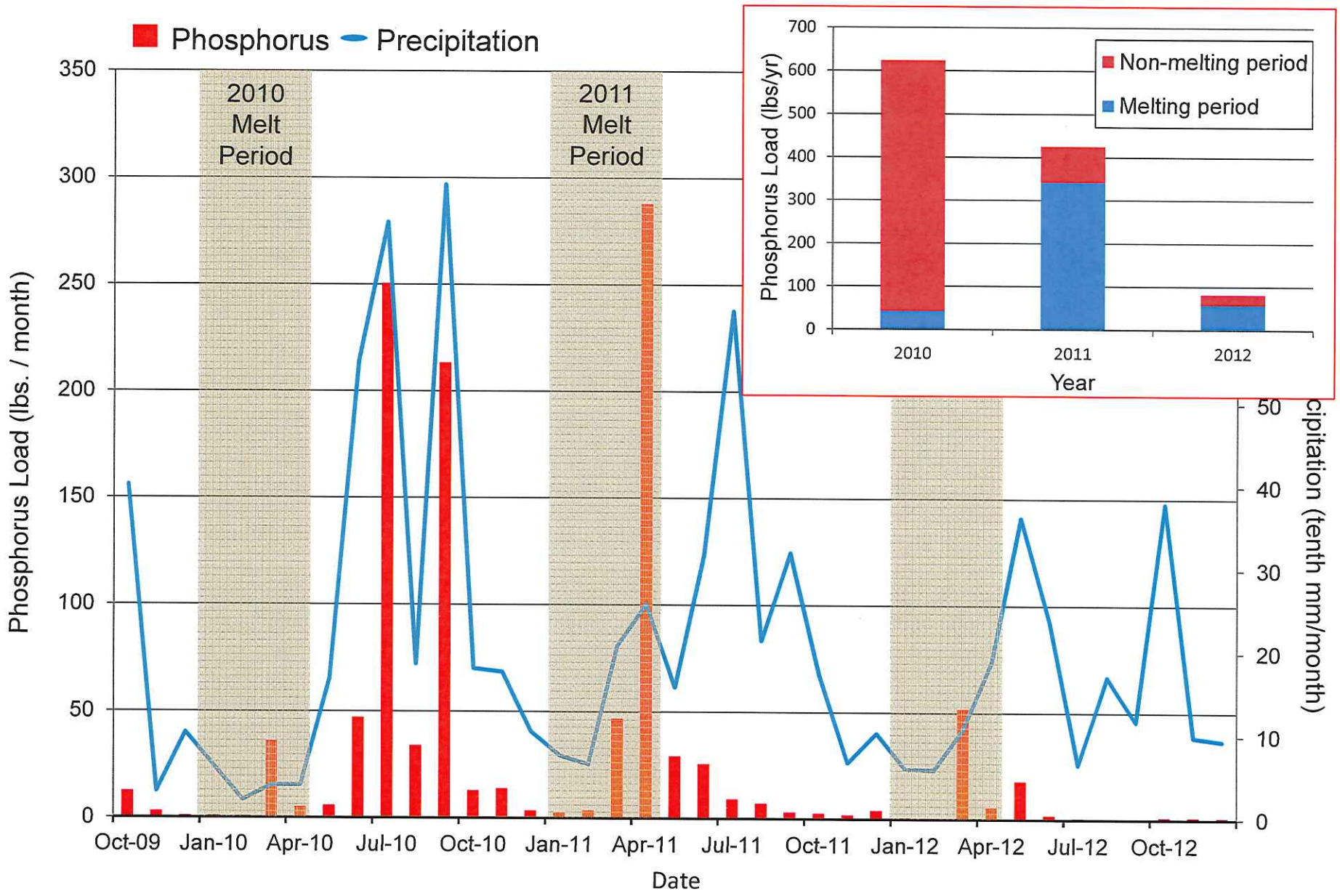
Fenwood Creek Monitoring

- Monitored for daily discharge (USGS) and semi-monthly water quality (citizen volunteer) at (Hwy 153) from 2009 – present

- (May-Oct) Median Concentration = 147 ug/L, Phosphorus criteria is 75 ug/L



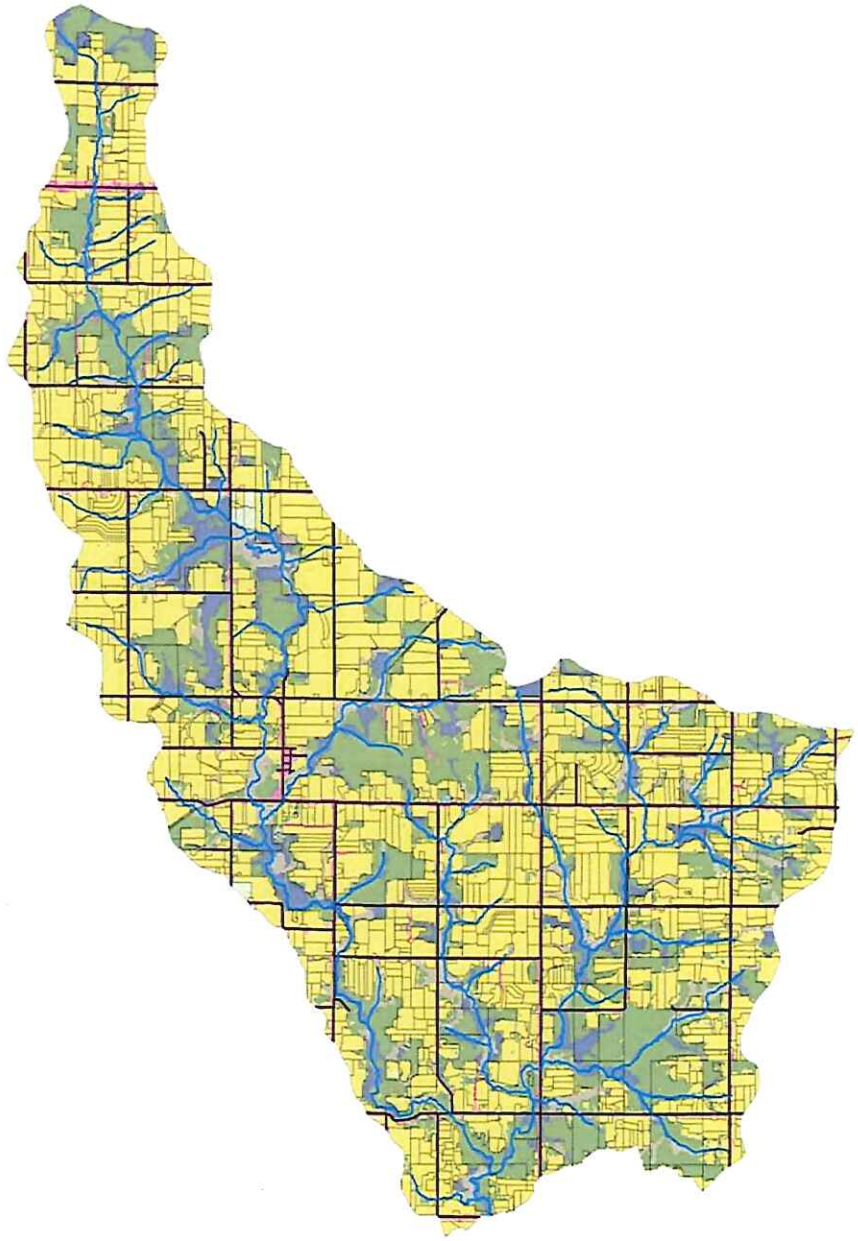
Fenwood Creek Water Quality



Now we know where to focus implementation, right?

- Monthly phosphorus loads at the outlet of Fenwood provide us:
  - ✓ context for comparison to the Big Eau Pleine & Wisconsin River Basins
  - ✓ understanding of timing of phosphorus contributions

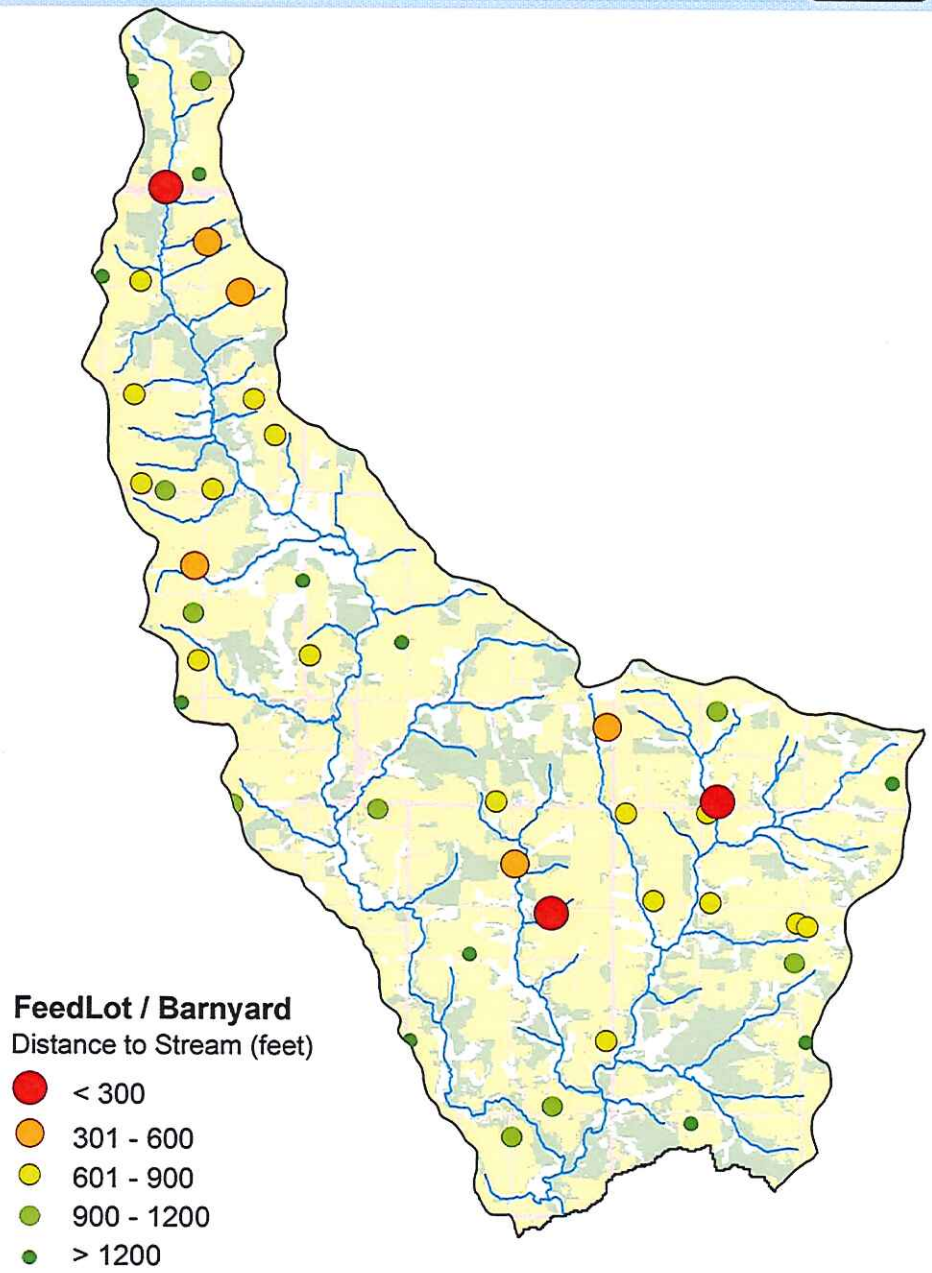
- But, within Fenwood there are over 1,900 fields and multiple tributaries. There is more information needed than before additional monitoring.



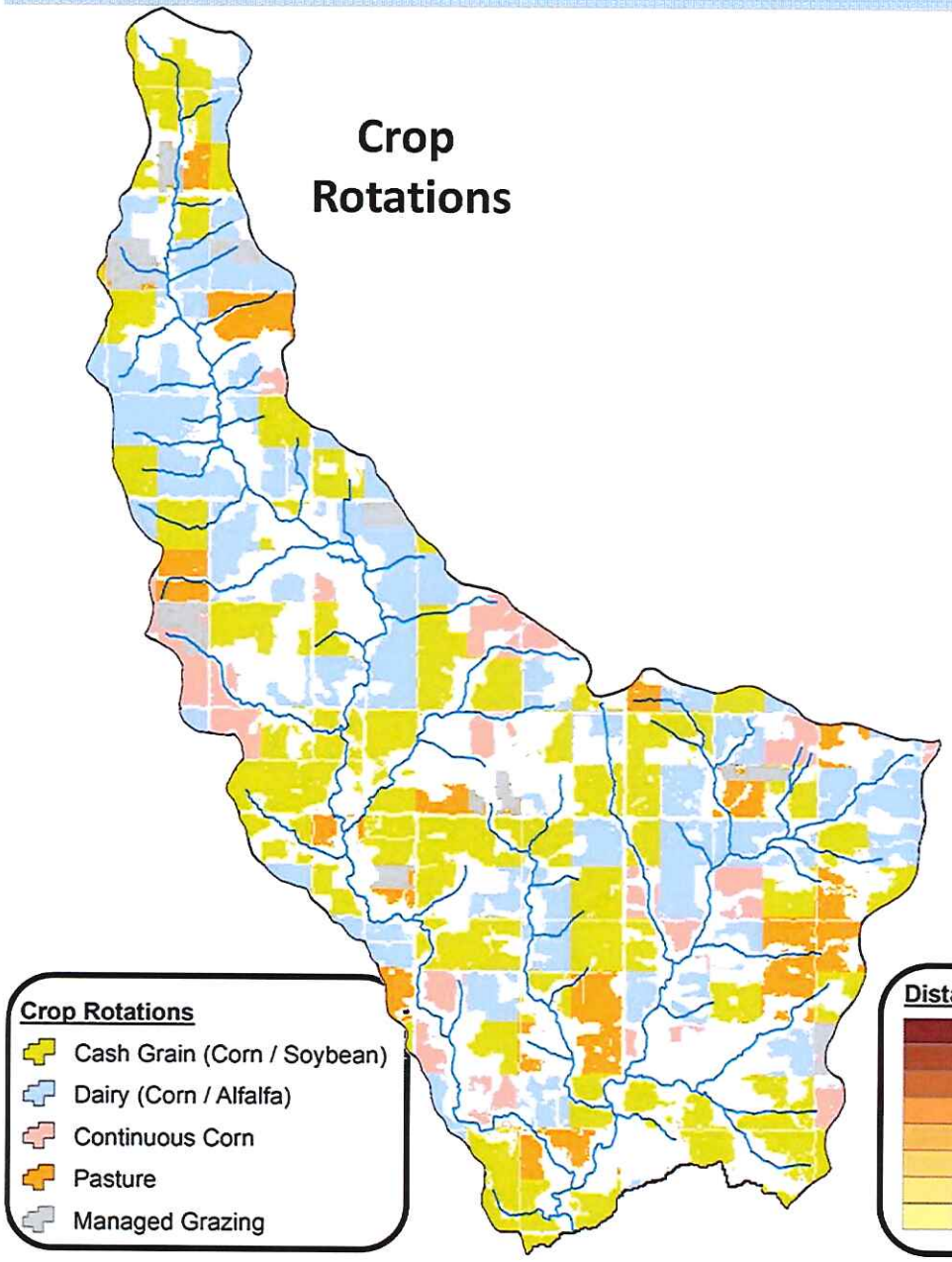
Watershed Inventory

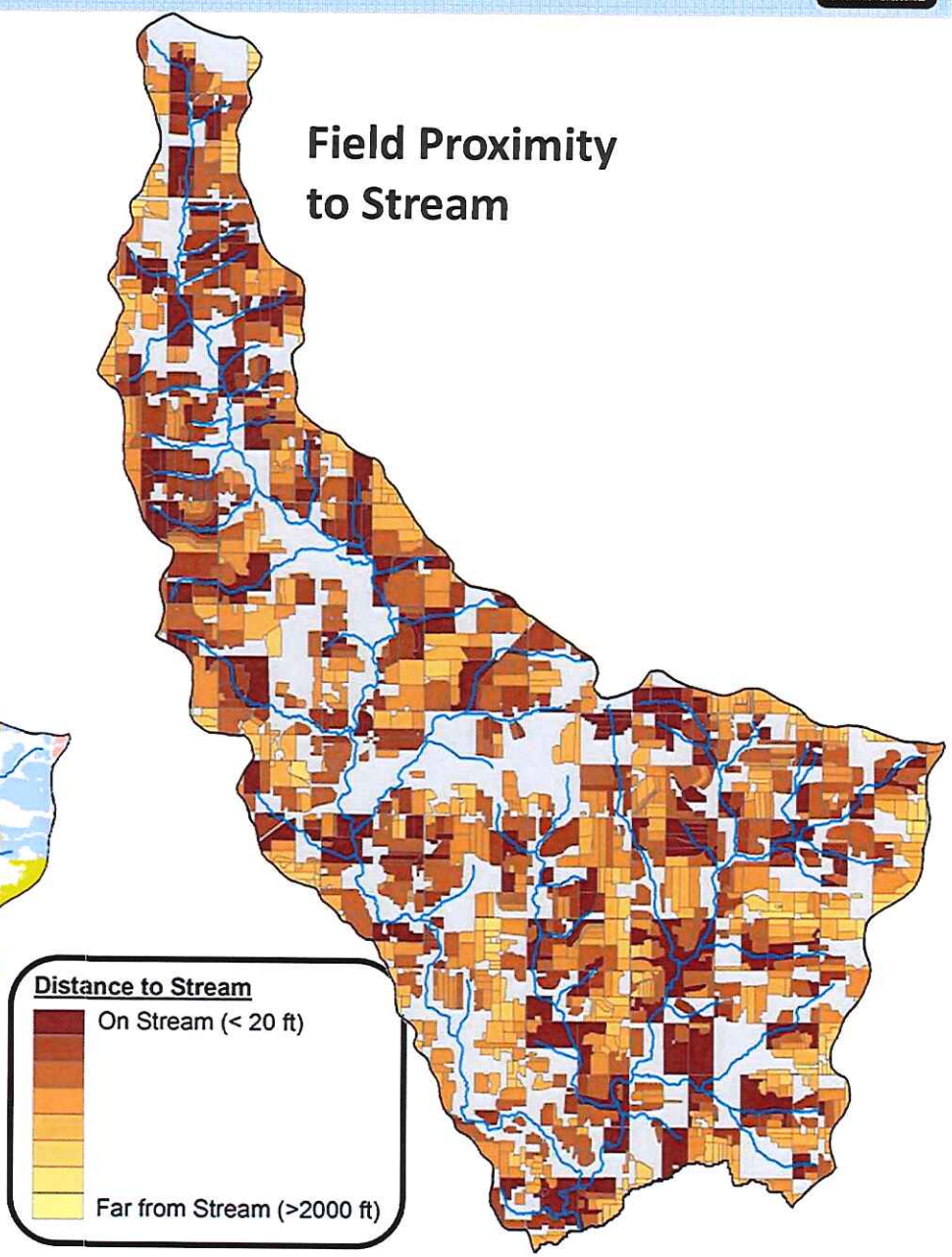
- Inventory barnyards, grass waterways, culverts, nutrient management plans

- Analysis to assess agricultural land for:
  - crop rotations
  - distance to waterway
  - relative runoff potential
  - relative erodibility

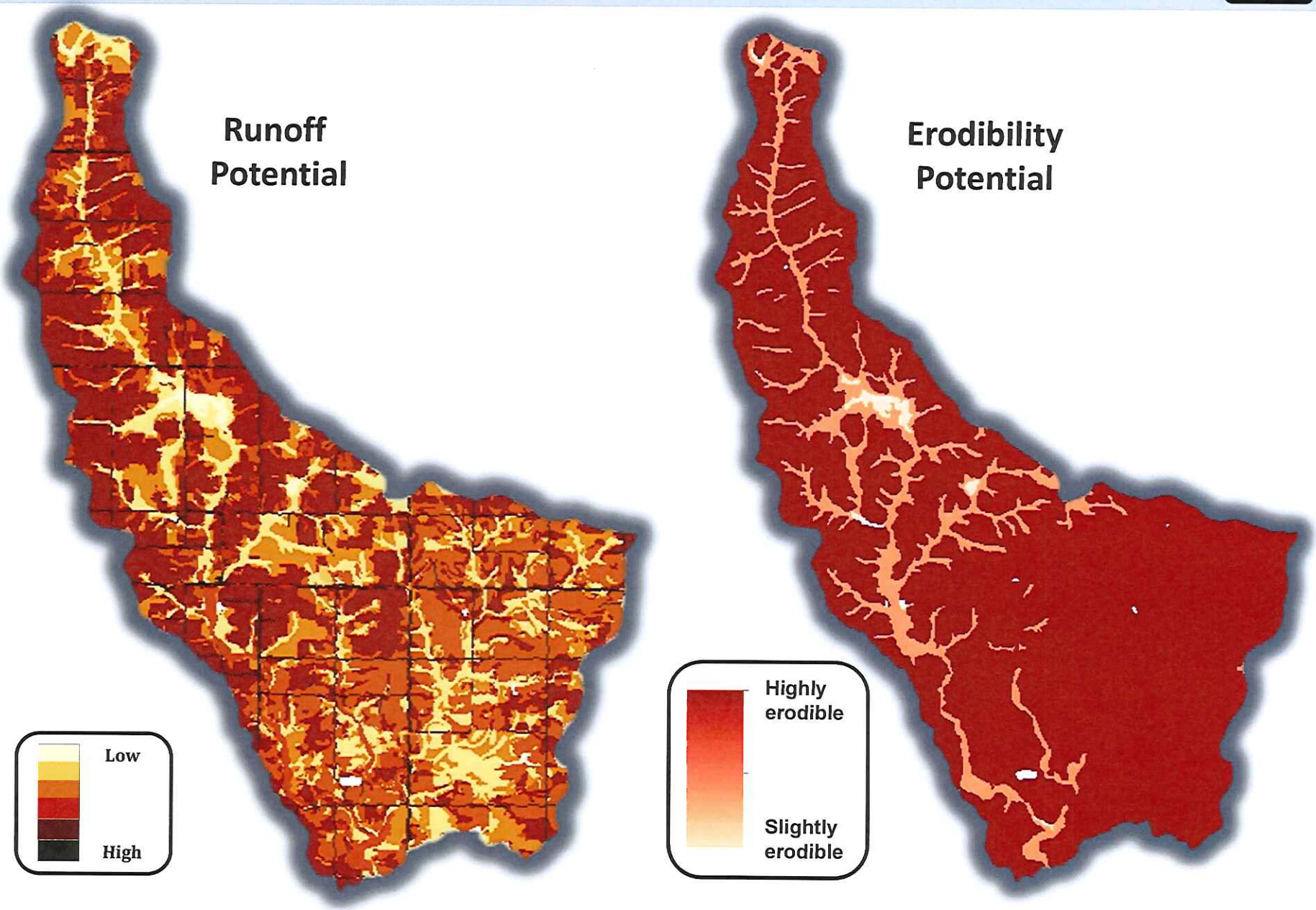


Fenwood Creek Implementation Analysis

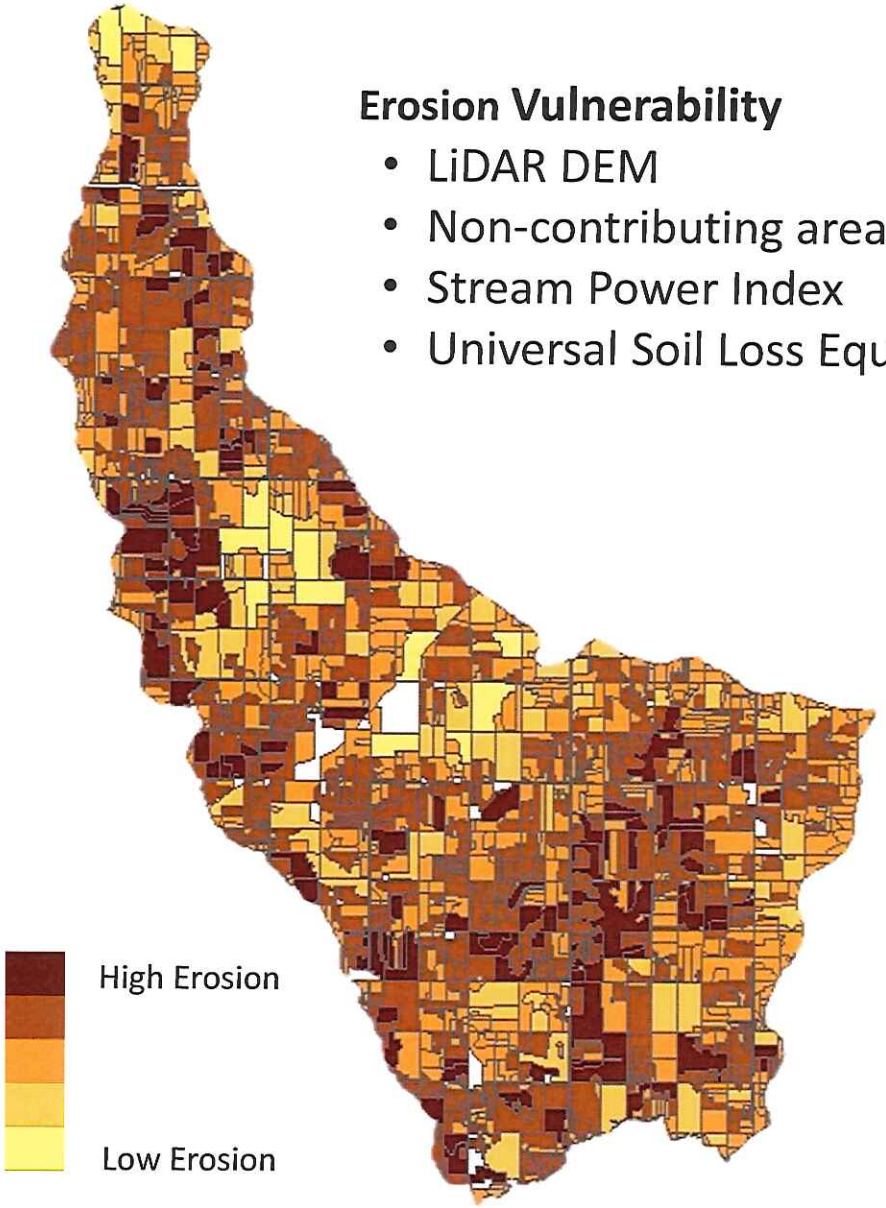




Fenwood Creek Implementation Analysis



Fenwood Creek Implementation Analysis



Erosion Vulnerability

- LiDAR DEM
- Non-contributing areas
- Stream Power Index
- Universal Soil Loss Equation

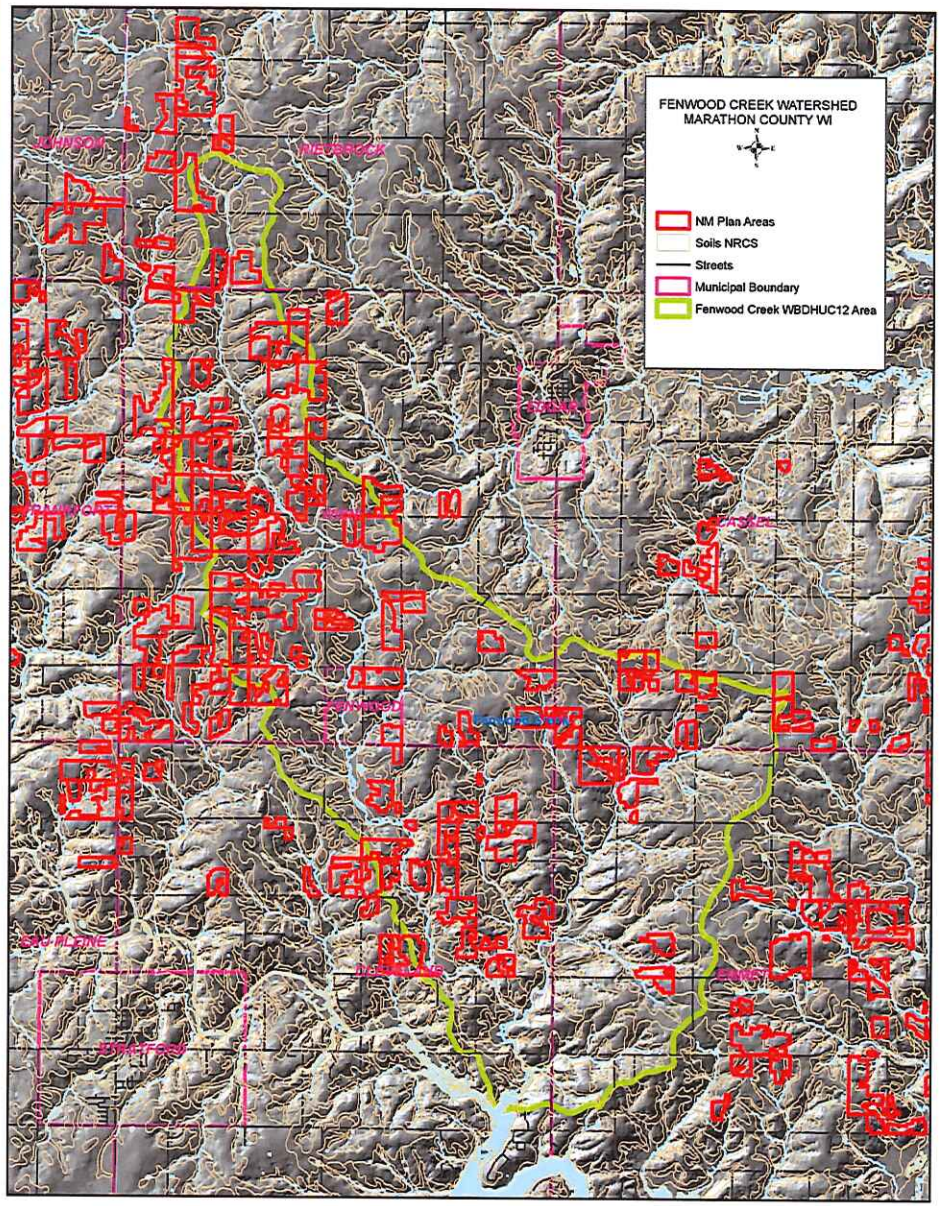

04/25/2011 17:48


04/25/2011 17:54


04/25/2011 17:55

Nutrient Management Plan

- 34 Operations
  - 27 landowners w/ farmsteads and primary cropland land base in Fn (5,083 acres)
  - 7 landowners w/o farmsteads not in Fn but have a cropland land base (1,000-1,500 acres)
  - Rented acres
  - Sorting of Management and Biophysical Characteristics


FENWOOD CREEK WATERSHED
MARATHON COUNTY WI
NM Plan Areas
Soils NRCS
Streets
Municipal Boundary
Fenwood Creek WBDHUC12 Area

Fenwood Creek Project Design

1. Community Engagement – ACES
2. Water Quality and BMP Monitoring
3. Land and Management Inventory
4. Water Quality Goals – Field Level
5. Landowner and Producer Planning
6. BMP Implementation
7. Adaptive Management

Best Management Practices

1. Residue Management

2. "Edge of field" vegetated filters, wetlands and sediment basins

3. Manure and commercial fertilizer management and distribution

4. Waste treatment technologies

Monitoring

- Wisconsin Buffer Initiative (WBI)
- UW-Agricultural Research Station/USGS
- Discovery Farms
- WI Valley Improvement Company (WVIC)
- Total Maximum Daily Loading (TMDL)

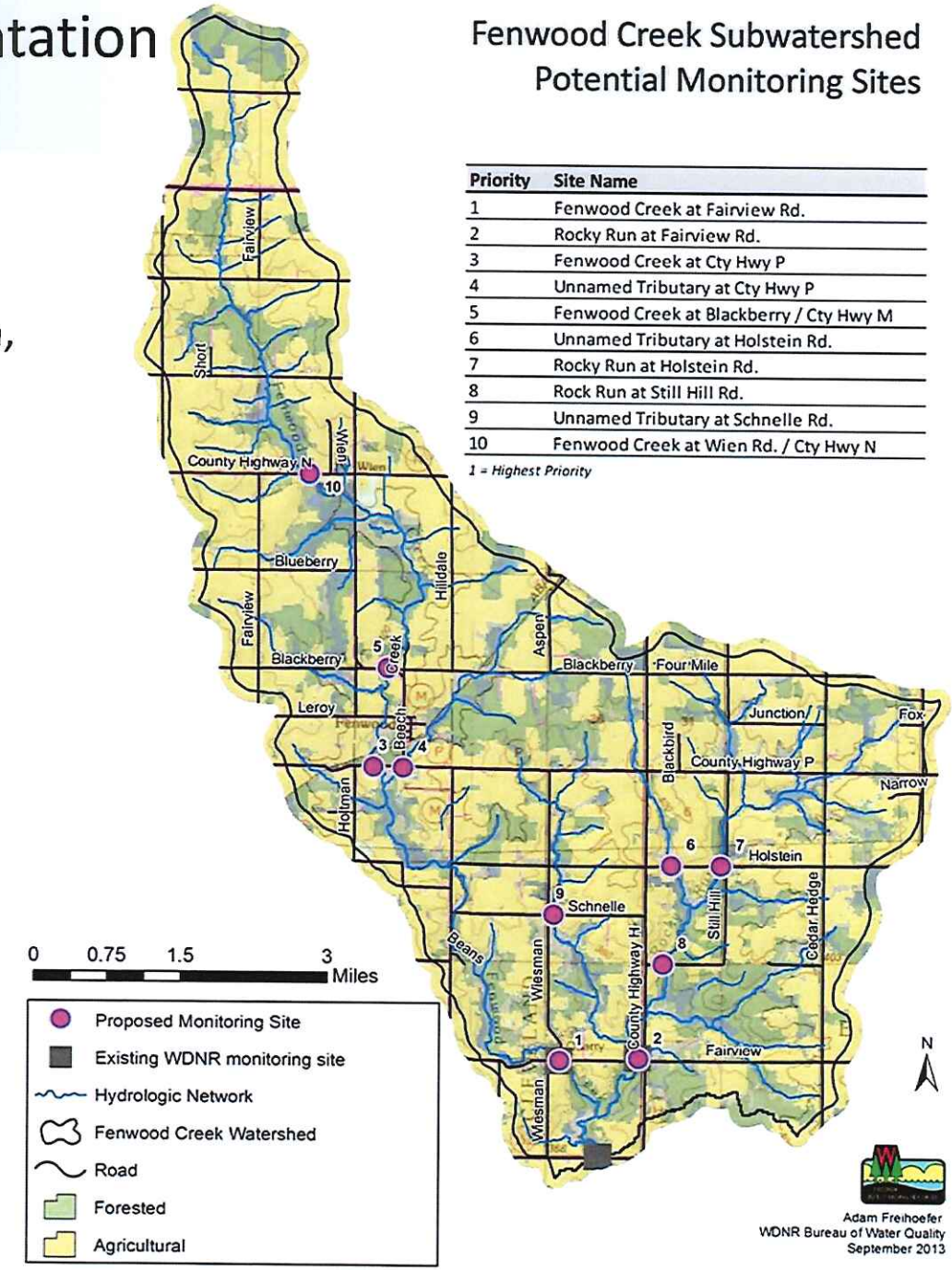
Fenwood Creek Implementation Monitoring Concept

- Semi-monthly phosphorus samples over at least two years may help confirm inventory data, direct efforts

Fenwood Creek Subwatershed Potential Monitoring Sites

Priority	Site Name
1	Fenwood Creek at Fairview Rd.
2	Rocky Run at Fairview Rd.
3	Fenwood Creek at Cty Hwy P
4	Unnamed Tributary at Cty Hwy P
5	Fenwood Creek at Blackberry / Cty Hwy M
6	Unnamed Tributary at Holstein Rd.
7	Rocky Run at Holstein Rd.
8	Rock Run at Still Hill Rd.
9	Unnamed Tributary at Schnelle Rd.
10	Fenwood Creek at Wien Rd. / Cty Hwy N

1 = Highest Priority



Adam Freihoefer
WDNR Bureau of Water Quality
September 2013

Other Implementation Monitoring

Fenwood Creek Pilot Project

Targeted Runoff Management Grant – 2015

Table 1. Staffing estimate

Activity	Hours/year	Total project Hours
Landowner Contacts	500	1500
Education	250	750
Inventory	250	750
Targeting	333	1000
CSA	250	750
Design/Implementation	500	1500
Project Management	333	1000
Evaluations	250	750
Final Report	-	100
Enforcement	250	750
		8850

Cost Summary: (8350 hours) x $45/hour= $375,750

Staffing: 1.5 FTE/year

Table 2. Cropping Practices: BMP implementation and cost estimate

BMP	No. of BMP's	Cost/BMP	Total Cost
Contour cropping	125 acres	$9/ac	$1125
Field Strip cropping	125 acres	$7.50/ac	$9375
High residue management	500 acres	$18.50/ac	$9250
Cover crop	100 acres	$25/ac	$2500
Nutrient Management	500 acres	$28/ac	$14,000
			$36,250

Table 3. Structural Practices: BMP implementation and cost estimate

BMP	No. of BMP's	Cost/BMP	Total Cost
Stream crossing	2	$1500	$3000
Trails and lanes	1000 ft	$10/ft	$10,000
Waste storage facility	3	$180,000	$540,000
Engineering (12%)		$21,600	$64,800
Waste transfer	3	$12,000	$36,000
Waste storage closure	4	$10,000	$40,000
Milk house/feed storage VTA's	6	$5,000	$30,000
Barnyard	6	$30,000	$180,000
Roof runoff system	6	$1,500	$9,000
Diversion	2000 ft	$2.25/FT	$4,500
Waterway	1000 ft	$3.00/FT	$3,000
Sediment basin	2	$5,000	$10,000
WASCOB (edge of field)	3	$10,000	$30,000
Outlets	6	$500	$3,000
Subsurface drains	6	$500	$3,000
Heavy use protection	6	$10,000	$60,000
Waste water treatment	3	$3,000	$9,000
Wetland	1	$12,000	$12,000
Grazing	250 ac	$25/Ac	$6,250
Fencing	1000 ft	$0.50/ft	$500
Riparian buffer	3	$1,000	$3,000
			$1,057,050

MARATHON COUNTY
RESOLUTION FOR RUNOFF MANAGEMENT GRANTS

WHEREAS, Marathon County is interested in acquiring a grant from the Wisconsin Department of Natural Resources for the purpose of implementing measures to control agricultural or urban stormwater runoff pollution sources (as described in the application and pursuant to ss. 281.65 or 281.66, Wis. Stats., and chs. NR 151, 153 and 155); and

WHEREAS, a cost-sharing grant is required to carry out the project:

THEREFORE, BE IT RESOLVED, that Marathon County hereby authorizes the Land and Water Program Director of the Marathon County Conservation, Planning and Zoning Department to act on behalf of Marathon County to:

- Submit and sign an application to the State of Wisconsin Department of Natural Resources for any financial aid that may be available;
- Sign a grant agreement between the local government (applicant) and the Department of Natural Resources;
- Submit reimbursement claims along with necessary supporting documentation;
- Submit signed documents; and
- Take necessary action to undertake, direct and complete the approved project.

BE IT FURTHER RESOLVED that Marathon County shall comply with all state and federal laws, regulations and permit requirements pertaining to implementation of this project and to fulfillment of the grant document provisions.

Adopted this 3rd day of March 2015

I hereby certify that the foregoing resolution was duly adopted by Land Conservation and Zoning Committee at a legal meeting on 3rd day of March 2015.

Authorized Signature: Rebecca J. Frisch Rebecca J. Frisch 4/14/15

Title: Conservation, Planning and Zoning Director

IMPORTANT NOTE: *The DNR expects the individual authorized by this resolution to become familiar with the applicable grant program's procedures for the purpose of taking the necessary actions to undertake, direct, and complete the approved project. This includes acting as the primary contact for the project, submitting required materials for a complete grant application, carrying out the acquisition or development project (e.g., obtaining required permits, noticing, bidding, following acquisition guidelines, etc.), and closing the grant project (e.g., submitting grant reimbursement forms and documentation, and organization of project files for future monitoring of compliance with grant program.*

Conservation, Planning and Zoning Department
210 River Drive • Wausau, Wisconsin 54403-5449
Phone 715-261-6000 • Marathon County 800-236-0153 • Fax 715-261-6016
cpz@co.marathon.wi.us