



Board of Public Works

Regular Meeting

335 South Broadway
De Pere, WI 54115
<http://www.de-pere.org>

Agenda

Monday, July 8, 2019

7:30 PM

De Pere City Hall Council Chambers

Pursuant to Wisconsin Statutes 19.84, Notice is hereby given to the public that a meeting of the **Board of Public Works** of the City of De Pere will be held on **July 8, 2019** at **7:30 PM** in the **De Pere City Hall Council Chambers**, 335 S. Broadway Street, De Pere, WI 54115.

This meeting can be viewed LIVE at www.depere.tv. This meeting is also rebroadcast on Spectrum Cable Channel 4 and AT&T U-verse Channel 99 throughout the week and available on demand at www.depere.tv.

I. Call to Order

1. Roll Call
2. Approval of Board of Public Works June 10, 2019 Meeting Minutes.

II. Public Comment

III. Items

1. Consideration and Selection of Water Utility Building Condition Assessment Contractor*
2. Consider Award of Contract 19-16 Marquette Square Dumpster Enclosure Construction*
3. Consider Award of Contract 19-17 Employers Boulevard Water Relay*
4. Consider Proposed Easements-Project 19-07*
5. Update and Discussion on 2018 Stormwater Management Plan-TMDL Written Plan*

IV. Future Agenda Items

V. Adjournment

***Items with an asterisk require City Council approval.**

Any person wishing to attend this meeting who, because of disability, requires special accommodations should contact the Clerk-Treasurer's office at 339-4050 by Noon, Monday July 8, 2019 so that arrangements can be made.

Agenda Sent To:

Mayor
Alderpersons
Department Heads
TV, Newspapers & Radio Stations
Kress Family Library

De Pere Chamber of Commerce
RJM Construction, LLC
Kruczek Construction, Inc.
Integrity Excellence Innovation

Notice is hereby given that a majority of the members of the Common Council of the City of De Pere may attend this meeting to gather information about a subject (s) over which they have decision-making responsibility.



City of De Pere, Wisconsin

Request For Board of Public Works Action

MEETING DATE: July 8, 2019

DEPARTMENT: Board of Public Works

FROM: Betty Sellenheim

SUBJECT: Approval of Board of Public Works June 10, 2019 Meeting Minutes.

ATTACHMENTS:

- 2019 0701 Draft Meeting Minutes (PDF)



Board of Public Works

Regular Meeting

335 South Broadway
De Pere, WI 54115
<http://www.de-pere.org>

Draft Minutes

Monday, June 10, 2019

7:30 PM

De Pere City Hall Council Chambers

I. Call to Order

The meeting was called to order at 7:30 PM by Mayor Michael J. Walsh

Attendee Name	Title	Status	Arrived
James Boyd	Aldersperson	Present	
Dan Carpenter	Aldersperson	Present	
Jonathon Hansen	Aldersperson	Present	
Dean Raasch	Aldersperson	Present	
Michael J. Walsh	Mayor	Present	

Others present:

Scott Thoresen, Director of Public Works

Eric Rakers, City Engineer

Tony Fietzer, Public Works Street Superintendent

Betty Sellenheim, Public Works Administrative Assistant/Recording Secretary

2. Approval of Board of Public Works May 13, 2019 Meeting Minutes

Aldersperson Carpenter moved to approve the May 13, 2019 Board of Public Works meeting minutes, seconded by Mayor Walsh.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dan Carpenter, Aldersperson
SECONDER:	Michael J. Walsh, Mayor
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

II. Public Comment

None

III. Items

1. Introduce New Public Works Street Superintendent, Tony Fietzer

Mayor Walsh welcomed Tony Fietzer and asked him to share a bit about himself and his background. Mr. Fietzer shared his background and his current thoughts on the transition to the City of De Pere.

2. Consider Preliminary Resolution for Special Assessment for Sidewalk on the East Side of Lawrence Drive from Main Avenue to Scheuring Road*

Mayor Walsh moved to approve the preliminary resolution for special assessment for sidewalk on the east side of Lawrence Drive from Main Avenue to Scheuring Road, seconded by Aldersperson Boyd.

Aldersperson Hansen asked about a small parcel at north end of project not being shaded yellow on the map. Eric Rakers, City Engineer, explained that sidewalks were installed at that property with the roundabout project.

Upon vote, the motion passed unanimously.

Attachment: 2019 0701 Draft Meeting Minutes (8494 : Approval of Board of Public Works June 10, 2019 Meeting Minutes.)

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	James Boyd, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

3. Consider RFP for Fire Department Station 1 Boiler Replacement Design and Construction Management*

Alderperson Carpenter moved to approve the RFP for Fire Department Station 1 boiler replacement to Tweet Garot Mechanical for \$8,900, seconded by Alderperson Raasch.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dan Carpenter, Alderperson
SECONDER:	Dean Raasch, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

4. Consider Contract Renewal with Hydrocorp for Commercial & Industrial Cross Connection Control Program*

Alderperson Carpenter moved to approve the contract renewal with Hydrocorp for commercial and industrial cross connection control program, seconded by Alderperson Hansen.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dan Carpenter, Alderperson
SECONDER:	Jonathon Hansen, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

5. Consider 2019 Sidewalk Repair Orders or Special Assessment

Alderperson Raasch moved to approve the 2019 sidewalk repair orders, seconded by Alderperson Boyd.

Alderperson Hansen questioned if the Board was approving the special charges or a 5 or 10 year special assessment. Eric Rakers, City Engineer, explained with the sidewalk program everything is a special charge. It is a yearly program and 1/8 of the city is done each year. Residents are invoiced in October, given 30 days to pay and then it goes on the tax roll providing a year for payment. Mr. Rakers explained the limits of the 2019 sidewalk repairs. The age of the neighborhood and high concrete prices this year has equated to rather large charges. Mr. Rakers stated there are quite a few locations that are with the lowest charge of \$316.75. There are 353 people listed in total with a special charge but there are a lot of people that do the work themselves. The average projected cost for all 353 people is \$872. There are approximately 78 people over \$1,000. There are additional costs and steps with a special assessment process. Alderperson Raasch questioned if a special assessment was done in 2019, what dollar amount would be used in future years. Mayor Walsh asked if staff had a recommendation regarding Alderperson Raasch's concerns. Mr. Rakers stated that having a policy in place would help determine when a special assessment would be used or not. Scott Thoresen, Director of Public Works, stated that residents also have the option of requesting a deferral for a special charge at Common Council. Alderperson Raasch asked if the lateral special assessments could be used as a template. Mr. Thoresen explained the difference between the special

assessment process and special charge. Mayor Walsh questioned providing five years for payment to locations over \$1,000 due to the high prices this year. Alderperson Hansen stated his support for a five year payment plan for locations over \$1,000 and questioned the payment of sidewalks for those under \$1,000. Mr. Rakers stated notices would be sent in 2019 but the contractor has until July 2020 to complete the concrete work and the residents would potentially not get a bill until then. Alderperson Boyd questioned what the prices might have been last year. Mr. Rakers stated the prices went up approximately 50% from last year. Mayor Walsh amended the motion to give five years to pay for people over \$1,000 for this year only, seconded by Alderperson Boyd.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dean Raasch, Alderperson
SECONDER:	James Boyd, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

6. Consider Award of Contract 19-05 Sidewalk, Curb and Concrete Pavement Repair*

Alderperson Hansen moved to approve the award of Contract 19-05 Sidewalk, Curb and Concrete Pavement Repair as allocated by staff to Martell Construction, Inc. for \$584,300, seconded by Alderperson Carpenter.

Alderperson Hansen asked for clarification on the colored concrete sealing. Eric Rakers, City Engineer, explained the concrete sealing process that improves the red color and life expectancy of the stamped concrete in roundabouts and crosswalks. Alderperson Hansen asked about the Main Avenue bump-out costs. Mr. Rakers explained that the savings came through reducing the amount of concrete work and having less storm sewer work than anticipated, which in turn will make the traffic control easier.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Jonathon Hansen, Alderperson
SECONDER:	Dan Carpenter, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

7. Consider Award of Contract 19-06A Lawrence Drive Sidewalk Grant Street to Main Avenue and Contract 19-06B Lawrence Drive Sidewalk Scheuring Road to Grant Street*

Alderperson Hansen moved to approve award of Contract 19-06A Lawrence Drive sidewalk Grant Street to Main Avenue and Contract 19-06B Lawrence Drive sidewalk Scheuring Road to Grant Street to Sommers Construction Company, Inc. for \$171,084.80 and \$459,793.25 respectively, seconded by Alderperson Boyd.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Jonathon Hansen, Alderperson
SECONDER:	James Boyd, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

8. Consider Proposed Easements-Project 19-06A and 19-06B*

Alderperson Raasch moved to approve the proposed easements for Project 19-06A and 19-06B, seconded by Alderperson Carpenter.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dean Raasch, Alderperson
SECONDER:	Dan Carpenter, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

9. Consider Award of Contract 19-11 Garrity's Glen South Subdivision Construction*

Alderperson Raasch moved to award Contract 19-11 Garrity's Glen South Subdivision Construction to Dorner, Inc. in the amount of \$2,059, 620.30, seconded by Mayor Walsh.

Alderperson Carpenter questioned the draining of the storm sewer into the existing ponds downstream. Eric Rakers, City Engineer, explained it would part of the pond series. Alderperson Carpenter questioned some holes being dug in the area of the subdivision. Mr. Rakers stated he would need to go out and take a look at what is being done. Mr. Rakers stated there was a spill that needed to be cleaned up and some digging was done relating to that work. Alderperson Boyd questioned the higher number of bidders. Mr. Rakers explained the appeal of this project to contractors due to late fall and winter construction.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Dean Raasch, Alderperson
SECONDER:	Michael J. Walsh, Mayor
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

10. Consider Intermunicipal Agreement for Reciprocal Aid*

Scott Thoresen, Director of Public Works, provided the background on the agreement. Local Public Works Departments over the years have borrowed equipment and occasionally personnel from each other. Recently, the need for an intergovernmental agreement was expressed. The Intermunicipal Agreement for Reciprocal Aid is a legal document stating the responsibilities of borrowing agencies for repairs and liability. Each local government involved will be requesting approval from their boards and councils, along with their attorney. Alderperson Raasch stated his concerns regarding this agreement being used by a community to avoid the purchase of equipment over time. Mr. Thoresen stated he sees additional agreements in the future on shared purchases and compost sites.

Mayor Walsh moved to approve the Intermunicipal Agreement for Reciprocal Aid, seconded by Alderperson Carpenter.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	Dan Carpenter, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

11. Consider Compliance Maintenance Annual Report for Wastewater Collection System*

Eric Rakers, City Engineer, explained the Compliance Maintenance Annual Report for the Wastewater system of De Pere. Mr. Rakers stated De Pere received "A" grades in both Financial Management and Collection System, which is the highest grade possible. Mayor Walsh and Mr. Rakers discussed the history of the CMAR when De Pere had their

own system and how things might change for next year with a new lift station being installed.

Mayor Walsh moved to approve the 2019 Compliance Maintenance Annual Report for the Wisconsin Department of Natural Resources, seconded by Alderperson Hansen.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	Jonathon Hansen, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

12. Consider Location for Wisconsin Public Service Electric Meter for Radar Speed Display Sign*

Eric Rakers, City Engineer, explained the sign was recommended as part of the Broadway report for pedestrian safety. The Police Department secured funds for the purchase of the sign and it will be installed in the transition area where the speed limit goes from 35 to 25 mph. The sign will need to be metered by WPS and cost \$28 per month. A solar option was looked at but there are too many trees to make it a viable option. Alderperson Hansen questioned what would happen to the brown Historic Neighborhood sign. Mr. Rakers stated staff would look to move it to another pole.

Mayor Walsh moved to approve the location for the Wisconsin Public Service Electric Meter for Radar Speed Display Sign at the north property line of 935 N. Broadway Street, seconded by Alderperson Carpenter.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	Dan Carpenter, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

13. Approval of City Engineer Parking and Traffic Recommendations*

Eric Rakers, City Engineer, explained that on Wisconsin Street north of George Street, there is a 3 hour parking sign that does not exist in City Ordinances. Staff will remove the current sign and replace with a 3 hour parking sign for 9AM to 6 PM Monday to Saturday and update the City Ordinance.

Mayor Walsh moved to approve City Engineer's recommendation to update 3 hour parking sign and ordinance along Wisconsin Street, seconded by Alderperson Raasch.

Upon vote, the motion passed unanimously.

RESULT:	ADOPTED [UNANIMOUS]
MOVER:	Michael J. Walsh, Mayor
SECONDER:	Dean Raasch, Alderperson
AYES:	Boyd, Carpenter, Hansen, Raasch, Walsh

14. Discuss City Engineer Recommendations on No-Action Parking and Traffic Discussion Items.

Eric Rakers, City Engineer, outlined the requests received. Request for designated painted crosswalk at Ninth and Westwood: staff did a pedestrian count and had 9 people over a 1.5 hour period in the morning and 1 person in the afternoon. Request to install RRFB at Broadway and O'Keefe: staff did a pedestrian count over lunch and had 0 people in a 2 hour period. Request to install 35 mph sign on Lawrence Drive by Southwest Park: staff will be discussing change to 25 mph due to the urbanizing of the area with the approval of Contract 19-11. Alderson Raasch stated some confusion as that area is Town of Lawrence on one side and De Pere on the other. Mr. Rakers stated he will be working with the Town of Lawrence. Mayor Walsh asked if the Town of Lawrence has a 35 mph sign on Lawrence Drive. Alderson Carpenter stated that there is one on the east side of the road. Alderson Raasch stated he has seen multiple families walking on the shoulder to access Southwest Park. Mr. Rakers stated with the new development sidewalks will be getting installed. Request for "Hidden Driveway" sign at 560-580 Ninth Street: through the MUTCD guidelines this location did not meet the needs for this warning sign as vehicular traffic should be expecting driveways on a city street. Staff will be placing traffic counters in this area to check speed and recommend to police for enforcement is necessary. Request to install a four-way stop at Wisconsin and Lewis and Michigan and Lewis: Lewis is a Fire Department route to Erie Street and staff recommends no change because of that. The request was submitted due to the school and there may be changes at the school that may eliminate the concerns. Mr. Rakers discussed future items including: long-term parking permits in Nicolet Square, "Park" and "Drive Slow" signs by Samantha Park on Samantha Drive, Crossing Guard criteria/policy, lane designations on Chicago at Webster, and amendments to crosswalk policy including Safe Routes to Schools. Alderson Carpenter asked if the pedestrian sign on Ninth will be staying in the middle of the roadway. Mr. Rakers stated that staff does not currently have any plans to take it down but discussed needing a crosswalk policy in place to follow. Alderson Hansen questioned if staff had reached out to any of the businesses in the Industrial Park regarding the crossing of Broadway at O'Keefe. Mr. Rakers stated that staff has not reached out the businesses but it would still need to meet the count and it is crossable without an RRFB.

IV. Future Agenda Items

None

V. Adjournment

Mayor Walsh moved to adjourn the meeting at 8:19 PM, seconded by Alderson Hansen.

Upon vote, the motion passed unanimously.

***Items with an asterisk require City Council approval.**

Any person wishing to attend this meeting who, because of disability, requires special accommodations should contact the Clerk-Treasurer's office at 339-4050 by Noon, Monday June 10, 2019 so that arrangements can be made.

Agenda Sent To:

Mayor
Aldersons
Department Heads
TV, Newspapers & Radio Stations
Kress Family Library
De Pere Chamber of Commerce

Country Visions Cooperative
Creative Business Rentals LLC
Double D Investment Real Estate LLC
Midstates Tire & Tool Inc.
Dairyland Lab Properties LLC
Bright Horizon Properties LLC

Avrio LLC
 Brooks Equipment Leasing Inc.
 Dakota Upreit LP
 Cummins NPower LLC
 D C Kubiak Holdings LLC
 Lamers A & K Properties LLP
 T & S Land Development LLC
 Jorgensen Investments
 Tri-DP LLC
 Jass Realty Company LLC
 Stanley & Krist Atanosoff
 Hydrocorp

Menard Inc. Corporate Accounting
 HAI Lawrence LLC
 Lawrence Drive Owners Association Inc.
 Walmart Real Estate Property Tax Dept
 Blue Oval LLC
 GCS Holdings of De Pere LLC
 Midwest Expansion De Pere LLC
 Tweet/Garot Mechanical
 Martell Construction, Inc.
 Dorner, Inc.
 Sommers Construction Company, Inc.

Notice is hereby given that a majority of the members of the Common Council of the City of De
 Pere may attend this meeting to gather information about a subject (s) over which they have
 decision-making responsibility.

Respectfully submitted,
 Betty Sellenheim



City of De Pere, Wisconsin

Request For Board of Public Works Action

MEETING DATE: July 8, 2019

DEPARTMENT: Board of Public Works

FROM: Eric Zygarlicke

SUBJECT: Consideration and Selection of Water Utility Building Condition Assessment Contractor*

ATTACHMENTS:

- 2019 0702 Water Building Condition Assessment Memo (PDF)

CITY OF DE PERE MEMO



To: Honorable Mayor Walsh
Members of the Board of Public Works

From: Eric J. Zygarlicke, Water Department Supervisor

Date: July 8, 2019

RE: **Consider Water Building Condition Assessment Contractor**

The City has solicited engineering contractors to prepare a detailed condition assessment report based on the request with pictures, preliminary budgetary estimates with contingencies, and recommendations for a building file for each water property at 315 N Ninth Street, 1340 Scheuring Road, 1501 Merrill Street, and 1851 Enterprise Drive. This report would also contain ratings for each issue identified for the purpose of prioritizing each deficiency.

The contractor would be required to do a walkthrough of all four of our water buildings, and put together a report for us prioritizing the issues of each structure so that we would know how to best allocate our budgeted money for the maintenance/repair/upgrade of these facilities. The utility is mostly interested in the actual buildings, and whether there are any issues with the brick/block, roofs, windows, doors, exterior facades, energy loss, and what the immediate problems are that need to be addressed.

Staff solicited five (5) companies for proposals (See attached) and has received the following quotes for performing the above inspections:

Integrity Excellence Innovation – De Pere, WI	= \$1,500
Robert E. Lee & Associates, Inc. – Hobart, WI	= \$ 4,995
Cedar Corporation – Green Bay, WI	= \$ 5,000
Best Built General Contracting – Green Bay, WI	= No Quote
RenewCo Restoration-Remodeling – Green Bay, WI	= No Quote

I reviewed the proposals that were submitted. Staff recommends approving the proposal from Integrity Excellence Innovation – De Pere, WI. The 2019 water utility budget has \$30,000 allocated for the condition assessment report.



City of De Pere, Wisconsin

Request For Board of Public Works Action

MEETING DATE: July 8, 2019

DEPARTMENT: Board of Public Works

FROM: Eric Rakers

SUBJECT: Consider Award of Contract 19-16 Marquette Square Dumpster Enclosure Construction*

ATTACHMENTS:

- 2019 0708 CI_BOPW_Consider_Award_of_Contract_19-16 (PDF)
- 2019 0627 CE_19-16 Bid Tab (PDF)
- Marquette Square Public Information Meeting Invite 5-13-19 (Template) (PDF)
- 2019 0513 Marquette Square Dumpster Meeting 5-13-19 (PDF)
- Marquette Square Dumpster Service Preliminary Assessment Costs 10-19-18 (PDF)

CITY OF DE PERE MEMO



To: Honorable Mayor Walsh
Members of the Board of Public Works

From: Eric P. Rakers, P.E., City Engineer

Date: July 8, 2019

RE: **Consider Award of Contract 19-16 Marquette Square Dumpster Enclosure Construction***

The Engineering Department received bids on Project 19-16 Marquette Square Dumpster Enclosure Construction on June 27, 2019. This project involves the construction of a dumpster enclosure at Marquette Square, near the intersection of James Street and N. Wisconsin Street. Staff held an informational meeting for the Marquette Square stakeholders on May 13, 2019 to get their input on the location and the enclosure aesthetics. A copy of the informational meeting invite letter and the PowerPoint presentation presented at this meeting are attached.

The bids received are as follows:

Contractor	Base Bid
RJM Construction, LLC	\$46,357.50
Milbach Construction Services, Inc.	\$47,802.07

The budgeted amount from TID 7 is \$60,000.

Also, at the informational meeting the proposed monthly cost for dumpster collection services for each parcel was discussed. A copy of the proposed assessments is attached. The proposed assessments have yet to be updated to reflect final construction costs and collection rates.

Staff's recommendation is to award the contract to RJM Construction, LLC in the amount of \$46,357.50.

Attachments:

- Project 19-16 Bid Tab
- Marquette Square Public Information Meeting Invite 5-13-2019 (Template)
- Marquette Square Dumpster Meeting PowerPoint 5-13-2019
- Marquette Square Dumpster Service Preliminary Assessment Costs

PROJECT 19-16
MARQUETTE SQUARE DUMPSTER ENCLOSURE
CONSTRUCTION BID TAB

				BIDDER NO. 1		BIDDER NO. 2	
				RJM Construction LLC		Milbach Construction Services, Inc.	
ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT BID	UNIT PRICE	AMOUNT BID
STORM SEWER							
ST-01	Provide Type B Inlet	EA	1	\$ 4,350.00	\$ 4,350.00	\$ 3,125.00	\$ 3,125.00
STREET AND DRAINAGE							
SD-01	Remove Curb and Gutter	LF	35	\$ 14.50	\$ 507.50	\$ 8.93	\$ 312.55
SD-02	Provide 24" Concrete Curb and Gutter	LF	40	\$ 60.00	\$ 2,400.00	\$ 54.41	\$ 2,176.40
SD-03	Drilled Tie Bars (Existing Curb and Gutter)	EA	2	\$ 50.00	\$ 100.00	\$ 11.16	\$ 22.32
SD-04	Landscaping: Topsoil, Seed, Fertilizer and Mulch. No. 40 Seed Mix	SY	30	\$ 50.00	\$ 1,500.00	\$ 22.32	\$ 669.60
SPECIAL CONSTRUCTION							
SP-01	Dumpster Enclosure Construction & Restoration	LS	1	\$ 36,400.00	\$ 36,400.00	\$ 40,715.00	\$ 40,715.00
SP-02	Remove Tree and Grind Stump	ID	20	\$ 55.00	\$ 1,100.00	\$ 39.06	\$ 781.20
BID TOTALS				\$ 46,357.50		\$ 47,802.07	

Attachment: 2019 0627 CE_19-16 Bid Tab (8509 : Consider Award of Contract 19-16 Marquette Square Dumpster Enclosure Construction*)



City of De Pere

925 South Sixth Street
DePere, WI 54115-1199
Phone: 920-339-8095
Fax: 920-339-4071
Cell: 920-639-1003

Scott J. Thoresen
Director of Public Works
sthoresen@mail.de-pere.org
www.de-pere.org

April 26, 2019

«OWNMAIL1»
«OWNMAIL3»
«OWNMAIL4»

**Re: Public Informational Meeting
Marquette Square Garbage & Recycling Collection
Parcel:«PARCELID», «LOCATION»**

Dear Property Owner:

Please join City staff to discuss collection of garbage & recycling for the Marquette Square area. The purpose of this meeting is to provide an update for the City's plans to convert from carts to dumpsters for garbage and recycling collection.

The informational meeting will be held on Monday May 13, 2019 at 5:00 P.M. at the Municipal Service Center located at 925 S. Sixth Street in De Pere. A short presentation will be given regarding the City's plans including discussion of charging property owners for these services as well as the timeline to implement the plans. After the presentation, City staff will address any questions or comments. Your feedback at this meeting will influence the direction of this project, which we hope to implement in 2019.

If you have any questions or require additional information, please feel free to contact me.

Sincerely,

DEPARTMENT OF PUBLIC WORKS

Scott J. Thoresen, P.E.
Director of Public Works

Cc: Mayor Walsh
Larry Delo, City Administrator
Kimberly Flom, Development Services Director
Alderspersons

Attachment: Marquette Square Public Information Meeting Invite 5-13-19 (Template) (8509 : Consider Award of Contract 19-16 Marquette Square

Marquette Square Dumpster Enclosure Discussion 5-13-19

Purpose of Meeting

- Dumpster enclosure requirements
- Discuss dumpster enclosure location
- Dumpster enclosure will be similar to Nicolet Square – need to choose brick color
- Timeline for building enclosures and implementing use of dumpster collection
- Creation of Recyclable and Garbage Common Collection Service District Ordinance
- Annual Assessments
- Questions

Dumpster Enclosure Requirements

- Similar to Nicolet Square
- The City will provide dumpster enclosure
- City will administer garbage and recycling collection
- City will provide area for storage of grease containers if necessary
- Property owner may opt out if their property allows for building of enclosures per City ordinance

Enclosure Locations

- Enclosure will require loss of four (4) parking stalls

Proposed Dumpster Enclosure Location



Attachment: 2019 0513 Marquette Square Dumpster Meeting 5-13-19 (8509 : Consider Award of Contract

Nicolet Square Enclosures





Marquette Square Dumpster Enclosure Timeline

- City will bid construction of dumpster enclosure in June 2019
- Construct enclosures complete by 12/1/19
- Collection services to begin 12/1/19
- City to collect all polycarts by 12/31/19

Creation of Ordinance

- Similar to Sec. 82-12. Nicolet Square Recyclable and Garbage Common Collection Service District

Annual Assessment

- Calculated annually
- 1st assessment will be on 2020 tax bill

2020 Marquette & Nicolet Square Combined Assessment

				COMMERCIAL COLLECTION RATE MONTHLY COSTS	FIXED & COMMERCIAL COLLECTION RATE MONTHLY COSTS	2020 TOTAL ANNUAL ASSESSMENT
PARCEL ID	OWNER	COMMERCIAL COLLECTION RATE	FIXED MONTHLY COSTS	COMMERCIAL COLLECTION RATE MONTHLY COSTS	FIXED & COMMERCIAL COLLECTION RATE MONTHLY COSTS	2020 TOTAL ANNUAL ASSESSMENT
WD-906	PHE WI LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-907	WILLIAM LEMKE LLC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-908	313 MAIN IN DE PERE LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-909	LIFE CHURCH GREEN BAY INC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-910	KEY PROPERTY MANAGEMENT LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-911	TILKENS HOLDING LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-912	NICK BROTHERS PARTNERSHIP	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-913	MIRHASHEMI INC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-915	RONALD MANNING	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-917	SAKS HOLDINGS LLC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-918	CONNECTIVE PROPERTIES LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-920	SAKS HOLDINGS LLC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-921	ABTS INVESTMENTS LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-922	DENNIS M & CLAUDIA D LARSON	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-923	RAW LEGACY LLC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
WD-925	LONNIE & CAROL MISHLER	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
WD-931	AJANGO PROPERTIES LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
ED-857	UNION HOTEL CORP	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
ED-850	THE LEE BUILDING CORP C/O MICHAEL L SAVOLT	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
ED-848	SERA K PROPERTIES LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
ED-847	STARRY DEVELOPMENT LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
ED-842	WADE CONARD	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
ED-841	GET REEL ENTERTAINMENT LLC	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
ED-840	THE LEE BUILDING CORP	6.770	\$ 13.94	\$ 80.46	\$ 94.40	\$ 1,132.82
ED-837	FIT FAMILY LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57
ED-836	FIT FAMILY LLC	1.115	\$ 13.94	\$ 1.60	\$ 15.55	\$ 186.57

2019 Nicolet Square Assessment

					FIXED &	
				COMMERCIAL	COMMERCIAL	
				COLLECTION	COLLECTION	2019
PARCEL		COMMERCIAL	FIXED	RATE	RATE	TOTAL
ID	OWNER	COLLECTION	MONTHLY	MONTHLY	MONTHLY	ANNUAL
		RATE	COSTS	COSTS	COSTS	ASSESSMENT
WD-906	PHE WI LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-907	WILLIAM LEMKE LLC	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-908	313 MAIN IN DE PERE LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-909	LIFE CHURCH GREEN BAY INC	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-910	KEY PROPERTY MANAGEMENT LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-911	TILKENS HOLDING LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-912	NICK BROTHERS PARTNERSHIP	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-913	MIRHASHEMI INC	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-915	RONALD MANNING	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-917	SAKS HOLDINGS LLC	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-918	CONNECTIVE PROPERTIES LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-920	SAKS HOLDINGS LLC	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-921	ABTS INVESTMENTS LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-922	DENNIS M & CLAUDIA D LARSON	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-923	RAW LEGACY LLC	6.770	\$ 14.24	\$ 82.18	\$ 96.43	\$ 1,157.11
WD-925	LONNIE & CAROL MISHLER	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57
WD-931	AJANGO PROPERTIES LLC	1.115	\$ 14.24	\$ 1.64	\$ 15.88	\$ 190.57

Marquette Square Assessment(not combined)

					FIXED & COMMERCIAL	
				COLLECTION	COLLECTION	2020
PARCEL		COMMERCIAL	FIXED	RATE	RATE	TOTAL
ID	OWNER	COLLECTION	MONTHLY	MONTHLY	MONTHLY	ANNUAL
		RATE	COSTS	COSTS	COSTS	ASSESSMENT
ED-857	UNION HOTEL CORP	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-850	THE LEE BUILDING CORP C/O MICHAEL L SAVOLT	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-848	SERA K PROPERTIES LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21
ED-847	STARRY DEVELOPMENT LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21
ED-842	WADE CONARD	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-841	GET REEL ENTERTAINMENT LLC	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-840	THE LEE BUILDING CORP	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-837	FIT FAMILY LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21
ED-836	FIT FAMILY LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21

Questions???

MARQUETTE SQUARE DISTRICT PRELIMINARY ASSESSMENTS FOR DUMPSTER COLLECTION SERVICES

PARCEL ID	OWNER	COMMERCIAL COLLECTION RATE	FIXED MONTHLY COSTS	COMMERCIAL COLLECTION RATE MONTHLY COSTS	FIXED & COMMERCIAL COLLECTION RATE MONTHLY COSTS	2020 TOTAL ANNUAL ASSESSMENT
ED-857	UNION HOTEL CORP	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-850	THE LEE BUILDING CORP C/O MICHAEL L SAVOLT	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-848	SERA K PROPERTIES LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21
ED-847	STARRY DEVELOPMENT LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21
ED-842	WADE CONARD	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-841	GET REEL ENTERTAINMENT LLC	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-840	THE LEE BUILDING CORP	6.770	\$ 21.76	\$ 125.58	\$ 147.35	\$ 1,768.14
ED-837	FIT FAMILY LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21
ED-836	FIT FAMILY LLC	1.115	\$ 21.76	\$ 2.50	\$ 24.27	\$ 291.21



City of De Pere, Wisconsin

Request For Board of Public Works Action

MEETING DATE: July 8, 2019

DEPARTMENT: Board of Public Works

FROM: Eric Rakers

SUBJECT: Consider Award of Contract 19-17 Employers Boulevard Water Relay*

ATTACHMENTS:

- 2019 0708 CI_BOPW_Consider_Award_of_Contract_19-17 (PDF)
- 2019 0627 CE_19-17 Bid Tab (PDF)

CITY OF DE PERE MEMO



To: Honorable Mayor Walsh
Members of the Board of Public Works

From: Eric P. Rakers, P.E., City Engineer

Date: July 8, 2019

RE: **Consider Award of Contract 19-17 Employers Boulevard Water Relay***

The Engineering Department received bids on Project 19-17 Employers Boulevard Water Relay on June 27, 2019. This work was requested and will be funded by Humana, Inc. at 1000 Employers Boulevard. The water service to Humana is a long, dead end line starting at Lawrence Drive. They need to relay the water main starting at Lawrence Drive to the end of the City right-of-way on Employers Boulevard to improve fire suppression flows. Humana has a private project relaying the water line from the right-of-way line to their building that would occur in conjunction to the City's work.

The bid received is as follows:

Contractor	Base Bid
Kruczek Construction, Inc.	\$164,600.00

Prior to the bid opening there were 10 prequalified construction firms holding plans for this work. It is staff's belief that the tight construction window for this work coupled with the overabundance of work in the area led to the lack of bidders for this project.

This project will be entirely funded by Humana through a Public Infrastructure Improvement Agreement. Staff's recommendation is to award the contract to Kruczek Construction, Inc. in the amount of \$164,600.00. If approved, consideration for award will go to Common Council once the Public Infrastructure Improvement Agreement is approved and finalized.

PROJECT 19-17
EMPLOYERS BOULEVARD WATER RELAY
BID TAB

BIDDER NO. 1

**Kruczek Construction
Inc.**

ITEM	DESCRIPTION	UNIT	QTY	UNIT PRICE	AMOUNT BID
WATER MAIN					
W-01	Provide 12" PVC Water Main (Granular Backfill) Open cut or Directional Drilling	LF	200	\$ 100.00	\$ 20,000.00
W-02	Provide 12" PVC Water Main (Natural Backfill) Open Cut or Directional Drilling	LF	980	\$ 60.00	\$ 58,800.00
W-03	Provide 10" PVC Water Main (Granular Backfill)	LF	20	\$ 85.00	\$ 1,700.00
W-04	Provide 2" Corporation with Plug/Saddle with 2" HDPE	EA	2	\$ 1,850.00	\$ 3,700.00
W-05	Provide 12" Gate Valve	EA	3	\$ 3,000.00	\$ 9,000.00
W-06	Provide 6" Gate Valve	EA	2	\$ 1,300.00	\$ 2,600.00
W-07	Provide Connection to Existing Water Main	EA	3	\$ 1,400.00	\$ 4,200.00
W-08	Provide Hydrant (6.5' Bury)	EA	2	\$ 4,200.00	\$ 8,400.00
W-09	Provide 6" PVC Hydrant Lead	LF	40	\$ 77.00	\$ 3,080.00
W-10	Abandon/Remove Water Main and Appurtenances	LS	1	\$ 5,000.00	\$ 5,000.00
STREET AND DRAINAGE					
SD-01	Provide Asphaltic Concrete Pavement Type 4 LT 58-28 S, 1 3/4" Upper Layer	TON	20	\$ 200.00	\$ 4,000.00
SD-02	Provide Asphaltic Concrete Pavement Type 3 LT 58-28 S, 2 1/4" Lower Layer	TON	20	\$ 200.00	\$ 4,000.00
SD-03	Remove and Replace 30" Concrete Curb and Gutter	LF	80	\$ 66.00	\$ 5,280.00
SD-04	Remove and Replace 24" Concrete Curb and Gutter (Integral)	LF	50	\$ 43.00	\$ 2,150.00
SD-05	Remove and Replace 9-Inch Concrete Pavement with Integral Curb (HES 3-Day)	SY	100	\$ 112.00	\$ 11,200.00
SD-06	Remove and Replace 6" Concrete Ramp	SY	10	\$ 80.00	\$ 800.00
SD-07	Remove and Replace 4" Concrete Sidewalk	SY	20	\$ 72.00	\$ 1,440.00
SD-08	Provide #4 Reinforcement Bars for Curb and Sidewalk	LF	200	\$ 1.25	\$ 250.00
SD-09	Drilled Tie Bars (Existing Sidewalk, Driveways, Pavement, Curb and Gutter)	EA	30	\$ 10.00	\$ 300.00
SD-10	Drilled Dowel Bars	EA	90	\$ 13.00	\$ 1,170.00
SD-11	Provide Detectable Warning Field (Natural)	EA	1	\$ 350.00	\$ 350.00
SD-12	Pavement Marking Epoxy 8-Inch White	LF	20	\$ 69.00	\$ 1,380.00
SD-13	Pavement Marking Epoxy 6-Inch White	LF	10	\$ 100.00	\$ 1,000.00
SD-14	Pavement Marking Epoxy 4-Inch White	LF	10	\$ 40.00	\$ 400.00
SD-15	Pavement Marking Epoxy 4-Inch Yellow	LF	10	\$ 40.00	\$ 400.00
SD-16	Landscaping-Topsoil, Seed, Fertilizer and Mulch	SY	1,400	\$ 6.50	\$ 9,100.00
SPECIAL CONSTRUCTION					
SC-01	Inlet Protection Type D	EA	7	\$ 100.00	\$ 700.00
SC-02	Traffic Control Detour Route	LS	1	\$ 4,200.00	\$ 4,200.00
BID TOTALS				\$164,600.00	

Attachment: 2019 0627 CE_19-17 Bid Tab (8510 : Consider Award of Contract 19-17 Employers Boulevard Water Relay*)



City of De Pere, Wisconsin

Request For Board of Public Works Action

MEETING DATE: July 8, 2019

DEPARTMENT: Board of Public Works

FROM: Eric Rakers

SUBJECT: Consider Proposed Easements-Project 19-07*

ATTACHMENTS:

- 2019 0708 CI_BOPW-Proposed Easement - Project 19-07 (PDF)
- Easement Document ED-91 (PDF)
- Easement Document ED-92 (PDF)
- Easement Document ED-94 (PDF)
- Easement Document ED-95 (PDF)
- Easement Document ED-1450 (PDF)

CITY OF DE PERE MEMO



To: Honorable Mayor Walsh
Members of the Board of Public Works
From: Eric Rakers, P.E., City Engineer
Date: July 8, 2019

RE: **Consider Proposed Easements-Project 19-07***

As part of Project 19-07, Asphalt, Curb, and Sewer Repair, a sanitary sewer is being repaired off of Bomier Street, near the Bomier Boat Launch. A section of the sewer is located on private property without easements. Staff is proposing to obtain easements to complete the spot repair in 2019 and line the entire sewer in the near future. The impacted parcels are:

- Parcel ED-91 (821 Fox River Drive)
- Parcel ED-92 (Part of 821 Fox River Drive)
- Parcel ED-94 (833 Fox River Drive)
- Parcel ED-95 (412 Bomier Street)
- Parcel ED-1450 (903 Fox River Drive)

If approved by the Board and Council, staff will complete the easement documents and work with property owners for signatures.

Staff recommends approving the easements.

FOX RIVER DRIVE

PARCEL: ED-2820
803 FOX RIVER DRIVE
RALPH D & SHERRY A ANDREWS JR
UNIT 1

PARCEL: ED-2820
805 FOX RIVER DRIVE
CONSTANCE R TURRIFF
UNIT 2

PARCEL: ED-91
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY
LOT 3

PARCEL: ED-92
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

BOMIER STREET

PARCEL: ED-94
833 FOX RIVER DRIVE
MICHAEL A & ANNE MARIE TRULLEY

P.O.B.

EXISTING EASEMENT



0 20' 40'



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

EASEMENT EXHIBIT

PARCEL ID:
ED-91
ADDRESS:
815 FOX RIVER DRIVE

DATE: 05/13/19
BY: MAL
CHECKED: CKK

Easement Legal Description Parcel: ED-91

That part of Lot 3 of Bomiers Addition to De Pere, as found in the Brown County index as file 1-l-11, more particularly described as follows:

Commencing at the Northwest corner of Lot 3 of Bomiers Addition to De Pere; Thence South 63°13'27" East along the North line of said Lot, 122.00 Feet to the **Point of Beginning**; Thence continuing along said line South 63°13'27" East, 20.00 feet; Thence South 27°51'10" West, 58.01 feet to the South line of said Lot; Thence North 63°13'27" West along said line, 20.00 feet; Thence North 27°51'10" East, 58.01 feet to the **Point of Beginning**.

Containing 1160.20 square feet, 0.027 Acres more or less, for Utility and Storm Sewer purposes.

FOX RIVER DRIVER

PARCEL: ED-2820
803 FOX RIVER DRIVE
RALPH D & SHERRY A ANDREWS JR
UNIT 1

PARCEL: ED-2820
805 FOX RIVER DRIVE
CONSTANCE R TURRIFF
UNIT 2

PARCEL: ED-91
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

PARCEL: ED-92
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

LOT 4

P.O.B.

S63° 13' 27"E
20.00'

47.52'
N27° 51' 10"E

527° 51' 10"W
45.22'

C1

LOT 9

BOMIER STREET

Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	20.18	540.69	2.14	N69° 47' 15"W	20.18

PARCEL: ED-94
833 FOX RIVER DRIVE
MICHAEL A & ANNE MARIE TRULLEY

PARCEL: ED-95
412 BOMIER STREET
DONALD C & LORI E JOLLY

PARCEL: ED-1450
903 FOX RIVER DRIVE
TRESSLER MICHAEL A & HEATHER H JOINT REVOC TRUST



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

OFFICE 920-339-4061
FAX 920-339-4071

EASEMENT EXHIBIT

PARCEL ID:
ED-92
ADDRESS:
815 FOX RIVER DRIVE

DATE: 05/13/19
BY: MAL
CHECKED: CKK

Easement Legal Description Parcel: ED-92

That part of Lot 4 and 9 of Bomiers Addition to De Pere, as found in the Brown County index as file 1-I-11, more particularly described as follows:

Commencing at the Northwest corner of Lot 4 of Bomiers Addition to De Pere; Thence South $63^{\circ}13'27''$ East, 122.00 Feet to the **Point of Beginning**; Thence South $63^{\circ}13'27''$ East continuing along said line, 20.00 feet; Thence South $27^{\circ}51'10''$ West, 45.22 feet to the North line of Bomier Street, said line being an arc; Thence Northwesterly along said arc, 20.18 feet, whose radius lies 540.69 feet to the right, whose Chord bears North $69^{\circ}47'15''$ West, a distance of 20.18 feet; Thence North $27^{\circ}51'10''$ East, 47.52 feet to the **Point of Beginning**.

Containing 928.69, square feet, 0.021 Acres more or less, for Utility and Storm Sewer purposes.

FOX RIVER DRIVER

PARCEL: ED-2820
805 FOX RIVER DRIVE
CONSTANCE R TURRIFF
UNIT 2

PARCEL: ED-91
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

PARCEL: ED-92
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

BOMIER STREET

PARCEL: ED-94
833 FOX RIVER DRIVE
MICHAEL A & ANNE MARIE TRULLEY

LOT 6

PARCEL: ED-95
412 BOMIER STREET
DONALD C & LORI E JOLLY
LOT 1
CSM 8984

PARCEL: ED-1450
903 FOX RIVER DRIVE
TRESSLER MICHAEL A & HEATHER H JOINT REVOC TRUST

S63° 01' 43"E
17.00'

P.O.B.

N27° 48' 37"E
57.83'

S27° 48' 37"W
57.78'

N63° 13' 27"W
17.00'

0 20' 40'



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

EASEMENT EXHIBIT

PARCEL ID:
ED-94
ADDRESS:
833 FOX RIVER DRIVE

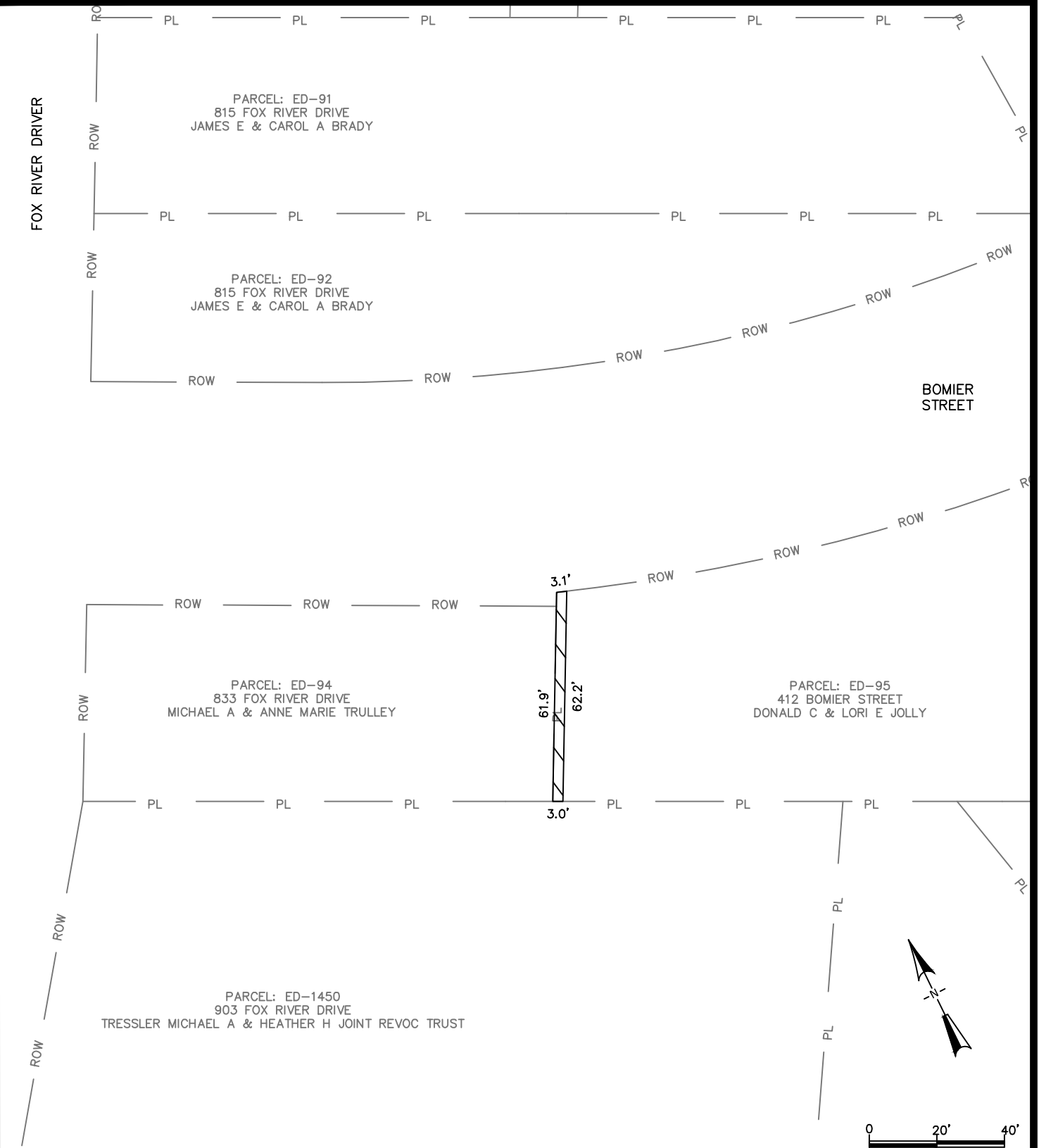
DATE: 05/13/19
BY: MAL
CHECKED: CKK

Easement Legal Description Parcel: ED-94

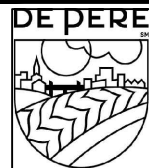
That part of Lot 6 of Bomiers Addition to De Pere, as found in the Brown County index as file 1-l-11, more particularly described as follows:

Commencing at the Northeast corner of Lot 6 of Bomiers Addition to De Pere point also being the **Point of Beginning**; Thence South 27°48'37" West along the East line of said Lot, 57.78 Feet to the South line of said Lot; Thence North 63°13'27" West continuing along said line, 17.00 feet; Thence North 27°48'37" East, 57.83 feet to the North line of said Lot, also the South Line of Bomier Street; Thence South 63°01'43" East Lot along said line, 17.00 feet to the Point of Beginning.

Containing 982.68, square feet, 0.023 Acres more or less, for Utility and Storm Sewer purposes.



Attachment: Easement Document ED-95 (8519 : Consider Proposed Easements-Project 19-07*)



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

EASEMENT EXHIBIT

PARCEL ID:
ED-95
ADDRESS:
412 BOMIER STREET

DATE: 05/13/19
BY: MAL
CHECKED: C

Easement Legal Description Parcel: ED-95

That part of Lot 1 of CSM 8984, as found in Volume 63, on Page 734 of the Brown County Register of Deeds as Document number 2841286, more particularly described as follows:

Commencing at the Northwest corner of said Lot, point also being the **Point of Beginning**; Thence Southeasterly 3.03 feet along the North line of said Lot, said line being an arc, whose radius lies to the left a distance of 598.00 feet, whose Chord bears South 69°34' 48" East, a distance of 3.03 feet; Thence South 27°48'37" West 62.23 feet to the South line of said Lot; Thence North 63°13'27" West along said line, 3.00 feet to the West Line of said Lot; Thence North 27°48'37" East, 61.90 feet to the **Point of Beginning**.

Containing 186.20, square feet, 0.004 Acres more or less, for Utility and Storm Sewer purposes.

FOX RIVER DRIVER

PARCEL: ED-91
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

PARCEL: ED-92
815 FOX RIVER DRIVE
JAMES E & CAROL A BRADY

BOMIER STREET

PARCEL: ED-94
833 FOX RIVER DRIVE
MICHAEL A & ANNE MARIE TRULLEY

PARCEL: ED-95
412 BOMIER STREET
DONALD C & LORI E JOLLY

LOT 6

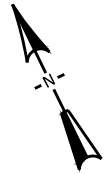
LOT 1
CSM 8984

P.O.B.

S63° 13' 27"E
20.00'N27° 51' 10"E
20.00'S27° 51' 10"W
20.00'N63° 13' 27"W
20.00'

PARCEL: ED-1450
903 FOX RIVER DRIVE
TRESSLER MICHAEL A & HEATHER H JOINT REVOC TRUST

LOT A



0 20' 40'



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

EASEMENT EXHIBIT

PARCEL ID:
ED-1450
ADDRESS:
903 FOX RIVER DRIVE

DATE: 05/13/19
BY: MAL
CHECKED: CKK

Easement Legal Description Parcel: ED-1450

That part of Lot A of Whitney's Subdivision of Private Claim 36E, as found in the Register of Deeds of Brown County, as Document J15524-22, more particularly described as follows:

Commencing at the Southwest corner of Lot 1 of CSM 8984, as found in Volume 63, on Page 734 of the Brown County Register of Deeds as Document number 2841286; Thence South $63^{\circ}13'27''$ East, 3.00 feet to the **Point of Beginning**; Thence South $27^{\circ}51'10''$ West 20.00 feet; Thence North $63^{\circ}13'27''$ West, 20.00 feet; Thence North $27^{\circ}51'10''$ East, 20.00 feet to the South line of Lot 6 of Bomier Addition to Depere; Thence South $63^{\circ}13'27''$ East along said line, 20.00 feet to the **Point of Beginning**.

Containing 400.00, square feet, 0.009 Acres more or less, for Utility and Storm Sewer purposes.



City of De Pere, Wisconsin

Request For Board of Public Works Action

MEETING DATE: July 8, 2019

DEPARTMENT: Board of Public Works

FROM: Eric Rakers

SUBJECT: Update and Discussion on 2018 Stormwater Management Plan-TMDL Written Plan*

ATTACHMENTS:

- 2019-07-08 CI_BOPW_Storm_Water_Report (PDF)
- Basin Map (PDF)
- Potential Basins TBT Treated Area-1 (PDF)
- CE-TMDL Long Term Plan_v1 (PDF)

CITY OF DE PERE MEMO



To: Honorable Mayor Walsh
Members of the Board of Public Works
From: Eric Rakers, P.E., City Engineer
Date: June 10, 2019

RE: **Discuss 2018 Stormwater Management Plan – TMDL Written Plan***

The purpose of this item is to give the Board and Council an update on the status of the City's storm water management program as it relates to the Wisconsin Pollutant Discharge Elimination System (WPDES) permit issued by the WDNR. The permit requires reductions in phosphorous (ph) and total suspended solids (TSS) to meet total maximum daily loads (TMDL) for receiving bodies of water. City staff prepared the 2018 Stormwater Management Plan last year to meet the requirements of this permit. An overview of the report is as follows:

1. Overall Background:

The City has been issued a Wisconsin Pollutant Discharge Elimination System Number WE-S050075-02 to discharge stormwater from the Wisconsin Department of Natural Resources (WDNR). Part of the permit requirements includes the following Permit Conditions:

Permit Section 1.5.4.5: The permittee shall submit a TMDL Written Plan to the Department by March 31, 2018.

1.5.4.5.1 Recommendations and options for storm water control measures that will be considered to reduce the discharge of each pollutant of concern.

1.5.4.5.2 A proposed schedule for implementation of the recommendations and options identified under Section 1.5.4.5.1

1.5.4.5.3 A cost effectiveness analysis for implementation of the recommendations and options identified under section 1.5.4.5.1.

In accordance with these requirements, the City prepared the 2018 Long Term Stormwater Management Plan. This plan was created through a review of the following City plans:

- City of De Pere Comprehensive Stormwater Management Plan, January 1999, by Earthtech
- City of De Pere Nonpoint Pollution WinSLAMM Analysis, March 2008, by Earthtech
- 2015 Stormwater Management Planning, City of De Pere, October 21, 2016, by R.A. Smith National

These plans included recommendations for future facilities which were reviewed for this 2018 plan.

2. Storm Water Basin Review

2.1 City Drainage Basin Overview

The City of De Pere is located within three different federally defined hydraulic unit codes 12 (HUC-12) drainage basins. These basins are defined as the Ashwaubenon Creek, Lower Fox River Mainstream, and East River per the report titled *Total Maximum Daily Load and Watershed Management Plan for Total Phosphorous and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay, March 12, 2012*, by the Cadmus Group, Inc. (TMDL Report)

The City's WinSLAMM model has been divided into four different basins based on the HUC-12 discharge location. The basins are as follows:

- AC – Ashwaubenon Creek
- ER – East River
- FE – Fox River East (East side of City)
- FW – Fox River West (West side of City)

For permitting purposes, FE and FW are both part of the Lower Fox River Mainstream basin.

Each basin is divided into sub-basins based on discharge to receiving waters. As new treatment facilities are added, additional sub-basins are created.

The City has different total suspended solids (TSS) and total phosphorous (TP) reduction requirements for each basin per the TMDL Report. The allocations are based on the Total Maximum Daily Load and Watershed Management Plan for Total Phosphorous and Total Suspended Solids.

2.2 Current City Model

The City updated the stormwater management plan which was completed in 2016. The plan titled 2015 Stormwater Management Planning re-analyzed the basins to include recent improvements in the stormwater management system. A summary of the regulatory requirements and current reduction percentages in the City for TSS and TP by basin is provided below, which is the same as Table 2 from the City's 2015 report.

TABLE 2 – MODELING RESULTS FOR EXISTING CONDITIONS

	Ashwaubenon Creek (AC)	East River (ER)	Lower Fox River Mainstem (FE&FW)	Total
Area (acres)	1,592	1,253	3,009	5,854
Total Phosphorus No controls (pounds/year)	987	728	1,838	3,553
TP With Controls (pounds/year)	379	198	1,283	1,860
Percent TP Reduction	61.6%	72.8%	30.2%	47.7%
TMDL Required Percent Phosphorus Reduction	40.5%	40.5%	40.5%	NA
Additional TP Removal Required (pounds/year)	(209)	(235)	189	NA
Total Suspended Solids No Controls (pounds/year)	514,581	321,619	866,773	1,702,973
TSS With Controls (pounds/year)	181,261	85,223	541,590	808,074
Percent TSS Reduction	64.8%	73.5%	37.5	52.5%

TMDL Required Percent TSS Reduction	52%	52%	72.2%	NA
Additional TSS Removal Required (pounds/year)	(65,738)	(69,154)	300,280	NA

Based on the 2015 Report, the City is meeting regulatory requirements for TSS and TP reduction in basins AC and ER. The City efforts on modifying stormwater management practices for existing development will focus on basins FE and FW.

3. TMDL Long Term Options Considered by City

Staff evaluated multiple options to meet the permit requirements. The two primary options to be utilized along with the summary of each are described below.

- **Allocating TSS and phosphorous reductions from the AC and ER basins to the FE and FW basins.** The City is treating TSS and phosphorous above the current TMDL requirements for these two basins. Under current rules, the additional treatment can be allocated to basins FE and FW.
- **Construct new storm water treatment facilities in untreated areas of basins FE and FW.** One of the primary tools the City will use to meet the TSS reduction requirements will be constructing retrofit facilities within existing developed areas. The emphasis for this approach will be existing developed areas of basins FE and FW. In addition to developed areas, there are agricultural areas within the FE and FW basins that will be converted to urban development in the future. The developed areas will be treated to a minimum of 80% TSS and 30% phosphorous reductions.

Based on the study the City will be able to meet the long term requirements of the WPDES permit. The summary for phosphorous and TSS loads is shown below.

Phosphorous Summary

	TP Summary (pounds/year)
Additional TP Removal Required (pounds/year)	189
Subtract Ashwaubenon Creek Basin TP (pounds/year)	(209)
Subtract East River Basin TP (pounds/year)	(235)
Subtract Street Sweeping TP Reductions (pounds/year)	(17)
Remaining TP Removal Required (pounds/year)	(272)

Total Suspended Solids (TSS)

	TP Summary (pounds/year)
Additional TSS Removal Required (pounds/year)	300,280
Subtract Ashwaubenon Creek Basin TP (pounds/year)	65,738
Subtract East River Basin TP (pounds/year)	69,154
Additional Facility Treatment (pounds/year)	282,007
Remaining TP Removal Required (pounds/year)	(116,619)

A short summary of the proposed facilities is as follows:

- Fox River East Basin (FE)
 - FE010 – Construct a new pond off of Broadway at the north City limits when development occurs.
 - FE030 – Construct a new pond on Parcel ED-1128-2-1 between Broadway and Lawton Place. The property is owned by St. Norbert Abbey. There is existing storm sewer that runs through a low ravine. This will require negotiations and property acquisition.
 - FE050 – Reroute the storm sewer in basin FE050A on Oakdale Avenue from Ridgeway Boulevard to the proposed pond in basin FE030A. The storm sewer on Oakdale Avenue will be 15 feet deep.
 - FE070 – This project consists of two different components that will occur at different time frames.
 - Construct a pond on City owned Parcel ED-372 off of Franklin Street. The construction of the pond will need to be coordinated with the Green Bay Metropolitan Sewerage District which has a large interceptor sewer running under the east side of the property. The project will also require approval to construct a new storm sewer main under the Fox River Trail.
 - The second upgrade will be to modify the storm sewer at the corner of Wisconsin and Williams Street. The storm sewer modification will change 3.11 acres of untreated area from basin FE110 and move to basin FE070. The storm sewer relay will be included with street construction on Wisconsin Street, which is not anticipated to occur for 15 to 20 years.
 - FE110 – Construct a pond in Legion Park off of Charles Street. The pond is proposed to service the storm sewer off of Ontario and eventually the storm sewer off of Charles Street. The challenge with this project is the construction within Legion Park. This would be a two stage project with the pond likely to be reconstructed to coincide with the reconstruction/resurfacing of Ontario Street. The storm sewer off of Charles Street would be constructed in the future in conjunction with several proposed projects in the park.
 - FE190 – There are two upgrades to this basin.
 - A new pond was constructed in 2017 at the northeast corner of Broadway and Cook Street in Optimist Park. This pond treats 51.78 acres of existing developed area. With the new pond, 10.87 acres is being routed from basin FE160 to the pond in FE190.
 - Construct a new pond at an area bounded by Cook/Honey/Pershing/Broadway Street. The City will need to work with the Wisconsin Department of Transportation for approval of the pond.
 - FE280 – New pond construction near Rockland Road when development occurs.

- FE310 - This is a new basin located on the southern limits of the City, adjacent to STH32/57. A new pond will be constructed in this basin once development occurs. The pond will treat an area that is currently exempt from the City model due to direct discharge to the Fox River. The majority of the area is in agricultural use with some residential development.
- Fox River West Basin (FW)
 - FW060 – Construct a pond off of Birch Street extended, east of Sixth Street. The proposed pond will service the entire basin. The pond will also service an additional 4.92 acres of area that was exempt from the City model because of direct drainage to the Fox River. The pond is located on private property and will require City acquisition.
 - FW070 – Construct a pond on Parcel WD-365 (North of Main Avenue). This pond is located on private property. Soil borings will be required to verify a pond can be constructed at this location.
 - FW200 – There are several modifications to this basin as listed below.
 - FW200C and D – Convert the two ponds off of Matthew Drive from dry ponds to wet ponds. This is City owned property.
 - FW200E – Currently the stormwater from basins FW200C, D, and E drain through an existing pond located at the southwest corner of Scheuring Road and the Canadian National Railroad tracks. After the wet ponds are constructed for FW200C and D, this water can be bypassed around the existing pond at Scheuring Road. Bypassing the flow from these areas improves the treatment of the sub-basin FW200E.
 - FW280C – This area will be treated to 80% TSS reduction in the future when development occurs.
 - FW290 – A new sub-basin was added (FW290C). This is an undeveloped area that will be treated to 80% TSS when developed.
 - FW300 – Construct a pond in this basin, just west of the Canadian National Railroad when development occurs.
 - FW310 – This is a new basin located on the southern limits of the City, adjacent to Lost Dauphin Road. A new pond will be constructed in this basin once development occurs. The pond will treat area that is currently exempt from the City model due to direct discharge to the Fox River. The area is in agricultural use. The pond will also treat 19.73 acres that is draining to Basin FW290. This area is currently receiving minimal treatment.

The City is not focusing on retrofitting facilities in the Ashwaubenon Creek and East River basins. Both basins are meeting the TMDL requirements for TSS and phosphorous reductions. The City will continue to construct ponds in these basins as agricultural property is converted to urban development. This will create additional credits for TSS and phosphorous reduction.

Additionally, the City will look for opportunities to treat existing developed areas with new and redevelopment sites. For instance, new development occurred on the north side of Main Avenue at Lawrence Drive extended this year. Stormwater from existing development adjacent to the project was routed to the new pond.

E. Implementation Cost and Schedule

1) Project Costs and Funding

Estimates have been created for the proposed stormwater management facilities. The costs have been based on the pond surface area, anticipated excavation, and past pond construction. In addition to the construction costs, there will be land purchase costs for several ponds located on private property. The anticipated construction costs are shown in the table below.

Wet Detention Pond	Drainage Area (Acres)	Pollutant Reduction TSS (%)	Capital Costs	Land Purchase	Construction Cost Per Pound TSS Removed (\$/LB)
FE010A	45.15	80%	\$129,000	\$40,000	\$17.04
FE030	123.56	60%	\$120,000	\$80,000	\$11.63
FE050	284.34	60%	\$445,000		\$21.57
FE070	39.89	80%	\$198,000		\$25.02
FE110A&B	76.70	60%	\$155,000		\$19.30
FE280A	65.41	80%	\$341,000	\$159,000	\$33.34
FE310	140.21	80%	\$468,000		\$7.09
FW060	12.70	60%	\$452,000	\$166,000	\$14.50
FW070	333.92				
FW200C&D	120.02	80%	\$224,000		\$7.63
FW200E	93.19	80%	\$56,000		\$2.46
FW280	11.95	80%	\$38,000		\$8.42
FW290	29.53	80%	\$89,000		\$17.85
FW300	28.35	80%	\$244,000	\$80,000	\$67.59
FW310	92.90	80%	\$299,000		\$8.07

The City will be using several sources of funding for pond construction including the stormwater utility, tax incremental finance district funds, developer fees, and grants. The City has used all of these sources to construct ponds over the last several years.

- **Storm Water Utility**

Many of the facilities will be funded by the stormwater utility. The funds available for pond construction will be impacted by the other activities, in particular construction projects, occurring in the year. The stormwater utility funds a diverse range of projects/activities related to stormwater. This includes street sweeping and leaf collection activities, equipment, storm sewer construction/replacement, and pond

maintenance. The stormwater utility revenue is generated via a residential user equivalent (RUE) charged against parcels in the City. The amount of activities/projects funded from the stormwater utility in a given year generally equals the revenue generated from the RUE. In some years when other significant construction projects occur, the revenue from the stormwater utility may be allocated for storm sewer installation. For instance, in 2019, the City will be resurfacing streets in a section of the City that has poor drainage. Due to this, a significant portion of the stormwater utility funds are being used to construct new storm sewer.

- **Tax Incremental Finance District (TID).**

Another source of funding that the City has used successfully in construction ponds is the TID. In the past several years, ponds have been built in several basins from TID financing. Several of the proposed ponds are located in existing or proposed industrial parks and/or commercial areas which are proposed to be funded by the TID.

- **Developer Funded**

Some of the proposed facilities will be constructed for new development. These facilities will not be constructed until development occurs. The City promotes the construction of regional facilities for new development wherever practicable. If development within the basin is staggered, the pond will be built for the first development that occurs. As other areas within the basin develop, a cost will be charged based on the amount/type of stormwater discharge.

- **Urban Non-Point Source and Stormwater (UNPS&SW) Construction Grants.**

A final source of funding for the proposed facilities is Urban Non-Point Source and Stormwater (UNPS & SW) Construction Grants which can fund up to \$150,000 of an approved stormwater management facility. This grant is a 50/50 match with other funds. Based on the WDNR website, construction grant eligible projects include:

- *Construction of structural urban best management practices (BMPs) including detention, wet, infiltration, or wetland basins, or infiltration trenches.*
- *Engineering design and construction services for BMPs installation.*
- *Land acquisition and easement purchase, including appraisal cost.*
- *Storm sewer rerouting and removal of structures.*
- *Streambank and shoreline stabilization.*

The City used this grant to construct the Optimist Park pond in Basin FE190 in 2017. The City will be submitting for construction grants for the urban retrofit ponds proposed to treat existing development that conforms to the above requirements.

2) Anticipated Schedule

A preliminary implementation schedule for the construction of facilities has been created. The projects have a five year schedule to accommodate design, property acquisition, potential grant funding, and contiguous construction projects.

Wet Detention Pond	Anticipated Construction Year	Capital Costs & Land Acquisition	Funding Source	UNPS & SW Grant Eligible
FW310	2019-2023	\$468,000	Paid for by the developer.	N
FE030	2020-2024	\$200,000	Storm Water Utility.	Y
FE050	2020-2024	\$445,000	Storm Water Utility.	Y
FE070	2025-2029	\$198,000	Storm Water Utility.	Y
FW200E	2025-2029	\$56,000	Storm Water Utility.	Y
FW200C&D	2025-2029	\$224,000	TID/Storm Water Utility.	Y
FE110A&B	2030-2034	\$155,000	Storm Water Utility.	Y
FW060 FW070	2035-2039 2035-2039	\$618,000	Storm Water Utility.	Y
FE010A	TBD	\$169,000	Storm Water Utility.	N
FE280A	TBD	\$500,000	TID/Storm Water Utility.	N
FE310	TBD	\$299,000	TID/Storm Water Utility.	N
FW280	TBD	\$38,000	Paid for by the developer.	N
FW290	TBD	\$89,000	Paid for by the developer.	N
FW300	TBD	\$324,000	TID/Storm Water Utility.	N

Notes:

1. TBD – Pond construction will occur when sites are developed.

Projects located on private property and in parks will require longer to construct. Acquisition of private property will likely take several years to obtain. The City will need to negotiate approval to conduct research and/or soil boring for the viability of the facilities. After studies are completed, the City will need to negotiate the actual purchase of the site. Some ponds are proposed in parks. The City of De Pere Park Board has been cooperating with the construction of ponds in park facilities in the past. However, each park has different demands and utilizing property for ponds may not be approved by the Board.

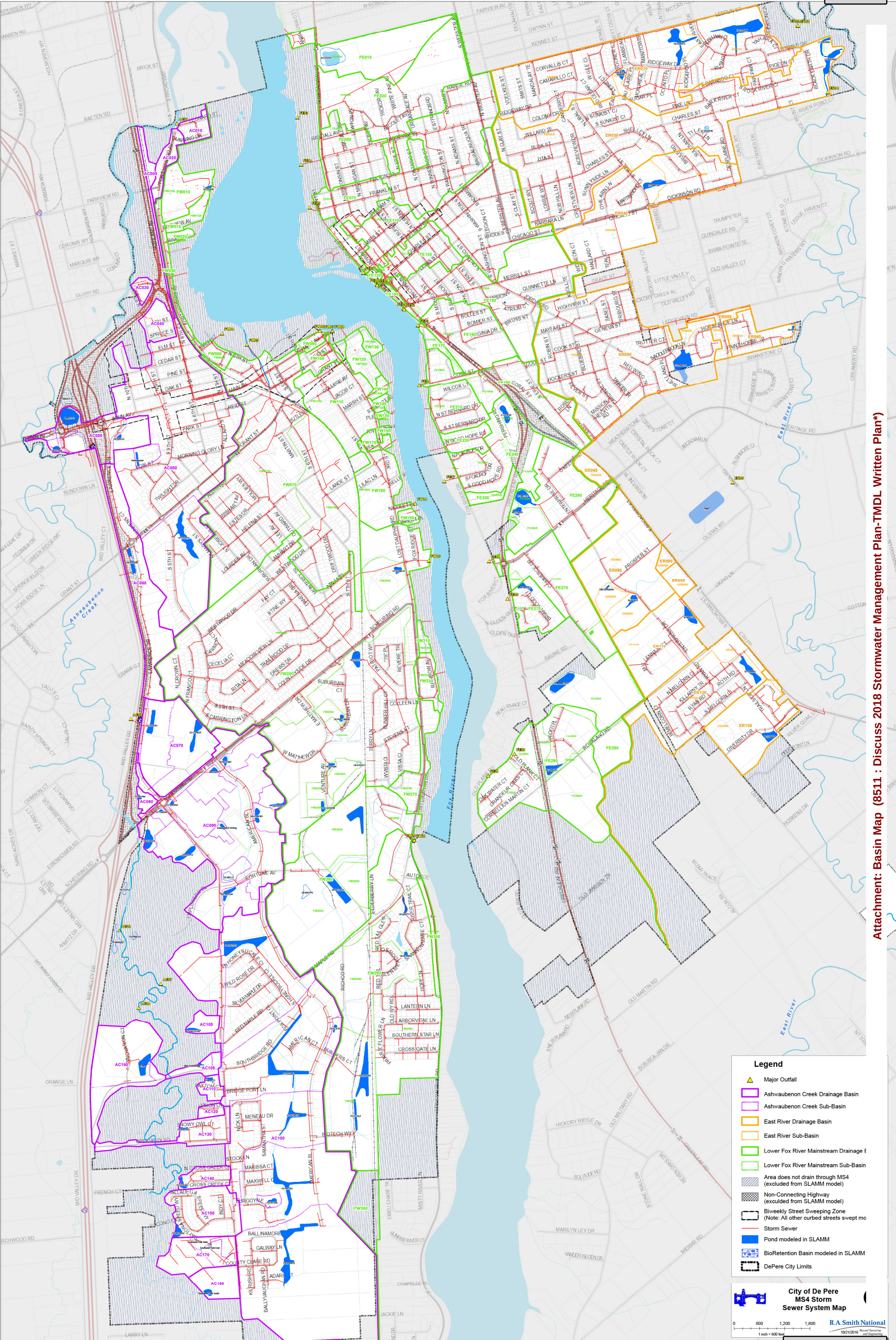
Several of the proposed facilities will require storm sewer rerouting or occur near other construction projects. City practice is to tie construction projects together to minimize additional costs, such as pavement patches and restoration. If storm sewer rerouting is required, the project schedule for proposed pond will be adjusted to occur with the street resurfacing/reconstruction projects. Ponds near industrial parks may be scheduled with nearby grading projects.

Proposed facilities associated with new development will occur when development occurs.

Summary

Based on the findings of report, the City has a long term plan to meet the TMDL requirements for phosphorous and TSS reductions. Several factors may impact this plan such as:

- Changes from the WDNR on the ability to transfer credits between basins.
- Future modifications to permit requirements, including:
 - Increased reductions for phosphorus and TSS.
 - New pollutant controls.
- Ability to acquire private property for pond construction.
- Funding availability.



Legend

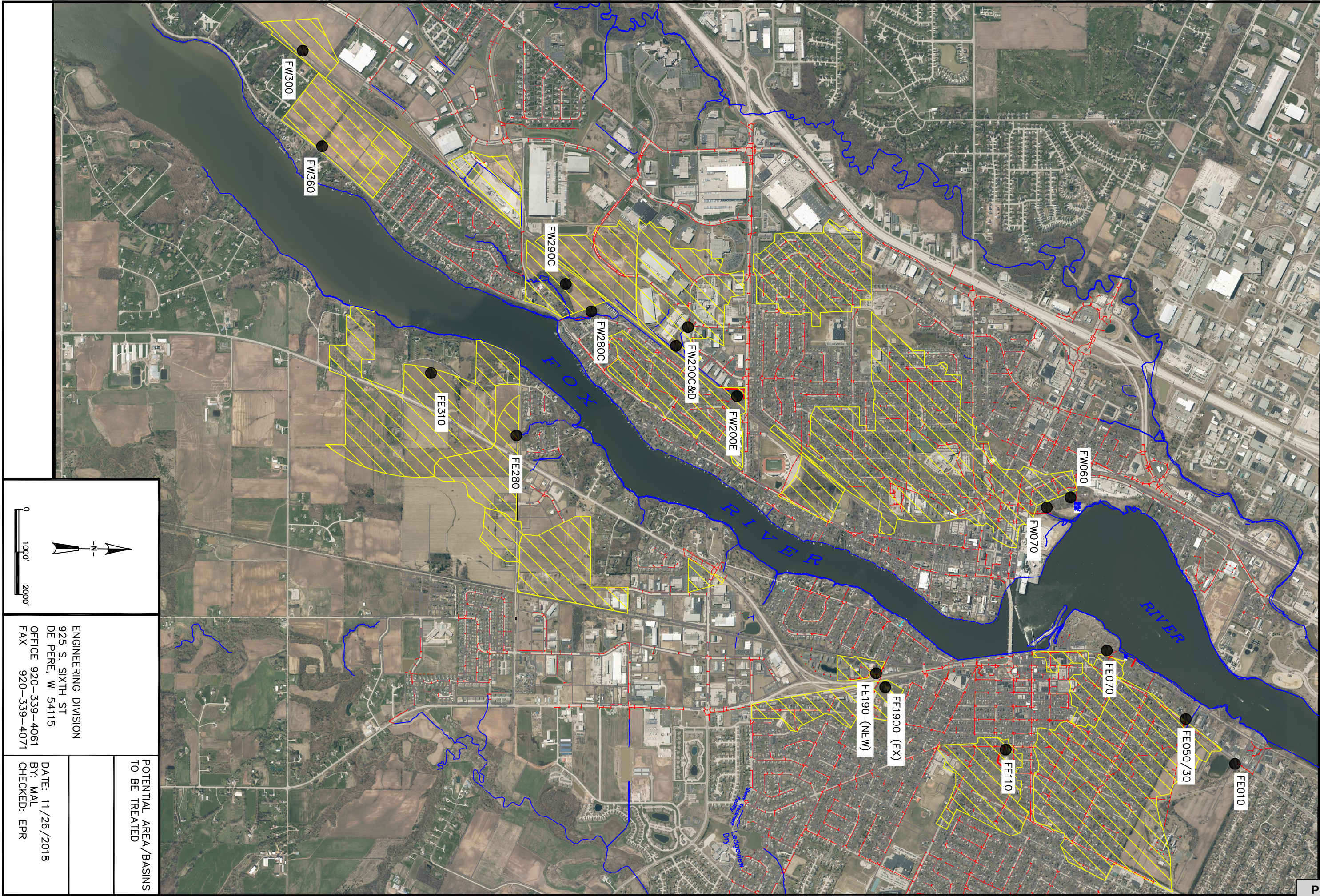
- Major Outfall
- Ashwaubenon Creek Drainage Basin
- Ashwaubenon Creek Sub-Basin
- East River Drainage Basin
- East River Sub-Basin
- Lower Fox River Mainstream Drainage Basin
- Lower Fox River Mainstream Sub-Basin
- Area does not drain through MS4 (excluded from SLAMM model)
- Non-Connecting Highway (excluded from SLAMM model)
- Biweekly Street Sweeping Zone (Note: All other curbed streets swept monthly)
- Storm Sewer
- Pond modeled in SLAMM
- BioRetention Basin modeled in SLAMM
- DePere City Limits

City of De Pere MS4 Storm Sewer System Map

RA Smith National

10/21/2016

0 600 1,200 1,800
1 inch = 600 feet



2018 STORMWATER MANAGEMENT PLAN

CITY OF DE PERE TMDL WRITTEN PLAN



November 26, 2018

2018 STORMWATER MANAGEMENT PLAN

CITY OF DE PERE TMDL WRITTEN PLAN

TABLE OF CONTENTS

- A. INTRODUCTION
- B. STORM WATER BASIN REVIEW
- C. TMDL LONG TERM OPTIONS CONSIDERED BY CITY
- D. PLAN OF ACTION DISCUSSION
- E. IMPLEMENTATION COST AND SCHEDULE
- F. REFERENCES

APPENDIX

- A. MODIFICATIONS AND PROPOSED STORMWATER FACILITIES
- B. NON-FEASIBLE REGIONAL TREATMENT FACILITIES
- C. INTERIM MUNICIPAL PHOSPHOROUS REDUCTION CREDIT FOR LEAF MANAGEMENT PROGRAMS, MARCH 8, 2018, BY THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES
- D. LEAF COLLECTION CREDIT MAP AND CALCULATIONS



November 26, 2018

A. Introduction

The City has been issued a Wisconsin Pollutant Discharge Elimination System Number WE-S050075-02 to discharge storm water from the Wisconsin Department of Natural Resources (WDNR). Part of the permit requirements includes the following Permit Conditions:

Permit Section 1.5.4.5: The permittee shall submit a TMDL Written Plan to the Department by March 31, 2018.

1.5.4.5.1 Recommendations and options for storm water control measures that will be considered to reduce the discharge of each pollutant of concern.

1.5.4.5.2 A proposed schedule for implementation of the recommendations and options identified under Section 1.5.4.5.1

1.5.4.5.3 A cost effectiveness analysis for implementation of the recommendations and options identified under section 1.5.4.5.1.

In accordance with these requirements, the City has prepared the 2018 Long Term Storm Water Management Plan. This plan was created through a review of the following City plans:

- City of De Pere Comprehensive Stormwater Management Plan, January 1999, by Earthtech
- City of De Pere Nonpoint Pollution WinSLAMM Analysis, March 2008, by Earthtech
- 2015 Stormwater Management Planning, City of De Pere, October 21, 2016, by R.A. Smith National

These plans included recommendations for future facilities which were reviewed for this 2018 plan. Many of the recommended facilities from the earlier reports have been constructed. Recommendations not constructed were re-evaluated and many included in this report.

In addition to the reports, the City had internal meetings to gather recommendations from staff on potential storm water facilities that could be constructed in the City. Staff provided valuable information from their in-depth knowledge of the City's storm water system as well as historical information of the area.

B. Storm Water Basin Review

1) City Drainage Basin Overview

The City of De Pere is located within three different federally defined hydraulic unit codes 12 (HUC-12) drainage basins. These basins are defined as the Ashwaubenon Creek, Lower Fox River Mainstream, and East River per the report titled *Total Maximum Daily Load and Watershed Management Plan for Total Phosphorous and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay, March 12, 2012*, by the Cadmus Group, Inc. (TMDL Report)

The City's WinSLAMM model has been divided into four different basins based on the HUC-12 discharge location. The basins are as follows:

- AC – Ashwaubenon Creek
- ER – East River

- FE – Fox River East (East side of City)
- FW – Fox River West (West side of City)

For permitting purposes, FE and FW are both part of the Lower Fox River Mainstream basin.

Each basin is divided into sub-basins based on discharge to receiving waters. As new treatment facilities are added, additional sub-basins are created.

The City has different total suspended solids (TSS) and total phosphorous (TP) reduction requirements for each basin per the TMDL Report. The allocations are based on the Total Maximum Daily Load and Watershed Management Plan for Total Phosphorous and Total Suspended Solids.

2) Current City Model

The City updated the storm water management plan which was completed in 2016. The plan titled 2015 Stormwater Management Planning re-analyzed the basins to include recent improvements in the storm water management system. A summary of the regulatory requirements and current reduction percentages in the City for TSS and TP by basin is provided below, which is the same as Table 2 from the City's 2015 report.

TABLE 2 – MODELING RESULTS FOR EXISTING CONDITIONS

	Ashwaubenon Creek	East River	Lower Fox River Mainstem	Total
Area (acres)	1,592	1,253	3,009	5,854
Total Phosphorus No controls (pounds/year)	987	728	1,838	3,553
TP With Controls (pounds/year)	379	198	1,283	1,860
Percent TP Reduction	61.6%	72.8%	30.2%	47.7%
TMDL Required Percent Phosphorus Reduction	40.5%	40.5%	40.5%	NA
Additional TP Removal Required (pounds/year)	(209)	(235)	189	NA
Total Suspended Solids No Controls (pounds/year)	514,581	321,619	866,773	1,702,973
TSS With Controls (pounds/year)	181,261	85,223	541,590	808,074
Percent TSS Reduction	64.8%	73.5%	37.5	52.5%
TMDL Required Percent TSS Reduction	52%	52%	72.2%	NA
Additional TSS Removal Required (pounds/year)	(65,738)	(69,154)	300,280	NA

Based on the 2015 Report, the City is meeting regulatory requirements for TSS and TP reduction in basins AC and ER. The City efforts on modifying storm water management practices for existing development will focus on basins FE and FW.

3) Upgrades/Modifications to the Existing to Model

The City's current model was completed in 2016 as part of the 2015 Report. There have been a few upgrades as well as modifications to the model. Some of the modifications are based on mapping errors in the model. A discuss of the changes is included in Appendix A, Modifications and Proposed Storm Water Facilities. A brief summary of the larger changes is as follows:

- Basin FE190 – Storm water management pond constructed in Optimist Park.
- Basin FE275 – Flow from new development in the basin directed to storm water pond in basin FE260.
- Basin FE290 – Storm water management pond was constructed north of the future Profit Place extension. This pond treats water that was exempt from the 2015 City model that is currently in agricultural use.
- Basin FW280 – Storm water management pond built off of Fortune Avenue.
- Basin AC051 – New pond constructed north of Main Avenue for Lawrence Drive extended.

C. TMDL Long Term Options Considered by City

There are several different practices that the City will utilize to meet the long term plan for the TMDL requirements. A summary of these practices and the order with which the practices will be applied are as follows:

1) Allocating TSS and phosphorous reductions from the AC and ER basins to the FE and FW basins. The City is treating TSS and phosphorous above the current TMDL requirements for these two basins. Under current rules, the additional treatment can be allocated to basins FE and FW.

2) Construct new storm water treatment facilities in untreated areas of basins FE and FW. One of the primary tools the City will use to meet the TSS reduction requirements will be constructing retrofit facilities within existing developed areas. The emphasis for this approach will be existing developed areas of basins FE and FW. In addition to developed areas, there are agricultural areas within the FE and FW basins that will be converted to urban development. The developed areas will be treated to a minimum of 80% TSS and 30% phosphorous reductions.

3) Construct new storm water treatment facilities in untreated areas of basins AC and ER. Similar to the discussion above, new storm water facilities will be constructed in basins AC and ER. Under the current rules, treatment attained in these basins can be allocated to the AC and ER basins. However, due to the uncertainty of the regulatory environment, the allocation treatment to basins can always change. In these basins, additional treatment from the conversion of agricultural lands to urban development, and the improved treatment will be allocated to basins FE and FW. At this time, retrofitting facilities for developed and untreated storm water is not proposed. There is risk for the City to install these facilities and then lose the ability to apply treatment to the other basins. If the City were guaranteed that waste reduction from retrofit storm water facilities would be grandfathered in for any regulatory changes in allocating between basins, the City would make retrofit facilities in basins AC and ER a priority.

4) Private site redevelopment. Redevelopment has occurred and will continue to occur throughout the City. Per the City's ordinance, redeveloped sites that do not discharge to a regional facility are required to reduce the total suspended solids load by 40%. Redevelopment of private sites will provide short term treatment for areas where future retrofit facilities can be constructed. The sites will provide long term treatment for basins that are not included in a regional facility. Although this will be a small portion of the City's long term plan, it will nonetheless help to show continued improvement.

As noted above, the City currently is exceeding the TMDL requirements for the AC and ER basins. The excess treatment will be allocated toward deficiencies in the FE and FW basins.

5) Advanced leaf collection. The City has been proactive in fall leaf collection. Six to eight passes are made through the City each fall. We have created a new collection system that is completed by a vacuuming truck that cleans the entire gutter as the truck travels from leaf pile to leaf pile.

6) Advance street sweeping. The City has a very active street sweeping program. Street sweeping is a community priority for aesthetic purposes. The street sweeping frequency was modified several years ago to also address storm water management requirements. Additional sweeping will be evaluated in areas where regional ponds are not constructed.

7) Construct catch basins. The City currently uses inlets for storm water collection. Catch basins will be considered in areas of the City that are not projected to drain to a regional facility. Catch basins will not be added in areas where street sweeping frequency is increased.

8) Adaptive management partnering. The Green Bay Metropolitan Sewerage District (GBMSD) is considering an adaptive management project in the Ashwaubenon Creek basin to address their phosphorous needs. There will be a reduction of TSS in conjunction with the phosphorous reduction. The TSS will be available to customers who have TMDL reductions requirements in the Lower Fox River. The City has had discussions with GBMSD regarding the potential adaptive management project and provided a letter of support to GBMSD for the project.

9) Nutrient trading outside of the City. Under the current regulatory environment, water quality trading is permitted between various entities. The WDNR has created a guide for trading that includes a detailed formula calculating trading credits based on many items such as source distance, risk factor of practice, etc. This along with the challenges for obtaining long term trading credits make this tool less effective at the current time. This will be considered in the future as the long term plan is implemented.

D. Plan of Action Discussion

Below is a summary of the overall City's approach to meet the TMDL requirements for phosphorous and TSS limits.

1) Allocating TSS and Phosphorous reductions from the AC and ER basins to the FE and FW basins.

Based on the results from the City's 2015 Report, the following additional treatment is obtained and will be allocated to the lower Fox River.

	Ashwaubenon Creek	East River
Additional TP Removed (pounds/year)	209	235
Additional TSS Removed (pounds/year)	65,738	69,154

With the phosphorous allocation, the City will be meeting the exceeding the TMDL requirements by 255 pounds/year.

	TP Summary (pounds/year)
Additional TP Removal Required (pounds/year)	189
Subtract Ashwaubenon Creek Basin TP (pounds/year)	(209)
Subtract East River Basin TP (pounds/year)	(235)
Remaining TP Removal Required (pounds/year)	(255)

Allocating the TSS reduction to the Fox River Basins will still leave the City 165,388 pounds per year.

	TP Summary (pounds/year)
Additional TSS Removal Required (pounds/year)	300,280
Subtract Ashwaubenon Creek Basin TP (pounds/year)	65,738
Subtract East River Basin TP (pounds/year)	69,154
Remaining TP Removal Required (pounds/year)	165,388

2) Construct new storm water treatment facilities in untreated areas of basins FE and FW.

One of the primary approaches to meet the TMDL requirements will be the construction of storm water management facilities within existing development. Due to clay soils in De Pere, the primary focus will be on the construction of ponds. As noted earlier, the City is not meeting the TMDL requirements for the Lower Fox River Mainstream basin (Basin FE and FW). The construction of retrofit facilities will be focused on these basins. Potential storm water management facilities in the FE and FW basins have been identified from the City's 2015 storm water report and a review of potential sites by City staff. Based on the addition of the facilities listed below, the City could obtain an additional 267,077 pounds per year of TSS reduction. With the additional treatment, the City will be exceeding the TMDL requirements by 101,689 pounds/year.

	TP Summary (pounds/year)
Additional TSS Removal Required (pounds/year)	300,280
Subtract Ashwaubenon Creek Basin TP (pounds/year)	65,738

Subtract East River Basin TP (pounds/year)	69,154
Additional Facility Treatment (pounds/year)	282,007
Remaining TP Removal Required (pounds/year)	(116,619)

A chart summarizing the facility locations and reductions is included in Appendix A. The City is anticipating meeting the TSS removal requirements once the facilities are constructed.

A short summary of each facility is as follows:

- Fox River East Basin (FE)
 - FE010 – Construct a new pond off of Broadway at the north City limits when development occurs. Pond will treat to 80% TSS reduction.
 - FE030 – Construct a new pond on Parcel ED-1128-2-1 between Broadway and Lawton Place. The property is owned by St. Norbert Abbey. There is existing storm sewer that runs through a low ravine. This will require negotiations and property acquisition.
 - FE050 – Reroute the storm sewer in basin FE050A on Oakdale Avenue from Ridgeway Boulevard to the proposed pond in basin FE030A. The storm sewer on Oakdale Avenue will be 15 feet deep. The proposed storm sewer work will occur when the street is reconstructed, which is scheduled in the next few years. The proposed expansion of the pond will need to be further evaluated and will be impacted by the ability to negotiate additional property for the pond, construct the storm sewer at depths that may impact the sanitary sewer, and overall project cost.
 - FE070 – This project consists of two different components that will occur at different time frames.
 - Construct a pond on City owned Parcel ED-372 off of Franklin Street. The construction of the pond will need to be coordinated with the Green Bay Metropolitan Sewerage District which has a large interceptor sewer running under the east side of the property. The project will also require approval to construct a new storm sewer main under the Fox River Trail. This pond will treat all of basin FE070 along with an area off of Front Street that does not currently flow through a City storm sewer.
 - The second upgrade will be to modify the storm sewer at the corner of Wisconsin and Williams Street. The storm sewer modification will change 3.11 acres of untreated area from basin FE110 and move to basin FE070. Flow from the manhole at this intersection is divided between basins FE070 and FE110 via the manhole with pipes flowing both north and south. The storm sewer to the north on Wisconsin will be relayed in the future so that the low flow water is directed to the north and to basin FE070. An overflow is anticipated at the manhole so that higher flow events will still discharge to basin FE110. The storm sewer relay will be included with street construction on Wisconsin Street, which is not anticipated to occur for 15 to 20 years.
 - FE110 – Construct a pond in Legion Park off of Charles Street. The pond is proposed to service the storm sewer off of Ontario and eventually the storm sewer off of Charles Street. The challenge with this project is the construction within Legion Park. The pond

is proposed to be sized to treat to 60% TSS reduction due to site restrictions. This is also a high usage park with several festivals that use the majority of the site. Park Board approval will be required for the project to proceed. This would be a two stage project with the pond likely be reconstructed to coincide with the reconstruction/resurfacing of Ontario Street. The storm sewer off of Charles Street would be constructed in the future in conjunction with several proposed projects in the park.

- FE190 – There are two upgrades to this basin.
 - A new pond was constructed in 2017 at the northeast corner of Broadway and Cook Street in Optimist Park. This pond treats 51.78 acres of existing developed area. With the new pond, 10.87 acres is being routed from basin FE160 and to the pond in FE190.
 - Construct a new pond at an area bounded by Cook/Honey/Pershing/Broadway Street. The City will need to work with the Wisconsin Department of Transportation for approval of the pond.
- FE260 – This is a drainage basin change for work completed since the report was issued. Area from drainage basin FE270 has been moved to FE260. Expansions were completed at 630 and 633 Heritage Road. The storm water from this development has been directed via storm sewer to existing ponds in Basin FE260.
- FE290 – A pond was constructed in 2016 north of the future Profit Place extension. This pond is treating several different areas that were modeled differently in the 2015 report including:
 - FE 290 is listed as a smaller area in the report and treating at a higher percent TSS reduction.
 - FE290A – This is a new area north of Rockland Road that was listed as exempt in the 2015 model. This is currently in agricultural use.
 - Transfer from FE270 to FE290. Development occurred in 2015 at the south end of Commerce Drive. The new development was designed and constructed to discharge to the new pond in FE290.
 - Transfer from FE280 to FE290. The 2015 study is being updated based on the design for the pond in FE290.
- FE310 - This is a new basin located on the southern limits of the City, adjacent to STH32/57. A new pond will be constructed in this basin once development occurs. The pond will treat area that is currently exempt from the City model due to direct discharge to the Fox River. The majority of the area is in agricultural use with some residential development.
- Fox River West Basin (FW)
 - FW060 – Construct a pond off of Birch Street extended, east of Sixth Street. The proposed pond will service the entire basin. The pond will also service an additional 4.92 acres of area that was exempt from the City model because of direct drainage to the Fox River. The pond is located on private property and will require City acquisition.
 - FW070 – Construct a pond on Parcel WD-365 (North of Main Avenue). This pond is located on private property. Soil borings will be required to verify a pond can be constructed at this location.

- FW200 – There are several modifications to this basin as listed below.
 - FW200C and D – Convert the two ponds off of Matthew Drive from dry ponds to wet ponds. This is City owned property.
 - FW200E – Currently the storm water from basins FW200C, D, and E drain through an existing pond located at the southwest corner of Scheuring Road and the Canadian National Railroad tracks. After the wet ponds are constructed for FW200C and D, this water can be bypassed around the existing pond at Scheuring Road. Bypassing the flow from these areas improves the treatment of the sub-basin FW200E to approximately 85%.
- FW280 – This basin is being separated into four different sub-basins to address various treatments that are occurring in the system.
 - FW280A – This sub-basin is treated by a new pond constructed in 2016.
 - FW280B – The sub-basin is treated by an existing pond. There were some modifications to the area draining to this pond with the new construction in 2016. Some of the area was redirected to sub-basin FW280A
 - FW280C – This area will be treated to 80% TSS reduction in the future when development occurs.
 - FW280D – This is the area of basin FW280 that is not treated. This will include a map update with area from basin FW200 moving to FW280.
- FW290 – A new sub-basin was added (FW290C). This is an undeveloped area that will be treated to 80% TSS when developed.
- FW300 – Construct a pond in this basin, just west of the Canadian National Railroad, when development occurs.
- FW310 – This is a new basin located on the southern limits of the City, adjacent to Lost Dauphin Road. A new pond will be constructed in this basin once development occurs. The pond will treat area that is currently exempt from the City model due to direct discharge to the Fox River. The area is in agricultural use. The pond will also treat 19.73 acres that is draining to Basin FW290. This area is currently receiving minimal treatment.

The City is not focusing on retrofitting facilities in the Ashwaubenon Creek and East River basins. Both basins are meeting the TMDL requirements for TSS and phosphorous reductions. The City will continue to construct ponds in these basins as agricultural property is converted to urban development. This will create additional credits for TSS and phosphorous reduction. Additionally, the City will look for opportunities to treat existing developed areas with new and redevelopment sites. For instance, new development occurred on the north side Main Avenue at Lawrence Drive extended this year. Storm water from existing development adjacent to the project was routed to the new pond.

In addition to the potential facilities identified in the previous section, many other potential facilities were reviewed and deemed to not be feasible for various reasons, including cost, property acquisition, constructability, etc. A review of each facility by basin is listed below with a location map included in Appendix B.

Non-Feasible Potential Facilities Summary

- Fox River East Basin (FE)
 - FE030A/FE050A – Underground Storage in Ridgeway Boulevard – Although there is space to build an underground treatment facility in this location it is not feasible because it would not be treating enough area to be cost effective. Additionally, there are many other utilities located in the right of way.
 - FE110 – Underground Facility at Bridge Approach – The storm sewer at this location is 10 to 12 feet deep and directly adjacent to the Fox River. The construction of an underground facility is cost prohibitive. Additionally, this site will likely be used for a more intensive park/public space gathering site.
 - FE130A/FE150A – Pond across from East Side Fire Station on Lewis St – This site is not feasible for a storm water facility due to other plans for the development of downtown De Pere.
 - FE160A – Pond at Foxview School (Off of Broadway) – There are several issues with this site including the proximity to the school, sewer depth and associated surface impact, and fill at the site.
 - FE160A/170A – Underground Facility at Bomier Boat Launch – The cost of constructing this facility is too high based on a cost analysis of the materials and work required to complete the project.
 - FE210A – Pond at Wilcox Ct – Storm water is unable to be routed to this location for treatment.
 - FE240C/260B – Pond at 1201 Enterprise – Storm water in this area is already treated downstream by ponds between Greenleaf Road and the Fox River Trail.
 - FE280A – Pond off of Old Plank Road – This is a wooded conservancy area with mature oak trees. The City will not be able to obtain the property for pond construction.
 - XF270A/FE280B – Commerce Empty Lot Pond – This is a development site for the City. When the site develops it will have to meet 80% treatment.
- Fox River West Basin (FW)
 - FW010A – Underground Storage at Brown County Fairgrounds – There is already a pond on this site that treats the storm water. The redundancy would not gain the City any additional treatment for the storm water entering the Fox River than is already being obtained through the existing facility.
 - FW110A – Pond on Parcel WD-905 (St. Norbert at Bridge) – The potential available area to build a pond is not large enough to provide adequate treatment to outweigh its construction and maintenance costs.
 - FW200A – St. Norbert Pond between Schneider Stadium and Mel Nicks Field – The existing storm sewer is 15' to 23' deep upstream of the pond location which is too deep to construct a pond. Additionally, several sub-basins are being treated upstream which would create some redundancy in treating water.
 - FW200B – Construct a new pond north of Meadowview Lane. This pond is very deep due to the existing storm sewer depth which significantly increases the cost. The pond is also proposed on West De Pere School property. The excavation depth is 17 feet just to get to the pond surface. This will create safety concerns for the school as well as impacting a large portion of their green space. Finally, the storm sewer to and

- from the pond would be placed between existing houses in two fifteen foot wide easements which will be challenging due to the storm sewer depth.
- FW200E – Patriot Park Pond – There is an area where a pond could be constructed in Patriot Park which would serve a small portion of FW200E. This same area flows to another pond just south of Scheuring Road resulting in the same water being treated twice.
 - FW290A – Red Maple to Lost Dauphin Pond – There is a pond at the Dog Park and at Richco Court upstream that already treat the storm water that this pond would service. The redundancy would not gain the City any additional treatment for the storm water entering the Fox River than is already being obtained by the existing facilities.
 - FW290C – Kiwanis Park Pond – The existing storm sewer that would connect to the pond outlet is 8 to 14 feet deep. This is too deep to cost effectively connect the pond into our storm sewer system. In addition to the existing storm sewer being too deep, the storm water that would be treated by this pond is already treated further downstream. The redundancy would not gain the City any additional treatment for the storm water entering the Fox River than is already being obtained by the existing facilities.

3) Advanced Street sweeping/leaf collection

On March 8, 2018, the Wisconsin Department of Natural Resources (WDNR) issued the Interim Municipal Phosphorous Reduction Credit for Leaf Management Programs. A copy has been included in Appendix C. This guidance allowed municipalities to receive credit for a 17% reduction in the annual load for Total Phosphorous by street sweeping in the fall based on the parameters shown in italics below. The City's conformance to these parameters is described after each.

1. *Medium Density (2-6 units/acre) Residential (Single Family) land use without alleys. Medium Density Residential with alleys land use may be included if the alleys receive the same level of leaf collection and street cleaning as the streets.* Areas conforming to medium density residential have been identified and shown in the map in Appendix D.
2. *Curb and gutter with storm sewer drainage systems and light parking densities during street cleaning activities.* Leaf collection activities are completed during the work day in residential areas. There is minimal street parking during these times.
3. *An average of one or more mature trees located between the sidewalk and the curb for every 80 linear feet of curb. Where sidewalk is not present, trees within 15 feet of the curb may be counted toward tree cover. Generally, this equates to a tree canopy over the street (pavement only) of 17% or greater. Field investigations or aerial photography may be used to document the tree cover.* All City trees are included in the City's GIS database. This information was used to determine tree spacing. The map showing the areas that meet this requirement is included in Appendix C.
4. *The municipality has an ordinance prohibiting residents from placement of leaves in the street and a policy stating that residents may place leaves on the terrace in bags or piles for collection.*
5. *Municipal leaf collection provided at least 4 times spaced throughout the months of October and November. Leaves may be pushed, vacuumed, or manually loaded into a fully enclosed vehicle,*

such as a garbage truck covered dump truck. No leaf piles are left in the street overnight. The city has an ordinance prohibiting the placement of leaves on the street.

6. *Within 24 hours of leaf collection, remaining leaf litter in the street must be collected using street cleaning machines, such as mechanical broom or vacuum assisted street cleaner. A brush attachment on a skid steer is not an acceptable equivalent.* The City has an innovative approach to leaf collection. Several trucks have been converted to vacuum units. The trucks vacuum up the leaf piles. In addition, these same trucks vacuum up the leaves in the gutter between leaf piles. Finally, the sweepers are deployed around the City.

As noted previously, the City has been proactive in fall leaf collection. In the fall of 2017, the City completed nine rounds of leaf collection throughout the City.

The estimated phosphorous removal from storm water in the FE and FW basins for areas not currently being treated by a regional facility is shown below. The calculations are included in Appendix D.

	TP Summary (pounds/year)
Additional TP Removal Required (pounds/year)	189
Subtract Ashwaubenon Creek Basin TP (pounds/year)	(209)
Subtract East River Basin TP (pounds/year)	(235)
Subtract Street Sweeping TP Reductions (pounds/year)	(17)
Remaining TP Removal Required (pounds/year)	(272)

Currently the City is meeting the phosphorous requirements. As the City constructs ponds for TSS, additional phosphorous reductions will be obtained.

E. Implementation Cost and Schedule

1) Project Costs and Funding

Estimates have been created for the proposed storm water management facilities. The costs have been based on the pond surface area, anticipated excavation, and past pond construction. In addition to the construction costs, there will be land purchase costs for several ponds located on private property. The anticipated construction costs are shown in the table below.

Wet Detention Pond	Drainage Area (Acres)	Pollutant Reduction TSS (%)	Capital Costs	Land Purchase	Construction Cost Per Pound TSS Removed (\$/LB)
FE010A	45.15	80%	\$129,000	\$40,000	\$17.04
FE030	123.56	60%	\$120,000	\$80,000	\$11.63
FE050	284.34	60%	\$445,000		\$21.57
FE070	39.89	80%	\$198,000		\$25.02
FE110A&B	76.70	60%	\$155,000		\$19.30
FE280A	65.41	80%	\$341,000	\$159,000	\$33.34
FE310	140.21	80%	\$468,000		\$7.09
FW060 FW070	12.70 333.92	60%	\$452,000	\$166,000	\$14.50
FW200C&D	120.02	80%	\$224,000		\$7.63
FW200E	93.19	80%	\$56,000		\$2.46
FW280	11.95	80%	\$38,000		\$8.42
FW290	29.53	80%	\$89,000		\$17.85
FW300	28.35	80%	\$244,000	\$80,000	\$67.59
FW310	92.90	80%	\$299,000		\$8.07

The City will be using several sources of funding for pond construction including the storm water utility, tax incremental finance district funds, developer fees, and grants. The City has used all of these sources to construct ponds over the last several years.

- **Storm Water Utility**

Many of the facilities will be funded by the storm water utility. The funds available for pond construction will be impacted by the other activities, in particular construction projects, occurring in the year. The storm water utility funds a diverse range of projects/activities related to storm water. This includes street sweeping and leaf collection activities, equipment, storm sewer construction/replacement, and pond maintenance. The storm water utility revenue is generated via a residential user equivalent (RUE) charged against parcels in the City. The amount of activities/projects funded from the storm water utility in a given year generally equals the revenue generated from the RUE. In some years when other significant construction projects occur, the revenue from the storm water utility may be allocated for storm sewer installation. For instance, in 2019, the City will be resurfacing streets in a section of the City that has poor drainage. Due to this, a significant portion of the storm water utility funds are being used to construct new storm sewer.

- **Tax Incremental Finance District (TID).**

Another source of funding that the City has used successfully in construction ponds is the TID. In the past several years, ponds have been built in Basin FE280 and AC051 from TID financing. Several of the proposed ponds are located in existing or proposed industrial parks and/or commercial areas which are proposed to be funded by the TID.

- **Developer Funded**

Some of the proposed facilities will be constructed for new development. These facilities will not be constructed until development occurs. The City promotes the construction regional facilities for new development wherever practicable. If development within the basin is staggered, the pond will be built for the first development that occurs. As other areas within the basin develop, a cost will be charged based on the amount/type of storm water discharge.

- **Urban Non-Point Source and Stormwater (UNPS&SW) Construction Grants.**

A final source of funding for the proposed facilities is Urban Non-Point Source and Stormwater (UNPS & SW) Construction Grants which can fund up to \$150,000 of an approved storm water management facility. This grant is a 50/50 match with other funds. Based on the WDNR website, construction grant eligible projects include:

- *Construction of structural urban best management practices (BMPs) including detention, wet, infiltration, or wetland basins, or infiltration trenches.*
- *Engineering design and construction services for BMPs installation.*
- *Land acquisition and easement purchase, including appraisal cost.*
- *Storm sewer rerouting and removal of structures.*
- *Streambank and shoreline stabilization.*

The City used this grant to construct the Optimist Park pond in Basin FE190 in 2017. The City will be submitting for construction grants for the urban retrofit ponds proposed to treat existing development that conforms to the above requirements.

2) Anticipated Schedule

A preliminary implementation schedule for the construction of facilities has been created. The projects have a five year schedule to accommodate design, property acquisition, potential grant funding, and contiguous construction projects.

Wet Detention Pond	Anticipated Construction Year	Capital Costs & Land Acquisition	Funding Source	UNPS & SW Grant Eligible
FW310	2019-2023	\$468,000	Paid for by the developer.	N
FE030	2020-2024	\$200,000	Storm Water Utility.	Y
FE050	2020-2024	\$445,000	Storm Water Utility.	Y
FE070	2025-2029	\$198,000	Storm Water Utility.	Y
FW200E	2025-2029	\$56,000	Storm Water Utility.	Y
FW200C&D	2025-2029	\$224,000	TID/Storm Water Utility.	Y
FE110A&B	2030-2034	\$155,000	Storm Water Utility.	Y
FW060 FW070	2035-2039 2035-2039	\$618,000	Storm Water Utility.	Y
FE010A	TBD	\$169,000	Storm Water Utility.	N
FE280A	TBD	\$500,000	TID/Storm Water Utility.	N
FE310	TBD	\$299,000	TID/Storm Water Utility.	N
FW280	TBD	\$38,000	Paid for by the developer.	N
FW290	TBD	\$89,000	Paid for by the developer.	N
FW300	TBD	\$324,000	TID/Storm Water Utility.	N

Notes:

1. TBD – Pond construction will occur when sites are developed.

Many of the proposed facilities are UNPS&SW grant eligible. The City will be applying grants and the ability to obtain these grants will impact the proposed schedule. If the City is not successful in obtaining a grant for a specific project, the project may be delayed, updated and resubmitted in the next grant cycle.

Projects located on private property and in parks will require longer to construction. Acquisition of private property will likely take several years to obtain. The City will need to negotiate approval to conduct research and/or soil boring for the viability of the facility. After studies are completed, the City will need to negotiate the actual purchase of the site. Some ponds are proposed in parks. The City of De Pere Park Board has been cooperating with the construction of ponds in park facilities in the past. However, each park has different demands and utilizing property for ponds may not be approved by the Board.

Several of the proposed facilities will require storm sewer rerouting or occur near other construction projects. City practice is to tie construction projects together to minimize additional costs, such as pavement patches and restoration. If storm sewer rerouting is required, the project schedule for proposed pond will be adjusted to occur with the street resurfacing/reconstruction projects. Ponds near industrial parks may be scheduled with nearby grading projects.

Proposed facilities associated with new development will occur when development occurs.

F. References

- 1) City of De Pere Comprehensive Stormwater Management Plan, January 1999, by Earthtech
- 2) City of De Pere Nonpoint Pollution WinSLAMM Analysis, March 2008, by Earthtech
- 3) 2015 Stormwater Management Planning, City of De Pere, October 21, 2016, by R.A. Smith National
- 4) Total Maximum Daily Load and Watershed Management Plan for Total Phosphorous and Total Suspended Solids in the Lower Fox River Basin and Lower Green Bay, March 12, 2012, by the Cadmus Group, Inc.

Appendix A: Modifications and Proposed Storm Water Facilities

- 1) Modifications/Upgrades for TSS Reduction Table
- 2) Overall Basin Additional Treatment Map
- 3) Basin FE010 Pond and Drainage Area Updates
- 4) Basin FE030 & FE050 Wet Pond and Potential Wet Pond Expansion
- 5) Basin FE030 & FE050 Revised Drainage Area
- 6) Basin FE070 Wet Pond
- 7) Basin FE070 Revised Drainage Area
- 8) Basin FE110 Wet Pond
- 9) Basin FE110 Revised Drainage Area
- 10) Basin FE160 & FE190 Revised Drainage Area
- 11) Basin FE260 Revised Drainage Area
- 12) Basin FE280 Wet Pond
- 13) Basin FE280 Revised Drainage Area
- 14) Basin FE290 Revised Drainage Area
- 15) Basin FE310 Basin Drainage Area
- 16) Basin FW060 Wet Pond
- 17) Basin FW060 Revised Drainage Area
- 18) Basin FW070 & FW060 Wet Pond
- 19) Basin FW070 & FW060 Revised Drainage Area
- 20) Basin FW200C & D Pond Conversion
- 21) Basin FW200C & D Wet Pond Drainage Area
- 22) Basin FW200E Storm Sewer Bypass
- 23) Basin FW200E Revised Drainage Area
- 24) Basin FW280C New Sub-basin Area
- 25) Basin FW290C New Sub-basin Area
- 26) Basin FW300 Wet Pond
- 27) Basin FW300 Drainage Area
- 28) Basin FW310 Wet Pond
- 29) Basin FW310 Basin Addition – Drainage Area

LOWER FOX RIVER MAINSTREAM - CITY OF DE PERE, WI
Modifications/Upgrades for TSS Reduction
2015 Report - May 5, 2016
Last Update - November 20, 2018

Modifications/Upgrades to Existing Basins

Original Study					2018 Proposed Revisions						Comment
Basin	Area (acres)	Total Suspended Solids No Controls (pounds/year)	Total Suspended Solids With Controls (pounds/year)	Percent TSS Reduction	Current Modeled Reduction	Additional Area Treated (acres)	Total Suspended Solids No Controls - New Treatment Area (pounds/year)	Modeled Percent TSS Reduction	Total Suspended Solids Reduction (pounds/year)	Additional Suspended Solids Reduction (pounds/year)	
FE010	64.606	17,624	15,498	12.10%	2,126	45.45	12398	80.00%	9,919	8,419	Construct a new pond off of Broadway when development occurs.
FE030	123.561	28,665	24,522	14.50%	4,143	123.56	28,665	60.00%	17,199	13,043	Future pond off of Broadway
FE050	160.776	34,377	28,170	18.10%	6,207	160.78	34,377	60.00%	20,626	14,404	Modify storm sewer to direct low flows to Glen Meadow and Basin FE030
FE070	39.886	10,794	8,824	18.30%	1,970	39.89	10,794	80.00%	8,635	6,660	Construct pond off of Franklin Street.
				16.70%		3.11	753	80.00%	602	476	Modify basin to move part of FE110 to FE070E.
				16.70%		4.55	1,101	80.00%	881	697	New area near river treated by pond. This was exempt from the current City model.
FE110	137.342	33,209	27,647	16.70%	5,562	76.70	18,546	60.00%	11,128	8,030	New pond constructed in Legion Park to treat sub-basins FE110A and FE110B.
						(3.11)					Modify basin to move part of FE110 to FE070E.
FE120	1.82	704	580	17.60%	124						
FE130	32.459	9,228	7,637	17.20%	1,591						
FE140	2.789	388	348	10.50%	40						
FE150	127.611	34,173	28,877	15.50%	5,296						
FE160	53.059	11,401	9,619	15.60%	1,782						
				15.60%		(10.43)					Move part of Basin FE190 to FE180. Area in from Basin FE190 that drains to Optimist Pond in Basin FE180.
FE170	6.249	1,040	878	15.60%	162						
FE190	58.7	14,679	12,372	15.70%	2,307	41.44	10,363	88.40%	9,161	7,534	Pond constructed in 2017
				15.70%		8.10	2,026	82.40%	1,669	1,351	Future pond off of Honey Court
				15.60%		10.43	2,242	88.40%	1,982	1,633	Move part of Basin FE190 to FE180. Area in from Basin FE190 that drains to Optimist Pond in Basin FE180.
FE210	30.413	5,937	4,929	17.00%	1,008						
FE230	13.221	2,830	2,353	16.80%	477						
FE240	56.309	13,866	9,707	30.00%	4,159						
FE250	4.965	997	816	18.10%	181						
FE260	101.379	42,164	8,645	79.50%	33,519	101.38	42,164	80.00%	33,731	211	Pond remodeled to verity 80% TSS reduction.
				8.20%		2.99	1,366	80.00%	1,093	981	Pond designed to treat the expansion of 1891 Commerce. Area removed from FE270 and added to FE290
FE270	57.935	26,467	24,290	8.20%	2,177						
						(2.99)					Area from FE270 directed to FE260 with Belmark Expansion
						(12.78)					Area from FE270 directed to FE290 with pond construction north of the future Profit Place extension. This occurred as part of the site plan expansion of 1891 Commerce and the pond construction.
FE275	23.216	6,761	1,256	81.40%	5,505						
FE280	127.272	32,694	19,865	39.20%	12,829						
				18.10%		50.68	13,025	80.00%	10,420	8,062	New pond to be constructed south of Rockland Road
				5.00%		14.73	7,954	80.00%	7,333	6,935	New area added to proposed pond. This area is currently exempt from the City permit and used for agriculture. Waste generation is based on agricultural use. Future development is based on residential land use.
FE290	20.768	7,180	297	95.90%	6,883	20.77	7,181	87.40%	6,276	-610	New pond has been built to service FE290. The existing area in the 2015 plan will flow to the pond.
				5.00%		58.21	31,433	87.40%	27,473	25,901	FE290A - Pond constructed in 2016. This was listed as exempt from the City's model in 2015. Land is in agricultural use.
						12.78	5,840	87.40%	5,105	5,105	Pond designed to treat the expansion of 1891 Commerce. Area removed from FE270 and added to FE290.
				80.00%		3.56	915	87.40%	800	68	Move part of FE280 to FE290. Part of basin FE 290 was reallocated as part of the pond constructed north of future Profit Place extension.
FE310				5.00%		140.21	75,713	80.00%	69,797	66,011	New basin with new pond once area is developed. Area is currently agricultural. Waste generation based on agricultural use. Additional suspended solids based on residential land use.
FW010	25.055	3,567	993	72.20%	2,574						
FW015	8.853	1,615	1,360	15.80%	255						
FW020	3.298	662	542	18.20%	120						
FW040	10.493	4,468	4,217	5.60%	251						
FW060	7.785	1,812	1,534	15.30%	278	7.79	1,812	60.00%	1,087	810	
				15.30%		4.92	1,146	60.00%	688	512	New area near river treated by pond. This was exempt from the current City model.
FW070	333.921	88,312	76,072	13.90%	12,240	333.92	88,312	60.00%	52,987	40,712	New pond constructe between North Sixth Street and the Fox River.
						0.00	0	80.00%	0	0	Modify basin to move part of FW180 to FW070 at Mel Nicks Field

Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)

LOWER FOX RIVER MAINSTREAM - CITY OF DE PERE, WI
Modifications/Upgrades for TSS Reduction
2015 Report - May 5, 2016
Last Update - November 20, 2018

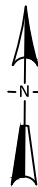
Modifications/Upgrades to Existing Basins

Original Study					2018 Proposed Revisions						Comment
Basin	Area (acres)	Total Suspended Solids No Controls (pounds/year)	Total Suspended Solids With Controls (pounds/year)	Percent TSS Reduction	Current Modeled Reduction	Additional Area Treated (acres)	Total Suspended Solids No Controls - New Treatment Area (pounds/year)	Modeled Percent TSS Reduction	Total Suspended Solids Reduction (pounds/year)	Additional Suspended Solids Reduction (pounds/year)	
						0.00	0	80.00%	0	0	Modify basin to move part of FW200 to FW070 at Mel Nicks Field
FW090	4.984	2,000	1,680	16.00%	320						
FW100	11.052	4,156	3,439	17.20%	717						
FW110	62.419	16,495	14,214	13.80%	2,281						
FW120	13.135	4,366	3,890	10.90%	476						
FW130	4.476	1,498	1,336	10.80%	162						
FW140	3.62	1,211	1,080	10.80%	131						
FW150	2.691	886	789	11.00%	97						
FW155	1.111	223	183	18.10%	40						
FW160	1.022	205	168	18.10%	37						
FW170	5.628	1,226	1,008	17.80%	218						
FW180	38.228	6,854	5,823	15.00%	1,031						
FW190	3.672	737	604	18.10%	133						
FW200	641.931	196,225	113,402	42.20%	82,823	120.02	54,849	60.00%	32,909	9,763	FW200C and D - Convert dry to wet ponds.
				42.20%		93.19	19,663	85.00%	16,714	8,416	FW200E-Bypass flow from FW200C and FW200D around pond off of Scheuring Road. Pond will only treat water from FW200E. FW200E area has been decreased with area going to FW280 due to a mapping area.
				42.20%		0.79	166	85.00%	141	71	Move part of FW270 to FW200. Modify basin due to correction in mapping and addition of storm sewer on Vista.
				18.00%		(0.78)					Area moved to FW280 due to mapping correction
FW210	3.561	715	585	18.10%	130		0		0		
FW230	13.484	2,708	2,216	18.10%	492		0		0		
FW270	23.616	4,734	3,882	18.00%	852		0		0		
						(0.79)			0		Move part of FW270 to FW200. Modify basin due to correction in mapping and addition of storm sewer on Vista.
FW280	189.281	89,344	32,502	63.60%	56,842						
				10.80%		11.95	2,521	80.00%	2,017	1,745	FW280C - New pond to be constructed in there once development occurs
				42.20%		0.78	165	10.80%	18	-52	FW280D - Modify basin to correct a mapping area. Move part of FW200 to FW280D. This is the Terry Lane area and will not be treated.
FW290	342.139	106,799	41,195	61.40%	65,604	(19.73)					Move part of FW290 to FW310. Part of basin FW290 will be redirected to the new pond in basin FW310.
				10.80%		29.53	6,231	80.00%	4,985	4,312	FW290C - This is an area of FW290 that is not currently developed. Once developed the area will be treated to 80% TSS.
FW300	7.598	1,606	1,327	17.40%	279	7.60	1,606	80.00%	1,285	1,005	New pond to be constructed in the future.
				17.40%		20.75	4,379	80.00%	3,503	2,741	Additional area in basin to be treated. 2015 model did not include the entire basin.
FW310				5.00%		73.17	39,512	80.00%	36,424	34,448	New basin with new pond once area is developed. Area is currently agricultural. Waste generation based on agricultural use. Additional suspended solids based on residential land use.
				18.10%		19.73	4,222	80.00%	3,378	2,614	Move part of FW290 to FW310. Part of basin FW290 will be redirected to the new pond in basin FW310.
Total	3,014.70	877,602	551,171	37.20%	326,431					282,007	

Assumptions
(1) Agricultural lands in the Lower Fox River Mainstream HUC-12 are discharging 540lbs/acre of TSS. Assume a 5% TSS reduction.



Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)



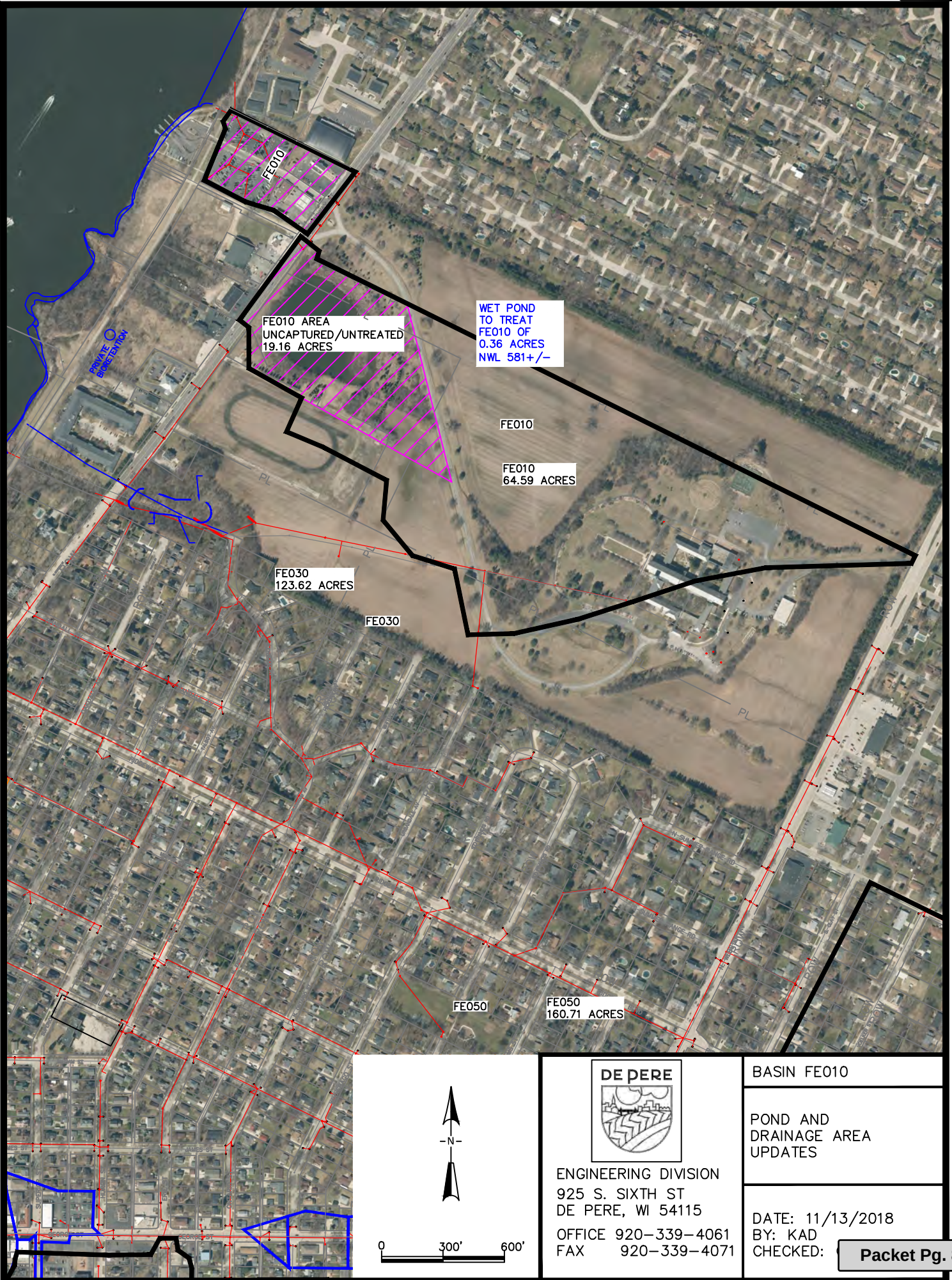
0 1000' 2000'



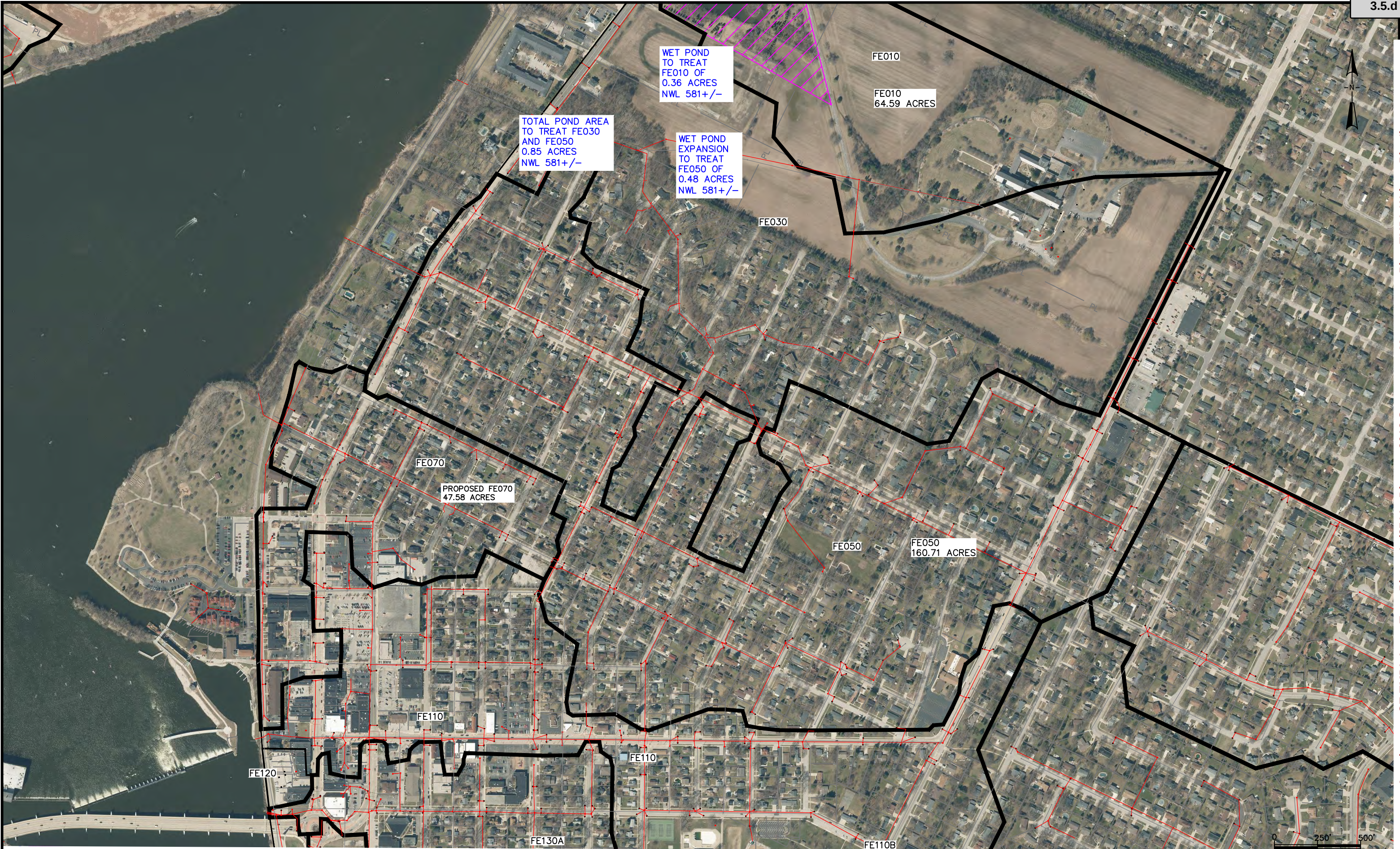
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

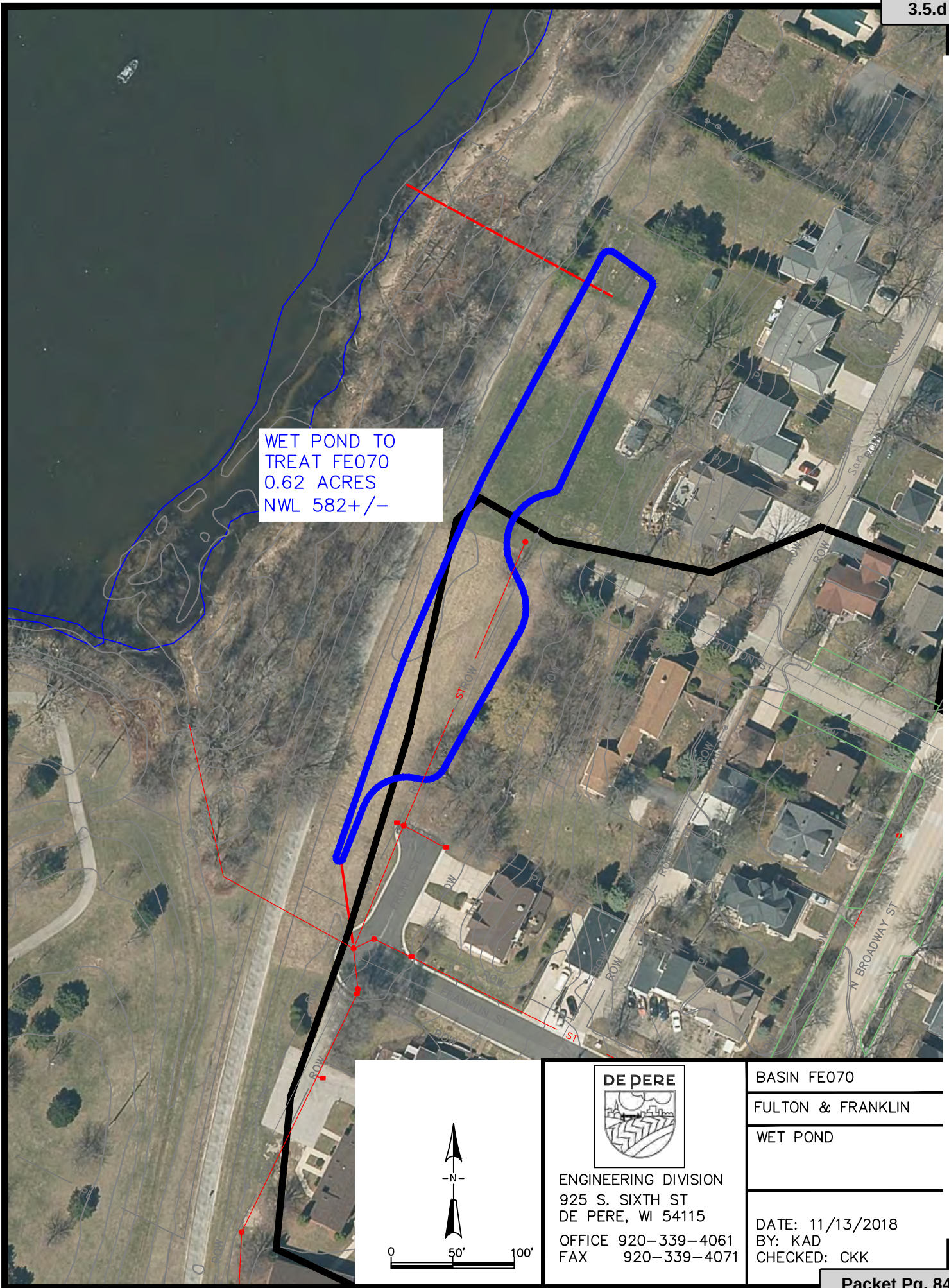
POTENTIAL AREA/BASIN
TO BE TREATED

DATE: 11/26/2018
BY: MAL
CHECKED: EPR









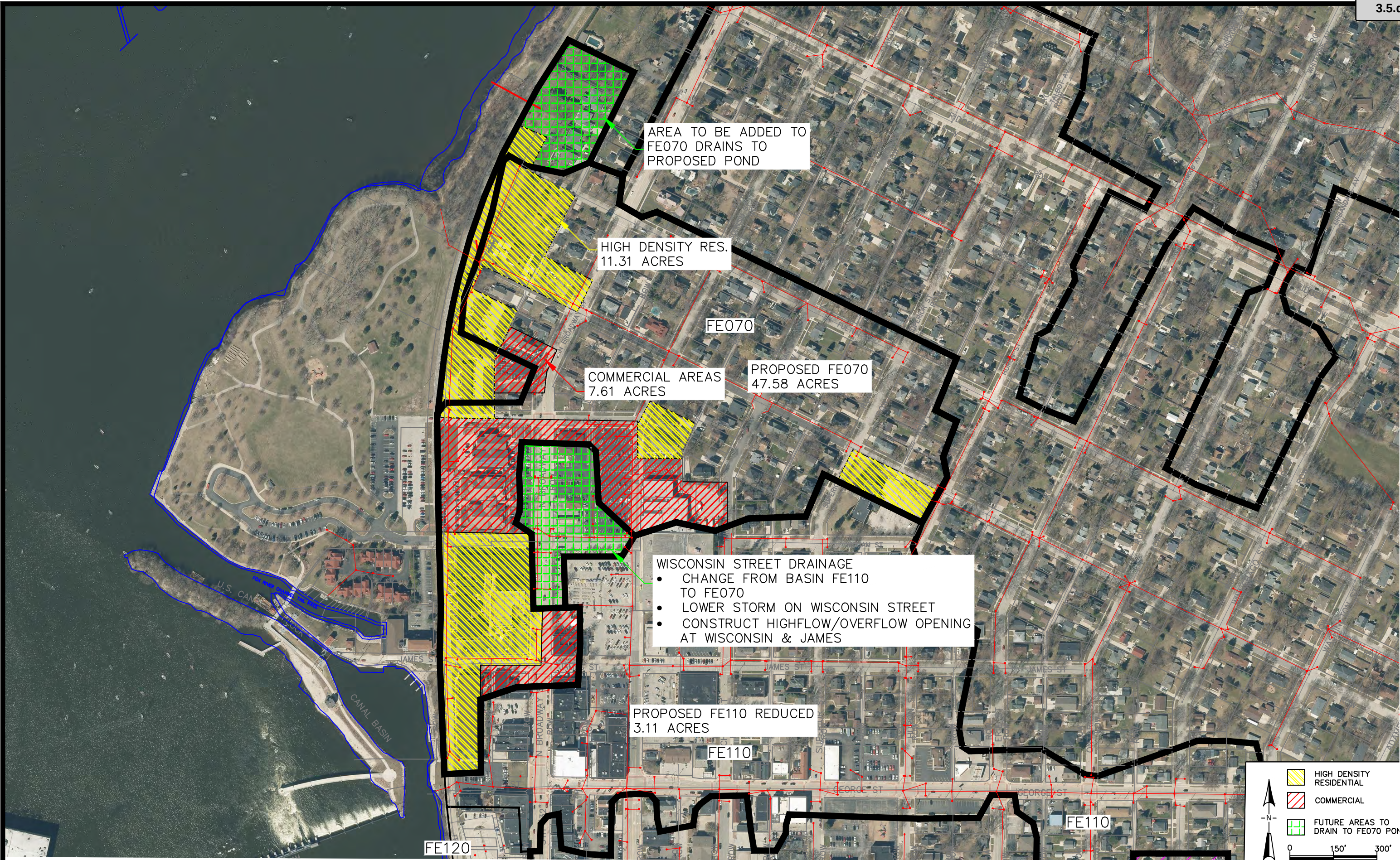
WET POND TO
TREAT FE070
0.62 ACRES
NWL 582+/-



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FE070
FULTON & FRANKLIN
WET POND

DATE: 11/13/2018
BY: KAD
CHECKED: CKK



Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)



CITY OF DE PERE

ENGINEERING DIVISION 925 S. SIXTH ST DE PERE WI 54115
OFFICE 920-339-4061 FAX 920-339-4071

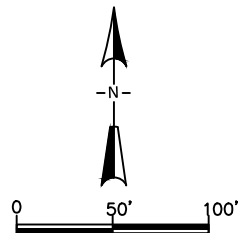
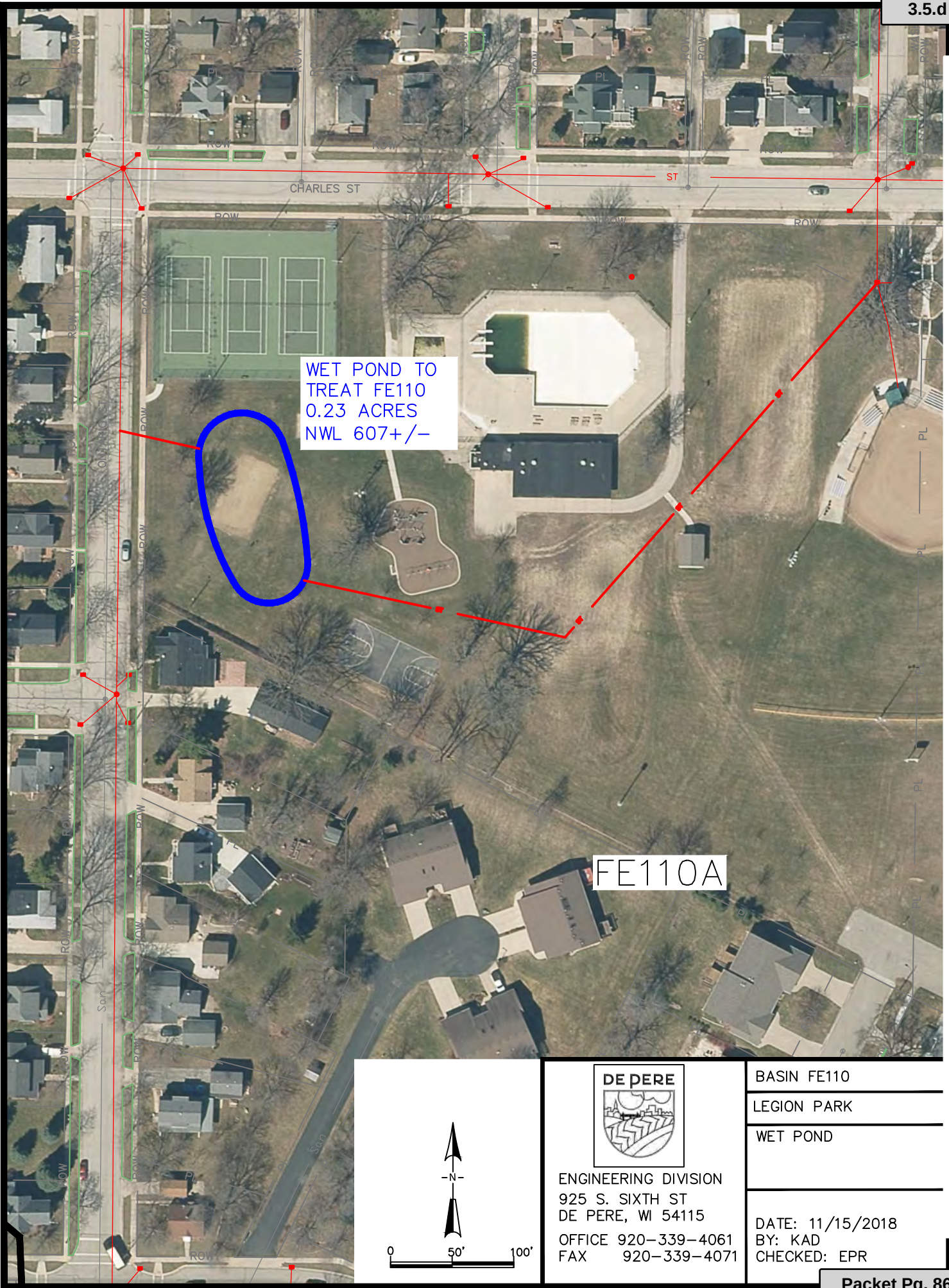
**BASIN FE070
REVISED DRAINAGE AREA**

NAME: PROPOSED STORM
WATER POND
PROJECT #

	BY	DATE
SURVEYED	KAD	11-2018
DRAWN	CKK	11-2018
DESIGNED	EPR	11-2018
CHECKED		

REVISIONS / ISSUES			
NO.	DATE	BY	REMARKS

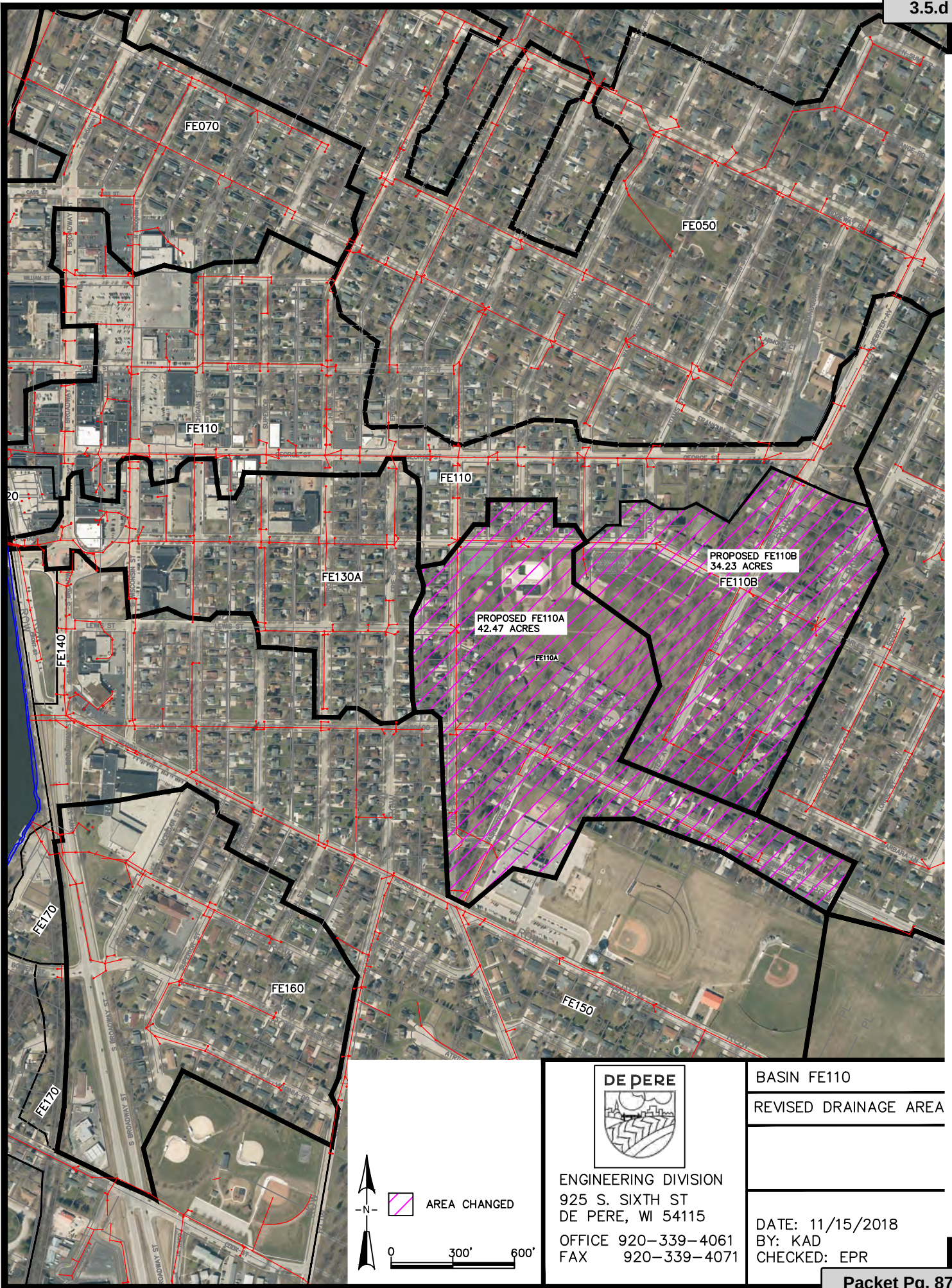
PAC
NO.



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FE110
LEGION PARK
WET POND

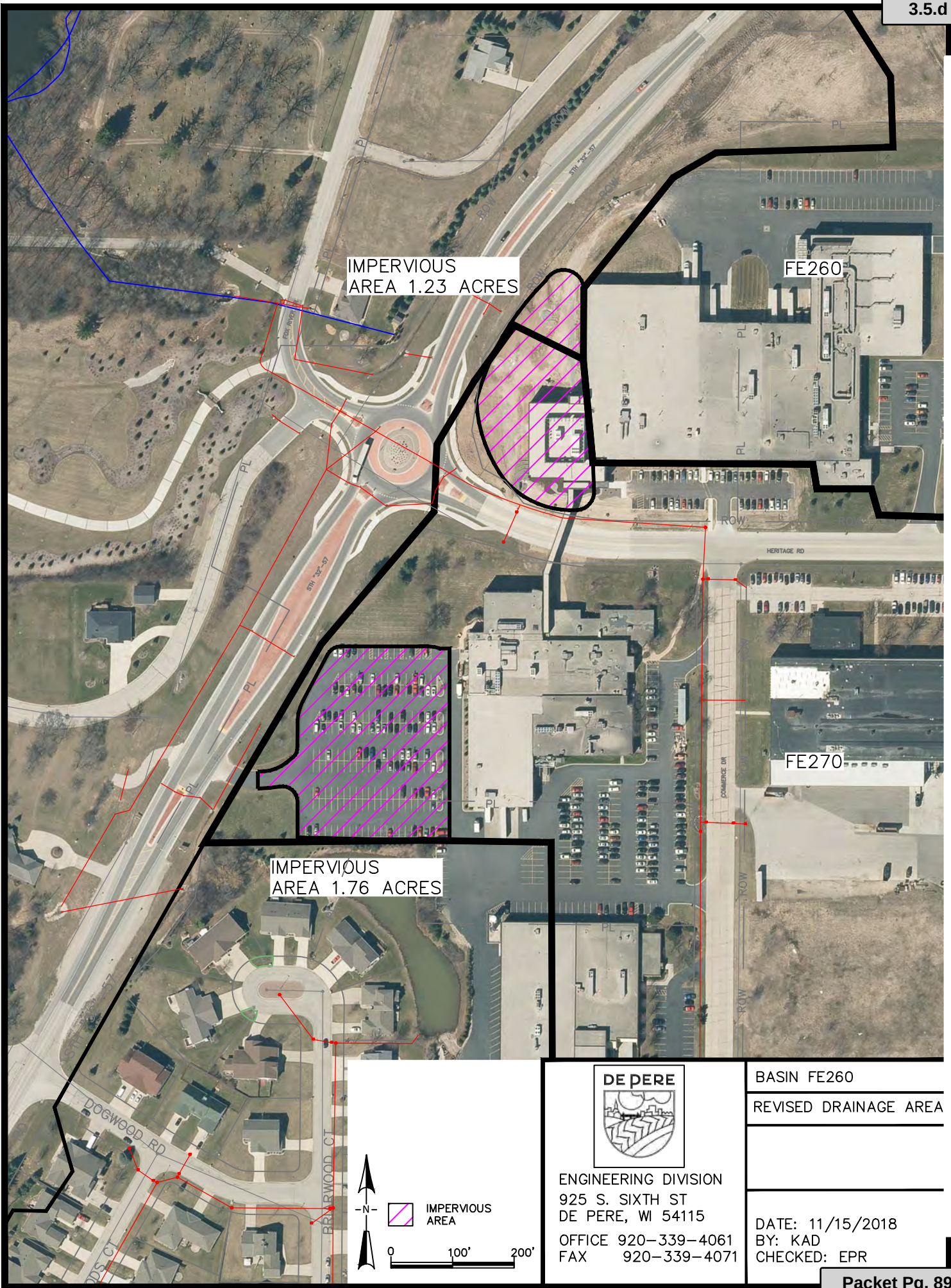
DATE: 11/15/2018
BY: KAD
CHECKED: EPR



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FE110
REVISED DRAINAGE AREA
DATE: 11/15/2018 BY: KAD CHECKED: EPR





Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)



DE PERE

ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

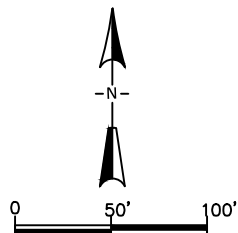
BASIN FE260

REVISED DRAINAGE AREA

DATE: 11/15/2018
BY: KAD
CHECKED: EPR



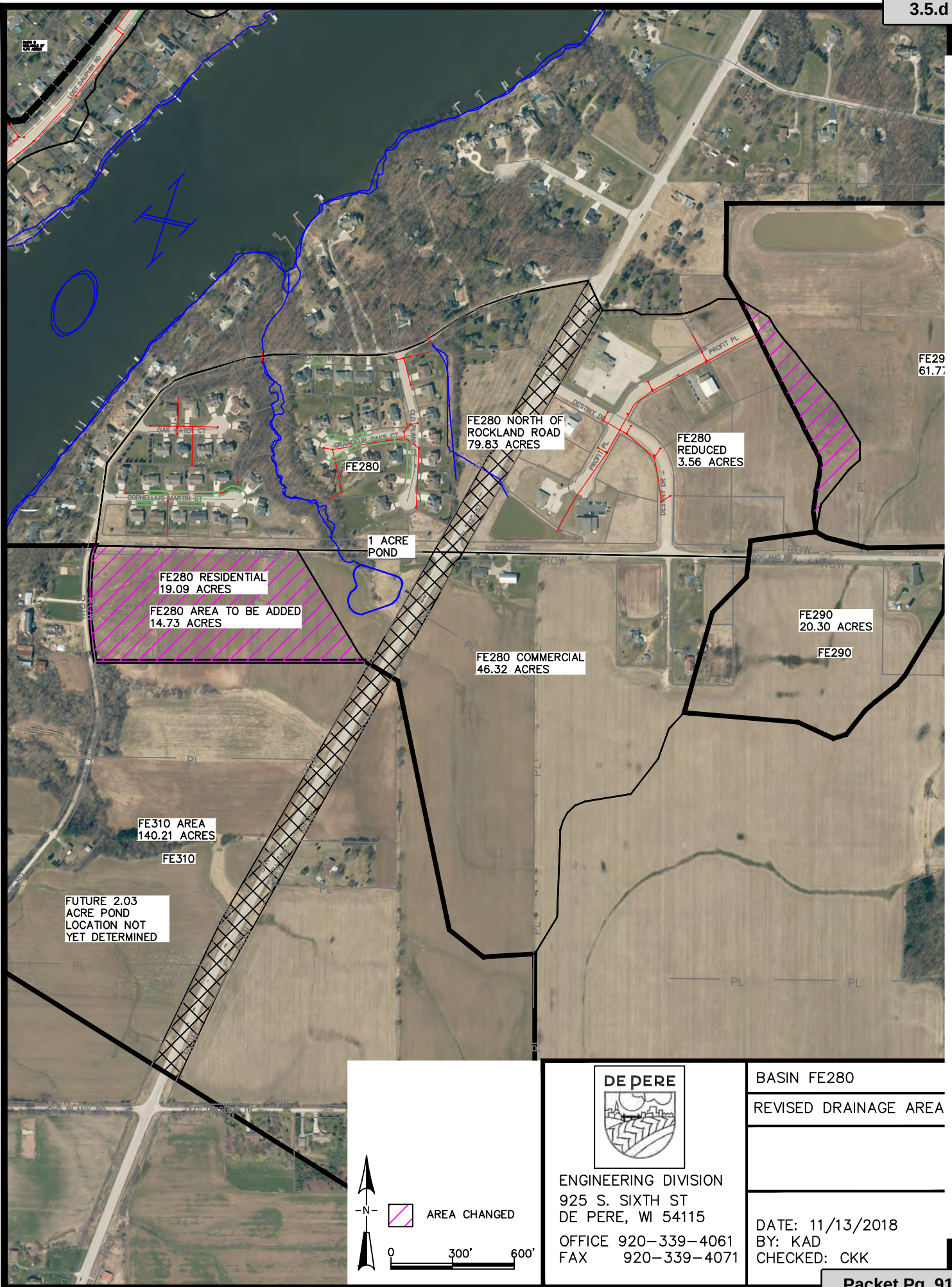
WET POND TO
TREAT FE280
1.00 ACRES
NWL 616+/-

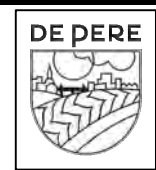
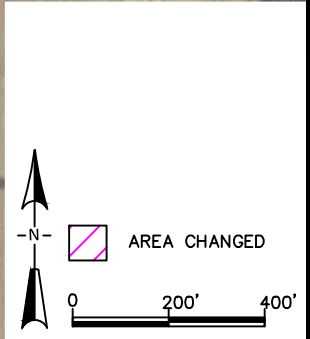
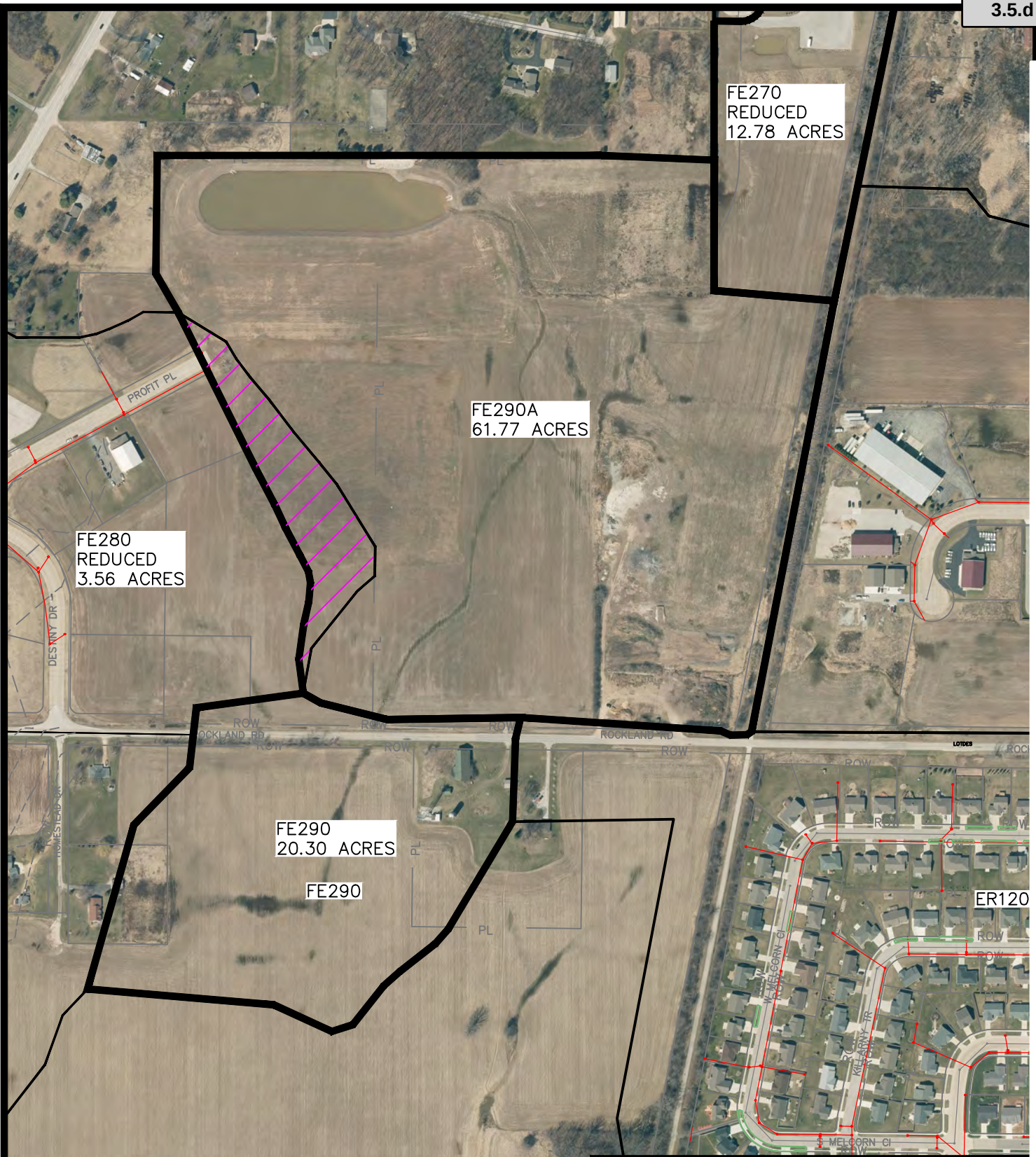


ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FE280
ROCKLAND & STH 57
WET POND

DATE: 11/14/2018
BY: KAD
CHECKED: CKK

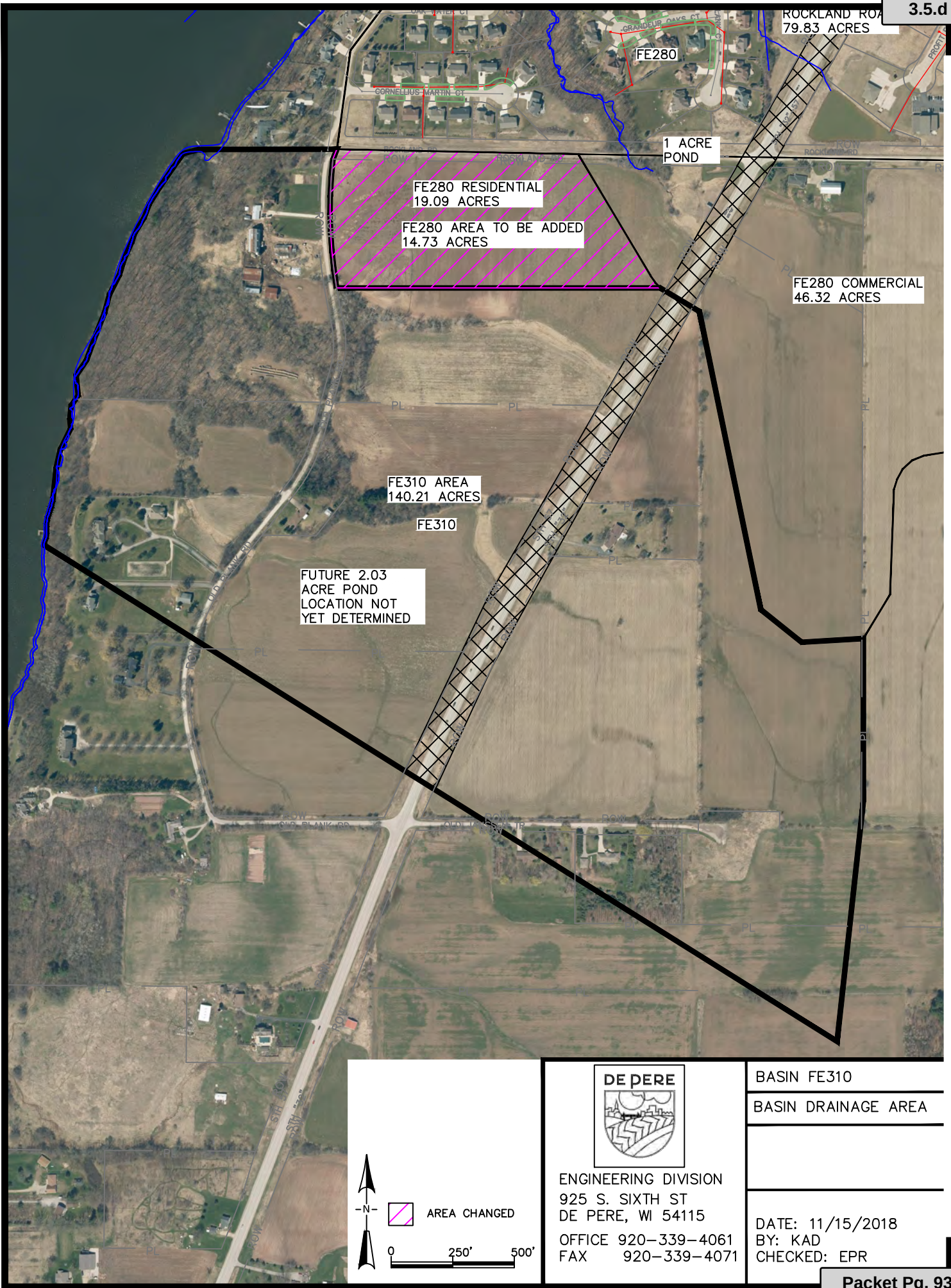


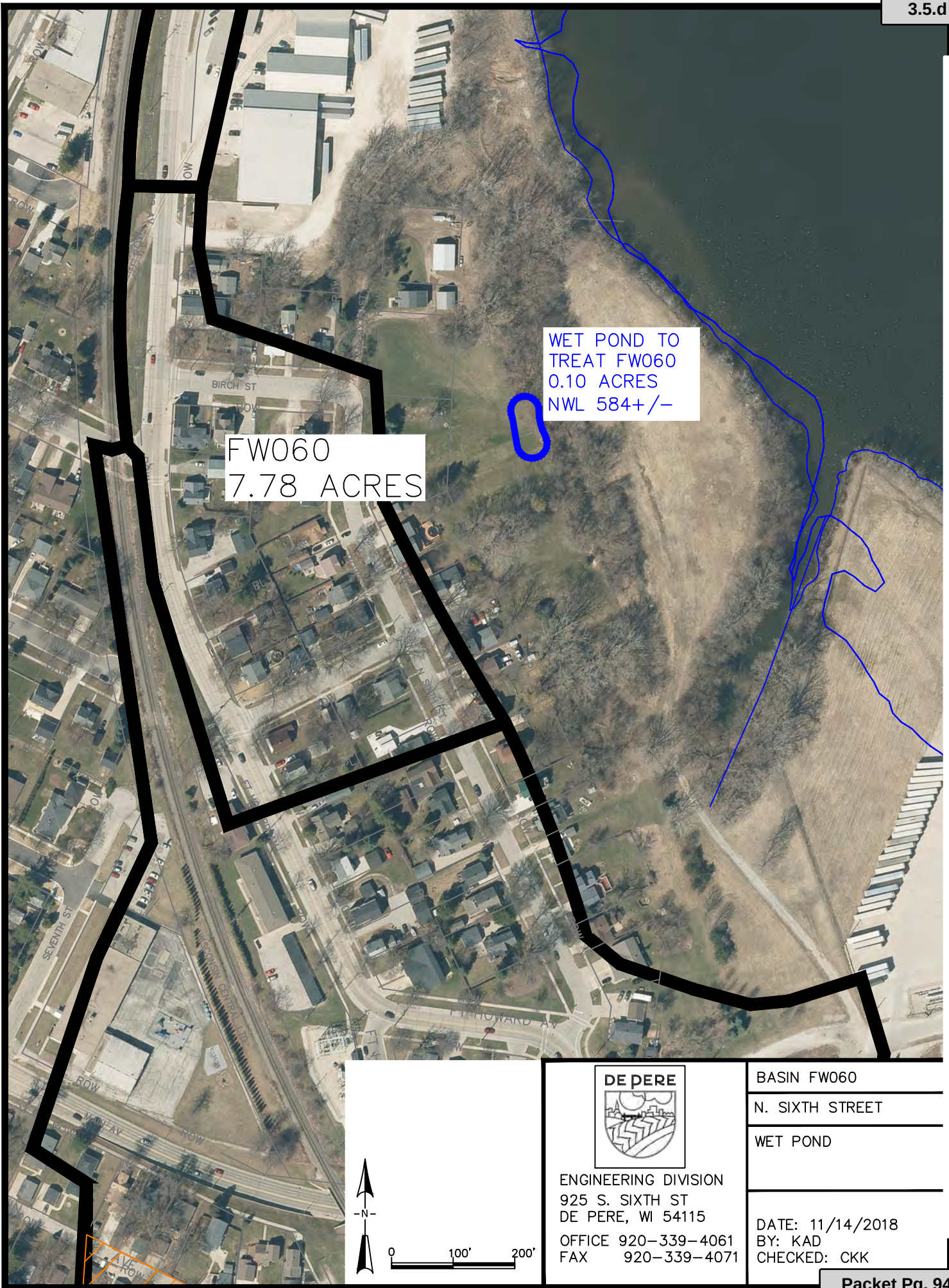


ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FE290
REVISED DRAINAGE AREA

DATE: 11/14/2018
BY: KAD
CHECKED: CKK

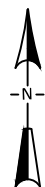




PROPOSED FW060
12.70 ACRES

FW060
7.78 ACRES

AREA TO BE ADDED
4.92 ACRES



AREA CHANGED



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115

OFFICE 920-339-4061
FAX 920-339-4071

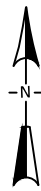
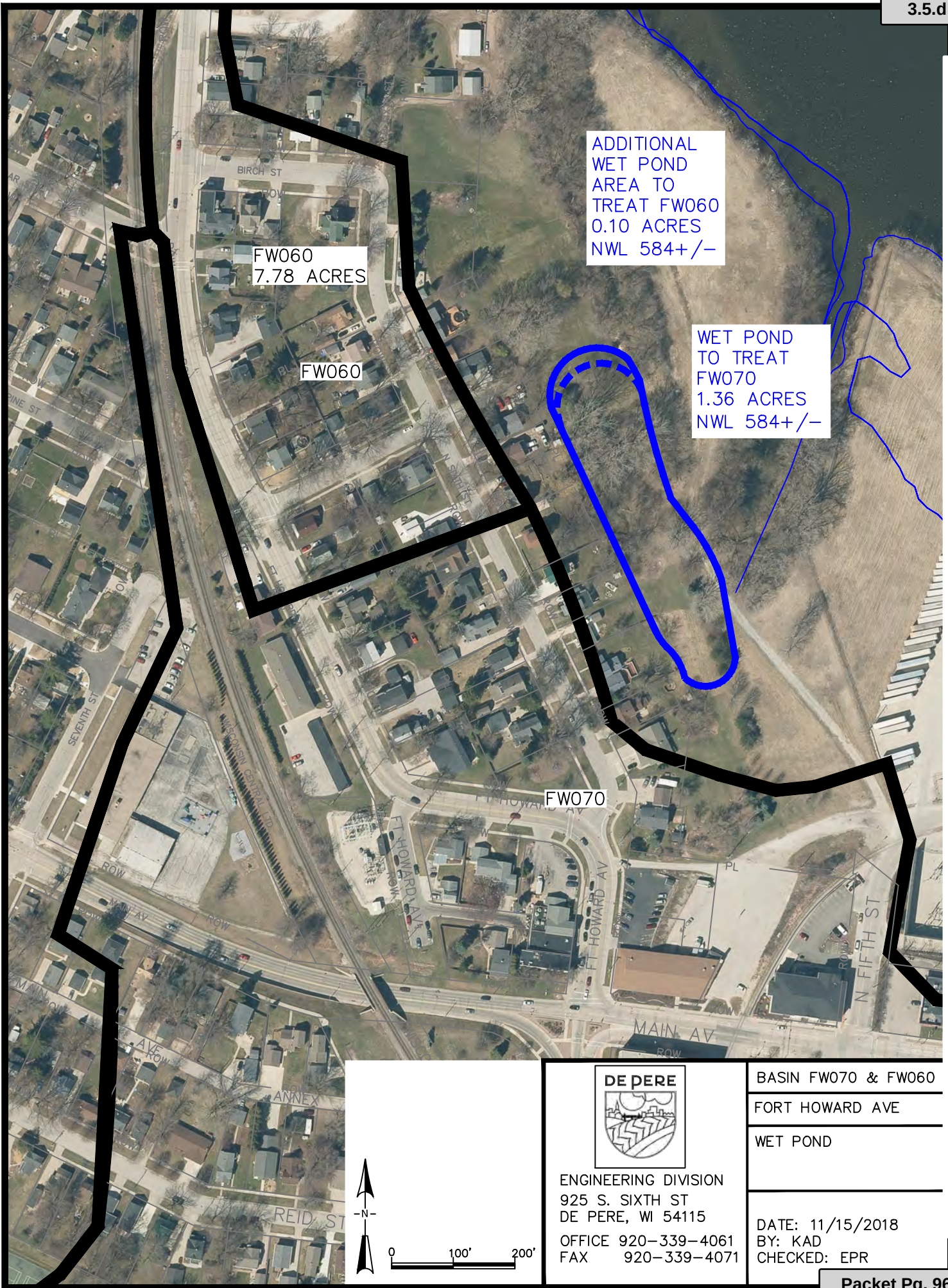
BASIN FW060

REVISED DRAINAGE AREA

DATE: 11/14/2018

BY: KAD

CHECKED: CKK



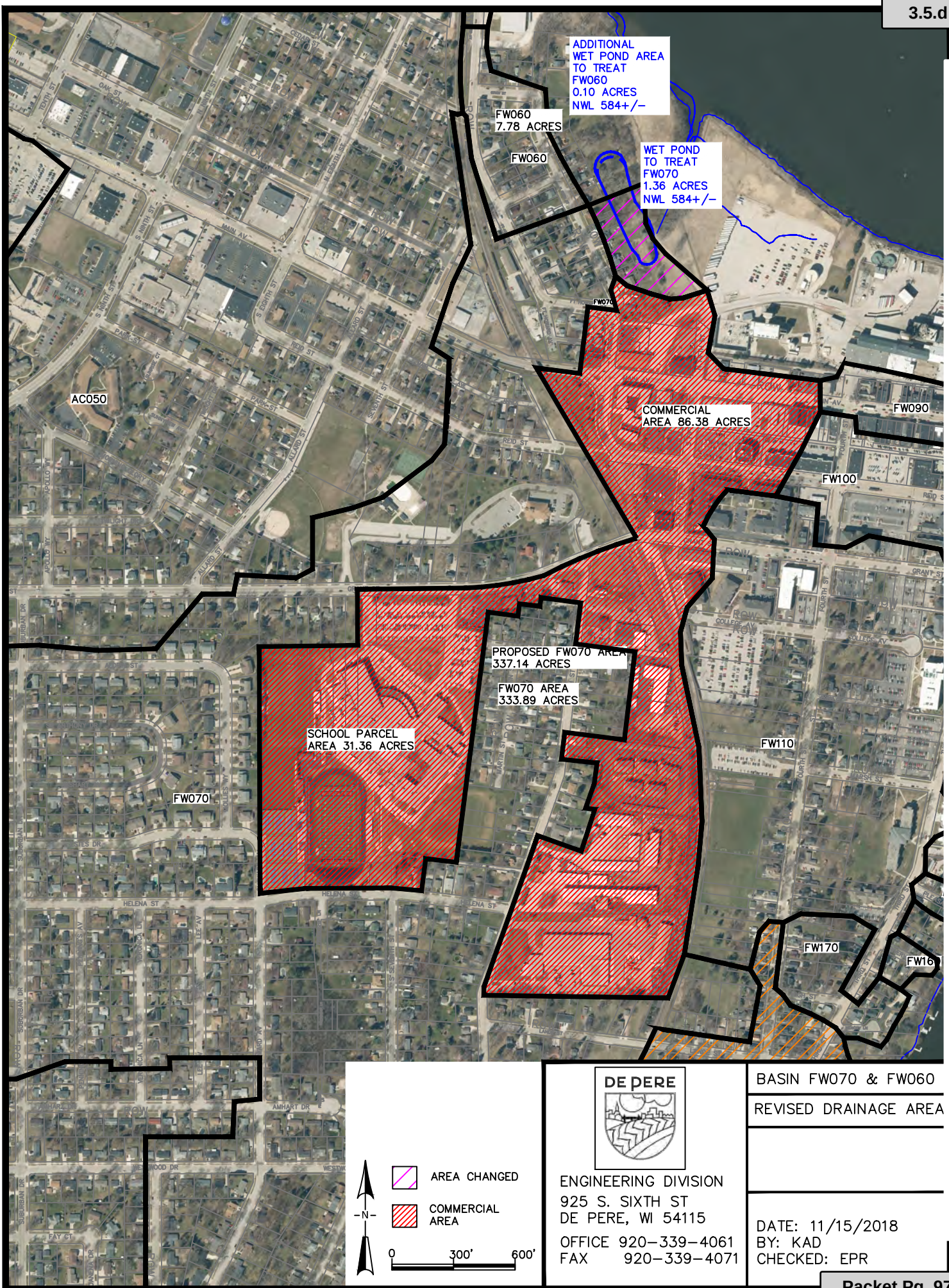
0 100' 200'

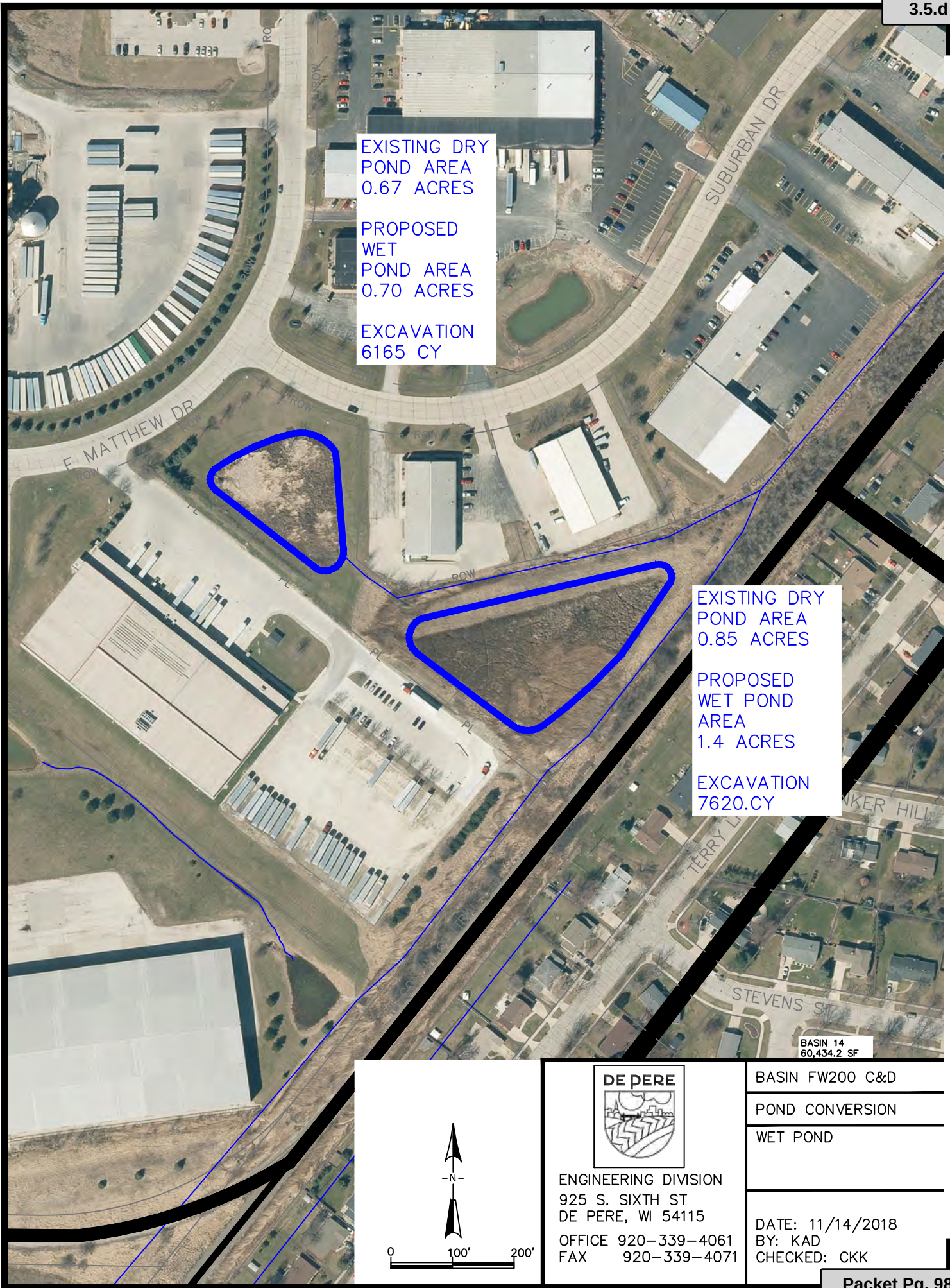


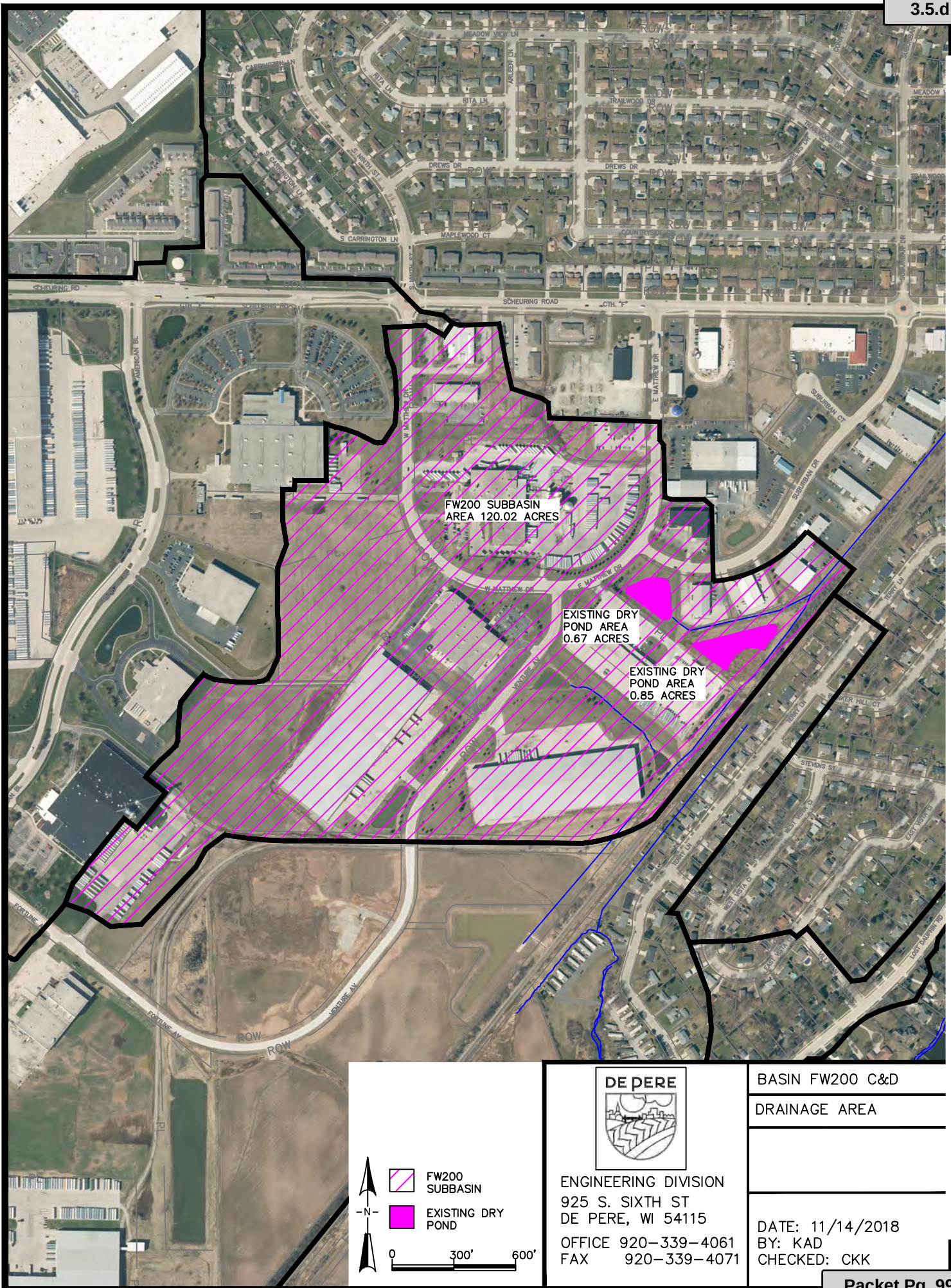
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

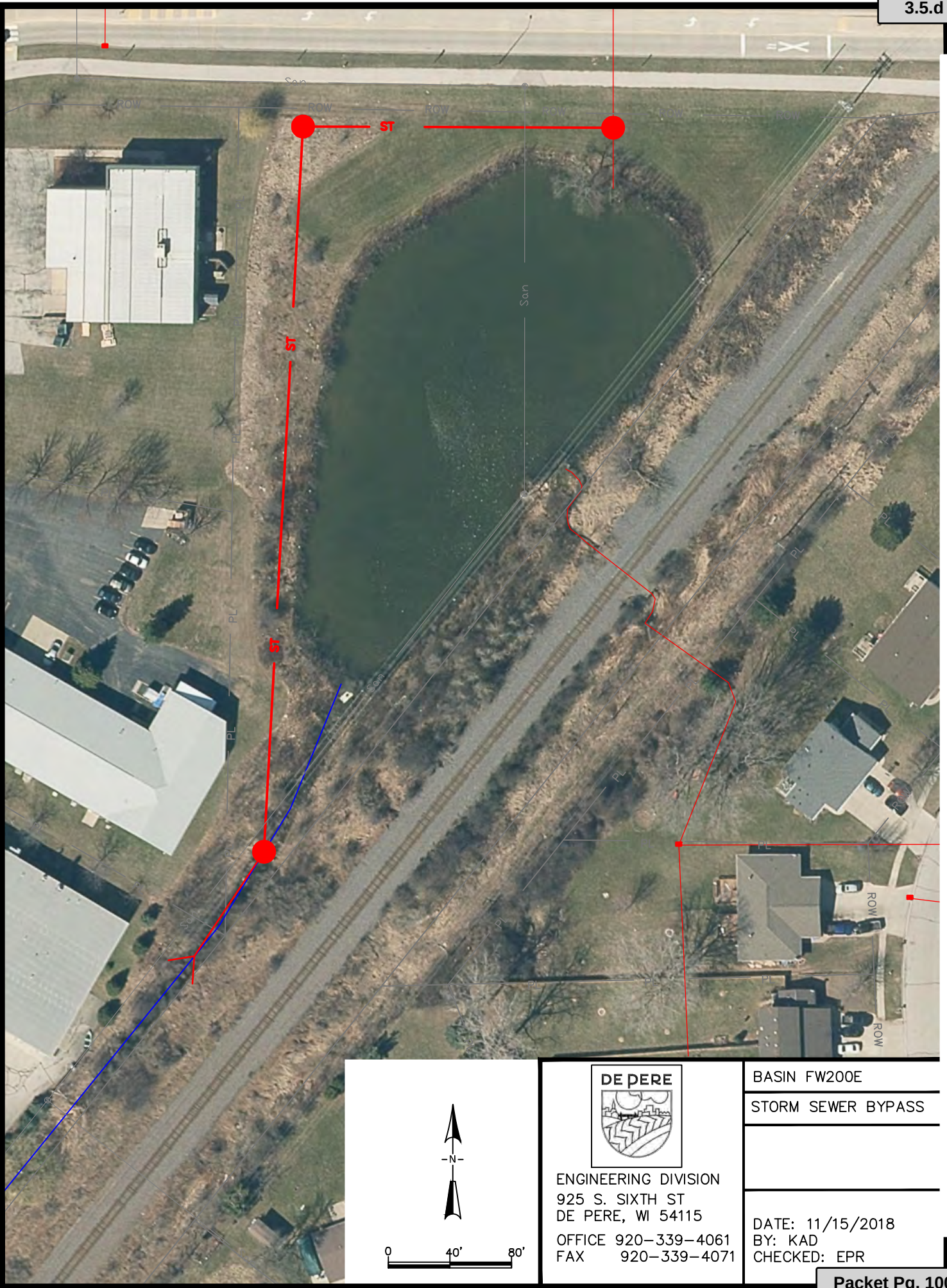
BASIN FW070 & FW060
FORT HOWARD AVE
WET POND

DATE: 11/15/2018
BY: KAD
CHECKED: EPR









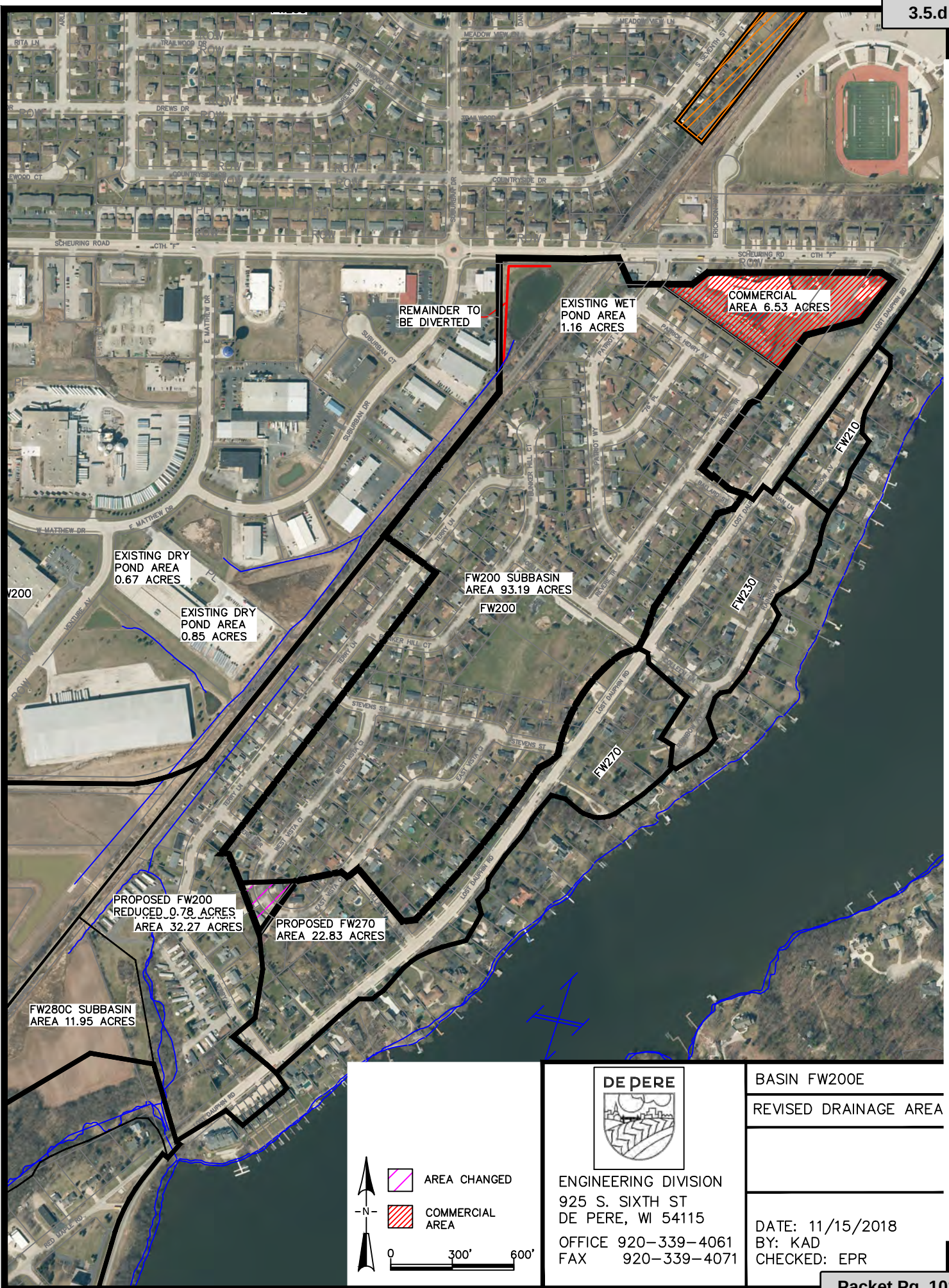
Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)



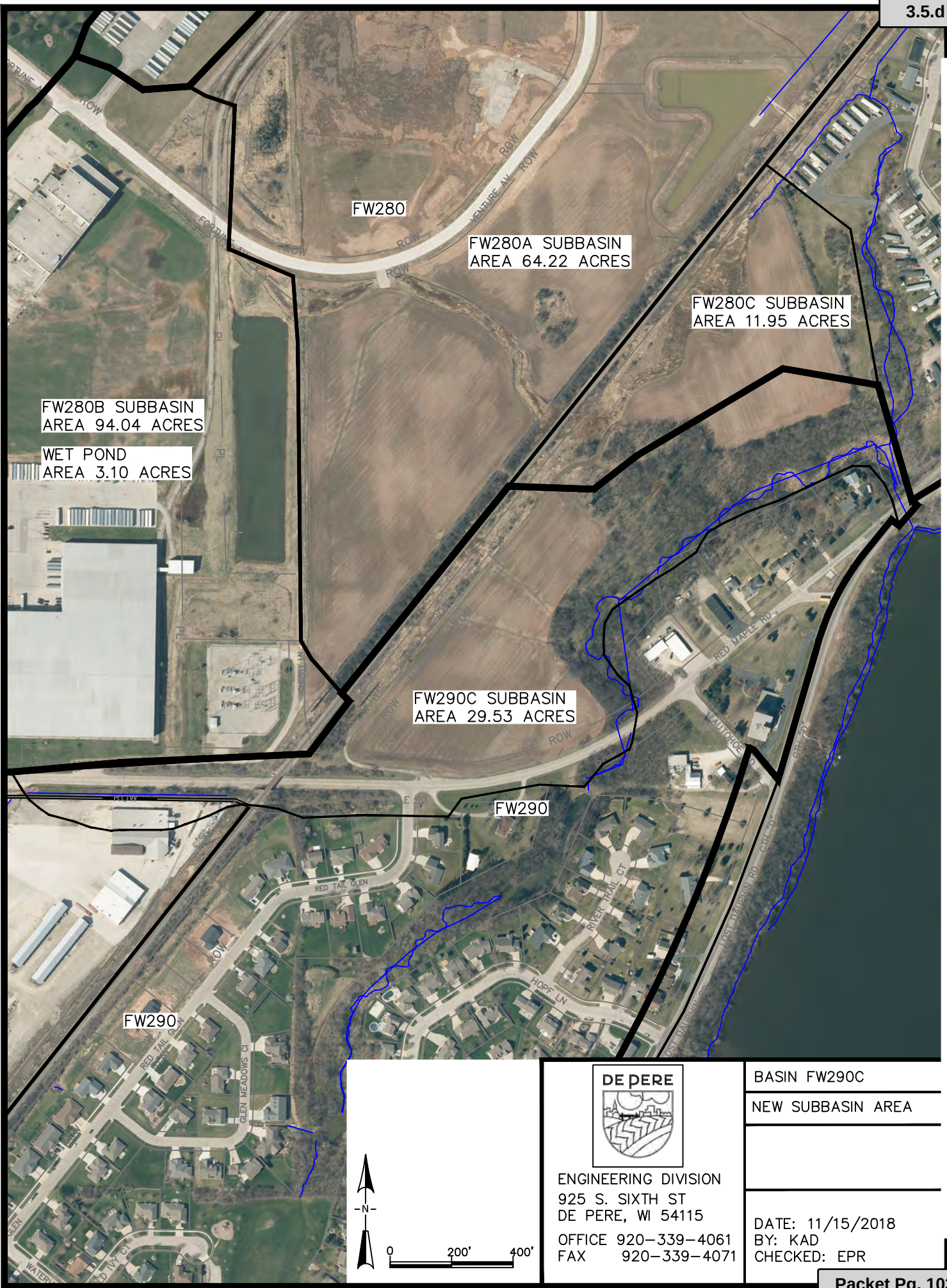
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FW200E
STORM SEWER BYPASS

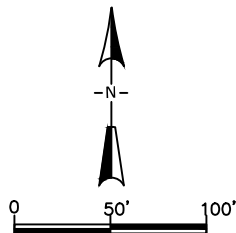
DATE: 11/15/2018
BY: KAD
CHECKED: EPR







WET POND TO
TREAT FW300
0.6 ACRES
NWL 635+/-

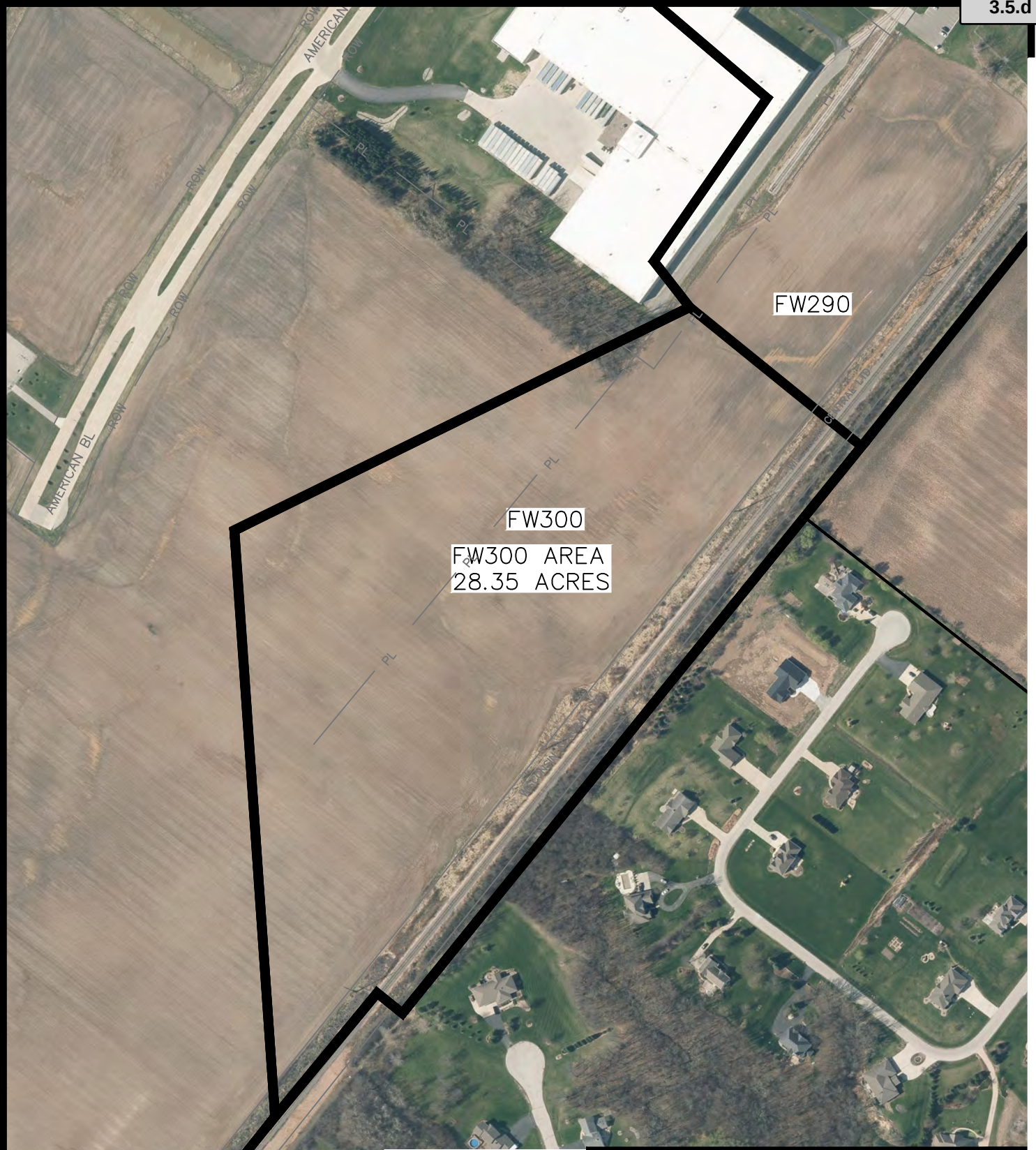


ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

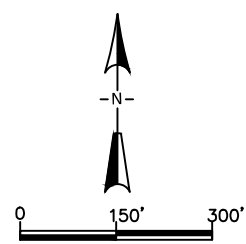
BASIN FW300

WET POND

DATE: 11/16/2018
BY: MAL
CHECKED: EPR



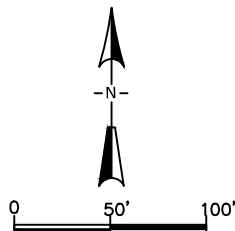
FW300
FW300 AREA
28.35 ACRES



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FW300
DRAINAGE AREA
DATE: 11/15/2018 BY: KAD CHECKED: EPR

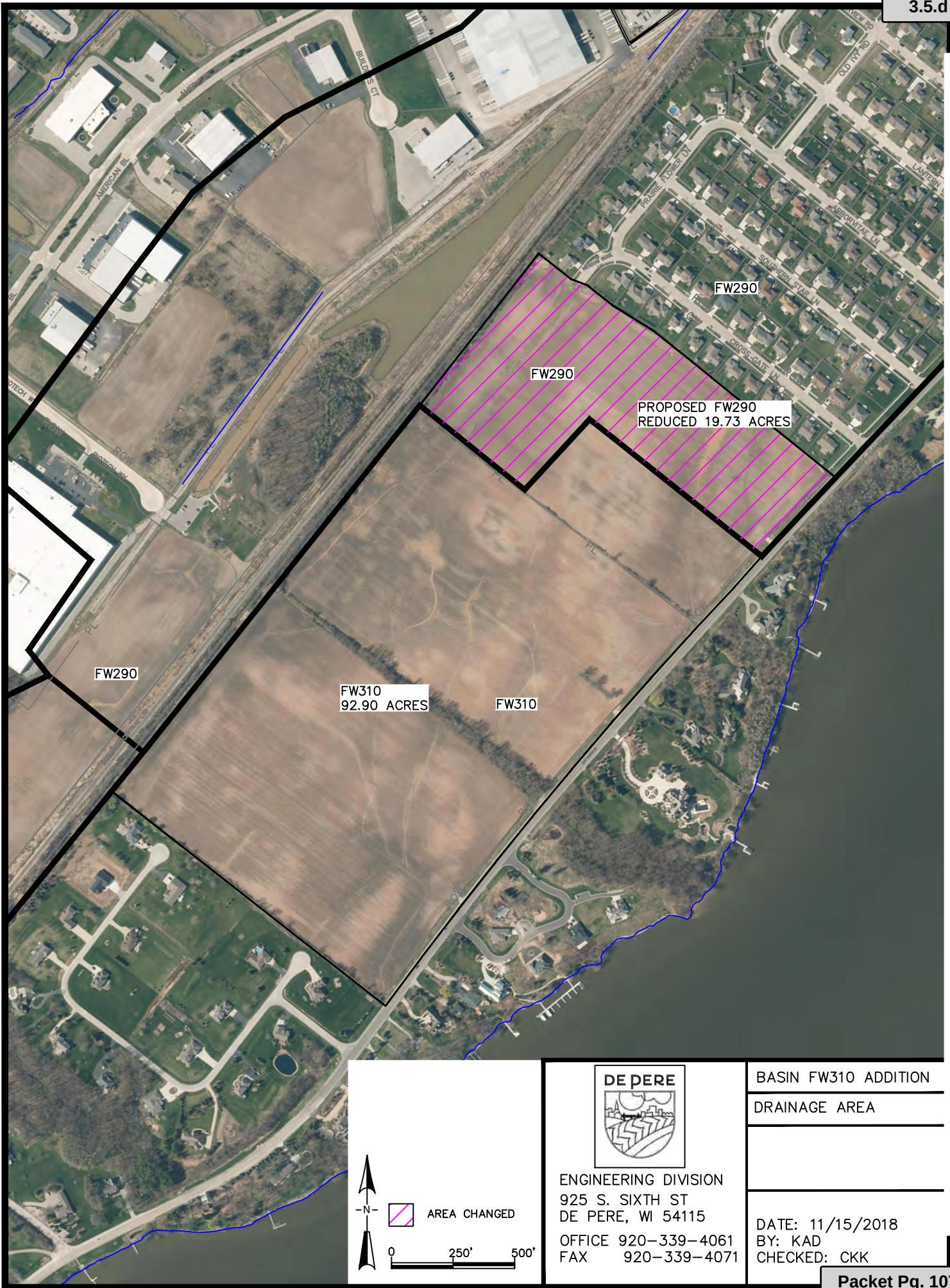
WET POND TO
TREAT FW310
0.92 ACRES
NWL 617+/-



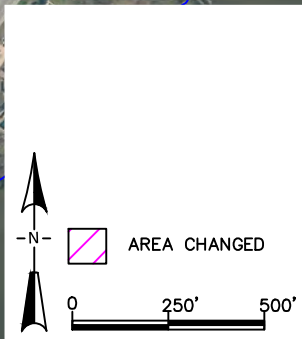
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FW310
SOUTHWEST SUBDIVISION
WET POND

DATE: 11/15/2018
BY: KAD
CHECKED: EPR



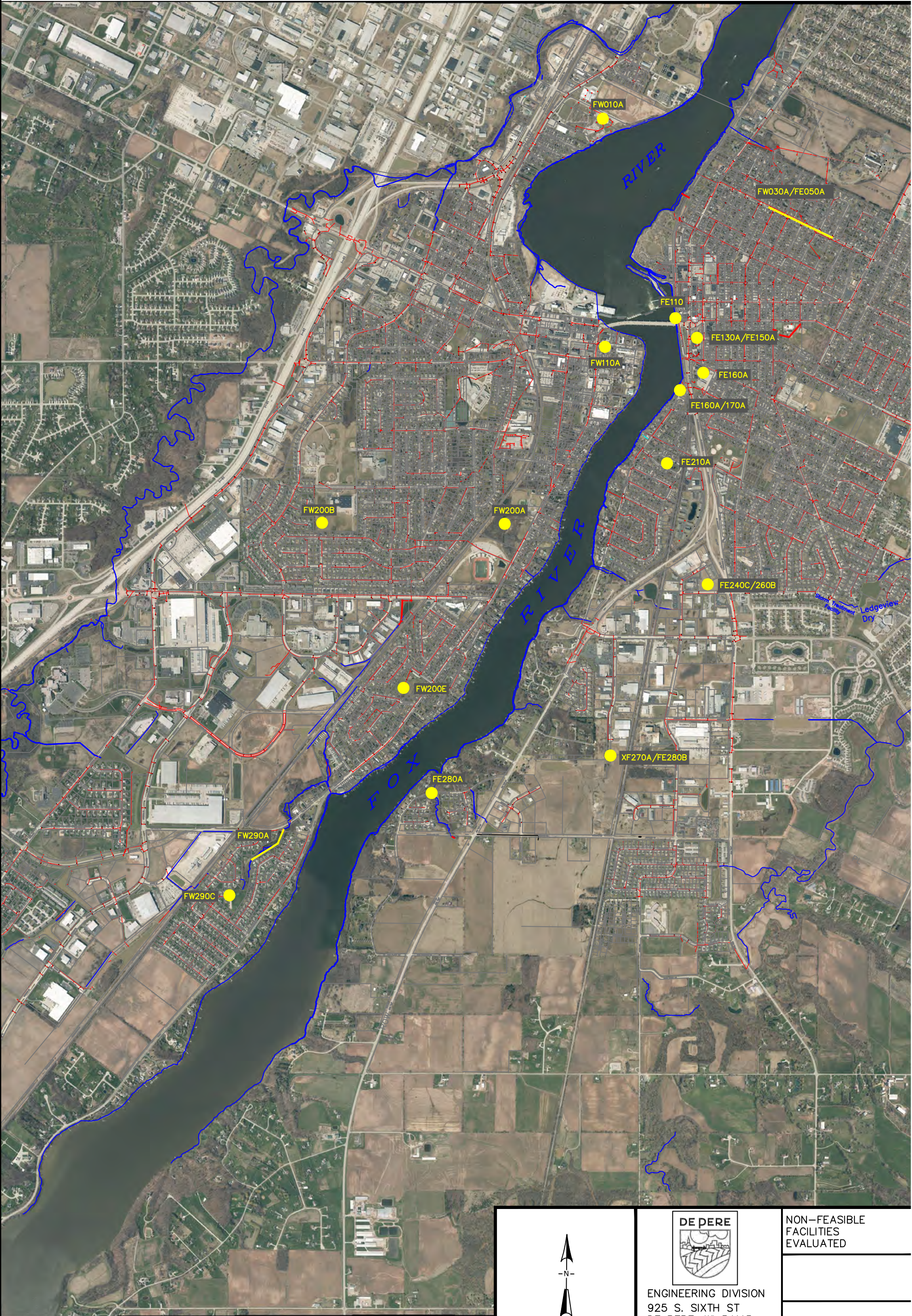
Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)



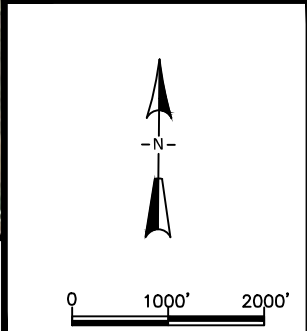
ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

BASIN FW310 ADDITION
DRAINAGE AREA
DATE: 11/15/2018
BY: KAD
CHECKED: CKK

Appendix B: Non-Feasible Regional Treatment Facilities



Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)





DE PERE

ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

NON-FEASIBLE FACILITIES EVALUATED
DATE: 11/26/2018 BY: MAL CHECKED: EPR

Appendix C: Interim Municipal Phosphorous Reduction Credit for Leaf Management Programs, March 8, 2018, by the Wisconsin Department of Natural Resources

Attachment: CE-TMDL Long Term Plan_v1 (8511 : Discuss 2018 Stormwater Management Plan-TMDL Written Plan*)



BUREAU OF WATERSHED MANAGEMENT PROGRAM GUIDANCE

RUNOFF MANAGEMENT POLICY AND MANAGEMENT TEAM Storm Water Management Program

Wisconsin Department of Natural Resources
101 S. Webster Street, P.O. Box 7921
Madison, WI 53707-7921

Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs

03-08-18

EGAD Number: 3800-2018-01

Notice: This document is intended solely as guidance, and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. This guidance does not establish or affect legal rights or obligations, and is not finally determinative of any of the issues addressed. This guidance does not create any rights enforceable by any party in litigation with the State of Wisconsin or the Department of Natural Resources. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

APPROVED:

Pam Biersach, Director
Bureau of Watershed Management

March 8, 2018

Date

A. Introduction/Statement of Problem Being Addressed

Permitted Municipal Separate Storm Sewer Systems (MS4s) will be subject to an annual average reduction for the discharge of a pollutant of concern to a surface water that has an approved TMDL. Recent studies indicate that phosphorus loads in stormwater in the fall of the year may be reduced by frequent leaf collection followed by street cleaning. Many municipalities are currently developing plans to meet TMDL limits and wish to include fall leaf management efforts in their plans.

While additional research is needed on a broader range of conditions and management methods, sufficient data is available to determine a preliminary phosphorus reduction credit for the most common municipal land use type. This credit is limited to the specific conditions and methods for which data is available. No credit has been quantified for other land uses, tree canopies, or collection programs but it is the Department's intent to expand the applicability of the guidance to more conditions and programs as additional studies are completed. This expansion is dependent on availability of funding for further data collection and evaluation.

B. Objectives

This guidance identifies a percent phosphorus reduction credit which may be taken by municipalities as part of TMDL planning and the conditions required to take that credit.

C. Background and Definitions

Urban trees provide a host of benefits to the residents and workers within a community, such as energy savings, aesthetics, airborne pollutant reduction, noise reduction, and providing bird habitat. Trees are also an important part of the hydrologic cycle. However, without adequate management of leaf litter, they also contribute to the nutrient loading in urban stormwater. Each tree species contributes a different amount of phosphorus to the stormwater, but since a diverse set of tree species is beneficial to long-term maintenance of a healthy canopy this effect is not being addressed at this time.

While there are many sources of phosphorus in urban stormwater, a primary contributor is organic detritus, especially in areas with dense overhead tree canopy (Duan et al, 2014; Hobbie et al, 2014; and Kalinosky et al, 2014). Measurement of end-of-pipe phosphorus concentrations has demonstrated that phosphorus loads in urban stormwater vary seasonally in certain medium density residential areas, with higher concentrations coinciding with leaf accumulation on streets (Selbig, 2016). As phosphorus discharges in stormwater can vary from year to year depending on timing of rainfall events, seasonal phosphorus loads were modeled over a twenty-year period with WinSLAMM to determine the average proportion that is discharged in the fall. From this information, it is estimated that on average 43% of the annual phosphorus load is discharged in the fall.

A variety of public works programs are already in place to collect leaves from the streets and properties in the fall, but until recently, little was known about the phosphorus reduction potential of different leaf collection programs. Over the last four years, the United States Geological Survey (USGS) conducted a study to characterize reductions of total and dissolved forms of phosphorus in stormwater through a municipal leaf collection and street cleaning programs in Madison, Wisconsin, USA. Some credit for phosphorus reduction is warranted based on the information.

To estimate the efficiency of leaf collection, leaves were collected three to four times at the test site and collected only once at the end of the fall at the control site. A small vehicle was used to push the leaves from the terrace into the street and then the leaves were pushed into garbage trucks. Within 24 hours of leaf collection, remaining leaf litter in the street was collected using mechanical street cleaners. Eight end-of-pipe phosphorus concentration measurements were compared at the test and control sites during the fall of 2016. Water quality data collected indicate that the collection and transfer method resulted in a 40% reduction of total phosphorus discharge in the fall at the test site versus the control site.

D. Guidance Content

A municipality may assume the specified reduction from no controls phosphorus loads provided all of the conditions are met. Further evaluation is required to determine how leaf collection methods may reduce loading to structural best management practices (BMPs) such as ponds. Therefore, this credit may not be taken in addition to phosphorus reductions from other BMPs in the drainage area at this time.

Transfer Plus Street Cleaning Method of Leaf Collection

Municipalities may assume 17% (40% reduction due to collection efforts x 43% of annual phosphorus load occurring in fall) Total Phosphorus annual load reduction for the leaf collection effort in the Medium Density Residential No Alleys (MDRNA) land use for this option. If the credit is desired for an area containing MDRNA and other land uses, the annual load reduction must be modified by the percent of the total phosphorus load from the area that is from the MDRNA. For example, the phosphorus load from a MDRNA might represent 60% of the load from the entire area. The new annual percent reduction for the area would be 10% (17% X 60%). Municipalities may apply the leaf credit to a subset of their MDRNA area if other BMPs are providing more phosphorus reduction for the remaining area. At this time credit for leaf collection is not available for other land uses or lower-density tree canopies. The Total Phosphorus annual load reduction for this option may be assumed if the following conditions are met:

1. Medium Density (2-6 units/acre) Residential (Single-family) land use without alleys. Medium Density Residential with alleys land use may be included if the alleys receive the same level of leaf collection and street cleaning as the streets.

2. Curb and gutter with storm sewer drainage systems and light parking densities during street cleaning activities.
3. An average of one or more mature trees located between the sidewalk and the curb for every 80 linear feet of curb. Where sidewalk is not present, trees within 15 feet of the curb may be counted toward tree cover. Generally, this equates to a tree canopy over the street (pavement only) of 17% or greater. Field investigations or aerial photography may be used to document the tree cover.
4. The municipality has an ordinance prohibiting residents from placement of leaves in the street and a policy stating that residents may place leaves on the terrace in bags or piles for collection.
5. Municipal leaf collection provided at least 4 times spaced throughout the months of October and November. Leaves may be pushed, vacuumed, or manually loaded into a fully enclosed vehicle, such as a garbage truck or covered dump truck. No leaf piles are left in the street overnight.
6. Within 24 hours of leaf collection, remaining leaf litter in the street must be collected using street cleaning machines, such as a mechanical broom or vacuum assisted street cleaner. A brush attachment on a skid steer is not an acceptable equivalent.

It is anticipated that additional scenarios will be added as research is completed.

E. References

- Duan, S., Delaney-Newcomb, K., Kaushal, S.S., Findlay, S.E.G., Belt, K.T., 2014. Potential effects of leaf litter on water quality in urban watersheds. *Biogeochemistry* 121, 61–80. <http://dx.doi.org/10.1007/s10533-014-0016-9>.
- Hobbie, S.E., Baker, L.A., Buyarski, C., Nidzgorski, D., Finlay, J.C., 2014. Decomposition of tree leaf litter on pavement: implications for urban water quality. *Urban Ecosyst.* 17 (2), 369–385. <http://dx.doi.org/10.1007/s11252-013-0329-9>.
- Kalinosky, P., Baker, L.A., Hobbie, S., Bintner, R., Buyarski, C., 2014. User support manual: estimating nutrient removal by enhanced street sweeping. Report to the Minnesota Pollution Control Agency (available at: <http://larrybakerlab.cfans.umn.edu/files/2011/07/Kalinosky-et-al.-2014.-Street-Sweeping-Guidance-Manual-final-9-24-2014.docx>, (accessed April 11th, 2016)).
- Selbig, W.R., 2016, Evaluation of leaf removal as a means to reduce nutrient concentrations and loads in urban stormwater, *Science of the Total Environment*, 571, pp. 124 – 133. <http://dx.doi.org/10.1016/j.scitotenv.2016.07.003>

CREATED:

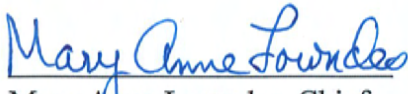


Amy Minser, Stormwater Engineer
On behalf of the Storm Water Liaison Team



Date

APPROVED:



Mary Anne Lowndes, Chief
Runoff Management Section



Date

Runoff Management Policy Management Team approved on February 1, 2018.
Division Administrator approved March 6, 2018.

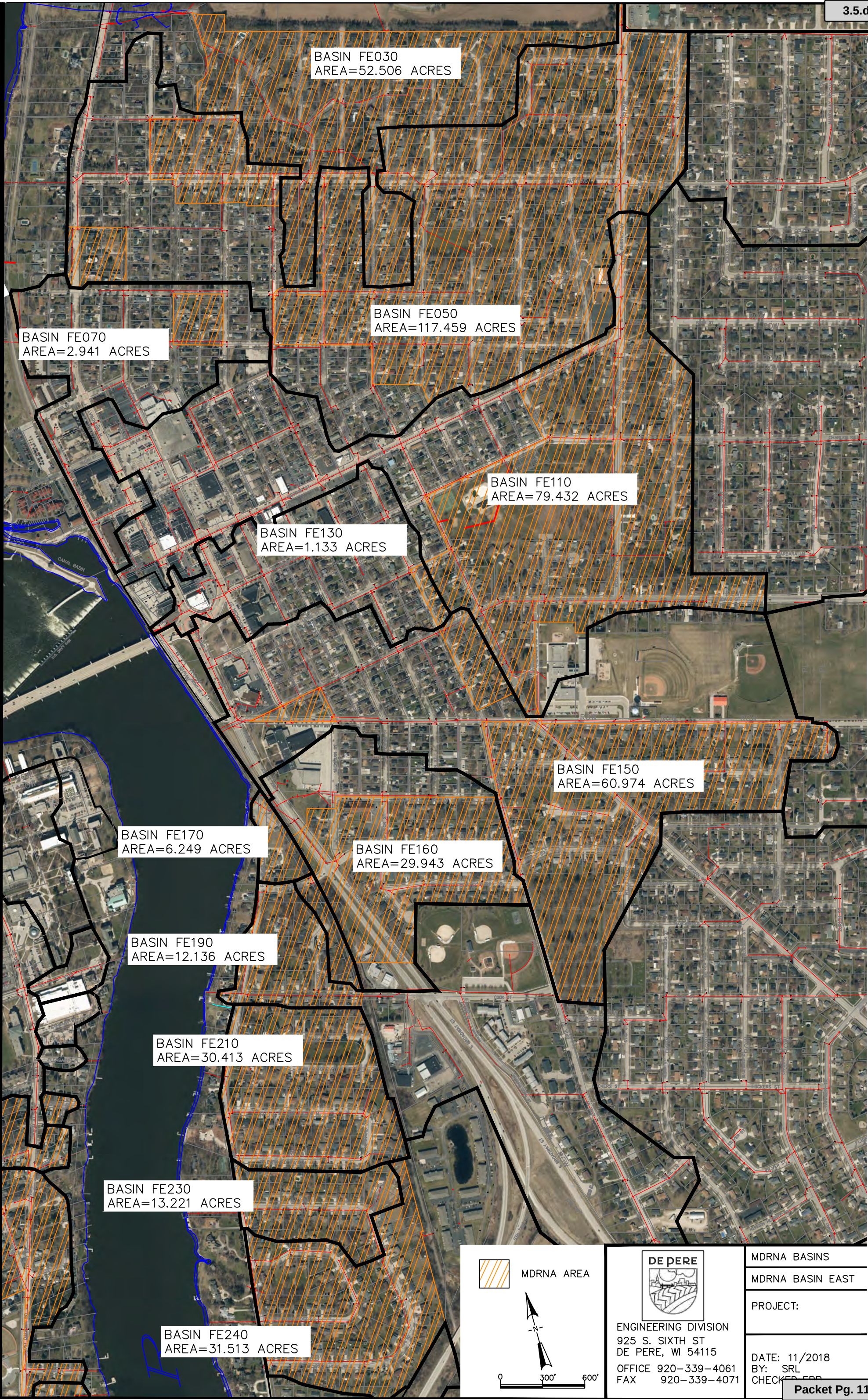
Appendix D: Leaf Collection Credit Map and Calculations

- 1) Modifications/Upgrades for Phosphorous from Sweeping
- 2) Modify Leaf Collection Basins Map

Original Study					2018 Proposed Revisions						
Basin	Basin Area (Acres)	Total Phosphorus No Controls (LB/Year)	Total Phosphorus With Controls (LB/Year)	Total Phosphorus Reduction (%)	Current Modeled Phosphorus Reduction (LB/Year)	MDRNA ¹ Area (Acres)	Total Phosphorus in MDRNA Area (LB/Year)	Ratio of MDRNA Area in Basin	Phosphorus Reduction Whole Basin (%)	Total Phosphorus Reduction (LB/Year)	Additional Total Phosphorus Reduction (LB/Year)
FE010	64.606	38.7	35.3	8.9%	3.44	-	-	-	8.9%	3.44	0.00
FE030	123.561	70.1	61.8	11.8%	8.27	52.506	8.9	0.42	14.0%	9.82	1.55
FE050	160.776	91.1	77.0	15.5%	14.12	117.459	20.0	0.73	16.6%	15.12	1.00
FE070	39.886	26.2	22.1	15.6%	4.09	2.941	0.5	0.07	15.7%	4.11	0.03
FE110	137.342	84.4	73.0	13.5%	11.39	79.432	13.5	0.58	15.5%	13.10	1.71
FE120	1.820	1.5	1.3	12.9%	0.19	-	-	-	12.9%	0.19	0.00
FE130	32.459	22.3	19.1	14.5%	3.23	1.133	0.2	0.03	14.6%	3.25	0.02
FE140	2.789	1.2	1.1	7.5%	0.09	-	-	-	7.5%	0.09	0.00
FE150	127.611	85.3	74.6	12.6%	10.75	60.974	10.4	0.48	14.7%	12.54	1.79
FE160	53.059	29.2	25.4	13.0%	3.80	29.943	5.1	0.56	15.3%	4.46	0.66
FE170	6.249	2.9	2.5	12.9%	0.37	6.249	1.1	1.00	17.0%	0.49	0.12
FE190	58.700	35.7	30.7	13.9%	4.96	12.136	2.1	0.21	14.5%	5.19	0.23
FE210	30.413	16.1	13.8	14.4%	2.32	30.413	5.2	1.00	17.0%	2.74	0.42
FE230	13.221	7.8	6.7	14.0%	1.09	13.221	2.2	1.00	17.0%	1.33	0.23
FE240	56.309	32.7	23.0	29.6%	9.68	31.513	-	-	29.6%	9.68	0.00
FE250	4.965	2.7	2.3	15.5%	0.42	-	-	-	15.5%	0.42	0.00
FE260	101.379	62.7	13.2	79.0%	49.53	-	-	-	79.0%	49.53	0.00
FE270	57.935	34.8	32.1	7.8%	2.71	-	-	-	7.8%	2.71	0.00
FE275	23.216	13.6	2.6	80.9%	11.00	-	-	-	80.9%	11.00	0.00
FE280	127.272	65.1	46.2	29.1%	18.94	-	-	-	29.1%	18.94	0.00
FE290	20.768	13.6	0.6	95.6%	13.00	-	-	-	95.6%	13.00	0.00
FW010	25.055	9.4	2.8	70.2%	6.60	-	-	-	70.2%	6.60	0.00
FW015	8.853	4.3	3.7	13.2%	0.57	8.853	1.5	1.00	17.0%	0.73	0.16
FW020	3.298	1.8	1.5	15.5%	0.28	3.298	0.6	1.00	17.0%	0.31	0.03
FW040	10.493	12.8	12.3	3.6%	0.46	-	-	-	3.6%	0.46	0.00
FW060	7.785	4.6	4.0	13.2%	0.61	7.785	1.3	1.00	17.0%	0.78	0.17
FW070	333.921	217.6	193.0	11.3%	24.59	216.146	36.7	0.65	15.0%	32.62	8.03
FW090	4.984	4.0	3.5	12.4%	0.50	-	-	-	12.4%	0.50	0.00
FW100	11.052	8.9	7.8	12.6%	1.12	-	-	-	12.6%	1.12	0.00
FW110	62.419	41.0	36.4	11.1%	4.55	-	-	-	11.1%	4.55	0.00
FW120	13.135	9.8	9.1	7.6%	0.74	-	-	-	7.6%	0.74	0.00
FW130	4.476	3.4	3.1	7.5%	0.26	-	-	-	7.5%	0.26	0.00
FW140	3.620	2.7	2.5	7.5%	0.20	-	-	-	7.5%	0.20	0.00
FW150	2.691	2.0	1.8	7.8%	0.16	-	-	-	7.8%	0.16	0.00
FW155	1.111	0.6	0.5	15.5%	0.09	-	-	-	15.5%	0.09	0.00
FW160	1.022	0.6	0.5	15.5%	0.09	1.022	0.2	1.00	17.0%	0.10	0.01
FW170	5.628	3.2	2.7	15.3%	0.49	5.628	1.0	1.00	17.0%	0.54	0.05
FW180	38.228	19.1	16.8	12.2%	2.33	24.668	4.2	0.65	15.3%	2.92	0.59
FW190	3.672	2.0	1.7	15.5%	0.31	3.672	0.6	1.00	17.0%	0.34	0.03
FW200	641.931	403.2	258.9	35.8%	144.35	-	-	-	35.8%	144.35	0.00
FW210	3.561	1.9	1.6	15.5%	0.29	3.561	0.6	1.00	17.0%	0.32	0.03
FW230	13.484	7.3	6.2	15.5%	1.13	13.484	2.3	1.00	17.0%	1.24	0.11
FW270	23.616	12.8	10.8	15.3%	1.96	23.616	4.0	1.00	17.0%	2.18	0.22
FW280	189.282	130.9	54.5	58.4%	76.45	-	-	-	58.4%	76.45	0.00
FW290	342.139	212.6	97.8	54.0%	114.80	-	-	-	54.0%	114.80	0.00
FW300	7.598	4.2	3.6	15.2%	0.64	-	-	-	15.2%	0.64	0.00
Total	3007.4	1858.2	1301.1	30.0%	557.1	749.7			30.9%		17.2

Notes:

- MDRNA - Medium Density Residential No Alleys land use meeting guidelines set forth in WisDNR Bureau of Watershed Management Program Guidance on Interim Municipal Phosphorus Reduction Credit for Leaf Management Programs.



BASIN FE030
AREA=52.506 ACRES

BASIN FE050
AREA=117.459 ACRES

BASIN FE070
AREA=2.941 ACRES

BASIN FE110
AREA=79.432 ACRES

BASIN FE130
AREA=1.133 ACRES

BASIN FE150
AREA=60.974 ACRES

BASIN FE170
AREA=6.249 ACRES

BASIN FE160
AREA=29.943 ACRES

BASIN FE190
AREA=12.136 ACRES

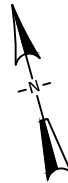
BASIN FE210
AREA=30.413 ACRES

BASIN FE230
AREA=13.221 ACRES

BASIN FE240
AREA=31.513 ACRES



MDRNA AREA



0 300' 600'



ENGINEERING DIVISION
925 S. SIXTH ST
DE PERE, WI 54115
OFFICE 920-339-4061
FAX 920-339-4071

MDRNA BASINS
MDRNA BASIN EAST

PROJECT:

DATE: 11/2018
BY: SRL
CHECKED: FDB

