BAXTER & WOODMAN
Consulting Engineers
256 South Pine Street, Burlington, WI 53105 • 262.763.7834 • baxterwoodman.com

August 14, 2017

Mr. Steve Knudson
Public Service Commission of Wisconsin
610 N. Whitney Way
Madison, WI 53705

Subject: Paddock Lake – Water System Improvements

Dear Mr. Knudson:

On behalf of the Village of Paddock Lake, we are requesting your Authority to Construct for the Water System Improvements project. Enclosed is a project filing application report which includes a project description, the estimated costs, project schedule, design parameters, and a discussion of alternatives in accordance with the requirements of Wisconsin Administrative Code PSC Chapter 184.

Please call if you have any questions.

Sincerely,

BAXTER & WOODMAN, INC.
CONSULTING ENGINEERS

Joseph W. Marchese

Joseph W. Marchese, P.E.

JWM:jmc
Encs.
C: Tim Popanda, Village of Paddock Lake (electronic copy)
Mark Kolczaski, Baxter & Woodman (electronic copy)
Doug Snyder, Baxter & Woodman (electronic copy)

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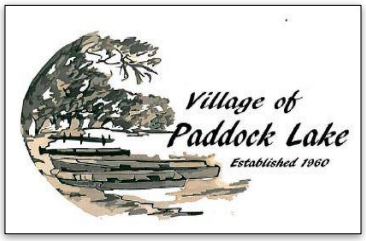
Village of Paddock Lake, Wisconsin

Water Supply Improvements

PSC Filing Application



Prepared by:

BAXTER & WOODMAN
Consulting Engineers

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August 2017

Village of Paddock Lake, Wisconsin
Water Supply Improvements PSC Filing Application

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1. PROJECT OVERVIEW

1.1 Location

The project is located in the Village of Paddock Lake, Wisconsin, about 15 miles west of the City of Kenosha, Wisconsin and about five miles north of the Illinois State border. Specifically, the project is located in Kenosha County, Township 1N, Range 20E, and Sections 2, 3, 10, and 11. The project includes three separate sites. The Well No. 1 and Well No. 2 sites located near the east end of the Village, the Well No. 3 site located near the southwest side of the Village, and the water main portion runs along STH 50 from near the west end of the Village at STH 75 to near the east end of the Village at 236th Avenue. See Appendix A for a Water System Concept Plan.

1.2 Project Description

The planned improvements include an expansion and improvements of the existing east side water system to provide additional supply and fire protection to existing customers and allow for service and fire protection expansion to future customers along the south and west sides of the Village. The following describes the proposed improvements:

- A new pump station to house Wells No. 1 and No. 2 that will include a ground storage reservoir, high service pumps, chemical addition (sodium hypochlorite and phosphate), and emergency stand-by power.
- New 350 gpm pumps for both Wells No. 1 and No. 2.
- New 12-inch water main along STH 50 and 236th Avenue to connect the east side system to the west side system. The new mains will provide service to Central High School and businesses on STH 50.
- A pump station, well pump, and emergency stand by power at the previously constructed Well No. 3; this pumping station will be classified as emergency use only and serve as the required redundant source of water.

1.3 Proposed Construction

The proposed construction requires improvements to Wells No. 1 and No. 2 and utilizing Well No. 3 as a back-up source. The water main construction will interconnect the east and west side water systems.

1.4 Construction Schedule

The project schedule includes design of the proposed improvements currently underway with Bidding and Award of the proposed project in early 2018. Construction would then begin in spring of 2018 and be complete by fall of 2018.

1.5 Contact Information

Table 1 contains a list of contact information for the design engineer and the Village.

TABLE 1

Contact Information

Name	Title	Organization	Address	Phone #
Joseph Marchese, PE	Project Manager	Baxter & Woodman	256 S. Pine St. Burlington, WI 53105	815-444-3363
Tim Popanda	Village Administrator	Village of Paddock Lake	6969 236th Ave. Salem, WI 53168	262-843-2713

1.6 Other Agency Correspondence/Permits/Approvals

1.6.1 Copies of Correspondence

See Appendix B for correspondence between the Village and the WDNR regarding the concept plans for supplying the west side of the Village with drinking water and improving fire protection throughout the areas served.

1.6.2 Issues or Concerns

No issues or concerns regarding this project have been raised.

1.6.3 Permits/Approvals Required

The Village will need to obtain a permit from the Public Service Commission for the Authority to Construct the project. The Village will also need WDNR approval for the water system improvements, the water main construction, and construction site stormwater and erosion control permits. A permit from WisDOT will be required for constructing, operating, and maintaing the water main along STH 50.

1.7 Project Maps

Refer to Appendix B for the project maps referenced in other Sections of this Report.

2. PROJECT DEVELOPMENT AND ALTERNATIVES

2.1 Purpose for the Project

The Village of Paddock Lake Water Utility currently serves roughly one third of its citizens, as a result, the U.S. Census population data is not applicable. However, the Village had a population of 2,992 as of the 2010 U.S. Census. The data in Table 2 below shows the current population served by the Utility as well as estimates for the number of new customers this project will serve. The data was provided by the Village and the Public Service Commission (PSC) of Wisconsin.

TABLE 2

Population

Service Area	Population
East Side Water System – Current	1,001
West Side and Business District	505
HWY 50 Business District	204
Total – With Improvements	1,710

While only one third of its citizens are being served by the water system, population projections for the Village are located in Table 3. The population projections are provided by the Department of Administration (DOA) – Demographic Services Center (DSC). Most of the near-term population growth in the Village is expected to occur on the west side of the Village and will be served by the new west side water system. Development is expected to occur only if the west side water system is placed into service.

TABLE 3

Population Projections

Year	Population
2015	3,015
2020	3,135
2025	3,215
2030	3,280
2035	3,290
2040	3,265

The existing water supply system is at the end of its useful life and is not code compliant. Much of the distribution system was installed with Wells No. 1 and No. 2 in 1958. The facility cannot be expanded beyond the current 275 single family home connections per WDNR orders. The firm capacity, or capacity with the largest well out of service, of the system has been exceeded by the

maximum system demand and needs to be expanded to allow for growth of the water utility and to provide fire protection for the service area. Table 4 shows the historical water demands from PSC records, the maximum day to average day ratio, and the average gallons of water used per capita per day (gpcd) .

TABLE 4

Historical Water Demands

Year	Average Day Demand (MGD)	Maximum Day Demand (MGD)	Max Day / Avg Day	GPCD
2011	0.0559	0.160	2.9	56
2012	0.0604	0.193	3.2	60
2013	0.0536	0.150	2.8	54
2014	0.0525	0.153	2.9	52
2015	0.0477	0.103	2.2	48
Average	0.0540	0.152	2.8	54

The utility, however, cannot provide water for additional customers or provide fire protection for the community. Another hot, dry summer similar to 2012 will push the water system beyond the firm capacity 0.180 MGD. The proposed improvements will provide a back-up water supply to be used for fire protection as well as improving the wells and storage system to provide more water for the community. Also, with both existing wells being drilled into the same aquifer so close to each other, a contamination event or need for chemical treatment would likely prohibit either well from being used.

In addition to the capacity and fire protection improvements needed, the system is out of compliance with WDNR requirements. On July 26, 2005, a boil water notice was issued by the WDNR as a result of positive total coliform samples taken from the distribution system. At the time, community water systems were not required to have continuous disinfection, and as such, the Village had no permanent disinfection for the water system. Shortly afterwards, the Paddock Lake Water Utility installed chemical feed equipment. The chemical feed equipment includes a blended phosphate injector and chlorine injector for both Wells No. 1 and No. 2. Since then, the water utility has and can properly provide safe drinking water for its customers. However, the WDNR approved the chemical feed system on a temporary basis, with the understanding a more permanent solution would be provided upon completion of the west side water system.

The need for this project is to improve water system capacity and provide fire flow protection. This project will also expand the water system within the Village to allow more citizens the opportunity to connect to the public water system. This project will help the Village attract more development by providing a reliable water source and fire protection. Another benefit of this project will be improved water quality and system reliability which the Village has been lacking for many years. The improvements will bring the system up to all current WDNR and OSHA safety standards to provide operators with a system that is safe and reliable.

2.2 Relation to Future Projects

In this proposed plan, the maximum growth for the water utility is 350 gpm. Based on a current maximum day demand (2012) of 134 gallsons per minute, a maximum day to average day ratio of 3 to 1, and 60 gpcd for new population growth, this phase will allow for an additional 1,700 population equivalent. Any additional growth beyond that will need to occur after additional phases have been implemented. Details for the Phases 2 and 3 are summarized below and are taken from the "Paddock Lake Water System Conceptual Plan" found in Appendix A. The only change made to the concept plan is that the Phase 2 elevated storage hydraulic grade line will match the existing Bristol and Paddock Lake systems, there will be a small geographic booster zone in the area of the water tower and there will only be one main needed between the Well No. 1/Well No. 2 facility and State Road 50.

Phase 2 – The intent is that this phase would proceed when the projected maximum day demand is between 350 and 700 gpm, or up to an additional 4,500 population equivalent beyond the current population served, and would include:

- Elevated tank with volume similar to or larger than the proposed ground storage reservoir at Wells No. 1 and No. 2 to be constructed in the western part of the Village. Overflow elevation would match the Village of Bristol and the existing east side system; the higher areas adjacent would require a small boosted zone to maintain static pressure above the 35 psi minimum to serve the entire Village.
- Iron removal filters at Well No. 3 and convert well to regular use.
- Continue replacing water mains in the existing system.

Phase 3 – The intent is that this phase would proceed when the projected maximum day demand exceeds 700 gpm, or above an additional 4,500 population equivalent beyond the current population served, and would include:

- A pump station and pump for previously constructed Well No. 4. The water would be pumped to Well No. 3 for treatment.
- A second connection between the east side and west side water systems, possibly along County Road K.
- Iron removal at Well 1 and Well 2.

2.3 Alternatives

Three different options were considered for the improvements for the Village of Paddock Lake Water Utility. The three options are summarized below.

Option 1: Improvements to Wells No. 1 and No. 2 and utilizing Well No. 3 as a back-up source – Selected Option

To allow for growth of the water utility, Wells No. 1 and No. 2 will be rehabilitated and a new 350 gpm pump will be installed at both wells. In addition to the rehabilitation and new pumps, a new pump station to house Wells No. 1 and No. 2 will be constructed that includes a ground reservoir, high service pumps, chemical addition (sodium hypochlorite and phosphate), and emergency

power. The pump station building will be constructed of masonry with a precast concrete plank ceiling. The reservoir will be a cast-in-place concrete reservoir partially buried below grade with a capacity of approximately 140,000 gallons. The reservoir will be sized to store a two-hour fire and the high service pumps will be sized to meet the maximum day needs of the customers and the fire demand.

A pump station and pump will be provided for previously constructed Well No. 3; this well will serve as a backup source of water until the Phase 2 improvements including the iron removal facilities are provided. The pump station building will be constructed of masonry with a precast concrete plank ceiling. The well capacity will match that of Well No. 1, or 350 gpm. The well will discharge to the common pressure zone with the service pumps of Well No. 1 and No. 2. A new 12" water main on STH 50 and 236th Avenue will connect to existing unused mains on STH 75 in the western part of the Village. The new water main will be constructed of PVC or HDPE and the water services will mostly be HDPE. Table 5 shows the preliminary opinion of probable cost for Option 1.

TABLE 5

Option 1 Project Costs

Description	Cost
Wells No. 1 & No. 2 Pump Station and Storage Improvements	$1,535,000
Well No. 3 Emergency Back-up Pump Station	$517,000
Wells No. 1 & No. 2 Rehabilitation/Well Pumps	$220,000
Highway 50 Water Main	$1,800,000
Highway 50 Water Services	$450,000
Total	**$4,522,000**

Option 2: Improvements to Wells No. 1 and No. 2 and utilizing a connection to Village of Bristol water system to serve as a backup supply

This option is similar to Option 1 with one exception; a connection to the Village of Bristol water system will serve as a backup water supply instead of implementing the improvements to Well No. 3. Wells No. 1 & No. 2 will receive the same improvements as described in Option 1. A water main connection to the Village of Bristol water system along STH 50 between 236th Avenue and USH 45 will be installed. The 12" water main will provide roughly 370 gpm of similar quality of water. This option will work to provide additional water capacity, but should not be used as fire protection. The water main will contain two days' worth of water for the Village of Paddock Lake, as a result, additional chlorine may need to be added to the water before use in the Paddock Lake system. Table 6 shows the preliminary opinion of probable cost for Option 2.

TABLE 6
Option 2 Project Costs

Description	Cost
Wells No. 1 & No. 2 Pump Station and Storage Improvements	$1,535,000
Wells No. 1 & No. 2 Rehabilitation/Well Pumps	$220,000
Highway 50 Water Main	$1,800,000
Highway 50 Water Services	$450,000
Connection to Bristol Water Supply	$1,062,000
Total	**$5,067,000**

Option 3: Well No. 3 and No. 4 Improvements

Wells No. 3 and No. 4 have been drilled and tested. Well No. 3 has a capacity of 800 gpm; Well No. 4 has a capacity of 400 gpm. Both wells are high in dissolved iron; removal treatment is needed. The well pumps and iron removal equipment will be sized only to meet the needs of the initial development area. The treatment building will be expanded in the future to maximize the future well output. The booster pumps and ground storage reservoir will provide 1,000 gpm fire protection for 2 hours. An access drive is needed to both sites; plans are to reuse and improve the limestone drives installed by the well driller. Fire protection will be provided by a pump and ground reservoir in the treatment building. Well No. 4 will be pumped to the treatment facility on the Well No. 3 site. There is existing water main between the well sites, on CTH F, and on STH 75 that was installed in 2005. Table 7 shows the preliminary opinion of probable cost for Option 3.

TABLE 7

Option 3 Project Costs

Description	Cost
Well No. 3	
Well Pump Station, Generator, Tank Building	$500,000
Water Treatment Equipment and Building	$700,000
Booster Station and Storage Facility	$500,000
Limestone Access Drive from Site to CTH F	$90,000
Sanitary Service from Site to CTH F	$60,000
Well No. 4	
Well Pump Station and Generator	$300,000
Limestone Access Drive from Site to Public Road	$40,000
Sanitary Holding Tank	$12,000
Construction Contingency (20%)	$440,400
Design Engineering (8%)	$211,400
Bidding and Construction Engineering (7%)	$264,200
Wells No. 3 & No. 4 Subtotal	$3,118,000
Highway 50 Water Main	$1,800,000
Highway 50 Water Services	$450,000
Total	**$5,368,000**

2.4 Factors Considered

Option No. 1 was the selected alternative based on the life cycle cost analysis and non-monetary factors as outlined below.

2.4.1 Life Cycle Cost Analysis

A 20-year present worth cost comparison is included in Appendix C. Option 2 has the lowest total present worth cost, Option 1 has the second lowest total present worth cost, and Option 3 has the highest total present worth cost.

2.4.2 Non-Monetary Factors

Many non-monetary factors were taken into consideration including water system infrastructure currently installed but not being used, fire protection improvements, and reliance on other communities for water service. Option 1 also provides the opportunity to bring the existing water supply system up to code.

3. PROJECT COSTS

3.1 Estimated Cost of Project

A breakdown of total project costs in accordance with Commission Uniform System of Accounts (USoA) is included in Table 8.

TABLE 8

USoA Cost Breakdown

Account #	Description	Estimated Cost
314	Wells and Springs	$40,000
321	Structures and Improvements	$1,390,720
325	Electric Pumping Equipment	$145,000
343	Transmission and Distribution Mains	$1,267,250
345	Services	$327,930
348	Hydrants	$80,000
SUBTOTAL CONSTRUCTION		$3,250,900
Contingency		$325,100
TOTAL CONSTRUCTION		$3,576,000
Engineering		$712,000
Legal		$20,000
Administration		$30,000
Interest		$100,000
Total Project Costs		**$4,438,000**

3.2 Estimated Annual Operating Costs

A preliminary look at the annual operating budget is included below.

3.2.1 Income

Current total annual revenue from retail sales is $91,538. This amount will increase once the new users are connected to the water system. The current average quarterly water user rates are $105.86 per customer. The proposed average quarterly water user rates will increase to $136.65 per customer in the first year. Estimated annual income is outlined in Table 9 below.

TABLE 9

Estimated Income

Description	Description	Cost
Operating Income	Metered sales – residential	$91,538
Non-Operating Income	Utility bill penalty and late charges	$900
Non-Operating Income – Other	Commercial sales	$3,102
Non-Operating Income – Assessments		$33,570
Non-Operating Income – GO/Taxes	General Fund	$120,000
Non-Operating Income – Other	TID Payments	$51,500
Other	Public sales	$1,683
Total		**$302,293**

3.2.2 Annual O&M Costs

A summary of annual operation and maintenance costs provided by the Village is included in Table 10.

TABLE 10

Proposed O&M Costs

Expense Item	Description	Annual Amount
Administrative/Office	Utility billing, Administration	$5,249
Engineering		$1,500
Insurance	Work comp., Liability	$3,900
Repairs/Maintenance		$17,600
Salaries/Benefits	Salary and Benefits	$16,761
Supplies	Chemicals	$5,600
Utilities	Electric, gas, and communication	$10,390
Total		**$61,000**

3.2.3 Debt Repayments

Existing debt repayments include a $122,000 annual payment for general obligation bonds from previous water system improvements. The existing debt payment will be transferred to the general fund and will be removed from the user rate calculations going forward. Only the debt repayment on the USDA loan will apply towards the new user rates. The annual debt payment for this new loan is estimated at $171,828.

3.2.4 Reserves

The Village will maintain reserves at current levels and increase when funds allow.

3.3 Replaced/Retired Property

This project does not involve replacement or retiring of any property.

3.4 Funding Sources

The Village has applied for a United States Department of Agriculture Rural Development loan and has received approval for that loan. The loan will be secured by a Mortgage Revenue Bond for a term of 40 years at an interest rate of 2.375%. The principal is due on an annual basis and the interest is due on a semi-annual basis each year.

3.5 Effect of the Proposed Project

The proposed project will improve water system capacity and provide fire flow protection. This project will also expand the water system within the Village to allow more citizens the opportunity to connect to the public water system. This project will help the Village attract more development by providing a reliable water source and fire protection. As more customers are connected to the system, the goal is that the cost of service will decrease or remain relatively constant.

4. EXISTING SITE INFORMATION

4.1 Existing System Description

Wells No. 1 and No. 2 were drilled and placed into service in 1958. The wells occupy the same pumphouse and both draw water from the sand and gravel aquifer. Well No. 1 is a 12-inch diameter well drilled to a depth of 136 feet and has an operational capacity of 375 gpm at 217 feet of head. Well No. 2 is a 6-inch diameter well drilled to 141 feet and has an operational capacity of 125 gpm at 227 feet of head. A hydro-pneumatic pressure tank was installed at the wells to provide storage system pressure. The tank can hold 10,000 gallons and has a pressure range of 40-60 psi. The tank is below grade and does not meet current requirements of Section NR 811.61 of the Wisconsin Administrative Code and presents OSHA confined space entry issues. The majority of the distribution system was also constructed at this time. According to the 2015 PSC Annual Water System Report, the distribution system consists of a total of 15,370 feet of water main; 4,171 feet is 4-inch diameter, 10,346 feet is 6-inch diameter, and 853 feet is 8-inch diameter.

The Village of Paddock Lake Water Utility was utilizing an Emergency Chlorination Procedure until 2005. The procedure was called into action when a "valid follow-up sample comes back positive for total coliform". Until the implementation of the emergency procedure, chlorine or any disinfecting product, was not added to the system. On July 26, 2005, a boil water notice was issued by the WDNR as a result of positive total coliform samples taken from the distribution system. Chemical injection systems were proposed and installed at both Wells No. 1 & No. 2 to inject blended phosphate and chlorine. The details of the implemented chemical feed systems are described in the 2005 Chemical Feed Approval letter from the WDNR, see Appendix A. As part of this approval letter, a variance was issued due code compliance issues and required a new pump station to be constructed within five years; this requirement has not been met but will be addressed as part of the proposed project.

Wells No. 3 andNo. 4 and approximately 2.5 miles of water main were constructed in 2008 to serve the new West Side Water System. The wells were drilled and grouted, but a pump or well station were not installed and the water main was never placed into service. At the same time, several proposed developments within the Village were put on hold due to the economic recession, and it was decided that the best solution at that time was to cap the wells and leave them for future developments.

5. ROUTE AND SITE INFORMATION

5.1 General Description

The project includes three separate sites. The Well No. 1 and Well No. 2 sites located near the east end of the Village, the Well No. 3 site located near the southwest side of the Village, and the water main portion runs along STH 50 from near the west end of the Village at STH 75 to near the east end of the Village at 236th Avenue. A majority of the water main will be constructed within road right-of-ways with only a small portion (less than 10%) being constructed within easements.

5.2 Water Main Description

Approximately 7,100 feet of new 12" water main and 200 feet of new 8" water main on STH 50 and 236th Avenue will connect to existing unused mains on STH 75 in the western part of the Village. The new water main will be constructed of PVC or HDPE and the water services will mostly be HDPE. There will be approximately 16 new fire hydrants installed throughout the project.

5.3 Associated Facilities

See other sections of this report for a discussion of associated facilites.

5.4 Staging Areas

All staging areas will be kept within close proximity to the construction sites and the footprint of the staging areas will be kept to a minimum. All staging areas will be restored to their pre-existing condition upon project completion.

5.5 Wisconsin Department of Transportation (WisDOT) ROWs

A majority of the water main construction associated with this project will occur within the WisDOT ROW of STH 50. Detailed plans will be submitted to WisDOT along with a permit request to construct, operate, and maintain the water main within the ROW. All work within the WisDOT ROW will be coordinated with them and in accordance with their requirements. STH 50 is scheduled to be reconstructed through the Village within the next several years.

5.6 Construction Impacts

A large construction project of this nature will have wide-ranging construction impacts throughout the project. However, many of the impacts will be short term and the long term benefits far outweigh any of these short term impacts. The water main construction and well work will be done concurrently with a goal of completing all work at approximately the same time. All existing water customers are expected to have a continuous supply of drinking water throughout the project with only minor short term outages necessary for crossover connections.

A majority of the water main is expected to be installed using open trench methods. All STH 50 crossings will be directionally drilled as well as the culvert crossing at the east end of STH 50 in an effort to minimize construction impacts.

Traffic impacts will be unavoidable during this project but will be kept to a minimum. STH 50 is a major highway through Kenosha County. Most of the work will be done outside of the roadway, however, lane closures will be required to keep workers and the public safe during construction. Traffic control will be provided in accordance with WisDOT requirements.

Environmental impacts are covered in the following section.

6. NATURAL RESOURCE IMPACTS

6.1 Flood-Sensitive Facilities

There is one location throughout the project where work will be performed within a floodplain. This location is on STH 50 just west of 236th Avenue. An unnamed stream crosses STH 50 at this location. The intermittent stream source is Paddock Lake and flows through a culvert under the highway. The outfall for the lake for normal flows is through a discharge pipe below the intermittent stream. The tentative plan is to directionally drill the water main under the culvert at this location to avoid any impacts on the intermittent stream. A map of the floodplain locations from the WDNR Surface Water Viewer relative to the project site is included in Appendix B.

6.2 Wetlands

There are several locations throughout the project where wetlands will be near the project site, but no wetlands will be directly affected by the proposed construction. A map of the wetland locations from the WDNR Surface Water Viewer relative to the project site is included in Appendix B.

6.2.1 Wetland Identification

Wetland delineation has been completed for the entire project limits. A wetland report has been prepared and will be submitted to the WDNR for concurrence and permitting.

6.2.2 Limiting Wetland Impacts

Silt fence will be placed along the edge of all wetlands to prevent any impacts from construction activities. Silt fence will be installed by the Contractor prior to any earth moving activities and will remain in place until restoration has been completed upland of the wetland.

6.3 Waterbodies/Waterways

No waterbodies or waterways will be crossed except as noted above. No construction activities will occur below the ordinary high water mark (OHWM) of a waterbody or waterway.

6.4 Rare Species and Natural Communities

A preliminary investigation into threatened or endangered species within/near the project area using the U.S. Fish & Wildlife Service IPaC Trust Resources Report indicated three endangered species, zero critical habitats, twenty five migratory birds, zero wildlife refuges and fish hatcheries, and three classifications of wetlands.

Based on these preliminary findings, an Endangered Resources Review Request was submitted to the Wisconsin Department of Natural Resources (WDNR) Bureau of Natural Heritage conservation. Their review revealed that the project falls under the Broad Incidental Take Permit and Authorization for No/Low Impact Activities, and therefore does not require an Endangered

Resources Review. A copy of the letter outlining this coverage along with the ER Review Verification is also included in Appendix D.

6.5 Archeological and Historic Resources

There are no historic properties located within the project area. The water main construction will all be within existing road right-of-ways that have previously been disturbed. The new pump station to house Wells No. 1 and No. 2 will be built on the site of the existing pump station building. The pump station at Well No. 3 will be built on land that was previously used for farming. The site was disturbed during well drilling activities and no items of historic significance were found.

The State Historic Preservation Office has reviewed the project and concurs that no historic properties will be affected. See Appendix D for a copy of the approval request.

6.6 Other Environmental Considerations

The construction of the proposed improvements will not have any permanent adverse air quality impacts. Some temporary adverse impacts resulting from the construction activities will occur. These include airborne dust from construction activities and vehicle emissions from workers' vehicles, delivery trucks, and construction equipment. Proper construction techniques will be utilized to minimize these negative impacts.

Other than the noise produced by construction activities, the proposed construction will not have any adverse effects on noise. The new equipment at the pump stations will produce the most noise. A majority of the new equipment will be installed inside the new pump station buildings. Standby generators may be installed outside adjacent to the new pump buildings, but would be enclosed in sound attenuating enclosures.

The proposed facilities will use more electricity than the existing pumping station. Most of the increase in power will be due to an increase in the motor sizes for the Welsl No. 1 and No. 2 pumps to pump a greater volume of water. There will also be new booster pumping equipment to pump the water from the ground reservoir into the distribution system. There will also be an increase in electricity due to the new construction of the Well No. 3 pump station, however, this facility will initially be used as a backup source of water, so initial energy consumption from this facility will be minimal. The increase in electricity use is necessary when expanding a water system.

VILLAGE OF PADDOCK lAKE, WISCONSIN
WATER SYSTEM IMPROVEMENTS
PSC FILING APPLICATION

APPENDIX A

Project Maps

- Water System Concept Plan
- Wetland Locations
- Floodplain Information

FUTURE WATER MAIN

12" MAIN (PHASE 3)

CTH K

ELEVATED STORAGE
(PHASE 2)
LOCATION UNKNOWN

STH 75

EXISTING 12"
MAIN–UNUSED

PADDOCK LAKE

APPROX. AREA WITH EXISTING
MUNICIPAL WATER SERVICE
LOW PRESSURE ZONE, EXISTING
MAINS NOT SHOWN

WELL NO. 1 & NO. 2
IMPROVEMENTS (PHASE 1)

12" WATER MAIN–HIGH PRESSURE (PHASE 1)
8" WATER MAIN–LOW PRESSURE (PHASE 1)

12" WATER MAIN (PHASE 1)
RELAY

STH 50

CENTRAL
HIGH
SCHOOL

CONNECT TO EXISTING
WATER MAIN

12" WATER MAIN (PHASE 1)

WELL NO. 3 (PHASE 1)
WATER TREATMENT (PHASE 2)

WELL NO. 4 2000 FEET SOUTH OF WELL NO. 3 AND
SOUTH OF CTH F (PHASE 3)

N
W
E
S

LEGEND

CORPORATE BOUNDARY

0 1000' 2000' 3000' 4000'

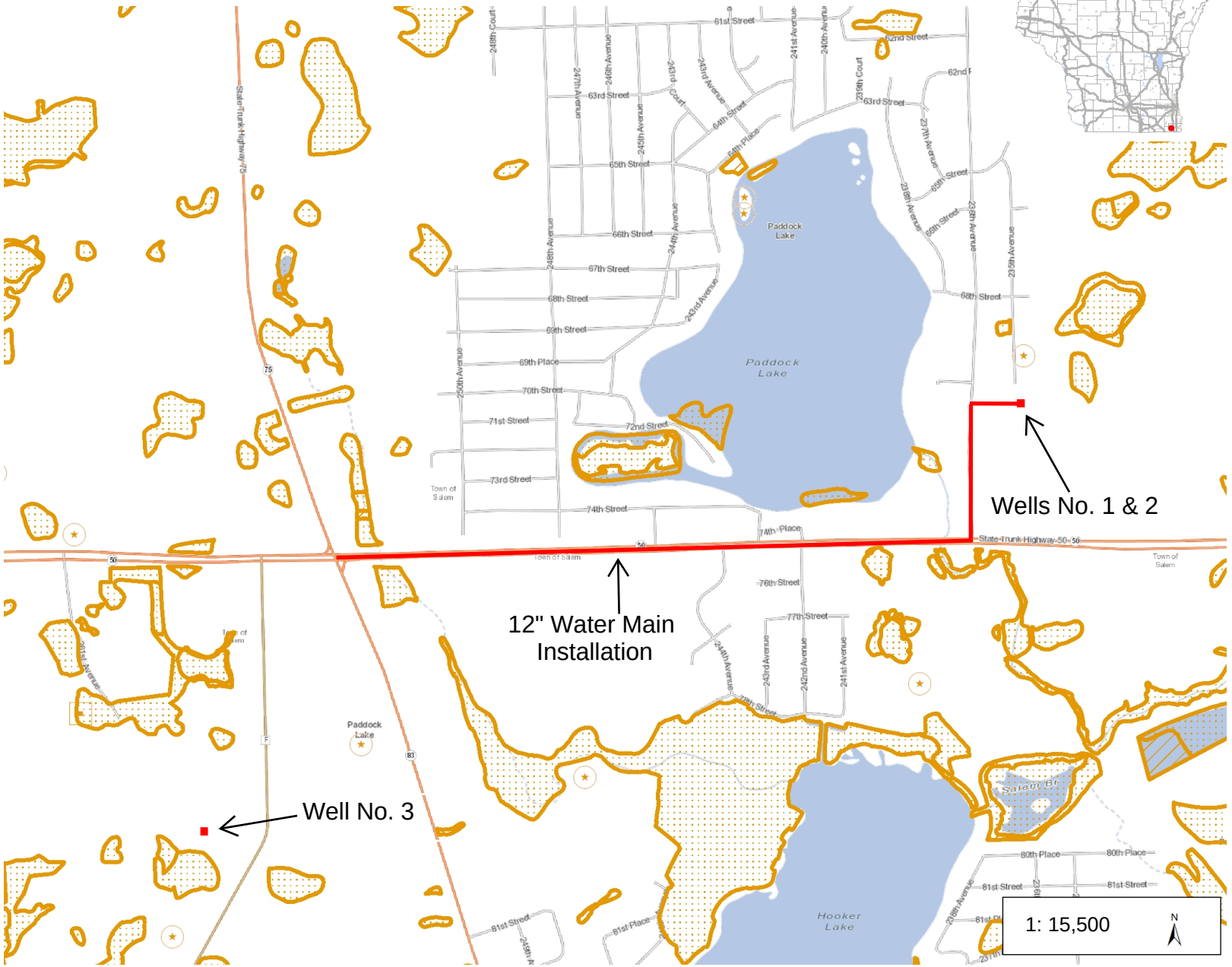
BAXTER & WOODMAN
Consulting Engineers

WATER SYSTEM CONCEPT PLAN
VILLAGE OF PADDOCK LAKE

P.N. 150496.30
08-06-15

I:\BURLINGTON\PADLK\150496.30 - WATER SUPPLY OPTIONS\CADD\DRAWINGS\DWG\40 - CURRENT\OPTION 2\STRT-MAP.DWG STRTMAP11X17
Plotted: 7/14/2016 2:32 PM By: 421TLB

Village of Paddock Lake Wetland Locations



Legend

- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands

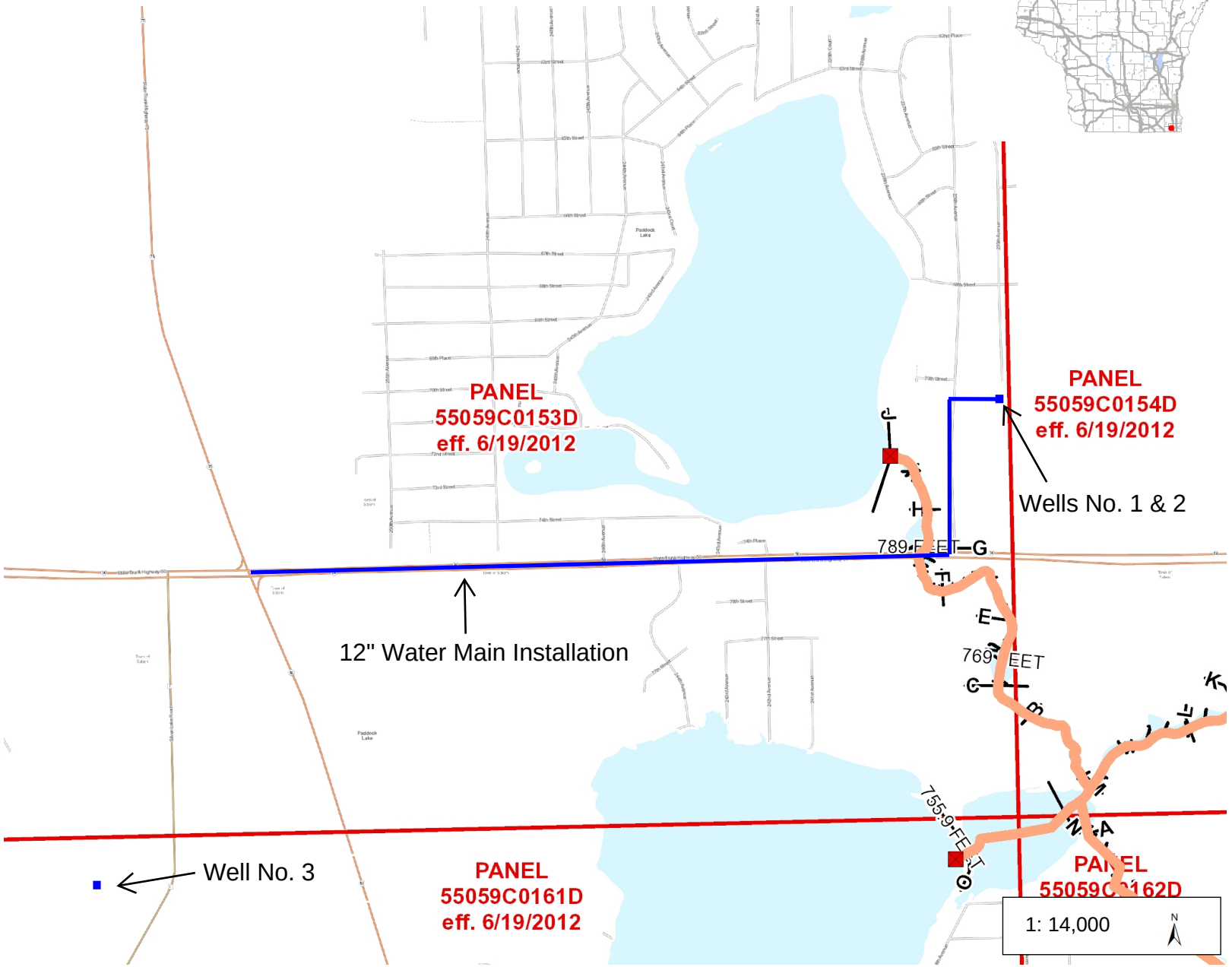
Notes

1: 15,500

0.5 0 0.24 0.5 Miles

NAD_1983_HARN_Wisconsin_TM

Village of Paddock Lake Floodplain Information



Legend

Dams
- Dams with FERC License
- Dams

Floodplain Analysis Lines
- Other
- Flood Insurance Study
- Letter of Map Revision
- Case By Case Analysis
- Bridge

Floodplain Analysis Points
- Other
- Flood Insurance Study
- Letter of Map Revision
- Case By Case Analysis
- Bridge

- FIRM Panels
- Cross-Sections
- Base Flood Elevations

Flood Hazard Boundaries
- Other Boundaries
- Limit Lines
- SFHA / Flood Zone Boundary

Flood Hazard Zones
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee

- Statewide Flood Insurance Rate Maps (FIRMs) Index
- Municipality

Notes

0.4 0 0.22 0.4 Miles

NAD_1983_HARN_Wisconsin_TM

VILLAGE OF PADDOCK lAKE, WISCONSIN
WATER SYSTEM IMPROVEMENTS
PSC FILING APPLICATION

APPENDIX B

Other Agency Correspondence/Permits/Approvals

- June 8, 2015 Paddock Lake Water System Planning WDNR Concept Approval Request
- August 11, 2015 Paddock Lake Water System Planning Supplemental Information
- August 25, 2015 Paddock Lake Water System Conceptual Plan WDNR Approval
- October 11, 2005 WDNR Approval for Temporary Chemical Feed Facilities for Well Nos. 1 and 2

BAXTER & WOODMAN
Consulting Engineers
256 South Pine Street, Burlington, WI 53105 • 262.763.7834 • baxterwoodman.com

June 8, 2015

Catherine M. Wunderlich, P.E., Section Chief
Wisconsin Department of Natural Resources
101 South Webster Street
P.O. Box 7921
Madison, WI 53707-7921

Subject: Paddock Lake Water System Planning

Dear Ms. Wunderlich,

On behalf of the Village of Paddock Lake, we are requesting concept approval for an expansion of the existing Village water system to provide additional supply and fire protection to existing customers and allow for service for additional customers. See the attached Concept Plan; details of the expansion are identified by the bullet items that follow. The Village will begin negotiations with the proposed new customers once they have your approval of the concept. The Village understands that they still have the responsibility to convince your office that each of the components of the expansion will meet the needs of the Village and meet WDNR Code. The concept includes:

- Replacement of the existing '50's well building with a new well building, ground storage reservoir, booster pump station, chemical feed system, and emergency generator. The reservoir will be sized to store an average day supply or a two-hour fire flow, whichever is greater. The booster pumps will be sized to meet the peak hour needs of the customers, or the fire demand, whichever is greater.
- Installation of new well pumps in Wells No. 1 & 2; each will be capable of meeting the maximum day demands of the system it will serve; the capacity of each well is planned for 350 gallons per minute; this flowrate should keep the pumping water level of each well within the well casing.
- Installation of the transmission main in STH 50 and replacement of water main on 236th Avenue.
- Construction of the previously approved well house, pumping equipment, and water system connection at Well 3; the pump capacity matches the proposed capacity of Well 1 and Well 2. The wellhead protection boundary for Well 3 and Well 4 extends into Salem. Paddock Lake and Salem have entered into a statutory agreement pursuant to Sec. 66.0307 which is approved and co-signed by the Department of Administration fixing the boundaries between Paddock Lake and Salem. Paddock Lake will be able to unilaterally enforce this wellhead protection district following the 10 year planning period provided for in the Sec. 66.0307 Agreement. Well 3 will be classified as emergency use until the Village is able to adopt the ordinance required by the WDNR approval of the wellhead protection plan, within the 10 year period.

This project has a history that dates back to 2004 when the west side properties annexed, the search for shallow wells began, and boundary agreement discussions began between Paddock Lake and Salem. The concept plan (see the enclosed December 23, 2004 WDNR approval letter – Option 1; Exhibit A) at that time was to have two separate water systems; Wells 3 and 4 would

serve the new west side system; these wells were located, drilled, tested, and capped. They were completed in 2008. The Village obtained approval (see enclosed April 10, 2009 WDNR approval) for the well buildings and pumping equipment at approximately the same time as the water transmission main connecting the developments was installed. The impact of the recession hit the developments and nothing has changed since, except that the WDNR granted conditional approval (enclosed) of the wellhead protection plan on May 16, 2014. In a somewhat related issue, the Village had a water main break on their east side system and were required to issue a boil water notice until they designed and installed chemical feed facilities at the Well 1 & 2 Facility; see the enclosed October 11, 2005 WDNR Approval; a condition of the approval is that sanitary sewer service be brought to the facility.

The recent improvement in economic conditions and prospect of development has the Village eager to move forward toward the approval and construction of the improvements described above. The proposed plan has the following benefits:

- The facilities serving Wells 1 & 2 will become new and brought to current standards, meeting the conditions of previous WDNR approvals.
- The existing customers will be provided with a second source of supply (Well 3 – emergency use) if the aquifer at Wells 1 & 2 needs rehabilitation.
- The existing water system will be provided with fire protection and emergency storage.
- The Village will not be operating two independent systems.
- The Village should be able to serve additional customers and generate additional revenue.

Please call if you have any questions.

Sincerely,

BAXTER & WOODMAN, INC.
CONSULTING ENGINEERS

Douglas R. Snyder, P.E.

DRS:jmc
Encs.
CC: Tim Popanda, Administrator
Terry Burns, President

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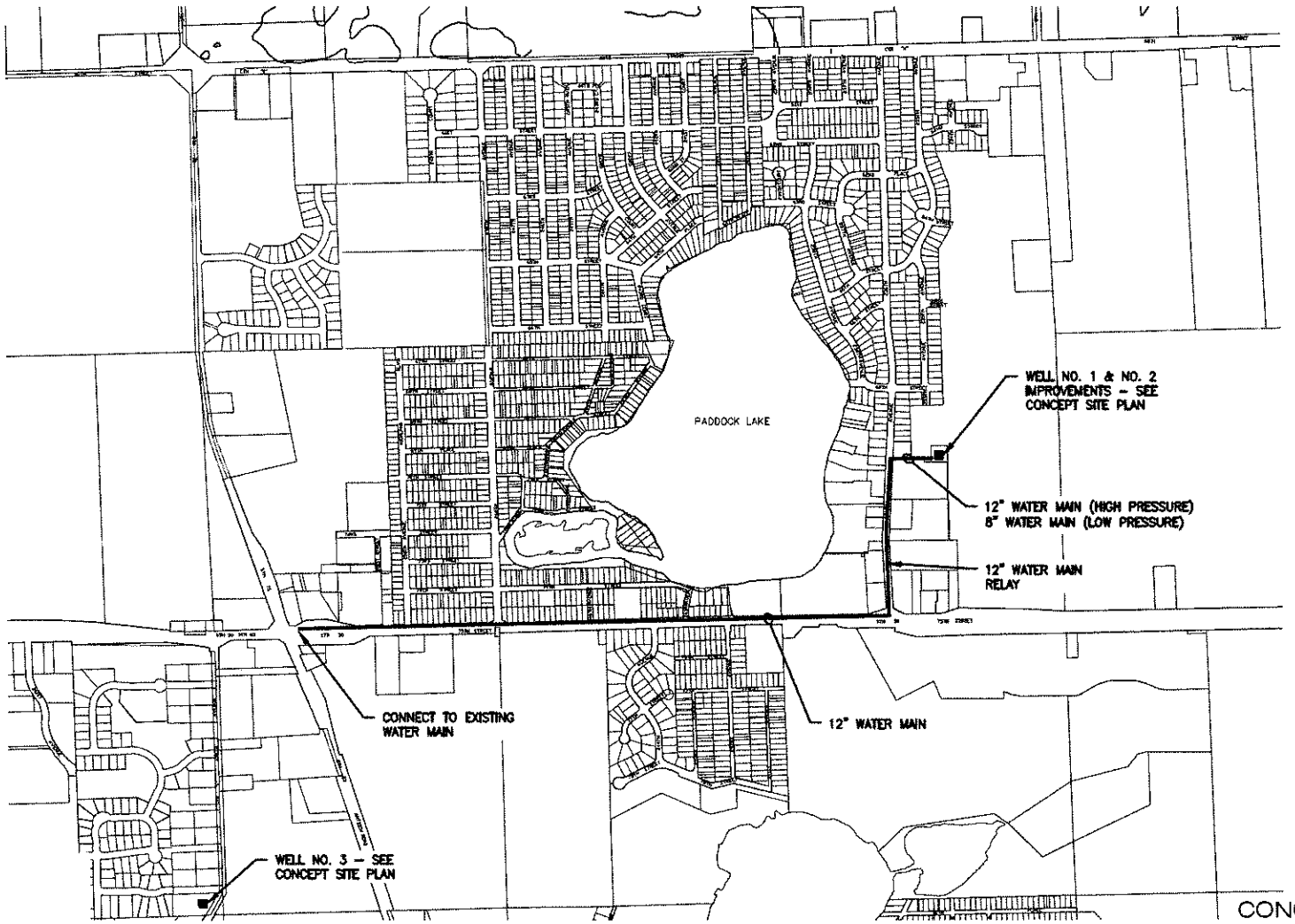
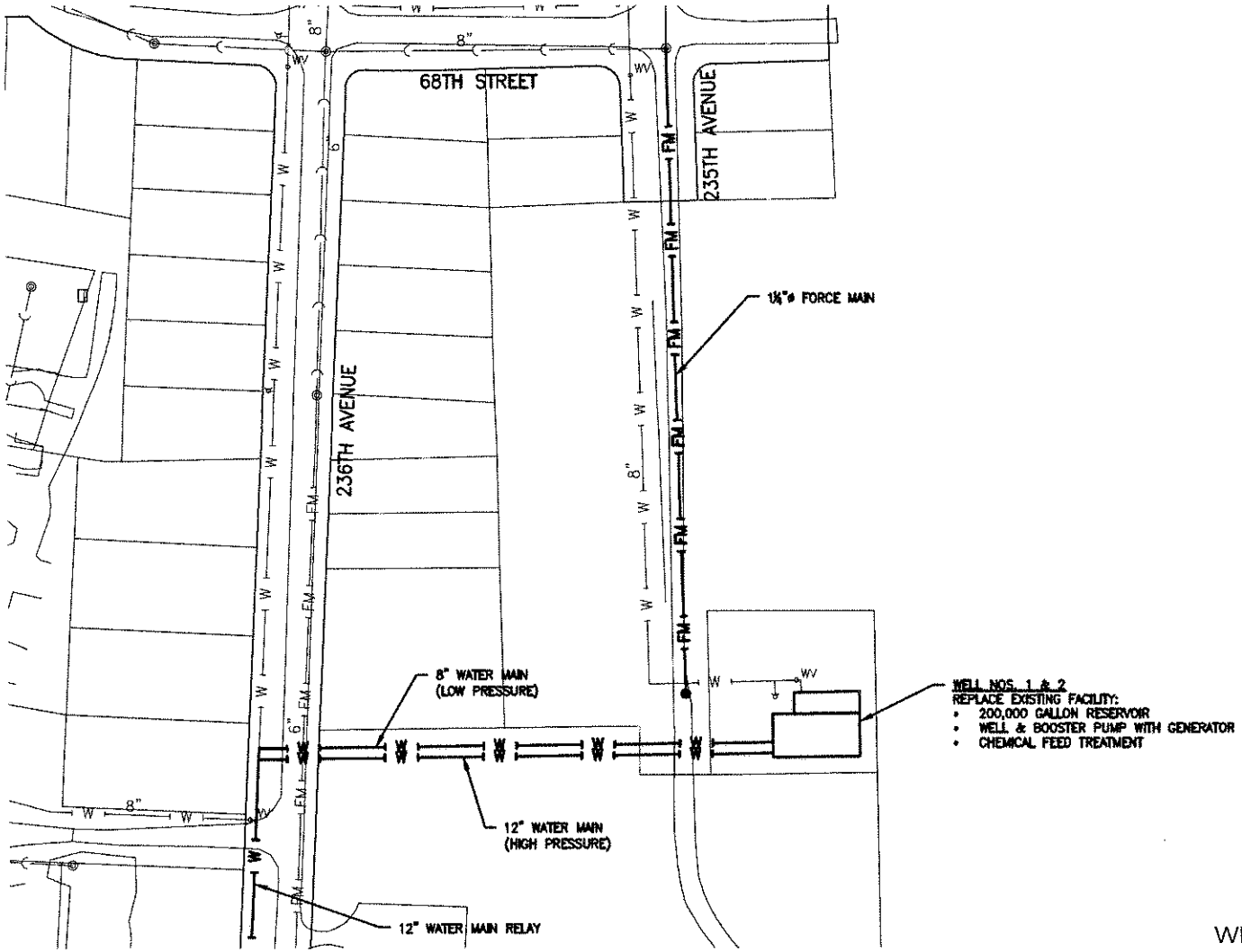


BAXTER & WOODMAN
Consulting Engineers

0 1000' 2000' 3000' 4000'

PRELIMINARY

CONCEPT OVERVIEW PLAN
OPTION 2 - SHARED WELL SUPPLY
VILLAGE OF PADDOCK LAKE
P.N. 150496.30
5/15/15



BAXTER & WOODMAN Consulting Engineers

WELL NOS. 1 & 2 IMPROVEMENTS
OPTION 2 - SHARED WELL SUPPLY
VILLAGE OF PADDOCK LAKE
P.N. 150496.30
5/15/15

I:\BURLINGTON\PADLK\000000\OPTION 2\1&2SITE.DWG WELL1&2
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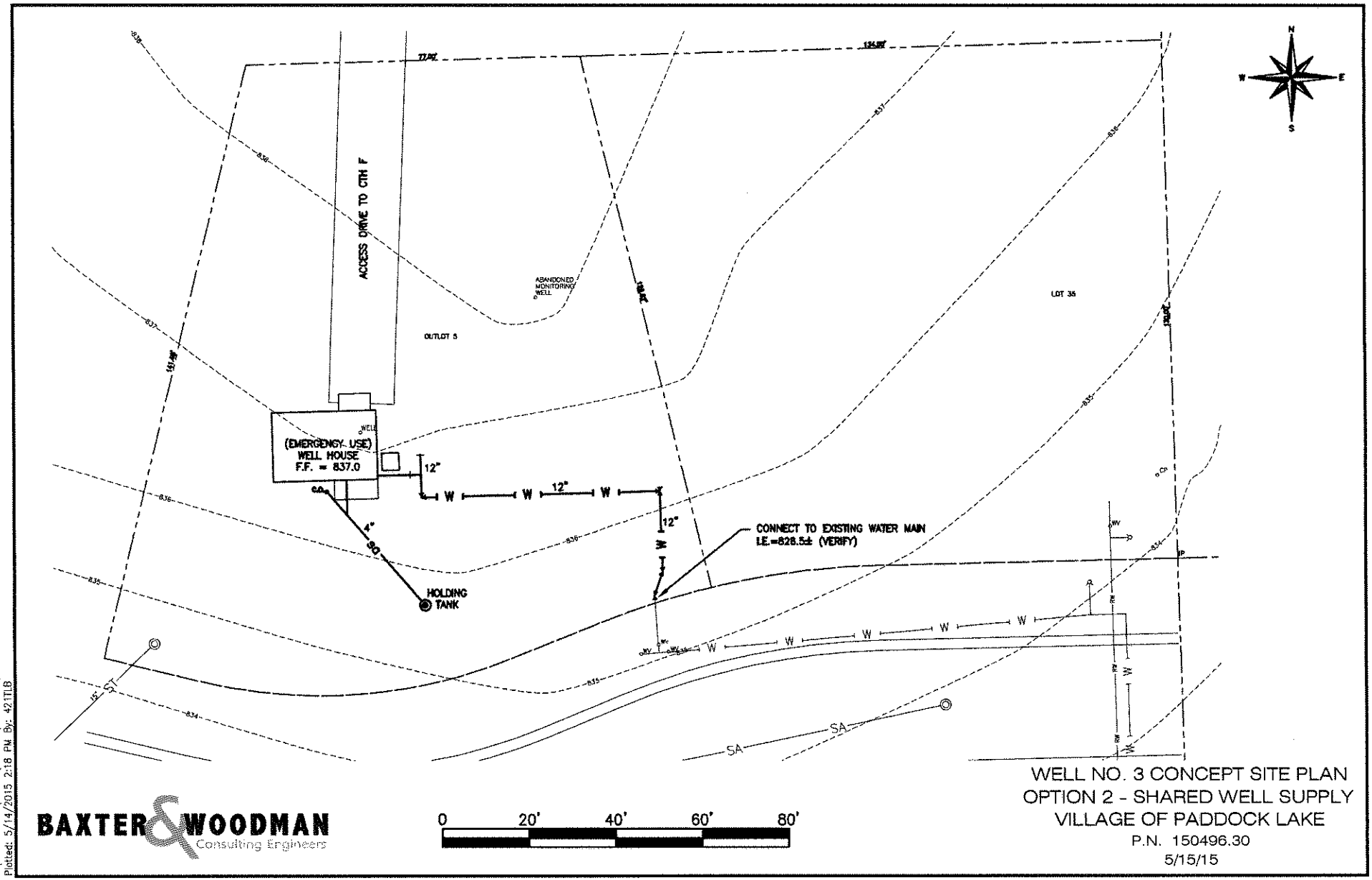

BAXTER & WOODMAN Consulting Engineers

0 20' 40' 60' 80'

WELL NO. 3 CONCEPT SITE PLAN
OPTION 2 - SHARED WELL SUPPLY
VILLAGE OF PADDOCK LAKE
P.N. 150496.30
5/15/15

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Preliminary Opinion of Probable Cost
Water Supply System Options
Village of Paddock Lake
PRELIMINARY

Option 2 - Shared Water Supply

Preliminary Opinion of Probable Cost

Item	Est. Quantity	Pay Basis	Unit Price	Amount
Well 1 & 2 Site				
Pump Station, Generator, and Chemical Feed	1	Lump Sum	$300,000	$ 300,000
Booster and Pressure Reduction Station and Storage Reservoir	1	Lump Sum	$600,000	$ 600,000
Sanitary Sewer Connection	1	Lump Sum	$ 40,000	$ 40,000
12-Inch Water Main with Hydrants & Valves	6100	Lineal Feet	$ 125	$ 762,500
12-Inch Water Main Relay with Hydrants & Valves	1600	Lineal Feet	$ 150	$ 240,000
Water Main Extensions at Intersections	500	Lineal Feet	$ 175	$ 87,500
Water Services	45	Each	$ 5,000	$ 225,000
Well 3 Site				
Pump Station, Chemical Feed, and Sitework	1	Lump Sum	$350,000	$ 350,000
Limestone Drive to CTH F	1	Lump Sum	$ 90,000	$ 90,000
Sanitary Holding Tank System	1	Lump Sum	$ 12,000	$ 12,000
		Construction Contingency (20%) =		$ 541,400
		Construction Subtotal =		**$3,248,400**
		Design Engineering (8%) =		$ 259,900
		Bidding and Construction Engineering (10%) =		$ 324,800
		Option 2 - Estimated Project Cost =		**$3,833,100**

Background and Improvement Description

Well 1 and Well 2 are within the same building and use water from the same source; these will be the primary wells.
These wells have pumps that produce 375 gpm and 125 gpm respectively.
Well 3 is capped; the capacity can be as high as 800 gallons per minute; this will be for emergency use.
All three wells have dissolved iron; the concentration in Well 3 is approximately 3 times that of the other wells.
Well 3 will remain for emergency use until demand warrants the construction of treatment at this site.
The access drive for Well 3 will be an improved version of the one constructed by the driller.
The booster pumps and ground storage reservoir will provide 1000 gpm fire protection for 2 hours.
A wellhead protection ordinace is needed, including an agreement with Salem to protect the capture area for Well 3.
Sanitary service is available from the intersection of 68th Drive and 235th Avenue for the Well 1 and Well 2 site.
A holding tank can be used to provide sanitary service to the Well 3 site; chlorine facilities are needed at Well 3.
The cost of the water main may be able to be recovered by special assessment to the property owners.
The treatment facility will contain connections for both the higher and lower pressure zones.
There is existing water main between the well sites, on CTH F, and on STH 75 that was installed in 2005.
This option provides the Village with more customers on the water system and provides better redundancy.
This option will prevent the need to upgrade the Well 1 and Well 2 Facility in the near future.

BAXTER & WOODMAN Consulting Engineers

WISCONSIN
DEPT. OF NATURAL RESOURCES

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
PO Box 12436
Milwaukee, Wisconsin 53212-0436
Telephone 414-263-8500
FAX 414-263-8483
TTY 414-263-8713

December 23, 2004

MS DORIS RADITZ
VILLAGE OF PADDOCK LAKE
6969 236TH AVENUE
PADDOCK LAKE WI 53168-9624

Project Number: W-2004-1208
PWSID#: 23001462
DNR Region: SE
County: KENOSHA

SUBJECT: CONCEPTUAL PLANS FOR PROPOSED WATER SUPPLY FACILITES

Dear Ms. Raditz:

The Wisconsin Department of Natural Resources, Division of Water, Bureau of Drinking Water and Groundwater, has reviewed for the following project:

Water system name: Village of Paddock Lake
Date received: 10/24/04; additional information 12/6/04; addendum 12/18/04
Length of time extension: None
Professional Engineer: Douglas R. Snyder – Baxter & Woodman, Inc.
Regional DNR Contact: Theera Ratarasarn – Milwaukee Service Center
Project description: Engineering Report (the Report) for West Side Water System in the Village of Paddock Lake (dated October 18, 2004); Addendum dated 12/15/04

The Report Exhibits (identified as A, B, C, D, and E) included aerial photographs, overlays of the proposed subdivision development, and alternative water supply facilities and locations. The population equivalent to be served in the proposed west side subdivisions was estimated to be approximately 1,550. The population served by the existing water system was estimated at 1,000. It is estimated that the proposed west-side subdivisions would be fully developed in approximately 10 years.

As submitted in the Addendum, the selected alternative would be a combination of the existing municipal water system (as located on the east of the Village) and additional facilities constructed on the west side of the Village. This would involve upgrading the well capacity of the existing Well No. 1 to 560 gpm. In addition, the proposal included the construction of two (sand & gravel) water supply wells with a total capacity of 560 gpm, two pumpstations, a water distribution system (including a connecting 12 inch water main along STH50) and elevated storage. The two wells, the two pumpstations, and the distribution system would be constructed in Phase 1. Water treatment facilities, if required for aesthetic reasons (secondary water quality standards), would be constructed in Phase 2. Elevated storage will be Phase 1 construction.

A potential alternative (Option 1 – Exhibit A) would be a separate west side water system with no connection with the existing municipal system. A separate west side water system would serve the proposed new subdivision areas discussed on Page 1of the Report. Under this alternative, each of the two proposed wells would be expected to have an approximate capacity of at least 200 gpm. The two wells, the two pumpstations, and the distribution system would be constructed in Phase 1. Water treatment facilities, if required for aesthetic reasons (secondary water quality standards), would be constructed in Phase 2. It was proposed to construct elevated storage in Phase 3. [NOTE: The Department would require the construction of the elevated tank when the simultaneous operation of both wells is necessary to meet demand.]

Since the water quality and quantity available from the proposed sand and gravel wells is unknown, an approach (discussed in correspondence with your consultant) provided for the construction of two wells/pumpstations and a centralized treatment facility. The treatment facility would include clearwell storage and high lift pumping

equipment. Treatment would be for iron removal and possibly include radionuclide removal (if the construction of a sandstone well would be necessary). With clearwell storage and high lift pumping, the construction of elevated storage in Phase 2 would be evaluated based upon the rate and type of development in the service area.

Any Phase 1 improvements will include a SCADA system capable of monitoring pump operation and water levels in storage facilities. Phase 1 improvements will also include auxiliary power and automatic switching equipment.

The Department is approving the alternative conceptual plans for the municipal community water system summarized above, with the following conditions:

1) An engineering report shall be submitted after the two water supply wells have been constructed and test pumped (to determine water quality and available well capacity). The engineering report shall meet all of the general requirements of NR 811.13. Specifically for this project, the engineering report shall include the following:

a) well construction reports and test pump data;
b) laboratory analysis of raw water samples
c) determination of available well capacity;
d) initial design drawings for the water supply facilities that will be constructed;
e) all calculations/assumptions used to determine the type and size of the facilities (including pumping, storage, and treatment facilities);
f) a map or aerial photo that defines the service area boundaries;
g) an estimate for the population to be served;
h) an estimate of average day, maximum day, and peak hour demands;
i) a detailed schedule for construction of the facilities.

2) Prior to the start of any construction, submit a well site investigation report and plans and specifications for the water supply wells.

Appeal rights: The project was reviewed in accordance with s. 281.41, Statutes for compliance with Chapters NR 108 and NR 811 Wis. Adm. Code and is hereby approved in accordance with s. 281.41, Statutes subject to the conditions listed above. If you believe you have a right to appeal this decision, you may file a written request for a contested case hearing pursuant to s. 227.42, Wis. Stats., or file for judicial review under s. 227.52 and 227.53, Statutes. You have 30 days after this approval is mailed to file your written request for hearing or file and serve your petition for judicial review. Your request for hearing or petition for judicial review must name the Secretary of the Department as respondent. This notice is provided pursuant to s. 227.48, Statutes.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Francis G. Fuja, P.E.
Plan Review Engineer
Telephone No. 414-263-8749

cc: Mike Johnson - Water Supt.
Douglas Snyder – Baxter & Woodman, Inc. (Burlington, WI office)
Theera Ratarasarn – SER Milwaukee
Lee Boushon – DG/2
Peter Fenecht - PSC
Fuja - DG Reviewer at SER Milwaukee

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Matthew J. Frank, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

April 10, 2009

EMILY UHLENHAKE CLERK
VILLAGE OF PADDOCK LAKE
6969 236TH AVE
SALEM WI 53168

Project Number:	W-2009-0039
PWSID#:	23019711
DNR Region:	SER
County:	KENOSHA

SUBJECT: WATER SYSTEM FACILITIES PLAN AND SPECIFICATION APPROVAL

Dear Ms. Uhlenhake:

The Wisconsin Department of Natural Resources, Division of Water, Bureau of Drinking Water and Groundwater, is conditionally approving plans and specifications for the following project. An engineering report of sufficient detail to meet the requirements of s. NR 811.13(3), Wis. Adm. Code, was submitted along with the plans and specifications.

Water system name: Paddock Lake – West Side System
Date received: 1/16/2009; additional information 2/27/2009; 3/04/2009; 3/18/2009; revision 4/07/2009
Length of Time Extension:
Engineering firm: Baxter & Woodman, Inc.
Professional Engineer: Joseph W. Marchese
Regional DNR Contact: Theera Ratarasarn, Wisconsin Department of Natural Resources, 2300 N. Dr. MLK Jr. Drive, Milwaukee, WI 53212, (414) 263-8650, theera.ratarasarn@wisconsin.gov
Project description: Pumpstations for Well Nos. 3 and 4; Hydropneumatic Tank Building

Design Report Summary and Future Improvements
Phase I
As provided in the design report, the Village will be constructing the two pumpstation buildings for Well Nos. 3 and 4 and a hydropneumatic tank building. Raw water from Well No. 4 will be piped to the Well No. 3 pumpstation. Prior to piping the water to the hydropneumatic tank building, the water from each well will be treated with blended phosphate (for sequestration purposes) and disinfected using sodium hypochlorite. The project includes the installation of a basic pump control and alarm system based upon system pressure.

Under a separate project (W-2006-0487), the West Side water transmission main was installed to supply water to three proposed developments (Whitetail Ridge, Golitz Highway F, and Fox Hollow) that are located west of STH 83 and south of STH 50, and three proposed developments (Willow Woods Condominiums, Willow Woods Estates, and Longmeadow Glen) that are located east of STH 75 and north of STH 50. Connecting water main between Well No. 3 and the water main in CTH F was partially constructed in easements located in the proposed White Tail Ridge and Golitz Highway F subdivisions. Connecting water main between Well No. 4 and the water main in CTH F was constructed in the 82ND Place and Fox Hollow Lane right of ways. (See **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 7 – regarding hydrant coding requirements).

It was estimated that these developments will be at final buildout within approximately 10 years. Assuming a population of approximately 1,500 people, the estimated average day and maximum day demands will be 150,200 gallons per day and 270,360 gallons per day, respectively. The design peak hour demand factor is 1.8 of the maximum day demand (608 gpm).

Phase II
As these developments mature, a future iron removal water treatment plant will be constructed on the Well No. 3 property (see **Recommendations** section, Items a, b, and c). The water treatment plant will include provisions for clearwell storage after aeration and/or disinfection. High lift pumping equipment will take suction from the clearwell and transfer water through an iron filter system and into the water main distribution system.

Phase III
It is proposed to eventually connect the West Side System to the existing municipal water system. The proposed schedule for installation of the connecting water main is estimated at 10 years – to coincide with the reconstruction of STH 50. A 500,000 gallon elevated tank is proposed/scheduled for construction at approximately the same time as the water main installation. [NOTE: Unless a future engineering demand/capacity analysis indicates otherwise, the Department believes that the elevated tank should be placed in service at the same time as the water main connecting the two separate community water systems is placed into service.]

Well No. 4 Pumpstation Facility
The pumpstation will be a reinforced concrete block or precast building with a finished floor elevation of 812.00 feet. The building will include heating, lighting, dehumidification, and ventilation systems. Access to the interior portion of the building will be through two double-leaf doors and a roof hatch. The two floor drains will discharge to sanitary sewer manhole through a four inch lateral. Based upon the revision received March 9, 2009, a holding tank manhole (rim elevation of 810.00 feet) will be installed approximately 25 feet from the southwest corner of pumpstation. [This manhole will eventually be utilized to connect the lateral to the proposed sanitary sewer. Future sanitary sewer within 200 feet from Well No. 4 shall be constructed using pressurized pipe that meets water supply standards – see **Variances being issued to Chapter NR 811, Wis. Adm. Code** section.] A 50 KW diesel fueled portable generator has been specified for providing the necessary emergency power for this pumpstation. An outside electrical hookup and manual transfer switch will be provided.

A concrete pump base, extending to a height of 36 inches above the floor, will be constructed. The height of the 24 inch outer casing shall be extended to at least four inches above the finished floor and incorporated into the pump base. The 18 inch protective casing shall terminate at least one inch above the top of the concrete pump base (see **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 4). A complying well vent shall be installed to terminate at least 24 inches above the floor (see **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 6).

Well No. 4 was test pumped for approximately 24 hours beginning during April 28-29, 2008. Static water level was reported at a depth of 59 feet. The discharge rate was held between 610 to 660 gpm for the duration of the pump test. At the end of the pump test, the reported drawdown was reported at 24 feet.

Chemical and bacteriological water samples were collected from the well on April 29, 2008. Laboratory analysis of the chemical samples indicated that there were no exceedances of the NR 809 primary water quality standards. The two bacteriological samples were total coliform negative. Di(2-ethyldhexyl)phthalate was analyzed at a concentration of 0.8 ug/L (Maximum Contaminant Level of 6 ug/L). Additional sampling may be necessary to determine if this compound is actually a contaminant in the groundwater. The raw water iron concentration was analyzed at 2.3 mg/L.

A lineshaft vertical turbine pump will be installed in the well. The pump, equipped with a soft start/stop controller, will be rated at 410 gpm at 253 feet TDH. The pump will be set on six inch drop pipe at a depth of 100 feet. [The column pipe will transition to eight inch just below the discharge head or by having the transition occur within the

discharge head.] The pump will be connected to a 40 horsepower motor operating at a maximum of 1800 rpm. The pump will be installed with an airline. An altitude gauge will be installed on the wellhead.

The eight inch well discharge piping will include: 1) an air/vacuum relief valve; 2) a check valve; 3) a raw water sample faucet; 4); a pressure gauge; 5) a flow meter/totalizer; 6) two (plugged) chemical injectors; and 7) a shut-off valve.

Well No. 4 pump to waste capability will be provided by a hydrant assembly and shut off valves located near the north wall of the pumpstation.

Well No. 3 Pumpstation Facility

The pumpstation will be a reinforced concrete block building with a finished floor elevation of 837.00 feet. The building will include heating, lighting, dehumidification, and ventilation systems. Access to the interior portion of the building will be through two double-leaf doors and a roof hatch. The two floor drains will discharge to a holding tank manhole (rim elevation of 835.60 feet) approximately 30 feet from the pumpstation. [Future sanitary sewer within 200 feet from Well No. 3 shall be constructed using pressurized pipe that meets water supply standards – see **Variances being issued to Chapter NR 811, Wis. Adm. Code**.] From the holding tank manhole, a four inch sanitary lateral pipe will be capped for a future connection with sanitary sewer.

A 150 KW emergency generator will be installed on a reinforced concrete pad located near the pumpstation. The emergency generator reportedly has a weather-rated enclosure and lockable access doors. The emergency generator was reportedly sized to provide backup power for the Well No. 3 pumpstation and the future treatment facility. An automatic transfer switch will be provided.

A concrete pump base, extending to a height of 36 inches above the floor, will be constructed. The height of the 24 inch outer casing shall be extended to at least four inches above the finished floor and incorporated into the pump base. The 18 inch protective casing shall terminate at least one inch above the top of the concrete pump base (see **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 4). A complying well vent shall be installed to terminate at least 24 inches above the floor (see **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 6).

Well No. 3 was test pumped for 24 hours beginning during April 21-22, 2008. Static water level was reported at a depth of 88 feet. The discharge rate was held constant (1270 gpm) for most of the pump test. At the end of the pump test, the reported drawdown was reported at 12 feet.

Chemical and bacteriological water samples were collected from the well on April 22, 2008. Laboratory analysis of the chemical samples indicated that there were no exceedances of the NR 809 primary water quality standards. The two bacteriological samples were total coliform negative. Di(2-ethyldhexyl)phthalate was analyzed at a concentration of 2.4 ug/L (Maximum Contaminant Level of six ug/L). Additional sampling may be necessary to determine if this compound is actually a contaminant in the groundwater. The raw water iron concentration was analyzed at 1.4 mg/L.

A lineshaft vertical turbine pump will be installed in the well. The pump, equipped with a soft start/stop controller, will be rated at 410 gpm at 229 feet TDH. The pump will be set on eight inch drop pipe at a depth of approximately 115 feet. The pump will be connected to a 30 horsepower motor operating at a maximum of 1800 rpm. The pump will be installed with an airline. An altitude gauge will be installed on the wellhead.

An eight inch discharge head will be installed on the pump base. The well discharge piping will include: 1) an air/vacuum relief valve; 2) a check valve; 3) a raw water sample faucet; 4); a pressure gauge; 5) a flow meter/totalizer; and a 6) a chemical injector (for blended phosphate).

The interior mechanical piping includes a floor penetration with the raw water main from Well No. 4. Between the floor penetration with the raw water main for Well No. 4 and the tee, the piping will include: 1) a flow meter/totalizer; 2) a chemical injector (for blended phosphate); and 3) a pressure gauge. A horizontal tee

connection (at a centerline elevation of 940.75 feet) allows water from Well No. 3 and 4 to be discharged to the hydropneumatic tank building. As connected to the right hand leg of the tee, the vertical spool piece that penetrates the floor will be installed with two chemical injectors (for dosing sodium hypochlorite - based upon pumpage from Well Nos. 3 and 4) and a smooth bore sample faucet.

Well No. 3 pump to waste capability will be provided by a hydrant assembly and shut off valves located near the northwest corner of the pumpstation.

Two sets of chemical feed systems will be installed inside the Well No. 3 pumpstation. A chemical feed system will be set up for each well – to inject blended phosphate (for sequestration purposes) and 12.5% sodium hypochlorite.

For the Well No. 4 blended phosphate application, a Pulsatron Series E+ Model LPB4 chemical feed pump (maximum capacity of 24 gallons per day at maximum stroke rate of 125 strokes per minute) will be installed. Based upon a 5.0 ppm dosage of Aqua Mag and a well flow rate of 400 gpm, the desired amount of chemical can be provided at stroke setting of 61% and a stroke rate of 60 strokes per minute. Blended phosphate will be stored in a 30 gallon solution tank. An electronic weigh scale will be provided to monitor daily blended phosphate usage. A 4 to 20 mA pacing signal from the flow meter/totalizer will control the stroke rate during well pump ramp up and shut down. Based upon an average day use (assuming six hours of well pumping), estimated sodium hypochlorite usage would be about 1.8 gallons.

For the Well No. 3 blended phosphate application, a Pulsatron Series E+ Model LPB4 chemical feed pump (maximum capacity of 24 gallons per day at maximum stroke rate of 125 strokes per minute) will be installed. Based upon a 3.4 ppm dosage of Aqua Mag and a well flow rate of 400 gpm, the desired amount of chemical can be provided at stroke setting of 50% and a stroke rate of 50 strokes per minute. Blended phosphate will be stored in a 16 gallon solution tank. An electronic weigh scale will be provided to monitor daily blended phosphate usage. A 4 to 20 mA pacing signal from the flow meter/totalizer will control the stroke rate during well pump ramp up and shut down. Based upon an average day use (assuming six hours of well pumping), estimated sodium hypochlorite usage would be about 1.2 gallons.

For the Well No. 4 sodium hypochlorite application, a Pulsatron Series E+ Model LPB4 chemical feed pump (maximum capacity of 24 gallons per day at maximum stroke rate of 125 strokes per minute) will be installed. Based upon a 2.0 ppm dosage of chlorine and a well flow rate of 400 gpm, the desired amount of chemical can be provided at stroke setting of 61% and a stroke rate of 66 strokes per minute. Sodium hypochlorite (12.5%) will be stored in a 36 gallon solution tank. An electronic weigh scale will be provided to monitor daily sodium hypochlorite usage. A 4 to 20 mA pacing signal from the flow meter/totalizer will control the stroke rate during well pump ramp up and shut down.

For the Well No. 3 sodium hypochlorite application, a Pulsatron Series E+ Model LPB4 chemical feed pump (maximum capacity of 24 gallons per day at maximum stroke rate of 125 strokes per minute) will be installed. Based upon a 2.0 ppm dosage of chlorine and a well flow rate of 400 gpm, the desired amount of chemical can be provided at stroke setting of 61% and a stroke rate of 66 strokes per minute. Sodium hypochlorite (12.5%) will be stored in a 36 gallon solution tank. An electronic weigh scale will be provided to monitor daily sodium hypochlorite usage. A 4 to 20 mA pacing signal from the flow meter/totalizer will control the stroke rate during well pump ramp up and shut down. Based upon an average day use (assuming six hours of well pumping), estimated sodium hypochlorite usage would be about 1.9 gallons.

Hydropneumatic Tank Building

The building will be constructed using reinforced concrete block. The finished floor elevation will be 837.00 feet. The building will include heating, lighting, dehumidification, and ventilation systems. Access to the interior portion of the building will be through two double-leaf doors located in the south wall. The two floor drains will discharge through a four inch lateral to a sanitary sewer manhole (rim elevation of 835.60 feet) approximately 30 feet from the pumpstation.

A 10,000 gallon (base bid) or a 4,000 gallon (alternate bid) horizontal pressure tank has been specified for installation. The pressure tank design was specified to be in accordance with ASME pressure vessel

requirements (design pressure of 100 psi). The building plan drawing (Sheet M-4) shows a 12 inch inlet and outlet connections - located on opposite ends of the tank.

The pressure tank installation will include: 1) a 14 by 18 inch elliptical manway; 2) a two inch drain connection; 3) a pressure gauge; 4) a sight glass; 5) an automatic air relief valve; 6) a fitting for adding air; 7) a pressure transmitter; and 8) a safety relief valve. The tank interior will be blasted to SSPC SP-10 and painted using two coats (DFT of 7 to 11 mils) of Tnemec FC20 White Pota-Pox. An air compressor/air receiver will be connected to the pressure tank (see **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 8).

Well Pump Operation
A pressure transmitter associated with the hydropneumatic tank will control the operation of the well pumps. The well pumps will be operated in the lead/lag mode. The lead pump will begin operation when the pressure drops to 50 psi and shutdown when the pressure reaches 65 psi. The lag pump will begin operation when the pressure drops to 45 psi and shutdown when the pressure reaches 60 psi. A low pressure alarm will be activated if the pressure drops to 40 psi.

Water Mains
On the Well No. 3 pumpstation property, the following water mains will be constructed:
1) approximately 220 feet of 8 inch Well No. 4 raw water main – installed from the existing plugged connection located near the southeast corner of the property to the tee connection (for inlet into the Well No. 3 pumpstation building);
2) approximately 45 feet of 10 inch connecting/bypass main – installed from the tee connection (for inlet into the Well No. 3 pumpstation building) to the tee connection (for the pressure tank inlet);
3) approximately 15 feet of 8 inch inlet/outlet main (into and out of the pressure tank building);
4) approximately 75 feet of 12 inch water main installed for pressure tank bypass; and
5) approximately 45 feet of 12 inch connecting main installed to transfer water from the pressure tank outlet tee to the plugged connection with existing water main.

On the Well No. 4 pumpstation property, approximately 30 feet of eight inch raw water main will be installed to connect the pumpstation to the existing eight inch raw water main (plugged at the property line). Several hydrant assemblies will provide Well No. 4 pump to waste capability or flushing capability for the raw water main (see **Approval conditions related to Chapter NR 811, Wis. Adm. Code** Section, Item No. 3).

Water main will be constructed using AWWA C151 ductile iron pipe (thickness class 52) using rubber gaskets and mechanical joints, or push-on joints, or flanged joints (AWWA C111).

NOTE: This letter approves the construction of the pumpstations for Well Nos. 3 and 4, the hydropneumatic tank facility and the water main associated with these facilities. This letter does not authorize construction of any of the facilities related to the proposed future iron removal facility, elevated tank, or the water main connecting the West Side System to the existing Paddock Lake System. Be advised, the design for the future iron filter facility shall maintain positive pressure in the discharge lines for both Well Nos. 3 and 4. Also, the design must provide provisions for dealing with backwash and sludge waste.

NOTE 1: Wisconsin Administrative Code NR 811.11 - General Requirements for New Community Water Systems
To obtain authorization for operation of a new community water system, the owner shall meet the following requirements:
a) The Department shall be notified in writing of the name of the certified waterworks operator who will be in charge.
b) The owner of a municipal water system shall have adopted cross-connection control and well permitting/abandonment ordinances.
c) Two copies of a current distribution system map [meeting the requirements of NR 811.11(2)] shall be kept on file with the Department at all times.

d) Each community water system shall develop a plan [see minimum requirements in NR 811.11(8)] to prepare for and respond to all types of emergency situations.

Capacity Development Evaluation: The Department is certifying that adequate technical, managerial and financial capacity exists for the Paddock Lake West Side community water system. The determination of capacity development may be re-evaluated should a system fail to correct deficiencies, frequently miss sampling deadlines, or experience persistent water quality or quantity problems.

Variances being issued to Chapter NR 811, Wis. Adm. Code: According to your engineer, sanitary sewer has not been installed in the vicinity of Well No. 3 or Well No. 4. [According to the engineer, it is believed that sanitary sewer in the Whitetail Ridge subdivision will be constructed within six to 18 months after completion of the Well No. 3 pumpstation and pressure tank facility. It is believed that the sanitary sewer in the Fox Hollow subdivision (where the Well No. 4 pumpstation is located) will be constructed within one to three years after the completion of the construction of the pumpstation facility. The construction of both Well Nos. 3 and 4 were approved by the Department under a variance to NR 811.16(4)(d). The variance required that sanitary sewer located between 50 and 200 feet of each well site be constructed using AWWA C600 standards for water main construction.

Since the sanitary sewers will be installed at a later date, temporary holding tank manholes will be installed. The temporary holding tanks will conform to the requirements set forth in COMM 84.25. The temporary holding tanks will be watertight, and be installed with an inspection manhole, a vent, and a high level alarm system. The holding tanks will be capable of storing 280 gallons of liquid prior to activating the alarm. When sanitary sewer becomes available, a new sewer lateral will be installed from the sewer main to the holding tank manhole and a connection will be made through the sump portion of the manhole. The sump portion of the manhole will be filled in with concrete – to create a flow line through the manhole. The rim elevation of each holding tank manhole shall be installed at least one foot lower than the floor elevation of the nearest pumpstation. A variance to NR 811.29(1)(h), which requires discharge of the building floor drains to sanitary sewer or to grade (at least 25 feet from the pumpstation), is granted.

Approval conditions related to Chapter NR 809, Wis. Adm. Code:

a. The Utility shall submit the following distribution monitoring plans: 1) lead/copper corrosion (NR 809.547); 2) disinfection-disinfection byproducts (NR 809.565); and 3) total coliform (NR 809.31).
b. Submit a completed copy of Form 3300-215 PUBLIC WATER SUPPLY POTENTIAL CONTAMINANT USE INVENTORY.

Approval conditions related to Chapter NR 811, Wis. Adm. Code:

1. A preconstruction conference shall be held to ensure the understanding of, and compliance with, the approved plans and specifications, the proposed method of erosion control, the duties of the resident project representative, the disinfection and bacteriological sampling requirements of NR 811.07(3), and any special conditions listed below.

2. Erosion control methods shall be used to prevent siltation to lands and waterways adjoining the construction area. These methods shall include but not be limited to the following:
   a. Siltation fences,
   b. Trench stabilization,
   c. Immediate mulching and seeding, and a
   d. Sedimentation basin

3. A tag shall be included on or near the hydrant installations associated with the eight inch raw water transmission main. The tag shall indicate that that the "HYDRANT IS TO BE OPERATED SOLELY BY WATER UTILITY PERSONNEL FOR FLUSHING PURPOSES ONLY" (or with other similar text).

4. For both Well Nos. 3 and 4, the outer casing shall be extended so that it terminates at least four inches above the finished floor elevation and be incorporated into the concrete pump base. The grouted protective casing shall be extended to a height one inch above the top of the pump base.

5. For both Well Nos. 3 and 4, a gasket or grout seal shall be provided between the discharge head and the pump base.
6. Each wellhead shall include the installation of a U-shaped vent (or a straight pipe with a mushroom cap) with a 24 mesh noncorrodible screen. The vent pipe shall terminate a minimum of 24 inches above the floor.
7. All fire hydrants installed on (distribution) water main piping shall be color coded or tagged and the fire chief notified in writing that fire department pumping equipment may not be connected until additional improvements have been made, and fire flow tests have shown that greater than 500 gpm at 20 psi residual pressure is available.
8. The specified air compressor to be installed to operate with the hydropneumatic tank shall be compatible with use in potable water systems.
9. Monthly reports of daily pumpage, number of pounds of chemicals used per day, and theoretical chemical residuals shall be submitted on Form 3300-24 [MONTHLY REPORT ON PUMPAGE, CHEMICAL ADDITION AND WATER LEVELS], or other Department approved form.
10. Actual residual testing shall be performed as necessary for control of the treatment processes and the results shall be submitted on Form 3300-24 [MONTHLY REPORT ON PUMPAGE, CHEMICAL ADDITION AND WATER LEVELS], or other Department approved form. (NR 809.705 requires that distribution chlorine residual testing shall be performed in the distribution system at least twice weekly. Based upon NR 809.74(2), orthophosphate residual testing shall be performed in the distribution system at least twice weekly.)
11. Prior to placing the well in service as a municipal water supply, submit and obtain Department approval of a wellhead protection plan.
12. To obtain authorization for operation of a new community water system, the owner shall meet the following NR 811.11(1)(a) requirements:
    a. The Department shall be notified in writing of the name of the certified waterworks operator who will be in charge.
    b. The owner of a municipal water system shall have adopted cross-connection control and well permitting/abandonment ordinances.
    c. Two copies of a current distribution system map [meeting the requirements of NR 811.11(2)] shall be kept on file with the Department at all times.
    d. Each community water system shall develop a plan [see minimum requirements in NR 811.11(8)] to prepare for and respond to all types of emergency situations.
13. Prior to placing the facilities into service, contact Theera Ratarasarn to schedule a startup inspection. As a part of this inspection, the status of the future sanitary sewer construction in the Whitetail Ridge subdivision (Well No. 3) and the Fox Hollow subdivision shall be reviewed.

Approval conditions related to other Department requirements: None.

Approval constraints: The project was reviewed in accordance with s. 281.41, Statutes for compliance with Chapters NR 108 and NR 811, Wis. Adm. Code and is hereby approved in accordance with s. 281.41, Statutes subject to the conditions listed above. This approval is valid for two years from the date of approval. If construction or installation of the improvements has not commenced within two years the approval shall become void and a new application must be made and approval obtained prior to commencing construction or installation.

This approval is based upon the representation that the plans submitted to the Department are complete and accurately represent the project being approved. Any approval of plans that do not fairly represent the project because they are incomplete, inaccurate, or of insufficient scope and detail is voidable at the option of the Department.

Appeal rights: If you believe that you have a right to challenge this decision, you should know that the Wisconsin Statutes, administrative rules and case law establish time periods within which requests to review Department decisions must be filed. To request a contested case hearing pursuant to section 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. For judicial review of a decision pursuant to sections 227.52 and 227.53, Wis. Stats., you must file your petition with the appropriate circuit court and serve the petition on the Department within the prescribed time period. A petition for judicial review must name the Department of Natural Resources as the respondent.

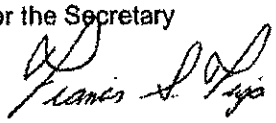
Recommendations: The owner is not required to implement the recommendations in order to comply with the approval. The following recommendations are based on staff review of the project:

a) With the relatively high iron concentrations in the raw water and with relatively long periods of detention in the water main distribution system, the effectiveness of using blended phosphate (in an attempt to sequester iron) may be limited. With relatively long detention times in the water distribution system during the initial startup phase, it is likely that polyphosphate will revert to orthophosphate (allowing iron to eventually be released in a solid form). If this occurs, customers may complain about the taste, odor, and discoloration of the water. While it might be anticipated that the water quality might improve as demand increases (and water age decreases), construction of the water treatment plant should be started as soon as possible after system startup.

b) The preliminary design of the future water treatment plant should consider that the raw water transmission main and well discharge piping need to maintain continuous positive pressure.

c) The preliminary design of the future water treatment plant should consider how backwash waste and sludge will be handled. Design of the future water treatment plant might also influence the design of the sanitary sewers within the subdivision development near Well No. 3.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary



Francis G. Fuja, P.E.
Public Water Supply Section
Bureau of Drinking Water and Groundwater
(414) 263-8749

attachments: Form 3300-215 PUBLIC WATER SUPPLY POTENTIAL CONTAMINANT USE INVENTORY.

cc: Mike Johnson - Water Superintendent by email at paddocklakewwtp@busynet.net
Joseph Marchese - Baxter & Woodman Inc by email
Adam DeWeese – DG/5 by email
Mark Nelson – DG/5 by email
James Witthuhn – DG/5 by email
Theera Ratarasarn – SER Milwaukee by email
Jason Chappelle – SER Sturtevant by email
Peter Feneht - WI Public Service Commission by email
Lee Boushon – DG/5

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

May 16, 2014

EMILY UHLENHAKE CLERK
VILLAGE OF PADDOCK LAKE
6969 236TH AVENUE
SALEM WI 53168-9624

Project Number:	W-2014-0274
PWSID#:	23019711
DNR Region:	SER
County:	KENOSHA

SUBJECT: WATER SYSTEM FACILITIES PLAN AND SPECIFICATION APPROVAL

Dear Ms. Uhlenhake:

The Wisconsin Department of Natural Resources, Division of Water, Bureau of Drinking Water and Groundwater, is conditionally approving plans and specifications for the following project. An engineering report or information of sufficient detail to meet the requirements of s. NR 811.09(3), Wis. Adm. Code, was submitted along with the plans and specifications.

Water system name: Village of Paddock Lake West
Date received: 05/02/2014
Length of Time Extension: None
Engineering firm: Baxter & Woodman Inc.
Professional Engineer:
Regional DNR Contact: Steve Szymaszek, 2300 N Martin Luther King Dr., Milwaukee, WI 53212, 414-263-8626, Steven.Szymaszek@wisconsin.gov

Project description: WELLHEAD PROTECTION PLAN (WHPP) FOR EXISTING WELL NOS. 3 AND 4

The construction of Well Nos. 3 and 4 for the Village of Paddock Lake (Village) was approved by the Department on June 2, 2006 under W-2006-0185 and modified on December 14, 2007 under W-2006-0185A. The well construction was completed by Layne-Northwest Company on May 09, 2008. The Wisconsin Unique Well Number for Well No. 3 is WJ905. For Well No. 4 the Wisconsin Unique Well Number is WJ904. Well Nos. 3 and 4 pump station facilities were approved on April 10, 2009 under W-2009-0039 but were never constructed and the approval has since expired. Any new facilities and pump installations proposed at either well would require new plans and specifications to be approved by the Department.

A WHPP for existing Well Nos. 3 and 4 has been submitted to the Department. The plan notes that Well Nos. 3 and 4 were built to provide a water system to the west side of the village. The WHPP for the Village is hereby approved.

The Department requests that three copies of the updated wellhead protection ordinance be sent to the Department after the ordinance is adopted by the Village.

Variances being issued to Chapters NR 810 or NR 811, Wis. Adm. Code: None.

Approval conditions related to Chapters NR 810 and NR 811, Wis. Adm. Code:

1. Three copies of the final wellhead protection ordinance are to be sent to the Department upon approval of the local governing authority. Once copy should be sent to the Regional DNR contact, and two copies should be sent to: Wisconsin Department of Natural Resources, c/o Norm Hahn, DG/d, Box 7921, Madison, WI.

Approval conditions related to other Department requirements: None.

Approval constraints: The project was reviewed in accordance with ss. 281.34 and 281.41, Wis. Stats. for compliance with Chapters NR 108, NR 810, NR 811 and NR 820, Wis. Adm. Code and is hereby approved in accordance with ss. 281.34 and 281.41, Wis. Stats. subject to the conditions listed above. This approval is valid for two years from the date of approval. If construction or installation of the improvements has not commenced within two years the approval shall become void and a new application must be made and approval obtained prior to commencing construction or installation.

This approval is based upon the representation that the plans submitted to the Department are complete and accurately represent the project being approved. Any approval of plans that do not fairly represent the project because they are incomplete, inaccurate, or of insufficient scope and detail is voidable at the option of the Department.

Be advised that this project may require permits or approvals from other federal, state or local authorities. For example, a certificate of authority from the Public Service Commission of Wisconsin under Wis. Stats. 196.49 and Wis. Admin. Code ch. PSC 184 may be required.

Appeal rights: If you believe that you have a right to challenge this decision, you should know that the Wisconsin Statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. To request a contested case hearing pursuant to s. 227.42, Wis. Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to serve a petition for hearing on the Secretary of the Department of Natural Resources. Requests for contested case hearings must be made in accordance with ch. NR 2, Wis. Adm. Code. Filing a request for a contested case hearing does not extend the 30 day period for filing a petition for judicial review. For judicial review of a decision pursuant to ss. 227.52 and 227.53, Wis. Stats., you must file your petition with the appropriate circuit court and serve the petition on the Department within 30 days after the decision is mailed. A petition for judicial review must name the Department of Natural Resources as the respondent.

Recommendations: The following recommendations are based on staff review of the project. The owner is not required to implement the recommendations in order to comply with the approval. None

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Lee H. Boushon, P.E., Chief
Public Water Engineering Section
Bureau of Drinking Water and Groundwater
(608) 266-0857

cc:

Douglas Synder – Baxter & Woodman Inc. (by email)
Tim Popanda – Village of Paddock Lake (by email)
Peter Feneht – PSC, Madison (by email)
Mary E. Wagner – DNR, CF/2 (by email)
Jim Witthuhn – DNR, DG/5 (by email)
Jeff Helmuth – DNR, DG/5 (w/WHPP)
Florence Olson – DNR, DG/5 Reviewer

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128
Telephone 414-263-8500
FAX 414-263-8483
TTY 414-263-8713

October 11, 2005

EMILY UHLENHAKE CLERK
VILLAGE OF PADDOCK LAKE
6969 235TH AVE
PADDOCK LAKE WI 53168

Project Number: W-2005-0954
PWSID#: 23001462
DNR Region: SOUTHEAST
County: KENOSHA

SUBJECT: WATER SYSTEM FACILITIES PLAN AND SPECIFICATION APPROVAL

Dear Ms. Uhlenhake:

The Wisconsin Department of Natural Resources, Division of Water, Bureau of Drinking Water and Groundwater, is conditionally approving the plans and specifications for the following project. The project review included review of an engineering report or information of sufficient detail to meet the requirements of NR 811.13(3).

Water system name: Paddock Lake Water Utility
Date received: 9/2/05; additional information 10/6/05
Length of time extension: None
Professional Engineer: Douglas R. Snyder – Baxter & Woodman, Inc
Regional DNR Contact: Theera Rafarasarn – Milwaukee Service Center
Project description: Temporary chemical feed facilities for Well Nos. 1 and 2

A boil water notice was issued by the Department on July 26, 2005 - as a result of total coliform positives being sampled from the distribution system. The Utility has been using emergency chlorination facilities to maintain chlorine residuals and bacteriological water quality in the distribution system. While operating the emergency chlorination facilities, bacteriological samples from the distribution system have been analyzed as total coliform negative. The proposed chemical facilities would be used to inject blended phosphate (to sequester iron) and provide a suitable chlorine residual in the distribution system.

Well Nos. 1 and 2 are located in a common pumpstation. The common discharge from Well Nos. 1 and 2 is to the distribution system – via a buried pressure tank located in the basement level. The location of the chemical injection for the phosphate and sodium hypochlorite (below-grade) are shown in the Upper Floor Plan drawing and the Piping Detail drawing.

The four chemical feed systems will be located inside a steel reinforced, precast concrete building. As shown in the Upper Floor Plan drawing, the north side exterior wall of the (10 foot by 12 foot) building will be located approximately 3 feet south of the existing pumpstation. Between the two buildings, separate rigid (outer) conduit pipe will be provided for electrical power, water supply, and chemical feed tubing. The rigid conduits installed for the chemical feed tubing and water line will be insulated and installed with a heat trace system. As shown in the Upper Floor Plan drawing, the two chlorine tubing lines and the two phosphate tubes will be routed separately inside (inner) conduit.

The building will include heating, lighting and ventilation systems. A double door will be installed on the south elevation. The floor elevation of the chemical building will be matched to the floor elevation of the

existing pumpstation. The plans include the installation of an emergency eyewash/shower system and a 45 gallon (tempered water storage) tank.

Well No. 1 Chemical Feed Systems
A Pulsatron Series E Plus Model LPB4 (maximum capacity of 24 gallons per day, 125 strokes per minute) chemical feed pump was installed to inject a blended phosphate (Hawkins Chemical LPC -31) into the well discharge line. With a design dosage of 6.83 mg/l as product and the well reportedly producing approximately 380 gpm, the adjustable stroke rate and stroke length could be set at 40 strokes per minute and 35%, respectively.

A Pulsatron Series E Plus Model LPB4 (maximum capacity of 24 gallons per day, 125 strokes per minute) chemical feed pump will be installed to inject 12.5% sodium hypochlorite into the well discharge line. With a design dosage of 1.5 mg/l and the well reportedly producing approximately 380 gpm, the adjustable stroke rate and stroke length could be set at 60 strokes per minute and 47%, respectively.

Well No. 2 Chemical Feed Systems
A Pulsatron Series E Plus Model LPA3 (maximum capacity of 12 gallons per day, 125 strokes per minute) chemical feed pump was installed to inject a blended phosphate (Hawkins Chemical LPC -31) into the well discharge line. With a design dosage of 6.83 mg/l as product and the well reportedly producing approximately 170 gpm, the adjustable stroke rate and stroke length could be set at 40 strokes per minute and 31%, respectively.

A Pulsatron Series E Plus Model LPA3 (maximum capacity of 12 gallons per day, 125 strokes per minute) chemical feed pump will be installed to inject 12.5% sodium hypochlorite into the well discharge line. With a design dosage of 1.5 mg/l and the well reportedly producing approximately 170 gpm, the adjustable stroke rate and stroke length could be set at 90 strokes per minute and 64%, respectively.

The chemical feed pumps will be installed on wall brackets located above the top of the solution tanks. For both well applications, solution tank size will be 10 gallons for the blended phosphate and 15 gallons for the 12.5% sodium hypochlorite. All four solution tanks will be graduated in 0.1 gallon increments (for daily usage determination). Each set of solution tanks will be placed within a polyethylene containment tank. The containment tank for blended phosphate will have a capacity greater than 20 gallons. The containment tank for sodium hypochlorite will have a capacity greater than 30 gallons.

Variances being issued to Chapter NR 811, Wis. Adm. Code: There is no sanitary sewer in the immediate area near the existing pumpstation. The proposed chemical building will not be constructed with a floor drain. As noted above, separate secondary containment will be provided for blended phosphate and sodium hypochlorite. It is expected that the existing pumpstation will be demolished and a new pumpstation within the next five years. The construction of a new pumpstation would be initiated after a proposed West Side Water system (see Department review letter dated December 23, 2004, Project No. W-2004-1208) is installed eastward along STH 50 and water service extended to current water customers. Operators will have to perform wash down/mop-up after a discharge of the emergency shower/eyewash system. A variance to the NR 811.29(1)(h) is granted for a duration of up to five years from the date of this letter. After five years, if the new pumpstation is not in service, the Department will require the installation of a floor drain and connection with sanitary sewer. [In the absence of sanitary sewer, the Department will require that the floor drain piping be connected with a properly-sized containment manhole.]

Approval conditions related to Chapter NR 811, Wis. Adm. Code:

1. A preconstruction conference shall be held to ensure the understanding of, and compliance with, the approved plans and specifications, the proposed method of erosion control, the duties of the resident project representative, the disinfection and bacteriological sampling requirements of NR 811.07(3), and any special conditions listed below.

2. Erosion control methods shall be used to prevent siltation to lands and waterways adjoining the construction area. These methods shall include but not be limited to the following:
   a. Siltation fences,
   b. Trench stabilization, and
   c. Immediate mulching and seeding.

3. All treatment chemicals injected into a community water system shall have the NSF 60 certification.

4. Appropriate protective clothing, eyewear, gloves, showers, and eyewash facilities shall be provided in accordance with the Department of Commerce requirements for chemical handling facilities. (For specific requirements contact the local Department of Commerce Safety Inspection staff.)

5. The electrical outlet(s) used for any chemical feed pump shall be clearly marked. The outlet(s) shall be electrically connected to operate with the appropriate well pump.

6. The monthly reports of daily pumpage, number of pounds of chemicals used per day, and theoretical chemical residuals shall be submitted on forms provided by the Southeast Region office of this Department.

7. Equipment for determining orthophosphate and free chlorine residuals shall be provided. Actual residual testing shall be performed as necessary for control of the treatment processes and the results shall be submitted on forms provided by the Southeast Region office of this Department. Orthophosphate and chlorine residual testing shall be performed a minimum of twice weekly.

8. Contact Theera Ratarasarn, of the Department's Milwaukee Service Center, telephone number 414-263-8650, to determine the free chlorine residual that shall be maintained throughout the entire distribution system.

9. Results of quarterly (calendar year) raw water bacteriological samples shall be submitted for Department review.

10. Prior to placing the chemical feed systems into service, Theera Ratarasarn, at telephone number 414-263-8650, shall be contacted for approval to start-up.

Approval conditions related to other Department requirements: None

Approval constraints: This approval is valid for two years from the date of approval and is subject to the conditions listed above. If construction or installation of the improvements has not commenced within two years the approval shall become void and a new application must be made and approval obtained prior to commencing construction or installation.

This approval is based upon the representation that the plans submitted to the Department are complete and accurately represent the project being approved. Any approval of plans that do not fairly represent the project because they are incomplete, inaccurate, or of insufficient scope and detail is voidable at the option of the Department.

Appeal rights: The project was reviewed in accordance with s. 281.41, Statutes for compliance with Chapters NR 108 and NR 811 Wis. Adm. Code and is hereby approved in accordance with s. 281.41, Statutes subject to the conditions listed above. If you believe you have a right to appeal this decision, you may file a written request for a contested case hearing pursuant to s. 227.42, Wis. Stats., or file for judicial review under s. 227.52 and 227.53, Statutes. You have 30 days after this approval is mailed to file your written request for hearing or file and serve your petition for judicial review. Your request for hearing or petition for judicial review must name the Secretary of the Department as respondent. This notice is provided pursuant to s. 227.48, Statutes.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Francis G. Fuja, P.E.
Plan Review Engineer
Telephone No. 414-263-8749

cc: Elaine Odegard - Water Supt.
Douglas Snyder – Baxter & Woodman, Inc. (Burlington office)
Theera Ratarasarn – SER Milwaukee
Lee Boushon DG/2
Fuja - DG Reviewer at SER Milwaukee
PSC

BAXTER & WOODMAN
Consulting Engineers
256 South Pine Street, Burlington, WI 53105 • 262.763.7834 • baxterwoodman.com

August 11, 2015

Catherine M. Wunderlich, P.E., Section Chief
Wisconsin Department of Natural Resources
101 South Webster Street
P.O. Box 7921
Madison, WI 53707-7921

Subject: Paddock Lake Water System Planning

Dear Ms. Wunderlich,

On behalf of the Village of Paddock Lake, we are providing the supplemental information requested by your review staff during the July 21, 2015 meeting. The Phase 1 improvements described below were intended in the June 8, 2015 request. Enclosed is a concept plan showing the improvements described below. The maximum day demand for the existing water system is 138 gallons per minute.

Phase 1 – The improvements needed to produce a water system with two hours of fire protection and able to supply a maximum day water use of 350 gallons per minute:

- Replacement of the existing 1950's well building with a new well building, ground storage reservoir, booster pump station, similar chemical feed (phosphate for sequestering and sodium hypochlorite for disinfection) systems, and emergency generator. The reservoir will be sized to store an average day supply or a two-hour fire flow, whichever is greater. The booster pumps will be sized to meet the peak hour needs of the customers, or the fire demand, whichever is greater. There will most likely be two booster pump systems; one system for each pressure zone. The lower pressure zone (existing system) will operate at the existing Hydraulic Grade Line Elevation (HGL) of 926 feet Mean Sea Level (MSL); ground elevations within this zone are between 770 feet MSL and 805 feet MSL. The lower pressure zone is necessary due the age and condition of the existing water mains; system pressures within this zone will range between 50 psi to 67 psi, depending on the elevation of the structure. The upper pressure zone is planned to operate at an HGL of 980 feet MSL; ground elevations within this zone are between 780 feet MSL and 860 feet MSL; corresponding pressures will range between 50 psi and 85 psi depending on the elevation of the structure. New customers outside the limits of the existing system will be served from the upper pressure zone. The improvements will include a SCADA system to monitor daily flow and chemical usage and prevent the need for routine weekend visits.
- Pump replacement Wells No. 1 & 2; the capacity of each pump is planned for 350 gallons per minute; the pumping water level needs to stay within the well casing.
- Installation of the transmission main in STH 50 and replacement of water main on 236th Ave.
- Construction of the previously approved improvements at Well 3; the pump will match the final capacity of the existing wells. Well 3 will be classified as emergency use only and serve

as a redundant source of water during the time that we need to chemically treat the aquifer or have an emergency at the existing well site.
- Begin replacing water main in the existing system when the associated roadway needs reconstruction.

Phase 2 – The additional improvements needed to supply a projected maximum day water use between 350 gallons per minute and 700 gallons per minute:

- Construct elevated storage; the size will be dependent on the planned development at the time, but will be sized to at least match the ground storage volume constructed in the first phase.
- Convert Well 3 to routine use and install iron removal treatment at Well 3.
- Continue replacing water mains in the existing system.

Phase 3 – The additional improvements needed to supply a projected maximum day water use greater than 700 gallons per minute:

- Construct the improvements at Well 4; pump the water to the Well 3 site for iron removal treatment.
- Construct a second water main connection (Tentatively along CTH K) between the two pressure zones and possibly eliminate the lower pressure zone. This will increase the static pressure in the lower zone by approximately 20 pounds per square inch (psi); the static pressure range in this new single pressure zone will range from 50 psi to 90 psi, with the majority of the area adjacent to the lake having a static pressure of approximately 75 psi.
- Continue connecting customers to the STH 50 water main and the CTH K water main, as needed.

Please call if you have any questions.

Sincerely,

BAXTER & WOODMAN, INC.
CONSULTING ENGINEERS

Douglas R. Snyder, P.E.

DRS:jmc
Encs.
CC: Tim Popanda, Administrator
Terry Burns, President

l:\Burlington\PADLK\150496.30 - Water Supply Options\30-ReportStudy\Correspondence\WDNR Concept Approval Amendment.docx

FUTURE WATER MAIN

12" MAIN (PHASE 3)

CTH K

ELEVATED STORAGE
(PHASE 2)
LOCATION UNKNOWN

STH 75

EXISTING 12"
MAIN–UNUSED

PADDOCK LAKE

APPROX. AREA WITH EXISTING
MUNICIPAL WATER SERVICE
LOW PRESSURE ZONE, EXISTING
MAINS NOT SHOWN

WELL NO. 1 & NO. 2
IMPROVEMENTS (PHASE 1)

12" WATER MAIN–HIGH PRESSURE (PHASE 1)
8" WATER MAIN–LOW PRESSURE (PHASE 1)

12" WATER MAIN (PHASE 1)
RELAY

STH 50

CENTRAL
HIGH
SCHOOL

CONNECT TO EXISTING
WATER MAIN

12" WATER MAIN (PHASE 1)

WELL NO. 3 (PHASE 1)
WATER TREATMENT (PHASE 2)

WELL NO. 4 2000 FEET SOUTH OF WELL NO. 3 AND
SOUTH OF CTH F (PHASE 3)

N
W
E
S

LEGEND

CORPORATE BOUNDARY

0 1000' 2000' 3000' 4000'

BAXTER & WOODMAN
Consulting Engineers

WATER SYSTEM CONCEPT PLAN
VILLAGE OF PADDOCK LAKE

P.N. 150496.30
08-06-15

I:\BURLINGTON\PADLK\150496.30 - WATER SUPPLY OPTIONS\CADD\DRAWINGS\DWG\40 - CURRENT\OPTION 2\STRT-MAP.DWG STRTMAP11X17
Plotted: 8/7/2015 11:21 AM By: 421TLB

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

August 25, 2015

MR TIM POPANDA ADMINISTRATOR
VILLAGE OF PADDOCK LAKE
6969 236TH AVE
SALEM WI 53168

Subject: Paddock Lake Water System Conceptual Plan

Dear Mr. Popanda:

This letter is in response to the June 8, 2015 and August 11, 2015 letters from Douglas R. Snyder of Baxter & Woodman Consulting Engineers of Burlington. The letters outline a concept plan for improvements to the Village of Paddock Lake water system which will provide fire protection for the existing customers and expansion of the system to allow for additional customers. The concept was also discussed in a meeting held here on July 21, 2015.

Maximum day demand is presently considered to be 138 gpm. The concept plan has been presented as follows:

Phase 1- The goal is to provide two hours of fire protection and to supply a maximum day demand of 350 gpm. Improvements would include:

- A new pump station to house Wells 1 and 2 that includes a ground reservoir, high service pumps, chemical addition (sodium hypochlorite and phosphate) and emergency power.
- New 350 gpm pumps for both Well No. 1 and Well No. 2
- Installation of new mains on STH 50 and 236th Avenue that will connect the pump station to existing unused mains on STH 75 in the western part of the Village. The mains would be part of a new high pressure zone and would also serve Central High School, presently served by its' own well.
- Two pressure zones will be created. The low zone will consist of the existing system with a hydraulic grade line (HGL) of 926 MSL (same as existing). There is a concern that the old mains cannot tolerate higher pressures. The high zone with an HGL of 980 MSL will include the proposed new mains, the existing unused mains in the western portion of the Village and any new customers outside the existing system. Elevations in the low zone range from 770 to 805 MSL and pressures will range from 50 to 67 psi. Elevations in the high zone will range from 780 to 860 and pressures will range from 50 to 85 psi. Two sets of high service pumps will be provided in the new pump station.
- A pump station and pump will be provided for previously constructed Well No. 3. Due to high levels of iron in the water, the well will serve as a backup source of water until iron removal facilities are provided. The well will discharge to the high pressure zone.
- Replace water mains in the existing system as roads are reconstructed.
- Provide updated SCADA for all facility improvements.

Phase 2 – The intent is that this phase would proceed when the projected maximum day demand is between 350 and 700 gpm and would include:

- Elevated tank with volume similar to or larger than the proposed ground storage reservoir at Wells 1 and 2 to be constructed in the western part of the village. Overflow elevation would likely be around 980 MSL to serve the high zone.
- Install iron removal filters at Well No. 3 and convert well to regular use.
- Continue replacing water mains in the existing system.

Phase 3 – The intent is that this phase would proceed when the projected maximum day demand exceeds 700 gpm and would include:

- A pump station and pump will be provided for previously constructed Well No. 4. The water would be pumped to Well No. 3 for iron removal treatment.
- A second connection will be made between the two pressure zones and the low zone may be eliminated with the entire system served by a single (high) zone.

The Department concurs with the concept as presented and offers the following comments:

1. This concept plan should not be construed as an engineering report.
2. A detailed engineering report should be prepared and submitted for further comment prior to the submission of plans and specifications for the elements of Phase 1.
3. The approval for the facilities at Well No. 3 has expired and will need to be resubmitted for review and approval.
4. The Village should make every effort to complete phases 1 and 2 as soon as possible.

Feel free to contact me with any questions.

Sincerely,

Larry B. Landsness, P.E.
Public Water Engineering Section
Bureau of Drinking Water & Groundwater
(608) 267-7647

cc: Doug Snyder – Baxter & Woodman (by email)
Jake Chappelle – SER (by email)
Florence Olson – DG/5 (by email)

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Jim Doyle, Governor
Scott Hassett, Secretary
Gloria L. McCutcheon, Regional Director

Southeast Region Headquarters
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128
Telephone 414-263-8500
FAX 414-263-8483
TTY 414-263-8713

October 11, 2005

EMILY UHLENHAKE CLERK
VILLAGE OF PADDOCK LAKE
6969 235TH AVE
PADDOCK LAKE WI 53168

Project Number:	W-2005-0954
PWSID#:	23001462
DNR Region:	SOUTHEAST
County:	KENOSHA

SUBJECT: WATER SYSTEM FACILITIES PLAN AND SPECIFICATION APPROVAL

Dear Ms. Uhlenhake:

The Wisconsin Department of Natural Resources, Division of Water, Bureau of Drinking Water and Groundwater, is conditionally approving the plans and specifications for the following project. The project review included review of an engineering report or information of sufficient detail to meet the requirements of NR 811.13(3).

Water system name: Paddock Lake Water Utility
Date received: 9/2/05; additional information 10/6/05
Length of time extension: None
Professional Engineer: Douglas R. Snyder – Baxter & Woodman, Inc
Regional DNR Contact: Theera Ratarasarn – Milwaukee Service Center
Project description: Temporary chemical feed facilities for Well Nos. 1 and 2

A boil water notice was issued by the Department on July 26, 2005 - as a result of total coliform positives being sampled from the distribution system. The Utility has been using emergency chlorination facilities to maintain chlorine residuals and bacteriological water quality in the distribution system. While operating the emergency chlorination facilities, bacteriological samples from the distribution system have been analyzed as total coliform negative. The proposed chemical facilities would be used to inject blended phosphate (to sequester iron) and provide a suitable chlorine residual in the distribution system.

Well Nos. 1 and 2 are located in a common pumpstation. The common discharge from Well Nos. 1 and 2 is to the distribution system – via a buried pressure tank located in the basement level. The location of the chemical injection for the phosphate and sodium hypochlorite (below-grade) are shown in the Upper Floor Plan drawing and the Piping Detail drawing.

The four chemical feed systems will be located inside a steel reinforced, precast concrete building. As shown in the Upper Floor Plan drawing, the north side exterior wall of the (10 foot by 12 foot) building will be located approximately 3 feet south of the existing pumpstation. Between the two buildings, separate rigid (outer) conduit pipe will be provided for electrical power, water supply, and chemical feed tubing. The rigid conduits installed for the chemical feed tubing and water line will be insulated and installed with a heat trace system. As shown in the Upper Floor Plan drawing, the two chlorine tubing lines and the two phosphate tubes will be routed separately inside (inner) conduit.

The building will include heating, lighting and ventilation systems. A double door will be installed on the south elevation. The floor elevation of the chemical building will be matched to the floor elevation of the

existing pumpstation. The plans include the installation of an emergency eyewash/shower system and a 45 gallon (tempered water storage) tank.

Well No. 1 Chemical Feed Systems

A Pulsatron Series E Plus Model LPB4 (maximum capacity of 24 gallons per day, 125 strokes per minute) chemical feed pump was installed to inject a blended phosphate (Hawkins Chemical LPC -31) into the well discharge line. With a design dosage of 6.83 mg/l as product and the well reportedly producing approximately 380 gpm, the adjustable stroke rate and stroke length could be set at 40 strokes per minute and 35%, respectively.

A Pulsatron Series E Plus Model LPB4 (maximum capacity of 24 gallons per day, 125 strokes per minute) chemical feed pump will be installed to inject 12.5% sodium hypochlorite into the well discharge line. With a design dosage of 1.5 mg/l and the well reportedly producing approximately 380 gpm, the adjustable stroke rate and stroke length could be set at 60 strokes per minute and 47%, respectively.

Well No. 2 Chemical Feed Systems

A Pulsatron Series E Plus Model LPA3 (maximum capacity of 12 gallons per day, 125 strokes per minute) chemical feed pump was installed to inject a blended phosphate (Hawkins Chemical LPC -31) into the well discharge line. With a design dosage of 6.83 mg/l as product and the well reportedly producing approximately 170 gpm, the adjustable stroke rate and stroke length could be set at 40 strokes per minute and 31%, respectively.

A Pulsatron Series E Plus Model LPA3 (maximum capacity of 12 gallons per day, 125 strokes per minute) chemical feed pump will be installed to inject 12.5% sodium hypochlorite into the well discharge line. With a design dosage of 1.5 mg/l and the well reportedly producing approximately 170 gpm, the adjustable stroke rate and stroke length could be set at 90 strokes per minute and 64%, respectively.

The chemical feed pumps will be installed on wall brackets located above the top of the solution tanks. For both well applications, solution tank size will be 10 gallons for the blended phosphate and 15 gallons for the 12.5% sodium hypochlorite. All four solution tanks will be graduated in 0.1 gallon increments (for daily usage determination). Each set of solution tanks will be placed within a polyethylene containment tank. The containment tank for blended phosphate will have a capacity greater than 20 gallons. The containment tank for sodium hypochlorite will have a capacity greater than 30 gallons.

Variances being issued to Chapter NR 811, Wis. Adm. Code: There is no sanitary sewer in the immediate area near the existing pumpstation. The proposed chemical building will not be constructed with a floor drain. As noted above, separate secondary containment will be provided for blended phosphate and sodium hypochlorite. It is expected that the existing pumpstation will be demolished and a new pumpstation within the next five years. The construction of a new pumpstation would be initiated after a proposed West Side Water system (see Department review letter dated December 23, 2004, Project No. W-2004-1208) is installed eastward along STH 50 and water service extended to current water customers. Operators will have to perform wash down/mop-up after a discharge of the emergency shower/eyewash system. A variance to the NR 811.29(1)(h) is granted for a duration of up to five years from the date of this letter. After five years, if the new pumpstation is not in service, the Department will require the installation of a floor drain and connection with sanitary sewer. [In the absence of sanitary sewer, the Department will require that the floor drain piping be connected with a properly-sized containment manhole.]

Approval conditions related to Chapter NR 811, Wis. Adm. Code:

1. A preconstruction conference shall be held to ensure the understanding of, and compliance with, the approved plans and specifications, the proposed method of erosion control, the duties of the resident project representative, the disinfection and bacteriological sampling requirements of NR 811.07(3), and any special conditions listed below.

2. Erosion control methods shall be used to prevent siltation to lands and waterways adjoining the construction area. These methods shall include but not be limited to the following:
   a. Siltation fences,
   b. Trench stabilization, and
   c. Immediate mulching and seeding.

3. All treatment chemicals injected into a community water system shall have the NSF 60 certification.

4. Appropriate protective clothing, eyewear, gloves, showers, and eyewash facilities shall be provided in accordance with the Department of Commerce requirements for chemical handling facilities. (For specific requirements contact the local Department of Commerce Safety Inspection staff.)

5. The electrical outlet(s) used for any chemical feed pump shall be clearly marked. The outlet(s) shall be electrically connected to operate with the appropriate well pump.

6. The monthly reports of daily pumpage, number of pounds of chemicals used per day, and theoretical chemical residuals shall be submitted on forms provided by the Southeast Region office of this Department.

7. Equipment for determining orthophosphate and free chlorine residuals shall be provided. Actual residual testing shall be performed as necessary for control of the treatment processes and the results shall be submitted on forms provided by the Southeast Region office of this Department. Orthophosphate and chlorine residual testing shall be performed a minimum of twice weekly.

8. Contact Theera Ratarasarn, of the Department's Milwaukee Service Center, telephone number 414-263-8650, to determine the free chlorine residual that shall be maintained throughout the entire distribution system.

9. Results of quarterly (calendar year) raw water bacteriological samples shall be submitted for Department review.

10. Prior to placing the chemical feed systems into service, Theera Ratarasarn, at telephone number 414-263-8650, shall be contacted for approval to start-up.

Approval conditions related to other Department requirements: None

Approval constraints: This approval is valid for two years from the date of approval and is subject to the conditions listed above. If construction or installation of the improvements has not commenced within two years the approval shall become void and a new application must be made and approval obtained prior to commencing construction or installation.

This approval is based upon the representation that the plans submitted to the Department are complete and accurately represent the project being approved. Any approval of plans that do not fairly represent the project because they are incomplete, inaccurate, or of insufficient scope and detail is voidable at the option of the Department.

Appeal rights: The project was reviewed in accordance with s. 281.41, Statutes for compliance with Chapters NR 108 and NR 811 Wis. Adm. Code and is hereby approved in accordance with s. 281.41, Statutes subject to the conditions listed above. If you believe you have a right to appeal this decision, you may file a written request for a contested case hearing pursuant to s. 227.42, Wis. Stats., or file for judicial review under s. 227.52 and 227.53, Statutes. You have 30 days after this approval is mailed to file your written request for hearing or file and serve your petition for judicial review. Your request for hearing or petition for judicial review must name the Secretary of the Department as respondent. This notice is provided pursuant to s. 227.48, Statutes.

STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES
For the Secretary

Francis G. Fuja, P.E.
Plan Review Engineer
Telephone No. 414-263-8749

cc: Elaine Odegard - Water Supt.
Douglas Snyder – Baxter & Woodman, Inc. (Burlington office)
Theera Ratarasarn – SER Milwaukee
Lee Boushon DG/2
Fuja - DG Reviewer at SER Milwaukee
PSC

VILLAGE OF PADDOCK lAKE, WISCONSIN
WATER SYSTEM IMPROVEMENTS
PSC FILING APPLICATION

APPENDIX C

20 Year Present Worth Cost Comparison

20 YEAR PRESENT WORTH COST COMPARISON

Water Supply Improvements
Village of Paddock Lake

ITEM	**Option 1** Improvements to Current Water Supply	**Option 2** Connection to Bristol Water	**Option 3** Wells 3 & 4 Improvements
Construction Cost	$3,582,180	$3,575,280	$3,877,180
Engineering, Legal, & Contingencies	$1,250,000	$1,250,000	$1,360,000
Project Cost	$4,832,180	$4,825,280	$5,237,180
Present Worth Operation & Maintenance Cost	$999,527	$835,831	$1,499,290
Present Worth of Replacement Costs	$0	$0	$83,617
Present Worth Salvage Value	($1,543,292)	($1,614,237)	($1,817,955)
Total Present Worth Cost	$4,288,415	$4,046,874	$5,002,132
Total Present Worth Cost	**$4,288,000**	**$4,047,000**	**$5,002,000**
Ratio to Lowest Cost Alternative	**1.06**	**1.00**	**1.24**

Comparison Annual Interest Rate (%) = 1.200

BAXTER & WOODMAN

Option 1: Improvements at Well 1 & 2 and utilizing Well 3 as back-up source

Interest Rate = 1.200%

1) CAPITAL CONSTRUCTION COST

General Construction	Initial Cost	Service Life (Years)	Replacement Cost Year 5	Replacement Cost Year 10	Replacement Cost Year 15	Salvage Value Year 20
Well 1 & 2 Station, Generator, Chemical Feed	$475,000	50				$285,000
Water Storage Resevoir and Pump	$450,000	50				$270,000
Enlarged Reservoir and Pump for Fire Protection	$150,000	50				$90,000
Sanitary Sewer Connection	$40,000	50				$24,000
Well 3 Pump Station, Chemical Feed, Sitework	$475,000	50				$285,000
Limestone Drive to CTH F	$120,000	20				$0
Sanitary Holding Tank System	$12,000	20				$0
Highway 50 Water Main	$1,347,250	50				$808,350
Highway 50 Water Services	$327,930	50				$196,758
Subtotal =	**$3,397,180**		**$0**	**$0**	**$0**	**$1,959,108**
Mechanical Construction						
Service Pumps for Higher Pressure Zone	$25,000	20				$0
Well Pump and Motor	$120,000	20				$0
Subtotal =	**$145,000**		**$0**	**$0**	**$0**	**$0**
Misc. Construction						
Well Rehabilitation	$40,000	20				
Subtotal =	**$40,000**		**$0**	**$0**	**$0**	**$0**

$0	**$0**	**$0**	**$1,959,108**
0.9421	**0.8876**	**0.8362**	**0.7878**
$0	**$0**	**$0**	**$1,543,292**

Construction Cost =	**$3,582,180**
Engineering, Legal, & Contingencies (35%) =	**$1,250,000**
Project Cost =	**$4,832,180**

2) OPERATION & MAINTENANCE COST

Items	Annual Cost
Proposed O&M	$56,511

Annual O&M Cost =	**$56,511**
Present Worth Factor =	**17.6873**
Present Worth O&M Cost =	**$999,527**

3) 20 YEAR PRESENT WORTH COST

Present Worth Cost =	**$4,288,415**	**(Project Cost + O&M Cost + Replacement Cost - Salvage Value)**

Construction Cost (+)	$3,582,180
Engineering, Legal, & Contg. (+)	$1,250,000
Interest During Construction (+)	$0
Total O&M Cost (+)	$999,527
Total Replacement Cost (+)	$0
Total Salvage Value (-)	$1,543,292
Total Present Worth Cost	**$4,288,415**

BAXTER & WOODMAN

Option 2: Connection to Bristol Water

Interest Rate = 1.200%

1) CAPITAL CONSTRUCTION COST

General Construction	Initial Cost	Service Life (Years)	Replacement Cost Year 5	Replacement Cost Year 10	Replacement Cost Year 15	Salvage Value Year 20
Well 1 & 2 Station, Generator, Chemical Feed	$475,000	50				$285,000
Water Storage Resevoir and Pump	$450,000	50				$270,000
Enlarged Reservoir and Pump for Fire Protection	$150,000	50				$90,000
Highway 50 Water Main	$1,347,250	50				$808,350
Highway 50 Water Services	$327,930	50				$196,758
Connection to Bristol Water Supply	$665,100	50				$399,060
Subtotal =	**$3,415,280**		**$0**	**$0**	**$0**	**$2,049,168**

Mechanical Construction						
Well Pump and Motor	$120,000	20				$0
Subtotal =	**$120,000**		**$0**	**$0**	**$0**	**$0**

Misc. Construction						
Well Rehabilitation	$40,000					
Subtotal =	**$40,000**		**$0**	**$0**	**$0**	**$0**

		$0	**$0**	**$0**	**$2,049,168**
		0.9421	**0.8876**	**0.8362**	**0.7878**
Construction Cost =	**$3,575,280**	**$0**	**$0**	**$0**	**$1,614,237**
Engineering, Legal, & Contingencies (35%) =	**$1,250,000**				
Project Cost =	**$4,825,280**				

2) OPERATION & MAINTENANCE COST

Items	Annual Cost
Flushing Charges	$19,000
Proposed O&M	$28,256

Annual O&M Cost =	**$47,256**
Present Worth Factor =	**17.6873**
Present Worth O&M Cost =	**$835,831**

3) 20 YEAR PRESENT WORTH COST

Present Worth Cost =	**$4,046,874**	**(Project Cost + O&M Cost + Replacement Cost - Salvage Value)**

Construction Cost (+)	$3,575,280
Engineering, Legal, & Contg. (+)	$1,250,000
Interest During Construction (+)	$0
Total O&M Cost (+)	$835,831
Total Replacement Cost (+)	$0
Total Salvage Value (-)	$1,614,237
Total Present Worth Cost	**$4,046,874**

BAXTER & WOODMAN

Option 3: Well 3 and 4 Improvements

Interest Rate = 1.200%

1) CAPITAL CONSTRUCTION COST

General Construction	Initial Cost	Service Life (Years)	Replacement Cost Year 5	Replacement Cost Year 10	Replacement Cost Year 15	Salvage Value Year 20
Well 3 - Pump Station, Generator, and Tank Buildir	$500,000	50				$300,000
Well 3 - Water Treatment Equipment and Building	$700,000	50				$420,000
Well 3 -Booster Station and Storage Facility	$500,000	50				$300,000
Well 3 - Limestone Access Drive from Site to CTH F	$90,000	20				$0
Well 3 - Sanitary Service from Site to CTH F	$60,000	50				$36,000
Well 3- Media Replacement		15			$100,000	$66,667
Well 4 - Pump Station and Generator	$300,000	50				$180,000
Well 4 - Limestone Access Drive from Site to Public	$40,000	20				$0
Well 4 - Sanitary Holding Tank	$12,000	20				$0
Highway 50 Water Main	$1,347,250	50				$808,350
Highway 50 Water Services	$327,930	50				$196,758
Subtotal =	**$3,877,180**		**$0**	**$0**	**$100,000**	**$2,307,775**

Mechanical Construction

Subtotal =	**$0**		**$0**	**$0**	**$0**	**$0**

Misc. Construction

Subtotal =	**$0**		**$0**	**$0**	**$0**	**$0**

		$0	**$0**	**$100,000**	**$2,307,775**
		0.9421	**0.8876**	**0.8362**	**0.7878**
Construction Cost =	**$3,877,180**	**$0**	**$0**	**$83,617**	**$1,817,955**

Engineering, Legal, & Contingencies (35%) =	**$1,360,000**
Project Cost =	**$5,237,180**

2) OPERATION & MAINTENANCE COST

Items	Annual Cost
Proposed O&M	$84,767

Annual O&M Cost =	**$84,767**
Present Worth Factor =	**17.6873**
Present Worth O&M Cost =	**$1,499,290**

3) 20 YEAR PRESENT WORTH COST

Present Worth Cost =	**$5,002,132**	**(Project Cost + O&M Cost + Replacement Cost - Salvage Value)**

Construction Cost (+)	$3,877,180
Engineering, Legal, & Contg. (+)	$1,360,000
Interest During Construction (+)	$0
Total O&M Cost (+)	$1,499,290
Total Replacement Cost (+)	$83,617
Total Salvage Value (-)	$1,817,955
Total Present Worth Cost	**$5,002,132**

BAXTER & WOODMAN

VILLAGE OF PADDOCK lAKE, WISCONSIN
WATER SYSTEM IMPROVEMENTS
PSC FILING APPLICATION

APPENDIX D

Environmental Information

- WDNR Endangered Resources Preliminary Assessment
- WDNR Endangered Resources Review Request
- WDNR Notice of Broad Incidental Take Permit/Authorization Coverage
- WDNR ER Review Verification Form
- Request for SHPO Comment and Consultation on a Federal Undertaking

Endangered Resources Preliminary Assessment

Created on **7/13/2016**. This report is good for one year after the created date.

Results

Endangered resources are present and the species present are legally protected. **Further actions are required to ensure compliance** with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43). Therefore you should request an Endangered Resources Review http://dnr.wi.gov/topic/ERReview/Review.html.

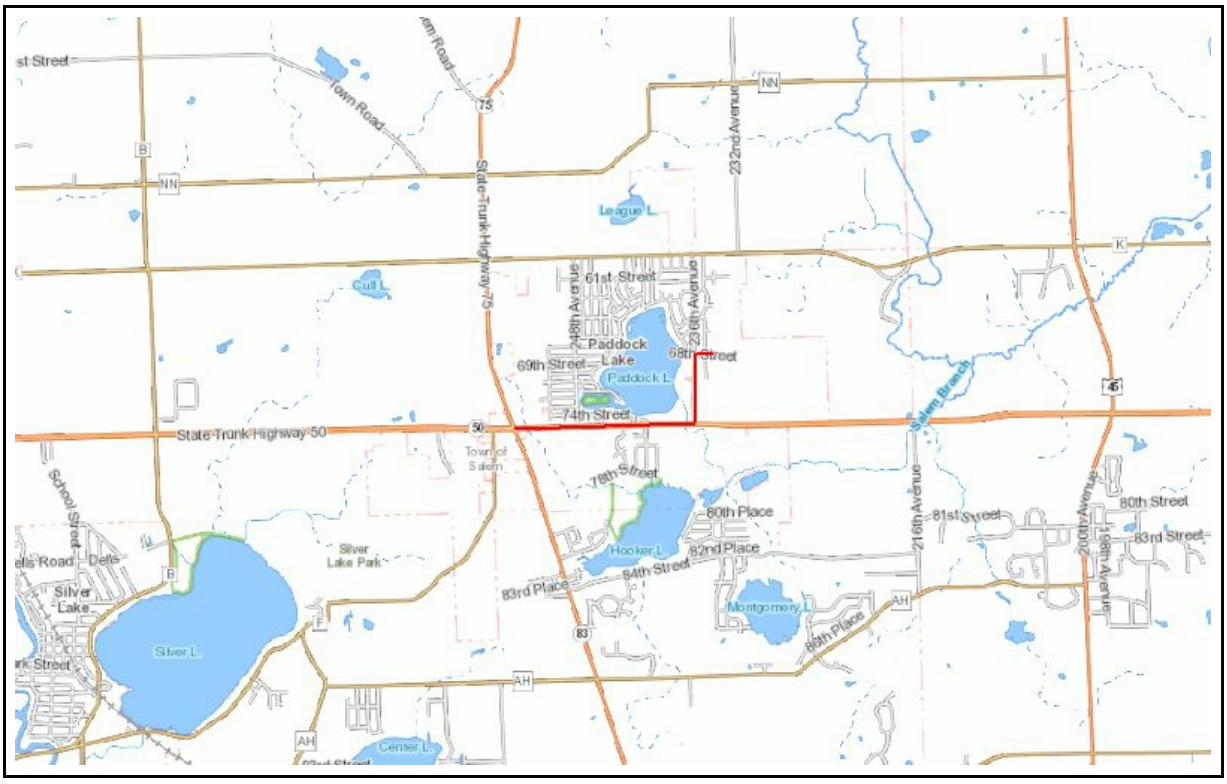
Project Information

Landowner name	Village of Paddock Lake, Wisconsin
Project address	
Project description	Water System Improvements

Project Questions

Does the project involve a public property?	Yes
Is the project on a federal property?	Yes
Is the project federally funded?	Yes
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	Yes
Is the project property in Managed Forest Law or Managed Forest Tax Law?	No

Project Area Maps



https://dnrx.wisconsin.gov/nhiportal/public

101 S. Webster Street . PO Box 7921 . Madison, Wisconsin 53707-7921

State of Wisconsin
Department of Natural Resources
Bureau of Natural Heritage Conservation
Attn: Endangered Resources Review Program
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Endangered Resources Review Request

Form 1700-047 (R 5/16)

Notice: Pursuant to s. 23.27(3)(b), Wis. Stats., this form must be completed and submitted to the Department of Natural Resources (DNR) to request an Endangered Resources (ER) Review of a proposed land development, management, planning or similar type of project. An ER Review provides the requester with information from Wisconsin's Natural Heritage Inventory (NHI) database and other sources on rare plants and animals, high quality natural communities, and other endangered resources that may be impacted by the proposed project. The ER Review will also include specific recommendations to help projects comply with Wisconsin's Endangered Species Law (s. 29.604, Wis. Stats.) and other laws and regulations protecting endangered resources. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31-19.39, Wis. Stats.).

Instructions: The following materials are required to process this request. Submit all materials by mail to the address above or email (DNRERReview@wisconsin.gov). Do not include payment with this form.

- ☐ Completed, signed form
- ☐ Map(s) delineating the project area, preferably a topographic map and digital orthophoto (aerial photo)

Submission of the following materials are strongly encouraged and will facilitate review of your project:

- ☐ NHI Public Portal Preliminary Assessment Printout
- ☐ Photographs that clearly show the project area, including natural features and vegetation present on site
- ☐ Additional relevant information and reports (e.g., detailed project and habitat descriptions, wetland delineation, and site plans)

Section 1: Requester Information (ER Review correspondence and invoice will be sent to this person)

Name	Organization		
Douglas R. Snyder, P.E.	Village of Paddock Lake		
Mailing Address	**City**	**State**	**ZIP Code**
6969 236th Ave.	Paddock Lake	WI	53168
Telephone Number	**Email Address**		
(262) 763-7834	dnsyder@baxterwoodman.com		

Section 2: Landowner Information (if different than Section 1)

Name	Organization		
Tim Popanda	Village of Paddock Lake		
Mailing Address	**City**	**State**	**ZIP Code**
6969 236th Ave.	Paddock Lake	WI	53168
Telephone Number	**Email Address**		
(262) 843-2713	tpopanda@paddocklake.net		

Section 3: Project Information

Project Name	Project Address *(if applicable)*
Water Supply Planning - Phase 1	Wells 1 & 2 (6969 236th Ave.), STH 50, Well 3 (78th Pl.

Project Types: ○ Residential ○ Commercial ○ Industrial ◉ Utility ○ Transportation (roads, railroads, trails)
○ Other: _____

Start Date (on-site disturbance)	End Date (on-site disturbance)	Federal Land or Funding	Land Type
June 2017	August 2018	◉ Yes ○ No ○ unknown	☐ Private ☒ Public (e.g. Right of Ways, schools, city/county land, etc.)

County: Kenosha

○ City ○ Town ◉ Village of: Paddock Lake

Township	Range	Direction	Section	Quarter Section	Quarter-Quarter Section	Additional Comments on TRS Location *(attach additional information if necessary)*
01 N	20	☒ E ☐ W	2	☐ NW ☐ NE ☐ SW ☐ SE	☐ NW ☐ NE ☐ SW ☐ SE	Work will occur Sections 2, 3, 10, & 11.
N		☐ E ☐ W		☐ NW ☐ NE ☐ SW ☐ SE	☐ NW ☐ NE ☐ SW ☐ SE	

Provide a detailed description of the proposed project and associated disturbance, including acres to be disturbed. Attach additional pages as needed.

See attached Project Narrative Description.

Acres to be disturbed: Well No. 3 site - 0.35 acres, Well No. 1 & No. 2 site - 0.75 acres, STH 50/236th Ave. - 2.5 acres

Section 3: Project Information, *continued*

Provide a detailed description of the habitat types and current land use within the project area (e.g., 50% in active agriculture-currently corn, 20% floodplain forest, 15% industrial area, 10% hardwood swamp dominated by black ash, 5% fallow field - in active agriculture until one year ago). Attach additional pages as needed.

10% agriculture, 70% roadway, 20% water utility

List all wetlands and waterbodies (e.g., rivers, intermittent streams, lakes, marshes) within one mile of the project area. List any known or suspected impacts of the proposed project to these wetlands and waterbodies. Indicate the location(s) of any point source discharge(s) into wetlands or waterbodies.

Paddock Lake, unnamed stream (Paddock Lake outflow) on STH 50 just west of 236th Ave., unnamed stream on STH 50 just east of STH75. Wetlands near water main route at unnamed stream locations. Wetlands just south of Well 3 site. No wetlands or waterbodies will be impacted by the proposed work.

List any reports that have been prepared to describe habitat that may be impacted by the proposed project (e.g., wetland delineation, habitat assessments, and rare species surveys). Attach copies if available.

U.S. Fish & Wildlife Service - IPaC Trust Resources Report

List any other project reports or correspondence concerning endangered resources. Include endangered resources reviews conducted by this or another agency (list log # and/or date issued) for this or a different phase of or alternative to the proposed project. Attach copies if available.

N/A

Section 4: Related Permits, Licenses or Regulatory Approvals

Permit, License or Approval	Issuing Agency, Program or Municipality	Contact Person	Status
Conceptual Plan	Wisconsin Dept. of Natural Resources	Larry B. Landsness, P.E.	☐ will be applying for ☐ have applied for ☒ have received
Engineering Report, Design	Wisconsin Dept. of Natural Resources	Florence Olson	☒ will be applying for ☐ have applied for ☐ have received
			☐ will be applying for ☐ have applied for ☐ have received

Section 5: Terms and Conditions

The requested ER Review may contain NHI data and information (including specific locations of endangered resources) which are considered sensitive and are not subject to Wisconsin's Open Records Law (per s. 23.27, Wis. Stats.). The information contained in the ER Review is solely for planning and implementation of the proposed project. As such, the information contained in the ER Review shall only be shared with individuals who need this information to carry out specific roles in the planning, permitting, and implementation of the proposed project. The requester must agree to not reproduce or disseminate the ER Review or the specific locations of endangered resources contained in the ER Review to any other parties or individuals without prior written permission from the DNR Bureau of Natural Heritage Conservation. (Contact the Endangered Resources Review Program at 608-267-0862 if you have any questions about sharing information contained in the ER Review.)

Section 6: Certification by Requester

I agree to pay, within 30 days of receipt of an invoice, the $75/hour fee charged by the Department per s. NR 29.04(1), Wis. Adm. Code, for this ER review. I am the owner, authorized representative of the owner, or utility representative of the property for which I am requesting an Endangered Resources (ER) Review. I accept the terms and conditions outlined in Section 5 (above). To the best of my knowledge, the information I have provided is complete and accurate.

NOTE: If submitting this request electronically, please type your name on the signature line. Your typed name, along with the email message generated from electronic submittal of this form, will be used as an electronic signature which is the legal equivalent to an actual signature.

Douglas R. Snyder	7/15/2016	Douglas R. Snyder, P.E.
Signature of Requester	Date Signed	Printed Name

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Scott Walker, Governor
Cathy Stepp, Secretary

101 S. Webster St.
Box 7921
Madison, Wisconsin 53707-7921
Telephone 608-266-2621
FAX 608-267-3579
TTY 608-267-6897

July 15, 2016

Douglas R. Snyder, P.E.
Village of Paddock Lake
6969 236th Ave.
Paddock Lake, WI 53168

SUBJECT: Notice of Broad Incidental Take Permit/Authorization Coverage
Proposed Water Supply Planning – Phase 1, Village of Paddock Lake, Kenosha County, WI (T01N R20E Section 2)

Dear Mr. Snyder:

This letter serves as notice that the proposed project as described in your Endangered Resources (ER) Review Request received July 15, 2016 is covered under Activity 2-A2, Any upland project with only mussel, fish and/or aquatic insect species present, of Table 2 of the Broad Incidental Take Permit/Authorization for No/Low Impact Activities (No/Low BITP/A). *Please note, Table 2 is only for use by DNR Staff and ER Certified Reviewers, therefore, the table is not available online.* Due to this coverage under the No/Low BITP/A, a formal review letter is not needed. This BITP/A covers projects that the DNR has determined will have no impact or a minimal impact to endangered and threatened species in the state. Because of this **there are no actions that need to be taken to comply with state and/or federal endangered species laws**, **any take that may result from the proposed project is permitted/authorized, and the ER Review fee is waived.**

Attached is an ER Review Verification Form for you to keep on file and submit with any other necessary DNR permit applications to indicate that the ER requirements have been met.

All commercial, governmental or non-profit entities that conduct projects covered under the BITP/A for No/Low Impact Activities must place documentation in the project file when the BITP/A is utilized. They must also submit an annual report to the Bureau of Natural Heritage Conservation (BNHC) documenting that their activities were performed in accordance with the specifications, definitions and conditions defined within the permit/authorization.

This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Please contact me at (608) 267-0862 or via email at Melissa.tumbleson@wisconsin.gov if you have any questions about this notice.

Sincerely,

Melissa Tumbleson
Endangered Resources Review Program

State of Wisconsin
Department of Natural Resources
Bureau of Natural Heritage Conservation
Endangered Resources Review Program
PO Box 7921, Madison WI 53707-7921
http://dnr.wi.gov/topic/ERReview/
DNRERReview@wisconsin.gov

ER Review Verification

Broad Incidental Take Permit/Authorization for No/Low Impact Activities

Form 1700-079 (R 4/16)

Notice: This form is authorized by s. 29.604, Wis. Stats. This completed signed form fulfills the requirement of an Endangered Resources Review and should be attached to other permits requiring an ER Review to show that Endangered Resources requirements have been met. Personal information collected on this form will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31-19.39, Wis. Stats.].

Instructions: Complete this form if your project is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities and therefore does not require an Endangered Resources Review.

Section 1: Applicant and Project Information

Requester Name	Organization or Agency Name
Douglas R. Snyder, P.E.	Village of Paddock Lake

Project Name	County	Township	Range	Section
Water Supply Planning - Phase 1	Kenosha	01 N	20 (●E ○W)	2

Telephone Number	Email Address	Reporting Year
(262) 763-7834	dsnyder@baxterwoodman.com	2016

Project Description

12" water main installation and improvements to well #s 1, 2 and 3.

Indicate who you are completing this form as:

- (●) DNR Staff
- ( ) Certified Reviewer
- ( ) Other: _____

Section 2: Broad Incidental Take Permit/Authorization Coverage Information

How is your project covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities?

- [ ] It is included in the list of activities in Table 1 – No/Low Impact Table for All Species at All Times of the Year.
- [ ] It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff and ER Certified Reviewers Only and the Taxa groups for the species of concern are covered.
- [x] It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff ER Certified Reviewers Only and the species of concern are covered by the Avoidance Measures document.

Activity Number(s)

2-A2, Any upland project with only mussel, fish and/or aquatic insect species present

Section 3: Applicant Certification

By my signature below, I certify that to the best of my knowledge, the information stated above is complete and accurate.

NOTE: If submitting this verification electronically, please type your name on the signature line. Your typed name, along with the email message generated from electronic submittal of this form, will be used as an electronic signature which is the legal equivalent to an actual signature.

Melissa Tumbleson	7/15/2016	Melissa Tumbleson
Signature	Date Signed	Requester/Submitter Name (please print)

HP-05-07 (8/15/03)

For SHPO Use Only. Case # 16-0764/KN

REQUEST FOR SHPO COMMENT AND CONSULTATION ON A FEDERAL UNDERTAKING

Submit one copy with each undertaking for which our comment is requested. Please print or type. Return to:

Wisconsin Historical Society, Division of Historic Preservation, Office of Preservation Planning, 816 State Street, Madison, WI 53706

Please Check All Boxes and Include All of the Following Information, as Applicable:

I. GENERAL INFORMATION

JUL 2 1 2016

☑ **This is a new submittal.**
☐ **This is supplemental information relating to Case #:_____ and title:_____**
☐ **This project is being undertaken pursuant to the terms and conditions of a programmatic or other interagency agreement.**
The title of the agreement is _____

a. Federal Agency Jurisdiction (Agency providing funds, assistance, license, permit): United States Department of Agriculture

b. Federal Agency Contact Person: Rhoda Fleming Phone: 920-923-3033 x137

c. Project Contact Person: Douglas R. Snyder, P.E. Phone: 262-763-7834

d. Return Address: 256 S. Pine St., Burlington, WI Zip Code: 53105

e. Email Address: dsnyder@baxterwoodman.com

f. Project Name: Village of Paddock Lake - Water Supply Planning - Phase 1

g. Project Street Address: Well Nos. 1 & 2 site (6969 236th Ave.), STH 50, Well No. 3 site (78th Pl.)

h. County: Kenosha City: Paddock Lake Zip Code: 53168

i. Project Location: Township 1 N, Range 20 E, E/W (circle one), Section 2, 3, 10, 11, Quarter Sections _____

j. Project Narrative Description—Attach Information as Necessary.

k. Area of Potential Effect (APE). Attach Copy of U.S.G.S. 7.5 Minute Topographic Quadrangle Showing APE.

II. IDENTIFICATION OF HISTORIC PROPERTIES

☐ Historic Properties are located within the project APE per 36 CFR 800.4. Attach supporting materials.
☑ Historic Properties are not located within the project APE per 36 CFR 800.4. Attach supporting materials.

III. FINDINGS

☑ No historic properties will be affected (i.e., none is present or there are historic properties present but the project will have no effect upon them). Attach necessary documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will have no adverse effect on one or more historic properties located within the project APE under 36 CFR 800.5. Attach necessa documentation, as described at 36 CFR 800.11.
☐ The proposed undertaking will result in an adverse effect to one or more historic properties and the applicant, or other federally authorized representative, wi consult with the SHPO and other consulting parties to resolve the adverse effect per 36 CFR 800.6. Attach necessary documentation, as described at 36 CFR 800.11, with a proposed plan to resolve adverse effect(s).

Authorized Signature: Douglas R. Snyder Date: 7/14/2016

Type or print name: Douglas R. Snyder, P.E.

Please note that for any future submissions, you must access site information via the Wisconsin Historical Society's databases for archaeological (ASI) and building (AHI) locations. Simply providing a map from the NRHP Web site is not sufficient.

IV. STATE HISTORIC PRESERVATION OFFICE COMMENTS

☒ Agree with the finding in section III above.
☐ Object to the finding for reasons indicated in attached letter.
☐ Cannot review until information is sent as follows: _____

Authorized Signature: _____ Date: 8-15-16