State of Wisconsin
Department of Natural Resources
Bureau of Watershed Management
PO Box 7921, Madison WI 53707-7921
dnr.wi.gov

Watershed Adaptive Management Request

Form 3200-139 (1/12)

Notice: Pursuant to s. NR 217.18, Wis. Adm. Code, this form must be completed and submitted to the Department at the time of the reissuance of an existing WPDES (Wisconsin pollutant discharge elimination system) permit to request adaptive management for phosphorus water quality based effluent limits (WQBEL).Failure to provide all requested information may result in denial of your request. Personal information collected will be used for administrative purposes and may be provided to requestors to the extent required by Wisconsin Open Records law [ss. 19.31-19.39, Wis. Stats.].

Type of Request:

- ☐ This is the formal adaptive management request as required in s. NR 217.18(2)
- ☒ This is a preliminary adaptive management request (to be submitted as part of facility planning.)

Facility and Permit Information

Facility Name	WPDES Permit No.
Village of Oregon Wastewater Treatment Facility	WI - 0020681-08-0

Facility Address	City	State	ZIP Code
101 North Perry Parkway	Oregon	WI	53576

Receiving Water
Oregon Branch discharging to Badfish Creek and eventually to the Yahara River.

Owner Contact Information

Last Name	First Name	MI	Phone No. (incl. area code)
Rau	Jeff		(608) 835-6290

Street Address	FAX Number
117 Spring Street	(608) 835-6503

City	State	ZIP Code	Email address
Oregon	WI	53575	jrau@vil.oregon.wi.us

Facility Information

Provide listed information for each lagoon or pond basin

Required for AM Request	Wis. Administrative Code Reference	Conclusion	Evidence/Source of information (attach as needed)
1. NPS contribute at least 50% of total P contribution	s. NR 217.18(2)(b)	☒ NPS contributes at least 50% ☐ NPS DOES NOT contribute at least 50%	Rock River TMDL
2. WQBEL Requires Filtration	s. NR 217.18(2)(c)	☒ Filtration required ☐ Filtration NOT required	See current facility operation below.
3. AM Plan	s. NR 217.18(2)(d)	☒ Plan is Included – Page 3 ☐ Plan is NOT Included *For a preliminary adaptive management request, AM plan not required*	Preliminary plan for Yahara Watershed submitted to DNR by Madison Metropolitan Sewerage District

Facility Operation and Performance

1. **Current P removal capability** – If the facility is currently required by a WPDES permit to monitor effluent phosphorus (P) provide a summary of the influent and effluent annual average P concentrations for each of the past three (3) years. If permit required P data is not available, the applicant should provide any other P data that may be applicable and available. If no data is available, the Department may estimate the P effluent concentration by based on data from other similar facilities.

The Oregon WWTF currently employs a combination of biological and chemical phosphorus removal to meet their 1.1 mg/L total phosphorus limit. Phosphorus treatment optimization at the WWTP has been achieved through a combination of in-plant process testing, modification to the controls of the biological phosphorus removal system, and changes to the configuration of the biological phosphorus removal system. The combination of these items has allowed the WWTP to decrease their chemical use while maintaining or increasing their phosphorus removal efficiency. Data from the end of 2015 (past three years attached) shows the decreasing trend of effluent phosphorus concentration and loading. At the same time chemical additions have been significantly decreased. This trend has been observed on a short term basis. The hope is that the trend will continue long term, however the reliability of the process is not known.
While significant improvements to the phosphorus removal efficiency have been observed, it is not anticipated that the WWTF will be able to achieve the 0.075 mg/L limit without major facility upgrades.

2. **Facility Operation** – Provide a summary description of overall facility operation. If not a continuously discharging facility, describe storage procedures and the time periods when effluent discharge occurs.

The WWTP includes an influent pump station, preliminary treatment with influent fine screening, vortex grit removal and grit washing, flow metering, and sampling, activated sludge with biological phosphorus removal, final clarification, effluent flow metering and sampling, and effluent re-oxygenation. Waste activated sludge is fed into the auto-thermal aerobic digestion system, thickened using a gravity belt thickener, and stored for 180 days. Class B liquid sludge is land applied on local fields in the spring and fall.
The facility also includes a hauled waste receiving station for receiving septic and holding tank wastes.

3. **Previous Studies** – Reference or attach any facility planning or evaluation study that evaluated facility performance capabilities (Note – Only include studies that are recent, within 5 years, or otherwise applicable for the evaluation of the existing facility and current conditions).

None.

Adaptive Management Plan (s. NR 217.18(d))

This section should summarize the Adaptive Management Plan for internal and external review. A complete Adaptive Management Plan should be attached. Note: If this is a preliminary adaptive management request, this section is not required.

Watershed	Percent Contribution of Applicant Discharge
Yahara River	

Action Area (include map)
The action area for this plan is the entire Yahara Watershed. See Attachment A.

Watershed Characteristics and Timeline Justification
The Yahara Watershed is located in south-central Wisconsin. The watershed is home to a mix of dairy operations, cash crops and intensive urban use. Long-term urban and agricultural development has led to accumulated legacy phosphorus which is anticipated to take several years to reduce.

Key Proposed Actions
There will be a suite of runoff-reducing practices implemented as part of this plan, as well as outreach/education efforts and water quality monitoring activities, all of which are identified and discussed in the preliminary adaptive management plan.

Key Goals and Measures for Determining Effectiveness
The primary goal of the plan is to meet the TMDL allocations for all participating partners. A combination of modeling, effluent and water quality monitoring will be used to determine the effectiveness of the project.

Partner(s)
See attached.

Funding Sources
Intergovernmental Agreement participants, County, State and Federal (e.g. Regional Conservation Partnership Program, Clean Lakes Alliance, Madison Gas & Electric, USGS, and others).

Adaptive Management Request and Certification

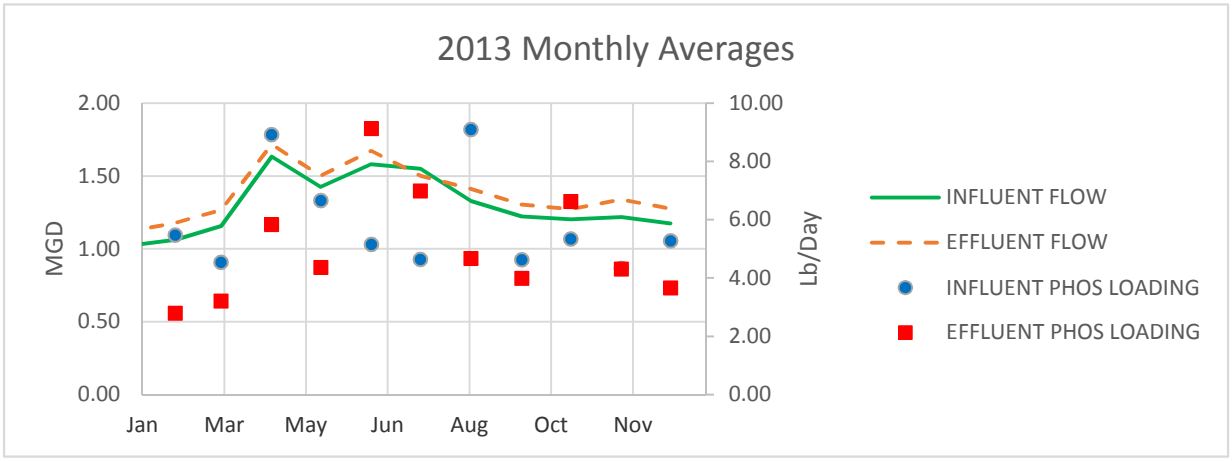
Based on the information provided, I am requesting the Watershed Adaptive Management option to achieve compliance with phosphorus water quality standards in accordance with s. NR 217.19, Wis. Adm. Code.
I certify that the information provided with this request is true, accurate and complete to the best of my knowledge.

Print or type name of person submitting request*	Title
Jeff Rau, P.E.	Director of Public Works
Signature of Official	**Date Signed**
Jeff Rau	3/11/16

*Must be an Authorized Representative for the treatment facility

Village of Oregon
WWTP Phosphorus Data

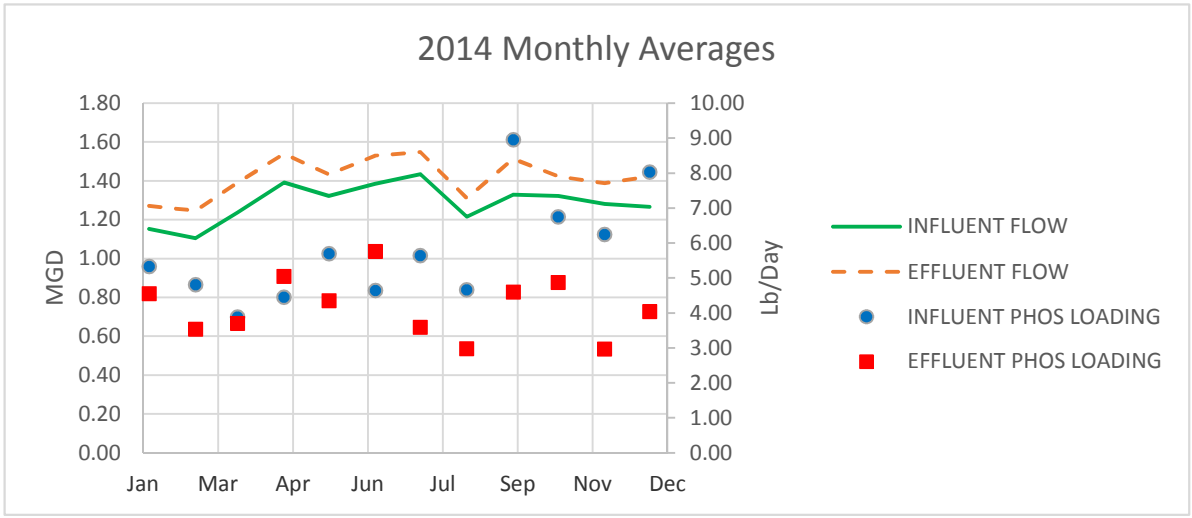
2013 Monthly Averages	Influent Flow	Influent Total Phos	Influent Phos Loading	Effluent Flow	Effluent Total Phos	Effluent Phos Loading
	MGD	MG/L	LB/DAY	MGD	MG/L	LB/DAY
January-13	1.02	4.11	5.46	1.11	0.48	2.15
February-13	1.06	4.43	5.47	1.18	0.65	2.79
March-13	1.16	3.95	4.53	1.27	0.81	3.21
April-13	1.63	4.96	8.92	1.72	0.96	5.84
May-13	1.43	3.53	6.66	1.50	0.77	4.37
June-13	1.58	3.31	5.15	1.67	1.49	9.13
July-13	1.55	2.80	4.64	1.50	1.23	6.98
August-13	1.33	5.20	9.09	1.41	0.94	4.67
September-13	1.22	3.39	4.63	1.30	0.92	3.99
October-13	1.20	3.32	5.34	1.27	1.30	6.63
November-13	1.22	2.99	4.33	1.34	0.96	4.31
December-13	1.17	4.22	5.27	1.28	0.82	3.66
Maximum	1.63	5.20	9.09	1.72	1.49	9.13
Minimum	1.02	2.80	4.33	1.11	0.48	2.15
Average	1.30	3.85	5.79	1.38	0.94	4.81



Village of Oregon

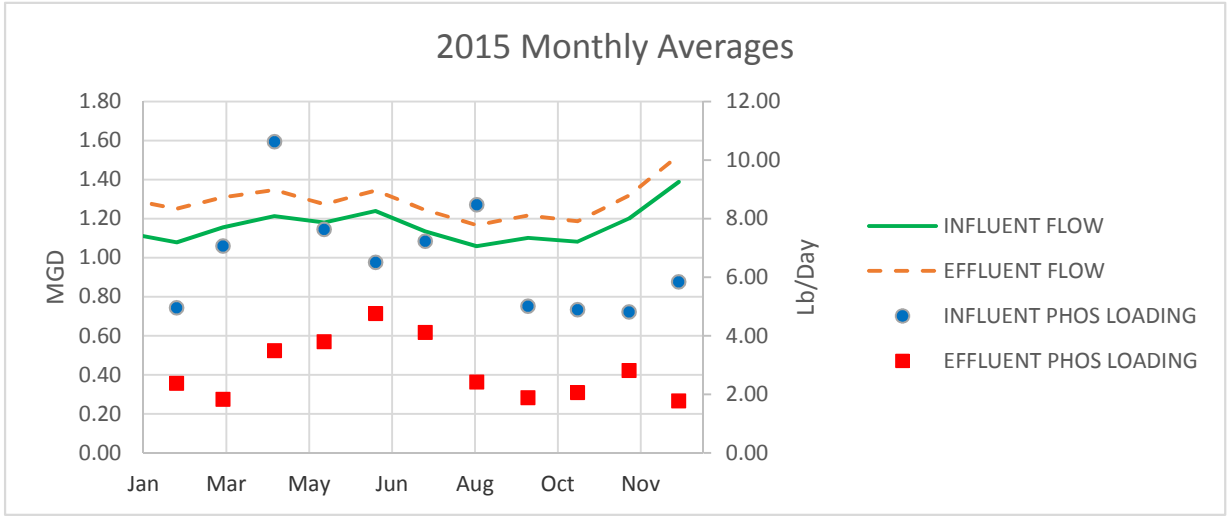
WWTP Phosphorus Data

2014 Monthly Averages	Influent Flow	Influent Total Phos	Influent Phos Loading	Effluent Flow	Effluent Total Phos	Effluent Phos Loading
	MGD	MG/L	LB/DAY	MGD	MG/L	LB/DAY
January-14	1.15	3.49	5.33	1.27	0.97	4.55
February-14	1.10	3.56	4.81	1.25	0.79	3.53
March-14	1.24	3.01	3.88	1.39	0.83	3.70
April-14	1.39	3.15	4.45	1.54	0.85	5.04
May-14	1.32	3.19	5.70	1.43	0.86	4.35
June-14	1.38	3.01	4.64	1.53	0.97	5.76
July-14	1.43	2.94	5.64	1.55	0.67	3.59
August-14	1.22	3.63	4.66	1.31	0.70	2.98
September-14	1.33	5.02	8.95	1.51	0.79	4.60
October-14	1.32	4.55	6.75	1.42	0.99	4.87
November-14	1.28	4.39	6.24	1.39	0.64	2.96
December-14	1.27	4.64	8.03	1.42	0.75	4.04
Maximum	1.43	5.02	8.95	1.55	0.99	5.76
Minimum	1.10	2.94	3.88	1.25	0.64	2.96
Average	1.29	3.71	5.76	1.42	0.82	4.16

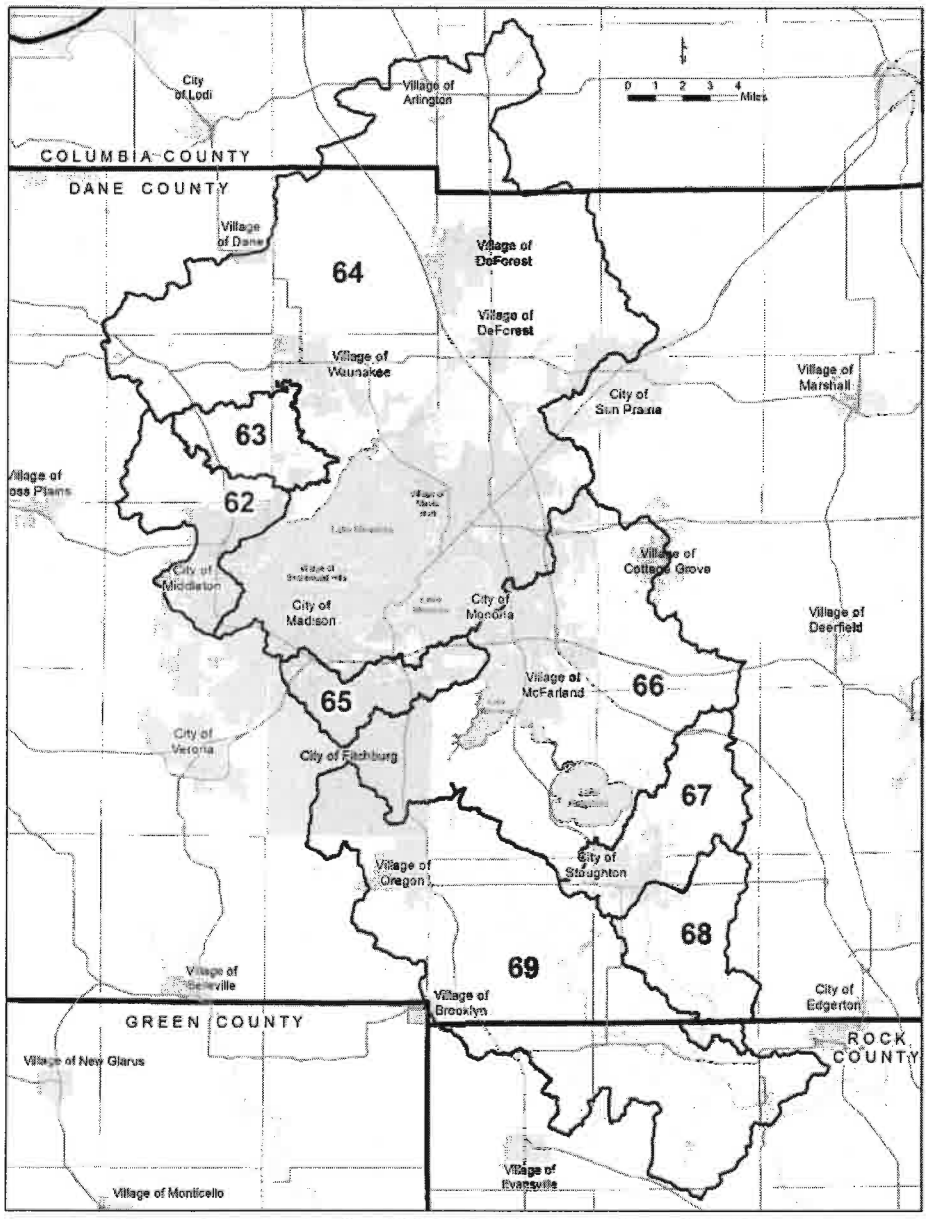


Village of Oregon
WWTP Phosphorus Data

2015 Monthly Averages	Influent Flow MGD	Influent Total Phos MG/L	Influent Phos Loading LB/DAY	Effluent Flow MGD	Effluent Total Phos MG/L	Effluent Phos Loading LB/DAY
January-15	1.13	5.00	6.03	1.30	1.01	4.60
February-15	1.08	5.14	4.95	1.25	0.54	2.37
March-15	1.15	4.68	7.06	1.31	0.36	1.82
April-15	1.21	8.11	10.63	1.35	0.74	3.49
May-15	1.18	4.71	7.63	1.27	0.85	3.80
June-15	1.24	4.57	6.50	1.34	0.98	4.76
July-15	1.13	5.81	7.23	1.24	0.93	4.11
August-15	1.06	5.90	8.47	1.17	0.60	2.42
September-15	1.10	3.91	5.01	1.22	0.43	1.88
October-15	1.08	4.20	4.89	1.19	0.50	2.06
November-15	1.20	2.87	4.81	1.32	0.61	2.81
December-15	1.39	3.80	5.84	1.52	0.30	1.77
Maximum	1.39	8.11	10.63	1.52	1.01	4.76
Minimum	1.06	2.87	4.81	1.17	0.30	1.77
Average	1.16	4.89	6.59	1.29	0.65	2.99



Watershed Adaptive Management Request
Attachment A-Action Area Map



Yahara River Watershed With TMDL Stream Reaches Shown.

Watershed Adaptive Management Request
Attachment B-Anticipated Partners

Partner		
Madison Metropolitan Sewerage District		
Oregon WWTP, Stoughton Utilities, Madison Gas & Electric, WDNR-Fish Hatchery		
Towns	Villages	Cities
Blooming Grove	*Cottage Grove*	*Fitchburg*
Bristol	*DeForest*	*Madison*
Burke	*Maple Bluff*	*Middleton*
Cottage Grove	*McFarland*	*Monona*
Dunkirk	*Shorewood Hills*	*Stoughton*
Dunn	*Waunakee*	Sun Prairie
Middleton	*Others*	UW-Madison
Pleasant Springs		
Westport		
Windsor		
Dane County Land and Water Resources Department *Columbia County Land and Water Department* *Rock County Land Conservation Department*		
USGS		
Clean Lakes Alliance		
Clean Wisconsin		
Sand County Foundation		
Yahara Pride Farms		
Capital Area Regional Planning Commission		
"Friends" Groups-e.g. Friends of Pheasant Branch Conservancy		
River Alliance of Wisconsin		
Rock River Coalition		
USDA/NRCS		
Wisconsin Department of Agriculture, Trade and Consumer		
Yahara Lakes Association		
UW Extension		
WDNR		
Wisconsin Land and Water Conservation Ass.		