

Wisconsin Department of Natural Resources SWIMS Project Summary

General Project Information

Project ID: LPL167618
Name: LAKE NOQUEBAY REHABILITATION DISTRICT: Lake Noquebay Nutrient Study - Phase 1
Type: Lakes Grant
Subtype: Large Scale Lake Planning
Status: ACTIVE
Start Date: 02/15/2018
End Date: 12/31/2020
Purpose: Marinette County is sponsoring a project to investigate nutrient loading to Lake Noquebay, identify major nutrient sources, and evaluate the effect of various nutrient reductions scenarios on water quality, in the time span of Feb. 2018 \2013 Dec. 2020. The project elements and deliverables are specified in Marinette County\2019s Grant application dated December 8, 2017.

In lake water quality conditions will be investigated along with an evaluation of ground water and watershed nutrient loading. The first goal is to evaluate current water quality conditions in Lake Noquebay by conducting water quality monitoring during the 2018 field season to characterize current water quality conditions and measure physical properties of the water column. The data will be analyzed according to the DNR protocols under WisCALM and CLMN guidance. The second goal is to evaluate the external nutrient loading to Lake Noquebay. This will be performed by:

- A) Conducting continuous flow monitoring on Smith Creek, Middle Inlet, Upper Inlet and the Outlet for use in watershed nutrient loading estimates and lake nutrient budgeting.
- B) Monitoring nutrient concentrations in Smith Creek, Middle Inlet, Upper Inlet, and ungauged tributaries for use in watershed loading estimates, water quality modeling, and evaluation of land use effects on nutrient loading.
- C) Identifying zones of groundwater inflow and outflow and quantify groundwater loading
- D) Monitoring nutrient concentrations in groundwater for use in groundwater loading estimates and lake nutrient budgeting.

Goal three consists of modeling external loading, creating a nutrient budget for Lake Noquebay and evaluating alternative load reduction strategies to protect the lake for future generations.

Special Conditions:

- 1) CLMN efforts should not be duplicated and these data shall be included in the trends analysis and final reporting;
- 2) All CLMN shall be entered into the SWIMS database.

Objective:
Comments: Grantee is LAKE NOQUEBAY REHABILITATION DISTRICT
Outcome:
Study Design:
QA Measures:

People

Name	Role	Status	Start Date	End Date	Organization	Comments
Druckrey, Chuck	TEAM_MEMBER	ACTIVE	05/10/2018		Marinette County LCD	

Project Statuses

Date	Reported By	Status	Comments
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Actions

Action	Detailed Description	Start	End Date	Status
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Action	Detailed Description	Start	End Date	Status
Grant Awarded	<p>Marinette County is sponsoring a project to investigate nutrient loading to Lake Noquebay, identify major nutrient sources, and evaluate the effect of various nutrient reductions scenarios on water quality, in the time span of Feb. 2018 \2013 Dec. 2020. The project elements and deliverables are specified in Marinette County\2019s Grant application dated December 8, 2017.</p> <p>In lake water quality conditions will be investigated along with an evaluation of ground water and watershed nutrient loading. The first goal is to evaluate current water quality conditions in Lake Noquebay by conducting water quality monitoring during the 2018 field season to characterize current water quality conditions and measure physical properties of the water column. The data will be analyzed according to the DNR protocols under WisCALM and CLMN guidance. The second goal is to evaluate the external nutrient loading to Lake Noquebay. This will be performed by:</p> <p>A) Conducting continuous flow monitoring on Smith Creek, Middle Inlet, Upper Inlet and the Outlet for use in watershed nutrient loading estimates and lake nutrient budgeting.</p> <p>B) Monitoring nutrient concentrations in Smith Creek, Middled Inlet, Upper Inlet, and ungauged tributaries for use in watershed loading estimates, water quality modeling, and evaluation of land use effects on nutrient loading.</p> <p>C) Identifying zones of groundwater inflow and outflow and quantify groundwater loading</p> <p>D) Monitoring nutrient concentrations in groundwater for use in groundwater loading estimates and lake nutrient budgeting.</p> <p>Goal three consists of modeling external loading, creating a nutrient budget for Lake Noquebay and evaluating alternative load reduction strategies to protect the lake for future generations.</p>	02/15/2018	06/30/2019	COMPLETE

Monitoring Stations

Station ID	Name	Comments
383125	Lake Noquebay - Deep Hole	
10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks	
10022480	Lower Middle Inlet - Hwy 141 Upstream	
10031086	Middle Inlet Wayside Rd upstream	
10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure	

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Assessment Units

WBIC	Segment	Local Name	Official Name
525500	1	The Outlet	The Outlet
525900	1	Noquebay Lake	Lake Noquebay
526000	2	Middle Inlet	Middle Inlet
529100	1	Lower Middle Inlet	Lower Middle Inlet
530100	1	Upper Inlet	Upper Inlet
5007111	1	Unnamed Stream	Unnamed

Lab Account Codes

Account Code	Description	Start Date	End Date
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Forms

Form Code	Form Name
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Methods

Method Code	Description
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Fieldwork Events

Start Date	Status	Field ID	Station ID	Station Name
03/14/2018 13:30	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
03/14/2018 13:30	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
05/02/2018	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
05/02/2018 14:18	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
05/02/2018 14:30	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
05/04/2018 13:20	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
05/16/2018 14:15	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
05/16/2018 14:40	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
05/16/2018 15:20	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
05/21/2018	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
05/21/2018 13:51	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
05/29/2018 11:00	COMPLETE	LMI	10031086	Middle Inlet Wayside Rd upstream
05/29/2018 11:30	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
05/29/2018 12:00	COMPLETE	UMI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
06/06/2018 10:30	COMPLETE	LI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
06/12/2018 12:40	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
06/12/2018 13:55	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
06/18/2018 10:34	COMPLETE	LI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
06/18/2018 11:47	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
06/18/2018 12:23	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
07/05/2018 10:26	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
07/05/2018 11:00	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
07/05/2018 11:15	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
07/17/2018 13:55	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole

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Start Date	Status	Field ID	Station ID	Station Name
07/17/2018 14:30	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
08/06/2018 10:54	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
08/06/2018 11:15	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
08/06/2018 11:52	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
08/20/2018 11:30	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
08/20/2018 13:55	COMPLETE	N2	383125	Lake Noquebay - Deep Hole
08/21/2018 10:30	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
08/21/2018 11:09	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
08/21/2018 11:33	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
08/29/2018 10:14	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
08/29/2018 10:28	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
08/29/2018 10:50	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
09/11/2018 13:34	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
09/11/2018 13:59	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
09/11/2018 14:19	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
09/18/2018 13:55	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
09/18/2018 14:12	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
10/08/2018 13:05	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
10/08/2018 13:20	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
10/08/2018 13:42	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
10/23/2018 13:46	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
10/23/2018 13:54	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
11/05/2018 13:15	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
11/05/2018 14:56	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
11/05/2018 15:35	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
04/02/2019 11:40	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
04/02/2019 12:05	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
04/02/2019 12:28	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
04/17/2019 11:50	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
04/17/2019 12:45	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
04/17/2019 13:25	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
04/18/2019 12:05	COMPLETE	LMI2	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
04/18/2019 12:35	COMPLETE	MI2	10031086	Middle Inlet Wayside Rd upstream
04/18/2019 12:50	COMPLETE	UI2	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
06/18/2019 13:25	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
06/18/2019 13:45	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
07/16/2019 11:35	COMPLETE	LM1	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks

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Start Date	Status	Field ID	Station ID	Station Name
07/16/2019 11:56	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
07/16/2019 12:20	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
08/19/2019 13:10	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
08/19/2019 13:50	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
08/19/2019 14:05	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
09/13/2019 12:50	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
09/13/2019 14:10	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
09/13/2019 14:50	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
09/23/2019 12:55	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
09/23/2019 13:12	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
09/23/2019 13:32	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
10/08/2019 12:35	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
10/08/2019 12:55	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
10/08/2019 14:30	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
10/22/2019 12:40	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
10/22/2019 13:05	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
10/22/2019 13:20	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
03/17/2020 13:10	COMPLETE	N-1	383125	Lake Noquebay - Deep Hole
03/17/2020 13:15	COMPLETE	N-2	383125	Lake Noquebay - Deep Hole
03/26/2020 11:25	COMPLETE	LMI	10051023	Lower Middle Inlet - 700m DS from confluence of Smith and L. Middle Inlet creeks
03/26/2020 11:50	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
03/26/2020 12:25	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
03/30/2020 13:35	COMPLETE	MI-30	10031086	Middle Inlet Wayside Rd upstream
03/30/2020 14:25	COMPLETE	UI-30	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
04/14/2020 12:54	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
04/14/2020 13:20	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
04/29/2020 08:50	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
04/29/2020 09:10	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
05/18/2020 10:00	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream
05/18/2020 10:15	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
05/18/2020 10:35	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
06/10/2020 10:11	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream
06/10/2020 10:23	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
06/10/2020 10:43	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
06/23/2020 11:00	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream
06/23/2020 12:30	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
06/23/2020 13:15	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
06/30/2020 13:45	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream

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Start Date	Status	Field ID	Station ID	Station Name
06/30/2020 14:15	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
06/30/2020 14:30	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
07/14/2020 11:05	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream
07/14/2020 11:24	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
07/14/2020 11:44	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
07/21/2020 11:15	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream
07/21/2020 12:30	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
07/21/2020 13:00	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure
08/10/2020 11:10	COMPLETE	LMI	10022480	Lower Middle Inlet - Hwy 141 Upstream
08/10/2020 12:46	COMPLETE	MI	10031086	Middle Inlet Wayside Rd upstream
08/10/2020 13:30	COMPLETE	UI	10043487	Upper Inlet - DS of Lk Noquebay WA Dike adjacent to water level control structure

Documents

Title	Description	Author	Published	Comments
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Budget

Combined Budgets:
 Combined SLOH:
 Combined Total:

Funding

Organization	Source	Type	Amount	Start Date	End Date
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