DEPARTMENT OF NATURAL RESOURCES

Lake Service Provider Tagging Pilot Study Interim Feasibility Report

As required by Minnesota Statutes, section 84D.108 subd. 2a-2c

January 15, 2019

Report to the Minnesota Legislature

Minnesota Department of Natural Resources
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Pursuant to Minnesota Statutes, Section 3.197, we estimate that it cost approximately $1,856 to produce this interim report. This includes staff time for attending meeting, drafting, and reviewing the report and compiling comments and recommendations. These costs do not include costs to prepare and implement the pilot study.

Upon request, this material will be made available in an alternative format such as large print, Braille or audio recording. Printed on recycled paper.

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DNR Lake Service Provider Tagging Pilot Study Interim Feasibility Report

This report fulfills the reporting requirements of Session Laws 2016, chapter 189, article 3, section 48: *"LAKE SERVICE PROVIDER FEASIBILITY REPORT. The commissioner of natural resources shall report to the chairs of the house of representatives and senate committees with jurisdiction over natural resources by January 15, 2019, regarding the feasibility of expanding permitting to service providers as described in Minnesota Statutes, section 84D.108, subdivision 2a, to other water bodies in the state. The report must: (1) include recommendations for state and local resources needed to implement the program; (2) assess local government inspection roles under Minnesota Statutes, section 84D.105, subdivision 2, paragraph (g); and (3) assess whether mechanisms to ensure that water-related equipment placed back into the same body of water from which it was removed can adequately protect other water bodies."*

The Minnesota Legislature authorized the Department of Natural Resources (DNR) to complete a 2-year pilot study with interested, eligible lake service provider businesses. The deadline for the pilot study described in Minnesota Statutes, section 84D.108 subdivisons 2a-2c was extended by the legislature to December 1, 2019 but the report deadline was unchanged and remains January 15, 2019. The pilot study is in progress and this interim report updates the legislature on pilot study status. A final report will be submitted in 2020 following the completion of the pilot study.

Summary

The purpose of the pilot study is to evaluate the feasibility of allowing lake service provider (LSP) businesses to remove water-related equipment with zebra mussels attached from one of three designated lakes (Lake Minnetonka, Gull Lake, and Cross Lake) and to reinstall the equipment into that same lake after the equipment has been seasonally stored, serviced or repaired, without first removing zebra mussels that are attached to it. The pilot study is still in progress and will be complete in December 2019. The final pilot study report will detail the study data, analysis and recommendations.

During the first half of this pilot study project, the DNR:

1. Completed initial communications and outreach to LSP businesses to design the study
2. Researched options for tagging and tracking equipment
3. Designed the pilot study permit, protocols, and logistics
4. Recruited participating LSP businesses
5. Trained and supported participating LSP and DNR staff on pilot study protocols
6. Regularly communicated with participating LSP businesses to share and verify data collection and trouble-shoot issues
7. Prepared timeline and steps needed in 2019 to assess local government inspection roles and whether mechanisms employed in the pilot study can adequately protect other water bodies from AIS spread

Background

LSPs are businesses that install, remove, rent/lease or decontaminate water-related equipment. LSP businesses are currently permitted by the Minnesota Department of Natural Resources (DNR) to ensure they know and follow aquatic invasive species (AIS) laws and best practices to prevent the spread of invasive species.

Participation Eligibility Requirements

This pilot study was open to permitted LSPs that met the following eligibility requirements established in state law.

1. The business is located in one of the following pilot study sites as specified in statute:
   o Lake Minnetonka (Public Waters basin 27-0133): The Minnetonka pilot study is open to businesses located in the Lake Minnetonka Conservation District (LMCD) boundaries or in a municipality immediately bordering those boundaries, which includes: Minnetrista, Mound, Spring Park, Orono, Minnetonka Beach, Wayzata, Minnetonka, Woodland, Deephaven, Shorewood, Greenwood, Excelsior, Tonka Bay, Victoria, Independence, Maple Plain, Medina, Long Lake, Plymouth, Medicine Lake, New Hope, Golden Valley, Saint Louis Park, Hopkins, Edina, Eden Prairie, Chanhassen, Chaska, Laketown Township, St. Bonifacious, Waconia, or Watertown.
   o Gull Lake (Public Waters basin 11-0305): The Gull Lake pilot study is open to businesses located in Cass or Crow Wing counties using the Gull Narrows State Water Access Site, Government Point State Water Access Site, and Gull East State Water Access Site.
   o Cross Lake (Public Waters basin 18-0312): The Cross Lake pilot study is open to businesses located in Cass or Crow Wing counties using the Cross Lake Southwest/#1 State Water Access Site.
2. The business procures a surety bond
   o The authorizing legislation requires each participating business to provide a $50,000 corporate surety bond, payable upon violation of the invasive species laws (Minnesota Statutes, chapter 84D). The violation terms are specified in the pilot study permit. See Appendix A.
3. The business obtains a tagging pilot study permit from the DNR
   o LSPs that decide to participate in the pilot study need to apply for a pilot study permit (with no cost and minimal paper work), which provides the framework for the pilot study.

Recruitment Process

Of the approximately 150 permitted LSP businesses in the Minnetonka area, approximately 50 met the geographical eligibility requirement and were the type of business (marine shop, dock and lift company, etc.) that could benefit from participation in the pilot. Of the approximately 200 permitted LSP businesses in Cass or Crow Wing County, about 55 worked on or near the pilot study lakes and were the type of business that could benefit from the pilot study permit.

The DNR called each of these 105 businesses to introduce the project to them and invite the business owners to attend one of two meetings scheduled in Minnetonka and Brainerd to learn more and to share feedback and suggestions with DNR staff to incorporate as the pilot study protocols were being developed. DNR followed up with continued communication to those businesses that expressed interest, including letters, sample permits and protocols, emails, phone check-ins and additional face to face meetings, as requested.

A total of three LSP businesses completed all of the steps to participate in the pilot study – 1 on Gull Lake and 2 on Lake Minnetonka. To date, these businesses have tagged and moved a total of 271 boats, lifts and docks from the pilot lake sites.

Barriers to Participation

During the planning and recruitment stages of the study, eligible LSP businesses described to the DNR some of the barriers to their participation, including:

1. **Surety bond.** The required $50,000 surety bond made some LSP owners less inclined to participate in the pilot study because business owners and their regular insurance brokers were unfamiliar with surety bonds, LSPs were concerned about the cost of the surety bond (industry standard is often 5%-10% of the total bond amount), and LSPs were concerned about their liability if the state were to collect on the bond.
2. **Limited benefits to eligible businesses.** Approximately 30% of the LSP businesses that met the statutory eligibility requirements in the three pilot study lake areas were the type of businesses that would benefit from participating in the pilot: those that move docks, lifts and boats. Many of the businesses located in the eligible areas would not benefit from participating – for example, companies located on riparian land that do not typically need to transport customer equipment away from the shore, and that do not need to decontaminate the equipment before reinstalling it.
3. **Public Access Limitation on Gull and Cross Lakes.** Statutory language limited participating in the study to certain public accesses on Gull and Cross Lakes. This was a barrier to LSPs that use other accesses on those lakes.

Pilot Project Implementation

To participate in the tagging pilot study, interested and eligible LSPs enrolled in the project by applying for a pilot study permit for one of the three pilot study lakes, securing a $50,000 surety bond and sending proof of bond to the DNR, and attending training on equipment tagging protocols. See Appendix A for a sample permit and Appendix B for tagging pilot study protocols.

Tagging Method Options

For effective enforcement, the tagging methods need to show chain of custody of the equipment being transported, requiring some form of unique tag and a method to track the tags and equipment. The DNR investigated several tagging options including paper logbooks, smartphone apps, bar-code stickers, and locking tags. The most consistent, reliable and affordable combination was a smartphone app paired with locking tags. DNR created a simple equipment tagging smartphone app survey using the existing watercraft inspection mobile app software to gather data to efficiently track equipment entered into the pilot study.

Participating LSPs were offered two choices for logging tags during the pilot study: using the smartphone app (see "Data Management" below) or using DNR watercraft inspection personnel to log tagged equipment out and back into the lake. All participating businesses have so far chosen the app-logging option.

LSP using the smartphone app. Participating businesses were given a set number of tags with serial numbers, locking wire to attach tags to equipment, and a free app to download for either Android or Apple devices. When removing equipment from a designated pilot study lake that they are planning to return to the same lake, LSP employees used the app to record the equipment (take photos of equipment and tags at access, add in basic information with the app) and tag the equipment with a locking tag. LSP employees legally transported this tagged equipment to their work site for repair or storage. When transporting equipment back to the lake, LSP employees used the app to document returning the equipment to the water and cut the tag off (saving the tag to return to the DNR at a later date).

DNR Watercraft Inspectors using the smartphone app. If the LSP did not want to use smartphones/tablets or was concerned about areas of poor connectivity, they could have DNR Watercraft Inspectors check equipment in and out of the lake. In this option, participating businesses would be given a list of accesses and times when Watercraft Inspectors would be available for checking equipment in and out. When removing equipment from a designated pilot study lake that they are planning to return to the same lake, LSP employees would go to an access with DNR Watercraft Inspectors, who would record the equipment (take photos of equipment and tags at access, add in basic information with the app). LSP employees would bring tags issued by the DNR and tag the equipment with a metal tag, allowing LSP employees to legally transport equipment to their work site for repair or storage. When transporting equipment back to the lake, LSP employees would go to an access with DNR Watercraft Inspectors to check in the equipment back to the lake and would cut the tag off (LSPs would collect tags to turn in at the end of the pilot study.)

Data Management

Each time a piece of equipment was tagged and entered into the app, the data was collected in a database and available for download. Each entry was also automatically emailed to the DNR. During the pilot study, DNR staff monitored the email account and data collection and regularly sent electronic copies of each LSP's tagging records to each company.

Storage Sites and Inspections

Once equipment being removed from each pilot study lake was tagged and entered into the app, LSPs transported it for maintenance or winter storage at storage sites listed on their permits.

During winter, DNR Conservation Officers visited LSP storage sites to verify that the tagged equipment was properly tagged and stored at locations registered on the LSP's pilot study permit. In the first winter season, officers spent 4 hours inspecting lifts at 14 storage locations for the LSP participating on Gull Lake. Initial inspections uncovered logistical challenges with inspecting docks and lifts and with inspecting stored lifts on multiple customer properties. Enforcement reported based on the first season of inspections, that this type of LSP tagging inspection was time consuming and cumbersome for Conservation Officers.

DNR will continue to monitor staff time and workload required to complete the enforcement aspect of the pilot study.

State and local resources needed to implement the program

The DNR will continue to collect tagging data, participant feedback, and enforcement data from this pilot study through its end date in 2019. After completion of the pilot, DNR will issue a final report, including any recommendations regarding state and local resources needed to implement and expand the program to other water bodies in the state over time.

Pilot Study Costs

Table 1 summarizes the development and implementation costs for the majority of the pilot study. There will be additional support costs for the final year of the study, but the majority of the expected final project costs are included. See Appendix C for a detailed cost breakdown.

Pilot Study Costs	Amount
Development Costs	$50,344
Implementation Costs	$27,200
Total	$77,544

Table 1: Pilot Study Costs

Assessing local government inspection roles

DNR will assess 2018 watercraft inspection data from local Watercraft Inspection Programs and gather feedback from these partner programs at seasonal wrap-up meetings in 2019. This feedback and input at the local level will be shared in the final DNR report, to help assess capacity, benefits and concerns associated with implementing this pilot at a larger scale.

Manage the risk of spreading zebra mussels/AIS

DNR will continue to collect pilot study data in 2019 and use final pilot study data to assess whether mechanisms to ensure that water-related equipment placed back into the same body of water from which it was removed can adequately protect other water bodies. Risk management recommendations will be included in the final tagging pilot study report.

Next Steps for Pilot Study Completion

Over the final year of the pilot study project, DNR will:

- Work with participating LSP businesses to complete data collection
- Gather feedback from participating LSPs, DNR program staff and enforcement staff
- Gather feedback and watercraft inspection data from local watercraft inspection programs to help assess local government inspection roles and capacity, benefits and concerns associated with implementing this pilot at a larger scale.
- Analyze final data and participant feedback to assess state and local resources needed to implement the program, local government inspection roles, and risk of spreading zebra mussels.
- Prepare a final pilot study report to share findings with the Minnesota Legislature.

Appendices

A. Sample permit
B. Tagging protocols
C. Pilot study cost details

Appendix A: Sample Permit

Lake Service Provider Pilot Study Permit

Gull Lake and zebra mussels

Minnesota Department of Natural Resources (DNR)
Division of Ecological and Water Resources
500 Lafayette Road, Box 25, St. Paul, Minnesota 55155

Who may apply for this permit

You are eligible to apply for this permit and participate in the Gull Lake pilot study (authorized by *Minnesota Statutes*, 84D.108 Subd. 2a.), if your businesses meets the following requirements:

- Have a current regular lake service provider permit,
- are located in Cass or Crow Wing Counties and using Gull Narrows State Water Access Site, Government Point State Water Access Site, and Gull East State Water Access Site on Gull Lake (DNR Division of Waters number 11-0305), and
- furnish adequate proof of a $50,000 corporate surety bond, as required by *Minnesota Statutes*, 84D.108 Subd. 2a(d)

How to use this permit

You must sign this permit to make it valid, and keep a copy of this permit with you while doing any activity authorized by this permit. This permit is only valid in conjunction with a valid lake service provider permit.

Permittee information

1. Name of lake service provider business owner or manager: _____
2. Business phone number: _____
3. Name(s) of any other designees authorized to work under this permit – note that all designees must have a current lake service provider employee certificate:

4. Address(es) of any storage location(s) where you may transport equipment under this permit:
   - *You may append a separate list if you have a large number of storage addresses.*
   - *Changes to storage addresses need to be submitted to the DNR within 48 hours.*

Permit conditions

Definitions

In this permit:

- "You" refers to anyone working under this permit listed as a permittee or designee above.
- "Eligible equipment" is customer-owned water-related equipment that is a watercraft, dock or lift that you remove from Gull Lake (DNR Division of Waters number 11-0305). Eligible equipment must have a place to attach a tag as required by the permit. Equipment owned or used by your businesses, or types of water-related equipment not listed here, are not eligible for this pilot project (without prior approval from the DNR). Equipment that has been transported away from a Gull Lake access without being tagged is no longer eligible equipment.
- "Enrolling" equipment refers to the process of tagging eligible equipment and using a mobile application or a DNR watercraft inspector to document that the equipment has been tagged and to provide additional information about that equipment to the DNR. Equipment must be enrolled at an access of Gull Lake.
- "Enrolled equipment" is eligible equipment that has been tagged and that may be handled according to this permit.

Scope

This permit allows you to return eligible equipment to Gull Lake with zebra mussels attached after the equipment has been serviced, repaired or seasonally stored.

Required actions

- The business owner or manager must successfully complete DNR pilot project training and ensure that any designees listed on this permit have been trained either by DNR or the lake service provider permittee to follow all pilot study requirements and protocols.
- You must transport enrolled equipment with zebra mussels attached directly from Gull Lake to an address specified on this permit when you are removing the equipment from the lake. When you are returning the equipment to the lake, you must transport the equipment from an address on this permit directly to Gull Lake. If you have more than one storage location listed on this permit, you may transport enrolled equipment between those addresses.
- You may not transport any enrolled equipment with attached zebra mussels to a water body other than Gull Lake.
- You must use tags, mobile applications or documentation required by DNR for the pilot project.
- You must tag, mark, and/or enroll in a smartphone or tablet application all eligible equipment in accordance with this permit.
    - In the case of docks or other equipment that may be in more than one section, only one section must be tagged but all sections must be stored and transported with the tagged section at all times.
- If, for any reason, enrolled equipment needs to be removed from the pilot project (for example, the equipment is sold, or the equipment is going to be placed into a water body other than Gull Lake), you must
    - remove the tag from the equipment,
    - decontaminate the equipment before leaving your facility, and
    - comply with all state laws.
- Once the tag is removed from the equipment, it is no longer enrolled equipment and this permit no longer applies to that equipment.
- If, for any reason, eligible equipment is not enrolled in the pilot project before leaving an access of Gull Lake, that equipment is not eligible to be enrolled in the pilot project.
- You must comply with invasive species laws that are not covered specifically by this permit, including removing drain plugs from watercraft before transport and removing aquatic plants from equipment at the access.
- You are responsible for placing and removing tags from all equipment.
- Immediately report any lost tags or other concerns to the DNR.

Surety bond

- Your surety bond is payable upon violation of *Minnesota Statutes*, chapter 84D while acting under this permit. Examples of violations that would require paying the surety bond include:
    - Placing or attempting to place water-related equipment with attached zebra mussels into any water body other than Gull Lake,
    - violating the terms or conditions of this permit,
    - transporting enrolled equipment to a location not listed on this permit, or
    - transporting enrolled equipment to a location that is not on a route between one of the addresses listed on this permit or between one of those addresses and Gull Lake.

Inspections

Your facilities, records related to this permit, and any equipment transported under this permit are subject to inspection at any reasonable time by the Commissioner of Natural Resources or a designated employee.

Revocation

The DNR may revoke this permit if you do not comply with the conditions of this permit or, if necessary to protect the interest of the public, to protect native plant and animal populations in the state, or to otherwise protect the state's natural resources. Any violation of *Minnesota Statutes*, chapter 84D may result in revocation of this permit.

Transferability

This permit is not transferable.

Disclaimer of Liability

No liability is assumed by the State or any of its officers, agents, or employees by issuance of this permit, or for any act or omission of the permittee.

Dates valid

This permit is valid from the date issued through December 1, 2019.

If you have questions

If you have questions about this permit, contact April Rust, Aquatic Invasive Species Training Coordinator, at april.rust@state.mn.us or 651-259-5706.

Issued by: _____

Heidi Wolf, Invasive Species Supervisor   Date

I hereby certify that I have read and understand the provisions of this permit and understand it is not valid unless signed by the permittee.

_____

Permittee Signature   **Date**

cc: Maj. Jackie Glaser, Mike Peloquin, Mike Duval, Ann Pierce, Keri Hull, Adam Doll, Kelly Pennington, Heidi Wolf, April Rust

Appendix B: Tagging protocols

Lake Service Provider App Tagging Protocol

This protocol is intended to be used by lake service providers (LSP) participating in the App option of the LSP tagging pilot study, created by the Minnesota Department of Natural Resources.

How to Install the Mobile Application

Device requirements

In order to participate in the mobile application tagging study, all staff placing or removing water-related-equipment must have access to an Android or Apple device. Compatible devices must have access to the Google Play® or App Store®, a camera, and Wi-Fi capabilities. Data plans are not required, but may make uploading results easier.

Downloading the survey

On the device, open Google Play or the App Store. For Android devices search and download DroidSURVEY; for Apple devices search and download iSURVEY. *DNR will notify you to download future updates, if needed.*

Name and authenticate your device

- Open the application once it has been downloaded
- Press the "device" button at the bottom of the screen.
- Create a user name following this format: LSP*_ABCD_01 where ABCD is a unique 4 digit identifier for your business (e.g. LSP_BLUE_01).*
    - o If you are using multiple devices, number them in order starting at 01 (e.g. BLUE_01, BLUE_02)
    - o Enter the authentication password**: 164852**
    - o If successful you will see a pop-up that says "now authenticated to the Minnesota Department of Natural Resources"
- Contact LSPstudy.dnr@state.mn.us to grant access to the survey. Improperly named devices will not be granted access.
    - o Press the "admin" (home) button and press "download surveys".
        - ▪ When successful you will see "LSP Pilot Project v1.3" listed as your current survey.
        - ▪ The admin page will be hidden by default once the survey is active. If you need to return to the admin page, press and hold the "start" button for 6 seconds.

Tagging Protocol Instructions

Tagging Protocol Instructions

New tags may only be placed on equipment being removed from the permitted lake *at the access*. Under no circumstances may tags be placed on equipment away from the immediate access location.

Attaching a new tag to equipment – removing equipment from the permitted lake

When removing a customer's watercraft or equipment from the permitted lake, remove all aquatic plants from watercraft/equipment and trailer, pull plugs as required according to your regular Lake Service Provider permit.

Once the equipment is safely out of the water, press "start" within the survey application (droidSURVEY or iSURVEY).

- Select the type of equipment you are moving.
- Select "removing" for question 2. This will allow you to use a new tag.
- Select a new tag and record the tag number in the box (ignore the leading zeros on the tag – just enter the last 4 numbers.) Double-check the number for accuracy.
    - Take a photograph of the tag number – this is a safety feature in the event of a typo.
    - Attach the tag to the equipment with wire, and press the seal to close. You must attach the seal to the equipment in such a manner that the tag cannot be removed without cutting the wire.
- If the equipment has a registration number, record it in the space provided. If the equipment has no registration, select "equipment has no registration number"
- Fix GPS. **NOTE: This feature is only available on Android devices. Apple devices are currently not compatible with GPS.**
    - Users of Apple devices and users unable to get a good signal must select "No" to the next question (Did you get a good GPS signal?)
    - Take a photograph of the access. This photograph is used in place of a GPS signal to verify your location. It is important to take a clear photograph that identifies your location.
- Take a photograph of the attached tag. It should be clearly visible that the tag is pushed and locked.
- Record how long the equipment will be out of the water. Select the option that fits your timeframe closest. Do not use the longest timeframe as a default. This question will be used when evaluating the pilot study.
- Press "Finish" to complete the survey and upload within 24 hours.

Removing a tag from equipment – placing equipment back into the permitted lake

This pilot covers attached zebra mussels only. Always be sure to follow all requirements of your Lake Service Provider permit.

- Select the type of equipment you are moving.
- Select "placing" for question two.
- Record the tag number of the attached tag in the box. Double-check the number for accuracy.
    - Take a photograph of the tag number – this is a safety feature in the event of a typo.
- If the equipment has a registration number, record it in the space provided. If the equipment has no registration select "equipment has no registration number."
- Fix GPS. **NOTE: This feature is only available on Android devices. Apple devices are currently not compatible.**
    - Users of Apple devices and users unable to get a good signal must select "No" to the next question (Did you get a good GPS signal?)
    - Take a photograph of the access. This photograph is used in place of a GPS signal to verify your location. It is important to take a clear photograph that identifies your location.
- Remove the tag, and take a photograph of the tag. It should be clearly visible that the tag has been cut and can no longer be re-used.
- Press "Finish" to complete the survey and upload within 24 hours.

Removing a tag from equipment – tagged equipment that will not be returning to the permitted lake

Special circumstances may arise where tagged equipment will no longer be returned to the permitted lake. **All tagged equipment not returning to the permitted lake must be decontaminated and free of all AIS before releasing the equipment to a customer.**

- Select the type of equipment.

- Select "this equipment is leaving the pilot study"

    - A text box will appear. Type in the reason the equipment is leaving the pilot study. Be as specific as possible. This will help the DNR evaluate the study.

- Record the tag number of the attached tag in the box. Double-check the number for accuracy.
    - Take a photograph of the tag number – this is a safety feature in the event of a typo.
- If the equipment has a registration number, record it in the space provided. If the equipment has no registration select "equipment has no registration number."
- A decontamination reminder will pop-up; press "next."

- Press "Finish" to complete the survey and upload within 24 hours.

Appendix C: Cost Details

Development Costs	Hourly Avg. FTE cost	Amount
Planning team meetings	120 hours @ $116/hr.	$13,920
Sub-team work meetings	140 hours @ $116/hr.	$16,240
Outreach meetings with LSPs	70 hours @ $116/hr.	$8,120
Communication planning	32 hours @ $116/hr.	$3,712
Outreach, communications and recruitment	24 hours @ $116/hr.	$2,784
Develop permit and tagging protocols	48 hours @ $116/hr.	$5,568
Implementation Costs		
Support to LSPs for permitting, surety bond questions	24 hours @ $116/hr.	$2,784
LSP staff and WIP/ENF staff attending trainings	54 hours @ $116/hr.	$6,264
DNR staff time preparing and leading trainings	72 hours @ $116/hr.	$8,352
Ongoing support and troubleshooting with participating LSPs	16 hours @ $116/hr.	$1,856
Tagged equipment inspections by DNR Conservation Officers (season 1= 4 hours to inspect 14 sites)	4 hours @ $116/hr.	$464
Contract for mobile device tagging app - development and hosting		$5,812
5,000 printed tags and wire		$1,668
Total		**$77,544**

Table 2: Pilot Study Cost Details