

**Appendix – Presque Isle Town Lakes Meeting
February 14, 2023**

This appendix contains much of the information which was presented at the Presque Isle Town Lakes Committee meeting of February 14, 2023.

Page 2 Wash Station Overview

An introductory letter distributed to the committee on February 5, 2023. Its purpose was to introduce the subject and start the conversation.

Page 4 Correspondence between Cathy Higley, Vilas County Lakes and Rivers and Nick Williams. January 15 and 16, 2023. A background discussion follows beginning on page 8. Altogether the discussion is 40 pages long with all sorts of statistical data included.

Page 10 Correspondence between Cathy Higley and Nick Williams. January 22 and 23, 2023. This discussion includes potential vendors and URL links.

Page 11 Possible types of rigs to be washed,

Page 12 Cost estimates by Nick Williams using Vilas County/Boulder Junction 2018 actual costs as a starting point. Includes information received from the Presque Isle Insurance agent. February 13, 2023. It is likely after 5 years the costs are much higher.

Page 13 Correspondence between Cathy Higley and Nick Williams regarding mats to collect wash water. February 14, 2023

Page 14 Prospective boat wash vendor questions drafted by Larry Gorrilla and Nick Williams. February 15, 2023

Wash Station Overview

Hi All!

February 5, 2023

As part of our lake protection activities we have been asked by the town chairman to improve invasive signage at the landings and look into the town buying a boat washing station. To that end we will be meeting at 7PM on Tuesday February 14, 2023, for about an hour or so. I know it is Valentines Day but we need to get started to see if the town can have something in place by 2023 fishing opening.

I know the DNR has all sorts of standard kiosk signs available and they will usually arrive a couple of weeks after being ordered. PITLC would just have to see which standard ones will meet our needs. It will take longer if we go the custom sign route. If it is custom the specific ordinance or regulation numbers must be affixed somewhere on the sign. In the past PITLC has ordered something from ACE Hardware in Woodruff. The town board would pay for any of the printing costs.

As to wash stations I have started the ball rolling by emailing Cathy Higley of Vilas County Land + Water to ask some specific questions. The first email conversation led to a second more detailed conversation. Cathy helped one municipality purchase a product and I had all sorts of questions. The county did extensive research and is willing to answer questions to help PITLC get on the right path.

In a very cursory way, I looked at several of the different vendors' products which were researched by the county and immediately became confused regarding what is right for Presque Isle. PITLC also received a possible choice from a bit of the town chairman's online research. It will be PITLC's job to sort through all this to help the town board come to a proper and cost-effective solution.

Cathy said it took the county about a year to sort through everything before a purchase was made. Using their research I feel confident the town might have PITLC's recommendation in less time.

Since the town will be paying for this, it is not only up to PITLC to select a unit but it is also to detail the ongoing annual cost of operation. We need to help the town board determine where the unit is to be located, how it is staffed, and so forth. Here is a general example of some particulars and how they work:

Some units are on trailers, some are housed in buildings. They all need electricity to operate, they all need water, they all need a way to recapture the post wash water and a place to dispose of the 'old' water. Most systems re-capture the same water for each wash through a mat-like system on the ground. Some wash using steam, some use hot water. If it is hot water the water is heated in a boiler to around 160 degrees. Through hoses, couplings and other fittings the 160 degree water is then sprayed on the entire rig, through various things like motor, bilge, live wells and more. This includes carpets. By the time the water hits the ground it is around 140 degrees. The literature says water at 140-160 degrees is hot enough to kill all proteins such as plants, spiny waterflea, zebra mussel larva and so forth. The process takes around half an hour per rig. By killing the proteins, the water can be used again and again (within limits).

If it is a steam unit, the steam is considerably hotter than 160 degrees.

Regardless of using a hot water or steam system ballast tanks are unable to be purged or cleaned of whatever is in them so spiny water flea, for example, is still alive in the tank and will be released the next time the boat sucks in and then expels water. A typical 'empty' ballast tank, per manufacturer specifications, contains between 4 and 20 gallons of water which cannot be drained. Over winter a typical ballast tank must have two gallons of antifreeze added to prevent freezing.

The steam and water systems each require a trained individual to run the equipment, to use the proper fittings. The individual must wear PPE to prevent being scalded. In no event is a typical boater allowed to drive up and sanitize his own boat due to potential insurance/injury issues. This is not a do-it-yourself operation and the boaters are not employees of the town so are not covered under the town's insurance.

To this end I have contacted the town clerk to find out a number of things. First from the insurance carrier: Does the unit need to be inside any building, inside its own building, or outdoors. This has to do with fire, unauthorized use, and other dangers. What about the qualifications of the town employee running the equipment, the training and such. Second what is the 40-hour wage plus benefits of a dedicated person.

The town board would have to decide whether the town needs to hire an engineer to design the proper setup for placement, enough space to turn a rig around, a source of water, electrical, plan for winter storage and winterizing. They would also have to decide on hours of operation. The last I heard the unit might be at the transfer station, which is only open 5 days a week.

PITLC's mission is to guide the town in selection of the device. PITLC would for sure not monitor the wash station, hire the individuals, do the accounting, man the facility or provide any labor. This is the town's responsibility. If it comes to pass PITLC might investigate whether the DNR has grants available to cover part of the cost.

At our first meeting on February 14, 2023, PITLC will talk about the best place to put the unit. It could be at the transfer station, at the town garage, next to the fire station or someplace else. Power needs to be available plus a source of water and, I guess, septic. We might end up with more questions than answers.

Then we will talk about use and requirements. Must everyone use it, only just non PI residents, must it be used each time between lakes, does it apply to kayaks, canoes, etc. What about boats which have been out of the water for 5 days and are presumed to be 'dry'. What about wash hours. One comment I heard was only force non-PI residents to use it and treat PI like an island of clean lakes and boats not needing to be washed. In other words, two classes of people. Is it reasonable to have a boater fishing in Van Vliet go to the transfer station to wash when they are 'only' going to next fish in Crab Lake? Are people going to lie about where they were last using the boat? Would the boater put up with nearly an hour from lift out in one to put in in another? What happens when one lake like Horsehead is infected? Does the 'PI is an island' mantra immediately go out the window? How does the constable know who is and who is not from PI? Do we need stickers?

The final discussion of the day will be the next step and to pass out assignments. Post meeting I will send out the emails from Cathy Higley and talk about how PITLC might evaluate each product. I would expect research results to be presented at the March 14 PITLC meeting. There is no way one person can do the entire evaluation job so I am counting on each of the committee members to step up.

If we have time we will also talk about lying. Since Crab Lake has been doing CB/CW for more than 10 years I have all the log sheets. Not only do we ask for lake last visited but we also track every boat registration number. If someone wants or needs to go through the sheets to ferret out data, I will supply them. The problem we should address is not encouraging boaters to lie or the CB/CW boater and other statistics will become useless.

Nick Williams
Chairman PITLC

Correspondence between Cathy Higley and Nick Williams January 15 and 16 2023

Hi Nick,

Thanks for asking! I spent about a year researching and getting a mobile one going for the Boulder Junction/Sayner area, and we still struggle with funding it. (It will be taking its 2nd year off due to lack of funding, hopefully to be remedied in 2024.)

First off, if people are checking their boats and removing plants and animals they find as they are required to most plant life will be removed. You can usually see aquatic plant fragments capable of regenerating/reproducing. But if you are concerned with animals – spiny water fleas and zebra mussels in particular, those can be hard/impossible to detect with your eyes. You are likely to not find them and hence not remove them. The good news is that most of the lakes in Vilas County have calcium concentrations that so far have shown to not support reproducing zebra mussel populations. There are a few exceptions to this: Bear Lake and Wildcat Lake do have sufficient calcium. There are many other lakes that are considered “borderline suitable” in Vilas, I highlighted ones in Presque Isle:

Elvoy Springs
Fishtrap Lake
Flambeau Lake
Gateway Lake
Gunlock Lake
Halls Lake
Harris Lake
Haskell Lake
Helen Lake
Island Lake
Johnson Lake
Johnson Lake
Landing Lake
Little Arbor Vitae Lake
Little Crooked Lake
Little John Lake
Little Muskie Lake
Little Papoose Lake
Little Presque Isle Lake
Little Sand Lake
Little Spider Lake
Little Star Lake
Lower Gresham Lake
Madeline Lake
Manitowish Lake
Mann Lake
McCullough Lake
Middle Sugarbush Lake
Mill Lake
Moraine Lake

Upper Ninemile Lake
Upper Sugarbush Lake
Van Vliet Lake
Verna Lake
West Bay Lake
West Ellerson Lake
White Sand Lake
Wolf Lake

Unfortunately, most of our lakes are now considered suitable for spiny waterfleas. To increase removal of AIS beyond what you cannot see, decontamination is helpful. Decontamination can be accomplished by letting your boat and equipment sit dry for 5 days; bleaching at a concentration of 2.5 Tbsp/gallon of water (make sure to rinse to avoid corrosion, and do not get bleach into surface water); using hot water at 140 degrees F for a 10 second contact time; or by using steam.

I should also note that are concerns for ballast tanks – many of those on wakeboats do not fully empty and can leave quite a bit of water trapped. Livewells on any boat that takes in lake water can do this to a much lesser degree.

The CD3 stations are not decontamination – they assist with manual removals. If they come with a wet vac, they can help to more full dry out livewells and bilges. So this can aid in the letting a boat dry for 5 days. I think these stations can have a place in AIS prevention, but you will need to decide what is a best fit for your area. The Lac Vieux Desert Tribe owns one – you may want to take a field trip this summer. Beth Schrader is my contact there: beth.schrader@lvd-nsn.gov.

However, if you really want to make a boat clean of AIS “now”; hot water or steam is really the most effective. There are some limitation with bleach – not all species are as susceptible to it. And the Lac du Flambeau Tribe does not want bleach being used on their lands for this. Hot water at over 140 degrees F will denature proteins, and kill whatever organisms are present. Steam is hotter and yet more effective.

However, there are liability issues to consider. Hot water (and certainly steam) can hurt people. Pressurized water can damage. So I’d really recommend that if you do decide to have a hot water pressure washer, that it be a dedicated and well trained qualified employee, not just volunteers or boat owners.

You’ll also want to make sure you have an agreement with the landing owner (if the town does not own the landing, or wherever you put the unit). You’ll want to make sure your waste water is either reclaimed (an extra \$10,000 roughly) or has no chance of re-entering the surface water. You’ll need to look at how much room you have at a landing to operate, how many parking spaces you’ll be giving up, and if you are likely to safely operate at the location you choose.

I’m attaching our year 1 report from our hot water pressure washer decon project in 2018. It has a cost breakdown on the last page for start up costs. If I could have a redo, I might go with either a Landa or a HydroTek unit even though they are a bit more expensive because it’s so much easier talking apples to apples when you need it repaired. No one seems to know much about our particular unit when it comes to repairs, or fitting for extra parts. Otherwise it has worked well.

I am also sharing our operating manual for our unit. I hope this also helps.

Feel free to call and chat if you have any more questions.

Thanks!

Catherine Higley
 Lake Conservation Specialist
 Vilas County Land & Water Conservation
 330 Court St
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 715-479-3738
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From: Nick Williams <thewds@milwpc.com>
Sent: Sunday, January 15, 2023 1:25 PM
To: Catherine Higley <cahigl@Vilascountywi.gov>
Cc: Carolyn Scholl <cascho@Vilascountywi.gov>
Subject: Boat washing stations

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Hi Cathy!

I would like to know if you know of anyone who has set up boat wash stations in Vilas County – and what are they using. Our town chairman is high on this one <https://www.cd3systems.com/PRODUCTS/> but to me it looks completely useless. To me a system which uses hot water is more to the point.

What say you or Vilas Co L+W? Any you would recommend (regardless of cost)?

Nick Williams
Chairman PI Town Lakes Committee

Background

[The full 40 page report is available for review]

Spiny waterfleas, an NR40 as a Prohibited species, are now verified in 4 lakes within Vilas County. Spiny waterflea and its impacts on Lake Mendota in Madison have been studied by the Center for Limnology and results show that spiny waterfleas had reached dense levels resulting in a loss of 1 meter of water clarity. This loss of water clarity is also coupled with detrimental changes in the lake fishery (Walsh, et al).

The Northwoods economy is dependent on maintaining desirable lakes. In 2016, Vilas County visitors spent \$212.5 million, ranked 4th in state per capita visitor spending, and lake front parcels generated 75% of the County's property tax revenue (Vilas County Land & Water Conservation Dept.). In addition, it has been fairly well documented that water clarity is linked to property values. In 2018, a study was done on Vilas and Oneida County lakes in particular. On Plum Lake, it was determined that an increase in 1 meter of water clarity would equate to an average increase of \$14,987.63 per property (Kemp et al). However, a loss of 1 meter in water clarity as seen on Lake Mendota (attributed to their spiny waterflea infestation) would equate to an average loss of \$19,399.84 per average property on Plum Lake (Kemp).

While every boater is required to "Inspect, Remove, Drain, and Never Move", it is not always easy to sufficiently drain water from every part of a boat (bilges, livewells, jetski impellers, etc.). Highly transient boaters are not able to dry their boat & equipment long enough to desiccate spiny waterflea adults or their resting eggs, contributing to risk of spread.

In addition, hot pressure washes are most effective used when targeting small-bodies organisms. Removal rates for physically larger species are generally not better than "Inspect, Remove, Drain, and Never Move" (Rothlisberger et al). Thus the targeted lakes we chose were either verified to have spiny waterflea or be considered vulnerable to spiny waterflea as per the WI DNR listing.

In a study of boater transiency, the region representing Vilas County reported that 53% of boaters were "transient" (using their boat on more than 1 water body per year) and that 56% of boaters were "highly transient" (using their boat on more than 1 water body in the last 5 days). These percentages are reported somewhat independently of each other and will not add to 100%, nor are they a subset of each other. This is due to visitors from other regions using their watercraft in Vilas County's region. These percentages are higher than the other regions in WI averages of 45% and 43% respectively, indicating a greater potential for AIS exposure and spread (Witzling). These transiency figures do not directly correlate with the Clean Boats Clean Waters (CBCW) DNR boater transiency data – which indicate Vilas County-wide boaters using their boats on another waterbody within the last 5 days 36% of the time (Wisconsin Dept. of Natural Resources) - probably due to the fact that the CBCW data is only able to capture prior transiency, not future transiency as the former study was able to capture.

A 2017 survey of transient boaters showed that over 70% of transient boaters would allow their boat to be decontaminated and that 41% indicated that the most important barrier was that the "Decontamination services were not available" (Higley). There are other hot pressure washer decontamination units operating at Lac Vieux Dessert (MI group) and within the Lac du Flambeau tribal boundaries (Tribe). However, this project is the only publicly available one operating throughout the "spiny waterflea season" (mid-summer through fall is when spiny waterflea populations peak annually) in the majority of Vilas County.

The Decontamination project began with a work group meeting starting in May 2017. The group consisted of representatives from:

- Boulder Junction Lakes Alliance (Dick Jenks)
- Eagle River Chain of Lakes Association (Carole Linn and Dave Mueller)
- DNR Northern Highlands Facilities staff (Dan Jacoby)
- UW-Oshkosh Environmental Research & Innovation Center (Carmen Thiel)
- Vilas County Land & Water Conservation (Cathy Higley)

The group consulted many others during the course of their work:

- Trout Lake Property Owners Association (Jim Pondel)
- UW-Extension Environmental Resources Center (Tim Campbell)
- UW-Madison Center for Limnology (Carol Warden)
- DNR (Samantha Olsen and Kevin Gauthier)
- Lakes Committee for the Town of Plum Lake
- Lac du Flambeau Tribal Natural Resources staff (Celeste Hockings)
- Minnesota Dept. of Natural Resources (Keri Hull)
- Several others not listed here

The group worked through the scientific appropriateness of boat decontamination services, selection of a decontamination unit, site suitability, property owner permissions, gaining stakeholder support, creation of an operator's manual, grant applications, and unit operation schedule.

Grant funding came from Lumberjack Resource Conservation, & Development (purchase of decontamination unit) and the DNR Surface Water Grant Program (funding for year 1 staff and operations). Donation funding also came from:

- Headwaters Chapter of Muskies Inc.
- Musky Clubs Alliance
- Walkabout Paddle & Apparel

These donations totaled roughly \$1,700 in 2018. A summary of total project costs is available in the Appendix.

Boat decontamination was offered to all receptive boaters upon entering and leaving all lakes. Operators were trained to "triage" high traffic situations: transient boats entering a suitable lake were priority as well as any boats leaving an infested lake. However, no high traffic events where triaging was necessary were reported. Datasheets used are available in the Appendix.

- DNR (Samantha Olsen and Kevin Gauthier)
- Lakes Committee for the Town of Plum Lake
- Lac du Flambeau Tribal Natural Resources staff (Celeste Hockings)
- Minnesota Dept. of Natural Resources (Keri Hull)
- Several others not listed here

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January 23, 2023

Hi Nick,

Here's quotes from units we considered -they are attached. In addition, we also considered a NorthStar unit:
https://www.northerntool.com/shop/tools/product_200317423_200317423

I am also attaching decon unit extra attachments list from American Pressure. That company has so far seemed the most competent when it comes to knowing what we are doing and what we'll need: <https://americanpressureinc.com/> I'm also attaching a photo of what they look like.

Link for Hydroclean in DePere: <https://hydrocleanequipment.com/>
Wisconsin Steam in Waukesha: <https://wisconsinsteam.com/>
Power Line (where we got our unit from in Utah): <https://powerlineindustries.com/>

I'm attaching our 2018 budget for decon which includes start up costs, staff time (includes mileage). Total dollar amount in 2018 was \$31,835.70.

I hope this helps. Feel free to call me if you'd like more guidance. I will be in the office from now until 1:30 pm. I will also be available tomorrow but will be working from home. You can call my cell if you like – 920-412-8159.

One last thought – it seems there is a bit of a rush to implement decontamination. Please don't rush something like this. There are a LOT of moving parts and it really is unrealistic to have all the I's dotted at T's crossed in less than a year. I am also including a link to our work group notes and processes from 2017 – it took awhile! https://drive.google.com/drive/folders/14yt_k0dLlc6RgCnL0L_yP9XNftn0SoKS?usp=share_link

Good luck!!

Catherine Higley

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From: Nick Williams <thewds@milwpc.com>
Sent: Sunday, January 22, 2023 4:51 PM
To: Catherine Higley <cahigl@Vilascountywi.gov>
Subject: Re: Boat washing stations

Hi Cathy!

Would you please let me know all the different suppliers/manufacturers of boat wash station equipment that you looked into. I tried to do a search but just couldn't find a way to isolate/find sellers or anything else. For example – you said you got one for BJ. You attached a handbook but not anything which named the supplier. You mentioned yours has parts finding difficulty so there must be others whose parts are easy to find. Links would be great.

Online all I found was CD3, adirondack watershed institute but no dealers in among useless stuff. Some of the places have buildings constructed and some have them on trailers. CD3 looks stupid, some of the others are possible.

If PITLC is going to study then maybe the town buys we need more guidance. I suppose if I went to the DNR they wouldn't recommend one over the other but I don't know where to start. I don't want the town to make a \$70,000 (or whatever) mistake. And then does the DNR have a grant to help buy/operate. Further, for what you bought for BJ talk about the cost of purchase and operations fully loaded – especially as you talked about that in your email below.

Nick Williams

Possible types of rigs to be washed

<u>Type of Craft</u>	<u>Yes</u>	<u>No</u>
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Miscellaneous

Canoe
Hydrobike
Kayaks
Personal Watercraft
Pontoon if have a trailer
Pontoon if from a storage facility
Pontoon if no trailer - stored on property
Row Boats (those without motors)
Row Trolling (wooden) Boats
Sail Boats - traditional
Sail boats - other

Boats

Bass Boats
Chris Craft' Boats (inboards)
Fishing Boats (the old kind)
Musky Boats
Wake Boats

Stickers

For certain kinds of rigs only
For everyone
For non PI visitors only
No stickers
When do stickers need to be refreshed

Notes and questions

Type of craft would need to be defined by an ordinance
What if a PI resident pulls out his boat from a PI lake, fishes in Lake Superior,
and returns to the same (or other) PI lake
What about last year versus this year
What about boat rentals from MW, BJ, etc

Other

Must guides participate

2023 cost estimates based upon Vilas County's 2018 actual costs

February 13, 2023

Hi All!

I have been preparing for our Tuesday PITLC meeting regarding a potential Wash Station. Here is a bit of extra information regarding dollar costs – a back of the envelope analysis. I used some information from Cathy Higley of Vilas County and their purchase in 2018 and ballpark information from the town's insurance agency. Regardless of the size of the numbers we will still press on.

In 2018 the county worked with Boulder Junction to buy a portable wash station on a trailer.

Fully loaded cost paid in 2018:	\$31,835.70
Their staff costs:	\$10,720
PI Staff costs:	\$15,000 \$4,300.00*
PI Employee health ins	\$250.00*
PI Workman's Comp	\$827.00*

First year total for PI \$37,212.70 Not in the town's 2023 budget**

* The PI Insurance company quoted staff cost for 1 part time employee at \$15,000 plus associated insurance.

** Excludes wash mat of \$10,000; excludes fuel, repairs, maintenance; does not cover any potential vendor price increases since 2018 or any potential infrastructure costs.

Second year costs: \$15,000 + \$250 + \$827 = \$16,077 – this also does not cover fuel, repairs, maintenance (+ winterizing)

This assumes only one employee working 8 hours a day. The reality is the wash station should be staffed from 6AM to 8PM so two employees would be needed.

So the first year cost would become \$37,212.70 + \$15,000 + \$250 + \$827 = \$53,289.70 Not in the town's 2023 budget
Second year costs would become \$30,000 + \$500 + \$1,654 = \$32,154

Same exclusions shown in ** above apply.

It is possible the amounts would be a bit higher when it comes to actual dollars as the county's base numbers are from 5 years ago. Keep in mind no wash station will address ballast tanks.

We can talk about this on Tuesday. After Tuesday's meeting I will distribute a vendor questionnaire and Cathy Higley's two email conversations (with me) plus her attachments.

Nick Williams
Chairman PITLC

Correspondence between Cathy Higley and Nick Williams - Mats

February 14, 2023

That is one I haven't really thoroughly researched. But if I were to guess, I'd suggest you start with American Pressure <https://americanpressureinc.com/> or Hydro Clean <https://hydrocleanequipment.com/>. The mat usually comes with a vacuum attachment and water reclamation system so you can suck up the wastewater and carry it/filter & reuse it as you go. But I have always been a little leery of the idea of reusing it. In theory it should be fine from an AIS standpoint if you are following protocols, but there will also be the dirt, oil, other grease, etc. associated with cleaning a boat.

Catherine Higley

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From: Nick Williams <thewds@milwpc.com>
Sent: Monday, February 13, 2023 3:14 PM
To: Catherine Higley <cahigl@Vilascountywi.gov>
Subject: Re: PITLC Meeting Tuesday 2/14/23 7pm
Hi Cathy!

Thanks for stepping in. I intentionally was silent about BJ not using for the last several as I could just see someone here trying to buy it off them at a discount. If the town goes with buying they need new – so if it fails it is all on us, not blaming a former owner. To me the town should consider the wash station a fixed cost – in other words not a variable cost which they can take a pass on in some years just to balance a budget.

One question for later – what about the mats to catch the water and stuff, then to recirculate it. Where do we get that?

Nick

The wash station in Boulder Junction is on a bit of a break to lack of funding. This will hopefully be back and running in 2024.

Catherine Higley

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Prospective Boat Wash Vendor Questions

February 15, 2023

1. Name and location of vendor; the website URL; how long have they been in business

Contact info for a sales rep/engineer.

2. What does the Boat Wash include – mounted on trailer or freestanding, necessary parts

Does vendor have portable as well as permanent installations including ability to supply all necessary repair parts on hand.

3. If a trailer what size ball is required; what are the trailer dimensions

Size of trailer/permanent unit (length, width, height, weight, size of vehicle to pull a trailer unit) Type of hitch required. Size of building for permanent unit and does unit need to be in the building when being cleaned? (Recommended size of building)

4. How much does the full unit weigh

See # 3.

5. Is there a key to turn the Boat Wash off when the attendant steps away

Don't think securing the unit would be advisable depending on type of heating source, but the controls could be secured, but unit left on as there will be a startup time to get up to temperature, etc.

6. Where can one obtain spare parts such as hoses, wands, spark plugs, thermometer, and the like

See #2

7. What fuel does it run on – propane, diesel, gasoline, electricity, natural gas

Capacity of fuel tank/tanks (fuel, water, etc. Hours of operation for fuel capacity)

8. How long does it run on propane, diesel, gasoline – what is its tank capacity

See #7

9. How many gallons of water are onboard; from fill up how long does it take to heat the water to 160 degrees (ie: wait time); is there a thermometer to verify tank water temperature; how does one add more water to the tank (a garden hose?)

Recovery time for water temperature to get to desired temperature between applications to kill invasives.

10. Can we obtain a factory installed second muffler to make the unit quieter

What is the DBA level when unit is operating and if unacceptable levels, can an add on unit be added to reduce DBA to acceptable levels without personal hearing protection?

11. What sort of on-site user training is provided

Number of hours of training required by factory rep and emergency assistance when equipment goes down. On site help, warranty, etc. Service contract available

12. Does the vendor supply PPE items; what are the recommended PPE items

13. Do they have mats to lay on the ground under the rig to capture the wash water so it isn't released into the environment; can the 'used' water be recirculated back into the wash tank and re-used; are there filters to be cleaned or replaced – how often

Would not consider a unit that did not have a reservoir to contain water and ability to drain off rainwater.

14. How often is the water replaced; where is it drained to for proper disposal

Consider holding tank/tanks for septic hauler to remove from site. Figure removal costs in annual operating budget, plus installation costs.

15. If a steam system what is the steam temperature

Steam pressure and temperature specifications as well as liability issues for operator, owner of equipment and damage to boat, trailer, equipment in boat, time to remove fishing tackle, bait, etc. No matter if you use, steam, hot water, chemicals, etc.

16. At the end of the day what is the normal shut down procedure

Time required for shut down/ clean-up/ maintenance of equipment and prep for next day's operation including security of equipment. Portable equipment would require a unit, truck, tools for small repairs, some repair parts, etc. Depending on equipment size/ weight the operators may be required to have a CDL license, etc.

17. Overnight what do most users do to protect against vandalism, theft

Depending of type of unit, this could be a relatively simple procedure.

18. How much does the unit cost, what are the options

Once it is determined what vendors we are going to approach we need a detailed proposal with all specifications, alternate items they may suggest, lists of perishables, etc. and outright purchase price, possible rental/lease of equipment, financing options if any, delivery times, set-up and training costs if any. Possibly each vendor could supply a detailed budget showing all related costs as we are looking at a portable unit or a permanent installation.

19. Do any users construct their own small building to permanently house the unit

I think there are possibly two options here: One a building like a car wash to drive in and the unit would have underground tanks or above ground tanks to collect the wastewater plus house the machinery to filter/clean the water and toilet facilities for the operator/s.

20. What is done to the unit to prepare it for winter; what sort of ongoing maintenance is required

No matter what unit is chosen there would be costs to secure the unit for winter and winterize the unit and then prepare it for the next seasons operation or if in a building it would have to be heated (an additional cost) as you are dealing with water in a freezing environment.

21. Is there anything which can be done to sanitize ballast tanks

What about bladders in wake enhancing boats? Same issue for live wells, etc. Think this is a liability issue due to potential damage to a boat even if not done by operator, but claimed to be damaged at wash station. (Law-suit heaven)

[If there are any other questions which come up please let Nick know so he can add them to the other volunteer vendor sheets]

Nick, You have an excellent start and I hope I have added to your questions in a positive way. I don't have a pre-conceived idea as which way is better a portable unit or permanent unit as both have positive and negative points. If a boat stays on a water body for the season and only comes off to go into storage or repair, I am inclined to say it does not have to be washed. It's the transient units that must be addressed and will the folks bring them to a central location after each lake visit, highly doubtful. If fine is low the guides will build it into their fees so they can fish and not waste time at a wash station, If the fine is high it will affect to tourist trade, a tough decision. Having a portable unit at each public landing would be cost prohibited but would insure no AIS in our lakes. Maybe closing/ opening various landings down on some sort of schedule could be an option and make sure each boat is washed prior to entry and departure. Depending on how many portable units and operators we could afford, but in the long run it would probably be more cost effective than trying to clean up a contaminated lake. Not an easy issue to address and certainly not one in which P.I. can accomplish by opening of the fishing season 2023 using volunteer labor and nothing in the Towns budget to get a program started.