

18 Sep 2020

To: Seven Lakes West Landowner's Association Board of Directors

From: Lake Auman Vitality Advocates (LAVA)

Subject: Concern of Large Wakes Impact on Lake Auman Dam, Bulkheads, Docks and Boats

This letter represents the views of the signatories and many others, as no effort was made to get signatures en masse. The points presented are based on actual scientific data, first hand experiences, and the consultation of an independent hydrology engineer. The BOD is respectfully requested to meet with our group and develop an action plan to address the concern pertaining the impact and effect of large wakes on the dam, bulkheads, docks and boats.

The contention of this letter is not a statement on wake surfing or water sport in general, as we are all supporters of those activities; however, Lake Auman is not large enough to safely operate wake boats with filled ballast that generate wakes and wave energy that is negatively impacting or damaging personal property, enjoyment of the lake and safety of other members of the community

Definition:

Wake/Surf Boat - any boat with a ballast capable of taking on water to produce larger wakes.

Background:

The Board of Directors (BOD) has attempted boating courtesy and education but more is needed to avoid creating unsafe conditions on the lake and in the community.

As it pertains to safety specifically, the Board needs to research and define the boat capacity of Lake Auman. The first step in defining capacity is to have a grasp on the existing boat population, which will require an independent audit of current boat registrations. This effort may also require additional information to clearly define type of boat as well as validate property ownership in the community.

With regard to wake boats, in 2019 the Lake Committee was involved in several months of discussion concerning resident complaints, the effects of large waves on lake infrastructure, growth projections, and wake boats and the wake they produce as a specific concern and source of the complaints and a potential threat to the lake infrastructure. The Committee authored and passed a motion, by majority rule, to be considered by the BOD. The motion directed the BOD to temporarily stop all new registrations of wake boats and other boats modified to produce surf quality wakes for at least 18 months. Boats registered prior to the effective date were not affected. This would allow time to study growth and effect of wake boat activity on the lake. However, the BOD rejected the motion without serious discussion with the Committee. Instead, some members of the BOD cite a petition generated by wake boat enthusiasts as evidence of support for wake boats, which reportedly was never validated for membership or household, and allegedly contains signatures from non-members and multiple

persons from a single household. In addition, some of the signatories of the petition simply wanted the BOD to adequately research the issue and make an educated decision on policy with regard to wake boats, which also never happened. The petition was also never made available to the membership at large.

We are specifically concerned that at least two members of the present Board own wake boats. The perception is that the BOD is NOT acting in the best interests of the community, but in the desired interests of a few community members. The concern is-that the BOD is not taking this issue seriously.

Evidence:

The science is clear. Wave amplitude, speed, and frequency are determinants of a wave's capacity to damage. Wake boats can generate a 3-4 foot wake when going 10 mph, which is much larger on a daily basis than occurs naturally in a storm on a lake of the size of Lake Auman at roughly 800 acres. The effect is also greater over time as severe storms are unique events, while wake generation is a virtual daily occurrence.

The scientific evidence in a University of Quebec at Montreal study (Attachment 1) on wakes and wake producing boats found wakes from wake boats, using the ballast to create them, carry four times the energy of a standard boat wake. The study was of one wake boat in a lake with an unimproved shoreline. The bulkheads on Lake Auman actually compound the problem. A bulkhead is not designed as an absorber of energy but reflects it back into the lake. In reflecting the wave it has to store then release energy which contributes to eventual failure. Wake boats accelerate the bulkhead deterioration. The article recommended operation of wake boats at least 300 meters from shore, or roughly 1000 feet. Rationally, the required operating distance would be larger if more boats were present given the compound/additive aspect of fluid waves. An additional study conducted by Laval University in Quebec City cautions against the use of wake boats in bodies of water less than 600 meters in width and 5 meters in depth (Attachment 2). The 5 meter observation is particularly troubling in terms of environmental impact and especially to the lake bottom and fish spawn. The problem is Lake Auman is too small (Attachment 3). As the attached map reflects, there is little area, and none outside the main basin, that can accommodate the minimum distance recommendation of 1000 feet from both shorelines and that is without consideration for a need to push the distance out further for multiple boats.

Damages and incidents are also well documented and have a cost. The impact is real in terms of both finances and enjoyment/activities. Attachment 4 lists incidents and repairs and is only a sample among many which demonstrate the realized harm the residents of Seven Lakes West are enduring. It is important to note that the 'wake boat' discussion is not only occurring at Lake Auman, but nationally as well. Many lake communities, virtually all with lakes much larger than ours, are considering banning wake boats (Attachment 5).

Note: other boats do create wakes and contribute to the deterioration of personal and common property, but with wakes at ¼ of the energy of wake boats, at a much more normalized rate.

3 Major Concerns:

1 – **The Dam.** As a High Hazard Dam, it was appropriately closed to road traffic that was causing deterioration of the dam's core at an accelerated rate. Per an independent hydrology engineer, artificial wakes generated by wake boats with the amplitude, frequency and speed of which they are capable have to have an effect on an earthen dam, likely similar or greater than auto traffic. On a lake this size, it would be unlikely for a storm to generate the wave energy of which wake boats are capable, and even if one did, it would be relatively short in duration. While we cannot control mother nature, we can certainly prevent the realized and potential damaging impact of boat produced wake. The wake from wake boats exposes the dam to significant wave energy force on a daily basis, with a significant increase in that force when more boats are on the water, especially wake boats, whose wakes carry four times the energy. The wave energy carries below the water level as well. As a side note, the engineer noted that when designing a bridge pylon, the biggest concern is not ingoing and outgoing tide, but the impact of boat wakes. While the rip rap and associated damage is visible to the naked eye, the serious concern is what you cannot see. The dam is the foundation upon which home values in Seven Lakes West are built, on or off the water. Note: Wood Lake home value changes when the community lost its earthen dam.

2 -**Damage to personal and common property.** Just citing issues disclosed on the members page blog, as well as those experienced by the members submitting this letter; damages include those to the irrigation system, boats, dock, stair, lift, and bulkheads since the introduction of wake boats and directly attributable to their wakes. Court rulings across the country are pretty clear in that boat owners are responsible for the damages created by their wake. In this case, the scientific evidence is also clear that one class of boats is accelerating the damage to structure. Anecdotally, truckers pay extra fees and fines to use the interstate system because they cause more damage, wear and tear on the roads.

3- **Preserving Lake Auman for the pleasure/enjoyment of the entire Seven Lakes West community.** Enjoyment of the lake by the vast majority of people that do not own a wake boat or wake surf which include kayakers, fishermen, swimmers, paddle boaters, sailboaters, children, etc. There are multiple incidents of kayaks being overturned, kids being knocked down, etc...caused by large wakes disrupting the lake, including those which caused personal injury. As mentioned, environmental impact is a major concern including fish spawn, lake bottom erosion/disturbance, as well as the potential for invasive species to be introduced in the ballast of wake boats.

Urgent Action to be Taken by the BOD:

1. BOD meet with our group to develop an action plan to address the concern pertaining to the effect of large wakes on the Lake infrastructure, potential lake contamination resulting from untreated ballast, as well as other environmental impacts. As part of this plan:
 - A. The BOD establish a moratorium on the registration of any new wake boats.
 - B. The BOD issue policy requiring wake boats to immediately suspend the use of any ballast on Lake Auman.

C. An appropriate enforcement mechanism should be implemented.

This policy should stand until an independent study by a qualified hydrology engineer can be completed to assess the specific effects and impacts associated with ballast use. Final policy is to be determined at the conclusion of the study based upon its recommendations/findings.

2. The BOD engage a disinterested third party to conduct an audit of boat registrations in order to:
 - A. Clearly establish what the current valid boat population is on Lake Auman,
 - B. Eliminate multiple boat owners with the same registration number.
 - C. Eliminate boat owners with multiple registrations for the same boat.
 - D. Clearly establish a process for registration that both enforces existing rules and adequately identifies registered boats for validation by the boat patrol and gate guards.
3. The BOD commission a study conducted by an independent professional entity to determine the boat population that Lake Auman can safely accommodate.

In closing, it is important to note that we would like to work with the board toward resolution of this issue that could have a serious impact on all community members/property owners. Working together, to provide a viable solution, is certainly preferred to other options which we all would prefer to avoid. We anticipate a positive response from the BOD within a week to formulate an action plan to address these concerns. We also request that this letter and supporting attachments be included in the minutes of the next Board meeting.

Respectfully,

//SIGNED//

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Attachments:

1. Quebec University Wake Study
2. Laval University Study
3. Lake Auman Satellite photo
4. Sample List of Specific Incidents/Damage
5. Small Sample of Communities Considering Banning Wake Boats