

Report to CSD Regarding Boating Safety and Noise Control

By the Fallen Leaf Lake Ad Hoc Committee on Boating Safety

February 25, 2021

Background:

This study arises from a CSD Board request to review and update the boating rules for users of Fallen Leaf Lake. Director, Mike Casey was tasked with seeking out and appointing a representative committee to look at the issues and report back to the Board.

Committee Members:

The Committee that endorses this report includes members from the West Side, East Side, Stanford Hill, Glen Alpine, Stanford Camp and a member of the public from South Lake Tahoe. It also includes a wakeboard boat owner, sailing enthusiasts, several avid water skiers, as well as people who swim, kayak and otherwise recreate on the lake¹.

Methodology:

The Committee began its work by designing a survey of Fallen Leaf residents and users to determine the issues of greatest concern to the community. The following is a summary of the results of that survey:

a. **Breadth of Survey:** The survey was mailed to over 500 seasonal and full-time residents and known users of the lake. Of those, over 240 responses were received.

b. Summary of boating safety responses

- 176 responders (69%) replied that large wakes are dangerous to swimmers, paddle boarders, kayakers and other smaller, slower, and therefore vulnerable lake users.
- 180 of the responders (80%) favor the statutory inland waterway protection zone extending 200' out from the shoreline (and from docks and moored boats) into the lake and which is intended to separate motorboats from swimmers & other vulnerable users.

- 78% of respondents felt that there is no need to update the current counter-clockwise water ski pattern on the north and south ends of the lake. It must be noted, however, that information regarding alternative patterns was not offered by the drafters of the survey. In their responses, several skiers mentioned alternative patterns, and, subsequently, the Committee has had extensive discussions with skiers, including a professional instructor, on the subject and has concluded that ski pattern norms have changed in recent years and should be introduced in this report to those who may not be aware of them.
- Some respondents commented that they did not feel there was any means of legal enforcement of recommendations and/or of any rules which might be suggested. We address this topic later in the report.

Disclaimer: The following sections contain statements and, in some cases, conclusions that might appear to be legal opinions. They are not. The only lawyer on the committee is Mike Casey, and his license has been inactive for many years. This is not a legal brief, but rather is the work of laymen and should not be relied upon for the legal accuracy of any statements or conclusions expressed. The committee strongly recommends that this report be reviewed by counsel to the extent the Board feels that might be appropriate.

Safety

Based on the survey results, it is apparent (and not surprising) that the Fallen Leaf community considers boating safety to be highly important. The questions are what regulation is most needed, and how is it best accomplished.

- a. **Right / Duty to Regulate:** The CSD took title, in 1993, to the 2.2 acre common area pursuant to a deed which explicitly provided that the improvements thereon, including a beach, marina, store, boat launch ramp, and public restrooms, would be dedicated in perpetuity to public use². By accepting the deed, the CSD knowingly accepted the conditions

of that deed and thereby undertook the responsibility of maintaining a safe swimming and boating environment both on and in the lake for the benefit of the community at large including the public.

- b. **Supportive Law:** While there are many laws on the books relating to marine safety, surprisingly, there are very few that define how boats should and should not be driven in a safe manner on inland waterways. Indeed, a deputy in the local sheriff's office stated, in an interview, that he was not aware of any laws on the books in California on point. That deputy was technically incorrect but, from a practical perspective, he was not far off the mark. Code section 655.2(a) of the Harbors and Navigation Code does, in fact, address the issue; however, it does so in a rather oblique and outdated way³ In addition to that code section it is pretty much universally accepted that both state and federal law provide that an operator of marine equipment, including power boats, is responsible for his or her vessel's wake and any damage or personal injury it may cause⁴.
- c. **Obstacles:** Some would say that the lake is owned by the State of California and therefore outside the CSD's jurisdiction. In reply, we would note that the absence of action by the State is, we believe, no excuse for the CSD to turn a blind eye. Nor do we believe that inaction by the State would protect the CSD from responsibility to properly address dangerous conditions or practices.
- d. **Relevant recent changes in the world of watersports:** Before considering whether or not any regulation might be appropriate or necessary, obviously one must look at the facts and determine whether there are risks that are known or obvious which might be considered dangerous and worthwhile protecting against through regulation. In the case of Fallen Leaf Lake, we believe some such risks do in fact exist in the realm of boating safety and, in particular, we address issues relating to the interaction of people and propellers as well as risks created by wake boats and their wakes.

- e. **Risks: Large wake boats:** Over the past several decades several new water sports, in particular wake boarding and wake surfing, have captured significant interest from enthusiasts. Indeed, those two sports have become so popular that they have led to major changes in the tow boat's hull design, as well as the addition of wave shaping devices and stern mounted ballast tanks, all of which help to improve the performance that boarders and surfers seek by increasing the size and density of the tow boats' wakes. While the upside of those sports is obvious from their names, there is a downside too, that downside being a significant increase in the size and energy load of the wakes involved. In addition, boats making sharp turns, such as those pulling inflatable equipment ("tubing") also make larger wakes than ski boats. All of these larger wake types have been known to damage lakefront property and may, if left unregulated, pose higher risk for swimmers and people in or on human powered vessels close to shore⁵. We will have more to say on this subject later.
- f. **Risks: Interaction of people and propellers:** When boat propellers come in close proximity to people, bad things can happen. This risk is greatest close to shore where children and adults alike swim, jump off docks into the lake, paddleboard, kayak, and otherwise enjoy being in the water. Unfortunately, the water's edge is also where boats dock and depart, often backing up, making sharp turns, and both approaching and departing at less than full attention and at dangerous speeds. The Committee feels strongly that the best way to control this situation is to create an area where motorized vessels moving faster than at idle speed are kept physically separated from swimmers and slower human powered vessels.
- g. **Solutions: Creation of a Safety Zone:** The Committee determined that, of all the issues studied, this was the most important because of the risk of mixing propellers and people. The idea of a safety zone is not new. In fact, it has been present for years at Fallen Leaf Lake but has never been enforced or paid attention to. We believe the time has come when a safety zone should be created by rule, adhered to by the community,

and enforced primarily by neighbor to neighbor interaction. We recommend that the safety zone should extend out 200' into the lake from the shoreline and any docks or other protrusions and we further recommend that within that zone, no propeller driven boats or other watercraft may be operated at a speed greater than 5 MPH. This safety zone follows the speed and distance provisions of Section 655(2)(a) of the Harbors and Navigation Code which provides its legal underpinning. This will be formalized in the rules we recommend (see infra).

Comment [CP1]: Is this cut off?

Management of Wake Boats

While there are a myriad of opinions (from environmentalists, the boat industry, lakefront homeowners, and other stakeholders) about the wakes created by wake enhanced boats, there is now enough scientific evidence to make good decisions about managing the effects of larger wakes. Specifically, the Committee relied upon reports from a Canadian university and an Australian university that captured reliable and unbiased primary data⁶. In the case of Fallen Leaf Lake, the most important findings of the research are:

1. Wake boats make larger waves that carry 3-4 times more energy than typical ski boat wakes;
2. Wake surfing wakes are generally larger than those of other sports;
3. Wake boat waves naturally dissipate their height and energy over a distance of about 400 feet to the point where they become similar to those of typical ski boats (Australian study)
4. Wake boat waves naturally dissipate their height and energy over a distance of nearly 1000 feet to the point where they are similar to natural, wind-driven waves (Canadian study)⁷.

The committee looked at a number of ways to try to manage wakes, among which included using hard numbers to represent different distances from shore for different boat types to adhere to, and using fractions of lake width to make it easier for some to visualize the desired distance. Ultimately and, with the

exception of the safety zone, we felt that all of these efforts suffered from the problem of potential (indeed probable) driver error. A better approach, it seemed, was to remind people that we believe they do, as a matter of law, own their wake and to suggest strongly that being farther out from shore is always safer for all concerned.

Recommendation: This Committee recommends, at minimum, that large wake boat activities such as filling of ballast tanks, wake surfing, wake boarding, and pulling inflatables be practiced towards the center of the lake. This is not just a matter of safety but of common courtesy as well, and it is made alongside a request that all operators of propeller driven boats, no matter their size or displacement, be aware of their wake and manage it with a clear understanding of their liability for any damage that might be caused by it.

Rules: We strongly recommend that the CSD adopt the following rules as well as the prefatory declaration of need as provided below:

Declaration of Need: The CSD Board declares that the safety of people and property is paramount when considering water sports and activities. In furtherance of that imperative, the following rules are hereby adopted:

1. **Rule #1:** Operators of motorized vessels, as well as towed water skiers, tubers, wake boarders, wake surfers, and others traveling on Fallen Leaf Lake at a speed in excess of 5 MPH shall maintain at all times a distance of no less than 100' away from any swimmers, kayakers, canoers, paddleboarders, wind surfers, sail boats or any other persons or human propelled devices anywhere on the lake;
2. **Rule #2:** Operators of motorized vessels shall not travel on Fallen Leaf Lake at a speed greater than 5 MPH at any time when they are at or less than 200' from the shoreline and any man-made protrusions extending out from the shoreline into the lake including but not limited to docks, boathouses and moored vessels.

3. **Rule #3:** Operators of motorized vessels shall neither operate or manage those vessels or their wakes on Fallen Leaf Lake in such a manner as to cause damage to persons or property.

In addition to the forgoing rules, the Committee also recommends that the following actions be undertaken:

- a. During the 2021 season, up to 15 buoys shall be purchased and set out by the CSD approximately 200' from shore as a test to determine whether or not they help keep boats at or beyond the required safety zone distance and also to learn whether or not well spaced buoys are acceptable aesthetically to the community as a whole. Then, in the Fall of 2021 nearby property owners, boaters, users of non-motorized vessels, and members of the public should be surveyed regarding their views and experiences with respect to the buoys both from an aesthetic and a safety perspective.
- b. We ask that the CSD approve the Committee's use of the old store at no expense to the Committee for the purpose of conducting weekly (or as frequently as there is demand for it), seminars and discussion groups to explain the goals of these proposals and their importance to the safety of all users of the lake.

Ski Patterns

Historically, and for as long as anyone can recall, the approved ski pattern was simply stated as the counter-clockwise or racetrack pattern. The Committee recommends that this be re-considered in light of changes in the sport to move to patterns that generate less wave action and smoother water for all skiers. (see footnote for videos that explain the "Dog Bone" solution)⁸.

North End: The skiers who use the north end slalom course aren't asking for the whole lake to switch to their favored "Dog Bone" pattern – all they want is the counter-clockwise sketch on the map at the launch ramp to be deleted as to the

north end. We take it a bit further, however, and see the “Dog Bone” model as a distinct improvement over yesterday’s racetrack pattern, and we recommend it as a best practice. On the other hand, since the pattern isn’t a matter of safety, and since the two patterns can co-exist (except at the north end when skiers are using the slalom course), we do not feel it is something that need be decided expeditiously. Rather, we simply advise that, unless told otherwise, we will recommend use of the “Dog Bone” pattern to friends and neighbors and hope it catches on.

South End: The Committee believes that the south end is a potential hazard zone, not so much because of the ski pattern used, but more because of all the disparate traffic and different speeds of boats that tend to coagulate there. Southbound boats enroute to the store, gas dock, or other destination head to the marina entry, and, as they get within 200' of it, they slow down at the single buoy (where there used to be two) and approach, at low speed, the narrow opening to marina traffic. Other boats come out of the marina area after having filled up or done whatever brought them there, and as they leave the marina opening behind them, they accelerate.

In addition, there are rental boats, often driven by novice boat drivers. They too exit the marina opening, often while looking around at the boat’s equipment or otherwise distracted.

Then there are the beach lovers who rent kayaks and take them outside the breakwater so they can stop, absorb the sun’s rays, and talk with their friends in an adjacent kayak.

And all the while, ski boats are towing skiers and tubers in the pattern which extends all around this chaos.

The Committee makes two recommendations:

- a. **South End Ski Pattern:** Discussions should be held with Stanford to determine a solution which pulls the south end ski pattern counter-clockwise and toward the west so that ski boats can maintain at least 100'

of separation from the above described human obstacles. One possible solution would be to re-orient the oval shape of the circle so that it points more north/south than its current east/west orientation.

- b. **The marina entry / exit area:** The CSD should create a plan to extend the entry/exit points to the east in order to eliminate the risk associated with the confluence of boating traffic congestion at the edge of a designated water ski area.

Noise

The survey identified that there have been increasing concerns with noise disturbances from people playing music loudly on their boats. This issue can best be framed by the physics at play and reference to the “Golden Rule.” The physics of sound are primarily driven by an intuitive observation and a more subtle phenomenon. The intuitive observation is that sound is damped by grass, trees and other obstructions when it travels over land- thus it is absorbed quickly. Over a lake, there are few obstructions, and so sound travels much farther. The subtle phenomenon is that sound is refracted by the cooler air near the lake surface. This bends sound from boats up to cabins on a hill. It also bends sound from cabins on a hill down to boats.

The Golden Rule states “do unto others as you would have them do unto you. Simply stated, there is a time and place for everything, and just as one person may resent someone blasting music around the lake, so too the noise maker wouldn’t want to be the recipient of something offensive to him. It has nothing to do with what is being played – it has everything to do with people’s right to enjoy their time at the lake without the distraction caused by the noise maker

Recommendation: The Committee recommends a community standard in which music should be audible only on the boat where it is being played. Music which is audible to riders behind a boat or to other nearby boats is likely to be too loud for this community.

The committee suggests that adoption of a community standard will provide a foundation for education and awareness efforts, providing a platform for community members to talk with each other. Suggested wording for a proposed rule regarding noise might be as follows:

Rule #4: It is the community standard at Fallen Leaf Lake that music played on a boat should be audible only on the boat and not for riders behind it or on other nearby boats and beyond.

If this approach is not effective over a season or two, there may be a need for a penalty schedule for repeated violations of the community standard. A possible schedule might be something like a warning for the first offense, a documented citation for a second offense, refusal of gas for a third offense, and refusal of launch rights for a fourth offense.

Other sources of noise: The committee recognizes that offensive noise can also emanate from the engine of boats and their muffler systems. That issue is not addressed here other than to note that it is against California law to operate a boat without an approved muffler system or where the noise from the boat exceeds 86 decibels measured from a distance of 50' from the vessel.

Summary:

The committee believes that the CSD can and should enact certain rules for the operation of watercraft on Fallen Leaf Lake and for the safety and enjoyment by homeowners, renters, day users, and the public at large. They recommend the enactment of four (4) rules, two (2) of which are consistent with existing law governing speed and distance requirements where people and boats interact. The third rule deals with the limitations on the operation of wake boats, and finally there is a rule relating to noise.

The Committee proposes to move forward with a review of the current launch contract as well as to put in place various ways to educate and remind the community about these rules and the rationale behind them and to take on such other roles and tasks as might be asked of it by the Board.

Respectfully Submitted,

Mike Casey

For the Committee

Endnotes

¹ Committee Members are Mike Casey, Linda D'Amato, Renate Fry, Chuck Hawley, Kevin Hoffman, Morgan Marshall, Chad Praul, Sara Stephens, Peter Thieriot, and, for a time, Richard Kirby.

² The Grant Deed, Easement and Dedication Agreement dated June 15, 1993 specifically provides, on page 2, that "FLLA's grant and conveyance of the Community Acquisition is made expressly conditioned upon CSD's intention and agreement to offer to dedicate the Community Acquisition to the public for recreational use for the benefit of the People of the State of California. CSD agrees that by accepting the grant and conveyance of the Community Acquisition as evidenced by CSD's execution of this instrument, CSD does hereby irrevocably dedicate the Community Acquisition to the public for recreational use for the benefit of the People of the State of California, including the use of the Property by the public for boating, swimming, fishing and other recreational uses which are consistent with the aforementioned uses in consideration of the character and location of Lot B, and including use of the Walkway Easement by the public for pedestrian access.

Paragraph 7.2 of the Real Property Transfer Agreement dated July 3, 1990 provides as follows: Conditions to TPL's Obligations: TPL's obligations to pay Grantor and accept or direct to the CSD the conveyance of the Community Acquisition and to assume or provide for the assumption of any conditions relating to the Community Acquisition are subject to the satisfaction or waiver of the following conditions: 7.2 The agreement of the CSD to accept the Community Acquisition and hold it for the benefit of the public, and to assume all Obligations of Grantor which pertain to the Community Acquisition as a result of any TRPA conditions and the Offer to Dedicate.

Paragraph c 1.3 of the Community Area Operating Agreement dated May 10, 1993 provides: 1.3 CSD shall in its site plan for and in its operation of the Community Area make provision for retention of the marina, boat ramp, and a portion of the beach for public access and use to the same extent that FLLA is required to so provide.

³ 655.2(a) Every owner, operator, or person in command of any vessel propelled by machinery is guilty of a misdemeanor who uses it, or permits it to be used, at a speed in excess of 5 mph in any portion of the following areas not otherwise regulated by local rules and regulations:

- (1) Within 100 feet of any person who is engaged in the act of bathing. A person engaged in the sport of waterskiing shall not be considered as engaged in the act of bathing for the purposes of this section.
- (2) Within 200 feet of any of the following:
 - (A) A beach frequented by bathers.
 - (B) A swimming float, diving platform, or lifeline.
 - (C) A way or landing float to which boats are made fast or which is being used for the embarkation or discharge of people.

⁴ The statement to the effect that an owner or operator is responsible for his or her boat's wake is found in many articles and handbooks. See, for example

<https://www.blslawyers.com/boaters-responsibility-for-own-wake-watch-your-wake.html>

, <https://www.thelog.com/ask-the-attorney/who-is-responsible-for-damage-caused-by-boat-wakes/>

<https://www.unitedmarine.net/blog/index.php/2014/10/15/watch-your-boats-wake/>

Presumably this conclusion (as to which we have not found either statutory or case law support) is based upon principals of common law negligence. Thus, a number of cases involving wake accidents have relied upon federal law, and specifically USC 2302 for the proposition that one is responsible for his own wake. However, a reading of that statute says no such thing. USC 2302 actually states, "A person operating a vessel in a negligent manner or interfering with the safe operation of a vessel, so as to endanger life, limb, or a property of a person, is liable for a civil penalty of not more than \$5,000 in the case of a recreational vessel..."

Whatever the circumstances, the operator should assume that if an accident were to occur because of his or her wake, he or she will be found to be responsible.

⁵ http://cdalakepoa.com/uploads/3/6/4/3/36431208/technical_summary_finalpdf.pdf

⁶ 2014 Canadian University Study

<https://www.documentcloud.org/documents/6801168-Canadian-Wake-Boats-1-English-UQAM-1.html>

2018 Australian University Study (completed on the Willamette River in Oregon):

<https://olis.leg.state.or.us/liz/201711/Downloads/CommitteeMeetingDocument/150575>

⁷ Observations by the Minnesota Department of Natural Resources suggest that whereas a wave that is 12.5 cm high (the size of a compact disc case) will not cause significant shoreline damage, a wave of double that size (ie 25 cm high) is four times more destructive, and a wave that is 62.5 cm is 25 times as destructive. (Published by "Environment Canada, 2005).

⁸ <https://www.youtube.com/watch?v=XsrbyOjJXhs>

<https://www.youtube.com/watch?v=QcBEC1kr0qM>

<https://www.youtube.com/watch?v=M3TgKvdRimg>

<https://www.youtube.com/watch?v=V0nl1REcC94>