

COMMISSION TO EXAMINE THE EFFECTS OF WAKE BOATS IN THE STATE OF NEW HAMPSHIRE, (HB 137, Chapter 77:1, Laws of 2019) Room 305, LOB

Monday, March 2, 2020 10 AM in LOB 305

**Draft Minutes**

- I. Call to order:
  - a. Chair, Representative Smith, called the meeting to order at 10:02 AM.
  
- II. Introductions:
  - a. Members present: Chris Bischoff, Pam Price, John Whalley, Maggie Ford, Winston Sims, Representative Gunski, Kelly Buchanan, Representative Smith, Senator Ward, Peter MacCallum, David Mankus, David Neils, Shane Carey
  - b. Members absent: Captain Dunleavy, Scott Behner
  - c. Guests: Clifford Goudey, Dann Lewis, Don Pierce, Tom O'Brien, Bill Winter, Jodi Grimbilas, Nick Farrell
  
- III. Approve the minutes from 2/3/2020
  - a. Page 3, item K clarify data
  - b. Page 5, item E, "was told by Captain Dunleavy"
  - c. Page 6, item D, "positive results"
  - d. Minutes were approved with corrections unanimously.
  
- IV. Presentation from Cliff Goudey on wave energy
  - a. Please see Cliff's presentation.
  - b. Purpose of study:
    - i. Collect accurate data on waves generated in wake sports
  - c. The study was performed on multiple sites (shallow and deep) on Conway Lakes in Orlando, FL. Each site was equipped with 5 sensors placed at intervals from the site to the shore.
  - d. Smaller, consistent waves can have more consistent energy for longer.

- e. During wake surfing, the trough of the wave is more significant than the swell above water. The wave energy creates turbulence within the water to dissipate energy.
- f. Dave N. asked Cliff to clarify how waves act in shallow water. Cliff responded, in shallow water, due to shoaling effect, waves get steeper and break due to interaction and friction with the bottom of the waterbody. In deep water, there is significantly less attenuation of waves. Shallow water allows waves to break.
- g. The power of the waves determines impacts to the shoreline and any structures on the waterbody. At deep water sites, the study examined the power of each passing wave at each station's sensors. Power dropped at each subsequent station closer to shore when the wave began in deep water.
- h. The condition of the shore determines impacts from wave energy. Rocky shorelines are more stable when compared to sandy shorelines. This study did not examine specific impacts to shore, but only measured wave energy.
- i. Winston asked, have you (Cliff) examined the direction of the waves? Boats create waves in many directions. Wind often pushes waves in a prevailing direction, but wind may also be erratic. Cliff responded that the tests were performed with boats traveling at an angle to create waves parallel to shore. The tests performed with wind did not take into consideration direction. Wind effects are very site specific.
- j. Pam asked to clarify that 10 passes on a boat creates 30 minutes of wind action. Cliff stated that sounded correct.
- k. Peter asked if there was a way to define a percentage change in wave energy when compared to distance. Cliff responded that could be done.
- l. Cliff stated that all waves will impact the shoreline in some manner. Wake surfing in shallow water is less impactful if the waves go out towards the middle of the lake instead of towards shore. Delicate shorelines, in certain locations not heavily affected by wind naturally, would benefit from no wake zones.
- m. John stated that the boat the commission took a field trip on was the same model as the boat used in this study. It was a larger size boat.

- n. Tom O'Brien had a question regarding slide 16. Does this indicate the trough of the wave has impacts to 20 inches under water? Cliff responded, yes.
- o. Kelly asked Cliff to explain the impact to turbidity and decreasing water quality due to the energy of waves. Cliff responded that it is site specific and specific to substrate.
- p. Dave M. asked if the surf plates were deployed outside the transom during testing? Cliff said he didn't know. He left those decisions to the boat operators when creating an "ideal wave".
- q. Pam stated the wake surfing boat added retrofitted ballast bags. If these were not added, the waves would be smaller? Cliff responded yes. Pam also stated that the wave height in all sectors of boating ended up the same 200 feet from the boat's pass.
- r. Kelly expressed concern that this research was not peer reviewed and was paid for in part by the Wake Sport Industry Association.
- s. Representative Gunski asked Cliff if the data was manipulated or changed in any manner or was a strictly scientific manner employed? Cliff maintained it was strictly scientific and was not manipulated.
- t. Winston expressed that this study has not lead to many others. Cliff expressed the additional study from Quebec regarding wave energy was "terrible" and had "ulterior motives".
- u. Dave N. stated that he wanted to return to the question regarding turbidity. He also stated that he wishes the state (NHDES) could have paid for this study. Dave went on to explain that the interaction with the bottom of the lake is notable, but did this study look at any other impacts to where this energy is transferred and dissipated? The sediment? Shoreline impacts? The energy does not go away. Cliff maintained that the energy dissipates with heat and friction. Dave recognizes that the wave energy dissipates with sediment movement and finds this concerning. Cliff stated that they could have taken water samples to examine impacts to water quality with wave energy, but this would have been site specific. Dave also stated that the mile-long fetch is a long distance. He also expressed these sports prefer

calm waters, which occur in areas not usually exposed to wind forces, such as small coves. The ecosystems in these clam areas may not be well adapted to wave energy.

- v. Dave M. inquired if the energy maintains the same, the energy must transfer to somewhere like the bottom substrate or the shoreline. Dave asked if this was exasperated by wake boats? Cliff stated it depends on boating behaviors and location.
  - w. Representative Gunski asked if we could see wave energy at deep and shallow sites again. He asked, in your opinion is there a reduction in wave energy in deep and shallow areas? In deeper areas is it less substantial? The main causes are the initial break of the wave and turbulence.
  - x. Dave N. commented on the executive summary and stated that at the '150 foot safe passage in NH, these waves are 8'-15' inches in height when created per the variables in this study.
  - y. Tom O'Brien asked at point, at idealized conditions, are each type of waves equal? At what depth? We know that disruption to the bottom occurs and that bigger waves are more impactful. Cliff responded we did not examine these considerations in this study, but there are probably negative effects of operating boats in shallow water.
  - z. Jodi mentions that FL doesn't have a safe passage law and has more consistent boating due to the milder weather.
- V. Shane asked if the other documents on the website have been addressed by the full commission at a meeting. Representative Smith stated they have not. Shane is concerned that the public might assume we've spoken about them. Representative Smith stated they are for information and research purposes and to contact her if someone has specific concerns.
- VI. The next meeting of the commission is on April 6<sup>th</sup> at 10 AM.

- a. One water sports enthusiast and one person negatively affected by waves/wakes will speak for no longer than 5 minutes each.
  - b. We will also discuss economic impacts. Marine Trades and the boating industry will provide that information.
  - c. We may discuss turbidity studies (possibly discussed at May meeting).
  - d. May 4<sup>th</sup> 10 AM
  - e. June 15<sup>th</sup> 10 AM
- VII. Pam will take over as clerk. Jodi will help with notes.
- VIII. Nick Farral introduced himself. He lives in Andover and participates in wake sports.
- IX. Adjourn
- a. Senator Ward made a motion to adjourn. Maggie seconded the motion. The meeting unanimously adjourned at noon.