

TOSL – Boating Ordinance Ad Hoc Committee (BOAHC)

Final Presentation

2/26/25

1

Committee Members

- o Bob Berkopec – Chair
- o Michelle Keil – Clerk
- o Ray Langer
- o Dave Mickelson
- o Tony Mornar
- o Tom Oatman
- o Craig Pagenkopf
- o Dave Thearin
- o John Trombello
- o **Lake “representation”**
 - 5 on Spider Chain; 3 on Teal; 1 on Lost Land
- o **Residency** – 5 Seasonal; 4 Full Time
- o **Property type** – All 9 own waterfront property; 2 also own non-waterfront
- o **Lake use(s)**
 - 8 of 9 use the lakes for both fishing and pleasure boating; 1 for boating
 - 6 of 9 members use/have used the lakes for motorized sports
 - All 9 use the lakes for “non-motorized” sports (kayaking, canoeing, nature viewing, swimming)

Diversity of interests, skills, & perspectives

2

2

Charter - Purpose, Goals, Scope

Review current Ordinance to

- o Ensure and maintain Public Health & Safety
- o Protect and preserve natural resources (environmental quality of lakes and shoreland)
- o Understand fiscal and legal impacts

Inform the Town Board

- o Whether, and in what areas, the current ordinance needs revision
- o Whether separate ordinances are needed for different bodies of water
- o Best methods of enforcement
- o For Spider Lake chain; How best to share, schedule, regulate recreation on the lake for individuals with diverse interests

Scope

- o What’s in:
 - Gathering & reviewing data/information
 - Talking with Subject Matter Experts (SMEs)
 - Presenting findings to the TOSL Board
- o What’s out:
 - *Actual revisions to the Boating Ordinance (this is the Town Board’s purview)*

3

3

Approach

- Systematic process (“Roadmap”)
- Objective, unbiased, non-judgmental, fact-based, data driven
- How we work with one another
 - Divide and conquer workload
 - Research, reading, analysis outside of meetings
 - During meetings: present results, discuss, decide next steps
 - Direct stake holder input to Committee email
 - Solicited input via Listening Session



4

4

Key Activities & Sources

Sub-team structure

- Definitions
- Environmental Impacts
- Speed Limits
- Water Activities Hours
- Wake Enhanced Activities
- Enforcement

Total hours = 678.

Fact, data and key information sources include:

- Academic institutions, often working in conjunction with state/federal agencies and NGOs
- WDNR and other state & federal natural resource protection bodies
- *Water Sports Industry Association*
- Lake associations (e.g. lake & fishery management plans)
- Not-for-profits (e.g. *Last Wilderness Alliance*)

Opinion surveys and solicitations

- TOSL, SCLA, WDNR (and other) surveys
- TOSL *Listening Sessions*
- BOAHC dedicated email & *Listening Session*

5

5

WDNR on Local Boating Ordinances



Wisconsin law allows local municipalities to enact local regulations relative to boating in the interest of public health, safety or welfare, including the public's interest in preserving the state's natural resources.

Local municipalities may have regulations governing such things as water skiing, shore zones, speed limits, etc. State boating law provides a general framework of regulation, but it is up to local municipalities to provide regulations tailored to local conditions.

TOSL Local Conditions:

- Water Quality/Clarity
- Sensitive Areas
- Wildlife & Fisheries
- Healthy Watersheds/Invasive species control

6

6

Sensitive Areas: *Spider Lake Chain Example*

2002 – 2003 WDNR *Spider Lake Chain Sensitive Area Survey Report*

- Integrated team approach: Water Mgmt Specialist, Fisheries Biologist, Water Quality Biologist, 2 Wildlife Biologists

Identified 31 sensitive areas on the Spider Lake Chain

- Almost all the sites mention use as spawning/nursery area and use by loons and other wildlife
- "Highly flocculent [i.e. easily disturbed] bottom sediment is found at many sites in Little Spider and Clear Lakes."



"Sensitive areas often contain high quality aquatic, wetland, and/or terrestrial vegetation... that typically provide habitat needed for seasonal or life stage requirements of fish, invertebrates, and wildlife, provide water quality benefits to the lake, and/or reduce shoreline erosion."

10

10

Wildlife - Loons

- Common Loon is not only an iconic "Northwoods Character" species, it is also classified by WDNR as a "Species of Special Concern" in WI
- Considered a "biosentinel" species, i.e. "indicators of stressors that disrupt aquatic integrity" because they are...
 - Long-lived, upper trophic level species...have low annual fecundity...susceptible to... persistent bio-accumulative toxins, water quality degradation...catastrophic ecological events, and direct and local recreational impacts.
 - Impacted by "remobilization of heavy metals...e.g. mercury...that can have reverberating disruptions along longer food chains"

"The loon population in northern WI has declined 22% in the past 25 years...shrinking by as much as 6% each year."

~ The Loon Project



11

11

Wildlife - Fisheries

FACT: Healthy water resources are an asset

- Tend to have higher real estate values
- Contribute more to the tax base
- Costs less to protect them than to restore polluted waters
- Generate major recreational and economic interest; anglers and waterfowl hunters spend \$1.5 billion annually in Wisconsin.

~ From the WDNR's *Healthy Watersheds, High-Quality Waters Action Plan* document



WDNR incorporates stakeholder input into development of management plans:

We can settle for nothing less in an area where the quality of fishing means so much to our livelihoods and our quality of life. ~ Max Wolter [Sr. Fisheries Biologist] and the Hayward DNR Fish Team, from the 2022 Spider Chain of Lakes Fishery Management Plan

"Maintaining critical habitat and good water quality is the first step in any fisheries management program. Without good quality habitat, other management actions are futile."
~ From WDNR 2018 publication *Wisconsin Muskellunge Waters*

12

12

Community Input

Consideration of a Diverse Set of Interests

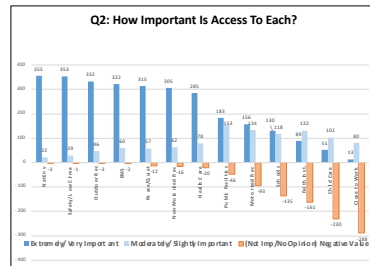
A majority of Town land owners acquired their property with the boating ordinance in place and was a major reason they wanted to own property in the TOSL

13

13

What Draws Property Owners To TOSL?

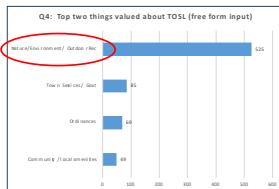
- Higher priorities:
 - Natural Environment
 - ✓ Outdoor Recreation
 - ✓ Peace & Quiet
 - ✓ Non-motorized Recreation
 - Health & Safety
 - ✓ Low crime
 - ✓ EMS
 - ✓ Health care
- Lower priorities:
 - Schools & Child Care
 - Faith Institutions
 - Close to Work



14

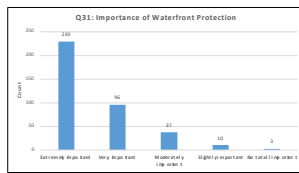
14

Importance of Natural Environment & Waterfront Protection



• 87% say Waterfront Protection is Extremely or Very Important (Q31)

- Nature/Environment/Outdoor Rec includes:
 - General mentions of Nature/Natural Env (183)
 - Peace and Quiet (97)
 - Lake/Water/Air Quality (130)
 - Forests (38)
 - Outdoor Recreation (77)



15

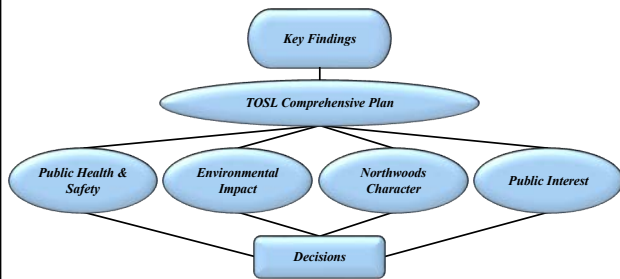
15

Key Topics – Findings and Recommendations

- Wake Enhancing Activities
- Ordinance Content & Verbiage
 - Speed Limit
 - Water Activity Hours
 - Enforcement

19

Decision Framework



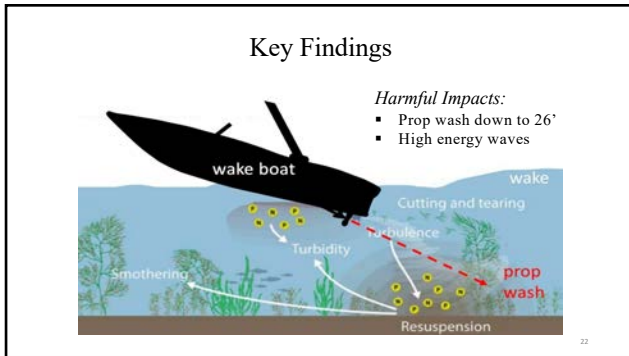
20

Wake Enhancing Activities – Wake Boats

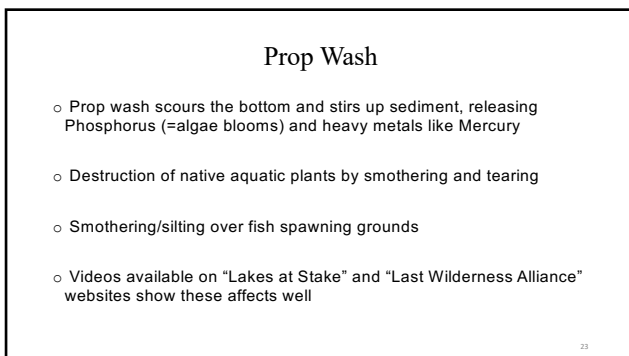
- What they do: Create “enhanced wakes” for the purpose of surfing behind the boat or wake boarding
- The technology: The boats ride deep in the water by taking on ballast water or by use of hydrofoils to plow through the water and create large waves



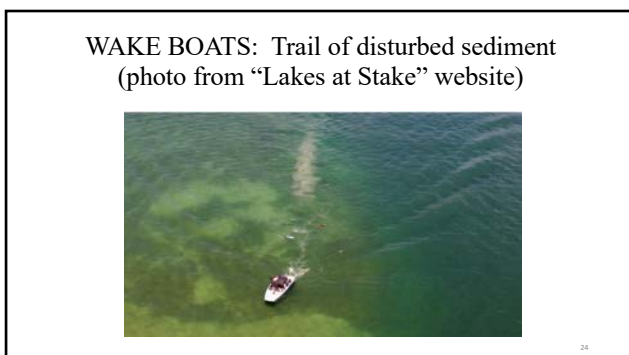
21



22



23



24

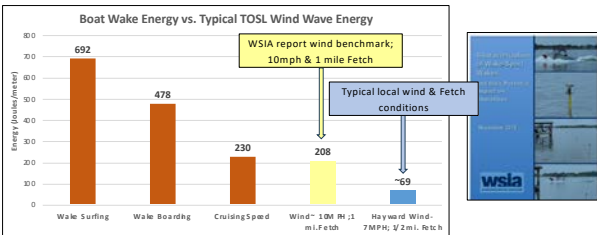
High Energy Waves

- Shoreline erosion: Waves are 2-3 times larger than other boats and carry 4-9 times the energy
- Destruction of native shoreline plants
- Birds and fish: Near-shore nesting birds (Loons) and fish spawning grounds are negatively impacted.
- Safety: Waves up to 3' can capsize kayaks, paddle boards, etc.

25

25

Comparison: Boat Wake Energies vs. Wind Wave Energies



Using average local wind speeds and typical Fetch lengths, wind wave energies are roughly 1/10th of Wake Surfing wake energies and 1/7th of Wake Boarding wake energies, even when measured 210' from the boat

26

26

Public Health & Safety

- Last Wilderness Alliance (LWA) has provided examples/reports from northern Wisconsin. There are 31 entries
 - Injuries like broken ribs and broken legs
 - Fishing people thrown out of their boats
 - Sail boats and paddle boats staying off the water when wake boats are present
 - Children not wanting to go in water when large waves are washing up on shore
- Little Spider Experience: Wake boat wave washed over a pontoon. Wave height was above the railing!

27

27

Impact: Activities Comparison (From “Lakes at Stake” website)

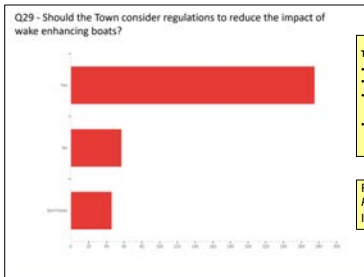
IMPACT	Jet Ski	Personal Boat	Ski Boat	Wake Boat	Canoe	Paddle Boat	Kayak	Fishing Boat	Swimming	Duck Hunting	Scuba	Sailing	Sea Horse
Safety of Others													
Shoreline Damage													
Fisheries and Fish Habitat													
Waterfowl													
Bottom Disturbance (Sediment Resuspension)													
Water Clarity (Turbidity)													
Aquatic Invasive Species													

Impact when sport is performed in accordance with existing statutes and Ordinances

	Significant Impact
	Moderate Impact
	Minimal or No Impact

28

Very Strong Support In TOSL For Reducing Impact Of Wake-Enhanced Activities



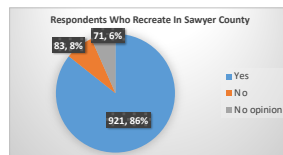
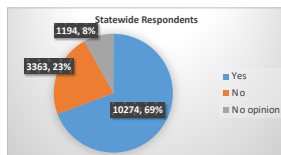
- TOSL Town Survey**
- 73% favor Wake Boat restrictions
 - 15% do NOT favor restrictions
 - 12% don't know
- Congruent with WI statewide and Sawyer county-wide results (next slide)
- Remember...87% say *Waterfront Protection* is Extremely or Very Important (Q31)

29

Broad Statewide Support For Reducing Impact Of Wake-Enhanced Activities

2024 Wisconsin Conservation Congress and Wisconsin Department of Natural Resources annual public survey

Q43: Would you support...modifying existing statutes to prohibit generation of intentionally magnified wakes for wake surfing...on lakes smaller than 1500 acres and less than 20 feet deep and maintain a distance from shore and other lake users of 700 feet?



30

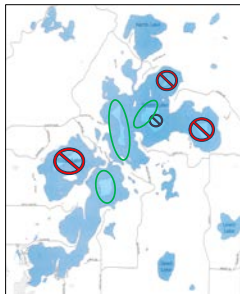
Ordinances- Two Approaches

- Limiting approach:
 - Cannot operate within 700 feet of shore
 - Cannot operate in water less than 20' deep (or 30')
- Exclusion approach:
 - No wake enhancing activities allowed (the Last Wilderness Alliance approach)

31

31

Spider Chain: 20' Water Depth Overlaid On 700' Restricted Zone



○ Denotes where water is at least 20' deep
AND 700' from shore

⊘ Denotes water not at least 20' deep

Only VERY limited areas even potentially suitable
for wake boating activity on Spider Chain.

32

32

Local Ordinance Status

- Towns in **Sawyer County** that have wake boat ordinances (for all waters within towns)
 - Town of Hayward
 - Town of Round Lake (Includes Round Lake)
 - Town of Bass Lake (Includes Grindstone and Lac Court Oreilles)
 - Those all used the 700' exclusion zone
- Town of Cable (total ban)

33

33

Recommendation

- Immediately enact a stand-alone local ordinance prohibiting wake surfing and all activities that use “enhanced wakes”
- “Last Wilderness Alliance” is available to assist. They have the legal and technical expertise (including 4 attorneys and a PHD Limnologist) plus document templates.

34

34

Ordinance Content & Verbiage

- Designate Ghost Lake as a “Quiet Lake”
 - Lake characteristics similar to other Quiet Lakes
 - ✓ Average depth of 5 feet
 - ✓ Narrow width
 - ✓ Near surface hazards
 - 90% of lakeshore is Natural forest
 - Eliminate the water sports hours (11 a.m. – 3 p.m.)
 - Town to contact Ghost Lake property owners to understand their feedback on proposed change



35

35

Ordinance Content & Verbiage

- Legal Counsel
 - Retain Legal Counsel that has experience in municipal ordinances to provide input and review of existing ordinances, any ordinance modifications, and any resulting litigation



36

36

Speed Limit

- The Town's boating ordinance regulating a speed limit of 10 m.p.h. on the Town lakes has been in effect in some form or fashion since 1956
- In 1963, the Sawyer County Circuit Court upheld the TOSL boating ordinance for Lost Land and Teal due to evidence of unsafe boating conditions. The unsafe Lake conditions that existed in 1963 continue to exist today. (Source: Zajac vs. Town Of Spider Lake)

37

37

Public Health & Safety

- Current ordinance is a compromise attempting to balance;
 - Higher speed activities (i.e. water and jet skiing, speed boating, etc.)
 - Lower speed activities (i.e. sailing, canoeing, kayaking, swimming, fishing, nature watching, etc.)
- Higher watercraft speeds:
 - Increase the potential of accidents (collision, capsizing, running aground, submerged water hazards)
 - Increase the negative effects on non-powered watercraft (sailboats, canoe, kayak, SUP, etc.)

38

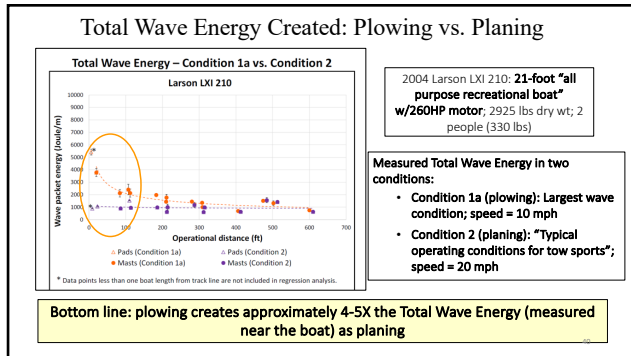
38

Boat Plowing & Planing

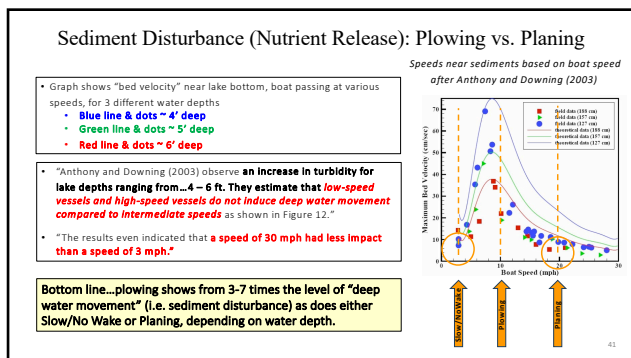
- Because of the large variance in the many types of boats and engine sizes, allowing boats to achieve a planing speed would require the elimination or increase of the 10 mph speed limit
- Higher speeds contributes to an increase in noise and presents greater safety issues with regard to submerged lake obstacles and non motorized water craft
- Some boats traveling at 10 mph outside of the 100' no wake zone create a "plowing" situation which can create larger wakes and reduced visibility creating a public safety issue
- Boats on plan produce less wave action and less sediment disturbance
 - WDNR requires slow/no wake within 100 ft. of shoreline

39

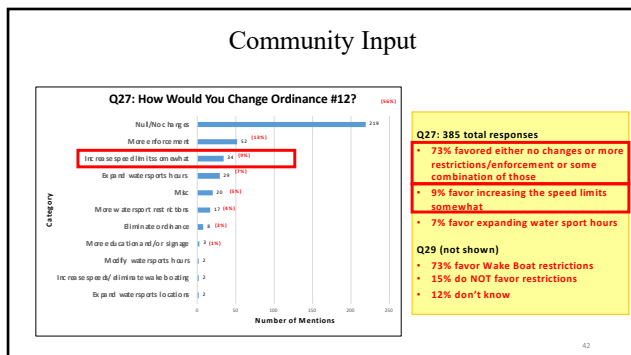
39



40



41



42

Other Considerations

- Eliminating or increasing the 10 mph speed limit could result in increased number and usage of PWC's since they are licensed watercraft and could operate at any time
 - Could be used outside of the 11:00 a.m. to 3:00 p.m.
 - Potential expanded usage on Quiet and other lakes
 - Noise considerations
 - ✓ Public health
 - ✓ Disruption of wildlife communication, reproduction, and feeding habits, causing significant harm to ecosystems



43

43

Recommendation

- Retain the current 10 m.p.h. speed limit boating ordinance (as defined in [Section 5a of TOSL Ordinance #02 – 2024](#))
- The exception would be during the time of 11:00 a.m. and 3:00 p.m. on those lakes specified in the ordinance where the speed limit would be lifted.

44

44

Water Activity Hours - Spider Chain of Lakes

- Current hours for waterskiing are 11:00 a.m. – 3:00 p.m.
 - Some concerns;
 - ✓ Congestion and safety
 - ✓ Difficult to fit activities into 4 hours
 - ✓ Too restrictive
- Discussed potential expansion of hours: 11:00 a.m. – 5:00 p.m.
 - Potential to do on trail basis to gather data and study impact
 - Development of a Town wide survey targeted specifically on the Boating Ordinance
 - ✓ Speed, Hours, Activities, etc.



45

45

Boat Wakes In Fetch-Limited Environments

University of Windsor, Canada - Conclusions from this study:

- Across all sites and over the summer of 2022 (June 1-September 23), the cumulative wake energy was 66% of the total wave energy, while the wind wave energy was 35% of the total wave energy.
- The energy of wakes, which is an important control on their ability to resuspend sediment and erode shorelines and damage infrastructure (Parnell & Kofoed-Hansen, 2001; Somere, 2005), is nearly 2x greater than the wind-waves across all sites. 
- This greater wake energy is only present at the shoreline (of the sampled sites) for an average of 11% of the summer, while wind-waves were present for an average of 83% of the summer. This is consistent with the results of Houser et al. (2021) who found that boat wakes were only present 9% of the summer, but their energy was ~2.3x greater than wind-wave energy where the fetch was 0.93 km (~0.6mi).



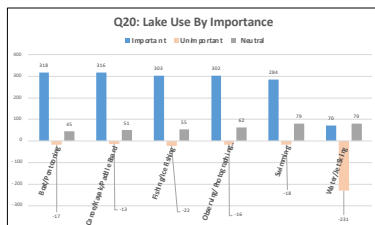
Bottom line for limited-fetch environment that is similar to that of TOSL: "Recreational boat wakes represent the majority of wave energy" **Despite wakes only being present for 11% of the time, they represent nearly 2x as much energy as wind-generated waves."**

40

46

Community Input

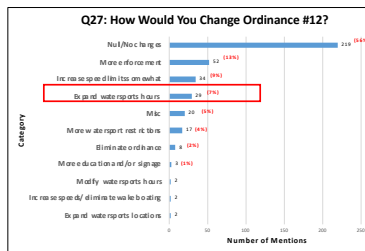
Lake Uses Favor “Quiet Lakes” Activities



- Water-related recreational interests
 - Boating/pontooning (83%)
 - Canoeing/kayaking/paddle boarding (82%)
 - Fishing/ice fishing (79%)
 - Observing nature/photography (78%)
 - Swimming (74%)
 - Water Skiing/Jet Skiing (18%)

47

Community Input



Q27: 385 total responses

- 73% favored either no changes or more restrictions/enforcement or some combination of those
- 9% favor increasing the speed limits somewhat
- 7% favor expanding water sport hours

Q29 (not shown)

- 73% favor Wake Boat restrictions
- 15% do NOT favor restrictions
- 12% don't know

48

Recommendation

- Retain the current hours for waterskiing on the Spider Lake Chain (11:00 a.m. – 3:00 p.m.)
 - No compelling reason to make a change
 - Community input supports no change
 - Expanded hours could result in:
 - ✓ Additional wave activity leading to environmental damage
 - ✓ Additional noise later in the day
 - ✓ Less time for non-motorized recreational activities
- Keep other lakes so designated as “Quiet Lakes” as they are today with the addition of Ghost Lake to this designation

49

49

Enforcement

- Conducted meetings with law enforcement
 - Options include partnering with other Towns or hiring Town’s own enforcement resource
 - Sheriff’s Dept. and the WDNR do not have authority and / or are unwilling to enforce Town ordinances
- Boating ordinance enforcement is the Town’s responsibility since it is a Town ordinance
 - WDNR and County Sheriff departments enforce state statutes
- Legal Counsel opinion: ordinances are only effective to the extent that the municipality invests time and money into enforcement

50

50

Enforcement

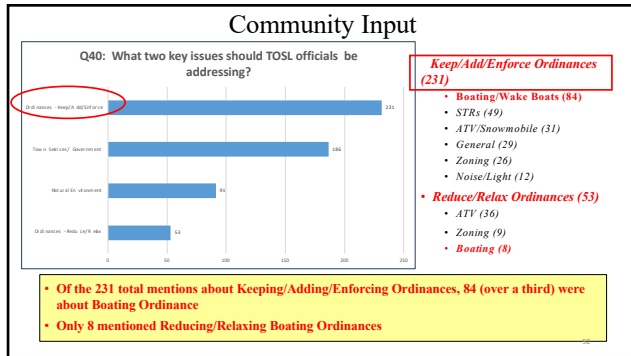
- WDNR has program “Intent to Patrol” that could be used for enforcement guidelines and suggestions as well as assistance in offsetting some costs



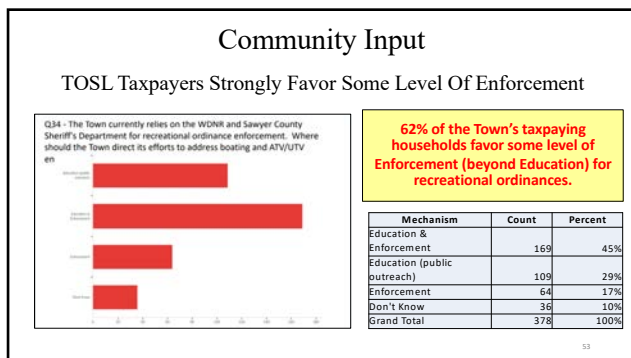
<https://widen.widen.net/s/lhwbcitsz/le0318>

51

51



52



53

- ### Recommendation
- Thoroughfare connecting Lost Land and Teal Lakes
 - Narrow channel; if traveling in middle no more than 50 to 75 ft. from shore.
 - Know nesting site for Loons
 - Habitat for other wildlife including muskrats, sand hill cranes, beaver, otter, eagles and osprey
 - Recommend placing official DNR approved slow no wake buoys in critical areas on Lost Land and Teal Lakes
 - To include the connecting body of water known as the Thoroughfare between Lost Land and Teal Lake
 - The TOSL would be required to apply for these permits

54

Recommendation

o Educate

- Make a concerted effort, utilizing the work of the PRC, to educate and inform property owners and, particularly, visitors about the requirements of the Town's ordinances
 - ✓ Intent to enforce/ensure compliance should be part of the message
 - ✓ Information should include fines/penalties once that info is available
- Distribute information through a wide variety of channels, including website, QR code, laminated hard copies, Boat landing monitors, etc.
- Partner with Lake Associations to distribute information to resorts, rentals, businesses, etc.



55

55

Recommendation

o Evaluate & Implement

- Review, investigate, and develop concrete and comprehensive guidance for enforcement of Town's Boating and other ordinances
- Develop and communicate a process to document violations so data can be collected and analyzed to understand the level of required enforcement
- Determine costs, available funding/cost sharing, manpower, technology, etc. needed for enforcement levels
- Review and refine protocols for warnings, citations, fines, adjudication, appeals process, etc.
- Develop and execute implementation plan that meets the enforcement needs of the Town



56

56

Committee Members

Additional Comments



57

Town Board

Q&A



58
