

Triennial Standards Review (TSR) 2021 – 2023 Public Hearing

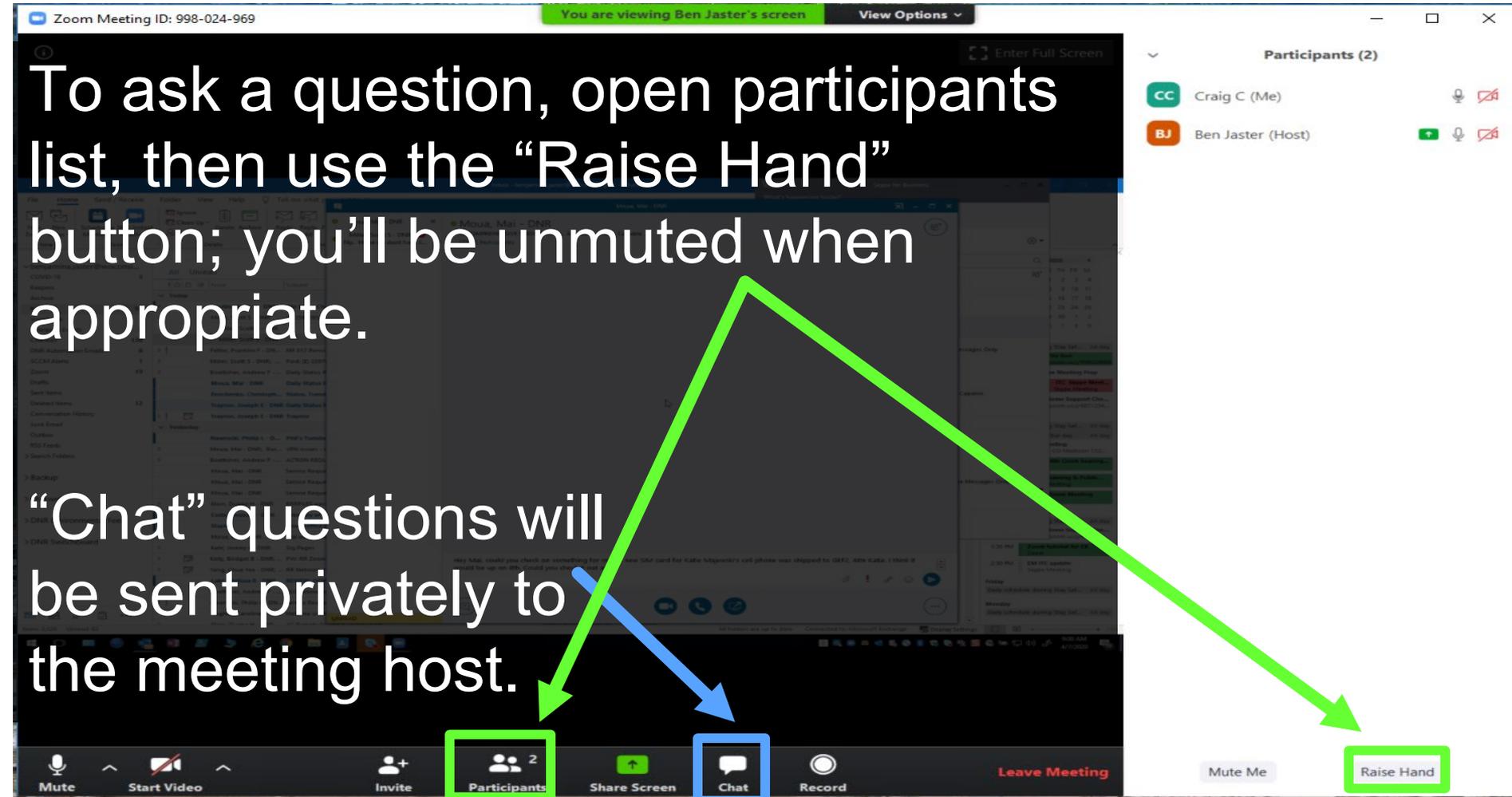
Wisconsin Department of Natural Resources
16 November 2020



Zoom Instructions and Guidelines

To ask a question, open participants list, then use the “Raise Hand” button; you’ll be unmuted when appropriate.

“Chat” questions will be sent privately to the meeting host.



On phone, dial *9 to “Raise Hand”

Your Comments, Please!

- Comments due **Dec. 4, 2020**
 - Email: MeghanC3.Williams@wisconsin.gov
 - Mail: Meghan Williams
Wisconsin DNR WT/3
PO Box 7921
Madison, WI 53707
- Website, Materials & Online Topic Ranking Form:
dnr.wi.gov/topic/SurfaceWater/TSR.html

Introductions



**Marcia
Willhite**

Chief, Water
Evaluation
Section



**Kristi
Minahan**

Water Quality
Standards
Specialist



**Ashley
Beranek**

Integrated
Report
Coordinator



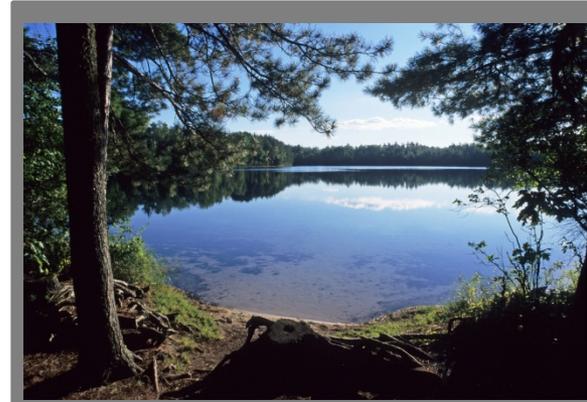
**Meghan
Williams**

Environmental
Toxicologist

Today's Agenda

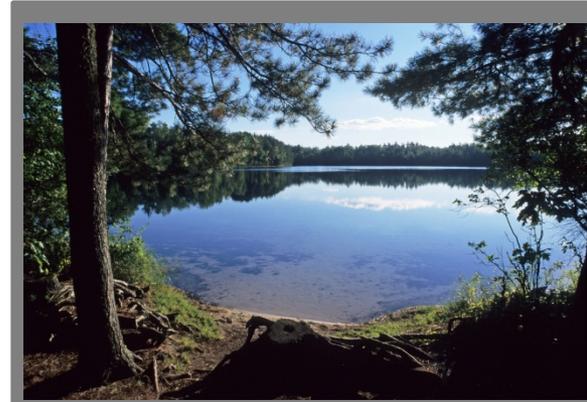
- Triennial Standards Review Process Overview
 - What is it?
 - What is its purpose?
 - What does it cover?
 - How is it structured?
- 2021 – 2023 TSR
 - Progress thus far
 - Descriptions of topics to be ranked
- Clarifying questions
- Formal comments

- An opportunity to revise or develop water quality standards or related guidance for Wisconsin's surface waters
- Occurs every 3 years
- Required of every state by the Clean Water Act section 303(c)

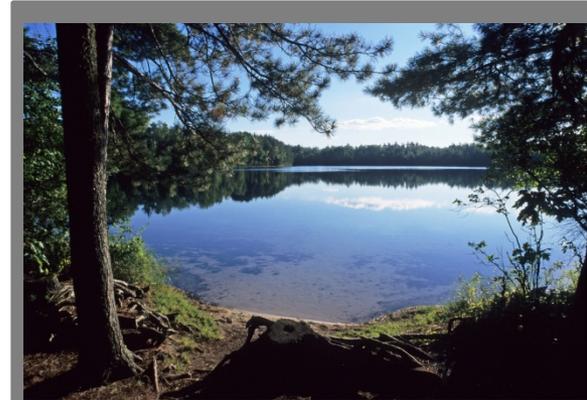


Purpose of the TSR

- Protect Wisconsin waters
- Gain valuable input from stakeholders
- Work-plan for projects
- Meet federal requirements set by Clean Water Act



- Water Quality Standards
- Water Quality Variances
- General Water Quality Standard Policies



Water Quality Standards

- Use Designation: determination of how a waterbody is used by people, aquatic communities, and wildlife

Fish and
Aquatic Life



Wildlife



Wildlife photos by Herbert Lang.

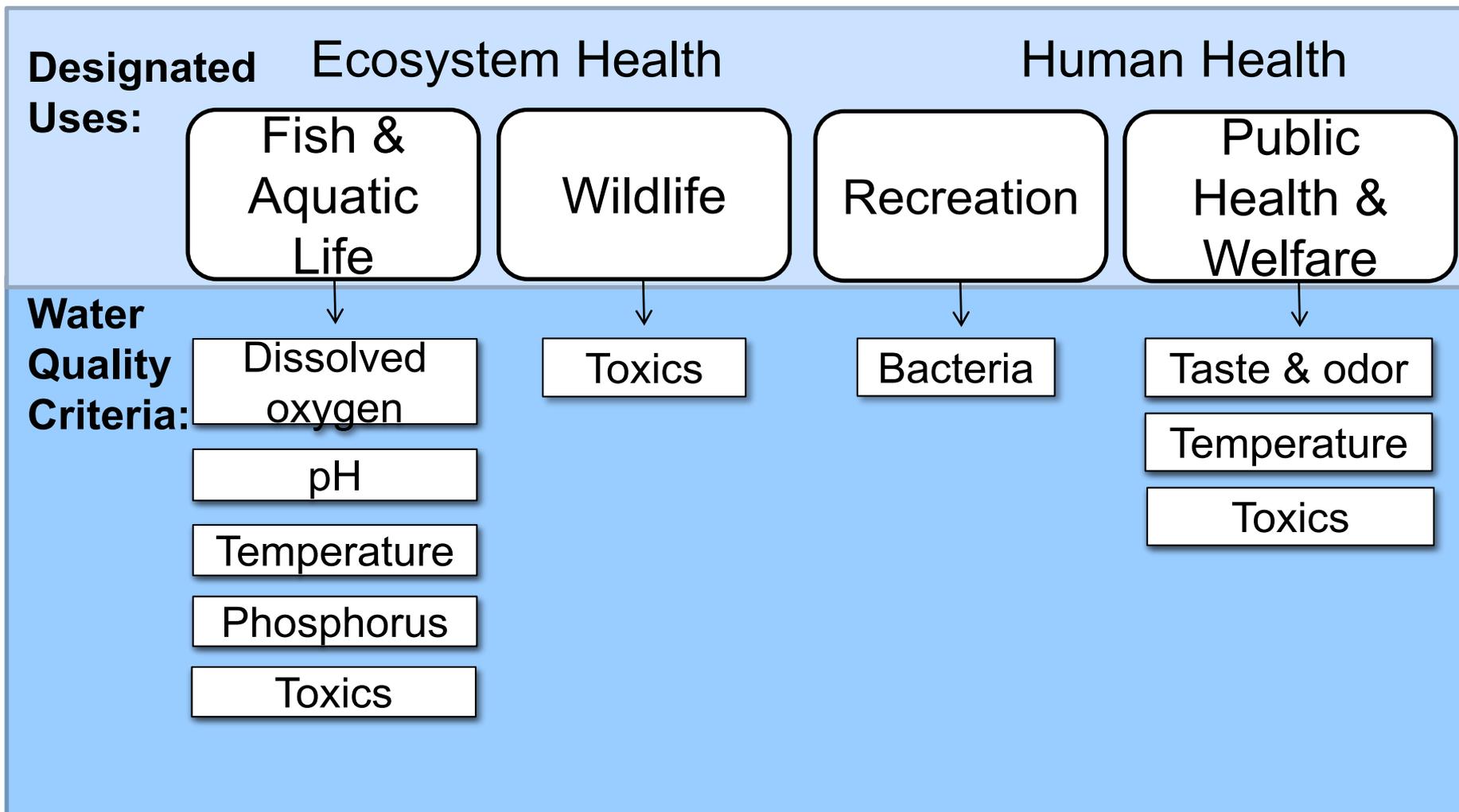
Recreation



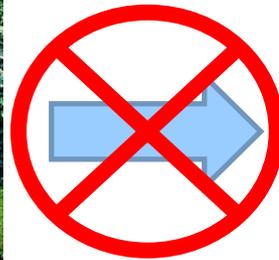
- Water Quality Criteria: describe the conditions that are protective of designated uses
 - Numeric Criteria: quantitative amount of a certain pollutant that is allowable in a waterbody
 - Narrative Criteria: descriptive statement of unacceptable conditions in a waterbody

Water Quality Standards

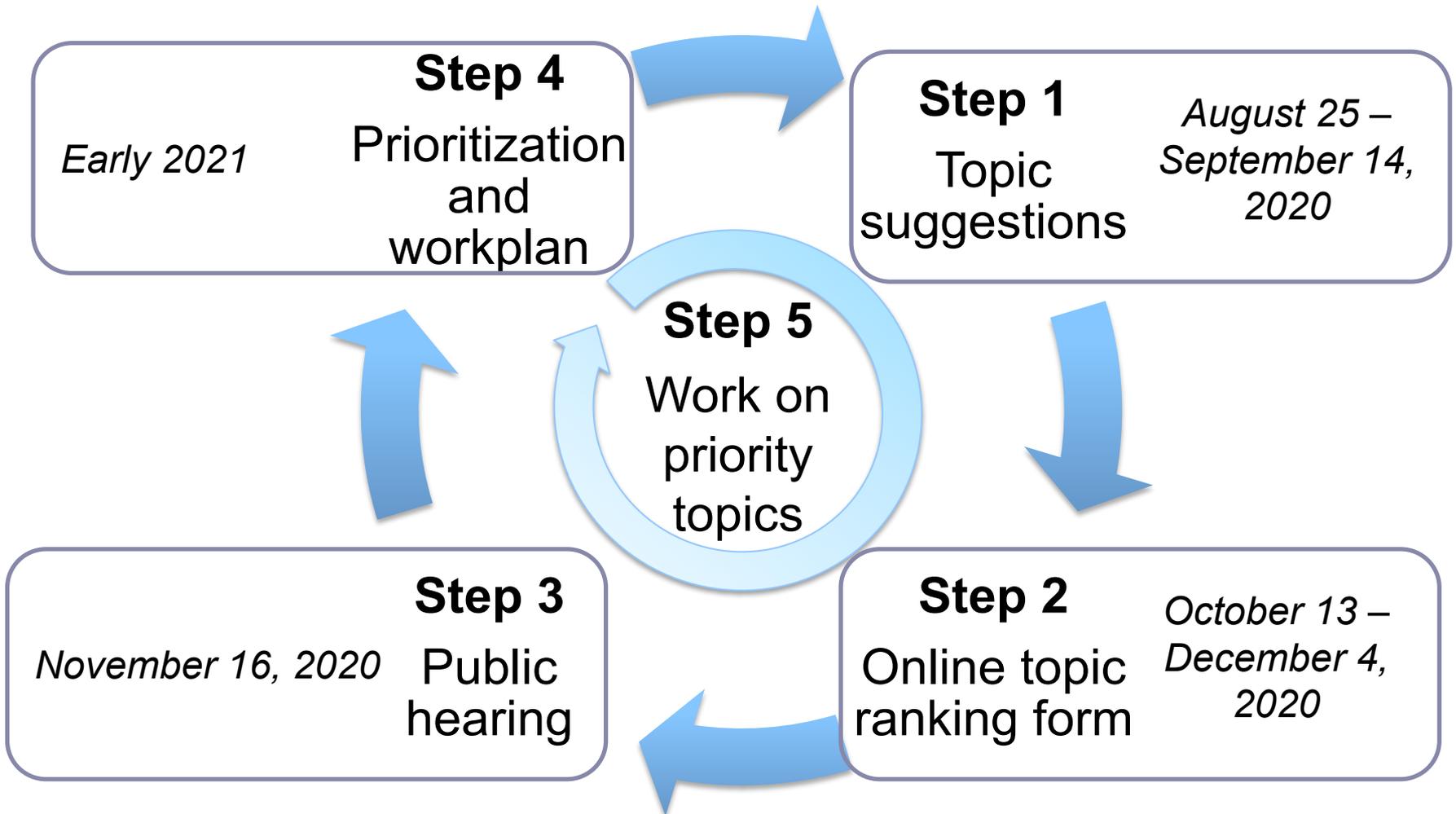
Different criteria protect different uses



- Antidegradation: protection for high-quality waterbodies



How is the TSR structured?

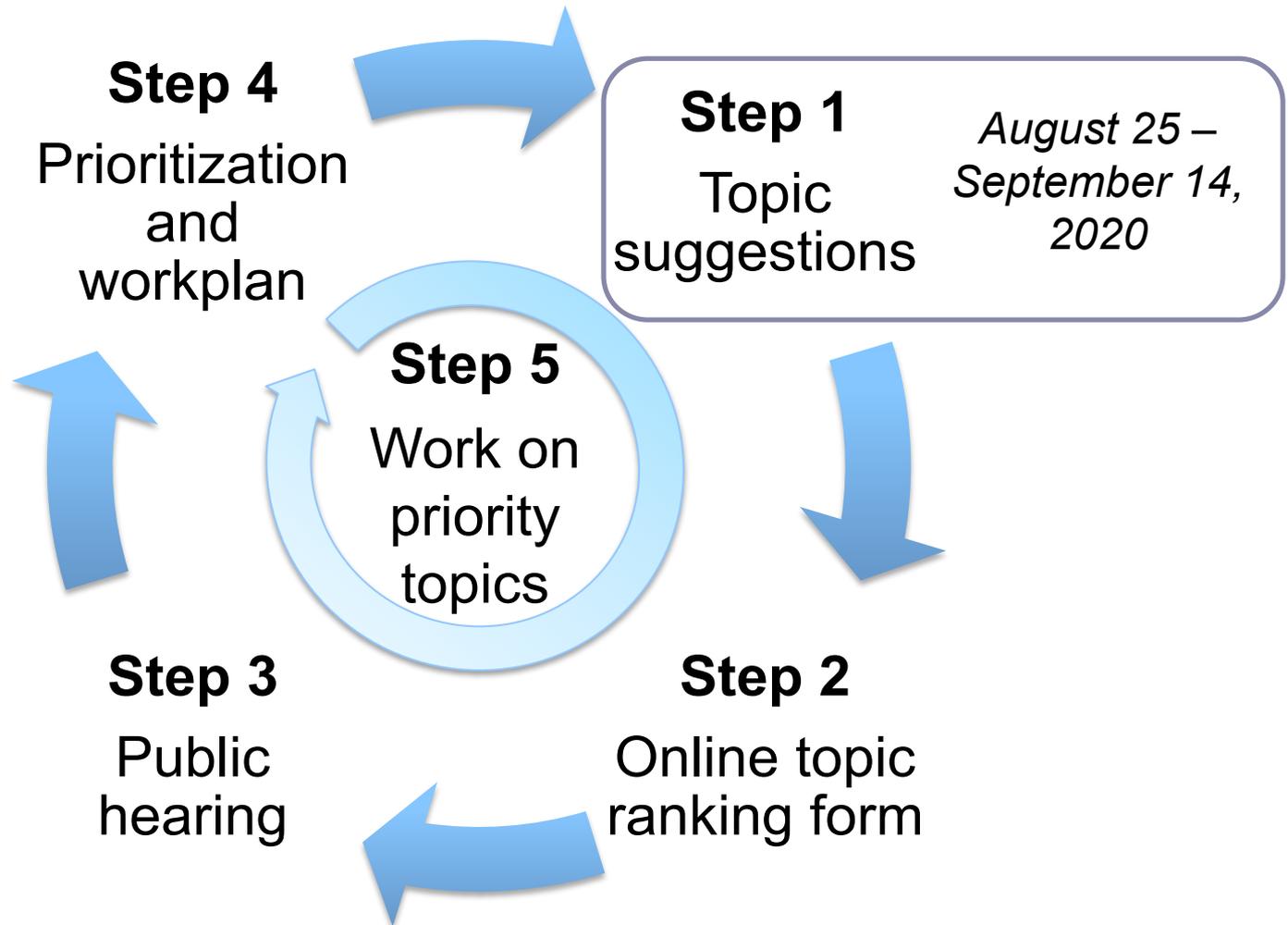


Every 3 years

Today's Agenda

- Triennial Standards Review Process Overview
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- **2021 – 2023 TSR**
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How is the TSR structured?



Every 3 years

Topic Suggestions

- Solicitation period: Aug 25 – Sept 14, 2020
- 73 topics submitted (49 submitters)
- Many topics outside scope of a TSR
 - High-capacity wells
 - CAFOs and agricultural runoff
 - Invasive species impacts
 - Residential runoff
 - Wetland protection
 - Watercraft regulations
- Final result: 14 topics for review

- New EPA criteria released in December 2018
 - Incorporates more recent toxicity data
 - Equation-based, reflects how aluminum toxicity is affected by pH, hardness, and dissolved organic carbon
- Wisconsin's water quality standards currently do not include aluminum criteria to protect aquatic life

Ammonia Criteria Revision

- Ammonia ($\text{NH}_3 + \text{NH}_4$) is a form of Nitrogen
- Used in fertilizers, household cleaners
- New EPA criteria released in 2013
 - Based on new toxicity studies that include sensitive unionid mussels and gill-breathing snails
 - More stringent than WI's current criteria



- DNR could revise criteria for substances for which EPA has new toxicological data
 - Examples: cadmium and selenium
- DNR could develop criteria for substances for which EPA has developed criteria, but for which there is currently no WI standard
 - Examples: acrolein, carbaryl, diazinon, nonylphenol and tributyltin

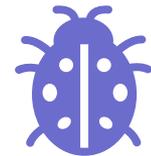
Bifenthrin

- Insecticide used to control ants, termites, and agricultural pests
- Research suggests that bifenthrin contributes to reduced macroinvertebrate populations in Midwestern waters

Chlorantraniliprole

- Insecticide used on agricultural crops and turf grass, in lawn/landscape applications
- Risks to freshwater invertebrates from chronic exposure to chlorantraniliprole have been identified
- Detected by DATCP in stream samples

- Use of clothianidin, imidacloprid and thiamethoxam has been implicated in global reductions in pollinator populations
 - Thought to be similarly toxic to aquatic invertebrates
- EPA OPP released revised aquatic life benchmarks for aquatic invertebrates for clothianidin and imidacloprid in 2016 and thiamethoxam in 2017
- Neonicotinoids are used extensively in WI
 - Increasingly detected in groundwater and surface water, particularly in Central Sands region



- EPA recommends that states use the Biotic Ligand Model (BLM) for calculating copper criteria
- BLM characterizes copper bioavailability by incorporating temperature, pH, DOC, and alkalinity into model
- Limited pilot study of BLM has been done using Wisconsin data, further study likely needed to determine the feasibility of using BLM to calculate copper criteria

- DNR currently only regulates nitrogen as a toxic substance through surface water quality criteria for ammonia ($\text{NH}_3 + \text{NH}_4$)
- Nitrogen and nitrate (NO_3) can pose risks to human health via drinking water contamination and/or by contributing to harmful algal blooms, which release algal toxins
- Some studies indicate nitrate can be harmful or toxic to aquatic life
- In summer 2020, EPA released draft tools to assist states in developing lake nutrient criteria to protect both human health and aquatic life

- Federal law requires states to identify and protect “High Quality Waters”
 - In Wisconsin, these are called Outstanding or Exceptional Resource Waters (ORW/ERWs) and are listed in NR 102
- ORW/ERW waterbodies have additional protections that are not automatically provided for other waterbodies
- DNR’s existing guidance on classifying waters as ORW/ERW is outdated, not standardized
 - Methods could be updated so that the process is clear and based on current scientific understanding
- DNR was not able to begin this process during previous cycles due to other workload and priorities

- Per- and polyfluoroalkyl substances (PFAS) are manmade substances that have been used to repel oil and water in a variety of industrial and consumer products and are also contained in firefighting foams
- PFAS are extremely persistent in the environment and bioaccumulate in humans and wildlife
- DNR is currently in the process of developing human health surface water quality criteria for PFOS & PFOA
- In November 2020, DHS released a list of recommended groundwater standards for 13 additional PFAS, indicating that reliable toxicity data exists for these compounds

- Pharmaceutical byproducts and personal care products (PPCPs) have been found throughout the Great Lakes
- Presence of these products in surface waters have been linked to several ecological problems (intersex fish, developmental issues in amphibians, etc.)
- In an effort to be proactive and protective of humans and wildlife, the DNR could consider developing water quality standards for pharmaceuticals and their byproducts



Wild Rice Designated Use Development

- Wild rice is an important ecological and cultural resource in WI, particularly in tribal areas, but its distribution has been greatly reduced from its historical range in the Great Lakes region
- A Designated Use could add some protection beyond the existing wild rice classification

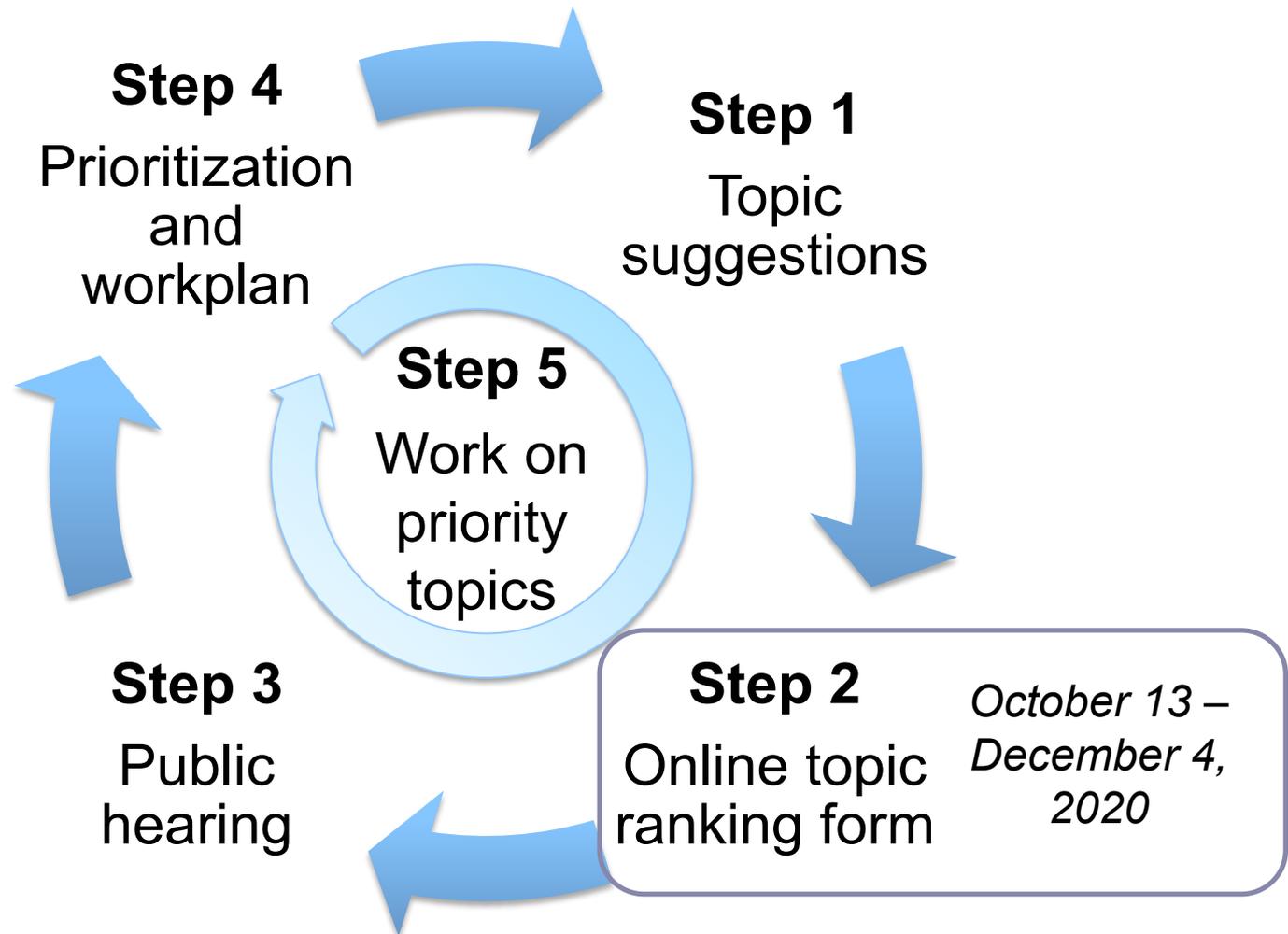
Sulfate Criteria Development

- Many parts of life cycle (seedling emergence and survival, biomass, growth, etc.) are negatively correlated with water sulfate concentrations
- Research in MN indicates that interaction between sulfate and sediment characteristics should be considered

In order to support the preservation and restoration of wild rice in WI, DNR could consider developing a wild rice designated use and/or sulfate criteria

- Excess suspended solids (TSS) in waterbodies can be caused by excess soil erosion, wastewater discharge, snowmelt, stormwater runoff, etc.
- In the water column, suspended particles decrease light penetration
 - Less light may reduce the number of rooted plants, and thus protective habitat for fish/aquatic life
- TSS is a commonly listed pollutant on WI's Impaired Waters List based on narrative water quality standard in NR 102
 - Assessed using best professional judgment
- Numeric water quality criteria for TSS would provide clear listing and delisting guidance
 - Standard sampling protocol, analytical method already exist for TSS

How is the TSR structured?



Every 3 years

Topic Ranking Form

- Online form gathers input from public, internal DNR staff, external partners
- Asks for input on top 5 topics you believe should be DNR's highest priorities
 - Your input will be used to determine a category for each topic
- Requests additional information on water quality variances, if known

[https://dnr.wi.gov/
topic/surfacewater
/tsr.html](https://dnr.wi.gov/topic/surfacewater/tsr.html)

Category A: Work is currently in progress

Category B: Priorities for upcoming cycle

Category C: Should be addressed but are not priorities for upcoming cycle

Category D: Barriers to work currently exist

Category A: Work is currently in progress

- Antidegradation Policy & Implementation Revision
- Biological Criteria Development
- Chloride Variance Streamlining
- Cyanobacterial Toxin & Cell Density Guidance for Recreational Exposure
- Designated Uses Structure/Process Revision
- Human Health Criteria Revision/Development
- Mercury Variance Streamlining
- PFOS & PFOA Criteria Development

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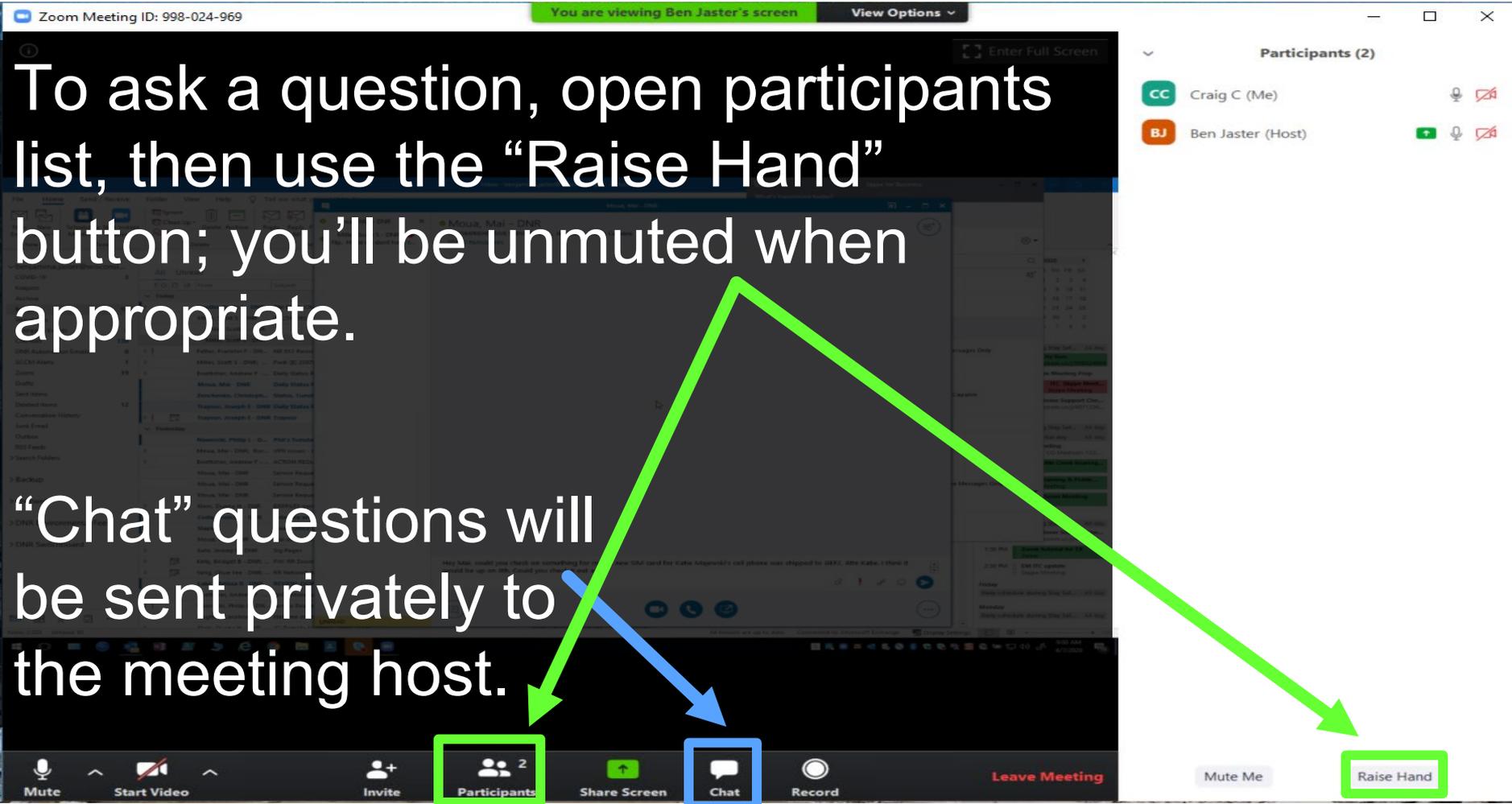
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- Topic Ranking Form:
<https://dnr.wi.gov/topic/surfacewater/tsr.html>
- Deadline to submit the form & comments:
December 4, 2020
- Reminder: finalized list of priority topics available in early 2021
- More public participation opportunities when new or revised standards go through rulemaking

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