



Water Innovation Network for
Sustainable Small Systems

A National Center for Innovative Small Drinking Water Systems

B1: Standardized Approach to Technology Approval – overcoming barriers

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Introduction

- *Brief Description:* Work with State Regulators to encourage information sharing to decrease barriers for the adoption of new technologies, including:
 - Survey of state regulators,
 - Workgroup of state regulators, and
 - Facilitate New England state regulators in information sharing.
- *Anticipated target utility characteristics:*
 - All utilities could potentially benefit. Especially true for smaller states and those with fewer staff resources to investigate new technologies.
- *Continuum of technology development:*



B1 -Project Objectives

1. Catalog state approaches to technology acceptance, including identifying barriers, procedures, and state legal requirements. (survey)
2. Convene workgroup of interested states to work toward overcoming barriers where possible and documenting a set of data needs and approaches that would facilitate acceptance.
3. Work with the New England states to apply the results from the workgroup to evaluate the potential for multi-state acceptance.

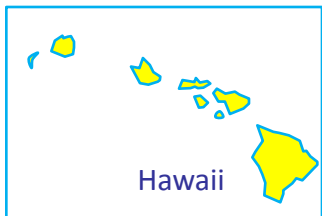
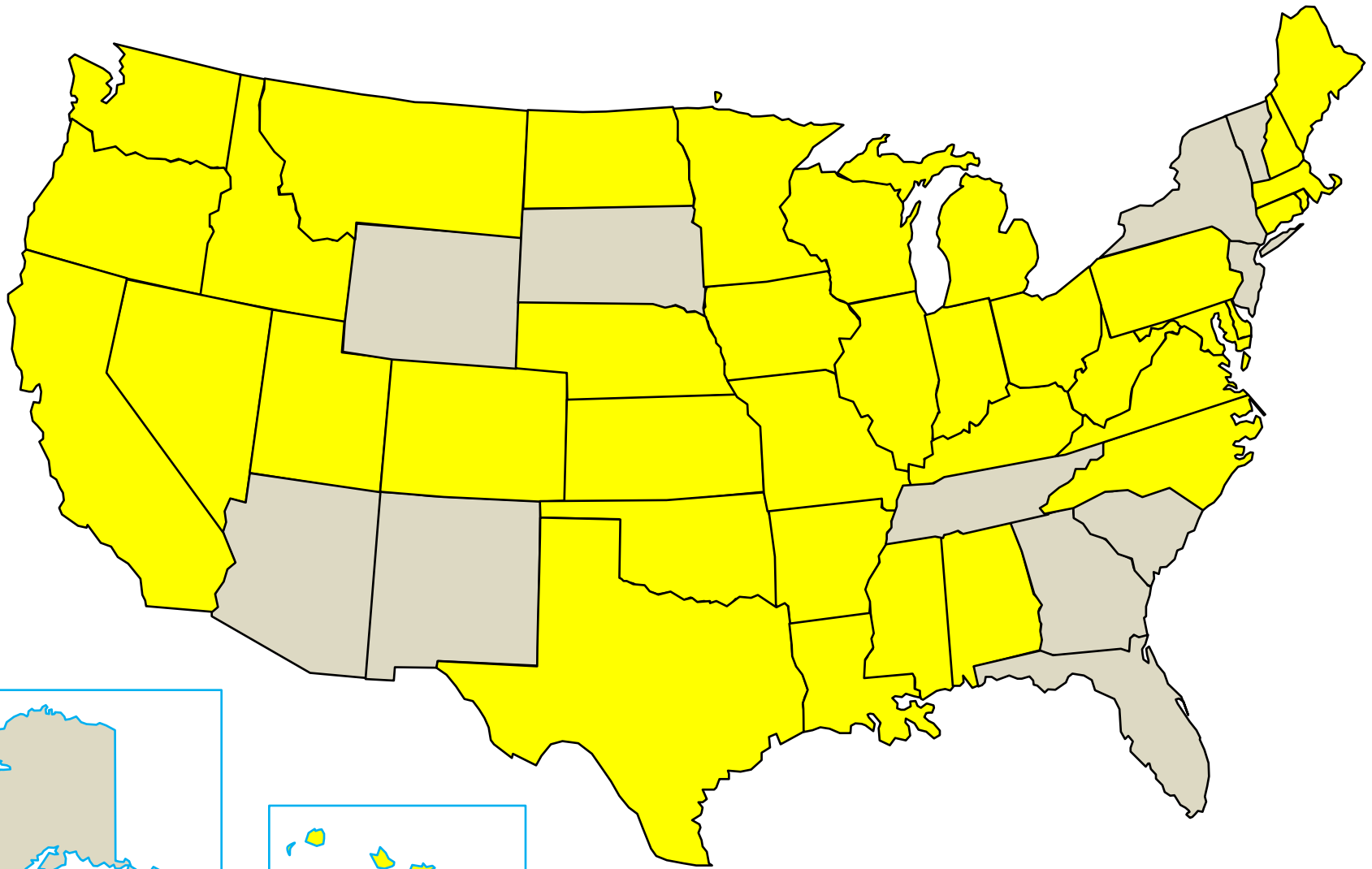


Survey

- WINSSS worked with ASDWA and DeRISK to developed and test a Survey Monkey questionnaire
 - 16 Questions
 - Covering: state program logistics & current status, recent experience with new technologies, barriers & data needs
- Timing
 - 6 states helped to beta test the survey; late May 2015.
 - ASDWA sent the survey to state administrators on June 22, 2015.
 - The state regulators were contacted and asked to complete the survey by July 9, 2015
- 40 states replied



Known Respondents

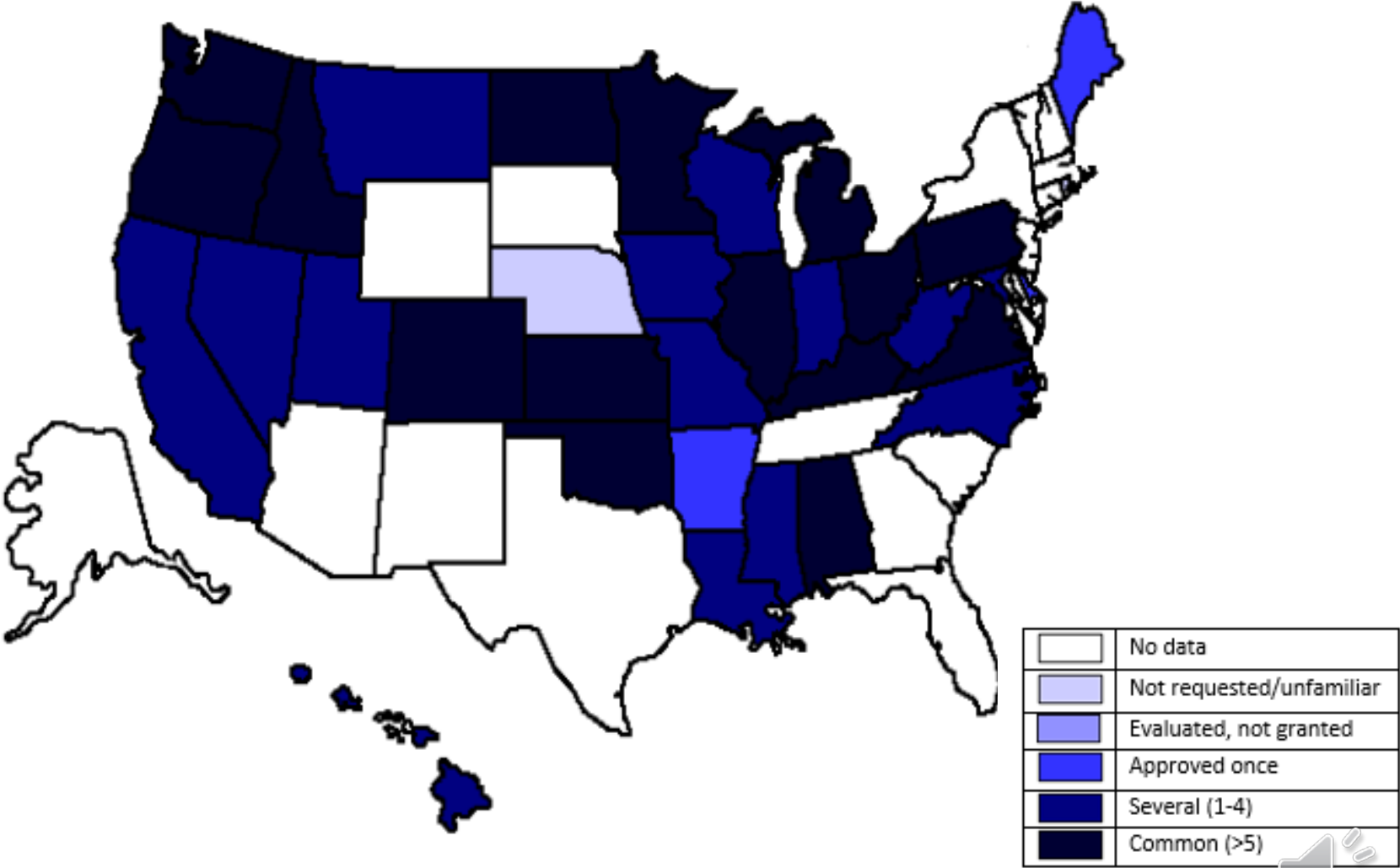


Survey Results Summary

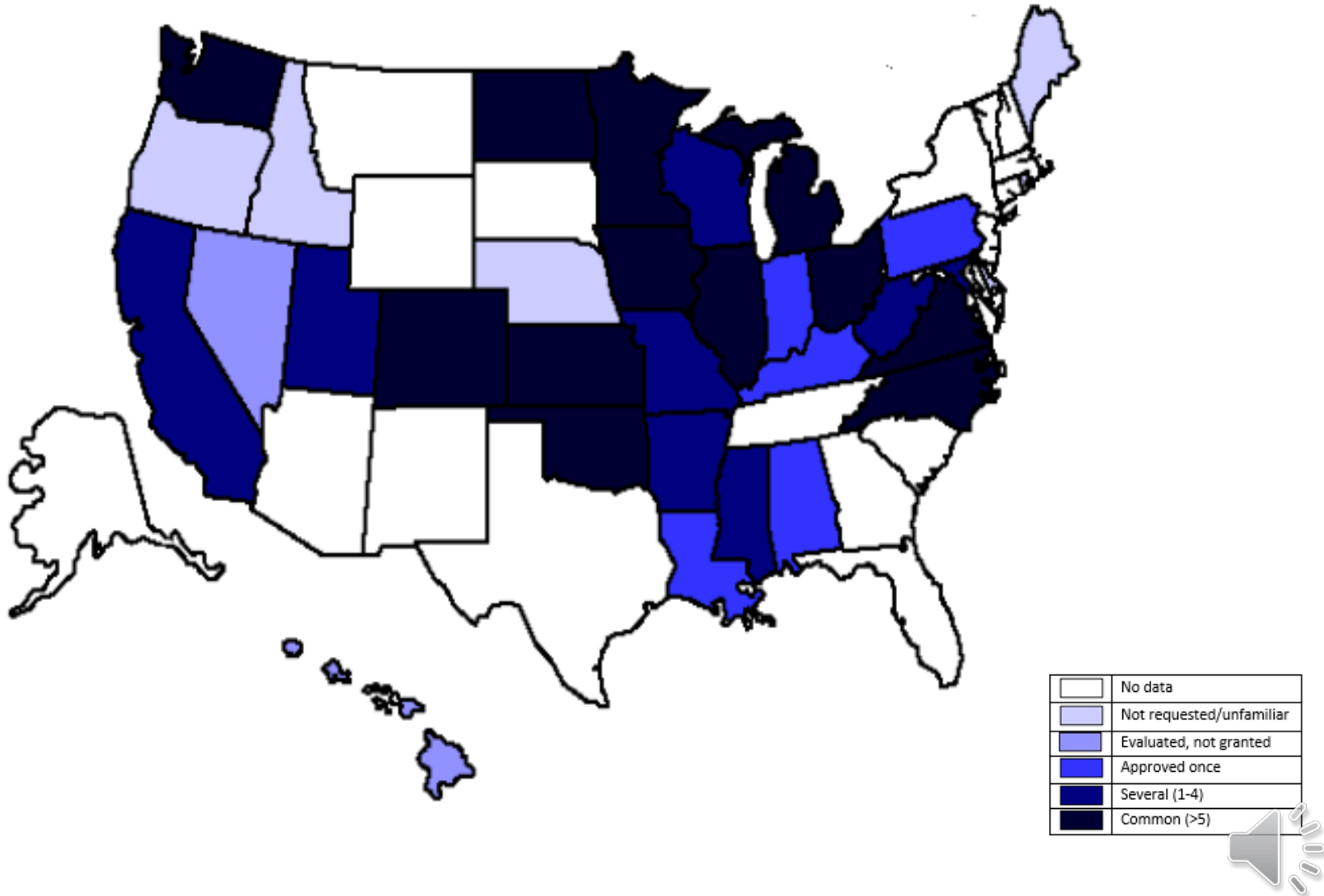
- New technologies not frequently considered for small systems.
- EPA Arsenic Demo Program and ETV program were valued by many ($\approx 40-50\%$), but not others.
- Most prevalent barriers and data needs:
 - Staff time and training
 - Adequate performance data to verify
 - Costs to pilot, collect data, and implement
 - Adequate data on residuals and waste generation
- UV is both widely used and most challenging
 - Guidance implemented sometimes, some don't use
 - No standard validation or operational approach
- Wide range in new technology acceptance.



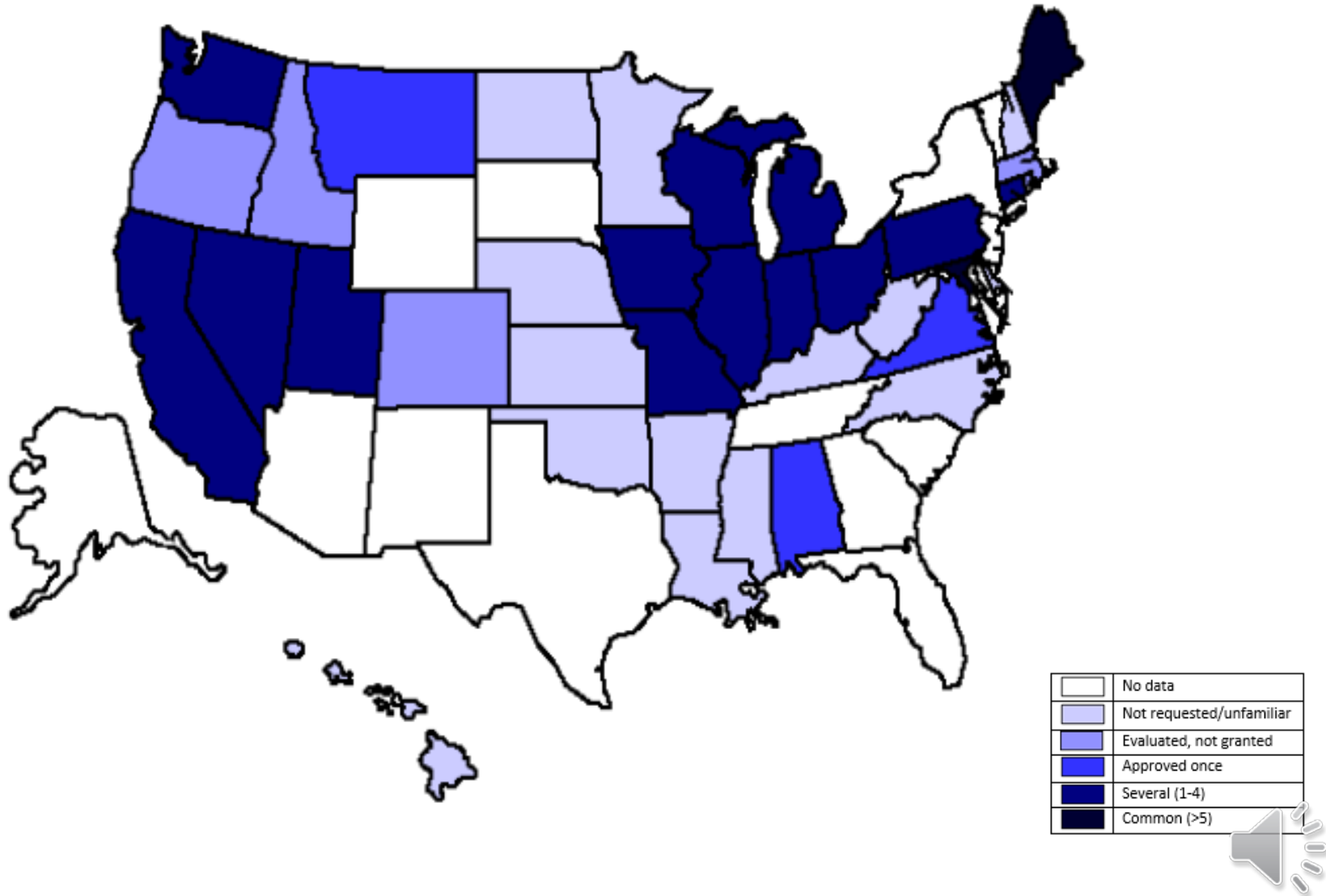
Low Pressure MF/UF Membranes



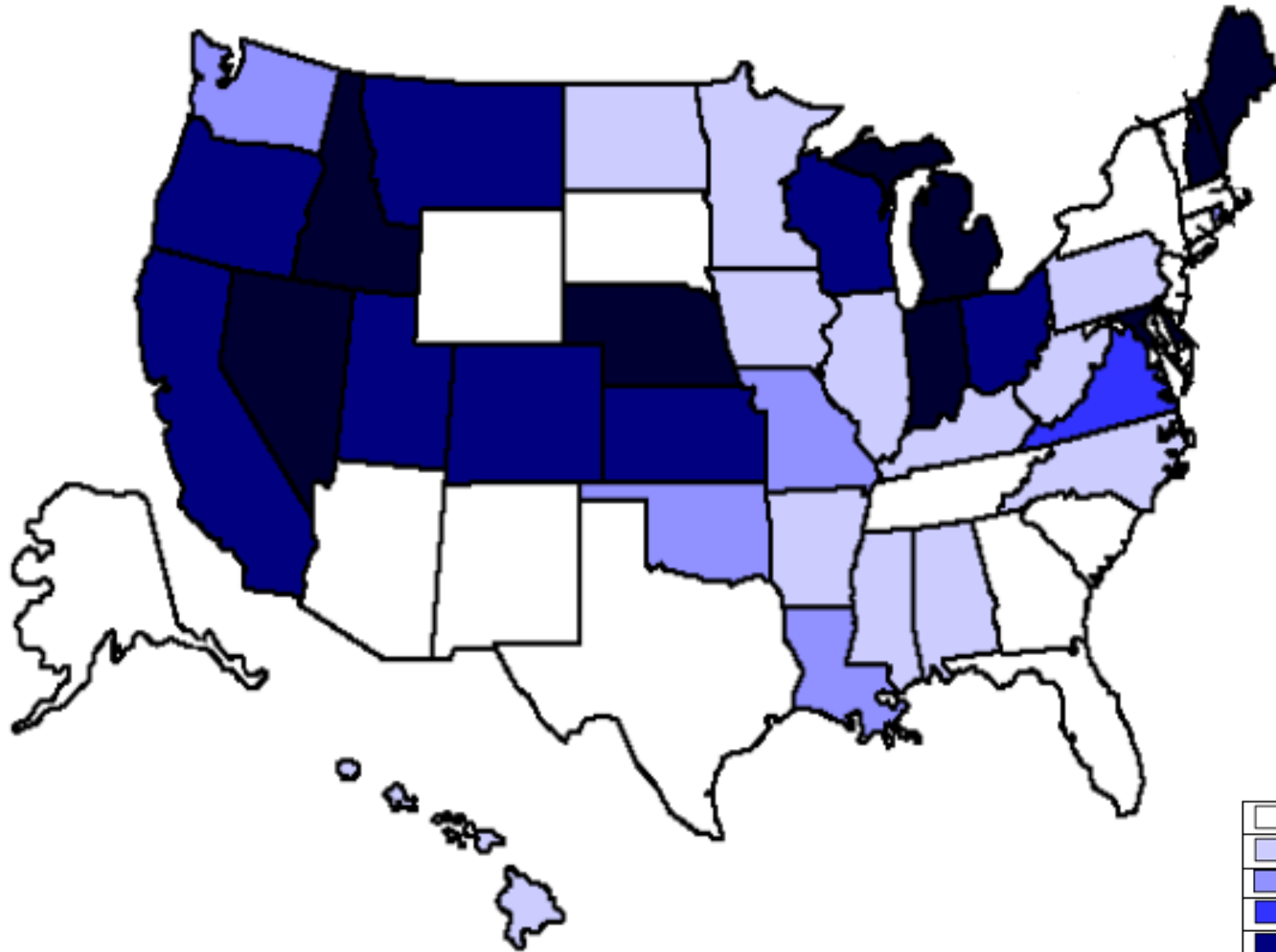
High Pressure NF/RO Membrane



UV-Medium Pressure



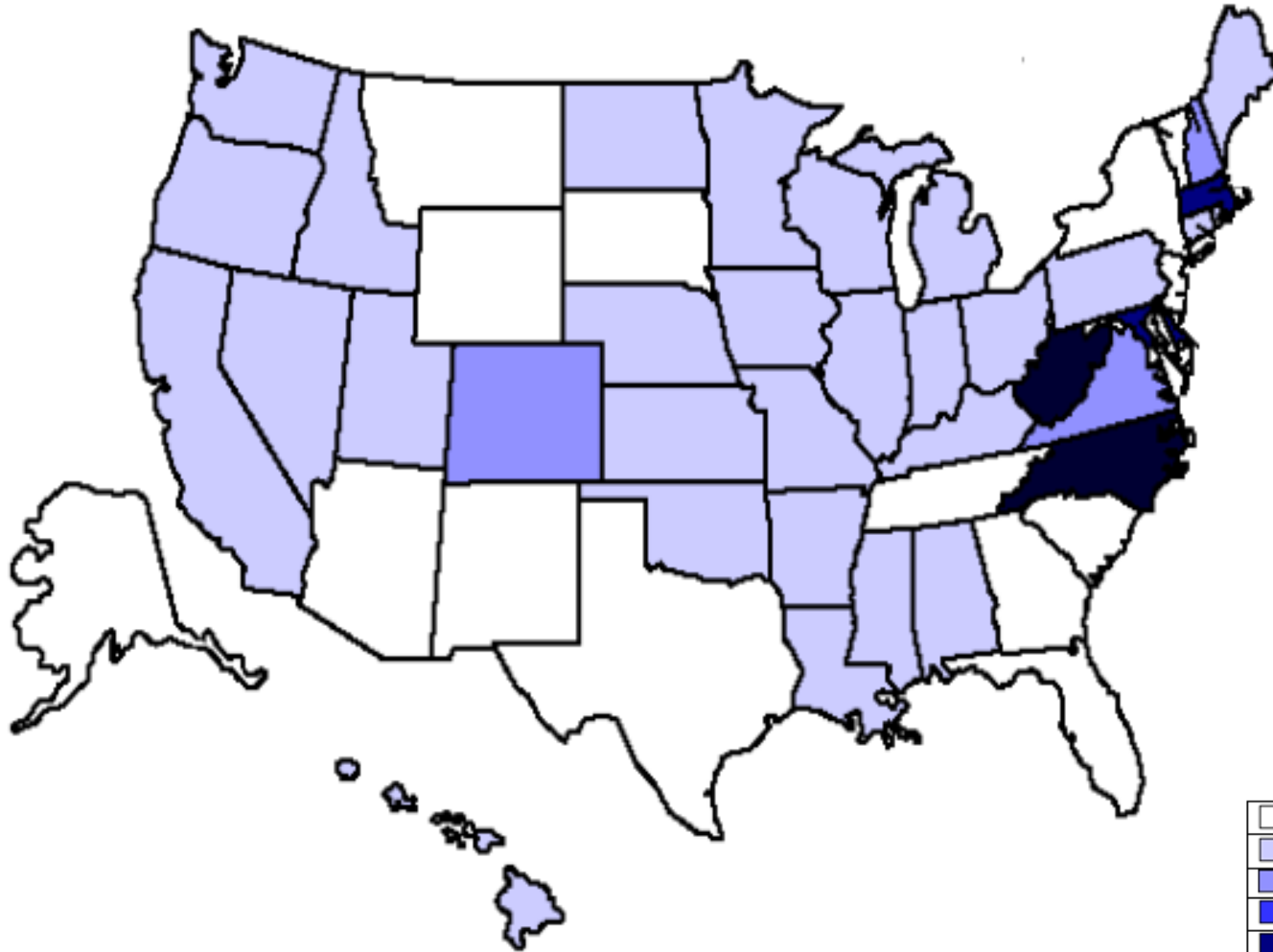
Point of Use



White	No data
Lightest blue	Not requested/unfamiliar
Light blue	Evaluated, not granted
Medium blue	Approved once
Dark blue	Several (1-4)
Darkest blue	Common (>5)



GAC for DBP Removal



White	No data
Light Blue	Not requested/unfamiliar
Medium Blue	Evaluated, not granted
Dark Blue	Approved once
Very Dark Blue	Several (1-4)
Black	Common (>5)



To What Degree would your state have an interest in participating in:

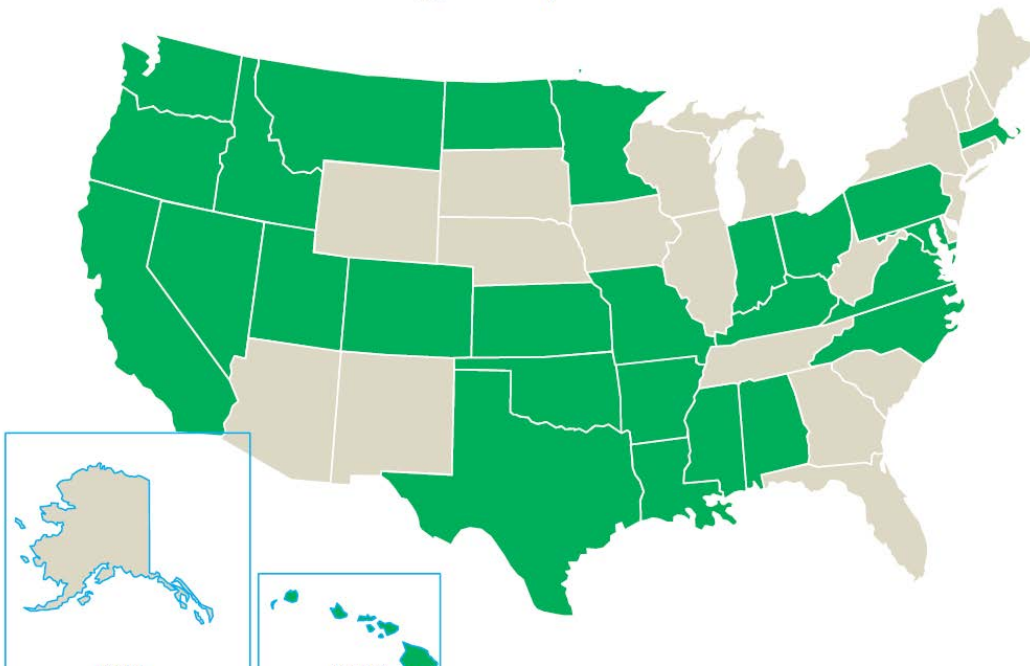
“Data Portal”

	(1) No Interest	(2)	(3) Some Interest	(4)	(5) Strong Interest
Information Sharing Network (34)	1		14	3	16
Develop Standards/ Common Data (34)	6		12	7	9
Partner for Approval (34)	8	3	10	4	9



State Workgroups

- WINSSS formed a workgroup of state regulatory staff (27 states) to discuss:
 - overcoming approval barriers and where possible, and
 - develop common approaches that would facilitate multi-state acceptance of new technologies.

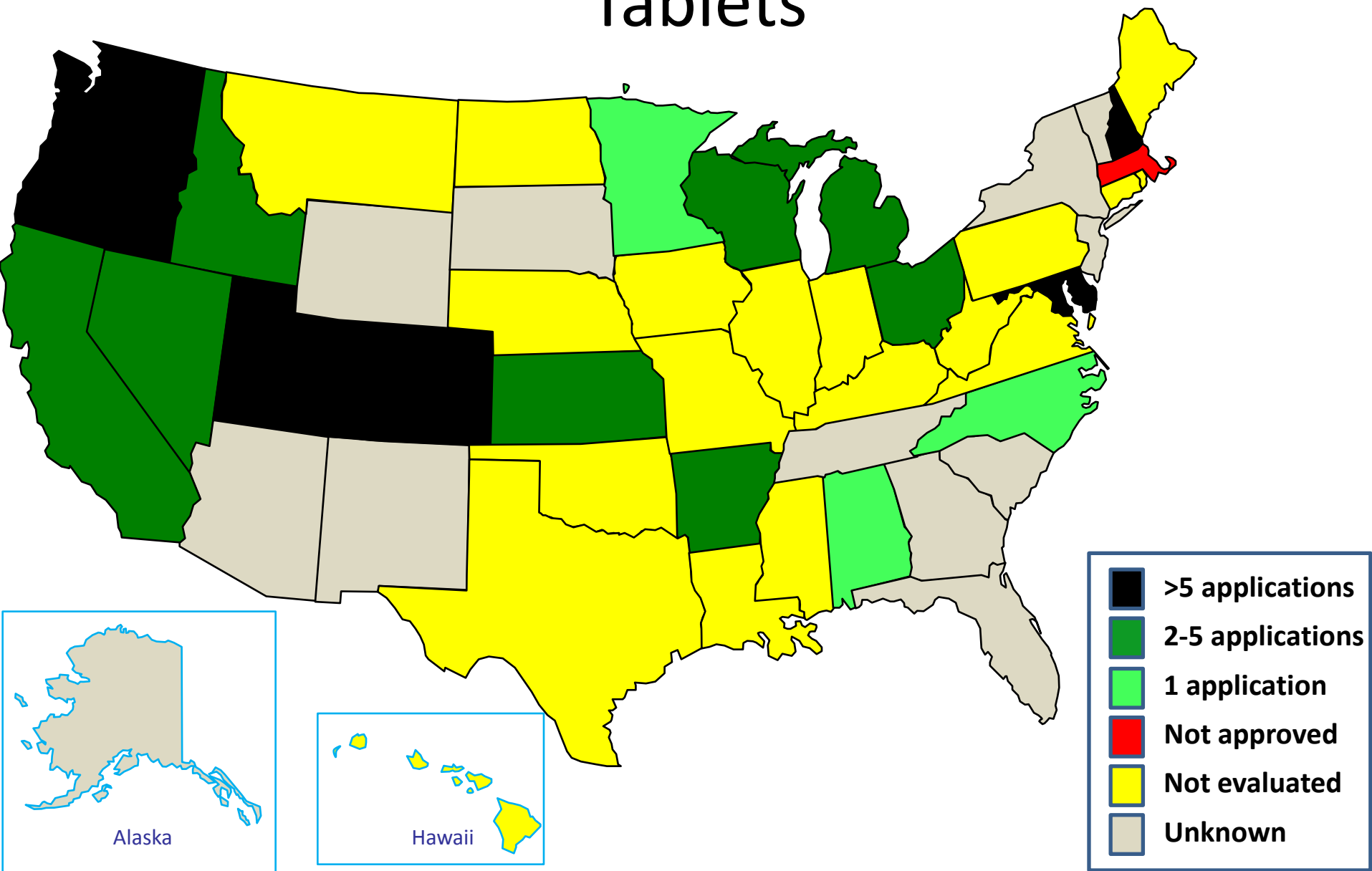


Workgroup Progress

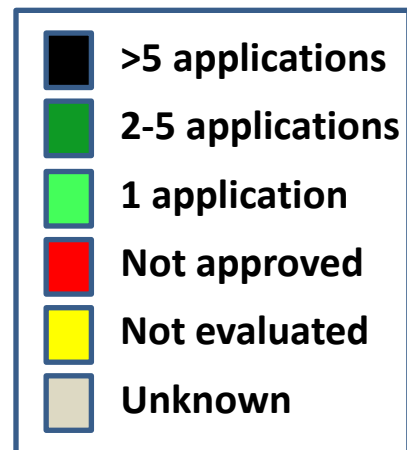
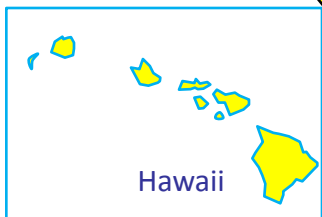
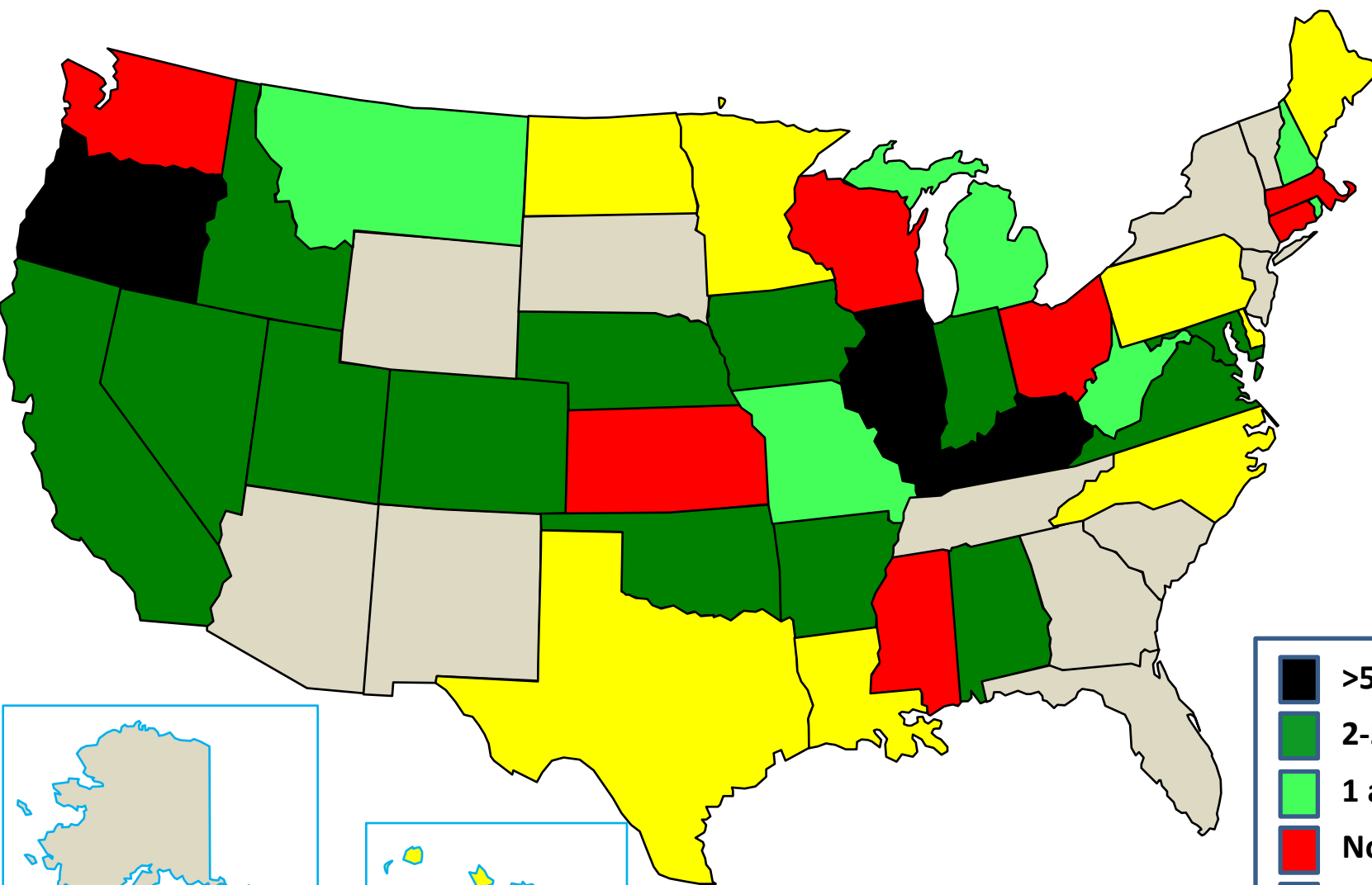
- Conference calls: 11 Dec 2015; 24 Feb 2016
- Interest in a Data Portal
 - Further discussions related to hosting and format
 - Data organization and framework is under development.
 - Collaboration with other organizations (AWWA, ASDWA, etc.)
 - How to populate? WINSSS, DeRISK, state regulatory agencies and others
 - Focus on experience with new technologies
 - Underlying principles, Operating characteristics, Costs, failure modes, Pilot data
- Discussion of shared drinking water tech. acceptance format
 - Outgrowth of the workgroup and likely organized separate from WINSSS center
 - Examining voluntary models like the Interstate Technology and Regulatory Council



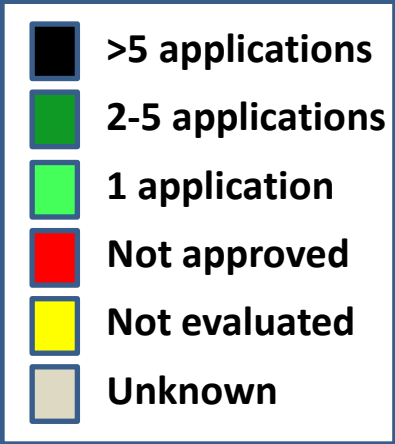
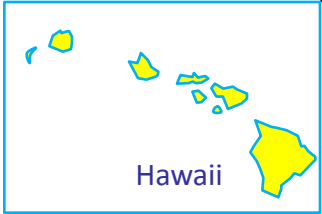
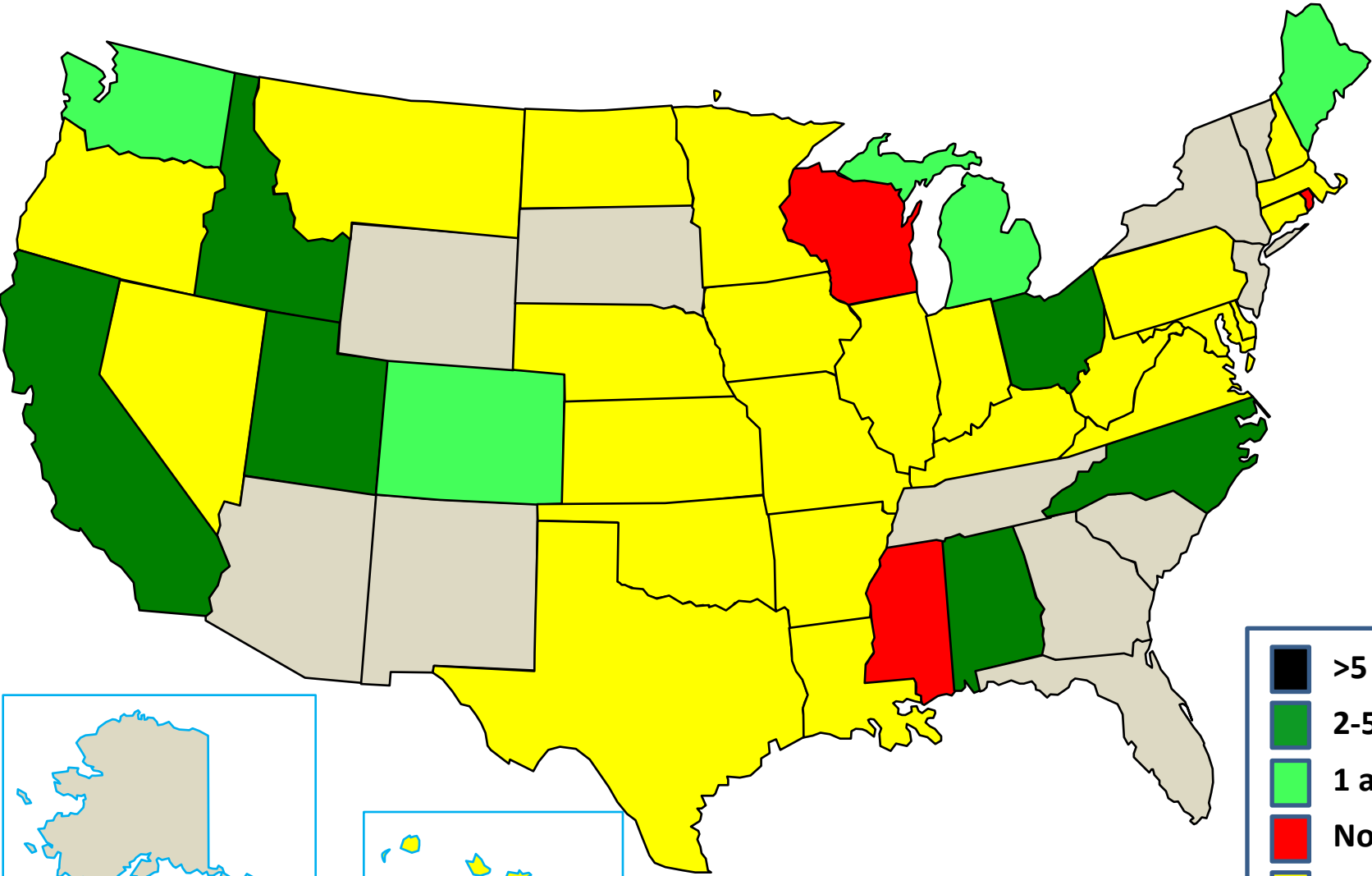
Calcium Hypochlorite Briquettes or Tablets



MIOX



MIEX



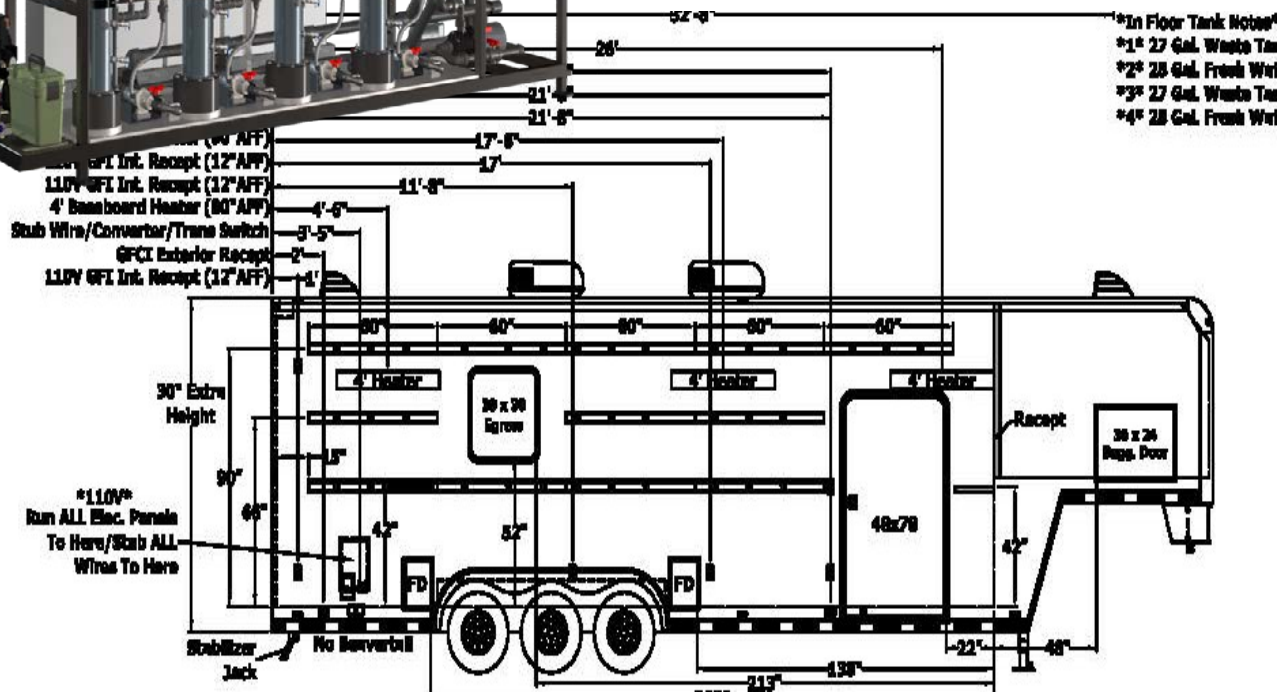
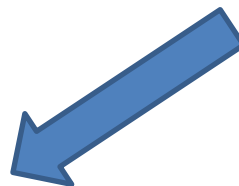
Appeal to Region 1 states

- WINSSS proposed to form a New England state workgroup
- To date there have been some initial discussions with MA staff who proposed that we start by discussing some technologies that have already been tested and approved by several New England states.
- We would review the process used by each state and how we could have benefited from sharing data and common protocols.
- These discussions would form the basis for establishing a New England wide approach to approving future technologies.
- Some of the technologies the group might consider evaluating include:
 - calcium hypochlorite briquettes (small innovation)
 - MIOX (larger innovation)
 - MIEX (major new process).
- The workgroup will ultimately determine which technologies would be reviewed.

Mobile Pilot Unit

Parallel trains
Up to 10 gpm

Delivered: 10/2015
Operational: ~7/2016



Inside of a smaller trailer used by a CA engineering firm



Outputs and Outreach

Completed:

“State Survey on Acceptance of New Technology“, EPA Small Systems Workshop, Cincinnati, August, 2015.

“Developing a Better Understanding of Drinking Water Technology Approval“, ASDWA Annual Conference, October, 2015.

“*State Survey to Improve Our Understanding of DW Treatment Technology Approval*“, National Centers for Innovation in Small Drinking Water Systems (DeRisk, WINSSS, RE’SEAU), Dec., 2015.

“The WINSSS experience in understanding barriers to acceptance of new technologies“, New England Water Works Association, March, 2016.

Scheduled:

“Finding common ground for standardized approaches for state regulatory approval of new technologies ”, AWWA ACE, Chicago, June 2016.

Anticipated:

White paper for WINSSS website, Summer 2016.

US EPA Small Systems Webinar – Sept. 2016

Manuscript for submission to a technical Journal, late 2016.