

# ThinkWater Evaluation Report

August 2018

Prepared by Amulya Rao, Environmental Resources Center, University of Wisconsin-Extension  
and University of Wisconsin-Madison

## CONTENTS

EXECUTIVE SUMMARY .....	2
INTRODUCTION.....	3
EVALUATION PURPOSE.....	3
EVALUATION QUESTIONS .....	3
EVALUATION METHODS.....	4
EVALUATION RESULTS .....	5
EVALUATION QUESTION 1: How did systems thinking influence ThinkWater participants’ program development and delivery?.....	5
EVALUATION QUESTION 2: What programmatic efforts contributed to or hindered ThinkWater’s impact?.....	9
EVALUATION QUESTION 3: What lessons from ThinkWater’s Wisconsin effort can be transferred to or adapted for other people and places?.....	13
EVALUATION QUESTION 4: How did systems thinking influence ThinkWater participants’ audiences learning?.....	19
EVALUATION QUESTION 5: How did ThinkWater influence participants’ metacognition or systems thinking capacity and skills?.....	20
EVALUATIVE CONCLUSIONS.....	21
RECOMMENDATIONS .....	23
APPENDIX.....	25

## EXECUTIVE SUMMARY

ThinkWater is a national USDA-NIFA funded initiative<sup>1</sup> focused on the application of systems thinking to water research, education and extension. One of ThinkWater's five objectives is to provide innovation space and focused demonstration in one state for learning what 'works'. The goal of this evaluation was to document the experiences and impacts of ThinkWater's water outreach and education demonstration in Wisconsin, and to inform future ThinkWater programming. The evaluation was developed in a participatory manner involving an evaluator and members of the ThinkWater team, and used a mixed methods approach.



In 2017, ThinkWater School trained 19 water professionals in systems thinking and its applications to water. Working in teams, participants applied the principles of systems thinking to design and develop community education and engagement programs. Evaluation results indicate that participants built their understanding of systems thinking and their capacity to apply it to their work. Additionally, they also strengthened their skills in developing effective and efficient programs. Participants attributed their success in learning systems thinking to interactive teaching and learning strategies that were implemented as part of ThinkWater School and reported high levels of motivation to continue applying systems thinking to their work. Participants' were challenged by the complicated nature of systems thinking and their lack of time to dedicate to ThinkWater School.



Wisconsin Water Thinkers Network is a network of around 200 people with an interest in water education and outreach. The network engages people and shares resources related to systems thinking and water. Evaluation results indicate that the Network has created a space for members to learn and apply systems thinking. Although the Network's leadership team identified value in their membership, they lacked clarity around their roles and responsibilities and reported the need to develop specific strategies that would help the Network achieve its mission.

Results of this evaluation indicate that ThinkWater has made considerable progress toward achieving its goals of 1) developing a Committed Minority<sup>2</sup> of water professionals in Wisconsin who are dedicated to applying systems thinking to their work and 2) developing an evidence-based case for the value and impact of applying systems thinking to water education, engagement and outreach. Future offerings of ThinkWater School could be improved by increasing participant diversity, clarifying expectations of participants, and building capacity around teaching systems thinking and evaluation. It is also recommended that a needs assessment be conducted with members of Wisconsin Water Thinkers Network, and that the Network's leadership team receive assistance with clarifying their roles and responsibilities.

---

<sup>1</sup> This project and resources are based upon work supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under Agreement Nos. 2011-51130-31148 & 2015-68007-23213

<sup>2</sup> Rensselaer Polytechnic Institute. "Minority rules: Scientists discover tipping point for the spread of ideas." ScienceDaily. ScienceDaily, 26 July 2011.<[www.sciencedaily.com/releases/2011/07/110725190044.htm](http://www.sciencedaily.com/releases/2011/07/110725190044.htm)>.

## INTRODUCTION

ThinkWater, a USDA NIFA funded initiative, advances the use of systems thinking to address complex water issues by integrating systems thinking into water education, research and outreach.

In 2017, ThinkWater was piloted in the state of Wisconsin and was implemented via two primary initiatives: Wisconsin ThinkWater School and Wisconsin Water Thinkers Network. Wisconsin ThinkWater School offered training in systems thinking to 19 water and natural resource professionals from various organizations, agencies, and municipalities in Wisconsin. Participants worked in teams and used systems thinking to design and develop community education and engagement programs. The Wisconsin Water Thinkers Network is a network of around 200 people who are interested in water education and outreach. Online communication, in-person gatherings, and a community of practice are strategies that were used to engage the Network and share resources related to systems thinking and water.

Both of these initiatives were implemented to achieve the goals of 1) developing a Committed Minority of water professionals in Wisconsin who are dedicated to applying systems thinking to their work and 2) developing an evidence-based case for the value and impact of applying systems thinking to water education, engagement and outreach.

To conduct an evaluation of their pilot efforts in Wisconsin, ThinkWater contracted the services of the Evaluation Unit at the University of Wisconsin's Environmental Resources Center. This report describes this evaluation, presents its results, and offers recommendations for the ThinkWater team.

In this report, we use the terms systems thinking, metacognition and DSRP interchangeably.

## EVALUATION PURPOSE

This evaluation was conducted in order to document the experiences and demonstrate the impacts of ThinkWater's pilot initiatives in Wisconsin. Results from this evaluation are intended to be used to improve ThinkWater's future programs or initiatives.

## EVALUATION QUESTIONS

This evaluation was designed to answer five big-picture questions, called evaluation questions. These questions were developed in a participatory manner, during the evaluation planning phase, by the evaluator and members of the ThinkWater team. This report is organized by the following evaluation questions:

1. How did systems thinking influence ThinkWater participants' program development and delivery?
2. What programmatic efforts contributed to or hindered ThinkWater's impact?
3. What lessons from ThinkWater's Wisconsin effort can be transferred to or adapted for other people and places?

4. How did systems thinking influence ThinkWater participants' audiences learning?
5. How did ThinkWater influence participants' metacognition or systems thinking capacity and skills?

## EVALUATION METHODS

The evaluation questions listed above were used to set the parameters of this evaluation. The evaluator and members of the ThinkWater team collectively determined the evidence that needed to be collected in order to answer the evaluation questions. Decisions around evaluation methods and stakeholders to involve in the evaluation were made collaboratively. All evaluation instruments\* were developed using a participatory approach involving the evaluator and members of the ThinkWater team.

**\*Note:** Refer to the appendix for all evaluation instruments.

A mixed methods approach, involving both quantitative and qualitative data, was used in this evaluation. The evaluation methods used are summarized here:

- Quantitative data:
  - An online survey was administered to ThinkWater School participants (19 recipients, 16 responses, 84% response rate)
  - An online survey was administered to members of the Wisconsin Water Thinkers Network (304 recipients, 64 responses, 21% response rate)
- Qualitative data:
  - Phone interviews were conducted with all ThinkWater School participants (19 interviews)
  - Jeremy Solin, ThinkWater's Wisconsin Coordinator and National Program Manager, was interviewed in-person
  - All six ThinkWater School teams participated in modified focus groups known as fishbowls. This technique is used to manage group discussions where small groups (ThinkWater School teams, in this case) discuss questions while the rest of the participants (other ThinkWater School participants) observe (Better Evaluation, 2015)<sup>3</sup>.
  - A focus group was conducted with three members of the Wisconsin Water Thinkers Network leadership team. Subjects were chosen using purposive sampling.

---

<sup>3</sup> Better Evaluation. (2015). Fishbowl Technique. Retrieved May 19, 2018, from <https://www.betterevaluation.org/en/evaluation-options/fishbowltechnique>

## EVALUATION RESULTS

**EVALUATION QUESTION 1:** How did systems thinking influence ThinkWater participants' program development and delivery?

### Impacts of systems thinking on ThinkWater School participants



Almost all respondents of the ThinkWater School survey said that their participation in ThinkWater School had somewhat or to a great extent built their understanding of systems thinking, built their capacity to apply systems thinking to their work, provided them with a shared language of systems thinking, strengthened their program development skills, and developed their ability to be a leader in systems thinking-based water programming (Table 1).

Table 1: Extent to which ThinkWater School's goals were achieved (n=16)

	Not at all (1)	Very little (2)	Somewhat (3)	To a great extent (4)	Don't know (5)	Mean
Build your understanding of systems thinking			4 (25%)	12 (75%)		3.8
Build your capacity to apply systems thinking to your work			7 (44%)	9 (56%)		3.6
Provide you with a shared language of systems thinking			3 (19%)	13 (81%)		3.8
Strengthen your program development skills (n=15)			6 (40%)	9 (60%)		3.6
Develop your ability to be a leader in systems thinking-based water programming		1 (6%)	8 (50%)	7 (44%)		3.4

**Note:** Refer to appendix for additional ThinkWater School goals (Table b).



During interviews, ThinkWater School participants elaborated on the various ways in which systems thinking influenced their programs. Many participants (n=7) said that systems thinking helped them examine, acknowledge or appreciate different perspectives, with one participant saying, "I think that it (ThinkWater

School) helped us make sure that we make a good program. Thinking about different perspectives that might influence a program, considering other people within our city that may not necessarily be directly involved, but might have input in the program we implement. Considering those perspectives, considering how things are linked to one another, I think those were helpful to understand.”

**SCHOOL** Participants also *thought* that ThinkWater School helped them develop more effective or efficient programs (n=5). One participant described it as, “I think it’s (ThinkWater School) been really crucial to make sure that when we have a program, that we figure out what we want people to learn and then have some way to actually get people to realize what we’re trying to teach them. And then having a system of evaluation so that we can continue to improve our efforts at the county and promote our services and encourage people to, I don’t know, to recycle better and protect the water quality...So it’s just one of those things, doing active education rather than the passive.”

**SCHOOL** With respect to evaluation, participants (n=8) said that ThinkWater School had led them to either start evaluating their programs, change their approach to evaluation, or understand the importance of evaluation. When asked whether systems thinking had changed how they evaluate their programs, one participant said “Yeah, I think in general it does (did). I think that’s one of those areas, measuring in a more concrete sense, I think we could use some more work in that. Not just in doing evaluations but also in just being really cognizant of how we’re going to measure, or how we’re going to check for understanding, in any given piece of the program. I think that measuring piece, I’d wanna be more systematic about it than we have been.”

**SCHOOL** Participants also highlighted the impact that mapping had on their program design, saying that it helped the teams develop a common language and that the maps served as an efficient communication or outreach tool. In discussing the utility of maps as communication tools, one participant said, “What I’ve discovered through ThinkWater School and systems thinking exercises is that I didn’t have the language to describe my thoughts. But I very much was aware of the parts and the wholes and the systems, and the relationships and the distinctions of things. Where I was weak was perspectives...understanding that that was the weakest part of how I think about and understand what I think, has been really great. Being able to map it out so that it’s not just in my head...I can put it out on a visual representation so that I can share that much more effectively with others”.

Other ways in which systems thinking impacted ThinkWater School participants’ programs are summarized here with sample quotes:

- **Participants are applying systems thinking to other projects (n=5):** “I think it’s (systems thinking) caused me to look at other issues, certainly, and use systems thinking principles to understand and work through them. A lot of my programming is in soil conservation, soil health, crop production, agricultural programming...I can’t help but use the systems thinking approach to continually move through this water quality

(issue), even if I'm working on a crop production issue. Using the systems thinking approach, tying it to everything else is, I think it's just gonna be a natural outflow of this program and what I learned here through ThinkWater.”

- **Systems thinking put their programs into perspective (n=4):** “I had an idea of what Think Water was and what systems thinking was. I kind of assumed we'd be learning tools and strategies to tackling water issues and educating about water. I don't know that I understood how much of a perspective shift it would really be. I thought that it would be tools and best practices and I knew it was going to be some hard work. I think I didn't understand how much it was going to shift the way I looked at the way we were teaching.”
- **Participants developed a new, common language (n=4):** “Just in our general discussions between departments, now that we've all participated (in ThinkWater School), we have some terminology and a shared understanding of how to address the next issue that's going to come up.”
- **Application of systems thinking led to increased transparency with their program participants (n=3):** “I think we used what we learned and applied that to the different aspects that we want people to get out of our programs. So instead of just doing something, making people do something, I think...the ThinkWater School helped us...think more holistically about what we're doing and be more transparent to our program participants, versus just do something to meet primary requirements.”
- **Systems thinking sparked new ideas or approaches (n=2):** “I think ours was maybe a bit unique compared to some of the other projects. We didn't have a current program in place. So I can't really say (that) we had one program and then we modified it. We were building something new, and I know that without the ThinkWater School tools and without DSRP, I think we would have approached it very differently. I can't say what it would have looked like, but I just think it would have been a different concept and the way that our event would have turned out being designed would have been different.”
- **Systems thinking improved participants' ability to communicate about their program to others (n=2):** “I think my biggest takeaway (of participation in ThinkWater School) is certainly the interconnectedness of everything that I'm doing, and maybe having the tools to make those interconnections more clearly understood for the people that I'm working with.”
- **Application of systems thinking incorporated complexity into their programs (n=1):** “Our program is still in the development phase, but I think that going to ThinkWater School has made it more complex in a good way. We think (thought) about the structure more than we would have if we had not (attended ThinkWater School). Thinking about different aspects and making...a better program versus just doing something to do it.”

### Challenges faced by ThinkWater School participants in applying systems thinking

 During their interviews, ThinkWater School participants discussed the challenges that they faced in applying systems thinking to their programs as well as the challenges that they anticipated facing as they continue to apply systems thinking to their work. Some participants (n=3) attributed the challenges that they

faced to the complicated nature of systems thinking itself. They mentioned that the concepts of systems thinking were complicated and this in itself could derail their efforts. Participants who had discussed systems thinking with others or were planning on it (n=5) mentioned that the systems thinking “jargon” was “messy”, “complicated”, “complex” or “confusing”. Others (n=3) remarked on how it was not easy to change existing and established systems of outreach and education based on new theories like systems thinking, especially when there are other education or outreach approaches that also work well. Another challenge mentioned was that of scale (n=2); for example, one participant noted the difficulty of scaling up their current program to the rest of Wisconsin given that others do not have training around systems thinking. Participants (n=2) also realize that it is going to be challenging to convince other people to invest time and energy into learning and applying something new like systems thinking. Finally, finding time to devote to learning and applying systems thinking was a commonly mentioned and anticipated challenge.

### Impacts of systems thinking on Wisconsin Water Thinkers Network members



A large majority of respondents to the survey sent out to members of the Wisconsin Water Thinkers Networks either agreed or strongly agreed that the Network had created a space for them to learn about (86%) or apply (68%) systems thinking.

Table 2: Extent to which respondents agree or disagree with these statements (n=58):

	<b>Strongly disagree (1)</b>	<b>Disagree (2)</b>	<b>Neither disagree nor agree (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>	<b>Don't know (6)</b>	<b>Mean*</b>
The Network has created a space for you to learn about systems thinking		1 (2%)	6 (10%)	28 (48%)	22 (38%)	1 (2%)	4.2
The Network has created a space for you to apply systems thinking		2 (3%)	13 (23%)	20 (35%)	19 (33%)	3 (5%)	4.0

*\*To calculate means, “Don’t know” responses were excluded*

*Note: Refer to appendix for a complete list of statements (Table i).*



A majority of the same survey respondents (55%) said that their involvement with the Network had either *not* improved their ability to deliver effective and strategic water programming or that they did not know whether it did. Whereas, a majority of them (63%) said that learning about systems thinking had changed how they thought about or approached water issues.

Table 3: Impact of involvement with Wisconsin Water Thinkers Network

	Yes	No	Don't know
Has your involvement with the Wisconsin Water Thinkers Network improved your ability to deliver effective and strategic water programming? (n=58)	26 (45%)	14 (24%)	18 (31%)
Has learning about systems thinking changed how you think about or approach water issues? (n=57)	36 (63%)	10 (18%)	11 (19%)



Some of those who said that their involvement with the Network had improved their ability to deliver effective and strategic water programming, attributed it to learning an instructional design model called MAC (n=4), attending webinars (n=4), and networking with other Network members (n=4). Some of those who said that learning about systems thinking changed how they think about or approach water issues elaborated by saying that systems thinking led to them being more strategic and systematic in their approach to programming (n=5), that it helped them incorporate multiple perspectives when designing programs (n=3), that it had improved their communication skills (n=2), and that their thinking around water issues had evolved (n=2).

**EVALUATION QUESTION 2:** What programmatic efforts contributed to or hindered ThinkWater’s impact?

**Programmatic efforts that contributed to ThinkWater School’s impact**



All or almost all respondents of the ThinkWater School survey said that working in teams, the cohort structure, applying systems thinking to a project, in-person meetings, presenting their projects, and meeting with Jeremy were either somewhat or very effective in promoting their learning of systems thinking.

Table 4: Extent to which the following activities and aspects of ThinkWater School were effective in promoting participants' learning of systems thinking? (n=16)

	<b>Very <u>ineffective</u> (1)</b>	<b>Somewhat <u>ineffective</u> (2)</b>	<b>Neither <u>ineffective</u> nor effective (3)</b>	<b>Somewhat effective (4)</b>	<b>Very effective (5)</b>	<b><i>Don't know</i> (6)</b>	<b>Mean*</b>
a) <i>Teaching Thinking 101</i> online training		2 (13%)	3 (19%)	8 (50%)	3 (19%)		3.8
b) Working in small teams				2 (13%)	14 (88%)		4.9
c) Learning and sharing with a cohort of other water professionals from across the state				6 (38%)	10 (62%)		4.6
d) Application of systems thinking to a project				3 (19%)	13 (81%)		4.8
e) In-person cohort meetings (eg. at Treehaven)				1 (6%)	15 (94%)		4.9
f) Presenting your project and getting feedback at in-person cohort meetings			1 (6%)	2 (13%)	13 (81%)		4.8
g) Mapping		1 (6%)	3 (19%)	3 (19%)	9 (56%)		4.3
h) Meetings with Jeremy (online/video and in-person)			1 (6%)	5 (31%)	10 (63%)		4.6

*\*To calculate means, "Don't know" responses were excluded*

*Note: Refer to appendix for a rating of ThinkWater resources (Table a).*



Similar themes evolved when ThinkWater School participants were asked during interviews about programmatic efforts that contributed to their learning of systems thinking. A majority of participants (n=12) said that they appreciated ThinkWater's cohort design and being able to learn from other teams. Specifically, participants said that seeing how other teams applied systems thinking made abstract concepts more meaningful, that they received valuable feedback from the other teams that improved their programs, that other teams motivated them, and that the cohort made their overall ThinkWater School experience more enjoyable. One participant said, "One of the absolute best parts about being involved with ThinkWater School was the cohort that pulled together around it. The different teams that were involved in this are just really inspiring. Watching them work their way through the process of trying to lay out and strategize how to use systems thinking in their (work) was the most worthwhile part of the whole experience." Additionally, during the fishbowl focus groups, three teams said that their learning was aided by the cohort model.



Some participants (n=4) also emphasized the role that in-person trainings (for example, at Treehaven) played in their learning since it cut out distractions, were productive, and allowed for networking and relationship-building. Participants also identified working in small teams (n=3) as an effective strategy. During the fishbowl focus groups too, participants said that working in small teams enhanced their overall experience. One participant said that ThinkWater School ended up being a team bonding experience. Another participant who identified as a systems thinking skeptic said that working in a team helped build confidence in the utility of systems thinking. Participants (n=3) also appreciated working with team members who brought in different perspectives and challenged existing assumptions. Some participants also identified challenges of working in small teams. It was challenging for some teams (n=3) to find the time to meet and work on their ThinkWater projects together. Finally, one team said that they faced some conflict since members had different ideas on how to approach their project.

Other factors that contributed to participants' learning were:

- Receiving feedback from experts (Jeremy Solin and Jennifer Kushner) (n=3): "When we had work time with our teams, people would come around...Jennifer or Jeremy. They would look at the maps we were building and ask us questions. That's where I think I started to learn more about the relationship form and how tricky that one could be. So as far as learning DSRP, for me, it was actually having to get in there and work with it, and then have people help us talk it through in the context of what we're working on."
- Modeling DSRP (n=2): "Jeremy and then later Jen when she joined us really modeled educating around DSRP. They were teaching us how to do systems thinking, but they were also conveying that information to us and educating us through the model of DSRP. So, I think the way they modeled educating with systems thinking, at times, was even more powerful than what they were educating with us."
- Systems thinking book (n=1): "Actually, I think, thinking back, some of the things that were kind of a wow factor for me were the book. Not all of it, but some of it. Reading the book really benefited me to start the process. If you have two people with different

perspectives, how do you work through that? The book, and some of the online training, was good at visualizing that, which was helpful for me”

Jeremy Solin, in his interview, also attributed ThinkWater School’s impact to similar programmatic efforts. He identified mapping, his one-on-one consultation sessions with teams, in-person ThinkWater School sessions, and the cohort structure as effective strategies.

### **Programmatic efforts that hindered ThinkWater School’s impact**



ThinkWater School interviewees also discussed a few factors that hindered their learning. The most commonly mentioned challenge was time (n=10). Participants said that they did not have a full understanding of the time commitment required for ThinkWater School and that carving out time for ThinkWater was challenging. The other things that participants struggled with were related to the small team and cohort structure. One participant said that their team did not have the time to meet or interact outside of ThinkWater School sessions. Another participant said that their group struggled because members had different perspectives and agendas which made it hard for them to get on the same page and develop a shared understanding. Finally, one participant said that hearing about other teams’ projects was ineffective since their work was so different that it was hard to relate to their ideas.

### **Challenges faced by Wisconsin Water Thinkers Network**



During the focus group, members of the Network’s leadership team said that they recognized that the Network had made some progress toward achieving impact but that there was room for improvement. One participant said, “I think we've made some progress. I don't think we are at all close to achieving it (Network’s goal). I think that it's obviously a very huge, ambitious goal. But I think that there's a really good thing going on here...And I know we're all stretched very thin, but I think we could do a lot better bringing more people in and being more visible.”



The challenges to being an impactful Network that were mentioned are: a lack of clarity around the Network’s audience (whether it was educators, professionals, or the general public), lack of engagement from non-leadership team members of the Network, the leadership team’s dependence on Jeremy Solin, and that the Network’s leadership team did not feel compelled to lead (“I think we would have done more if Jeremy pushed us a little bit more”). To address these challenges, the focus group participants offered the following ideas: appoint a president or chairperson for the Network, conduct periodic evaluations of the Network’s progress towards achieving their mission, develop strategies to help the Network achieve its mission, and make efforts to increase professional and racial diversity in the Network.

**EVALUATION QUESTION 3:** What lessons from ThinkWater’s Wisconsin effort can be transferred to or adapted for other people and places?

### General recommendations from ThinkWater School participants



ThinkWater School participants, in their interviews, drew on their experiences to offer recommendations to improve the program. These recommendations could be used to improve ThinkWater’s future efforts.

Many participants (n=7) said that although they appreciated the evaluation training they received they would have liked more comprehensive training in evaluation methods, tools, and procedures. Apart from additional training, they also would have liked more evaluation-related follow-up to help them measure the impact of their programs. Related to evaluation needs, one participant said, “If there's one thing that I would recommend or change about Think Water...we didn't spend enough time on evaluation. That is the one thing that I don't feel very comfortable with; making sure that I'm evaluating the right thing. I'm having trouble with the evaluation piece but I have to incorporate that as I go.”



Participants also recommended offering continued, ongoing support to ThinkWater School teams (n=6). Examples of continued support that were mentioned are phone follow-ups with teams, annual in-person meet-ups,

continued training on systems thinking, local meet-ups, and online resources. When asked about support that they needed from ThinkWater, one participant said, “Just (ThinkWater team) being a resource and continuing to put content out. I think if they're (ThinkWater team) available for ongoing communication...for posing questions or if we wanted to teach it (systems thinking) or wanted to incorporate it into some aspect of our programming...I would probably reach out to ThinkWater...I guess, being available and continuing to keep the content in front of us, I think will be helpful.”

Other recommendations were:

- Clarify expectations (n=3): Participants recommended that expectations around time and products for ThinkWater School should be clarified early on.
- Improve (racial) diversity (n=1): One participant said that people of color needed to be better represented in ThinkWater School, noting, “I also think, just in general, having more than one team represented by people of color is always good. There were some comments that I think were well meaning, but someone said something like, “Wow, that team brought the culture”. What did they mean by that? I think sometimes it can feel like there is a token group. At least that's what I heard from some of my teammates. Why are most environment groups still predominantly white? How do we make sure that inclusion and equity aren't just token positions? I know this is a conversation that's happening across environmental movements and it needs to happen more, so I don't want to put it all on Jeremy or on ThinkWater. I think just acknowledging or even maybe inviting people to talk about it a little bit as part of the group is helpful.”
- Acknowledge other approaches and frameworks (n=2): Although participants appreciated and valued Jeremy’s work in integrating systems thinking with other existing frameworks of change, they recommended additional emphasis to it. One

participant said, "When you're dealing with these kinds of theories (systems thinking), sometimes it's presented in such a way as if it's the only theory. Practitioners believe in this theory, and I understand that, but in some ways there was no cultural or different ways to learn it, I felt. I think it was a pretty standard classroom kind of situation...(I would have liked to have seen) some kind of acknowledgement of culture, or inclusion, or different ways to learn. Or recognition that this is one way to learn something and it's not necessarily the best."

- Structurally facilitate learning among teams (n=2): Two participants said that they would have liked more time to interact and learn from the other teams. One participant recommended that this take place early on, saying, "I would say longer community time, where you were able to, connect more with the people who were going through this program with you. There was a lot of that, but it came later over time. I think having the ability to connect with all the people in the very beginning could have potentially made the connection stronger. As we were going through the program I did not email people from other groups saying, "Hey. How is this going for you?". That probably would have been really helpful. But that just didn't happen because there wasn't really that connection."



Finally, participants also attributed Jeremy's support and guidance to their overall satisfaction with ThinkWater School (n=4). This is an important consideration for ThinkWater as it looks to expand to other places. Of Jeremy's role, one participant said, "I felt very honored in my time. Jeremy didn't just try to give us busy work. He was very accommodating to what capacity we had, how much time we had to invest, etc. The way that meeting times and gatherings were structured was just very accommodating. I just want to give a lot of credit to that."



ThinkWater School participants were asked about their motivation and likelihood to continue applying systems thinking to their work. Most participants said that they were either slightly or highly motivated to continue applying systems thinking to their work (88%), either slightly or highly motivated to connect with other colleagues around systems thinking (88%), and either quite or extremely likely to continue applying systems thinking to their work (82%). Those who were unmotivated to continue to apply systems thinking attributed it to the overall complicated nature of the theory and mapping.

Table 5: Motivation and likelihood to continue applying systems thinking to work (n=16).

	Highly <u>un</u> motivated (1)	Slightly <u>un</u> motivated (2)	Neutral (3)	Slightly motivated (4)	Highly motivated (5)	Don't know	Mean
How motivated are you to continue applying systems thinking to your work?			1 (13%)	3 (19%)	11 (69%)		4.6
How motivated are you to connect with other colleagues around systems thinking?		2 (13%)		7 (44%)	7 (44%)		4.0
	Not at all likely (1)	Slightly likely (2)	Modera- -tely likely (3)	Quite likely (4)	Extremely likely (5)	Don't know (6)	Mean
How likely are you to continue applying systems thinking to your work?		2 (13%)	1 (6%)	6 (38%)	7 (44%)		4.1



During the fishbowl focus groups, ThinkWater School participants shared their advice for future participants. Some of their recommendations were: set dedicated time aside to work on ThinkWater (n=3), be patient with the ThinkWater School process (n=2), choose an existing project for ThinkWater School rather than developing a new one (n=2), and get buy-in from colleagues and administrators early on in the process (n=2).

## Recommendations from ThinkWater School participants around teaching systems thinking



Many ThinkWater School participants had specific recommendations and feedback related to teaching and learning systems thinking. These recommendations are important for ThinkWater to consider as they look to expand their efforts to other states.

Table 6: Systems thinking teaching strategies that worked and recommendations from ThinkWater School participants

Teaching strategies that worked	Recommendations
Having full-day teaching sessions	Use general examples that are not topic-specific
Mapping using MAC	Demonstrate concepts with examples that are complex (not rudimentary)
Mapping recreational activities	Have a longer, immersive introductory session
The triangle exercise	Demonstrate progression through ThinkWater School using an example
Practicing mapping with different topics	Review contents of and reference the systems thinking book while teaching
	Assign homework to practice mapping
	Conduct more hands-on and guided mapping sessions
	Tailor content of the online class so it is relevant to all audiences

Jeremy Solin, in his interview, reflected on the challenges of teaching systems thinking. The first challenge was that participants tended to focus on content rather than structure. Jeremy described this as, “Systems thinking is all about structure, but people want to debate the content, and not look at the process and the structure of applying systems thinking. What I’m learning is that when people are uncomfortable with a new strategy they resort to what they know. For people (working) in water, we’re presenting them with a new way of approaching something they are very familiar with. So, when you give them something that includes both something that they’re comfortable with and something that they’re uncomfortable with, they’re going to focus on what they’re comfortable with and debate that. In that, we lose sight of what we’re trying to teach.” The second challenge was that simple tools (like MAC) overshadowed the sophisticated mapping tools. Jeremy explained this as, “That’s (MAC) one of the first things that people understand. How I’ve seen it (MAC) applied is simple and linear, but it’s meant to be used with a fair amount of sophistication at the mapping level. But people don’t necessarily understand that they’re not actually using it how it was designed to be used.” The third challenge was finding a balance between discussing conceptual ideas vs focusing on the practical applications of systems thinking. Jeremy described this challenge using metacognition as an example, saying, “I spend a little bit of time focused on that (teaching metacognition). But because people want to get to the application, metacognition often gets

glossed over. We need more emphasis and support in helping people understand the power of being metacognitive. The challenge is that it's not much fun or exciting...but it's the basis and foundation (of systems thinking).” Jeremy also observed that participants struggled with taking the first steps in applying systems thinking. He noted that “There was a lack of comfort with applying systems thinking to any topic. There's an initial barrier to overcome that is fairly significant. Even though people have the skills and abilities to begin practicing, that discomfort keeps them from starting. I heard that from a lot of people who said, “I understand what systems thinking is but I can't yet apply it to whatever I'm doing”; at least five of the teams told me that at some point during the spring and summer.” This feedback is important to consider and address in any future programming that involves teaching systems thinking.



ThinkWater School participants were asked in a survey about their motivation and likelihood to teach systems thinking to others. 69% of survey respondents said that they were either slightly or highly motivated to teach systems thinking and 57% said that they were either quite or extremely likely to teach systems thinking.

Table 7: Motivation and likelihood to teach systems thinking (n=16).

	<b>Highly unmotivated (1)</b>	<b>Slightly unmotivated (2)</b>	<b>Neutral (3)</b>	<b>Slightly motivated (4)</b>	<b>Highly motivated (5)</b>	<b>Don't know</b>	<b>Mean</b>
How motivated are you to teach systems thinking to others?	1 (6%)	2 (13%)	2 (13%)	7 (44%)	4 (25%)		3.7

  

	<b>Not at all likely (1)</b>	<b>Slightly likely (2)</b>	<b>Moderately likely (3)</b>	<b>Quite likely (4)</b>	<b>Extremely likely (5)</b>	<b>Don't know (6)</b>	<b>Mean</b>
How likely are you to teach systems thinking to others?	2 (13%)	2 (13%)	2 (13%)	7 (44%)	2 (13%)	1 (6%)	3.3



Participants who said that they were not motivated or likely to teach systems thinking explained that they were either more interested in applying systems thinking than teaching it, they did not have the time or capacity to do it, it was not part of their job descriptions, it was too complicated to teach others, they were not confident enough to teach it, or that they did not know that teaching systems thinking to others was an expectation of their participation in ThinkWater School. If ThinkWater’s expansion strategy involves participants teaching systems thinking, then these barriers need to be addressed.



A few ThinkWater School participants said that they might teach systems thinking to others but needed support and resources such as a curriculum, feedback on teaching strategies, and power point presentations.



Recommendations were sought from ThinkWater School participants on building a Committed Minority of systems thinkers in Wisconsin and on expanding ThinkWater implementation across the country. Responses are summarized in the table below:

Table 8: Recommendation on building a committed minority and scaling up ThinkWater

<b>Recommendations on building a committed minority of systems thinkers in Wisconsin</b>	<b>Recommendations on expanding ThinkWater implementation across the country</b>
Engage willing and diverse audiences	Expand into states that are leaders in water quality and treatment eg. California
Host regular annual events for ThinkWater School participants and others	Introduce ThinkWater to private sector
Continue outreach activities like the newsletter and webinars	Collaborate with existing water-related networks
Work with schools	Replicate ThinkWater School in other states
Continue to engage with and support ThinkWater School participants	Develop a formal ThinkWater certification
Offer additional training using train-the-trainer model	Promote sharing and collaboration among all ThinkWater participants across the country

**Recommendations from Wisconsin Water Thinkers Network members**

Recommendations for improving ThinkWater’s services as well as recommendations for scaling up ThinkWater’s efforts were sought from members of the Wisconsin Water Thinkers Network.



Members of the Network’s leadership team offered the following recommendations for ThinkWater to consider as they plan to scale up their efforts. First, they emphasized the need for shared but structured Network leadership and clarity around the roles, duties and responsibilities of leadership team members. They said that this could be laid out in memorandums of understanding or agreements. They

also recommended that each state Network develop specific goals based on the needs of their communities. Finally, they recommended that ThinkWater Networks should determine early on who their audience is and tailor strategies that cater them.



Wisconsin Water Thinkers Network members were also asked for input on strategies to improve their ability to deliver water programming and incorporate systems thinking in their approach to water issues. They offered up the following suggestions to ThinkWater and to Wisconsin Water Thinkers Network:

- Offer MOOCs (massive open online courses) on systems thinking
- Offer more trainings or workshops on systems thinking
- Conduct more in-person events and trainings (rather than online)
- Engage more academic experts in ThinkWater
- Ramp up outreach activities
- Develop resources on applying systems thinking at larger scales
- Find ways to differentiate Wisconsin Water Thinkers Network from other organizations
- Develop clear goals for Wisconsin Water Thinkers Network

Finally, Jeremy Solin also reflected on improvements that could make the Network more effective. He acknowledged the challenges of building effective networks especially when members are geographically dispersed, and said that it would have been preferable to have alumni of ThinkWater School build a network rather than having the network be a separate initiative. His comment was, “It might have been more effective to start with ThinkWater School and focus on the alumni to build that network instead of creating a place (network) that would catch them as they came out of it. At this point, what I’m seeing is that the real leadership in Wisconsin related to systems thinking and water education outreach is coming from the ThinkWater School participants.” Reflecting on the effectiveness of the Network, he said, “I’m still a bit ambivalent and ambiguous about it’s (Wisconsin Water Thinkers Network) effectiveness. I don’t know that it’s been worth the effort and the time. I think that time probably would have been more effectively spent in another cohort of ThinkWater school.”

**EVALUATION QUESTION 4:** How did systems thinking influence ThinkWater participants’ audiences learning?



ThinkWater School participants were asked whether they noticed or measured changes in their program participants’ learning as a result of having applied systems thinking to their programs. Participants were unable to answer this question for a number of reasons. At the time of the interviews, some ThinkWater School projects were yet to be implemented or were ongoing, therefore participants did not have any substantial observations or data to report. Some participants acknowledged that they were not making explicit efforts to measure the impact that systems thinking was having on their program participants’ learning. Others said that although they appreciated the evaluation training they received during ThinkWater School, they did not have

the skills and tools to conduct evaluations of their programs (As noted earlier, many participants said that they would have liked to have more training around evaluation). Finally, one participant said that they observed an increase in engagement from their program participants but could not be sure since it was not systematically measured.

Nevertheless, most participants (94%) reported that their evaluation skills had improved as a result of their participation in ThinkWater School (table x).

Table 9: Extent to which ThinkWater School’s goals were achieved (n=16)

	<b>Not at all (1)</b>	<b>Very little (2)</b>	<b>Somewhat (3)</b>	<b>To a great extent (4)</b>	<b>Don’t know (5)</b>	<b>Mean</b>
Improve your evaluation skills		1 (6%)	10 (63%)	5 (31%)		3.3

*Note: Refer to appendix for additional ThinkWater School goals (Table b).*

**EVALUATION QUESTION 5:** How did ThinkWater influence participants’ metacognition or systems thinking capacity and skills?



As mentioned earlier in the report, most ThinkWater School participants agreed that systems thinking was necessary to address complex water issues and credited ThinkWater with building their understanding of systems thinking. Similarly, most Wisconsin Water Thinkers Network members also agreed that the Network had created a space for them to learn about systems thinking. This data is summarized in the tables below:

Table 10a: ThinkWater School participants’ agreement with the following statement (n=16):

	<b>Strongly Disagree (1)</b>	<b>Disagree (2)</b>	<b>Neither agree nor disagree (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>	<b>Don’t know (6)</b>	<b>Mean</b>
Systems thinking is necessary to address complex water issues			3 (19%)	7 (44%)	6 (38%)		4.2

Table 10b: ThinkWater School participants' responses to the extent to which ThinkWater School achieved the following goal (n=16):

	<b>Not at all (1)</b>	<b>Very little (2)</b>	<b>Somewhat (3)</b>	<b>To a great extent (4)</b>	<b>Don't know (5)</b>	<b>Mean*</b>
Built their understanding of systems thinking			4 (25%)	12 (75%)		3.8

Table 10c: Wisconsin Water Thinkers Network members' agreement with the following statement (n=58):

	<b>Strongly Disagree (1)</b>	<b>Disagree (2)</b>	<b>Neither agree nor disagree (3)</b>	<b>Agree (4)</b>	<b>Strongly agree (5)</b>	<b>Don't know (6)</b>	<b>Mean</b>
The Network has created a space or you to learn about systems thinking		1 (2%)	6 (10%)	28 (48%)	22 (38%)	1 (2%)	4.2

## EVALUATIVE CONCLUSIONS

The following evaluative conclusions were drawn based on the results and data in this report:

### (A) ThinkWater School

- i. Interactive learning strategies valued: Programmatic strategies such as the cohort model, team participation, and in-person training, were effective in helping participants learn and apply systems thinking. A majority of participants recognized the role that these strategies played in making ThinkWater School a valuable experience for them. However, some challenges remained unresolved. Teams were consistent in identifying the lack of time to work on ThinkWater School and time to meet with other team members as hinderances.
- ii. Lack of clarity around time commitment: Expectations around time commitment and products were either not accurately estimated or not made explicit to participants. It is recognized that ThinkWater School was a pilot and information around time commitments might not have been available to the ThinkWater team.
- iii. Low likelihood of teaching systems thinking: Although most participants stated in the survey that they were motivated and likely to teach systems thinking to

others, data from personal interviews contradicts this. In interviews, most participants said that they were neither teaching nor planning on teaching systems thinking to others because it was too complicated a topic, teaching was not part of their job description, or they were not confident in their ability to teach it.

- iv. Insufficient training on and low prioritization of evaluation: More time could have been dedicated to training participants in evaluation. Although many participants said that systems thinking had improved their programs or made their programs more effective, they did not have data to support this claim. The evaluation question around systems thinking's influence on ThinkWater School participants' audiences learning could not be satisfactorily answered since participants had not collected data, either because it was not a priority or because they lacked the skills and resources to do it.
- v. Jeremy Solin's role: Jeremy Solin played a crucial role in offering personal attention, guidance and mentorship to ThinkWater School teams. Many participants said that the support that Jeremy offered was invaluable.

#### (B) Wisconsin Water Thinkers Network

- i. Membership valued by leadership team: Members of the leadership team found value in their membership to the Network. They appreciated the networking opportunities that it provided, the resources that it gave them access to, and that it was unique in that it provided a space for water outreach professionals to share and learn from each other.
- ii. Membership valued by network members: Similarly, members of the Network identified value in their membership as it offered a space for them to engage in dialogue around water, learn about systems thinking and its applications, access valuable resources, and network with others who are involved efforts around water.
- iii. Leadership team needs clarity and direction: The Network faces similar pitfalls as other online networks. Leadership team members acknowledged that they lacked clarity around their roles and responsibilities, needed strategies to help them achieve their mission and recognized that they were dependent on Jeremy to keep the Network's momentum going.

## RECOMMENDATIONS

Based on the findings of this evaluation, the following recommendations are offered to the ThinkWater team:

### (A) ThinkWater School

- i. Retain interactive learning strategies: Continue to implement successful programmatic strategies such as the cohort model, small team participation and in-person trainings in future iterations.
- ii. Increase diversity: Make a conscious effort to increase diversity of participants to ensure meaningful representation.
- iii. Clarify expectations: Make explicit the following before people commit to participating in ThinkWater School: time commitment required, expected outcomes, and expectations around teaching systems thinking. Additionally, offer to help teams map out and schedule periodic team meetings
- iv. Build capacity around teaching systems thinking: If participants are expected to teach systems thinking, ThinkWater School trainings need to incorporate coaching and guidance around it. This will help give people the skills and confidence that they need to teach systems thinking.
- v. Build evaluation capacity: Incorporate a more thorough, in-depth training session on evaluation and assist teams in developing and implementing program evaluations.
- vi. Tailor content to audience's interests and needs: Develop water-specific content, examples and practice exercises.
- vii. Help advocate for systems thinking: Coach participants in getting buy in from supervisors or leaders within their organizations so that they have the support that they need to continue applying systems thinking to their work.
- viii. Continue alumni engagement: To develop a committed minority of systems thinkers, continue to engage and nurture the growth of alumni by offering support in the form of resources and guidance.

(B) Wisconsin Water Thinkers Network

- i. In other states, consider having the Network stem from ThinkWater School: As ThinkWater looks to expand to other states, explore Jeremy Solin's recommendation of having alumni of ThinkWater School build a network rather than having the network be a separate initiative.
- ii. Bridge ThinkWater School and Wisconsin Water Thinkers Network: Connect members of the Network who are interested in learning systems thinking with ThinkWater School alumni who are interested in teaching systems thinking.
- iii. Conduct a thorough needs assessment: A Network-wide needs assessment will help identify members' needs and priorities to ensure that the Network is offering services that members need and value.
- iv. Revisit leadership team's roles and responsibilities: Assist leadership team in clarifying their roles and responsibilities and re-establish their commitment to shared leadership.

## APPENDIX

### Summary statistics of survey to ThinkWater School participants

Table a: To what extent were the following activities and aspects of ThinkWater School effective in promoting your learning of systems thinking? (n=16)

	Very <u>in</u> effective (1)	Somewhat <u>in</u> effective (2)	Neither <u>in</u> effective nor effective (3)	Somewhat effective (4)	Very effective (5)	<i>Don't know</i> (6)	Mean*
a) <i>Teaching Thinking 101</i> online training		2 (13%)	3 (19%)	8 (50%)	3 (19%)		3.8
b) Working in small teams				2 (13%)	14 (88%)		4.9
c) Learning and sharing with a cohort of other water professionals from across the state				6 (38%)	10 (62%)		4.6
d) Application of systems thinking to a project				3 (19%)	13 (81%)		4.8
e) In-person cohort meetings (eg. at Treehaven)				1 (6%)	15 (94%)		4.9
f) Presenting your project and getting feedback at in-person cohort meetings			1 (6%)	2 (13%)	13 (81%)		4.8
g) Mapping		1 (6%)	3 (19%)	3 (19%)	9 (56%)		4.3
h) Meetings with Jeremy (online/video and in-person)			1 (6%)	5 (31%)	10 (63%)		4.6

\*To calculate means, "Don't know" responses were excluded.

Table b: According to you, to what extent did ThinkWater School achieve the following goals? (n=16)

	Not at all (1)	Very little (2)	Somewhat (3)	To a great extent (4)	<i>Don't know</i> (5)	Mean*
a) Build your understanding of systems thinking			4 (25%)	12 (75%)		3.8
b) Build your capacity to apply systems thinking to your work			7 (44%)	9 (56%)		3.6
c) Develop your ability to be a leader in systems thinking-based water programming		1 (6%)	8 (50%)	7 (44%)		3.4
d) Build a culture of systems thinking within your ThinkWater School team		1 (6%)	6 (38%)	9 (56%)		3.5
e) Provide you with a shared language of systems thinking			3 (19%)	13 (81%)		3.8
f) Strengthen your program development skills			6 (40%)	9 (60%)		3.6
g) Improve your evaluation skills		1 (6%)	10 (63%)	5 (31%)		3.3
h) Share systems thinking-related resources		3 (19%)	8 (50%)	5 (31%)		3.1
i) Build your sense of place through shared water experiences		1 (6%)	10 (63%)	5 (31%)		3.3

\*To calculate means, "Don't know" responses were excluded.

Table c: How motivated are you to (n=16):

	Highly <u>un</u> motivated (1)	Slightly <u>un</u> motivated (2)	Neutral (3)	Slightly motivated (4)	Highly motivated (5)	Mean
a) Continue applying systems thinking to your work *			1 (13%)	3 (19%)	11 (69%)	4.6
b) Teach systems thinking to others**	1 (6%)	2 (13%)	2 (13%)	7 (44%)	4 (25%)	3.7
c) Connect with other colleagues around systems thinking ***		2 (13%)		7 (44%)	7 (44%)	4.0

Table d: How likely are you to (n=16):

	Not at all likely (1)	Slightly likely (2)	Moderately likely (3)	Quite likely (4)	Extremely likely (5)	<i>Don't know</i> (6)	Mean
a) Continue applying systems thinking to your work		2 (13%)	1 (6%)	6 (38%)	7 (44%)		4.1
b) Teach systems thinking to others	2 (13%)	2 (13%)	2 (13%)	7 (44%)	2 (13%)	1 (6%)	3.3

Table d: To what extent do you agree or disagree with the following statements (n=16):

	Strongly <u>Disagree</u> (1)	<u>Disagree</u> (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	<i>Don't know</i> (6)	Mean
a) Systems thinking is necessary to address complex water issues			3 (19%)	7 (44%)	6 (38%)		4.2
b) My ThinkWater team's work is having or will have a positive impact on the environment and society at large				12 (75%)	2 (13%)	2 (13%)	4.1

Table e: Rate the usefulness of the following resources (n=16):

	Not at all useful (1)	Slightly useful (2)	Moderately useful (3)	Quite useful (4)	Very useful (5)	Don't know (6)	Mean
a) <i>Teaching Thinking 101</i> and other online trainings		1 (6%)	10 (63%)	2 (13%)	1 (6%)	2 (13%)	3.2
b) Other ThinkWater videos		1 (6%)	6 (38%)	5 (31%)	1 (6%)	3 (19%)	3.5
c) Metamaps software		3 (19%)	3 (19%)	4 (25%)	6 (38%)		3.8
d) ThinkWater Infographics		1 (6%)	4 (25%)	8 (50%)	1 (6%)	2 (13%)	3.6
e) <i>Systems Thinking Made Simple</i> book		2 (13%)	6 (38%)	5 (31%)	1 (6%)	2 (13%)	3.4
f) Other (The learning tools are nice, but the actual practice and application time spent in groups is best) n=1					1		
g) Other (In person contact with teachers, etc.) n=1					1		

**Summary statistics of survey to members of the Wisconsin Water Thinkers Network**

Table f: Approximately, for how long have you been involved with the Wisconsin Water Thinkers Network? (n=62)

	Frequency and percent
a) 0-6 months	12 (24%)
b) 7-12 months	13 (21%)
c) More than 12 months	28 (45%)
d) Don't know	6 (10%)

Table g: Are you, or have you ever been, a member of the Wisconsin Water Thinkers Network leadership team? (n=62)

	Frequency and percent
a) Yes	4 (7%)
b) No	5 (90%)
c) Don't know	3 (3%)

Table h: Which of the following Wisconsin Water Thinkers Network activities have you participated in? (Select all that apply) (n=64)

Activity	Frequency
Webinars on systems thinking	29
Online systems thinking trainings	10
Wisconsin Water Thinkers Network Community of Practice	20
In-person gatherings	47
Accessing online systems thinking resources (e.g. ThinkWater infographics, videos, etc.)	22
Reading the Wisconsin Water Thinkers Network newsletter	38
None of the above	3

Table i: To what extent do you agree or disagree with the following statements? Wisconsin Water Thinkers Network has created a space for you to (n=58):

	Strongly disagree (1)	Disagree (2)	Neither disagree nor agree (3)	Agree (4)	Strongly agree (5)	Don't know (6)	Mean*
a) Engage in critical dialogue about effective water education, outreach, and public engagement		2 (3%)	12 (22%)	26 (45%)	15 (26%)	2 (3%)	4.0
b) Learn about systems thinking		1 (2%)	6 (10%)	28 (48%)	22 (38%)	1 (2%)	4.2
c) Apply systems thinking		2 (3%)	13 (23%)	20 (35%)	19 (33%)	3 (5%)	4.0
d) Learn about other water-related efforts in Wisconsin		2 (3%)	7 (12%)	25 (43%)	22 (38%)	2 (3%)	4.2
e) Access resources that are valuable to your work		3 (5%)	14 (24%)	30 (52%)	8 (14%)	3 (5%)	3.8
f) Network with people involved in water-related efforts		3 (5%)	8 (14%)	23 (40%)	21 (36%)	3 (5%)	4.1

\*To calculate means, "Don't know" responses were excluded

Table j: Has your involvement with the Wisconsin Water Thinkers Network improved your ability to deliver effective and strategic water programming? (n=58)

	Frequency and percent
a) Yes	26 (45%)
b) No	14 (24%)
c) Don't know	18 (31%)

Table k: The mission of the Wisconsin Water Thinkers Network is to "create, connect, and share water community engagement strategies and resources". On a scale of 1 to 5, to what extent do you think the Wisconsin Water Thinkers Network is fulfilling its mission? (n=55)

	<b>Frequency and percent</b>
a) Not at all	2 (4%)
b) To a slight extent	4 (7%)
c) To a moderate extent	19 (35%)
d) To a considerable extent	22 (40%)
e) To a great extent	8 (15%)

### **Interview questions for ThinkWater School participants**

1. Why did you decide to participate in ThinkWater School?
2. Has your programming changed as a result of your participation in ThinkWater School? How?
  - o *Prompt: Describe the specific changes to your programming as a result of applying systems thinking*
3. Will systems thinking have a lasting impact on how you approach your work? If yes, how? If no, why not?
4. Having applied systems thinking to your programming, what changes, if any, have you noticed related to participant learning?
  - o *Prompt: What evidence do you have?*
5. Thinking about the specific aspects of your programming that you applied systems thinking to, did you receive any feedback from your program participants? Please describe.
6. What components of ThinkWater School contributed most to your learning? (And least?)
7. What can ThinkWater do to improve participants' ability to learn and apply systems thinking?
8. What were your expectations from ThinkWater School, and (in what ways) were these expectations met?
  - o *Prompt: Were there any unexpected outcomes of your participation? What was your biggest takeaway(s)?*
9. Do you have any other comments that you would like to share about your ThinkWater School experience?

### **Interview questions for Jeremy Solin**

1. Why did you decide on the strategies you did for the Wisconsin demonstration? (*Prompt: Explain/articulate your theory of change*)
2. In your opinion, what programmatic efforts contributed most to ThinkWater School participants' learning of systems thinking?

3. What changes, if any, would you make to the Wisconsin demonstration if you were to do it over? (*Prompt: What were the barriers and strengths of the Wisconsin design*)
4. What changes, if any, would you make to ThinkWater School specifically, if you were to do it over?
5. What does success look like to you, with respect to ThinkWater School? (*Prompt: What types of things would you expect to see that would indicate to you that ThinkWater School was a success?*)
6. What does success look like to you, with respect to Wisconsin Water Thinkers Network? (*Prompt: What types of things would you expect to see that would indicate to you that Wisconsin Water Thinkers Network was a success?*)
7. From your experience with ThinkWater, what have you learnt about teaching systems thinking? What activities and/or resources contributed most to it?

### **Focus group questions for Wisconsin Water Thinkers Network's leadership team**

1. What value does your involvement with Wisconsin Water Thinkers Network have to you?
  - Prompt: Has your involvement with Wisconsin Water Thinkers Network had any impact on your work?
  - Prompt: Has systems thinking changed how to you approach your work?
2. To what extent do you think the mission and vision of the Wisconsin Water Thinkers Network is being achieved?
3. ThinkWater is looking to scale up its efforts to other states. Thinking about building a network similar to Wisconsin Water Thinkers Network in other states, what recommendations do you have for the team?
  - Prompt: What would you do differently?
4. How confident are you in teaching or sharing systems thinking strategies?
  - Prompt: VMCL (Vision, Mission, Capacity & Culture, & Learning)
  - Prompt: Committed minority
  - Prompt: MAC (Map, Activate, Check)
  - Prompt: DSRP (Distinctions, Systems, Relationships, and Perspectives.)

### **Fishbowl questions for ThinkWater School teams**

1. Tell us about your experience learning and applying systems thinking as a team.
  - Prompt: What were some expected and unexpected benefits of working in a team?
  - Prompt: What were some challenges that you faced?
2. What was the biggest impact of your involvement in ThinkWater School?
3. If you were talking to a future ThinkWater School team or participant, what collective or individual advice would you have for them?