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2021 Nebraska Water Leaders Academy Final Report

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2021

Nebraska Water Leaders Academy

Final Report

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Nebraska Water Leaders Academy

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waterleadersacademy.org

Partner

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- North Platte Natural Resources District
- Roric Paulman, Paulman Farms & Silver Spur, LLC
- Sargent Irrigation District
- Twin Loups Irrigation District
- Upper Big Blue Natural Resources Dist.

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2021 Nebraska Water Leaders Academy class

Front Row (L to R): Joshua Neuffer, US Bureau of Reclamation, McCook; Jonathan Mohr, JEO Consulting Group, Inc., Malcolm; Cortney Schaefer, Nebraska Rainwater Basin Joint Venture, Wood River; Melissa Mosier, Nebraska Audubon, Lincoln; Renata Rimsiate, Dougherty Water for Food Global Institute, Lincoln; John Bush, Upper Big Blue Natural Resources District, York; Becky Schuerman, Nebraska Extension, Lincoln.

Back Row (L to R): Anton Hassebrook, Central Nebraska Public Power and Irrigation District, Gothenburg; Luke Ritz, Central Nebraska Public Power and Irrigation District, Gothenburg; Matthew Rennau, Diamond Plastics, Wood River; Korey Hobza, Loup River Public Power District, Columbus; James Remmenga, Remmenga Drilling, Inc., Holdrege; Andy Pedley, Nebraska Department of Natural Resources, Lincoln; Rick Miller, Pathfinder Irrigation District, Scottsbluff; Andrew Vinton, Nebraska Legislature, Lincoln; Curtis Scheele, USDA Natural Resources Conservation Service, Holdrege. Absent: Seth Popp, North Platte Natural Resources District, Scottsbluff.

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Executive Summary

Seventeen participants completed the 2021 Water Leaders Academy bringing the total number of graduates to 153 since the inception of the program in 2011. Assessments of participants' transformational leadership skills, champion of innovation skills, water knowledge, engagement with water issues, civic capacity, entrepreneurial leadership behaviors, and boundary spanner abilities showed significant increases over the course of the year, according to both the participants and their raters. Feedback from the participants was highly positive and constructive. Academy planners are addressing participant concerns. Only minor changes are planned for the 2022 Academy curriculum. Results of the program assessment indicate that the curriculum is meeting Academy objectives. Most importantly, alumni have emerged as leaders in their communities and around the world.

2021 Nebraska Water Leaders Academy - Final Report

Introduction

Due to the COVID-19 pandemic the 2020 class was postponed to 2021. Additionally, the start of the 2021 class was delayed until June and the normal year-long program was compressed to six months. Eleven participants from the postponed 2020 class joined six new participants to comprise the 2021 class.

Effective management of Nebraska’s water resources is evermore challenged by weather, climate, technology, socioeconomic trends, and regulation. Anthropogenic climate change, declining water tables and stream flows, increasing demands on freshwater, aging infrastructure, fiscal constraints, and impacts on aquatic organisms are particularly imminent water challenges in Nebraska and elsewhere (Pahl-Wostl et al., 2013; Pittock et al., 2008; USACE, 2014). Sustaining freshwater ecosystem services in the face of emerging environmental threats is widely recognized as a pressing global challenge (Pittock et al., 2013; Rockström et al., 2009, Millenium Ecosystem Assessment, 2005).

Changes in Nebraska’s water-resource conditions, as well as a pervasive public desire for sound policies, starkly underscore the need for knowledgeable and skilled leaders (Burbach, et al., 2015; Lincklaen Arriëns & Wehn de Montalvo, 2013; Morton & Brown, 2011). Leadership capacity is an essential driver of water management changes (Brasier et al., 2011; Morton et al., 2011; Pahl-Wostl et al., 2011; Redekop, 2010; Taylor et al., 2012). Moreover, leadership capacity enables innovation, shared visions of a more sustainable water future, and collective success (McIntosh & Taylor, 2013).

The Nebraska State Irrigation Association (NSIA), the state’s oldest water association, and its Executive Director Lee Orton addressed the need for such leadership by establishing the Nebraska Water Leaders Academy (hereafter “Academy”) and the nonprofit Water Futures Partnership-Nebraska in 2011 in partnership with the University of Nebraska-Lincoln (UNL).



Figure 1: Academy participants exploring the Niobrara River Valley.

Since that time, NSIA has served as the primary sponsor and has successfully garnered funding support for the Academy from water-related businesses, private citizens, and other interests. Founding partner Diamond Plastics Corporation sponsored the first Academy and the Nebraska Environmental Trust has provided major funding support for the Academy since 2012.

The Academy is a year-long program consisting of six two-day sessions held in different communities across the state. There are three curricular components of the Academy: leadership, policy/law, and natural resources. Dr. Mark Burbach and Dr. Connie Reimers-Hild developed the leadership component of the Academy with major contributions from accomplished faculty and staff at UNL (See Appendix 1). Dr. Gina Matkin participates with ongoing development of the leadership curriculum and provides input on the team projects. Leading experts in Nebraska water policy, law, and natural resources from UNL; federal, state, and local agencies; NGOs; and other entities developed curriculum in their respective fields. Academy alumni serve on the planning committee.



Figure 2: Academy participants and guides.

Every year, the Academy has achieved its goal of including statewide participants with diverse backgrounds and interests. Moreover, the water leadership capacity in Nebraska has grown for 10 years through coordinated educational and developmental experiences. These experiences are provided by experts from various disciplines (Appendix I). In order to develop Nebraska's future water leaders, and to trigger lasting change in their abilities (Geller, 1992; McCauley et al., 2010), the Academy employs a process-based curriculum with developmental

experiences and opportunities to learn from these experiences (Barbuto & Etling, 2002; McCauley et al., 2010; Newman et al., 2007; Popper & Maysless, 2007).

The objectives of the Nebraska Water Leaders Academy are:

- Develop scientific, social, and political knowledge about water and related natural resources.
- Provide training, professional presentations, and experiential learning activities that instill sound and comprehensive knowledge about efficient, economic, and beneficial uses of Nebraska's water resources.
- Develop and enhance critical thinking and leadership skills through process-based educational activities.
- Encourage and assist participants toward active involvement in water-policy issues at all levels of governance.
- Integrate multi-disciplinary educational and leadership programs to provide life-long leaders in water resources management.
- Challenge traditional paradigms about water resources and facilitate creative solutions to water-resources problems.
- Increase civic capacity and community engagement.

The Academy has graduated a total of 153 participants with a wide range of professional, geographic, and water resources backgrounds. Seventeen individuals completed the 2021 Academy. Table 1 lists the curriculum topics covered in the 2021 Academy.



Figure 3: Mike Jess explains the intricate network of irrigation canals in the Nebraska Panhandle.

Table 1: Curriculum topics presented by experts at the 2021 Nebraska Water Leaders Academy
(¹ = Session)

Leadership	Policy/Law	Resource
Transformational Leadership ^{1,2,5,6}	Nebraska Water Law ¹	Nebraska Climate/Weather ¹
Gallup Strengths ¹	Briefing on Legislative Process ¹	Nebraska Geology ¹
Social Media & Networking ¹	Water Quality in Nebraska & NDEE Programs ¹	Nebraska Groundwater Hydrology ¹
Boundary Spanning Behavior ^{1,3,4,6}	North Platte Basin Integrated Water System ²	North Platte Irrigation Infrastructure ²
Community Development ²	Panhandle NRD Projects & Programs ²	
Community Capital & Community Capacity ²	Nebraska's Public Power & Irrigation Districts History ²	Panhandle Groundwater Modeling Projects ²
Communicating Across Diverse Perspectives ³	Water Markets ²	Water Efficiency Technology ³
Collaborative Approaches to Water Management ³	History of NRDs ²	Twin Platte NRD Water Monitoring
Leading Innovation ⁵	Platte/Republican Interface ³	Testing Ag Performance Solutions (TAPS)- Ag BMPs ³
Integrated Water Resources Management ⁵	NDEE Ag Water Programs ³	Niobrara River Valley Geology and Ecology ⁴
Risk Communication ⁵	Bazile Groundwater Management Area ⁴	
Niobrara River Valley: Past, Present, & Future ⁴		
Your Future as Leaders ⁶	Niobrara National Scenic River ⁴	Omaha's Combined Sewer Separation Project ⁵
Involvement in Public Boards & Service Orgs ⁶	Middle Niobrara Water-based Tourism ⁴	PMNRD Flood Control & Water Quality Projects ⁵
Ten Things Every Conservationist Should Know ⁶	Nebraska Wellhead Protection Program ⁴	Omaha Wastewater Treatment & Water Production ⁵
Empowerment ⁶	NDEE State Revolving Fund and Water Well Standards ⁵	
Motivation ⁶	Missouri River-Past, Present, Future ⁵	
Community Involvement & Leadership Opportunities ⁶	Water Economics ⁶	Diversity and ecology of the Platte River and Sandhills ⁶

This report summarizes the evaluation of the 2021 Academy as well as the cumulative evaluation of the Academy. Results will determine the effectiveness of the Academy in meeting its objectives, and assist in planning the tenth Academy class in 2022.

Program Evaluation

Program evaluation is an essential component of the Academy because it: (1) assesses the development of participants' leadership knowledge, skills, and behaviors; (2) evaluates the instructional methods used in the Academy; and (3) provides constructive feedback from participants; and guides the development of future sessions. The 2021 class evaluation consisted of session evaluations and an empirical analysis using leadership assessments performed before and after attendance (Figure 1). Participants also completed a CliftonStrengths assessment prior to their attendance for self-awareness purposes only. The six session evaluations gauged participants' change in knowledge levels in the areas of leadership, policy, and water issues. Participants also provided subjective feedback about the major points they learned from each session, a summary of the session experience, and other important comments they shared with the Academy planners. Evaluations enable session planners to modify and adjust future sessions, particularly with regard to topics and presenters. Feedback from 2021 participants as well as previous graduates is also being used to plan the 2022 Academy.



Figure 4: Jodi Delozier leading a discussion of the contribution of boundary spanner behaviors in collaborative water management.

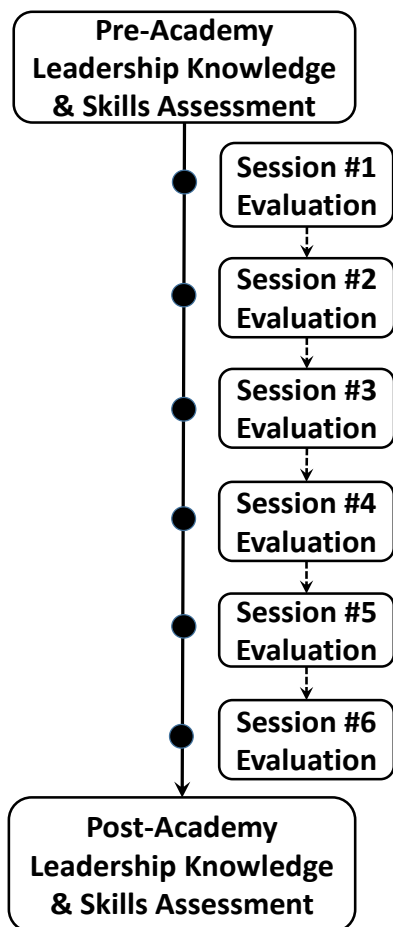


Figure 5: Flow chart of the Nebraska Water Leaders Academy program evaluation.

The empirical analysis measures the participants' change in leadership knowledge, skills, and behavior throughout the 2021 Academy. This analysis gauges the effectiveness of the curriculum by evaluating the participants' research-based transformational leadership behaviors, their capacity to engage in civic issues, their innovation behaviors associated with positive individual and organizational outcomes, and their boundary spanning abilities. Participants' change in knowledge of, and engagement with, water issues in Nebraska is also assessed. Finally, participant's level of entrepreneurial leadership behaviors is assessed. This analysis is ongoing because it includes the cumulative results from all classes (2011-2021).

Methodology

Participants

All seventeen 2021 participants completed the pre- and post-Academy assessments. There were four females and 13 males. The participants' ages ranged from 24 to 53 years with a

median age of 38 years.



Figure 6: Academy participants interact with a panel of experts on the Platte/Republican interface.

Procedures

A research-based questionnaire was employed to assess changes in leadership skills among participants about, and behaviors with respect to Nebraska's water issues. Items were also developed to measure participants' knowledge and behavior. The survey was administered online using Qualtrics™ software. UNL Institutional Review Board (IRB) approved the research prior to the assessment.

Academy participants were notified of the online questionnaire three weeks prior to the first Academy session in June 2021 and given instructions for its completion. This process was repeated three weeks prior to the final session in November 2021. Participants were also asked to invite others with whom they have a professional relationship to rate their leadership behaviors. Raters have included supervisors, peers, close colleagues, and those with whom participants work closely outside of their organizations. Participants sent these raters an e-mail invitation that included the link to the online questionnaire.

Measures

The online questionnaire consisted of four research-based leadership assessments and an additional section that assesses participants' knowledge about, and behaviors with respect to, Nebraska's water issues. All the instruments used in the questionnaire have satisfactory

reliability and validity; thus they consistently and accurately measure the targeted skills and behaviors.

The first assessment was the Multifactor Leadership Questionnaire (MLQ-5) developed by Bass and Avolio (1995). The MLQ-5 (leader version and rater version) is a 45-item, 5-point Likert-type scale that is used to evaluate an individual's leadership style. The MLQ-5 measures characteristics of transformational and transactional leadership. Only the transformational elements were used in the evaluation.

Transformational leadership comprises four dimensions (Antonakis, Avolio, & Sivasubramaniam, 2003). *Idealized Influence* refers to the charisma of the leader, whether the leader is perceived as being confident and powerful, whether the leader is viewed as focusing on higher-order ideals and ethics, and whose actions are centered on values, beliefs, and a sense of mission. *Inspirational Motivation* refers to the ways leaders energize others by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicating to others that the vision is achievable. *Intellectual Stimulation* refers to leader actions that appeal to others' sense of logic and analysis by challenging others to think creatively and find solutions to difficult problems. *Individualized Consideration* refers to leader behavior that contributes to others' satisfaction by advising, supporting, and paying attention to the present and potential individual needs of others, and thus allowing them to develop and self-actualize.

The second assessment was a modified Champions of Innovation scale developed by Howell, Shea, and Higgins (2005). It is a 14-item, 5-point Likert-type scale that measures characteristics of champions of innovation. The scale was modified by eliminating one or two items from each of the three subscales for a total of 10 items. The constructs' three subscales are: *enthusiasm and confidence in what innovation can do*, *persisting under adversity*, and *getting the right people involved*.

A third assessment measures characteristics of civic capacity. The civic capacity scale was developed by Cramer (2015). Nine items of the 5-point Likert-type scale were used. Civic capacity is "the combination of interest and motivation to be engaged in public service and the ability to foster collaborations through the use of one's social connections and through the pragmatic use of processes and structures" (Sun & Anderson, 2012, p. 317). Civic capacity is composed of three dimensions. *Civic Drive* refers to the desire and motivation to be involved

with social issues. *Civic Connections* refers to the social capital found in the leader's internal and external social networks that specifically enables and promotes the success of collaboration. *Civic Pragmatism* refers to the ability to translate social opportunities, by leveraging structures and mechanisms for collaboration.

A fourth assessment asks participants about their *entrepreneurial leadership behaviors* before and after the Academy. Five items were used to measure entrepreneurial leadership behavior. An entrepreneurial individual is described as an innovative person who is open to change and recognizes and pursues opportunities irrespective of existing resources, such as time, money, personal support and/or technology. Entrepreneurial leaders are noted for their ability to develop a compelling vision, recognize opportunities where others do not, operate in a highly unpredictable atmosphere, influence others (both followers and a larger constituency), absorb uncertainty and risk, build commitment, and overcome barriers (e.g., Renko, Tarabishy, Carsrud, & Brännback, 2015).

A fifth assessment of boundary spanning abilities was added for the 2021 class. Boundary spanners are individuals who reach across organizational borders to build relationships, interconnections, and interdependencies in the management of complex problems. Often referred to a “inter-agency ambassadors” or “gate keepers”, they actively work toward collaboration, attempting to link diverse stakeholders, processes, and information from multiple perspectives (Coleman & Stern, 2018; Poblete & Bengston, 2020). A 21-item, 5-point Likert-type scale was developed to measure six dimensions of boundary spanning behavior. The six dimensions are... Authentic Leadership, Trustworthiness, Autonomy, Perspective-taking, Relationship Developer, and Effective Science Communication. *Authentic Leadership* is the ability to lead by example but also motivate others to seek a shared vision. *Trustworthiness* is the ability to be authentic, honest, transparent, and to act in the best interests of others. *Autonomy* is the ability to act on behalf of one’s home organization yet still work toward a common goal, the inner conviction to encourage “outside-the-box thinking,” and an ability to apply multiple perspectives to a situation. *Perspective taking* is the ability to recognize, respect, and manage diversity in thought and opinion particularly when working across multi-disciplinary boundaries. *Relationship developer* is the ability to develop and maintain relationships across internal and external borders; using their personal network may increase their ability to perform and move through the various domains, levels, and scales inherent in natural resources management. *Effective Science*

Communication is the ability to interpret complex and/or technical information, provide constructive feedback, encourage a two-way exchange of information, and adeptly reframe issues.

The questionnaire also asks participants about their Nebraska water issues knowledge and engagement. The knowledge and behavior scale is an 8-item, 5-point Likert-type scale that measures *awareness* of water issues in Nebraska and *engagement* in water issues in Nebraska.

The internal reliability for the all the scales was 0.70 or greater. Nunnally and Bernstein (1994) concluded that acceptable minimum reliability (Cronbach's alpha) for measurement scales should be 0.70.

Results from 2021 Nebraska Water Leaders Academy

Leadership Knowledge, Skills, and Behaviors – Participants' Perspectives

The pre- and post-Academy transformational leadership behaviors of participants were assessed through a paired-samples *t*-test. Participants' transformational leadership behaviors significantly increased from pre-Academy ($M = 2.77$ $SD = 0.43$ to post-Academy ($M = 3.05$, $SD = 0.33$); $t(16) = 3.89$, $p = 0.001$, $d = .73$. Results are summarized in Table 2. All four of the transformational leadership behaviors were significantly higher at the end of the Academy.

Table 2. Results of Paired Samples *t*-Tests Comparing Participants' Transformational Leadership Behaviors Before and After the Academy ($N = 17$)

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.66	0.45	2.96	0.40	0.30	4.47	16	.001***	0.70
Inspirational Motivation	2.82	0.65	3.07	0.47	0.25	2.20	16	.043*	0.44
Intellectual Stimulation	2.74	0.37	3.03	0.28	0.29	3.31	16	.004**	0.88
Individual Consideration	2.88	0.47	3.15	0.46	0.26	2.95	16	.009**	0.58
Total Trans. Leadership	2.77	0.43	3.05	0.33	0.28	3.89	16	.001**	0.73

* $p < .05$. ** $p < .01$. *** $p < .001$.

A paired-samples *t*-test compared 2021 participants' pre-Academy and post-Academy champion of innovation behaviors. Participants' innovation behavior scores significantly increased from pre-Academy ($M = 2.66$, $SD = 0.49$) to post-Academy ($M = 3.07$, $SD = 0.53$); $t(16) = 4.50$, $p = 0.001$, $d = .94$. Results are summarized in Table 3. There was a significant increase in two of the three champions of innovation dimensions.

Table 3. Results of Paired Samples *t*-Tests Comparing Participants' Champion of Innovation Behaviors Before and After the Academy (*N* = 17)

Champion of Innovation Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Expresses Enthusiasm and Confidence in Innovation	2.40	0.57	2.79	0.50	0.39	3.44	16	.003**	0.73
Persistence under Adversity	2.73	0.75	3.11	0.64	0.38	2.76	16	.007**	0.55
Get Right People Involved	2.86	0.64	3.31	0.45	0.45	3.73	16	.001***	0.81
Total Champ. of Innov.	2.66	0.49	3.07	0.37	0.41	4.50	16	.001***	0.94

* $p < .05$. ** $p < .01$. *** $p < .001$.

A paired-samples *t*-test was conducted to compare 2021 participants' pre-Academy and post-Academy Nebraska water issues knowledge and engagement in water issues. Participants' awareness of water issues significantly increased from pre-Academy ($M = 2.50$, $SD = 0.71$) to post-Academy ($M = 3.26$, $SD = 0.94$; $t(16) = 5.75$, $p = 0.001$, $d = .91$). Results are summarized in Table 4. There was a significant increase in participants engagement in water policy issues from pre-Academy ($M = 2.32$, $SD = 0.94$) to post-Academy ($M = 2.79$, $SD = 0.94$); $t(16) = 5.34$, $p = 0.001$, $d = .50$.

Table 4. Results of Paired Samples *t*-Tests Comparing Participants' Nebraska Water Knowledge and Engagement Before and After the Academy (*N* = 17)

Water Knowledge & Engagement	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.50	0.71	3.26	0.94	0.76	5.75	16	.001***	0.91
Engagement	2.32	0.94	2.79	0.94	0.47	5.34	16	.001***	0.50

** $p < .01$.

A paired-samples *t*-test was conducted to compare 2021 participants' pre-Academy and post-Academy civic capacity. Participants' civic capacity significantly increased from pre-Academy ($M = 2.18$, $SD = 0.77$) to post-Academy ($M = 2.76$, $SD = 0.76$; $t(16) = 4.37$, $p = 0.001$, $d = .60$). Results are summarized in Table 5. There was a significant increase in all three dimensions of civic capacity.

Table 5. Results of Paired Samples *t*-Tests Comparing Participants' Civic Capacity Before and After the Academy (*N* = 17)

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Drive	2.29	0.75	2.73	0.83	0.43	3.58	16	.002**	0.55
Connections	2.24	0.96	2.88	0.90	0.65	3.65	16	.002**	0.69
Pragmatism	2.00	0.85	2.67	0.81	0.67	3.89	16	.001***	0.81
Total Civic Capacity	2.18	0.77	2.76	0.76	0.58	4.37	16	.001***	0.76

** $p < .01$. *** $p < .001$

A paired-samples *t*-test was conducted to compare 2021 participants' pre-Academy and post-Academy entrepreneurial leadership behavior. Participants' entrepreneurial leadership behavior significantly increased from pre-Academy ($M = 2.67$, $SD = 0.50$) to post-Academy ($M = 2.91$, $SD = 0.47$; $t(16) = 2.63$, $p = 0.009$, $d = 0.49$). Results are summarized in Table 6.

Table 6. Results of Paired Samples *t*-Test Comparing Participants' Entrepreneurial Leadership Behavior Before and After the Academy (*N* = 17)

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Entrepreneurial Behav.	2.67	0.50	2.91	0.47	0.24	2.63	16	.009**	0.49

** $p < .01$.

A paired-samples *t*-test was conducted to compare 2021 participants' pre-Academy and post-Academy boundary behavior. Participants' boundary spanner behavior significantly increased from pre-Academy ($M = 2.81$, $SD = 0.32$) to post-Academy ($M = 3.01$, $SD = 0.29$; $t(16) = 6.12$, $p = 0.001$, $d = 0.65$). Results are summarized in Table 7.

Table 7. Results of Paired Samples *t*-Tests Comparing Participants' Boundary Spanner Behaviors Before and After the Academy (*N* = 17)

Boundary Spanner Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Trustworthiness	3.00	0.17	3.41	0.34	0.41	6.13	16	.001***	1.53
Autonomy	2.24	0.69	2.73	0.36	0.20	4.03	16	.001***	0.89
Authentic Leadership	2.56	0.37	3.01	0.36	0.22	4.98	16	.001***	1.23
Perspective Taking	2.50	0.45	2.87	0.38	0.15	5.14	16	.001***	0.88
Relationship Developer	2.63	0.48	3.08	0.42	0.26	5.28	16	.001***	1.00
Effective Sci.Comm.	2.57	0.43	2.99	0.41	0.18	4.97	16	.001***	1.00
Total Boundary Spanner	2.58	0.31	3.01	0.29	0.20	8.60	16	.001***	1.43

* $p < .05$. ** $p < .01$. *** $p < .001$.

Leadership Knowledge, Skills, and Behaviors – Raters' Perspectives

The effects of self-report bias and social desirability issues are minimized if multiple data sources are used to assess leadership behaviors (Donaldson & Grant-Vallone, 2002).

Accordingly, feedback from multiple raters on Academy participants' leadership behaviors is another way of gauging the impact of the Academy on participants, and another means of assessing the achievement of Academy objectives. Fifty-seven individuals responded to invitations from 2021 Academy participants to rate their leadership behaviors prior to the Academy and 52 individuals rated participants at the end of the Academy. The number of raters for each participant ranged from 0 to 5 on the pre-Academy questionnaire and 0 to 5 on the post-Academy questionnaire. One person did not have raters on the pre-Academy questionnaire and another person did not have a rater on the post-Academy questionnaire. Excluding the participants that did not have raters, the average number of raters was 3.6 for the pre-Academy questionnaire and 3.3 for the post-Academy questionnaire.

An independent samples *t*-test comparing raters' perspectives on participants' transformational leadership showed a significant increase from pre-Academy ($M = 3.17$, $SD = 0.33$) to post-Academy ($M = 3.35$, $SD = 0.46$); $t(107) = 2.43$, $p = 0.017$, $d = .45$. Results are summarized in Table 8. Raters assessed a significant increase in three of the four transformational leadership behaviors (Idealized Influence, Inspirational Motivation, and Intellectual Stimulation).

Table 8. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Transformational Leadership Behaviors Before and After the Academy*

Transformational Leadership Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Idealized Influence – Pre-Academy	57	3.16	.35	2.07	107	.041*	0.39
Idealized Influence – Post-Academy	52	3.31	.42				
Inspirational Motivation – Pre-Academy	57	3.16	.48	2.70	107	.008**	0.51
Inspirational Motivation – Post-Academy	52	3.42	.54				
Intellectual Stimulation – Pre-Academy	57	3.14	.38	2.02	107	.046*	0.38
Intellectual Stimulation – Post-Academy	52	3.32	.55				
Individual Consideration – Pre-Academy	57	3.23	.52	1.38	107	.171	0.27
Individual Consideration – Post-Academy	52	3.37	.53				
Total Trans. Leadership – Pre-Academy	57	3.17	.33	2.43	107	.017*	0.45
Total Trans. Leadership – Post-Academy	52	3.35	.46				

* $p < .05$. ** $p < .01$.

An independent samples *t*-test comparing raters' perspectives on participants' champion of innovation behavior showed a significant increase from pre-Academy ($M = 3.17$, $SD = 0.56$) to post-Academy ($M = 3.51$, $SD = 0.50$); $t(107) = 3.83$, $p = 0.001$, $d = .64$. Results are summarized in Table 9. Raters assessed a significant increase in all three champions of innovation dimensions.

Table 9. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Champion of Innovation Behaviors Before and After the Academy*

Champion of Innovation Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Enthusiasm & Confidence – Pre-Academy	57	3.05	.66	3.35	107	.001***	0.66
Enthusiasm & Confidence – Post-Academy	52	3.44	.52				
Persistence – Pre-Academy	57	3.27	.46	2.16	107	.033*	0.40
Persistence – Post-Academy	52	3.47	.53				
Right People Involved – Pre-Academy	57	3.18	.61	4.01	107	.001***	0.77
Right People Involved – Post-Academy	52	3.63	.56				
Total Champ. of Innovation – Pre-Academy	57	3.17	.56	3.83	107	.001***	0.64
Total Champ. of Innovation – Post-Academy	52	3.51	.50				

* $p < .05$. *** $p < .001$.

An independent samples *t*-test comparing raters' perspectives on participants' awareness of water issues in Nebraska showed a significant increase from pre-Academy ($M = 3.25$, $SD = 0.70$) to post-Academy ($M = 3.61$, $SD = 0.47$); $t(107) = 3.10$, $p = 0.003$, $d = 0.60$. Raters also

assessed a significant increase in participants' engagement in Nebraska water issues from pre-Academy ($M = 3.18$, $SD = 0.73$) to post-Academy ($M = 3.45$, $SD = 0.60$); $t(107) = 2.14$, $p = 0.035$, $d = .40$. Results are summarized in Table 10.

Table 10. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Nebraska Water Knowledge and Engagement Before and After the Academy*

Water Knowledge & Engagement	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Awareness – Pre-Academy	57	3.25	.70	3.10	107	.003**	0.60
Awareness – Post-Academy	52	3.61	.47				
Engagement – Pre-Academy	57	3.18	.73	2.14	107	.035*	0.40
Engagement – Post-Academy	52	3.45	.60				

* $p < .05$. ** $p < .01$.

An independent samples *t*-test comparing raters' perspectives on participants' civic capacity showed a significant increase from pre-Academy ($M = 3.13$, $SD = 0.57$) to post-Academy ($M = 3.44$, $SD = 0.64$); $t(107) = 2.66$, $p = 0.009$, $d = 0.51$. Results are summarized in Table 11. Raters assessed a significant increase in all three dimensions of civic capacity from pre-Academy to post-Academy.

Table 11. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Civic Capacity Before and After the Academy*

Civic Capacity	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Drive – Pre-Academy	57	3.11	.63	2.30	107	.023*	0.44
Drive – Post-Academy	52	3.40	.69				
Connections – Pre-Academy	57	3.13	.64	3.22	107	.002**	0.62
Connections – Post-Academy	52	3.52	.62				
Pragmatism – Pre-Academy	57	3.15	.58	2.02	107	.046*	0.39
Pragmatism – Post-Academy	52	3.40	.70				
Total Civic Capacity – Pre-Academy	57	3.13	.57	2.66	107	.009**	0.51
Total Civic Capacity – Post-Academy	52	3.44	.64				

* $p < .05$. ** $p < .01$.

An independent samples *t*-test comparing raters' perspectives on participants' entrepreneurial leadership behavior showed a significant increase from pre-Academy ($M = 3.27$, $SD = 0.36$) to post-Academy ($M = 3.45$, $SD = 0.43$); $t(107) = 2.35$, $p = 0.021$, $d = 0.45$. Results are summarized in Table 12.

Table 12. *Results of Independent Samples t-Test Comparing Raters' Perceptions of Participants' Entrepreneurial Behavior Before and After the Academy*

Entrepreneurial Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Entrepreneurial Behavior – Pre-Academy	57	3.27	.36	2.35	107	.021*	0.45
Entrepreneurial Behavior – Post-Academy	52	3.45	.43				

* $p < .05$.

An independent samples *t*-test comparing raters' perspectives on participants' boundary spanner behavior showed a significant increase from pre-Academy ($M = 3.07$, $SD = 0.42$) to post-Academy ($M = 3.46$, $SD = 0.39$); $t(102) = 4.87$, $p = 0.001$, $d = 0.96$. Results are summarized in Table 13.

Table 13. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Transformational Leadership Behaviors Before and After the Academy*

Transformational Leadership Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Trustworthiness – Pre-Academy	52	3.26	.35	4.54	102	.001***	0.88
Trustworthiness – Post-Academy	52	3.59	.40				
Autonomy – Pre-Academy	52	3.01	.53	4.77	102	.001***	0.92
Autonomy – Post-Academy	52	3.46	.44				
Authentic Leadership – Pre-Academy	52	3.03	.51	3.75	102	.001***	0.73
Authentic Leadership – Post-Academy	52	3.39	.47				
Perspective Taking – Pre-Academy	52	3.00	.52	3.84	102	.001***	0.75
Perspective Taking – Post-Academy	52	3.39	.52				
Relationship Developer – Pre-Academy	52	3.06	.61	3.54	102	.001***	0.69
Relationship Developer – Post-Academy	52	3.47	.57				
Effective Sci. Comm. – Pre-Academy	52	3.07	.53	3.79	102	.001***	0.75
Effective Sci. Comm. – Post-Academy	52	3.46	.51				
Total Boundary Spanner – Pre-Academy	52	3.07	.42	4.87	102	.001***	0.96
Total Boundary Spanner – Post-Academy	52	3.46	.39				

* $p < .05$. ** $p < .01$.

Results of the 2021 Academy participants' assessments show a significant change in transformational leadership behaviors, innovation behaviors, awareness of Nebraska water issues, engagement in water issues, civic capacity, and entrepreneurial leadership behavior. These changes are evidence that the curriculum is meeting the objectives of the Academy.

While the overall results were statistically significant from both the participants' and raters' perspectives, the participants generally scored themselves much lower than the raters on

all skills and abilities. This is contrary to most other years when participants tended to rate themselves slightly higher than their raters. For some reason the 2021 class was more critical of their leadership skills and abilities.

2021 Session Evaluations

Session evaluations covered the specific topics addressed during each session. Participants concluded that their knowledge and understanding increased substantially after each session (Appendix II). Results provide strong support for the Academy's objectives. Participants' feedback was incorporated into session planning. Organizers made adjustments in subsequent sessions based on the feedback. For example, participants have often expressed a desire for more discussion with presenters. The planning team incorporated more time for discussion into sessions and has made a point to remind presenters to allow time for question and answers.

The participants' feedback is used to plan the 2022 Academy. Presenters that were commended by participants are being retained and new presenters will be invited. New leadership and water related topics are being investigated. Field trip destinations, presenters, group projects, and recruitment are also being adjusted.

Post session evaluations are a valuable tool for gauging participants experience with the Academy. Feedback from participants will continue to guide the development and delivery of the Academy.

Cumulative Nebraska Water Leaders Academy Results

Leadership Knowledge, Skills, and Behaviors – Participants' Perspectives

Cumulative Participants

One hundred fifty-one of the 153 total Academy participants have completed the pre- and post-Academy assessment of leadership behaviors, champion of innovation behaviors, Nebraska water issues knowledge and behavior, and entrepreneurial leadership behavior since 2011. Thirty-eight females and 113 males have completed the pre- and post-assessment (39 females and 114 males have completed the Academy). Respondents' ages ranged from 24 to 68 years with a median of 37 years.

A paired-samples *t*-tests showed there has been a significant cumulative increase in the cumulative participants' transformational leadership behaviors from pre-Academy ($M = 2.76$, SD

= 0.46) to post-Academy ($M = 3.07$ $SD = 0.39$); $t(133) = 11.66$, $p = 0.000$, $d = .73$. Results are summarized in Table 14. There has been a significant increase in all four transformational leadership behaviors for Academy participants of nine classes of the Academy from pre-Academy to post-Academy.

Table 14. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Transformational Leadership Behavior Before and After the Academy (N = 151)*

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.69	0.48	3.00	0.41	0.31	10.06	150	.000***	0.69
Inspirational Motivation	2.77	0.60	3.08	0.51	0.31	9.03	150	.000***	0.56
Intellectual Stimulation	2.75	0.57	3.09	0.47	0.34	10.55	150	.000***	0.65
Individual Consideration	2.85	0.53	3.12	0.41	0.27	8.04	150	.000***	0.55
Total Trans. Leadership	2.76	0.46	3.07	0.38	0.30	12.32	150	.000***	0.73

*** $p < .001$.

A paired-samples *t*-test showed there has been a significant increase in cumulative participants' innovation behaviors from pre-Academy ($M = 2.96$, $SD = 0.50$) to post-Academy ($M = 3.25$, $SD = 0.41$); $t(150) = 10.98$ $p = 0.000$, $d = .63$. Results are summarized in Table 15. Nine classes of Academy participants have demonstrated a significant increase in all three champions of innovation dimensions from pre-Academy to post-Academy.

Table 15. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Champion of Innovation Behaviors Before and After the Academy (N = 151)*

Champion of Innovation Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Expresses Enthusiasm and Confidence in Innovation	2.85	0.68	3.18	0.54	0.33	8.83	150	.000***	0.52
Persistence under Adversity	2.94	0.59	3.21	0.52	0.27	7.64	150	.000***	0.49
Get Right People Involved	3.08	0.58	3.36	0.50	0.28	8.40	150	.000***	0.52
Total Champ. of Innov.	2.96	0.50	3.25	0.41	0.29	10.98	150	.000***	0.63

*** $p < .001$.

A paired-samples *t*-test showed there has been a significant increase in awareness of Nebraska policy water issues for Academy participants from eight classes of the Academy from pre-Academy ($M = 2.76$, $SD = 0.80$) to post-Academy ($M = 3.41$, $SD = 0.51$; $t(150) = 11.74$, $p = 0.000$, $d = .97$). Results are summarized in Table 16. There has been a significant increase in engagement in water policy issues for eight classes of participants from pre-Academy ($M = 2.55$, $SD = 0.90$) to post-Academy ($M = 3.09$, $SD = 0.71$); $t(150) = 10.31$, $p = 0.000$, $d = .67$.

Table 16. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Nebraska Water Knowledge and Engagement Before and After the Academy (N = 151)*

Water Knowledge & Engagement	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.76	0.80	3.41	0.51	0.65	11.74	150	.000***	0.97
Engagement	2.55	0.90	3.09	0.71	0.54	10.31	150	.000***	0.67

*** $p < .001$.

Civic capacity was assessed for the first time in 2016. Thus, cumulative results for civic capacity represent the past three Academy classes. Results of a paired-samples *t*-test showed a significant increase in cumulative participants' civic capacity from pre-Academy ($M = 2.29$, $SD = 0.82$) to post-Academy ($M = 2.82$, $SD = 0.65$); $t(86) = 9.27$, $p = 0.000$, $d = .72$. Results are summarized in Table 17. There was a significant increase in all three civic capacity dimensions from pre-Academy to post-Academy.

Table 17. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Civic Capacity Before and After the Academy (N = 87)*

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Drive	2.38	0.89	2.77	0.78	0.39	6.63	86	.000***	0.47
Connections	2.40	0.93	3.02	0.71	0.62	8.62	86	.000***	0.74
Pragmatism	2.09	0.90	2.66	0.73	0.57	7.82	86	.000***	0.70
Total Civic Capacity	2.29	0.82	2.82	0.65	0.52	9.27	86	.000***	0.72

*** $p < .001$.

A paired-samples *t*-test of entrepreneurial leadership behavior showed there has been a significant increase in eight Academy classes from pre-Academy ($M = 2.70$, $SD = 0.69$) to post-Academy ($M = 3.01$, $SD = 0.58$); $t(150) = 8.12$, $p = 0.000$, $d = 0.49$. Results are summarized in Table 18.

Table 18. Results of Paired Samples *t*-Test Comparing Cumulative Participants' Entrepreneurial Leadership Behavior Before and After the Academy ($N = 151$)

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Entrepreneurial Behav.	2.70	0.69	3.01	0.58	0.31	8.12	150	.000***	0.49

*** $p < .001$.

Leadership Knowledge, Skills, and Behaviors – Raters' Perspectives

Cumulative Results of External Raters

A series of independent samples *t*-tests were conducted to compare the cumulative raters' perspective on Academy participants' transformational leadership behaviors. Three hundred fifty raters have completed pre-Academy assessments and 315 raters have completed post-Academy assessments. Results showed a significant increase from pre-Academy ($M = 3.05$, $SD = 0.49$) to post-Academy ($M = 3.29$, $SD = 0.43$); $t(772) = 7.36$, $p = 0.000$, $d = .50$. Results are summarized in Table 19. The cumulated raters assessed a significant increase in all four transformational leadership behaviors.

Table 19. Results of Independent Samples *t*-Tests Comparing Cumulative Raters' Perspectives of Participants' Transformational Leadership Behaviors Before and After the Academy

Transformational Leadership Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Idealized Influence – Pre-Academy	407	3.05	.52	6.82	772	.000***	0.48
Idealized Influence – Post-Academy	367	3.28	.44				
Inspirational Motivation – Pre-Academy	407	3.09	.56	6.05	772	.000***	0.45
Inspirational Motivation – Post-Academy	367	3.33	.50				
Intellectual Stimulation – Pre-Academy	407	3.00	.56	7.25	772	.000***	0.53
Intellectual Stimulation – Post-Academy	367	3.28	.50				
Individual Consideration – Pre-Academy	407	3.05	.59	5.54	772	.000***	0.40
Individual Consideration – Post-Academy	367	3.26	.52				
Total Trans. Leadership – Pre-Academy	407	3.05	.49	7.36	772	.000***	0.50
Total Trans. Leadership – Post-Academy	367	3.29	.43				

*** $p < .001$.

An independent samples *t*-test comparing cumulative raters' perspectives of participants' innovation behaviors showed a significant increase from pre-Academy ($M = 3.19$, $SD = 0.48$) to post-Academy ($M = 3.47$, $SD = 0.43$); $t(772) = 7.50$, $p = 0.000$, $d = .61$. Results are summarized

in Table 20. The cumulated raters assessed a significant increase in all three champions of innovation behaviors from pre-Academy to post-Academy.

Table 20. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Champion of Innovation Behaviors Before and After the Academy*

Champion of Innovation Behavior	N	M	SD	t	df	Sig.	Cohen's d
Enthusiasm & Confidence – Pre-Academy	407	3.08	.64	6.84	772	.000***	0.50
Enthusiasm & Confidence – Post-Academy	367	3.37	.52				
Persistence – Pre-Academy	407	3.24	.50	6.45	772	.000***	0.46
Persistence – Post-Academy	367	3.47	.50				
Right People Involved – Pre-Academy	407	3.25	.52	7.75	772	.000***	0.61
Right People Involved – Post-Academy	367	3.55	.46				
Total Champ. of Innov. – Pre-Academy	407	3.19	.48	7.50	772	.000***	0.61
Total Champ. of Innov. – Post-Academy	367	3.47	.43				

*** $p < .001$.

An independent samples *t*-test comparing raters' perspectives on water issues knowledge showed a significant increase pre-Academy ($M = 3.25$, $SD = 0.64$) to post-Academy ($M = 3.58$, $SD = 0.49$); $t(772) = 7.48$, $p = 0.000$, $d = .58$. Results are summarized in Table 21. Raters also assessed a significant increase in cumulative participants' engagement with Nebraska water policy issues from pre-Academy ($M = 3.06$, $SD = 0.74$) to post-Academy ($M = 3.43$, $SD = 0.61$); $t(772) = 7.20$, $p = 0.000$, $d = .55$.

Table 21. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Nebraska Water Knowledge and Engagement Before and After the Academy*

Water Knowledge & Engagement	N	M	SD	t	df	Sig.	Cohen's d
Awareness – Pre-Academy	407	3.25	.64	7.86	772	.000***	0.58
Awareness – Post-Academy	367	3.58	.49				
Engagement – Pre-Academy	407	3.06	.74	7.48	772	.000***	0.55
Engagement – Post-Academy	367	3.43	.61				

*** $p < .001$.

Civic Capacity was assessed for the first time in 2016. Thus, cumulative results for civic capacity from the raters' perspective represent the past three Academy classes. Results of an independent *t*-test showed a significant increase in civic capacity from pre-Academy ($M = 3.04$, $SD = 0.59$) to post-Academy ($M = 3.35$, $SD = 0.60$); $t(447) = 5.72$, $p = 0.000$, $d = .52$. Results

are summarized in Table 22. The cumulated raters assessed a significant increase in all three dimensions of civic capacity from pre-Academy to post-Academy.

Table 22. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Civic Capacity Before and After the Academy*

Civic Capacity	N	M	SD	t	df	Sig.	Cohen's d
Drive – Pre-Academy	253	3.04	.66	4.88	477	.000***	0.44
Drive – Post-Academy	226	3.33	.66				
Connections – Pre-Academy	253	3.05	.63	6.40	477	.000***	0.59
Connections – Post-Academy	226	3.41	.60				
Pragmatism – Pre-Academy	253	3.04	.62	4.92	477	.000***	0.45
Pragmatism – Post-Academy	226	3.32	.63				
Total Civic Capacity – Pre-Academy	253	3.04	.59	5.72	477	.000***	0.52
Total Civic Capacity – Post-Academy	226	3.35	.60				

*** $p < .001$.

An independent-samples *t*-test comparing cumulative raters' perspectives of participants' entrepreneurial leadership behavior showed a significant increase from pre-Academy ($M = 3.16$, $SD = 0.55$) to post-Academy ($M = 3.37$, $SD = 0.57$; $t(771) = 4.96$, $p = 0.000$, $d = 0.37$). Results are summarized in Table 23.

Table 23. *Results of Independent Samples t-Test Comparing Cumulative Raters' Perspective of Participants' Entrepreneurial Leadership Behavior Before and After the Academy*

Entrepreneurial Behavior	N	M	SD	t	df	Sig.	Cohen's d
Pre-Academy	406	3.16	.55	5.39	771	.000***	0.37
Post-Academy	367	3.37	.57				

*** $p < .001$.

Discussion

The results of the empirical analysis and the review of the session evaluations demonstrate that the Academy is meeting its objectives and is successfully developing future water leaders. Academy participants demonstrated a significant increase in their leadership knowledge, skills, and behaviors. A series of educational modules was created in 2021 to increase participants' boundary spanning abilities. The empirical analysis showed that participants significantly increased their boundary spanning abilities. Participants also provided constructive and highly positive feedback overall. Moreover, participant concerns were addressed in subsequent sessions, and minor changes are planned for the 2022 Academy

curriculum based on participants' feedback. The changes include a few new topics and presenters.

Multi-rater feedback demonstrates that others have observed an increase in Academy participants' leadership knowledge, skills, and behaviors. Results of raters' perceptions of 2021 participants' leadership knowledge, skills, and behaviors were statistically significant. Likewise, results from the cumulative perspective of raters of all 10 Academy classes were statistically significant.

Team Projects

2021 Class Projects

The aim of the class project was modified in 2021 with the goal of more interesting and inspiring topics and with real-world applications. Several Academy alumni were approached for potential topics that could have real world implication for water management or education. Four topics with descriptive information were compiled and presented to Academy participants. Participants ranked topics by preference. Subsequently, three teams were formed comprised of participants who had ranked the topic as their first or second choice. One team (Hasebrook, Hobza, Mosier, Rennau, Ritz, and Schuerman) created an informational brochure on the successful delisting from the Endangered Species Act of the Interior Least Tern and the implications on Nebraska and management of vegetative sandbars and river channels. Results of their work indicate that little will change in the short term because many extant activities continue while the US Fish and Wildlife Service implements a 5-year post-delisting monitoring plan.



A second team (Neuffer, Pedley, Popp, Schaefer, and Scheele) produced a primer/brochure on the Platte River Recovery Implementation Program (PRRIP). The primer, intended as an informational brochure for public audiences at PRRIP exhibits, describes four topics – target wildlife species, timeline of significant events in the Platte River basin, major human uses of the Platte River, and a brief overview of PRRIP and its goals.

The third team (Bush, Miller, Mohr, Remmenga, Rimsiate, and Vinton) developed a visual representation of groundwater metering and allocation regulations. This series of maps informs stakeholders, groundwater management, and other interested parties on the state of groundwater management in Nebraska.

Academy Alumni

Many Academy alumni are serving as water leaders in local, national, and global arenas. Several alumni have been elected to Natural Resources Districts boards of directors. Several others are preparing to run for election to the boards of directors of multiple Natural Resources Districts. Other alumni are involved in local water boards and planning committees. Academy alumni are also members of other community boards or organizations ranging from planning, community involvement, education, and church groups. Numerous alumni are engaged in local political and community organizations as employees or volunteers. Many alumni have assumed supervisory roles in their workplaces, and they credit the Academy for instilling the skills, confidence, and experience they needed to advance. Examples of leadership includes, but is not limited to, alumni serving as:

- Special Advisor to the Secretary of the U.S. Department of Agriculture
- Nebraska Natural Resources Commission members
- Nebraska Environmental Trust board member
- Nebraska State Irrigation Association member
- City council member
- Foundation board members (alumni are serving on a variety of different boards)
- Coordinator for a state senator
- Water round-table discussion participants and committee members who work within a Nebraska-focused water task force, and

- Director of a nature preserve.

Additionally, an Academy alumnus is teaching a geography and water resources course at the University of Nebraska-Omaha, using knowledge gained from his experience in the Academy. Three alumni apply leadership behaviors learned in the Academy to their cooperative extension programming. Two alumni have begun volunteering at her local elementary school and a science fair. One Academy alumnus is engaged in international water management. He works facilitate resolutions to transboundary water conflict in Afghanistan, Tajikistan, and Pakistan.

The service of alumni in leadership roles demonstrates that the Academy is fulfilling its specified goals while also facilitating individual achievement. Advances in science and technology, combined with uncertain policy modifications, political challenges, population growth and a massive evolution in consumer behaviors and expectations, have created a need for both incremental and radical innovation at local to global scales. The increasingly rapid rate of change calls for entrepreneurial leaders who can serve as champions of innovation with a focus on the future. The Academy teaches and measures these skills and abilities. Alumni are working, serving, and leading locally and globally. They are leading innovation to create change and a more positive future in areas ranging from politics to education and international water management.

Future Plans

Our analyses indicate that only minor changes in the Academy curriculum are necessary. The instructional methods are generally working well, and the session topics and instructors/presenters have been generally well received. The Academy planners will consider replacing a few instructors/presenters as per numerous constructive criticisms expressed by participants. The Academy planners are also considering how to include more discussion opportunities with leadership and water experts. The evolving nature of water issues in Nebraska requires the Academy to be proactive in the development of curriculum and the choice of instructors/presenters in future Academy programs, as well as consideration of instructors/presenters who understand principles of adult learning.

Alumni are strongly encouraged to maintain active involvement with the Academy. To wit, many alumni have served on the Academy planning team. Alumni have presented at

Academy sessions and follow current activities on-line. Academy alumni are asked to keep the Academy organizers updated on their involvement in water issues and are included in announcements from the Academy planners. The Academy has a regular newsletter and maintains a Facebook page to communicate with alumni. Furthermore, alumni are invited to attend each session in 2022. The success of the 2015 and 2018 alumni reunions and alumni feedback indicate that alumni reunions are attractive and more should be planned. Therefore, there is ongoing discussion of an alumni reunion is ongoing.

Summary

Seventeen participants successfully completed the 2021 Academy bringing the total number of graduates to 153 since the inception of the program in 2011. Academy graduates have demonstrated increased transformational leadership behaviors, champion of innovation skills, water knowledge and engagement, civic capacity, entrepreneurial leadership behaviors, and boundary spanning abilities. Alumni have emerged as leaders in their communities and beyond. The Academy continues to meet its objectives. It also continues to expand and evolve based on participant feedback and the research being conducted with participants. The success of the 10 classes of the Academy has provided a firm foundation on which to build and expand. The blending water science and policy with the development of leadership will continue to be of tremendous importance in the sustainable use of Nebraska's water resources and community capacity.

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Appendix I

Contributors to the 2021 Nebraska Water Leaders Academy

Instructor	Organization	Program Title	Session
Renee Donner	UNL Department of Agricultural Leadership, Education and Communication (ALEC)	Social Media	#1, Lincoln
Maria Walker	Nebraska Extension, Southeast Research & Extension Center (SREC)	Gallup Strengths Finders	#1, Lincoln
Sen. Curt Friesen	Nebraska Unicameral	NARD involvement and broadband bill	#1, Lincoln
Mark Burbach	UNL School of Natural Resources (SNR) Conservation & Survey Division (CSD)	Full Range Leadership (i.e., Transformational Leadership)	#1, Lincoln
Mark Burbach	UNL SNR CSD	Pre-Academy Leadership Skills Assessment	#1, Lincoln
Jodi Delozier	UNL SNR	Bridging Boundaries – A Model for Effective Stakeholder Engagement (pt. 1)	#1, Lincoln
LeRoy Sievers	Nebraska Dept. of Natural Resources	Water Law Primer	#1, Lincoln
Ryan Chapman	Nebraska Department of Environmental Quality (NDEQ)	History of Federal and Nebraska Water Quality Laws, Regulations, and Policies	#1, Lincoln
Lee Orton	Nebraska State Irrigation Association (NSIA)	Science Element	#1, Lincoln
Allen Dutcher	UNL SNR	Nebraska Climate/Weather	#1, Lincoln
Matt Joeckel	UNL SNR CSD	Geology of Nebraska	#1, Lincoln
Jesse Korus	UNL SNR CSD	Hydrology of Nebraska	#1, Lincoln
John Heaston	Heaston Consulting	Nebraska Ecology Overview	#1, Lincoln
David Miesbach	NDEQ	NDEQ Standards, Programs, & Drinking Water Quality	#1, Lincoln
Cheryl Burkhart-Kriesel	Nebraska Extension, Panhandle Research & Extension Center (PREC)	Understanding the Community Context	#2, Scottsbluff
Dakota Staggs	Nebraska Children and Families Foundation	Influencing Community Capitals and Community Capacity: What We've Learned about the Water Leaders Academy	#2, Scottsbluff
Lee Orton	Nebraska State Irrigation Association (NSIA)	Nebraska's Public Power & Irrigation Districts History	#2, Scottsbluff
J. Michael Jess	Water Resources Engineer (former director NDNR)	River Basin Compacts & Decrees	#2, Scottsbluff
Kevin Adams	Farmers Irrigation District	North Platte Reservoir & Irrigation System	#3, Scottsbluff
Dennis Strauch	Pathfinder Irrigation District	North Platte Reservoir & Irrigation System	#3, Scottsbluff
Richael Young	Mammoth Trading	Water Markets in Practice	#2, Scottsbluff
Pat O'Brien	Upper Niobrara-White NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects/Upper Niobrara White NRD Projects & Programs	#3, Scottsbluff
Rod Horn	South Platte NRD	South Platte NRD Projects and Programs	#2, Scottsbluff
John Berge	North Platte NRD	North Platte NRD Projects and Programs	#2, Scottsbluff
Thad Kuntz	Adaptive Resources, Inc.	Western Water Use Management Modeling	#2, Scottsbluff
Gina Matkin	UNL Department of Agricultural Leadership, Education and Communication (ALEC)	Communicating Across Diverse Perspectives	#3 North Platte
Wes Eaton	Penn State University	Best Practices and Outcomes in Collaborative Approaches to Water Management: Integrating Research and Practice	#3 North Platte
Brad Edgerton	Frenchman Cambridge Irrigation District	Panel – Central Nebraska Water Issues	#3 North Platte
Jason Farnsworth	Platte River Recovery Implementation Project	Panel – Central Nebraska Water Issues	#3 North Platte
Devin Brundage	Central Nebraska Public Power & Irrigation Dist.	Panel – Central Nebraska Water Issues	#3 North Platte

Andy Bishop	Nebraska Rainwater Basin Joint Venture	Panel – Central Nebraska Water Issues	#3 North Platte
Kevin Fornoff	Middle Republican NRD	Panel – Central Nebraska Water Issues	#3 North Platte
John Heaston	Heaston Consulting	Panel Moderator	#3 North Platte
Jodi DeLozier	UNL SNR	Bridging Boundaries – A Model for Effective Stakeholder Engagement (pt. 2)	#3 North Platte
Roric Paulman	Paulman Farms	Water Efficiency Technology Deployed on the Family Farm	#3 North Platte
Chuck Burr	Nebraska Extension	<i>Nebraska TAPS Program</i>	#3 North Platte
Kent Miller	Twin Platte NRD	Advance Water Monitoring System	#3 North Platte
Ann Dimmitt	Twin Platte NRD	Advance Water Monitoring System	#3 North Platte
Ryan Chapman	Nebraska Department of Environmental Quality (NDEQ)	NDEE Agency programs related to modern production ag	#3 North Platte
David Miesbach	Nebraska Department of Environmental Quality (NDEQ)	NDEE Agency programs related to modern production ag	#3 North Platte
Jodi DeLozier	UNL SNR	Bridging Boundaries – A Model for Effective Stakeholder Engagement (pt. 3)	#4, Valentine
Mike Murphy	Middle Niobrara NRD	Panel - The Niobrara River Valley, The Past, The Present, The Future	#4, Valentine
Gordon Warrick	National Park Service, Niobrara National Scenic River	Panel - The Niobrara River Valley, The Past, The Present, The Future	#4, Valentine
Terry Julesgard	Lower Niobrara-White NRD	Panel - The Niobrara River Valley, The Past, The Present, The Future	#4, Valentine
John Heaston	Heaston Consulting	Panel Moderator	#4, Valentine
Matt Joeckel	UNL SNR CSD	Niobrara River Valley Geology	#4, Valentine
Regina Osburn	Cherry County Tourism & Valentine Visitor's Center	Tourism in the Middle Niobrara River Region	#4, Valentine
Tatiana Davila	Nebraska Department of Environmental Quality (NDEQ)	Nebraska Wellhead Protection Program	#4, Valentine
Annette Sudbeck	Lewis & Clark NRD	Panel - Bazile Groundwater Management Area Program	#4, Valentine
Jeremy Milander	Nebraska Extension	Panel - Bazile Groundwater Management Area Program	#4, Valentine
Tatiana Davila	Nebraska Department of Environmental Quality (NDEQ)	Panel - Bazile Groundwater Management Area Program	#4, Valentine
Tom Heinemann	Jacobs Engineering	Omaha's Combined Sewer Overflow Project	#5, Omaha
Jim Theiler	City of Omaha	Omaha's Combined Sewer Overflow Project	#5, Omaha
Paul Woodward	Papio-Missouri NRD	Water Quality Projects and Flood Control Levees	#5, Omaha
Amanda Grint	Papio-Missouri NRD	Flood Control Dams	#5, Omaha
Ray Hutzell	City of Omaha	Missouri River Wastewater Treatment Plant	#5, Omaha
Kevin Tobin	Metropolitan Utilities District	Platte West Water Production Facility	#5, Omaha
Jennifer Schellpeper	Nebraska Department of Natural Resources	Legislation Supporting Integrated Water Resource Management in Nebraska: Bringing Together Prior Appropriation and Correlative Water Rights	#5, Omaha
Connie Reimers-Hild	Wild Innovation	Leading Like a Futurist	#5, Omaha
Gerald Mestl	Nebraska Game & Parks Commission	The Missouri River-Past, Present, Future	#5, Omaha
Steve McNulty	NDEQ	NDEQ Financial Assistance Programs	#5, Omaha
David Miesbach	NDEQ	Water Well Standards and Waste Water	#5, Omaha

Steven Wolf	Fides Munusque Fidele	Risk Communication	#5, Omaha
Ethan Freese	Platte Basin Timelapse Program	Beauty, diversity, and ecology of the Platte River and Sandhills of central Nebraska conveyed through multimodal digital technologies	#6 Kearney
Dakota Altman	Platte Basin Timelapse Program	Beauty, diversity, and ecology of the Platte River and Sandhills of central Nebraska conveyed through multimodal digital technologies	#6 Kearney
John Heaston	Heaston Consulting	Ten Things Every Conservationist Should Know	#6 Kearney
Nick Brozovic'	Daugherty Water for Food Global Institute	Water Economics	#6 Kearney
Jodi Delozier	UNL SNR	Bridging Boundaries – A Model for Effective Stakeholder Engagement (pt. 4)	#6 Kearney
Mark Burbach	UNL SNR CSD	Personal Empowerment – Engaging Your Leadership Capacity	#6 Kearney
Mark Burbach	UNL SNR CSD	Post-Academy Leadership Assessment	#6 Kearney
John Chapo	Lincoln Children's Zoo	Community Involvement and Leadership Opportunities	#6 Kearney
Mark Burbach	UNL SNR CSD	Session Facilitation	All Sessions

Appendix II

Session Evaluations

Nebraska Water Leaders Academy

June 17 & 18, 2021

Lincoln, NE

14 Responses

Please provide two responses for each statement below. In the section labeled “BEFORE this Academy Session” circle the answer that best describes you BEFORE this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of this Academy Session” circle the answer that best describes you NOW that you finished this session of the Water Leaders Academy.

BEFORE this Academy Session						Now, at the END of this Academy Session					End Mean	% Change
Not at all	A little	Some what	Very Much	Completely		Not at all	A little	Some what	Very Much	Completely		
1(2)	2(5)	3(5)	4(2)	5	1) I understand how to maximize my personal and professional networks through social media	1	2(1)	3(4)	4(7)	5(2)	3.71	49
1	2(1)	3(11)	4(2)	5	2) I understand how applying my Strengths can affect my leadership	1	2	3(2)	4(8)	5(4)	4.14	35
1(5)	2(2)	3(6)	4(1)	5	3) I understand Full Range Leadership	1	2	3(5)	4(8)	5(1)	3.71	68
1(8)	2(2)	3(3)	4(1)	5	4) I understand the role of a boundary spanner in effective stakeholder engagement	1	2	3(5)	4(8)	5(1)	3.71	108
1(2)	2(4)	3(5)	4(3)	5	5) I understand Nebraska’s water laws	1	2	3(4)	4(10)	5	3.71	41
1(2)	2(5)	3(5)	4(2)	5	6) I understand the history of Federal and Nebraska water quality laws	1	2(1)	3(7)	4(6)	5	3.21	29
1	2(4)	3(8)	4(2)	5	7) I understand Nebraska’s climate and weather	1	2	3(3)	4(10)	5(1)	3.86	35
1(1)	2(6)	3(5)	4(2)	5	8) I understand Nebraska’s geology	1	2	3(4)	4(9)	5(1)	3.71	47
1(1)	2(4)	3(6)	4(3)	5	9) I understand Nebraska’s groundwater hydrology	1	2	3(4)	4(9)	5(1)	3.79	36
1(2)	2(4)	3(4)	4(4)	5	10) I understand important ecological issues in Nebraska	1	2	3(6)	4(7)	5(1)	3.64	34

(Please turn over...)

11) What is Your Main Takeaway from this session of the Nebraska Water Leaders Academy?

- There is plenty of work to do regarding water in NE.
- I have a lot to learn about the leadership aspect from this course and look forward to it.
- There is a whole lot more involved with water in Nebraska than I knew!
- Anyone involved in the water realm that wants to be a leader must take time to develop their strengths in order to reach a broad audience; many people have different perspectives when it comes to water.
- Nebraska water issues very complex.
- Water is People issue.
- Lot's of knowledge. Great people – excited to get to know everyone.
- My personality. A lot of info. Need to dig in & absorb.
- Importance of having comprehensive view of water background, laws, issues, and management.
- I did not realize how dire the situation was with megadrought and implications to our ground water supply. A lot of efforts have been made to use water more efficiently, but clearly that is not enough. It appears that more dramatic measures are necessary to not only maintain, but make any progress towards recharging groundwater.
- Importance of water leadership.
- I am glad I'm a part of the academy this year. I'm excited to hit the road and do more active, hands on, and experiential learning in future sessions.
- Water is a people issue and the issues are often multi-faceted & complex.
- There is a deep connection between ground & surface water.

12) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- Inspirational Motivation, I will look for opportunities to motivate others.
- The water law aspect is something that is incredibly important for my work. Now that I know more, I feel more confident in my ability to advise producers on how to approach different situations.
- Weather data & predicting drought which will affect river flows.
- The 5 strengths I discovered as my top; now that I have background on what those strengths mean I will be able to sue them on a daily basis.
- To use my specific strengths. I plan to apply my specific strength to communicate and work with others.
- I would like to incorporate Boundary Spanner Techniques in the future stakeholder engagement events with NEDNR.
- I'll try to be better with social media strategy. Also, always a good reminder to freely express my opinions, observations, ask questions.

- In between streams are kinda miniature aquifers of a larger aquifer. Water is global. Water is 100%, no loss, no gain. 100% recycled. Recharge is so slow vs the use. You can't remove water/pumping & recharge @ same rate. The demand outweighs the supply. However, there are areas in Nebr. that are increasing aquifer supply.
- Boundary Spanner.
- I think the Gallup Strengths were really useful to learn about. The speaker did a good job of highlighting how each strength could be utilized in group projects. I will certainly keep my strengths in mind in addition to trying to identify and utilize others' strengths while working with our partners.
- Be involved in water leadership.
- Enjoyed learning more LB962 history from LeRoy Sievers, and am interested in whether a similar "unanimous consent" model could ever be used in future water disputes or issues. The concept of individual consideration could be important here, as understanding what is important to individual stakeholders could help generate consensus.
- Reminder to craft explanations/answers to general public questions/concepts as brief as possible, but factual.
- Different leadership approaches & how to "act them out"

13) Additional Ideas, Comments, Suggestions, or Questions.

- Twelve hours of events on the first day was a little much.
- Really enjoyed the presenters. I got a lot out of the climatologist & the geology lectures.
- First day was pretty long – hard to stay focused the whole time. The NDEE presentation could be "beefed" up. Did not retain anything.
- Second day presentations were great, but they could be shorter and/or more interactive.
- A tour Day one?
- Seems like a wonderful group of participants and instructors. I am really looking forward to the upcoming months.
- Water Leader Branded Pens
- Less consecutive (sic) classroom time would make it easier to stay focused on day 1.

Nebraska Water Leaders Academy

July 15 & 16, 2021

Scottsbluff, NE

15 Responses

Please provide two responses for each statement below. In the section labeled “BEFORE this Academy Session” circle the answer that best describes you BEFORE this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of this Academy Session” circle the answer that best describes you NOW that you finished this session of the Water Leaders Academy.

BEFORE this Academy Session						Now, at the END of this Academy Session					End Mean	% Change
Not at all	A little	Some what	Very Much	Completely		Not at all	A little	Some what	Very Much	Completely		
1	2(2)	3(8)	4(5)	5	1) I understand the importance of natural resources to community development.	1	2	3(1)	4(11)	5(3)	4.13	29
1	2(9)	3(6)	4	5	2) I understand how I can influence my community’s capitals and community capacity	1	2	3(5)	4(8)	5(2)	3.80	63
1(4)	2(3)	3(7)	4(1)	5	3) I understand the history of Nebraska’s irrigation and public power districts	1	2	3(4)	4(10)	5(1)	3.80	63
1(4)	2(4)	3(7)	4	5	4) I understand the development of the integrated water system in the North Platte River Basin.	1	2(1)	3(5)	4(8)	5(1)	3.60	64
1(3)	2(11)	3(1)	4	5	5) I understand water markets.	1	2	3(8)	4(7)	5	3.47	100
1(2)	2(7)	3(6)	4	5	6) I understand the history of the NRD system.	1	2	3(3)	4(11)	5(1)	3.87	71
1(3)	2(6)	3(4)	4(1)	5(1)	7) I understand current NRD programs and projects in the Panhandle.	1	2	3(3)	4(10)	5(2)	3.93	64
1(7)	2(3)	3(4)	4(1)	5	8) I understand modeling projects that Thad Kuntz & Adaptive Resources have been involved with in the Panhandle.	1	2(1)	3(7)	4(6)	5(1)	3.47	79

(Please turn over...)

11) What is Your Main Takeaway from this session of the Nebraska Water Leaders Academy?

- The importance of surface irrigation in the panhandle.
- Irrigation is vital to the economy in the panhandle and there are a number of challenges that face irrigators in the area.
- Value of the water leader network.
- The surface water system in the Panhandle is incredibly complex. It's economic value to the North Platte Valley is massive and it's concerning that the aging infrastructure is now starting to fail.
- I have a much better understanding of the scale of the irrigation project in the panhandle & can better explain the importance of the ongoing maintenance & operations of the projects.
- Community Capital, Irrigation Canal System, NRD issues/roles.
- Complexities and necessities of water infrastructure. Uniqueness of each NRD and how issues vary west to east.
- My main takeaway is understand as to how the river flows affect groundwater along with local economies. Everything is interdependent.
- Surface water irrigation in the panhandle is incredibly complex. The sheer amount of data that must be completed to allocate resources is overwhelming. The view of the river valley from the top of Scott's Bluff is incredibly eye-opening. You can see the incredible scope that people have manipulated the landscape to irrigate agricultural lands.
- The North Platte Valley has very complex water issues that require a lot of cooperation between all the involved parties.
- It was nice to get a more personal sense of the importance of water to the people & economy of the North Platte River Valley.
- More knowledge of the North Platte Irrigation projects above McConaughy (sic).
- Lot of work to move water so communities can exist.
- Western Irrigation Districts.
- This is the first time I've seen the canal system in person. Travelling the area and seeing them, as well as talking to the managers, helped cement my understanding. I knew the Panhandle got significantly less water than Central/East NE, but seeing how different the irrigation system is this way was beneficial.

12) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- The importance of working with the NRD.
- Water Markets and Ground Water Modeling are topics addressed or used in developing IMPs and basin wide plans. They have confused me in the past but the sessions have helped me to understand them better.
- General knowledge on how critical surface water irrigation is to the Scottsbluff area economy.
- I enjoyed the talks about community development concerning natural resources. It kind of change how I view the subject. Breaking it down into separate categories makes it easier to understand different peoples perspectives, and will be useful going forward.
- I learned more about formal & informal water markets & will be able to explain these concepts to people I work with & elected officials.
- Community Capital – Involved, open mind, think outside the box. Potter community – What an example. Who said a golf course has to be 9 holes? Outside the box example.

- Community context – Groups are often stuck in conflict state, and how via honest, transparent communication and listening we can change that. I think it's important to always keep that in mind.
- Water markets & how they work. I think I may be able to correct a problem with our licensing through a water market.
- Now that I have a better understanding of the NRDs and their responsibilities, it will be easier to partner with them on various projects in the future.
- Modeling projects, they will offer a great visual representation to customer on how pumping practice could influence future groundwater amounts and users.
- It was really nice to spend time going deeper into water markets. This is helpful in my work trying to get a better understanding of trading & speculation concerns along the South Platte River in CO.
- Water Market assessments; not sure how to apply.
- Water Market Research.
- The different community capitals were new to me. I will be more conscience (sic) of how my work specifically impacts my surrounding community.

13) Additional Ideas, Comments, Suggestions, or Questions.

- I very much enjoyed leaving the classroom to actually get out and see some of the area. I feel that is an important part of this program.
- More time in the NPNRD Greenhouse!
- Excellent session. Loved the Community Capital, the tour (great!), NRDs, etc. All excellent. NRD was excellent.
- This is a great session.
- I really enjoyed the field trip. It was beneficial to see all of this water management in action. Sack lunch, snacks, & bus were great.
- Should always have tacos when in Scottsbluff. 😊

Nebraska Water Leaders Academy

August 12 & 13, 2021

North Platte, NE

15 Responses

Please provide two responses for each statement below. In the section labeled “BEFORE this Academy Session” circle the answer that best describes you BEFORE this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of this Academy Session” circle the answer that best describes you NOW that you finished this session of the Water Leaders Academy.

BEFORE this Academy Session						Now, at the END of this Academy Session					End Mean	% Change
Not at all	A little	Some what	Very Much	Completely		Not at all	A little	Some what	Very Much	Completely		
1	2(7)	3(7)	4(1)	5	1) I understand how to participate in or facilitate conversations that include differing perspectives or viewpoints	1	2	3(3)	4(11)	5(1)	3.87	49
1(2)	2(5)	3(7)	4(1)	5	2) I understand best practices for collaborative approaches to water management.	1	2(1)	3(2)	4(11)	5(1)	3.80	54
1	2	3	4	5	3) I understand eco-tourism in the Central Platte region from an environmental perspective	1	2	3	4	5		
1(2)	2(6)	3(6)	4(1)	5	4) I understand the issues surrounding the Platte/Republican interface.	1	2	3(4)	4(9)	5(2)	3.87	61
1	2(3)	3(12)	4	5	5) I understand the boundary spanner dimensions of autonomy, authentic leadership, and science communication in effective stakeholder engagement and collaborative resource mngt.	1	2	3(2)	4(11)	5(2)	4.00	43
1(6)	2(6)	3(3)	4	5	6) I understand the water efficiency technology deployed on the Paulman farm.	1	2	3(5)	4(8)	5(2)	3.80	111
1(5)	2(6)	3(2)	4(2)	5	7) I understand the Testing Ag Performance Solutions (TAPS) program.	1	2(1)	3(7)	4(6)	5(1)	3.47	68
1(3)	2(7)	3(4)	4(1)	5	8) I understand the NDNR programs related to modern production ag.	1	2(1)	3(6)	4(8)	5	3.47	58

(Please turn over...)

9) What is Your Main Takeaway from this session of the Nebraska Water Leaders Academy?

- Value of technology in forming efficiency
- Communication, listening, belonging and uniqueness to have a full picture & understand diff points of view. Importance of technology
- Communication with partners & players
- Water conservation comes from many sectors
- Effective communication and giving all stakeholders the opportunity to have a seat @ the table is critical to make positive progress.
- Obtaining a better understanding of precision ag. practices
- Outside the box thinking' being willing to try new things. Paulman's presentation had the Einstein quote when he said the same thinking that got you into your problem won't get you out of it.
- It's amazing how far technology has advanced in precision farming in the last decade
- If the governing bodies could back away the local Department associates could make water transfer effective. Paulson farm visit was great and very informative.
- Roric's farm is a laboratory & I am interested to continue to learn about precision ag tech.
- Producers must constantly adapt in order to survive
- Producers and regulators need to meet ½ way. And work together to impliment [sic] next generation water management best practices.
- Water management is incredibly complicated and involves many different stakeholders. It is increasingly important for us to identify stakeholders and learn how to best work with them, utilizing their strengths.
- Managing water is hard.
- Paulman Farms info

10) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- Better understanding of science communication, autonomy & authentic leadership is always very helpful. I'll try to apply tips in every day work.
- Autonomy
- To continue working on communication scientific information in an easy to understand fashion to those I work with who do not have a scientific background.
- Focusing more on using boundary spanning techniques
- Listening to diverse perspectives. I need to be better at realizing there's more than 2 ways to look at something
- The boundary spanning elements will come in handy as we start planning our next stakeholder meetings
- I will use my Boundery [sic] Spanning Dimensions
- I will play w/ the water well quality clearinghouse site, which I didn't know about.
- The interbasin transfer of water could be a tough situation in the future.
- I developed a better understanding of what it takes to have quality stakeholder engagement.

- It was really interesting to hear that VRI/Prescription Irrigation is still not as efficient as we would wish. I plan to see if we might be able to add well quality testing and recurrent sprinkler packages to our cost-share program options.
- Resources about collaborative product/issue identification.
- Stakeholder Engagemint [sic]

11) Additional Ideas, Comments, Suggestions, or Questions.

- Way too much presentation time. 1.5 + hours between breaks is way too long. Missed opportunity to show the implementation of technology on Roric's farm. TPNRD people added nothing, just repeated stuff Roric said. Don't tell people it's a tour when its really just more classroom time. Very disappointed with this session.
- Don't stay at Ramada North Platte next year. Seemed a bit sketchy. Would have been cool to go out and see some of Paulman's tech in the field. Really enjoyed being in the shop! Enjoying my group project and team members
- The conversations on the water transfer project was very interesting.
- I would have enjoyed a tour of the Paulman property to see how his irrigation practices produce results similar/different to his neighbors.
- The Platte/Republican discussion was really interesting.
- Too many Power Points this session! Need more adult learning practices implemented.

Nebraska Water Leaders Academy

September 16-17, 2021

Valentine, NE

14 Responses

Please provide two responses for each statement below. In the section labeled “BEFORE this Academy Session” circle the answer that best describes you BEFORE this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of this Academy Session” circle the answer that best describes you NOW that you finished this session of the Water Leaders Academy.

BEFORE this Academy Session						Now, at the END of this Academy Session					End Mean	% Change
Not at all	A little	Some what	Very Much	Completely		Not at all	A little	Some what	Very Much	Completely		
1	2(5)	3(6)	4(3)	5	1) I understand the boundary spanner dimensions of and relationship building, perspective taking, and trustworthiness in effective stakeholder engagement and collaborative resource management.	1	2	3(2)	4(10)	5(3)	4.00	40
1	2(3)	3(8)	4(3)	5	2) I understand management issues associated with Niobrara River stakeholders (panel discussion)	1	2	3(5)	4(9)	5	3.64	82
1(4)	2(7)	3(2)	4(1)	5	3) I understand Natural Resources Commission- Funding programs	1	2(4)	3(8)	4(2)	5	2.86	43
1(4)	2(6)	3(3)	4(1)	5	4) I understand the Niobrara River Valley Geology	1	2	3(7)	4(4)	5(3)	3.71	79
1(4)	2(7)	3(2)	4(1)	5	5) I understand the unique ecosystem of the middle Niobrara River	1	2(1)	3(4)	4(7)	5(2)	3.71	86
1(2)	2(7)	3(5)	4	5	6) I understand water-related tourism in the Middle Niobrara River Region	1	2	3(1)	4(10)	5(3)	4.14	87
1(3)	2(5)	3(4)	4(1)	5(1)	7) I understand the NDEE Wellhead Protection Program	1	2	3(3)	4(10)	5(1)	3.86	59
1(5)	2(5)	3(3)	4	5(1)	8) I understand the Bazile Groundwater Management Area Project (panel discussion)	1	2	3(4)	4(9)	5(1)	3.79	83

(Please turn over...)

9) What is Your Main Takeaway from this session of the Nebraska Water Leaders Academy?

- Enjoyed the kayaking geology trip and the geologic examples that were pointed out. Interesting to learn more about the working relationship btw MNNRD and the National Park Service.
- There is a fine line to hold when there is such natural beauty in an area. You have stakeholders who want to protect it, and stakeholders who want to profit off of it and benefit the community. It's a delicate balance.
- I never realized how much of a recreational impact the Niobrara has on the local economy. It's impressive how they have managed it and continue to look at how to manage it into the future.
- Push and pull between local control & protection of natural resources in the area, versus promoting tourism & economic development.
- The unique lay of the river.
- Managing tourism, agriculture and local economy in very complex when looking at all of the entities that have to be involved.
- Niobrara & tourism.
- I learned a lot about the geology of the Region.
- Seeing the geology 'live' on the river.
- The complexity about the recreational opportunities -> Economic benefits vs costs to the ecosystem (which eventually becomes economic costs, too).
- I am always amazed at the diversity of water issues around different regions of the state. It was really interesting to hear that groundwater here is actually increasing. The Niobrara is so unique in that it is springfed rather than snowmelt-fed. With less irrigation in this region than the Platte/Loup River Valleys, it should remain a healthy area within the High Plains Aquifer.
- Economics is typically a bigger drive than conservation.
- The geology of the Niobrara river structure.
- Water table in sandhills is increasing – was up 5' in 2019. Increased tourism will have financial benefits (sic) in Valentine area, but there will be concerns with more and more tourists visiting and maintaining lifestyle of local residence.

10) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- Boundry [sic] spanner concepts always good to have reminder on the importance of relationship building, perspectives, collaboration & stakeholder engagement
- Learning how to take someone else's perspective was useful. I'm in a lot of organizations, and often only look at things in a way they will benefit myself & my company.
- The boundary spanning portions continue to be helpful. I can definitely see myself using the core concepts while I am helping landowners make decisions.
- Relationship-building => important to network, ask people about themselves to improve collaborative efforts. Having food is important to get people to events and engaged.
- I feel I understand the aquafer (sic) better because of how well it was explained by Matt.
- Relationship building, it is key to understand that you have to cultivate relationships with people in order to ensure an outcome that all parties can agree on, whether it is an employee, customer, or another group.

- Boundary Spanning
- Tourism/Recreation can play a role in helping to fund/promote best water management practices. It might be a good idea to include tourism/recreation stakeholders in the future planning efforts.
- Importance of maintaining natural resources to support tourism. I will see the concept of tourism as another benefit to lake/stream restoration projects.
- Be more aware about the relationship building, perspective taking, and trustworthiness dimension. I'm planning on being more intentional about including them while working with various stakeholders.
- I will definitely apply the perspective-taking boundary spanner method in both professional and personal situations in the future. I like the idea of questioning everything and trying to find new, innovative solutions.
- Perspective
- Perspective taking – I will use this when needed when looking at my employees' projects when needed.
- Relationship, perspective taking, listen to other to build friendship and learn their point of view.

11) Additional Ideas, Comments, Suggestions, or Questions.

- Nice accommodations, fun trip, and interesting speakers
- Wonderful discussion on nitrates in the ground water and issues in educating the population with a goal of lowering those levels.
- I would have liked a little more background on the management issues in the area. What exactly is a Scenic River Designation? What regulations are associated with the designation? What are specific points of contention?
- Peppermill was excellent! Thank you for dinner. Consider adding where people are from (UNL, NRCS, etc.) on the name tags to speakers/guests know who we represent.
- I loved the guided kayaking trip. I've kayaked the Niobrara before, but didn't really know what I was looking for. I have an even greater appreciation for the area now that I understand the geology a little more.

Water Leaders Academy

October 14-15, 2021

Omaha, NE

15 Responses

Please provide two responses for each statement below. In the section labeled “BEFORE this Academy Session” circle the answer that best describes you BEFORE this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of this Academy Session” circle the answer that best describes you NOW that you finished this session of the Water Leaders Academy.

BEFORE this Academy Session						Now, at the END of this Academy Session					End Mean	% Change
Not at all	A little	Some what	Very Much	Completely		Not at all	A little	Some what	Very Much	Completely		
1(13)	2(2)	3	4	5	1) I understand Omaha’s CSO Program	1	2	3(9)	4(6)	5	3.40	200
1(10)	2(3)	3(2)	4	5	2) I understand Papio-Missouri NRD flood control projects in the Omaha metro area	1	2	3(7)	4(8)	5	3.53	141
1(12)	2(2)	3(1)	4	5	3) I understand Metropolitan Utilities District (MUD) water and wastewater treatment projects in Omaha	1	2(1)	3(9)	4(5)	5	3.27	227
1(5)	2(3)	3(3)	4(4)	5	4) I understand IWRM in Nebraska, bringing together prior appropriation and correlative water rights	1	2(1)	3(5)	4(8)	5(1)	3.60	50
1(1)	2(8)	3(5)	4(1)	5	5) I understand how to lead innovation for personal and organizational change	1	2(1)	3(5)	4(8)	5(1)	3.60	50
1(9)	2(4)	3(2)	4	5	6) I understand Missouri River management past, present, and future	1	2	3(6)	4(7)	5(2)	3.73	143
1(11)	2(3)	3	4(1)	5	7) I understand the State Revolving Fund Program	1	2(1)	3(11)	4(3)	5	3.13	124
1(4)	2(5)	3(3)	4(3)	5	8) I understand Nebraska water well standards and waste water rules	1	2	3(8)	4(6)	5(1)	3.53	51
1(4)	2(5)	3(3)	4(2)	5	9) I understand risk communication	1	2	3(1)	4(13)	5	3.93	77

Please turn over...)

10) What is Your Main Takeaway from this session of the Nebraska Water Leaders Academy?

- Out west everyone is trying to conserve water. Out East its all about controlling all the excess water.
- What really stood out to me was the Missouri River presentation Thursday night. I never realized that channelization of the river played such a large role in the flooding we experience fairly common.
- Omaha water and sewer systems are extremely complex and expensive. I find it hard to grasp how these systems can be affordable.
- I was in awe of the scope of MUD's water treatment plant
- Learning about the CSO programs & flood control projects was very interesting & new to me. I also very enjoyed learning about the Missouri River – very nice discussion at the dinner.
- Urban water issues are complicated. It is interesting the learn about the effort & infrastructure that are not obvious.
- Public water systems (Drinking water/sewer) are very complex and highly technical.
- M.U.D. Tour. Futurist presentation.
- I never realized how heavily the city of Omaha relies on the Missouri River to deal with their waste water.
- Omaha's big issues with waste management & the missouri [sic] river flood challenges.
- The facilities, etc for the waste water and municipal water treatment plants
- It is a very complex and monumental task to treat and deal with wastewater. I was impressed by the technology but yet surprised by the amount of work/time/money dedicated to something we take for granted every day.
- Better knowledge of Omaha's water systems.
- Water treatment is a complicated & expensive process!
- That all water is interconnected ... public & pvt. H₂O , public & pvt. wastewater; sw, & gw. Communication is key between all of these parties.

11) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- Futuristic thinking. It will help with personnel management
- I enjoyed the wild Future presentation. I often find myself getting caught up in day-to-day issues, and not thinking further & bolder in to the future. It will make a more consiece [sic] effort to do this.
- Risk Communication – Work to understand different perceptions of stakeholders.
- Leading like a futurist, & I think it will be personnaly [sic] beneficial to think more about the future when making decisions.
- Futuristic leadership. It reminds to intentionally be more positive and more optimistic when thinking about strategy, vision, mission
- Ways that decreasing flow capacity in rivers can be modeled – may be something I can use on the Platte.
- I want to be more cognizant to the fact that stake holders may have preconceived [sic] ideas about the agency I represent that may impact how my message is received.
- Futurist presentation – will use when redesigning permitting program.
- Risk communication will come in handy when it comes to dealing with Stake holder meetings, mainly by knowing how to effectively communicate to get a point across.
- Shoot for the moon – Look for large goals

- Investment in water treatment in the city which can relate on a smaller scale in rural communities.
- I will definitely use risk management in my work while dealing with landowners on controversial subjects.
- I learned a lot more about the past, present, and potential futures of the Missouri River, namely the ACE channelization project & the problems it has caused.
- Learning another's "language" and using it to best communicate. Make the info hit them on a personal level.

12) Additional Ideas, Comments, Suggestions, or Questions.

- I liked the tour and Paul was a great guide. More time orienting to the city of Omaha before or during the tour would be helpful.
- I think it would be interesting to hear from a well driller to learn about well construction.
- Great session
- It would be nice if some sessions could be held outside. Fresh air is a wonderful thing.
- Good Tour & presenters.
- Jennifer Shellpeper [sic] was a great presentation.
- It was difficult to hear during the water treatment plant tour @ Platte West. Not sure how to fix it other than having the tour guide use a small microphone. I don't know if it would be possible, but I would have liked to see more of the processes at the waste water treatment plant.
- Session organization was good. Group time in morning helps people get thinking.
- No notes. I enjoyed all the presenters this session, especially Gerald Mestl's Missouri River talk.
- -Speakers powerpoint presentations are much more impactful if the audience can clearly read the slides and if info is condensed.
- -On the tour of the DW treatment plant it would help to have a portable mic & speaker so that everyone can hear the tour guide.

Nebraska Water Leaders Academy

November 18-19, 2021

Kearney, NE

16 Responses

Please provide two responses for each statement below. In the sections labeled “BEFORE this Academy Session” and “BEFORE the Academy” circle the answer that best describes you BEFORE you participated in this session of the Academy and the Water Leaders Academy. Then, in the sections labeled “Now, at the END of the Academy Session” and “Now, at the END of this Academy Session” circle the answer that best describes you NOW that we have finished this session and the entire Academy.

Congratulations on your accomplishment!

BEFORE this Academy Session						Now, at the END of this Academy Session					End Mean	% Change
Not at all	A little	Some what	Very Much	Completely		Not at all	A little	Some what	Very Much	Completely		
1	2(3)	3(6)	4(7)	5	1) I understand the beauty, diversity, and ecology of the Platte River and Sandhills of central Nebraska	1	2	3(1)	4(11)	5(4)	4.19	29
1	2(7)	3(4)	4(5)	5	2) I understand how to get involved with or serve on public boards or service organizations	1	2	3(5)	4(10)	5(1)	3.75	30
1	2(3)	3(9)	4(4)	5	3) I understand the economics of water	1	2	3(3)	4(12)	5(1)	3.88	27
1	2(7)	3(7)	4(2)	5	4) I understand motivation to serve on public boards and/or service organizations	1	2	3	4	5	3.75	40
1	2	3	4	5	5) I understand the Nebraska One Health Program	1	2	3	4	5		
1	2(10)	3(2)	4(4)	5	6) I understand how to get involved in community leadership opportunities	1	2	3(5)	4(9)	5(2)	3.81	45
BEFORE the Academy						Now, at the END of the Academy						
1(2)	2(5)	3(8)	4(1)	5	7) I use my boundary spanner skills in collaborative endeavors	1	2	3(2)	4(10)	5(4)	4.13	65
1(1)	2(6)	3(8)	4(1)	5	8) I practice transformational leadership in my life	1	2	3(4)	4(9)	5(3)	3.94	54
1	2(1)	3(11)	4(4)	5	9) I can participate well in conversations that include differing perspectives or viewpoints	1	2	3(1)	4(13)	5(2)	4.04	27
1	2(4)	3(9)	4(3)	5	10) I can lead personal or organizational innovation	1	2	3(2)	4(12)	5(2)	4.00	36
1(6)	2(3)	3(3)	4(4)	5	11) I am involved in water policy issues	1(1)	2(2)	3(4)	4(6)	5(3)	3.50	51
1(4)	2(1)	3(9)	4(2)	5	12) I am a water leader	1	2	3(1)	4(7)	5(8)	4.44	54

(Please turn over)

13) What is Your Main Takeaway from this session?

- One presentation I found interesting was the one regarding motivation. After being forced to think about it, I discovered the root of my motivation for choosing my career was different from what I initially thought.
- Water will be a continuing point of contention in Nebraska, and people will need to work together to reach peaceful resolution.
- Made some very good professional connections.
- It was really eye-opening to hear multiple people emphasize that there is not finish line in conservation. I am a very goal-oriented person that likes to finish things and check them off. But I am now working on some longterm projects that I won't be able to finish. It really helps my mind-set to realize that its okay to make progress without "finishing".
- How I use boundary spanning in my everyday work.
- Realizing my motivation at work.
- Very interested in the time-lapse project. Would like to learn more about it and their story telling methods. Diversity of backgrounds & opinions is a good thing... breaks the narrow focus/blinders.
- No matter how hard you try you will never get it done. But you should still try like you expect to get things done (Authentic leadership).
- Partner praise doesn't always mean that you're doing well. Need to push partners a bit, even if they don't like it, to be a good leader.
- Audience is positional. What they say may not be their true feelings.
- Understanding the science of 'listening' to people to improve collaboration. (i.e. John Heaston meeting / sand/gravel manager, touring sites, etc.
- The importance of taking what we have learned and not sitting on it but go out in the state and use it.
- There's no finish line, but intentional efforts toward improving water use are critical. Taking the time to build relationships, understand different perspectives, establish trust with different stakeholder groups is key for the long-term.
- Boundary spanning
- Look into volunteering on boards
- There are many talented professionals in this class, and I am excited to have all these great individuals in my network.

14) List one specific skill or concept that you learned during this session, and describe how you will apply it in your life/work.

- John Heaston's point from his list about praise/getting cussed out. More often than not praise is not given, but when something does go wrong those my company works with are quick to curse us. I need to get better at keeping a level head when interacting with people like this.
- Probably the biggest skill is the ability to keep an open mind to other viewpoints.
- The time lapse videos are so cool! I am going to work with our Communications Assistant to put together some time-lapse videos to showcase work we have been doing on wetland restoration projects.
- I am an authentic Leadership boundary spanner and I need to make sure I am using all the boundary spanners when they are appropriate.
- I learned that I am using Trustworthiness at work. – I will continue to use trustworthiness
- Language can build bridges and can also build barriers. When I am explaining/teaching, I need to be cognizant of how I come across. Make sure I don't talk down or over another's head but rather learn their language, put it in terms that are concise & can be easily understood.

- I feel like John’s “10 thing every conservation professional should understand” will help me to be more effective in my work as a water planner.
- Look closely at the financials if you are on a non-profit board.
- Andy Bishops note on biologist diversifying knowledge on irrigation management to be met goals was a good real-world example of leadership.
- The boundary spanning is important in all areas of life.
- Being more intentional about using leadership skills (boundary spanning).
- Importance of local and non-profit boards
- Self motivation, I will assess what parts of my job motivate or de motivate and see how I can use the information to better my productivity
- Maintain this network that you helped us build

15) What is Your Main Takeaway from the overall Nebraska Water Leaders Academy?

- I didn’t realize how many leadership aspects [boundary spanning, transformational leadership, etc...] I was already using in my career. After participating in the Academy I now know how to further sharpen these skills.
- I feel better equipped [sic] to be a leader within my industry, and now look forward to being involved in future policy decisions in the state.
- Improved knowledge of water systems & the relationship between ground & surface water.
- As a biologist who works with a lot of other biologists, water is honestly not always the highest priority. It is often challenging to convince biologists to prioritize groundwater management and irrigation. After this Academy, my perspective have [sic] changed entirely. We NEED to make groundwater use a priority and find programs for water conservation at the same rate as wildlife conservation.
- There is way more involved with Nebraska water & waterways then I ever knew! I learned a lot from this course and I am seeing a lot of stuff differently now. This class will stay with me in my future as I work on projects.
- Water needs are diverse across the state. Water needs include irrigation (surface & groundwater), municipal, flood control, recreational, and habitat.
- That boundary spanning needs to become and stay a part of the discussions and communication happening w/in Natural Resources and the topics of the water world.
- Water is complex and multifaceted. WLA has helped me to gain a better understanding of issues w/ water, the different perspectives included and strategies to work through conflict.
- More is possible if you invest in relationships.
- Diversity of water activities/issues across the state. Like the selection of projects that are meaningful and could potentially be used.
- Great to see Nebraska and completed water projects and networking.
- The importance of working together. As a group of water leaders we need to work together.
- Fantastic experience. From the scientific aspect of water to reflecting about leadership skills & learning how to be more intentional about using them to the people – speakers clean water, and WLA organizers. I came seeking knowledge about Nebraska water issues. I leave inspired to lead and make a difference toward finding solutions.
- Engaging stakeholders and the importance of it.
- Great course. I loved learning about the different uses of water
- Great people and programming. Highly recommend.

16) Suggestions to the Academy for Future Consideration (i.e., topics, presenters, activities, information to share, etc.)?

- I think more concrete presentations, as in work/projects that have been completed, would be beneficial. There are a lot of abstract presentations, I would prefer more examples of what has been done.
- More examples of intraorganizational boundary spanning.
- When we were in North Platte, I would have liked to tour the farm in addition to the PPT. A trip to McCoughny (spelling?) or another reservoir [sic] would be great. Sitting in a crane blind in March/April near Gibbon would be wonderful if possible.
- We covered the state pretty well but we missed the north east corner of the state. Maybe look into this more. We saw water use but did not explore any hydro plants. Maybe a section on power generation from the river. Look at hydro plants nuclear plant & maybe an old hydro plant that shows the differences over time.
- -Hydroelectric
- -Fishery or lake rehabilitation
- Possibly get someone from UNMC or the public health side of things such as Jesse Bell.
- -Republican Basin
- -Rural and small town municipal water
- -Information on well drilling
- Someone from drought mitigation center would be great. Make time to get out on the Missouri river when in Omaha.
- -Adding lectures/presentations on real-world projects, planning efforts, case-studies
- -Adding something about the Republican River INCORPE [sic]
- Might be interesting to hear more perspective from the private sector (e.g., even engage with startups) to understand their innovative thinking about tackling water issues. I really enjoyed when we had discussions as a groups, Dedicating more time for that might be good.

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