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## 2017 Nebraska Water Leaders Academy - Final Report

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# 2017 Nebraska Water Leaders Academy – Final Report

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**December 31, 2017**

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# Nebraska Water Leaders Academy

## *Water Futures Partnership-Nebraska*

waterleadersacademy.org

### **Partner**

**University of Nebraska-Lincoln**

### **Funding**

#### **Nebraska Environmental Trust**

The Academy is funded through a grant from the Nebraska Environmental Trust. The Trust is funded by proceeds from the Nebraska Lottery and has awarded more than \$178 million to more than 1,300 conservation projects across the state of Nebraska since 1994.

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- Flowserve
- Sargent Irrigation District
- Mirage Flats Irrigation District



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## 2017 Nebraska Water Leaders Academy class

**Front Row (L to R):** Bret Schomer, Lower Platte North NRD, Wahoo; Brent Downey, Downey Drilling, North Platte; Travis Figard, Olsson Associates, Lincoln; DeAnna Bartruff, Central Nebraska Public Power & Irrigation District, Holdrege; Ben Miller, Nebraska Department of Environmental Quality, Lincoln; Kim Howell, Nebraska Department of Health and Human Services, Lincoln; Andy Bishop, Rainwater Basin Joint Venture, Grand Island; Kyle Hauschild, Lower Platte South NRD, Lincoln; John Berge, North Platte NRD, Scottsbluff; Brenda Densmore, US Geological Survey, Lincoln; John Miller, Nebraska Department of Natural Resources, Lincoln.

**Back Row (L to R):** Ryan McIntosh, Mattson Ricketts Law, Nebraska City; Jack Wergin, Upper Big Blue NRD, York; Don Masten, Ag Valley Cooperative, Edison, & Flying M, Loomis; Casey Campbell, Ducks Unlimited, Grand Island; Kevin Kruse, JEO Consulting, Lincoln; Tim Burnham, Nebraska Department of Health and Human Services, Grand Island; Dylan Rowe, T Rowe Inc., Lexington; Ben Beckman, Nebraska Water Center, Lincoln; Rick Kubat, Metropolitan Utilities District, Omaha.

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## Executive Summary

Twenty participants completed the 2017 Water Leaders Academy bringing the total number of graduates to 101 since the inception of the program in 2011. Assessment of participants' transformational leadership skills, champion of innovation skills, water knowledge and engagement, civic capacity, and entrepreneurial leadership behaviors showed a significant increase over the course of the year, from both participants' and their raters' perspectives. Feedback from participants was highly positive and constructive. Participant concerns were addressed, and only minor changes are planned for the 2018 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 beyond.

## 2017 Nebraska Water Leaders Academy - Final Report

### Introduction

The effective management of Nebraska's water resources is evermore challenged by variations in weather, climate, technology, socioeconomic policies, and regulation. Anthropogenic climate change, declining water tables and stream flows, increasing demands on freshwater, aging water infrastructure, fiscal constraints, and impacts on aquatic organisms are particularly imminent challenges in Nebraska and around the world (Pahl-Wostl et al., 2013; Pittock et al., 2008; USACE, 2010). Sustaining freshwater ecosystem services in the face of emerging environmental threats is a pressing global challenge (Pittock et al., 2013; Rockström et al., 2009, Millenium Ecosystem Assessment, 2005).

Changes in Nebraska's water resources, as well as a broad-based 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 change (Brasier et al., 2011; Morton et al., 2011; Pahl-Wostl et al., 2011; Redekop, 2010; Taylor et al., 2012). Moreover, it enables innovation, shared visions of a more sustainable water future, and collective success (McIntosh and Taylor, 2013).

The Nebraska State Irrigation Association (NSIA), the state's oldest water association, addressed the need for such leadership by establishing the Nebraska Water Leaders Academy (Academy) and the nonprofit Water Futures Partnership-Nebraska in 2011 in partnership with the University of Nebraska-Lincoln (UNL). 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.

Academy classes have always attained the specific goal of assembling participants from Nebraska with a wide range of water resources interests and a widespread geographic distribution. Moreover, the water leadership capacity in Nebraska has grown for seven 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 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 & Mayseless, 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 accurate information 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 101 participants with a wide range of professional, geographic, and water resources backgrounds. Twenty individuals participated in the 2017 Academy. The 2017 Academy consisted of six two-day sessions held in different communities (Lincoln, Kearney, Valentine, Scottsbluff, Omaha, and Nebraska City). The leadership component of the Academy was developed by Dr. Mark E. Burbach and Dr. Connie Reimers-Hild with contributions from accomplished faculty and staff at UNL (See Appendix 1). Nebraska water policy, law, and resource topics were addressed by leading experts in their respective fields from UNL; federal, state, and local agencies; NGOs; and other entities. Table 1 lists the curriculum topics covered in the 2017 Academy.

Table 1: *Curriculum topics presented by experts at the 2017 Nebraska Water Leaders Academy*  
(<sup>1</sup> = Session)

<b>Leadership</b>	<b>Policy/Law</b>	<b>Resource</b>
Transformational Leadership <sup>1,2,5,6</sup>	Water Law <sup>1</sup>	NE Climate/Weather <sup>1</sup>
Personality <sup>1</sup>	Nebraska Legislature <sup>1</sup>	NE Geology <sup>1</sup>
Etiquette and Public Presence <sup>1</sup>	South Loup Watershed Management Plan <sup>2</sup>	NE Groundwater Hydrology <sup>1</sup>
Diversity & Conflict <sup>2</sup>	Compacts & Decrees <sup>2</sup>	Water Quality in Nebraska <sup>1</sup>
Intersection of science and policy <sup>3</sup>	Niobrara National Scenic River <sup>3</sup>	Ecological Importance of the Central Platte Valley & Rainwater Basin <sup>2</sup>
Common Pool Resource Management <sup>3</sup>	Urban Water Conservation Strategies <sup>3</sup>	Ecology & Environmental Awareness <sup>2</sup>
Niobrara River Valley, The Past, The Present, The Future <sup>3</sup>	North Platte Reservoir Syst. <sup>4</sup>	N-CORPE Augmentation Project <sup>2</sup>
Community Capital <sup>4</sup>	North Platte Basin Integrated Water System <sup>4</sup>	Ecotourism – Commercial and Environmental Perspectives <sup>2</sup>
Leading Innovation <sup>5</sup>	NDEQ Projects, Panhandle <sup>4</sup>	Niobrara Geology and Ecosystem <sup>3</sup>
Involvement in Public Boards & Service Orgs <sup>6</sup>	Natural Resources Districts <sup>4</sup>	Valentine Stormwater Improvement <sup>3</sup>
Networking <sup>6</sup>	Water Markets <sup>5</sup>	Niobrara River Water Issues <sup>3</sup>
Empowerment <sup>6</sup>	NDEQ Financial Assistance Programs <sup>5</sup>	Panhandle Groundwater Modeling Projects <sup>4</sup>
Motivation <sup>6</sup>	Nebraska Water Investment Issues <sup>6</sup>	Municipal Water Supply & Wastewater <sup>5</sup>
Community Involvement & Leadership Opportunities <sup>6</sup>		Omaha Metro Flood Control Projects <sup>5</sup>
Next Steps – Leadership Opportunities <sup>6</sup>		Omaha's Combined Sewer Separation Project <sup>5</sup>
		Future of Ag Production <sup>6</sup>
	Missouri River-Past, Present, Future <sup>6</sup>	

This report summarizes the evaluation of the 2017 Academy as well as the cumulative evaluation of the Academy. Results will determine the effectiveness of the Academy in meeting its objectives, and also assist in planning the eighth Academy class in 2018.

### 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 evaluation consisted of two components – session evaluations and an empirical analysis using a pre- and post-Academy leadership assessment (Figure 1). Participants also completed a personality inventory pre-academy but the purpose of the inventory is self-awareness and it is not used in the program evaluation. The session evaluations gauged participants' change in knowledge levels related to leadership, policy, and water issues covered in each individual session. Participants also provided subjective feedback concerning the major knowledge they gained from the 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 the participants is also being used to plan the 2018 Academy.

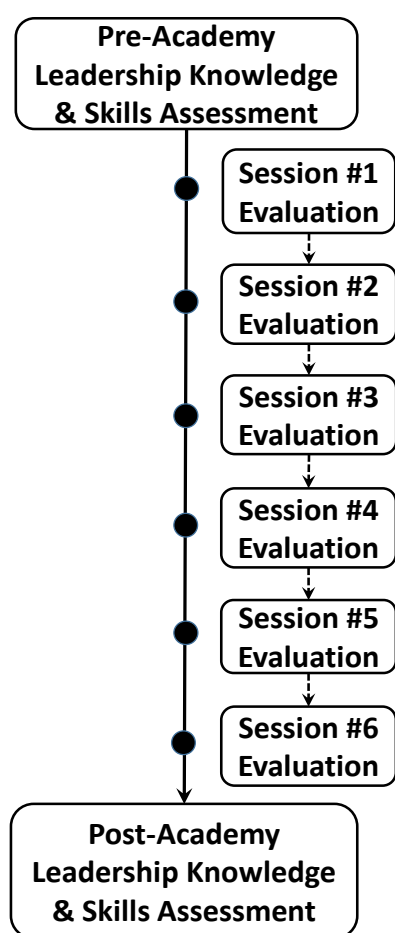


Figure 1. Flow chart of the Nebraska Water Leaders Academy program evaluation.

The empirical analysis component measures the participants' change in leadership knowledge, skills, and behavior from the beginning to the end of the Academy. This evaluation component gauges the effectiveness of the Academy curriculum. The objective was to evaluate participants' research-based transformational leadership behaviors, their capacity to engage in civic issues, and their innovation behaviors associated with positive individual and organizational outcomes. Participants' change in knowledge of, and engagement with, water issues in Nebraska was also assessed. Finally, participant's level of entrepreneurial leadership behaviors was assessed. This research is on-going and will include results from succeeding years.

## **Methodology**

### *Participants*

All twenty 2017 Academy participants completed the pre- and post-Academy assessment of transformational leadership behaviors, innovation behaviors, civic capacity, Nebraska water issues knowledge and behavior, and entrepreneurial leadership behaviors. There were three females and seventeen males. The participants' average age was 40.4 years with a range of 24 to 59.

### *Procedures*

A research-based questionnaire was employed to assess changes in leadership skills among participants over the course of the Academy. Items were also developed to measure participants' Nebraska water issues knowledge and behavior. The survey was administered on-line using Qualtrics™ software with the assistance of a trained graduate assistant from UNL. UNL Institutional Review Board (IRB) approval of the research was granted prior to beginning the assessment.

Academy participants were notified of the on-line questionnaire three weeks prior to the first Academy session in January 2017 and given instructions for the completion of the survey. This process was repeated three weeks prior to the final session in November 2017. Participants were also asked to invite others with whom they have a professional relationship to rate their leadership behaviors. Participants sent raters an e-mail invitation that included the link to the on-line questionnaire. All IRB protocols were followed and anonymity of participants and raters was ensured.

## Measures

The on-line questionnaire consisted of three research-based leadership assessments. The first assessment was the Multifactor Leadership Questionnaire (MLQ-5) developed by Bass and Avolio (1995). The MLQ-5 (-leader and -rater) 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. The MLQ-5 has satisfactory reliability and validity (Bass and Avolio, 1995). 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 Champions of Innovation scale has satisfactory reliability and validity (Howell, et al. 2005). 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 the following dimensions:

*Civic Drive*: desire and motivation to be involved with social issues.

*Civic Connections*: social capital found in the leader's internal and external social networks that specifically enables and promotes the success of collaboration.

*Civic Pragmatism*: ability to translate social opportunities, by leveraging structures and mechanisms for collaboration.

A fourth assessment was developed to measure participants' Nebraska water issues knowledge and behavior. 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 Academy also 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).

The internal reliability for the all the scales was .70 or greater. Nunnally and Bernstein (1994) concluded that acceptable minimum reliability (Cronbach's alpha) for measurement scales should be .70. Internal reliabilities are reported in Table 2.

Table 2. *Internal Reliabilities ( $\alpha$ ) for Academy Assessment Scales*

	Transformational Leadership Pre-Academy	Transformational Leadership Post-Academy
Participant	.91	.85
Rater	.90	.88
Cumulative Participant	.89	.89
Cumulative Rater	.93	.90
	Innovation Pre-Academy	Innovation Post-Academy
Participant	.83	.83
Rater	.80	.87
Cumulative Participant	.87	.81
Cumulative Rater	.87	.88
	Awareness & Engagement Pre-Academy	Awareness & Engagement Post-Academy
Participant	.92	.73
Rater	.90	.89
Cumulative Participant	.88	.78
Cumulative Rater	.92	.92
	Civic Capacity Pre-Academy	Civic Capacity Post-Academy
Participant	.91	.85
Rater	.92	.95
Cumulative Participant	.89	.83
Cumulative Rater	.93	.95
	Entrepreneurial Leadership Pre-Academy	Entrepreneurial Leadership Post-Academy
Participant	.70	.70
Rater	.72	.76
Cumulative Participant	.70	.70
Cumulative Rater	.72	.76

### Results from 2017 Nebraska Water Leaders Academy

#### Leadership Knowledge, Skills, and Behaviors – Participants' Perspective

The pre- and post-Academy transformational leadership behaviors of participants were assessed through a series of paired-samples *t*-tests. This assessment revealed a significant increase in participants' total transformational leadership behaviors from pre-Academy ( $M = 2.80$ ,  $SD = 0.42$ ) to post-Academy ( $M = 3.12$ ,  $SD = 0.28$ );  $t(20) = 5.05$ ,  $p = 0.000$ ,  $d = 0.90$ . Results are summarized in Table 3. There was a significant increase in all four of the transformational leadership behaviors.

Table 3. *Results of Paired Samples t-Tests Comparing Participants' Transformational Leadership Behaviors Before and After the Academy (N = 20)*

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.78	0.51	3.06	0.41	0.28	4.58	20	.000***	0.61
Inspirational Motivation	2.78	0.63	3.14	0.35	0.38	3.63	20	.002**	0.71
Intellectual Stimulation	2.76	0.42	3.13	0.33	0.37	4.33	20	.000***	0.98
Individual Consideration	2.86	0.41	3.15	0.28	0.29	3.38	20	.003**	0.83
Total Trans. Leadership	2.80	0.42	3.12	0.28	0.32	5.05	14	.000***	0.90

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

A series of paired-samples *t*-tests were conducted to compare 2017 participants' pre-Academy and post-Academy champion of innovation behaviors. There was a significant increase in participants' total innovation behavior scores from pre-Academy ( $M = 2.94$ ,  $SD = 0.42$ ) to post-Academy ( $M = 3.23$ ,  $SD = 0.37$ );  $t(20) = 4.45$ ,  $p = 0.000$ ,  $d = .73$ . Results are summarized in Table 4. There was a significant increase in all three champions of innovation dimensions.

Table 4. *Results of Paired Samples t-Tests Comparing Participants' Champion of Innovation Behaviors Before and After the Academy (N = 20)*

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	2.81	0.69	3.10	0.50	0.29	3.14	20	.005**	0.48
Persistence under Adversity	2.93	0.58	3.22	0.48	0.29	2.81	20	.011*	0.54
Get Right People Involved	3.07	0.31	3.38	0.35	0.31	3.90	20	.001**	0.94
Total Champ. of Innov.	2.94	0.42	3.23	0.37	0.29	4.45	20	.000***	0.73

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

Two paired-samples *t*-tests were conducted to compare 2017 participants' pre-Academy and post-Academy Nebraska water issues knowledge and behavior. There was a significant increase in participants' awareness of water issues from pre-Academy ( $M = 2.50$ ,  $SD = 0.84$ ) to post-Academy ( $M = 3.50$ ,  $SD = 0.36$ ;  $t(20) = 4.90$ ,  $p = 0.000$ ,  $d = 2.49$ ). Results are summarized in Table 5. There was a significant increase in participants engagement in water policy issues

from pre-Academy ( $M = 2.45$ ,  $SD = 0.89$ ) to post-Academy ( $M = 3.26$ ,  $SD = 0.65$ );  $t(20) = 6.10$ ,  $p = 0.000$ ,  $d = 1.04$ .

Table 5. *Results of Paired Samples t-Tests Comparing Participants' Nebraska Water Knowledge and Behavior Before and After the Academy (N = 20)*

Water Knowledge & Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.50	0.84	3.50	0.36	1.00	4.90	20	.000***	2.49
Engagement	2.45	0.89	3.26	0.65	0.81	6.10	20	.000***	1/04

\*\*\*  $p < .001$ .

A series of paired-samples *t*-tests were conducted to compare 2017 participants' pre-Academy and post-Academy civic capacity. There was a significant increase in participants' civic capacity from pre-Academy ( $M = 2.48$ ,  $SD = 0.71$ ) to post-Academy ( $M = 3.01$ ,  $SD = 0.47$ ;  $t(20) = 6.10$ ,  $p = 0.000$ ,  $d = 0.88$ ). Results are summarized in Table 6. There was a significant increase in all three dimensions of civic capacity.

Table 6. *Results of Paired Samples t-Tests Comparing Participants' Civic Capacity Before and After the Academy (N = 20)*

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Drive	2.72	0.83	3.07	0.64	0.35	4.15	20	.001**	0.47
Connections	2.58	0.80	3.22	0.52	0.64	5.52	20	.000***	0.95
Pragmatism	2.13	0.85	2.75	0.54	0.62	4.84	20	.000***	0.87
Total Civic Capacity	2.48	0.71	3.01	0.47	0.53	6.10	20	.000***	0.88

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

A paired-samples *t*-test was conducted to compare 2017 participants' pre-Academy and post-Academy entrepreneurial leadership behavior. There was a significant increase in participants' entrepreneurial leadership behavior from pre-Academy ( $M = 2.62$ ,  $SD = 0.42$ ) to post-Academy ( $M = 2.88$ ,  $SD = 0.40$ ;  $t(20) = 2.88$ ,  $p = 0.009$ ,  $d = 0.63$ ). Results are summarized in Table 7.

Table 7. *Results of Paired Samples t-Test Comparing Participants' Entrepreneurial Leadership Behavior Before and After the Academy (N = 20)*

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Entrepreneurial Behav.	2.62	0.42	2.88	0.40	0.26	2.90	20	.009*	0.63

\*  $p < .05$ .

### Leadership Knowledge, Skills, and Behaviors – Raters' Perspective

Multiple sources of data must be employed when assessing leadership behaviors so that the effects of self-report bias and social desirability issues are minimized (Donaldson & Grant-Vallone, 2002). Multi-rater feedback on Academy participants' leadership behavior is another way of gauging the impact of the Academy on participants, and another means of assessing the achievement of Academy objectives. Sixty-three raters responded to invitations from 2017 Academy participants to rate their leadership behaviors prior to the Academy. Fifty-eight raters responded to invitations from 2017 Academy participants to rate their leadership behaviors after the Academy.

A series of independent samples *t*-tests comparing raters' perspective on transformational leadership showed a significant increase in the total transformational leadership from pre-Academy ( $M = 3.07$ ,  $SD = 0.48$ ) to post-Academy ( $M = 3.40$ ,  $SD = 0.39$ );  $t(116) = 4.09$ ,  $p = 0.000$ ,  $d = .76$ . Results are summarized in Table 8. There was a significant increase in all four of the transformational leadership behaviors from the raters' perspective.

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	63	3.10	.55	3.45	116	.001**	0.64
Idealized Influence - Post Academy	55	3.42	.44				
Inspirational Motivation - Pre Academy	63	3.13	.52	3.52	116	.001**	0.66
Inspirational Motivation - Post Academy	55	3.45	.44				
Intellectual Stimulation – Pre Academy	63	2.96	.64	3.42	116	.001**	0.64
Intellectual Stimulation – Post Academy	55	3.33	.50				
Individual Consideration – Pre Academy	63	3.09	.48	3.77	116	.000***	0.70
Individual Consideration – Post Academy	55	3.40	.40				
Total Trans. Leadership – Pre Academy	63	3.07	.48	4.09	116	.000***	0.76
Total Trans. Leadership – Post Academy	55	3.40	.38				

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

A series of independent samples *t*-tests were conducted to compare 2017 participants' pre-Academy and post-Academy champion of innovation behavior from the raters' perspective. There was a significant increase in participants' total innovation behaviors from pre-Academy ( $M = 3.26$ ,  $SD = 0.39$ ) to post-Academy ( $M = 3.54$ ,  $SD = 0.42$ );  $t(116) = 3.88$ ,  $p = 0.000$ ,  $d = .69$ . Results are summarized in Table 9. All three champions of innovation dimensions showed a significant increase from pre-Academy to post-Academy from the raters' perspective.

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	63	3.11	.58	3.01	116	.003**	0.54
Enthusiasm & Confidence – Post Academy	55	3.41	.53				
Persistence – Pre Academy	63	3.29	.47	2.74	116	.007**	0.49
Persistence – Post Academy	55	3.54	.54				
Right People Involved – Pre Academy	63	3.38	.37	4.37	116	.000***	0.78
Right People Involved – Post Academy	55	3.67	.37				
Total Champ. of Innovation – Pre Acad.	63	3.26	.39	3.88	116	.000***	0.69
Total Champ. of Innovation – Post Acad.	55	3.54	.42				

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

Two independent samples *t*-tests were conducted to compare 2017 participants' pre-Academy and post-Academy Nebraska water issues knowledge and behavior from the raters'

perspective. There was a significant increase in participants' awareness of water issues in Nebraska from pre-Academy ( $M = 3.17$ ,  $SD = 0.69$ ) to post-Academy ( $M = 3.59$ ,  $SD = 0.46$ );  $t(116) = 3.83$ ,  $p = 0.000$ ,  $d = 0.72$  from the raters' perspective. There was also a significant increase in participants' engagement in Nebraska water issues from pre-Academy ( $M = 3.04$ ,  $SD = 0.78$ ) to post-Academy ( $M = 3.52$ ,  $SD = 0.58$ );  $t(116) = 3.80$ ,  $p = 0.000$ ,  $d = .70$  from the raters' perspective. Results are summarized in Table 10.

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

Water Knowledge & Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Awareness – Pre Academy	63	3.17	.69	3.83	116	.000***	0.72
Awareness – Post Academy	55	3.59	.46				
Engagement – Pre Academy	63	3.04	.78	3.80	116	.000***	0.70
Engagement – Post Academy	55	3.52	.58				

\*\*\* $p < .001$ .

A series of independent samples *t*-tests were conducted to compare 2017 participants' pre-Academy and post-Academy Nebraska civic capacity from the raters' perspective. There was a significant increase in participants' civic capacity from pre-Academy ( $M = 3.07$ ,  $SD = 0.61$ ) to post-Academy ( $M = 3.49$ ,  $SD = 0.55$ );  $t(116) = 3.97$ ,  $p = 0.000$ ,  $d = 0.72$  from the raters' perspective. Results are summarized in Table 11. All three dimensions of civic capacity showed a significant increase from pre-Academy to post-Academy from the raters' perspective.

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	63	3.05	.69	3.68	116	.000***	0.68
Drive – Post Academy	55	3.49	.61				
Connections – Pre Academy	63	3.13	.58	4.03	116	.000***	0.74
Connections – Post Academy	55	3.54	.52				
Pragmatism – Pre Academy	63	3.03	.64	3.69	116	.000***	0.68
Pragmatism – Post Academy	55	3.44	.57				
Total Civic Capacity – Pre Academy	63	3.07	.61	3.97	116	.000***	0.72
Total Civic Capacity – Post Academy	55	3.49	.55				

\*\*\* $p < .001$ .



An independent samples *t*-test was conducted to compare 2017 participants' pre-Academy and post-Academy entrepreneurial leadership behavior from the raters' perspective. There was a significant increase in participants' entrepreneurial leadership behavior from pre-Academy ( $M = 3.28$ ,  $SD = 0.46$ ) to post-Academy ( $M = 3.55$ ,  $SD = 0.45$ );  $t(116) = 3.17$ ,  $p = 0.002$ ,  $d = 0.59$  from the raters' perspective. 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	63	3.28	.46	3.17	116	.002**	0.59
Entrepreneurial Behavior – Post Academy	55	3.55	.45				

\*\* $p < .01$ .

Results of the 2017 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. Results also indicate that the curriculum is meeting Academy objectives.

## 2017 Session Evaluations

Session evaluations covered the specific topics addressed during each session. Participants believed 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 Q&A.

The participants' feedback is used to plan the 2018 Academy. Presenters that were commended by participants are being retained and other presenters will be invited. Some new leadership and water related topics are being investigated. Field trip destinations, presenters, group projects, and recruitment are being adjusted.

Session evaluations are a valuable tool for the entire program. 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’ Perspective

#### *Cumulative Participants*

Ninety-nine of the 101 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. There have been 21 females and 78 males complete the pre- and post-assessment (22 females and 79 males have completed the Academy). Respondents’ average age was 38.7 years with a range of 21 to 61.

A series of paired-samples *t*-tests were conducted to compare the cumulative Academy participants’ pre-Academy and post-Academy transformational leadership behaviors. There has been a significant increase in the cumulative participants’ total transformational leadership behaviors from pre-Academy ( $M = 2.74$ ,  $SD = 0.47$ ) to post-Academy ( $M = 3.06$ ,  $SD = 0.39$ );  $t(98) = 10.49$ ,  $p = 0.000$ ,  $d = .74$ . Results are summarized in Table 13. There has been a significant increase in all four transformational leadership behaviors for Academy participants of seven classes of the Academy from pre-Academy to post-Academy.

Table 13. *Results of Paired Samples t-Tests Comparing Cumulative Participants’ Transformational Leadership Behavior Before and After the Academy (N = 99)*

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen’s <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.67	0.52	3.00	0.43	0.33	7.84	98	.000***	0.69
Inspirational Motivation	2.72	0.60	3.07	0.52	0.35	8.07	98	.000***	0.62
Intellectual Stimulation	2.74	0.60	3.10	0.51	0.36	8.96	98	.000***	0.65
Individual Consideration	2.82	0.57	3.08	0.39	0.26	6.36	98	.000***	0.53
Total Trans. Leadership	2.74	0.47	3.06	0.39	0.32	10.49	98	.000***	0.74

\*\*\*  $p < .001$ .

A series of paired-samples *t*-tests were conducted to compare the cumulative Academy participants’ pre-Academy and post-Academy champion of innovation behaviors. There has been a significant increase in cumulative participants’ total innovation behaviors from pre-Academy ( $M = 3.00$ ,  $SD = 0.50$ ) to post-Academy ( $M = 3.29$ ,  $SD = 0.38$ );  $t(98) = 8.47$ ,  $p = 0.000$ ,  $d = .65$ . Results are summarized in Table 14. Seven classes of Academy participants have

demonstrated a significant increase in all three champions of innovation dimensions from pre-Academy to post-Academy.

Table 14. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Champion of Innovation Behaviors Before and After the Academy (N = 99)*

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	2.99	0.64	3.27	0.47	0.28	6.24	98	.000***	0.50
Persistence under Adversity	2.95	0.55	3.24	0.46	0.29	6.58	98	.000***	0.57
Get Right People Involved	3.06	0.59	3.34	0.51	0.28	6.89	98	.000***	0.51
Total Champ. of Innov.	3.00	0.50	3.29	0.38	0.29	8.47	98	.000***	0.65

\*\*\*  $p < .001$ .

Two paired-samples *t*-tests were conducted to compare the cumulative Academy participants' pre-Academy and post-Academy Nebraska water issues knowledge and behavior. There has been a significant increase in awareness of Nebraska policy water issues for Academy participants from seven classes of the Academy from pre-Academy ( $M = 2.90$ ,  $SD = 0.72$ ) to post-Academy ( $M = 3.50$ ,  $SD = 0.65$ ;  $t(98) = 8.54$ ,  $p = 0.000$ ,  $d = 0.88$ ). Results are summarized in Table 15. There has been a significant increase in engagement in water policy issues for seven classes of participants from pre-Academy ( $M = 2.61$ ,  $SD = 0.86$ ) to post-Academy ( $M = 3.14$ ,  $SD = 0.65$ );  $t(98) = 7.71$ ,  $p = 0.000$ ,  $d = .70$ .

Table 15. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Nebraska Water Knowledge and Behavior Before and After the Academy (N = 99)*

Water Knowledge & Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.90	0.72	3.50	0.46	0.60	8.54	98	.000***	0.88
Engagement	2.61	0.86	3.14	0.65	0.53	7.71	98	.000***	0.70

\*\*\*  $p < .001$ .

Civic capacity was assessed for the first time in 2016. Thus, cumulative results for civic capacity represent the past two Academy classes. Results showed a significant increase in cumulative participants' total civic capacity from pre-Academy ( $M = 2.48$ ,  $SD = 0.62$ ) to post-

Academy ( $M = 2.93$ ,  $SD = 0.46$ );  $t(34) = 6.37$ ,  $p = 0.000$ ,  $d = .82$ . Results are summarized in Table 16. There was a significant increase in all three civic capacity dimensions from pre-Academy to post-Academy.

Table 16. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Civic Capacity Before and After the Academy (N = 35)*

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Drive	2.63	0.82	2.93	0.65	0.30	3.92	34	.000***	0.41
Connections	2.66	0.70	3.20	0.50	0.54	6.35	34	.000***	0.89
Pragmatism	2.17	0.73	2.66	0.59	0.49	4.81	34	.000***	0.74
Total Civic Capacity	2.48	0.62	2.93	0.46	0.45	6.37	34	.000***	0.82

\*\*\*  $p < .001$ .

A paired-samples *t*-test was conducted to compare the cumulative Academy participants' pre-Academy and post-Academy entrepreneurial leadership behavior. There has been a significant increase in seven Academy classes from pre-Academy ( $M = 2.71$ ,  $SD = 0.75$ ) to post-Academy ( $M = 3.03$ ,  $SD = 0.61$ ;  $t(98) = 6.12$ ,  $p = 0.000$ ,  $d = 0.47$ ). Results are summarized in Table 17.

Table 17. *Results of Paired Samples t-Test Comparing Cumulative Participants' Entrepreneurial Leadership Behavior Before and After the Academy (N = 99)*

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Entrepreneurial Behav.	2.71	0.75	3.03	0.61	0.34	6.12	98	.000***	0.47

\*\*\*  $p < .001$ .

### Leadership Knowledge, Skills, and Behaviors – Raters' Perspective

#### *Cumulative Raters*

A series of independent samples *t*-tests were conducted to compare the cumulative Academy participants' pre-Academy and post-Academy transformational leadership behaviors from raters' perspectives. Two-hundred sixty-one raters have completed pre-Academy assessments and 244 raters have completed post-Academy assessments. Results showed a significant increase in cumulative participants' total transformational leadership from pre-Academy ( $M = 2.99$ ,  $SD = 0.52$ ) to post-Academy ( $M = 3.26$ ,  $SD = 0.42$ );  $t(503) = 6.36$ ,  $p = 0.000$ ,  $d = .57$  from the raters' perspective. Results are summarized in Table 18. All four

transformational leadership behaviors significantly increased from pre-Academy to post-Academy from the cumulative raters' perspective.

Table 18. *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	261	3.01	.56	5.77	503	.000***	0.51
Idealized Influence – Post Academy	244	3.27	.45				
Inspirational Motivation – Pre Academy	261	3.03	.59	5.36	503	.000***	0.48
Inspirational Motivation – Post Academy	244	3.29	.50				
Intellectual Stimulation – Pre Academy	261	2.94	.59	5.86	503	.000***	0.53
Intellectual Stimulation – Post Academy	244	3.23	.50				
Individual Consideration – Pre Academy	261	2.95	.62	5.26	503	.000***	0.47
Individual Consideration – Post Academy	244	3.22	.52				
Total Trans. Leadership – Pre Academy	261	2.99	.52	6.36	503	.000***	0.57
Total Trans. Leadership – Post Academy	244	3.26	.42				

\*\*\*  $p < .001$ .

A series of independent samples *t*-tests were conducted to compare the cumulative Academy participants' pre-Academy and post-Academy champion of innovation behaviors from the raters' perspective. Results showed a significant increase in cumulative participants' total innovation behaviors from pre-Academy ( $M = 3.19$ ,  $SD = 0.47$ ) to post-Academy ( $M = 3.47$ ,  $SD = 0.44$ );  $t(503) = 6.84$ ,  $p = 0.000$ ,  $d = .62$  from the raters' perspective. Results are summarized in Table 19. There was a significant increase in all three champions of innovation behaviors from pre-Academy to post-Academy from the cumulative raters' perspective.

Table 19. *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	261	3.09	.61	5.37	503	.000***	0.49
Enthusiasm & Confidence – Post Academy	244	3.37	.54				
Persistence – Pre Academy	261	3.23	.51	5.51	503	.000***	0.48
Persistence – Post Academy	244	3.47	.50				
Right People Involved – Pre Academy	261	3.25	.51	7.41	503	.000***	0.65
Right People Involved – Post Academy	244	3.56	.44				
Total Champ. of Innov. – Pre Academy	261	3.19	.47	6.84	503	.000***	0.62
Total Champ. of Innov. – Post Academy	244	3.47	.44				

\*\*\*  $p < .001$ .

Two independent samples *t*-tests were conducted to compare the cumulative Academy participants' pre-Academy and post-Academy Nebraska water issues knowledge and behavior from the raters' perspective. Results showed a significant increase in cumulative participants' awareness of Nebraska water policy issues from pre-Academy ( $M = 3.26$ ,  $SD = 0.62$ ) to post-Academy ( $M = 3.59$ ,  $SD = 0.49$ );  $t(503) = 6.57$ ,  $p = 0.000$ ,  $d = .59$  from the raters' perspective. Results are summarized in Table 20. Results showed a significant increase in cumulative participants' engagement with Nebraska water policy issues from pre-Academy ( $M = 3.02$ ,  $SD = 0.76$ ) to post-Academy ( $M = 3.43$ ,  $SD = 0.61$ );  $t(503) = 6.75$ ,  $p = 0.000$ ,  $d = .59$  from the raters' perspective.

Table 20. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Nebraska Water Knowledge and Behavior Before and After the Academy*

Water Knowledge & Behavior	N	M	SD	t	df	Sig.	Cohen's d
Awareness – Pre Academy	261	3.26	.62	6.57	503	.000***	0.59
Awareness – Post Academy	244	3.59	.49				
Engagement – Pre Academy	261	3.02	.76	6.75	503	.000***	0.59
Engagement – Post Academy	244	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 two Academy classes. Results showed a significant increase in cumulative participants' total civic capacity from pre-Academy ( $M = 2.96$ ,  $SD = 0.63$ ) to post-Academy ( $M = 3.35$ ,  $SD = 0.60$ );  $t(208) = 4.57$ ,  $p = 0.000$ ,  $d = .63$  from the



ratars' perspective. Results are summarized in Table 21. There was a significant increase in all three dimensions of civic capacity from pre-Academy to post-Academy from the cumulative ratars' perspective.

Table 21. *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	107	2.98	.68	4.18	208	.000***	0.59
Drive – Post Academy	103	3.37	.65				
Connections – Pre Academy	107	2.97	.67	4.68	208	.000***	0.65
Connections – Post Academy	103	3.39	.62				
Pragmatism – Pre Academy	107	2.94	.66	4.16	208	.000***	0.58
Pragmatism – Post Academy	103	3.31	.61				
Total Civic Capacity – Pre Academy	107	2.96	.63	4.57	208	.000***	0.63
Total Civic Capacity. – Post Academy	103	3.35	.60				

\*\*\*  $p < .001$ .

An independent-samples *t*-test was conducted to compare the cumulative Academy participants' pre-Academy and post-Academy entrepreneurial leadership behavior. There has been a significant increase in cumulative participants' entrepreneurial leadership from pre-Academy ( $M = 3.12$ ,  $SD = 0.60$ ) to post-Academy ( $M = 3.36$ ,  $SD = 0.62$ ;  $t(503) = 4.43$ ,  $p = 0.000$ ,  $d = 0.39$ ). Results are summarized in Table 22.

Table 22. *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	261	3.12	.60	4.43	503	.000***	0.39
Post Academy	244	3.36	.62				

\*\*\*  $p < .001$ .

## 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 leaders in the water arena. Academy participants demonstrated a significant increase in their leadership knowledge, skills, and behaviors. Feedback from participants was constructive and highly positive. Participant concerns were addressed in subsequent sessions, and changes are planned for the 2018 Academy curriculum. The changes include new topics and presenters.



Multi-rater feedback shows that others have observed an increase in Academy participants' leadership knowledge, skills, and behaviors. Results of raters' perceptions of 2017 participants' leadership knowledge, skills, and behaviors were statistically significant. Moreover, results from the cumulative raters' perspective of all seven Academy classes were statistically significant.

## **Team Projects**

### *2017 Class*

Academy participants were divided into four teams. Each team is required to create and complete a project that increases the impact of the Academy. One team created an educational water map in the form of a poster with residential water use in Nebraska. The map is targeted to K-12 students and will be made available to K-12 teachers. The map includes water trivia and volume conversions. A second team created a pamphlet encouraging wise domestic water use as well as information on potential groundwater contaminants in Nebraska and contact information on water testing. A third team created a Google Earth map with a collection of possible displays. Displays include USGS stream gauge locations, NRD boundaries, Nebraska Department of Natural Resources field offices, and many others. A fourth team created a story map of the 2017 Academy class in a free ARCGIS Online program. The map summarizes and catalogs Academy activities for the year and is envisioned as a recruiting tool for the Academy. The team will make the map available to the Academy.

### *Past Classes*

Many team projects in previous Academy classes have engaged the public on water issues. A team developed a Geographical Information System (GIS) tool with multiple maps for educational presentations on Nebraska's water resources while another developed a GIS story map as a means to communicate and connect with other water leaders. A team worked with information technology students at the University of Nebraska-Kearney to create an app that measures household water consumption. A team assessed the status of water plans in surrounding states, which can be used to inform the development of a Nebraska water plan. Another team developed and shared a promotional video of the Academy.

Several teams over the past seven classes have developed various citizen guides to water information and water volume conversions. A water resource guide in the form a "pull-and-reveal" slider was produced in 2012. Users pull the slider to reveal a name of a watershed in one

window while facts about the watershed are revealed in another window. This slider has been shared with the public and natural resources agencies. Another team developed an informational tool for educational modules on Nebraska's water resources. Similarly, a team developed a slideshow guide to Nebraska's water resources. This information has been uploaded to a Dropbox™ folder available to elementary teachers. Yet another team worked with the Nebraska Department of Natural Resources to develop a promotional pamphlet of the Nebraska Rainfall Assessment and Information Network (NeRAIN) to recruit volunteers to report local precipitation. The team also contacted elementary, junior high, and high school principals to increase awareness of the program with science and math teachers. A team developed a comprehensive source of water related contacts with links to connect the user with the resource.

Two previous Academy teams have written funding proposals. One of the teams received funding and purchased a portable stream table to educate the public and K-12 students on how rivers work. Another team wrote and submitted a grant to fund an Academy alumni reunion. Although the grant was not funded, the team organized an Academy reunion as part of the 2015 Nebraska Water Resources Association and Nebraska State Irrigation Association Joint Convention. An Academy alumnus has developed a slideshow depicting the history of water projects in the North Platte River watershed for a college credit project.

### **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 Natural Resources Districts boards of directors. Other alumni are involved in their local water basin 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 advanced into supervisory roles within their jobs, crediting the Academy for giving them the skills, confidence, and experience they needed to make the jump. Examples of leadership advancement includes, but is not limited to, alumni serving as:

- Special Advisor to the Secretary of the U.S. Department of Agriculture
- Nebraska Natural Resource Commissioner

- Nebraska Environmental Trust board 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

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. A couple alumni apply leadership behaviors learned in the Academy to their cooperative extension programming. And yet another alumnus has begun volunteering at her local elementary school and their Science Fair. One Academy alumnus is even engaged in international water management. He works on teams, who have secured grant-funding, to work on critical water issues in places like Kabul Afghanistan, Dushanbe Tajikistan, and Islamabad Pakistan.

The service of alumni in leadership roles serves as evidence that the Academy is not only achieving its goals but is also helping participants realize theirs. 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 locally and globally. 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.

### **Nebraska Water Center Water Tour**

In 2017, the Academy supported seven participants who joined the University of Nebraska Water Center field trip that explored water issues in the central Platte River basin. The Academy has past supported several participants to join Water Center field trips exploring water issues in the Republican River basin and the North Platte River basin in Colorado and Wyoming.

Participants reported these trips to be very valuable in understanding water issues in Nebraska. The Academy may support participants in joining the 2018 Water Center multi-day field trip to explore the North Platte River basin in Wyoming.

### **Future Plans**

Our analyses indicate that only minor changes in the 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 that were not well regarded 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 vigilant 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. Several Academy alumni have served on the Academy planning team. Alumni have also presented at Academy sessions and are following Academy activities on-line. Alumni are also giving presentations to citizen groups on water issues in Nebraska, and some are now serving on water governance boards. 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. Academy alumni will be invited to attend each session in 2018. The success of the 2015 alumni reunion and alumni feedback indicates that alumni reunions are attractive and more should be planned. Discussion of an alumni reunion is on-going.

### **Summary**

Twenty participants successfully completed the 2017 Academy bringing the total number of graduates to 101 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, and entrepreneurial leadership behaviors. 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 seven classes of the Academy has

provided a great foundation on which to build and expand; blending water science and policy with leadership will be of tremendous importance to sustainable use of Nebraska's water resources and community capacity.

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## Appendix I

### Contributors to the 2017 Nebraska Water Leaders Academy



Instructor	Organization	Program Title	Session
Jessica Jones	Nebraska Extension, Southeast Research & Extension Center (SREC)	Personality and Leadership Assessments and Potentials	#1, Lincoln
Carol Jess	CJJ Communications	Communication Expectations	#1, Lincoln
Sen. Dan Hughes	Nebraska Unicameral	Natural Resources Committee	#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
LeRoy Sievers	Nebraska Dept. of Natural Resources	Water Law Primer	#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
Marty Link	Nebraska Department of Environmental Quality (NDEQ)	Water Quality in Nebraska	#1, Lincoln
David Miesbach	NDEQ	Water Quality in Nebraska	#1, Lincoln
John Bender	NDEQ	Water Quality in Nebraska	#1, Lincoln
Dave Schumacher	NDEQ	Water Quality in Nebraska	#1, Lincoln
Mary Bomberger Brown	UNL, SNR	Ecological Importance of the Central Platte Valley	#2, Kearney
Adam Rupe	JEO Consulting	South Loup Watershed Management Plan	#2, Kearney
Laura Johnson	NDEQ	South Loup Watershed Management Plan	#2, Kearney
Gina Matkin	UNL Department of Agricultural Leadership, Education and Communication	Diversity and Conflict	#2, Kearney
J. Michael Jess	Water Resources Engineer (former director NDNR)	River Basin Compacts & Decrees: Nebraska Obligations	#2, Kearney
Kyle Shepard	N-CORPE Manager	Nebraska Cooperative Republican Platte Enhancement	#2, Kearney
John Heaston	Heaston Consulting	Ecology and Environmental Awareness	#2, Kearney
Sarah Focke	Kearney Convention Bureau	Eco-Tourism from the Commercial Perspective	#2, Kearney
Bill Taddicken	Audobon Rowe Sanctuary	Eco-Tourism from the Environmental Perspective	#2, Kearney
John Heaston	Heaston Consulting	The Intersection of Science and Policy	#3, Valentine
Pat O'Brien	Upper Niobrara-White NRD	The Niobrara River Valley, The Past, The Present, The Future	#3, Valentine
Mike Murphy	Middle Niobrara NRD	The Niobrara River Valley, The Past, The Present, The Future	#3, Valentine
Jesse Bradley	NDNR	The Niobrara River Valley, The Past, The Present, The Future	#3, Valentine
Steve Thede	National Park Service, Niobrara National Scenic River	The Niobrara River Valley, The Past, The Present, The Future	#3, Valentine
Sue Lackey	UNL SNR CSD	Niobrara River Valley Geology	#3, Valentine
Kevin Kruse	JEO Consulting	Valentine Storm Water Improvement Case Study	#3, Valentine
Ann Bleed	Engineer (former director NDNR)	Platte River Basin: Applying the Elinor Ostrom Principles of Common Pool Resources Management	#3, Valentine

Cheryl Burkhart-Kriesel	Nebraska Extension, Panhandle Research & Extension Center (PREC)	Understanding the Community Context	#4, Scottsbluff
J. Michael Jess	Water Resources Engineer (former director NDNR)	Development of the Integrated Water System and the Political Structure in the North Platte Basin	#4, Scottsbluff
Lee Orton	NSIA	Nebraska's Public Power & Irrigation Districts	#4, Scottsbluff
John Flint	NDEQ	NDEQ Programs in the Panhandle	#4, Scottsbluff
Rod Horn	South Platte NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects	#4, Scottsbluff
John Berge	North Platte NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects	#4, Scottsbluff
Pat O'Brien	Upper Niobrara-White NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects	#4, Scottsbluff
Thad Kuntz	Adaptive Resources, Inc.	Western Water Use Management Modeling	#4, Scottsbluff
Connie Reimers-Hild	Rural Futures Institute at the University of Nebraska & Nebraska Extension	Leading Innovation: A Foundation for Personal and Organizational Change	#5, Omaha
Michael Arends	Omaha Public Works Dept.	Elkhorn Wastewater Treatment Plant	#5, Omaha
Steve Carlin	Metropolitan Utilities District	Platte West Water Production Facility	#5, Omaha
Lori Laster	Papio-Missouri NRD	Flood Control Projects	#5, Omaha
Paul Woodward	Papio-Missouri NRD	Water Quality Projects	#5, Omaha
Tara Sampson	NDEQ	NDEQ Financial Assistance Programs	#5, Omaha
John Danforth	NDEQ	NDEQ Financial Assistance Programs	#5, Omaha
Richael Young	Mammoth Trading	Water Markets in Practice	#5, Omaha
Jim Theiler	Omaha Public Works Dept.	Omaha's Combined Sewer Overflow Project	#5, Omaha
Mark Burbach	UNL SNR CSD	Post-Academy Leadership Assessment	#6 Nebraska City
Karen Amen	Lower Platte South NRD Board of Directors	Panel Discussion- Getting Involved and Experience Serving on Public Boards	#6 Nebraska City
Glenn Johnson	Lower Platte South NRD, Former General Manager	Panel Discussion- Getting Involved and Experience Serving on Public Boards	#6 Nebraska City
Gerald Mestl	Nebraska Game & Parks Commission	The Missouri River-Past, Present, Future	#6 Nebraska City
Lee Orton	NSIA	Water Resources - Nebraska's Investment, Yesterday, Today and Future	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Personal Empowerment	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Tapping into Your Motivation to Serve	#6 Nebraska City
Julie Obermeyer	UNL College of Agriculture and Natural Resources	Networking	#6 Nebraska City
John Chapo	Lincoln Children's Zoo	Community Involvement and Leadership Opportunities	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Leadership Next Steps	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Session Facilitation	All Sessions

## Appendix II

### Session Evaluations

# Nebraska Water Leaders Academy

January 26 & 27, 2017

Lincoln, NE

19 responses

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

BEFORE this WLA Session						Now, at the END of this Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1	2	3(4)	4(7)	5(8)	1) I understand the importance of professional etiquette	1	2	3	4(7)	5(12)	13.3
1	2(3)	3(6)	4(7)	5(3)	2) I understand the relationship between personality and leadership	1	2	3(3)	4(8)	5(8)	20.9
1	2(3)	3(11)	4(4)	5(1)	3) I can effectively use my knowledge of personality to improve my leadership skills	1	2	3(3)	4(8)	5(8)	26.7
1(2)	2(7)	3(8)	4(2)	5	4) I understand the concept of Transactional Leadership	1	2	3(4)	4(13)	5(2)	54.2
1(2)	2(7)	3(7)	4(3)	5	5) I understand the concept of Transformational Leadership	1	2	3(2)	4(16)	5(1)	53.1
1(1)	2(6)	3(11)	4(1)	5	6) I understand how Full Range Leadership can strengthen my leadership skills	1	2	3(2)	4(14)	5(3)	52.0
1	2(7)	3(9)	4(3)	5	7) I understand Nebraska’s water laws	1	2	3(7)	4(11)	5(1)	40.0
1	2(7)	3(7)	4(5)	5	8) I understand Nebraska’s climate and weather	1	2	3(6)	4(10)	5(3)	32.7
1(1)	2(8)	3(10)	4	5	9) I understand Nebraska’s geology	1	2(1)	3(4)	4(12)	5(2)	53.2
1(1)	2(8)	3(9)	4(1)	5	10) I understand Nebraska’s groundwater hydrology	1	2(1)	3(4)	4(13)	5(1)	47.9
1(1)	2(4)	3(10)	4(4)	5	11) I understand major water quality issues in Nebraska	1	2	3(3)	4(16)	5	32.7

(Please turn over...)

## Nebraska Water Leaders Academy Evaluation; Session 1, January 26-27, 2017

### 12) What is Your Main Takeaway from the first session of the Nebraska Water Leaders Academy?

- There are many complicated issues facing the state regarding water and it is going to take effective education, communication and collaboration to work through them. I'm excited to do my part.
- The different ways that I can use to improve my leadership skills.
- Leadership qualities and how personalities can effect them; water law in NE; The "REAL" struggle we face with water sustainability going forward.
- We all need to be doing more to work on water issues.
- A better understanding of the climate and geology resources available for water issues.
- Solutions to water challenges are complex.
- I really enjoyed many parts of the sessions, the second day was very important to help understand how Nebraska ground water is connected.
- Water and uses is complex issue. Takes working together to get best results. Leaders and connections between or with others are great ways to network.
- Nebraska's Water Resource is much more fragile than I initially thought. But it's very encouraging to hear all the speakers discuss how people are making a difference.
- There are numerous interacting forces that influence water issues. Water interacts and impacts every entity of government and political decision in Nebraska. Solutions will require multiple disciplines and information sets to achieve "sustainability".
- The session was well designed for leadership and policy workshops. The speakers were all very knowledgeable and passionate about water resources within the state. The session helped expand my understanding of the extent of people involved with water in Nebraska. Also, the presentation material will serve as a valuable reference in the future.
- Nebraska is unique in terms of how we are approaching issues. Continuing to rely on all parties and points of view will be critical.
- I enjoyed the leadership component - had gone through some of that with participating in Leadership Tomorrow - Hall County. It was good to refresh the leadership component. Also enjoyed learning about the aspects of Nebraska water - law, geology, hydrology, and quality. How they all come together to impact our most valuable resource. Great learning experience!
- There are many different perspectives on water use and what the future may hold. Not even the science is black and white to all. Group interaction can significantly add to what is learned during the course, and gives insights into others values and beliefs. This session reminded me of how valuable the education (continuing), is to grow in one's profession. It also reminded me of how much more I need to be involved in seeking new information and insights into water resource issues. #1 was the importance of staying positive.
- I'm impressed at the level of interest and commitment at those involved in the program. The participants are engaged and knowledgeable and the facilitators are highly competent. I'm struck though by the disconnect that exists between our public entities with each other. It seems that unified approach would be more effective barring political concerns. That being said, it appears to be improving dramatically.
- I was very pleased with the presentations and styles of leadership, and the quality and value of the discussions on day 2 about hydrogeology. The presentation by Jessie Korus was eye-opening and highlighted the challenges in managing groundwater.
- Lots of factors involved making management very complex. Leadership portion was good; practical application/policy development especially with capitol visit could be a bit more tied in.



- There are several different ways to connect with the individuals a person is trying to lead. You have to know the personality type of that person in order to understand the most effective tactics to motivate and challenge them.
- This course will be very useful - I have already learned a lot.

### 13) Additional Ideas, Comments, Suggestions, or Questions:

- I hate you for the ice breakers, and I thank you for the ice breakers!
- Have lunch or mid-morning snack if we go to 1:30/2:00pm.
- I think it would be helpful to spend a bit more time on water law.
- I liked the flow at the DEQ presentations. A couple of the previous ones were a little long and dry. I would like to commend Lee and staff for passionately presenting this program. The passion is energizing to the attendees. I'm proud to be associated with the Water Leaders Academy.
- I especially enjoyed the UNL professors. Geology and hydrology are so important to proper management goals. Best practices. It is important to stay positive and hopeful and good that presenters are not all doom and gloom. I like a "little" doom though.
- More time for the geology and hydrology. Probably will happen, but seeing the formations that were highlighted to understand the geology.
- Very good sessions on etiquette and personalities, very informative.
- Great first session. I'll review the books, but would like additional resources to review in between sessions. In short, I would like to improve my scientific knowledge.
- Hopeful that recent news of Costco in Fremont and water quality issues will be discussed.

# Nebraska Water Leaders Academy

March 23-24, 2017

Kearney, NE

20 Responses

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

Then, in the section labeled “Now, at the END of the Session” circle the answer that best describes you NOW that we have finished the session.

BEFORE this WLA Session						Now, at the END of this Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1(1)	2(6)	3(7)	4(6)	5	1) I understand the ecological significance of the Central Platte valley & Rainwater Basin	1	2	3(3)	4(13)	5(4)	39.7
1(5)	2(11)	3(3)	4(1)	5	2) I understand the South Loup Watershed Management Plan	1	2	3(7)	4(12)	5(1)	85.0
1(1)	2(8)	3(11)	4	5	3) I understand how to participate in or facilitate conversations that include differing perspectives or viewpoints	1	2	3(2)	4(15)	5(3)	62.0
1(2)	2(8)	3(7)	4(3)	5	4) I understand Nebraska’s river basin compacts and decrees	1	2	3(3)	4(13)	5(4)	52.8
1	2(6)	3(11)	4(3)	5	5) I understand the N-CORPE project	1	2	3(3)	4(16)	5(1)	34.5
1(2)	2(3)	3(11)	4(4)	5	6) I understand issues related to ecological and environmental awareness	1	2	3(6)	4(13)	5(1)	31.6
1(2)	2(6)	3(10)	4(2)	5	7) I understand eco-tourism from the commercial perspective	1	2(1)	3(5)	4(12)	5(1)	42.3
1(1)	2(7)	3(11)	4(1)	5	8) I understand eco-tourism from the environmental perspective	1	2	3(3)	4(16)	5(1)	50.0

(Please turn over...)

## Nebraska Water Leaders Academy Evaluation; Session 2, Kearney, NE, March 23-24, 2017

### 9) What is Your Main Takeaway from this session?

- Learning about the water rights/acts/decrees
- We have gotten caught up in thinking that the only impact or need for water is agriculture. This week opened all of our eyes that this is not true, and that prediction (?) agriculture and habitat concern are not exclusive.
- I have a better understanding of the Platte River System and how water is inventoried and stored.
- I enjoyed the visit to Rowe.
- People value water resources for more than just agriculture. Natural processes involving water resources benefits people, and most have recognized values. Buffer strips, wetlands, channel maintenance, wildlife habitat are all important components of a healthy environment for people and wildlife.
- Ecosystems over the years has changed and continues to change. We have to continue to change and look to the future use. In the big picture everything works together.
- Different ways that we can do to help the river. How much time and effort that is put into the river.
- How various human decisions have affected the Platte River. Learn more about NCORPE and what they feel they are accomplishing.
- Good to dive into a bit more of the social and messy parts of water resources.
- The importance of the Central Platte Valley and Rainwater Basin to Nebraska and some of the things that play a vital role in its maintenance, awareness, and management.
- The Central Platte is pretty unique but still needs much restoration and has many challenges to overcome. Though economic benefits and world recognition are helpful.
- The importance of the ecological landscape of the Central Platte Valley and Rainwater Basin and how the changes have impact on wildlife.
- How much the Platte River eco-system has changed over the last century and how it affects wildlife and habitat.
- The importance of habitat across the state- impacted by DNR, NRD's, etc. as well as compacts and decrees.
- The constant maintenance and upkeep on the Platte River has a much greater impact than just for the migratory birds.
- Enhanced awareness of importance of cranes to Nebraska/World recognition of conflict issues.
- We all have an important part to play that will be a big impact.

### 10) Additional Ideas, Comments, Questions:

- Very good program for the day, no changes.
- Could we get the Sandhill cranes to come by a little later? say 8:00am or so?:-)
- Commercial eco-tourism talk could be improved by more focus on impact and less on marketing plans.
- I thought the presentation were very informative! Great topics. I learned a lot!
- For me, it would be helpful to have the presenter's powerpoint presentation or other handouts prior to the presentation. It would be great to take notes directly on them rather than separate notes, then printing the presentation and matching them up.
- projection issues - video problems - display was shaking at times.
- Good speakers and topics.

# Nebraska Water Leaders Academy

May 18-19, 2017

Valentine, NE

16 Responses

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

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

BEFORE this Session						Now, at the END of this Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1	2(7)	3(8)	4(2)	5	1) I understand the intersection of science and policy	1	2	3(1)	4(15)	5	37.0
1(2)	2(9)	3(3)	4(2)	5	2) I understand management issues associated with Niobrara River stakeholders (panel discussion)	1	2	3(3)	4(13)	5	64.8
1(2)	2(5)	3(6)	4(2)	5(1)	3) I understand the unique ecosystem of the middle Niobrara River (via float trip)	1	2	3(1)	4(11)	5(4)	55.8
1(9)	2(5)	3(1)	4	5(1)	4) I understand the Valentine stormwater improvement program	1	2	3(2)	4(10)	5(4)	144.4
1(7)	2(7)	3(1)	4(1)	5	5) I understand Ostrom’s principles of common pool resource management	1	2	3(5)	4(10)	5(1)	114.3

(Please turn over)

## Water Leaders Academy Evaluation; Session 3, Valentine, NE, May 18-19, 2017

### 6) What is Your Main Takeaway from this session?

- Cooperation will be key to progressing to be better.
- Understanding the political issues between stakeholders NRDs/DNR/Federal gov. etc.
- Surface/ground water not fair distribution of water. Something must be done to make it sustainable.
- Ann's input and ideas were great!
- Compromise is difficult. NRD boundaries may not be the most effective outlines of the resource. Water defies boundaries. I am thankful the NPS is here. I think a stronger statewide interest is needed.
- There needs to be more collaboration b/t NRDs, DNR, cities, counties, etc. to help on current water issues. We need to stop just worrying about just ourselves and more about the whole state.
- Great session. Learned a lot about water issues in areas with River.
- I seem to get the most out of the leadership presentations. They seem to lead back to water issues in the state and it helps me look at all sides of the issue which, in my opinion, is the most important part of effective leadership.
- Importance of cooperative solutions. Keep all interests involved in discussions. Solutions will not come easy or fast.
- The beauty and uniqueness of this part of Nebraska is worth protecting and sharing.

### 7) Additional Ideas, Comments, Questions:

- Coordinate optional gathering Wednesday night for those arriving early? Pay on your own but give place and time.
- Great speakers/presentations. I enjoyed the panel discussion.
- More work space.
- I liked the breakout sessions.

# Nebraska Water Leaders Academy

July 13-14, 2017

Scottsbluff, NE

**18 Responses**

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

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

BEFORE this Session						Now, at the END of this Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1	2(6)	3(9)	4(3)	5	1) I understand the importance of context when engaging with communities.	1	2	3(3)	4(12)	5(3)	41.2
1(5)	2(9)	3(3)	4(1)	5	2) I understand NDEQ groundwater issues in the Panhandle discussed by John Flint.	1	2(3)	3(5)	4(10)	5	69.4
1(3)	2(9)	3(5)	4(1)	5	3) I understand the integrated water system in the North Platte River Basin and how it developed.	1	2	3(4)	4(12)	5(2)	75.0
1	2(3)	3(10)	4(5)	5	4) I understand Nebraska’s irrigation and public power districts.	1	2	3(3)	4(11)	5(4)	30.4
1(4)	2(6)	3(7)	4	5(1)	5) I understand historical and current NRD programs and projects in the Nebraska panhandle.	1	2	3(3)	4(12)	5(3)	71.4
1(6)	2(7)	3(4)	4(1)	5	6) I understand modeling projects that Thad Kuntz & Adaptive Resources have been involved with in the Panhandle.	1	2(1)	3(3)	4(14)	5	86.1

(Please turn over)

## Water Leaders Academy Evaluation; Session 4, Scottsbluff, NE, July 13-14, 2017

### 7) What is Your Main Takeaway from this session?

- The Panhandle has a long history of water issues. These are true challenges that continue to this day, and the managers are forced to come up with progressive ideas to address these ever changing challenges.
- The Panhandle is a very unique system of water management in Nebraska.
- North Platte river water issues will be complicated.
- This was a very informative session. A lot of the information that was covered was all new to me. Not being from Nebraska this field trip was very educational. Plus hearing about this history of the NRDs and North Platte River Basin. Enjoyed both days very much. Very valuable information. Gained a better perspective of the surface water issues and groundwater issues in the part of the state.
- Learned some techniques to use in group settings from Cheryl Burkhart-K.'s presentation. I was very appreciative of Mike Jess's knowledge of the North Platte History and Lee Orton's knowledge of Nebraska Water history.
- There is no extra water - NP system, it all goes to someone else via return flow, it does look wasteful. Hard to imagine this country being populated without Bureau Projects.
- The importance of canals, laterals, and districts etc. to irrigated ag and groundwater recharge.
- The canal system, and the way it is all tied together. It's interesting how efficiency may come back to hurt the area in the long run by loss of return water.
- Understanding the different canals that come off of the North Platte.
- Future problems may be occurring with new technology with less runoff. The lower runoff will affect downriver features. The development of the irrigation companies is quite complicated and intertwined. Very interesting to see several irrigation companies in same location.
- Surface water irrigation is an important part of Nebraska's water history and current water management and crop production. However, many of the systems are very old and working well but resources should be put into modernizing the systems and possible looking for improvement opportunities.
- How important the canals, dams, ditches and etc. of the North Platte Valley are to the whole state of Nebraska.
- I had no idea that the canal system in Nebraska was that old. The complexity of the water pioneers' forethought and physical production is very impressive. I am also impressed by the level of collaboration between the NRD's in the Panhandle area. They have a true collective attitude to solving water issues now and into the future.
- The water resources and economics are complex and unique in the Panhandle region. With the importance of surface water resources in the regions, improvements to the surface water systems are vital to the economic viability of the area.
- History of irrigation and how it led to settlement of this area.
- Better understanding the complexity of the diversion dams, their importance and how the states must work together to maintain the process and progress of the canal system.
- I think that the conjunctive nature of the Panhandle presents the greatest challenge to IMP obligation in the Platte Basin.



## 8) Additional Ideas, Comments, Questions:

- Would be interesting to hear from irrigation district/canal manager. Allocate more time for Thad Kuntz - very interesting presentation.
- I thought the DEQ guy was ineffective in his presentation - interesting information but covered and recovered to boredom. I really enjoy this part of Nebraska and thank the Academy for putting it together.
- It was great having the bus with commentary during the drive for the additional time to hear about area and history. Great learning about water law and water history from people so passionate and interested about both.
- Great session.
- Maybe an explanation of Lake McConaughy, its purpose and what happens downstream.
- Would have been interesting to explore the food crops/diversity of Ag in the area. Good stuff was the NRD Managers. I wish they had more time to explain lease, buy-out, and transfers. Are they on target to meet goals. A lot of money being spent - what is the outcome, will it justify cost?
- I wish some of the irrigation district personnel would have been available to meet tour at diversion sites to get a perspective from their point of view.
- Very valuable information and learned so much! Just seeing the topography and how the river, diversion dams, etc. work. Would like to learn more on the NRDs but realize time constraints. Interesting stuff! I know so much more than I did before Thursday!
- Would like this in depth of a tour with the Republican Basin.

# Nebraska Water Leaders Academy

September 14-15, 2017

Omaha, NE

18 Responses

Please provide two responses for each statement below. In the shaded section labeled “BEFORE this WLA Session” circle the answer that best describes you BEFORE you participated in this session of the leadership academy.

Then, in the section labeled “Now, at the END of this WLA Session” circle the answer that best describes you NOW that we have finished the session.

BEFORE this WLA Session						Now, at the END of this WLA Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1(4)	2(7)	3(6)	4(1)	5	1) I understand Papio-Missouri NRD flood control projects in the Omaha metro area	1	2	3(2)	4(13)	5(3)	82.5
1(5)	2(8)	3(4)	4(1)	5	2) I understand Metropolitan Utilities District (MUD) water and wastewater treatment projects in Omaha	1	2	3(1)	4(14)	5(3)	100.0
1(3)	2(9)	3(6)	4	5	3) I understand how to lead innovation	1	2	3(8)	4(9)	5(1)	74.4
1(3)	2(7)	3(6)	4(2)	5	4) I understand Omaha’s sewer separation project (i.e. CSO, combined sewer overflow)	1	2	3(2)	4(13)	5(3)	69.8
1(6)	2(6)	3(6)	4	5	5) I understand the State Revolving Fund Program	1	2	3(6)	4(11)	5(1)	86.1
1(8)	2(2)	3(8)	4	5	6) I understand water markets	1	2	3(2)	4(14)	5(2)	100.0

(Please turn over...)

## Water Leaders Academy Evaluation; Session 5, Omaha NE, September 14-15, 2017

### 8) What is Your Main Takeaway from this session?

- Paper water, depletion factors, regulatory agency roles and city necessary are not well understood. There is so much to know about the interrelated roles in H<sub>2</sub>O resources. Lifelong learning opportunities...
- The complexity of water related issues for municipalities the size of Omaha.
- People are dirty, they generate a lot of waste. No silver bullet, but combination of green and infrastructure needed to address Omaha's sewage and water issues. Long-term vision needed for CSO.
- Really enjoyed the water market session. Very informative.
- How much water large cities such as Omaha use on a daily basis.
- The biggest takeaway from this session is the fiscal challenge that the unplanned-for growth in the city is enormous and not funded easily by user rates.
- The opportunities in water market trading.
- Lots of money is being spent and generated in Nebraska for water quality improvements. The price or value we place on water becomes clearer with these high priced projects and through water markets.
- I am impressed with the level of collaboration between the different political subdivisions in the metro area. I'm also struck by the vast differences in theory and practice between the metro areas and rural Nebraska as well as the similarities in scope and practice between the 2. I was also impressed by the vision and competence of the employees of MUD and the water treatment plant.
- PMNRD - learned about issues with project development competing against private developers. I was encouraged by the ownership taken by CSO and the Omaha water treatment plants. I see a need for an educated public on these activities.
- I found the new damsite project to be very interesting and had no idea of the challenges and costs of those types of projects. After listening to Richael, I was most interested in her presentation. I enjoyed how she delivered her message and engaged the class.
- The large investment that Omaha has in CSO and how they are striving to betterment of the quality of water. All presenters were very good. Richael was very informative and great to listen to!!
- Importance of flood control to water infrastructure necessary for larger cities.
- Correcting problems can be expensive and quite extensive to correct.
- I felt it was very beneficial to learn about a large metropolitan area and the challenges it faces for various water/waste water issues. I totally enjoyed touring the facilities - never had seen that firsthand. Also really enjoyed learning about the flood control issues and various projects that have been completed. Things we take for granted and do not really give proper credit.

### 9) Additional Ideas, Comments, Questions:

- A river boat tour with Nebraska Game and Parks Commission Gerald Mestl - Missouri River Program could set you up with their boats and tour guides.
- Thanks for the exposure to many issues that we don't get to deal with on a daily basis.
- MUD was very interesting, wish the tour would have been longer.

- More time at the drinking water treatment plant would have been interesting.
- Water provided throughout the tour.
- Looking forward in reference to the Academy, it strikes me that it is heavily weighted to the government sector and regulators. I wonder if we should look more to the business sector to balance the attendees and the experience. I like that I am able to network with some of the regulators and dept. folks. It definitely enhances the ability to use them more effectively.
- MUD water treatment was very interesting. Disappointed it was so short.
- Enjoyed the water market presentations. Had no idea they even existed. Very interesting.

# Nebraska Water Leaders Academy

November 16-17, 2017

Nebraska City, NE

**17 Returned**

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

***Congratulations on your accomplishment!***

BEFORE this Session						Now, at the END of the Session					% Change
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
1	2(1)	3(5)	4(11)	5	1) I understand the benefits of networking	1	2	3	4(11)	5(1)	21.3
1	2(5)	3(8)	4(3)	5(1)	2) I understand how to get involved with or serve on public boards or service organizations	1	2	3(2)	4(12)	5(3)	35.3
1(2)	2(9)	3(4)	4(2)	5	3) I understand Missouri River management past, present, and future	1	2	3(1)	4(12)	5(4)	77.5
1	2(7)	3(7)	4(3)	5	4) I understand the history of Nebraska’s investment in water resources	1	2	3	4(14)	5(3)	51.1
1	2(3)	3(12)	4(2)	5	5) I understand how motivation affects service on public boards and service organizations	1	2	3	4(14)	5(3)	42.8
1	2(3)	3(6)	4(8)	5	6) I understand the future of water and ag. production	1	2	3(2)	4(9)	5(6)	28.6
1	2(3)	3(12)	4(1)	5(1)	7) I understand how to get involved in community leadership opportunities	1	2	3(2)	4(12)	5(3)	35.3
BEFORE the Academy						Now, at the END of the Academy					
1(2)	2(2)	3(11)	4(2)	5	8) I understand interpersonal conflict	1	2	3(2)	4(14)	5(1)	42.6
1	2(4)	3(12)	4(1)	5	9) I use my understanding of personality types	1	2	3(3)	4(12)	5(2)	39.6
1(2)	2(8)	3(7)	4	5	10) I use transformational leadership principles	1	2	3(1)	4(16)	5	71.8
1	2(7)	3(7)	4(3)	5	11) I can lead personal or organizational innovation	1	2	3(3)	4(11)	5(3)	44.7
1(4)	2(3)	3(6)	4(4)	5	12) I am involved in water policy issues	1	2	3(5)	4(8)	5(4)	52.3
1(3)	2(3)	3(9)	4(2)	5	13) I am a leader in the area of water	1	2	3(4)	4(11)	5(2)	50.0

**(Please turn over)**

## Water Leaders Academy Evaluation; Session 6, Nebraska City, NE, November 16-17, 2017

### 8) What is Your Main Takeaway from this session?

- I enjoyed this session as much as any we've done. All sessions were good, this one was excellent. I learned about the Missouri River and was impressed by the incredible history and the politics involved in its development. Also didn't have any idea how development effected the propensity to flood. Very satisfied with this session.
- It is vital to not only know about water issues but also take some actions. This may mean serving on boards, things through work or other things. If you want to make a difference you have to get involved.
- Get involved. Take a proactive approach and get involved with a group/board that you have a passion about.
- The importance of working on public boards.
- Good for community-personal development to be involved.
- Board participation is an honor not a right. Be engaged, be proactive, bring time, treasures, and talents.
- Importance of networking. Importance of being engaged and using tools/knowledge for positive outcomes.
- Find ways to continue these connections made with other students. Find ways to continue learning about NE water issues and get involved.
- To embrace what we learned all year. And take what we know, share the knowledge and empower others. Keep the conversation going on water issues.
- The diversity of knowledge amongst classmates.
- The presentation on the Missouri River was fascinating.
- At this point we are expected to be Action Water Leaders and use what we have learned to be more involved at work and in public.
- The history of the Missouri River and how we have transformed it in our favor. The transformation was incredible, but it has also had a major impact on habitat for wildlife and flood prevention in a negative way.
- I thought this session was a good mix of leadership and water topics. Was interesting to listen to Karen and Glenn on their board experiences. Lee's overview was a great tie in to our sessions. Where we were and where we are going. Hopefully, moving forward. I can build on what I have learned with continued relationships.
- Leadership and service is important in engagement and boards.
- The presentation on the Missouri river was fascinating.

### 9) What is Your Main Takeaway from the Nebraska Water Leaders Academy?

- The diversity of interests and issues related to water is the main takeaway that I enjoyed learning about in the past year.
- Be knowledgeable and serve.
- The most important thing I will be taking home is the connections I have made with people from completely different views.
- Leaders come in all different personality types. Motivation, knowledge and action are needed.
- For me it was a great networking opportunity.

- Great to meet so many people who share the passion for water in our state, and learning about all of the ways that they are involved.
- Nebraska is doing a great job of managing their water but there is still lots of work to do and lots of folks working on it.
- There is so much more detail involved in Nebraska water issues than I was previously aware. Having a fuller understanding of those issues is important in facilitating meaningful and productive conversations that hopefully lead to implementable solutions.
- Water issues are complex, but solutions can be found through outside the box or through partnerships.
- Education and networking.
- It was a great experience learning multiple areas of water issues faced in Nebraska.
- Great class to be a part of. Great networking and building relationships.
- There are some real water issues within Nebraska and we all have to do something about it. If we want to be leaders, we have to be on the front lines making positive changes.
- Networking is key to success in most any endeavor. I have connected with many new folks that will give me the ability to be much more effective in water issues. I was never fully aware of the number of political subdivisions involved in water issues for Nebraska. I'm amazed at the committed resources expended in our state for water.
- This has been an awesome experience. Not being from Nebraska or really having any experience with "water", I was not sure what to expect. My expectations were far exceeded. I have learned so much. The overall picture of water as a natural resource and issues related to its management. The inspiration to become involved as a leader in some capacity as well. So many more take-aways and knowledge gained. It has been very rewarding.

### 13) Additional Ideas, Comments, Suggestions:

- Missouri River and John Chappo talks great. Younger perspective on boards and involvement would be great since we are all early career professionals.
- Bringing in more producers.
- Thank you for this great opportunity.
- Really enjoyed the field trips, the hotel accommodations, and the meals.
- I have really enjoyed this year – thanks! Information on groups/association/societies in Nebraska that focus on water or natural resources that a person can join.
- Republican River.
- This was a very good for developing relationships with others within the water field. It was a great hearing other's perspectives on things.
- My thanks to the Jess's, Orton's, and Mark for the hard work to facilitate the WLA. Also thanks to Jodi and the effort she made to make the WLA enjoyable. If there is any contribution that I can make for future WLA's, please know that I will be available to participate.
- I must also mention the people I have met – a chance to build and make new friendships with so many people/professional who deal with Nebraska's water resources in varying capacities.









