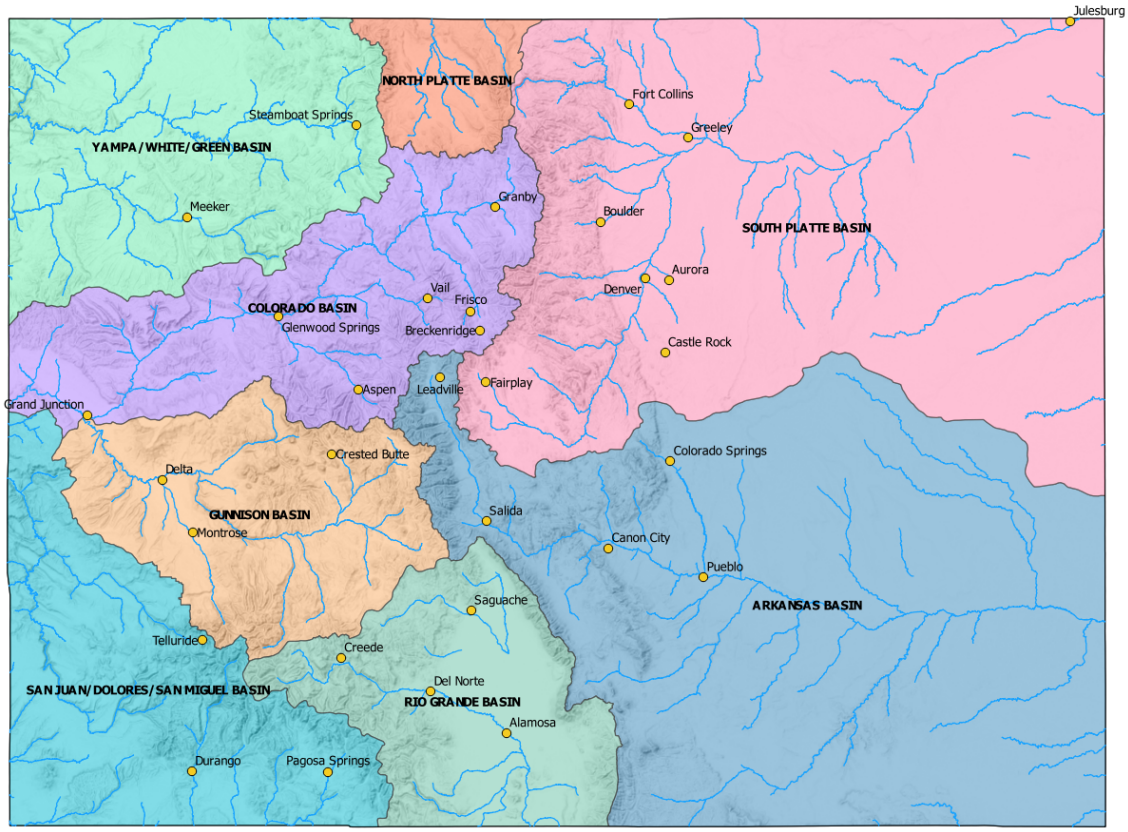
OneWorld OneWater Center
Metropolitan State University of Denver | Denver Botanic Gardens

Water Education Asset Mapping Project
Final Grant Report
Colorado Water Conservation Board
June 2018



https://coloradoriverwatch.org/wsr-home/

Objective

Colorado's Water Plan (CWP) sets a measurable objective of significantly improving the level of public awareness and engagement on water issues statewide by 2020, as determined by water awareness surveys. In addition, the plan lays out an overarching goal to "provide technical and financial assistance for high-quality, balanced, and grassroots water education and outreach efforts that inform Coloradans about the issues so that they may engage in determining Colorado's water future."

To do this, CWP lists three critical actions: 1) create a new outreach, education, and public engagement grant program; 2) conduct a water education assessment to help develop a data-based water education plan; and 3) improve the use of existing state resources and involve the innovation community in solutions. The Water Education Asset Mapping Project plans to address various aspects of these critical actions.

Asset mapping is a useful method that can help organize large quantities of qualitative, quantitative, and anecdotal data in order to identify trends, strengths, and solutions. UCLA describes an asset map as, "Asset mapping provides information about the strengths and resources of a community and can help uncover solutions. Once community strengths and resources are inventoried and depicted in a map, you can more easily think about how to build on these assets to address community needs and improve health."

The Water Education Asset Mapping Project intends to provide information about the education and outreach strengths, resources, needs, and gaps (geographically and topically) regarding adult education throughout Colorado, and include recommendations for the Colorado Water Conservation Board to consider when addressing future education and outreach projects. The information collected will additionally contribute to the development of a statewide education and outreach plan spearheaded by Water Education Colorado. In sum, this project will gather, synthesize, and disseminate the information needed for Colorado to create an effective water education plan and provide appropriate and critically needed funding for education and outreach programs that help achieve Colorado's Water Plan goals.

Methods

One of the goals of the Water Education Asset Mapping Project was to connect with entities all over Colorado to collect information about past, present, and future water education efforts. Entities included -but were not limited to- basin roundtables, Public Education, Participation, and Outreach (PEPO), state agencies such as Parks & Wildlife, conservation districts, utilities, statewide nonprofits such as Water Education Colorado, local groups such as the Water Information Program, universities and colleges, etc. Interviewed organizations were sourced through calls for involvement at a PEPO meeting, a workshop at the Sustaining Colorado Watersheds Conference, newsletter articles, targeted emails to individuals and organizations, colleague recommendations, and networking events. Over 50 groups and individuals were contacted with requests to be interviewed; interviews were conducted with 34 of these.

The intention was not to connect with every water education group in Colorado but to connect with influencers both statewide and local to learn about their education efforts. Higher education, continuing education, and community educational opportunities were the main focus. K-12 educational efforts were not a high priority for this project in order to scale the project to a manageable scope considering time constraints and organizational capacity.

It was initially proposed that the goals of the interviews would be to capture the following information:

- Collect information on the educational resources available,
- Identify what has been accomplished in the past three years and what the entities would like to do in the next three years,
- Approximate how much money is budgeted for educational efforts each year,
- Explore which educational outreach resources could be improved,
- Determine if there are resources could be applicable for use in other areas of Colorado,

- Determine if there are resources available for non-English speaking residents, and
- Identify gaps.

However, after interviews began, it was realized that this project would grow organically and that the information collected through each interaction would vary based on organization and organizational need. A responsible and unbiased data collection does not influence the conversation, but listens to what the data is saying. Therefore, the goals of the interviews shifted slightly overtime to include:

- Collect information on the educational resources available,
- Determine what marketing and outreach strategies are successful in different communities,
- Identify organizational strengths and successes,
- Learn where organizational funding comes from,
- Listen to the origin story of the group interviewed,
- Determine if there resources available for non-English speaking residents,
- Collect information on how the organization interact with their community and vice versa,
- Identify if the organization has a strategic plan,
- Learn if elected officials/decision makers are involved with the organization in any capacity,
- Determine what evaluation methods are used by the interviewed group,
- Decide if there are priority topics for each organization to address in their community or are they multidisciplinary focused,
- Identify gaps in resources and programming.

Priority was placed on conducting interviews face-to-face if available, followed by phone call and email. It was decided not to collect information through a large online survey in order to establish an open and respectful professional relationship with each entity. Although the time spent collecting data and needed funds would be more when compared to creating and distributing an online survey, based on research experience, face-to-face communication is much more effective in truly learning the ins and outs of an organization beyond numbers and facts. Additionally, Colorado is home to geographical barriers that divide the state – the Rocky Mountains. While most of the state's population resides on the east side of the mountains, the majority of water in Colorado falls on the west side. This has created a history of collaboration and contention between people living on either side of the mountains. The One World One Water Center is located in Denver, CO. It was decided it would make an important impression to put forth the effort to meet with people on both sides of the Rocky Mountains face-to-face. This effort was extremely well received by everyone interviewed throughout the data collection process.

Thirty-four organizations were interviewed over the course of seven months. Three of the interviews were conducted over the phone, one through email, and the remaining interviews were all conducted in person. Every conversation was documented through written notes and audio recordings except the interview

conducted via email. Below is a list of every group interviewed broken out by the river basin they are located.

Arkansas Basin	
	Arkansas Basin Roundtable
	Colorado Mountain College
	Colorado Springs Utilities
	Colorado Springs Water Resources Division
	Fountain Creek Watershed Flood Control & Greenway District
	Purgatoire Watershed Partnership
	Upper Arkansas Water Conservancy District
Colorado Basin	
	Colorado Mesa University
	Eagle River Water & Sanitation District
	Eagle River Watershed Council
	Healthy Rivers
	Roaring Fork Conservancy
	Town of Vail
	Ute Water Conservancy District
Rio Grande Basin	
	Alpine Achievers Initiative
	Conejos Clean Water
	Headwaters Alliance
	Rio Grande Basin Roundtable
	Rio Grande Headwaters Restoration Project
	Rio Grande Watershed Conservation & Education Initiative
	Sangre De Cristo Acequia Association
	Sangre De Cristo National Heritage Area
San Juan/Dolores/San Miguel Basin	
	Colorado Parks and Wildlife
	Dolores Watershed Resilient Forest Collaborative
	Mountain Studies Institute
	River Watch
	Southwestern Water Conservancy District
	Water Information Program
South Platte Basin	
	Big Thompson Conservation District
	Boulder County Flood Plain Division
	Englewood Wastewater Treatment
	Inland Ocean Coalition
	Open Water Foundation
	Water Education Colorado

The following graphic identifies every town that the One World One Water Center traveled to in order to conduct interviews for the Water Education Asset Mapping Project.

Locations where interviews took place.

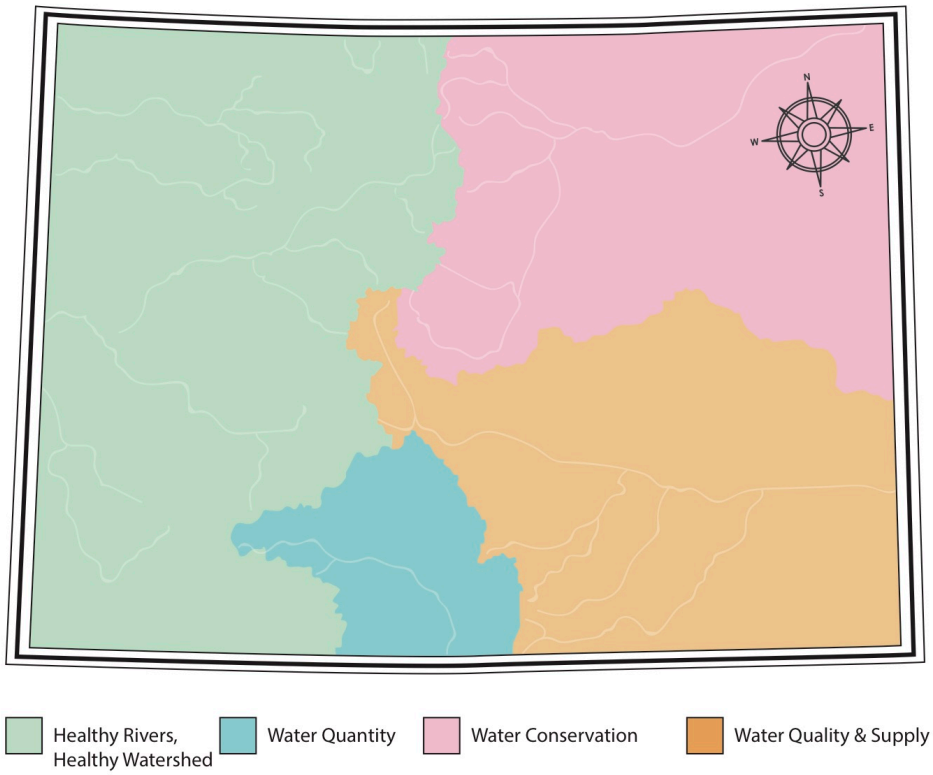
Findings

After all of the interviews were conducted, the written notes and audio recording were used to synthesize key points into one data collection. Below is a snap shot of one of the sections of the data collection spreadsheet for reference.

Non-English Resources	SJ/SM/DB	CB	RBG	AB	SPB
No, no need					II
No, but would like to in the future and see a need for it	IIII	IIII		IIIII I	III
Yes, Bilingual staff in office			II	I	I
Yes, Printed materials	I	I	III	I	
Yes, Occasional programming		I	II		
Yes, Videos translated			I		

Based on the data collected an asset map was created to showcase trends in Colorado water education organizations and programs statewide. Please see Appendix A. One item of significance noticeable through the asset map is that the top identified organizational goals do not match the gaps in resources and programming mentioned most frequently by groups organized - with the exception of the goal to build capacity and the gap in acquiring staff both in quantity and quality. This shows that organizations truly are struggling to fill the gaps they know exist in resources and programming with the tools they currently have.

An interesting result of this project was the differences in priority topics between different parts of the state. For instance, it was noticed that groups interviewed in the Arkansas Basin mentioned a majority of projects related to water quality but in the Rio Grande Basin, water quantity was a priority topic in programming. Below is a map highlighting trends in priority program topics throughout the state.



Trends in Priority Programmatic Topics

Recommendations and Other Items of Note

Based on the information gathered and analyzed, the following recommendations are being made to the Colorado Water Conservation Board with the intention to highlight organizational and programmatic areas that could use additional funding, attention, and resources.

1) Invest in resources, methods, and tools that will allow organizations to easily create resources and programming for non-English speaking residents. According to Data USA 835,706 people living in Colorado are non-English speaking and 70% of those people are Spanish speaking (https://datausa.io/profile/geo/colorado/#demographics). Nearly all of the groups interviewed for this project expressed an interest in doing more to reach and include non-English speaking community members yet very few groups had that on their list of future goals. This is due to limited funding, organizational capacity, and not knowing how to best reach their non-English speaking community members. Eagle River Water & Sanitation District in Vail, CO has imbedded Google Translate into their website which isn't flawless but is certainly better than nothing. Additionally, as they cater to a tourist-heavy society, their signage at community events is translated into many languages. The Sangre De Cristo Acequia Association in Alamosa, CO emphasized the importance of connecting with and appealing to a community champion that can help open doors and build trust within non-English speaking community members. Supporting projects that can help organizations best identify how to connect with their non-English speaking residents can not only help raise the awareness of environmental issues but

can help cultivate trust, enable an entity/community to be seen as a leader, and influence behavior change within their service areas.

2) Very few groups interviewed had a strategic plan that was more current than three years old, if they had one at all. Every basin has a Basin Implementation Plan that some groups said they use in place of an organization-specific strategic plan but some groups admitted that they do not have the organizational capacity or available funding to follow their BIP. While for some organizations this allows them to be flexible and adaptable to what their community and environment needs, for other groups it seemed to inhibit them from growing and expanding. Investing in projects that can help organizations create a strategic plan, or any type of future visioning, regardless of their staff size and/or funding capabilities has the potential to streamline educational efforts and promote growth.
3) Support projects that will develop and teach evaluation tools and methods for both programmatic and organizational evaluation. Seeking creative and effective evaluation methods and tools was the top resource gap that interviewed organizations identified. Many organizations don't prioritize evaluation, don't know how to best incorporate useful evaluation methods, or simply do not have the capacity to effectively evaluate their programs and their organization as a whole. This creates a problem in assessing if a program or project was successful and how to make it better in the future. Of the evaluation methods reportedly used by interviewed organizations, measuring event attendance was number one followed by surveys and verbal feedback. Additionally, some evaluation tools like logic models can be complicated and confusing so people may shy away from using them. Some people also reported enjoying learning from evaluation workshops but struggled to figure out how to incorporate the methods they had learned into their work. Colorado Springs Utilities has a dedicated evaluation staff member and they expressed how important that position has been to assessing, developing, and growing current and new projects. Unfortunately, most groups do not have that same ability. It is important to support evaluation work that groups can easily incorporate into their work, allows them to assess the success of their work, and contributes to their organizational goals.
4) Other items of note that were statistically significant:
    a. Geographical barriers – many organizations outside of the Front Range of Colorado reported that geographical barriers play a role in how they address their work. Specifically, they impact a person's access to professional development opportunities such as conferences and workshops if they do not work in the Front Range area. This is not a new revelation and has been a point of frustration for a long time but is worth noting. Diversifying program locations could help ease these frustrations, build collaboration, and connect people from different parts of the state.
    b. Generational differences – Groups in four out of five basins interviewed specifically mentioned the challenge of generational differences can create. For example the Headwaters Alliance spent a

lot of time delicately working with different generations in their community to honor the mining history of Creede while also educating on mine remediation and diligently working to clean up the Willow Creek watershed from years of mining damage. At a larger level, this challenge is really about working with people with varying points of view. It is important for organizations to have the tools needed to communicate, engage, and collaborate with people with different points of view.

c. Utilizing new technology in programming and in marketing – 26% of interviewed groups mentioned that they struggle with effectively using social media marketing for a variety of reasons. For some groups they have found that one social media platform is more popular than another in their community, some groups reported they don't use social media marketing because they don't know how to use it, and some groups said they struggle with the time commitment that powerful social media marketing could need. The benefit of social media marketing is that it is fast and cost effective. But it also requires a certain amount of intuition from social media users to be beneficial and needs reliable Internet connection, which doesn't exist in some Colorado communities. In addition to struggling with social media, introducing other new technology and methods into programming can be challenging. Google tools, webinar platforms, and presentation software have proven to be equally challenging for the same reasons as social media.
d. Limited capacity – Nearly half of the groups interviewed identified limited organizational capacity – staff, time, and resources - as a large challenge they face in growing and creating sustainable projects.
e. Funding – Funding was also a highly reported challenge, second to limited capacity. Grants, the CWCB, and private donors were the top three reported sources of funding by interviewed groups. It is a good thing to know that there are currently lots of grant opportunities, state agencies, and private citizens willing to financially support organizations but it can also be worrisome that should those financial options be limited, many organizations would struggle tremendously. The Arkansas Basin Roundtable puts together regular meetings for the public on new funding opportunities for local organizations and projects. They are the only interviewed group that mentioned holding funding specific events like this. Diversifying funding sources can help groups make connections, build program capacity, and be more adaptable to future changes and challenges.
f. It also is worth mentioning that regardless of the challenges and gaps educational groups face there is a tremendous amount of creative, resourceful, and collaborative work being done. Every group met with exemplified a unique quality that revealed their strengths, their resourcefulness, and secured them as an important community resource. The following is a list of some of the unique organizational qualities and accomplishments documented that could be helpful in creating community solutions.

- Alpine Achievers Initiative has developed strong working relationships with public schools in their service area.
- Colorado Mountain College has established and maintained long standing significant mutually beneficial relationships with government agencies.
- Colorado Springs Utilities has an incredibly dedicated volunteer network and they have a dedicated staff member focusing a lot on organizational and programmatic evaluation.
- Colorado Springs Water Resources Division has incorporated a significant amount of ADA compliant tools on their website and in trail restorations.
- Conejos Clean Water empowers their community to take action and to contribute back into their environment by creating a strong community bond.
- Eagle River Water & Sanitation District includes a number of frequently used languages in their signage at community events to raise awareness of safe drinking water in the tourist heavy community of Vail.
- Fountain Creek Watershed Flood Control and Greenway District hosts a very successful multi-day Creek Week event with the support of local businesses and creative marketing from a small staff.
- Headwaters Alliance were able to incorporate public input into their strategic plan to highlight how important the Creede, CO community is to their work and mission.
- Mountain Studies Institute successfully executes a number of educational programs every year with a lot of community support while addressing geographical barriers and generational differences.
- Open Water Foundation has a huge collection of data publicly available on their website and feel passionately about the accessibility and usability of scientific data.
- Rio Grande Basin Roundtable knows how to deal with a water crisis through past experiences and community resiliency.
- Rio Grande Headwaters Restoration Project successfully works with a lot of private landowners.
- Rio Grande Watershed Conservation & Education Initiative manages all of the public relations and outreach for multiple San Luis Valley water organizations in addition to executing their own programs and events.
- River Watch has been home to a long-standing citizen science program that is so popular, they haven't done any recruitment for the program in years and yet they still have a waitlist for involvement.
- Sangre De Cristo Acequia Association has navigated how to work with and serve their non-English speaking community members through patience, understanding, and collaboration.
- Sangre De Cristo National Heritage Area is effectively addressing generational differences in marketing and communications.

- Southwestern Water Conservancy District hosts a very successful annual water seminar that connects communities throughout their service area while breaching geographical barriers.
- Upper Arkansas Water Conservancy District utilizes community strengths to benefit community – "Community within and community up."
- Ute Water Conservancy District hosts a two-day annual water festival for local school children with immense community support in the form of volunteers and in kind donations while advising other water festival coordinators around the state.
- Water Education Colorado is able to cross geographical barriers in Colorado, create multidisciplinary learning opportunities, and connects well with a water fluent community.

Budget Breakdown

	Initial Estimate	Mid-Point Adjustment	Actual Cost
Project Management	$11,500.00	$22,500.00	$27,580.00
Supplies	$2,500.00	$500.00	$1,100.00
Travel	$15,00.00	$4,000.00	$3,651.00
Final Report	$5,000.00	$7,000.00	$1,670.00
MSU Denver Foundation & OWOW Center Fee (15%)	$6,000.00	$6,000.00	$6,000.00
Total:	$40,000.00	$40,000.00	$40,001.00

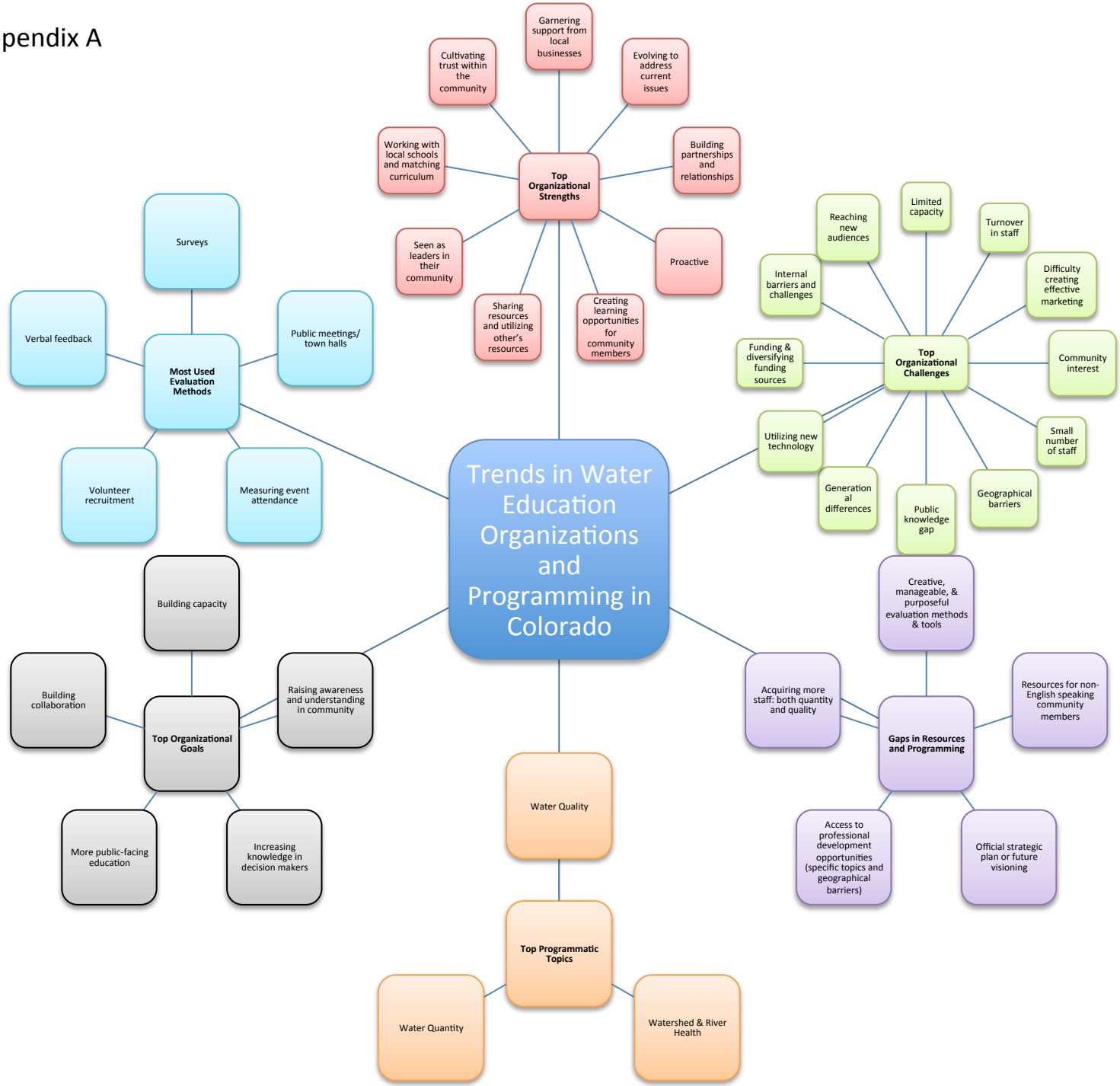
Project Challenges

The goal was to connect with organizations and communities in all river basins in Colorado. Unfortunately, due to time constraints and organizational capacity, only five basins were reached. Though, regardless of challenges, 34 organizations and groups were interviewed covering a lot of ground within those five basins. Additionally, the intention of this project was never to create a full inventory of water-focused educational programs in Colorado but that is something that many groups would like to see created. The 34 groups interviewed for this project are only a portion of the many organizations leading a variety of water education initiatives in Colorado. The list of people striving to better their environment through research, policy, community action, and raising awareness in Colorado is tremendous. It should be noted that if the CWCB wishes to support an inventory project in the future, it would require much more funding and manpower to successfully create and maintain a full statewide educational inventory than the scope of this project.

Future

There was a lot of value found in the results of this project from the communities and organizations that were interviewed. To optimize this information to its best use, the One World One Water Center will be collaborating with Water Education Colorado on incorporating this information into their statewide educational initiatives both current and future.

Appendix A


Trends in Water Education Organizations and Programming in Colorado
Top Organizational Strengths
Garnering support from local businesses
Evolving to address current issues
Building partnerships and relationships
Proactive
Creating learning opportunities for community members
Sharing resources and utilizing other's resources
Seen as leaders in their community
Working with local schools and matching curriculum
Cultivating trust within the community
Most Used Evaluation Methods
Surveys
Public meetings/ town halls
Measuring event attendance
Volunteer recruitment
Verbal feedback
Top Organizational Challenges
Limited capacity
Turnover in staff
Difficulty creating effective marketing
Community interest
Small number of staff
Geographical barriers
Public knowledge gap
Generational differences
Utilizing new technology
Funding & diversifying funding sources
Internal barriers and challenges
Reaching new audiences
Top Organizational Goals
Building capacity
Raising awareness and understanding in community
More public-facing education
Increasing knowledge in decision makers
Building collaboration
Gaps in Resources and Programming
Creative, manageable, & purposeful evaluation methods & tools
Resources for non-English speaking community members
Official strategic plan or future visioning
Access to professional development opportunities (specific topics and geographical barriers)
Acquiring more staff: both quantity and quality
Top Programmatic Topics
Water Quality
Watershed & River Health
Water Quantity

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