Results of the 2019 Survey of Colorado Agricultural Producers on Watershed and Stream Management Plans

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Photo: Phil Brink

Ag Water NetWORK
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EXECUTIVE SUMMARY

Agricultural operations of all sizes were represented among the survey responses. The category with the most – about 42 percent - represented operators with less than 250 acres in production. About eighty-four (84) percent of respondents applied irrigation water on at least some of their land. Most – about 51 percent – indicated 250 acres or less were being irrigated. Sixteen (16) percent did not own or lease any water rights; ie. they were completely 'dryland' operators. These producers also represented many of the largest operations.

Irrigation water was most commonly sourced from a mutual ditch company or via a decreed surface water diversion. Water conservation districts, government agencies and private irrigation companies also were cited as water providers. Almost one in five respondents sourced at least some of their water from a tributary groundwater (well) right and about one in ten indicate having a non-tributary groundwater (well) right.

More than half of the respondents indicated their water-related challenges include the amount of water available for irrigation (ie. inadequate quantity), their delivery infrastructure and the efficiency of their irrigation system. Water storage was cited by 43 percent of producers as a challenge. Other challenges included water rights issues, water quality, and technology. Some additional challenges, cited in the comment section, included state regulatory issues, water going to urban sprawl, correction of out of compliance augmentation plans, and stock-watering.

More than half – 54 percent - of the producers that took the survey had been or were currently involved in a watershed management planning effort.

Most producers felt that 'preserving and enhancing existing uses (agriculture, etc.)' should be a priority of any watershed management plan. This was followed by irrigation infrastructure improvement and creating a drought contingency plan. All three of these priorities were cited by more than half of the respondents, with 'adding more water storage' indicated by almost half (49 percent). Other responses, in descending order of response rate, included groundwater management planning, stream or river channel and riparian area restoration, forest health / fire mitigation and improving water quality.

When asked "who should lead or co-lead watershed planning efforts in your area?", the majority of producers (60 percent) indicated their local conservation district was the most suitable entity. A 'coalition of local water interests' and the 'local or regional water conservation / conservancy district' were also popular choices, each receiving just under half of the votes.

CCA's Ag Water NetWORK has begun working with the Colorado State Conservation Board and individual conservation districts to assist them in preparing to lead or co-lead watershed / stream management planning efforts where there is local interest. The Ag Water NetWORK's assistance can include both outreach presentations and training. The Colorado Ag Water Alliance (CAWA) is working with the Ag Water NetWORK to help deliver outreach and training.

Seventy (70) percent of producers indicated it would be helpful to have a better understanding of watershed management plans if they were to participate in the planning process. Fifty-six (56) percent said not holding meetings during harvest or irrigation season would also be helpful, and almost one-third indicated that accessing meetings via conference calling would better enable them to participate. Producers also indicated that evening meetings work best (46 percent) followed by mid-late afternoon time-frames. Morning meetings were the least popular.

Producers expressed strong support for the idea of having a local ag-oriented person serve as a "liaison" to help represent agriculture's interests at local watershed management planning and implementation meetings. The Ag Water NetWORK has developed a training program to help prepare interested ag producers and other ag-connected individuals to engage and represent agricultural interests on watershed and stream management planning efforts. The first training workshop was held in Hayden on May 6th in cooperation with the local Community Agricultural Alliance, which organized the event. Additional workshops are being tentatively planned at the invitation of local conservation or community agricultural groups.

What specific role might producers prefer if they were to participate in watershed management planning activities? Forty-two (42) percent of producers indicated they would be occasional attendees with no formal role.' Forty (40) percent would serve as a subcommittee member and 13 percent would be willing to lead or co-lead a local planning effort. More than one in ten were willing to host other water stakeholders at their farm or ranch to showcase water-related improvements.

Forty-four (44) percent of producers said they are 'somewhat familiar' with what a watershed management plan is and what it is intended to accomplish. About 30 percent indicated minimal or no familiarity. The balance - about one-fourth - indicated they were fairly or very familiar.

Interestingly, producers that indicated a willingness to serve as a leader or co-leader gave themselves an average familiarity score of 3.9 out of a maximum possible score of five (5). Conversely, producers that answered "don't know" to the question of how they might participate in watershed management planning gave themselves an average familiarity score of 1.2. This dichotomy suggests greater producer familiarity with watershed management planning leads to greater involvement in the planning process.

Agricultural producers are interested in being involved in watershed management planning. Eighty-eight (88) percent of producers indicated they were at least "somewhat interested" in participating in a local watershed management planning initiative. Almost 1 in 4 indicated that they were "very interested" in participating.

I. Background

A. Purpose of the Survey

The Colorado Cattlemen's Association (CCA) and Partners for Western Conservation (PWC) created the Ag Water Network in late 2015 with the objective of helping to 'keep ag water connected with ag land.' The Ag Water NetWORK advances this objective by providing producers with timely, contextual information about water to support informed decisions that help advance and sustain agricultural production in Colorado, especially irrigated agriculture.

Colorado's Water Plan calls for 80 percent of locally prioritized rivers to be covered by Stream Management Plans (SMPs) and 80 percent of critical watersheds to have watershed management plans (WMPs) by 2030. The state legislature has increased funding for the CWCB watershed restoration grant program to help achieve the dual objectives.

The 2018 Agricultural Statistics Report indicated about 48 percent (31.8 M acres) of the land area in Colorado is utilized by farm operations. Additional land used for agricultural purposes is leased from local, state and federal agencies. Irrigators and stock growers also own and utilize much of the water in Colorado – which they use to produce food, fiber and fuel. Additionally, irrigation companies and unincorporated groups of farmers and ranchers own and operate most of the ditches and canals that deliver water to agricultural land around the state.

Watershed and stream management plans focus on land and water resources. The core purpose of stream and watershed master plans is to characterize water-related resources and needs within a specific area, identify and prioritize problems, secure funding, and design and implement solutions.

Stream management plans typically focus on protecting and/or improving environmental and recreational uses within a section of a stream or river. Environmental and recreational uses are generally considered "non-consumptive" uses because little or no water is consumed by the use. For example, flows needed to support aquatic life and rafting represent non-consumptive uses.

A watershed management plan generally covers a significantly larger area than a stream management plan and looks at both non-consumptive and consumptive uses. Consumptive uses of water include irrigation, stock-watering, commercial and industrial processes, mining, dust suppression, and municipal and domestic use.

A watershed management plan often begins by inventorying water resources, uses and infrastructure within a watershed or sub-watershed. With this information, problems are identified and prioritized and solutions can be designed and priced. Solutions that benefit multiple uses - such as restoring and stabilizing a stream channel and embankment section during the replacement of an irrigation diversion structure - are often eligible for a wider array of funding sources.

Agricultural engagement is crucial to the development of comprehensive plans – whether watershed or stream management plans. In order to represent agricultural objectives, producers must be familiar with the basic elements of watershed and stream management plans and understand fundamentals about how water is used by agriculture and other water interests, including municipal and industrial (M & I), environmental and recreational. Ag producer participation in the planning process also benefits other stakeholders through sharing of

knowledge about farming, ranching and irrigation. This helps build trust between stakeholders and increases the likelihood of getting multi-benefit projects implemented.

In the first quarter of 2019, CCA's Ag Water NetWORK surveyed agricultural producers – both irrigated and dryland operators - to gauge their familiarity with watershed and stream management plans and determine their priorities around water and water management planning. The online survey was conducted statewide with the help of water conservancy districts, conservation districts, agricultural organizations and numerous individuals.

B. Survey Details

The survey was released January 16th, 2019 and closed on April 30th, 2019, and received more than 330 responses. Approximately nine (9) percent of the respondents did not proceed beyond the first five questions – which covered basic information about the respondent's operation. These incomplete surveys were eliminated from the dataset. To the first question on the survey which asked "Do you own or lease agricultural land in Colorado? If no, you do not need to complete this survey," twelve (12) respondents either answered "no" or did not provide a response. These surveys were also eliminated from the dataset since the survey was exclusively geared toward Colorado's agricultural producers.

A small number of respondents missed or ignored a question, but otherwise completed the survey. Thus, the number of responses to a given question ranged from 288 (highest) to 284 (lowest). The survey contained 15 questions as well as a section at the conclusion which allowed respondents to leave general comments or ask questions. All 15 survey questions are listed in the Appendix, along with the general comments received.

The results of the survey are explained and shown graphically in the following text and figures. A few of the individual survey questions provided an "Other" category in which respondents could input their own answer or provide a comment. The comments associated with these survey questions are listed with the results of the respective question. A footnote at the bottom of each figure indicates the number of respondents that answered the question (for example, n = 288).

As incentive for completing the survey, random drawings were held approximately every week and a half during the survey period for Cabela's gift cards. A total of $500 in gift cards were distributed among eight (8) winners. The winners and the value of the gift card that they won are also listed in the appendix.

C. How will the Survey Results be Used?

The survey data – both the responses to questions and the producer comments - will be used to gain greater insight into producer priorities, concerns and needs related to watershed and stream management planning and implementation activities. In addition to publishing this report, the Ag Water NetWORK will utilize the survey findings in training, outreach and published articles. Use of this report by all water stakeholder groups and media outlets is encouraged.

This report – which summarizes the survey findings – is intended to help organizations and individuals representing all water interests improve their understanding of agricultural producer perspectives on the topic of water.

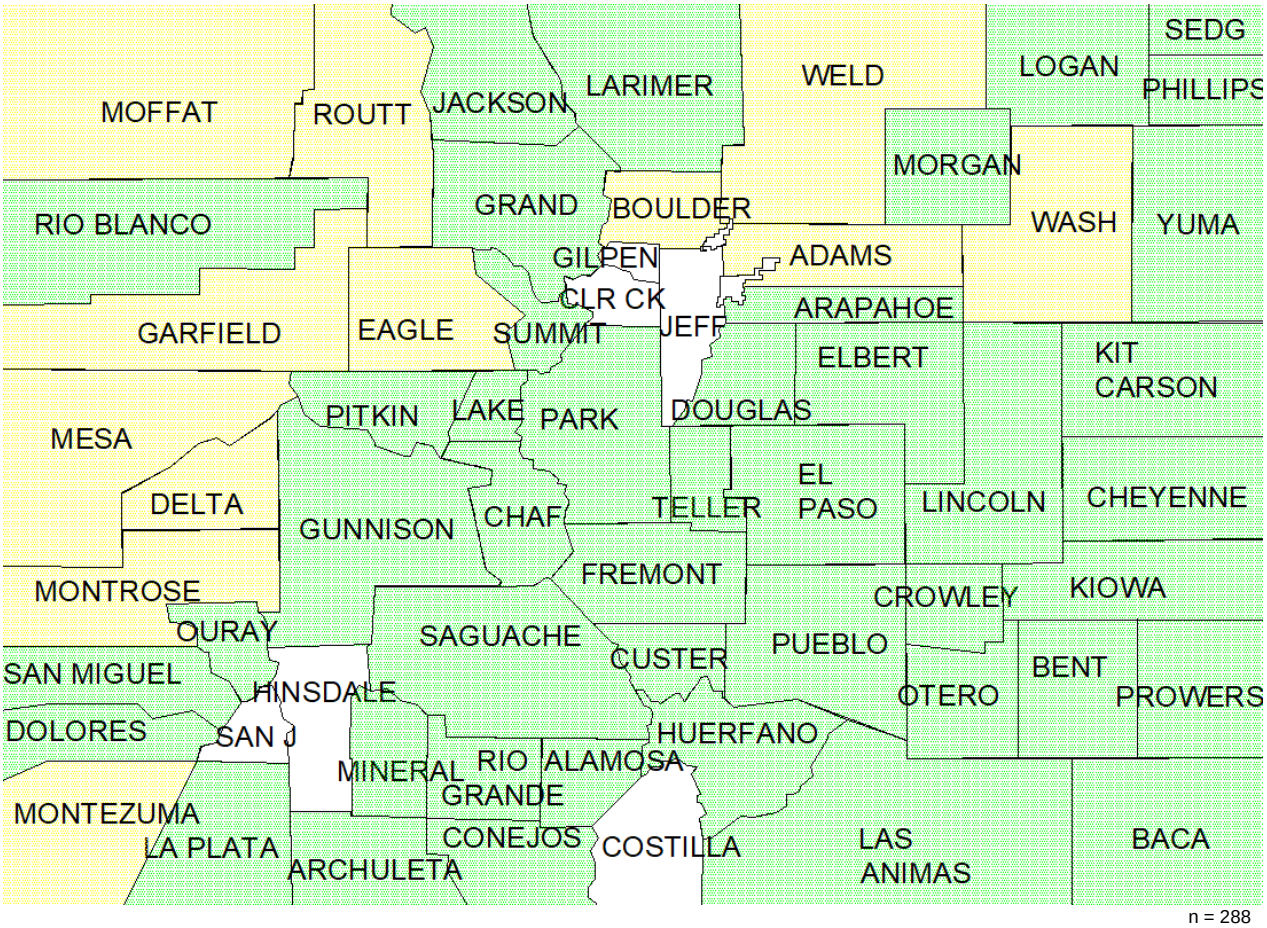
As agriculture represents a major stakeholder in land and water resource management throughout the state, it is hoped that the results of this survey will be used to foster greater communication between agriculture and the other water stakeholder groups. Ultimately, the challenges and perspectives gleaned from the survey responses are intended to yield greater cooperative engagement and more efficient and effective watershed and stream management planning and implementation which will benefit all water stakeholders and result in a more prosperous and sustainable agricultural industry in Colorado.

II. Survey Responses

A. Respondent Operation Characteristics

Responses were received from 56 counties around the state, which represents about 88 percent of the counties in Colorado. Green shading on Figure 1 (below) indicates that at least one survey response was received from an agricultural producer in the county. Yellow shading indicates the county was among the top 12 responding counties.

Figure 1. Map of Responding Counties



n = 288

Figure 2. Top 12 Counties Responding

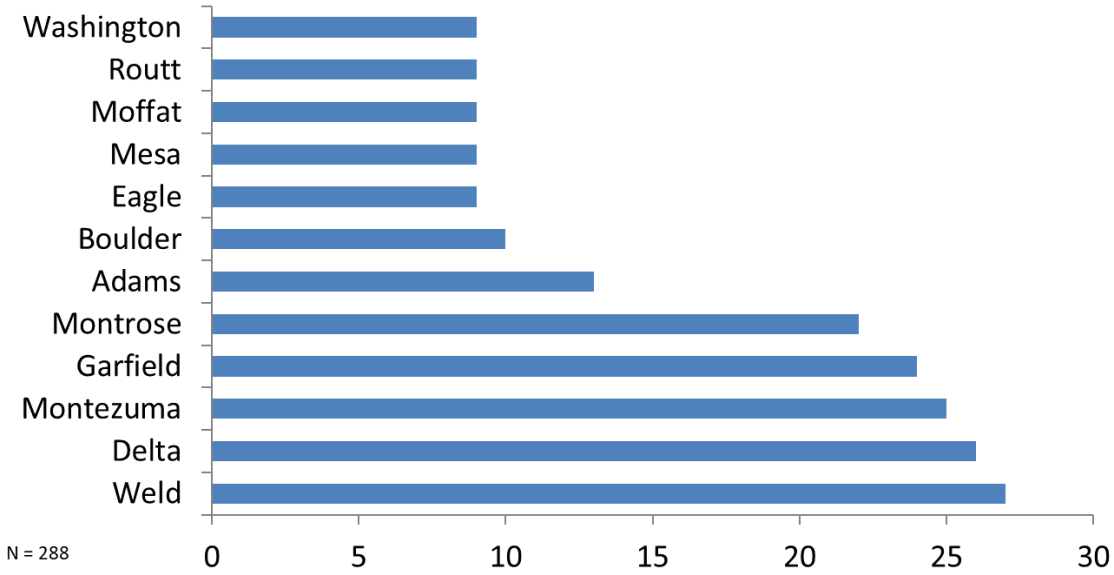
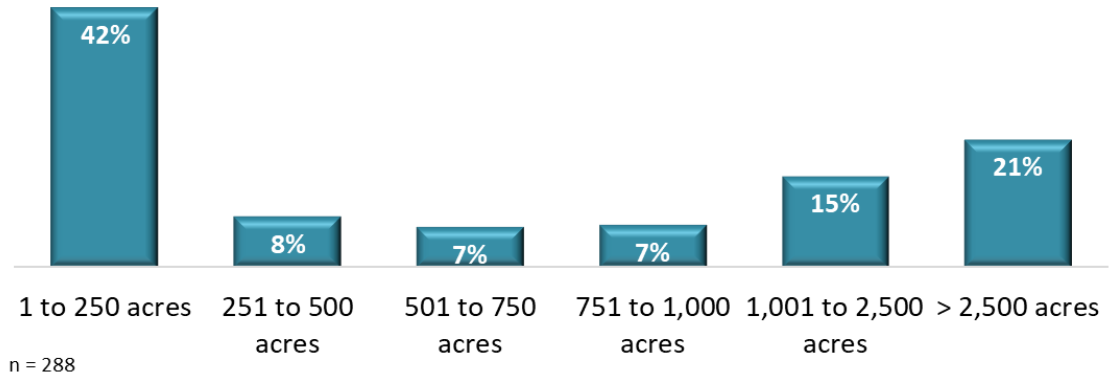


Figure 2 displays the survey response rate among the counties from which at least 9 (nine) responses were received. Weld County led with 27 responses, followed by Delta County (26), Montezuma County (25), Garfield County (24) and Montrose County (22). When combined, the responses from the top 12 counties represent about two-thirds of all the survey responses.

Agricultural operations of all sizes were represented among the survey responses. The category with the most responses – about 42 percent - represented operators with less than 250 acres in production. Producers that indicated having between 251 and 1,000 acres represented less than one-fourth of the total respondents. Above 1,000 acres, the number of responses increased, and about 1 in 5 indicated having more than 2,500 acres under production.

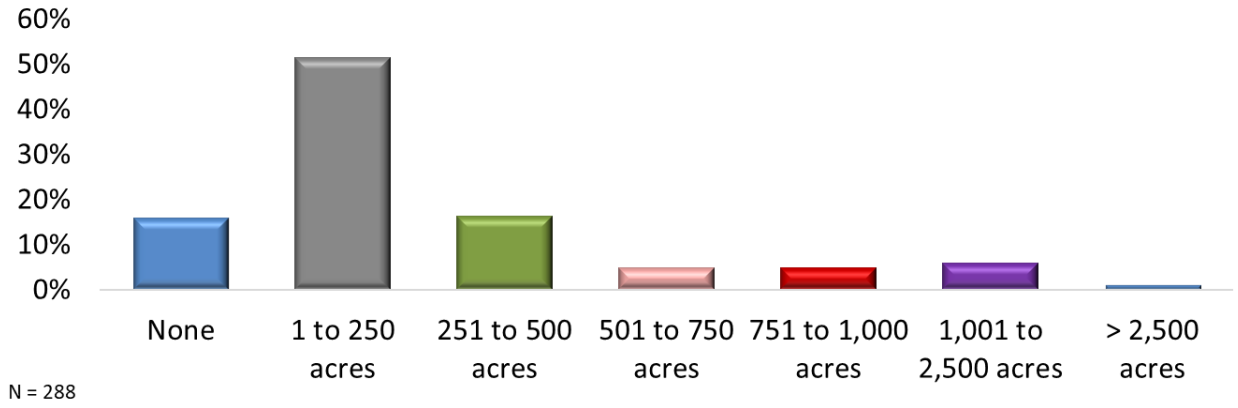
Figure 3. Acres Utilized for Agricultural Production (Owned or Leased)



Sixteen (16) percent of the survey takers indicated having 'dryland' operations in which no acreage is irrigated. Many of these operations had over one-thousand acres in production. Roughly half (51 percent) of the respondents irrigate 250 or fewer acres, and sixteen (16) percent irrigate between 251 and 500 acres. Each of the irrigated acreage categories between 501 acres

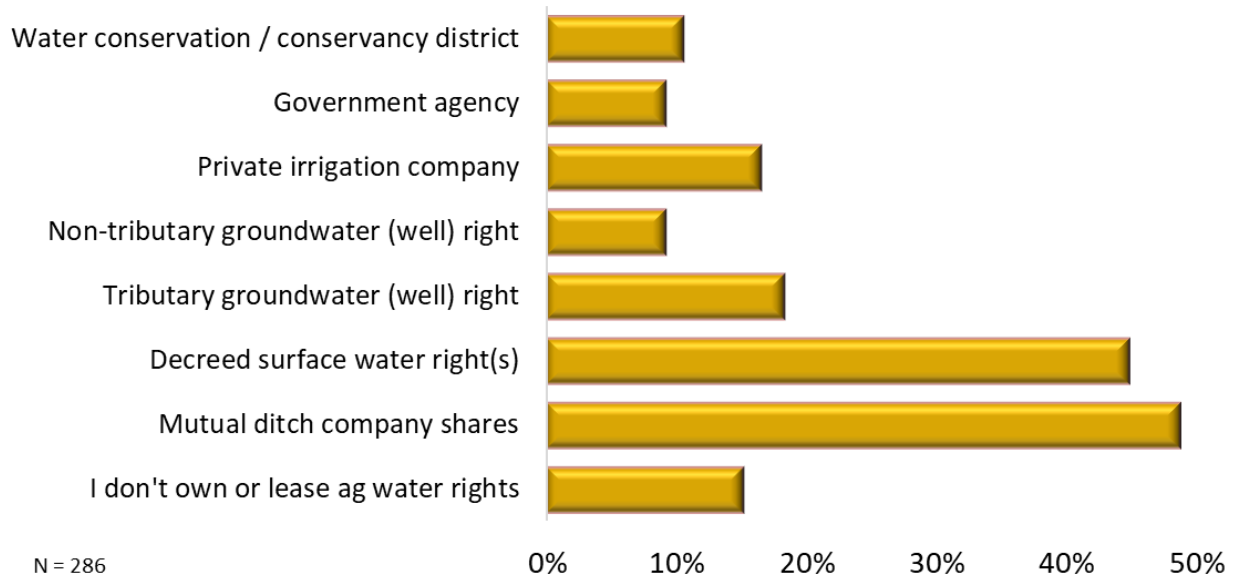
and 2,500 acres saw a response rate of five (5) to six (6) percent. About one percent of the respondents said they irrigated more than 2,500 acres.

Figure 4. Irrigated Acres (owned and Leased)



Agricultural producers access irrigation water in a variety of ways, as shown in Figure 5 below. Almost half of the survey respondents indicated they obtain water via decreed surface water rights and through a mutual ditch company. Ten percent of respondents utilized water through a water conservation / conservancy district. About sixteen (16) percent get their water through a privately-owned irrigation company, which are usually smaller than mutual ditch companies. The remaining sixteen (16) percent of respondents indicated they were completely dryland operators; ie. they did not own or lease any water rights.

Figure 5. Type(s) of irrigation water rights - owned and leased

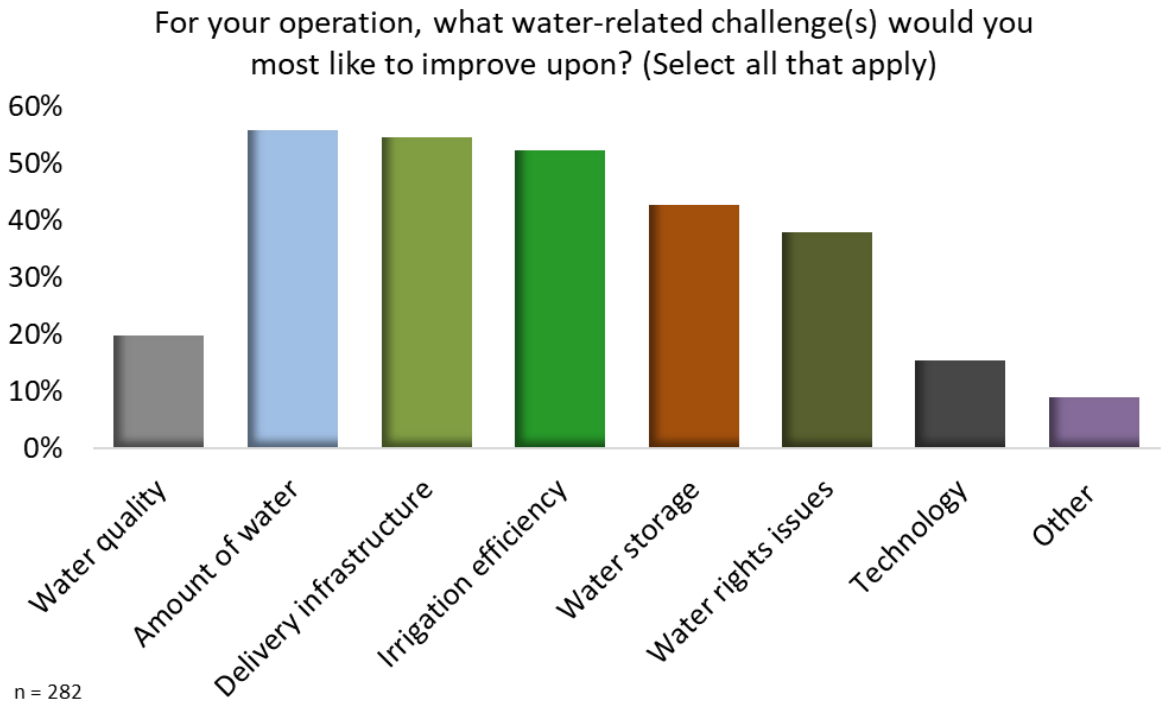


Roughly one in five said they utilize tributary groundwater and about one in ten use non-tributary groundwater. Tributary groundwater is administered through the prior appropriation system (first in time, first in right) whereas non-tributary groundwater is not considered to be connected to surface water and is not administered through the priority system. Non-tributary groundwater is, however, administered by individual groundwater management districts which are overseen by the Colorado groundwater commission.

B. Watershed Planning Considerations

The next section covers responses from producers regarding their challenges, priorities and engagement interests pertaining to water-related issues and watershed and stream management planning.

Figure 6. Water-related challenge(s)



Colorado agricultural producers face multiple water-related challenges. Figure 6 reflects the answers producers provided to the question of "what water-related challenges would you like to improve upon?" More than half of the respondents indicated that the amount of water (i.e. quantity) that was available for them to use represented a challenge. The robust response aligns with 2010 Statewide Water Supply Initiative (SWSI) findings, which indicated that all basins in the state had existing agricultural water shortages. The shortages were highest in the South Platte, Arkansas and Rio Grande River Basins. The survey responses and SWSI report indicate more acres would be irrigated and more acres would be more *fully* irrigated if more water was available for legal diversion.

The condition of irrigation water delivery infrastructure – the ditches, head gates, flumes, pipes, etc. that are involved in delivering water to farm fields – was cited by 55 percent of respondents as a challenge. This was followed by on-farm irrigation efficiency challenges, which was checked

by fifty-two (52) percent of respondents. Irrigation efficiency often involves upgrading from gated pipe or flood irrigation to a sprinkler system. Other methods to increase efficiency include surge irrigation on furrowed field and surface and subsurface drip irrigation.

Water storage was cited as a challenge by 43 percent of respondents, and more than a third of producers said water rights issues were challenging for them. Water quality was indicated as a challenge by one in five of the survey takers.

This question also contained an "Other" category, which generated several comments. The comments are displayed below:

Producer Comments in response to the question "For your operation, what water-related challenges would you like to improve upon?"

- Reduce ground water pumping when it adversely affects surface water flows.
- Right to bottle water
- [Apply] wastewater on grazing land
- Learn how underground water is identified. Also learn more about ownership of water under our real property. Also, how to get control of and quantify the water under deeded land surfaces. Lastly how is the re supplying of underground water determined on our property. When does the grandfather clauses of historic use of underground of homesteader continue to be preserved?
- State regulatory issues
- Water going to urban sprawl
- Improve pastures - eliminate prairie dogs and nuisance weeds - figure out the best way forward once CRP comes out of contract - would like to use it for grazing cattle...but may have to put it into crop/hay production
- Ground water pumping
- Water storage - in aquifers.
- Produced water development \ reclamation
- Protection of decreed water rights for ag use
- How to get along better with my fellow shareholders
- Water for cattle
- Conservation
- Water banking
- Correction of out of compliance augmentation plans
- Water Leasing
- Water quality
- Piping, evaporative loss
- Streamlining intermediate leasing to outside water users

The next question asked, "are you currently involved with a local organization that is working on a watershed management / integrated water management planning effort and/or have you been previously?" Figure 7 (below) displays the results. Slightly more than half (54%) of the survey takers indicated that they were or had previously been involved in some kind of watershed or integrated water management planning activity. The balance – 46 percent – indicated "No."

Figure 7. Producer involvement with Watershed management planning efforts

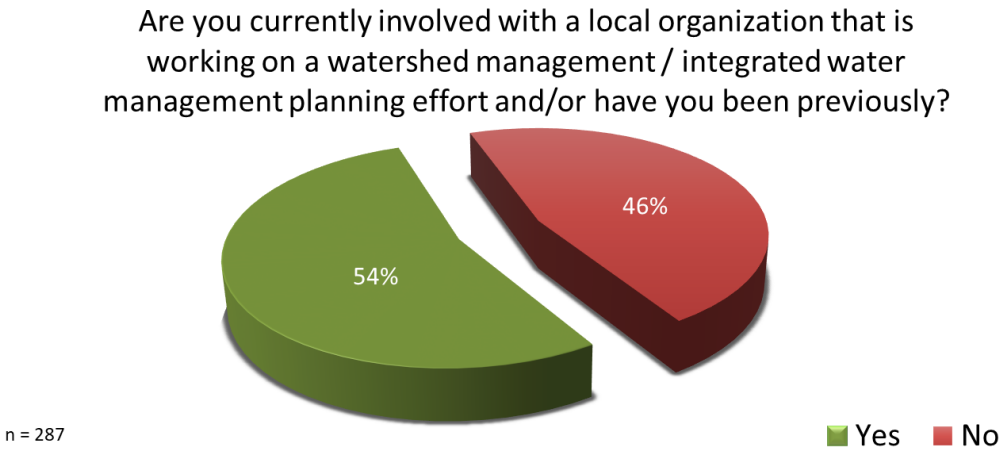


Figure 8. What should the Priorities of a Watershed Management Plan be?

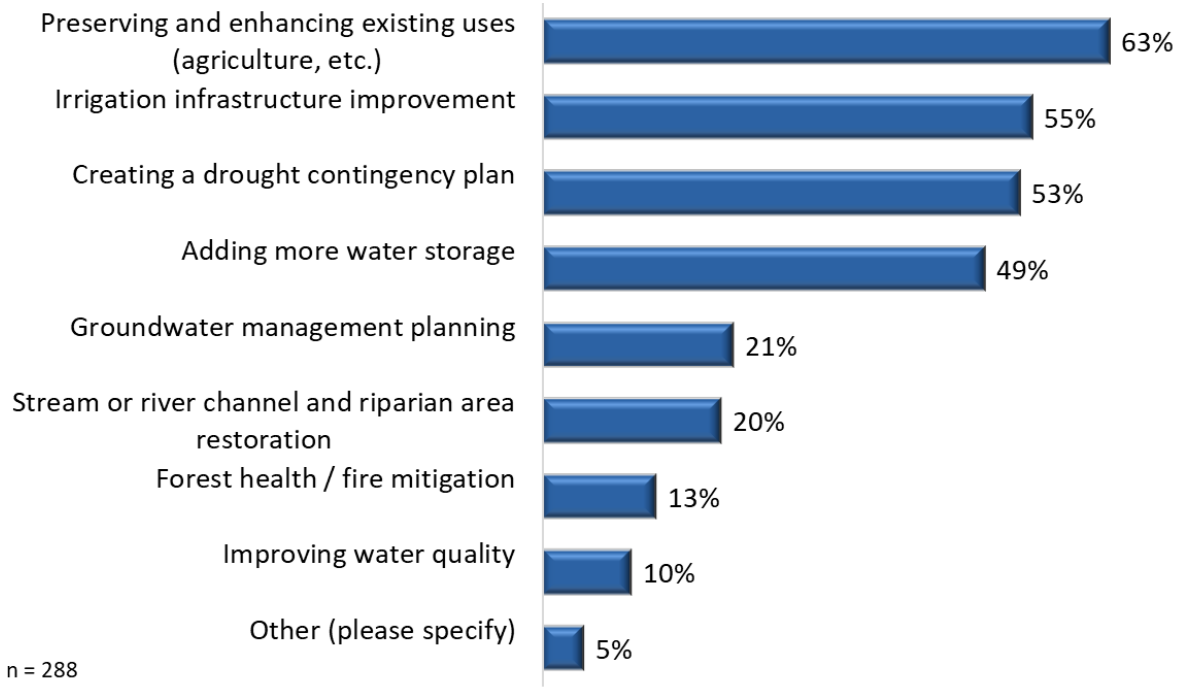


Figure 8 displays producer responses to the question: "Imagine you are helping create a watershed management plan in your area. What do you think the top three (3) priorities should be?" This question generated responses from all 288 of the survey takers – most of whom used all of their three possible choices.

The majority of producers – 63 percent – felt that preserving and enhancing existing uses (agriculture, etc.) should be a priority of any watershed management plan in their area.

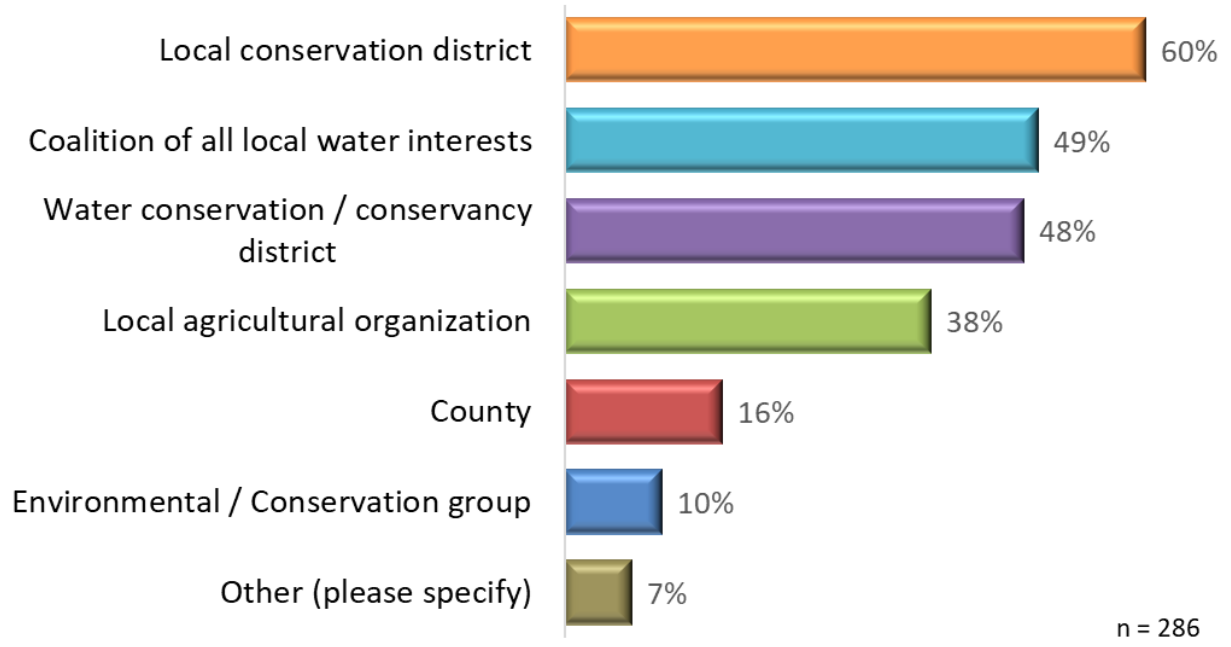
Fifty-five (55) percent thought irrigation efficiency improvement should be a priority, and almost as many – 53 percent – felt that creating a drought contingency plan should be one of the priorities of any local water management planning effort. Forty-nine (49) percent indicated that adding more water storage should be prioritized.

About one in five producers indicated groundwater management planning and stream or river channel and riparian area restoration should be a priority. Thirteen (13) percent cited forest health / fire mitigation as an appropriate priority and 10 percent indicated water quality should be a primary focus of watershed planning activities.

Producer Comments in response to the question: "Imagine you are helping create a watershed management plan in your area. What should the top three (3) priorities should be?"

- Legislative actions that make water laws more effective
- Water administration issues
- Preservation of aquifer water rights to sustain livestock and domestic needs for the ranch.
- Salinity in irrigation water needs to be addressed in river water since its reused 7-8 times before it leaves the state, which increases the salinity problem
- Beavers and check dams
- Riparian area restoration
- Restore Bonny Reservoir!!
- How to best share limited water resources in light of the Colorado River Compact
- More intermediate size water storage to extend irrigation periodically
- Water sharing with other sectors
- Wetland habitat restoration and protection
- Recreation opportunities from rafting to fly fishing
- Water Leasing

Figure 9. Who Should Lead Watershed Management Planning?



Watershed and stream management planning requires local leadership. The next question on the survey asked, “from the list below, which entities are well suited to lead or co-lead watershed planning efforts in your area?” Local conservation districts led with 60 percent of the responses, followed by “a coalition of all local water interests” (49 percent) and “water conservation / conservancy districts” (48 percent).

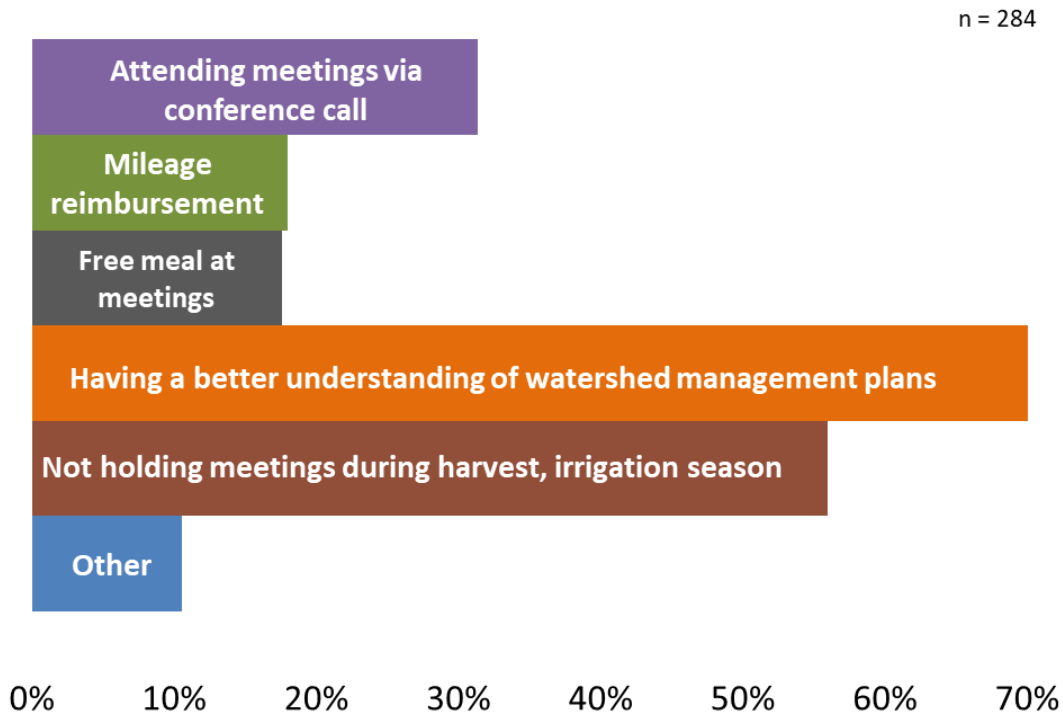
Thirty-eight (38) percent thought that local agricultural organizations would be best suited for leading watershed and stream management planning efforts. And county governments, environmental / conservation groups garnered 16 percent and 10 percent of the votes respectively. Several comments were also received and are shown below.

CCA’s Ag Water NetWORK has begun working with the Colorado State Conservation Board and individual conservation districts to assist in helping them prepare to lead or co-lead watershed / stream management planning efforts where there is local interest. The Ag Water NetWORK’s assistance can include both outreach presentations and training. The Colorado Ag Water Alliance (CAWA) is working collaboratively with the Ag Water NetWORK to help deliver outreach and training.

Producer Comments in response to the question “which entities are well suited to lead or co-lead watershed planning efforts in your area?”

- Local water right owners
- Ground water management districts
- I don't trust government. Folks making decisions about water that don't own water.
- Do not know
- Unsure
- All agriculture producers that use the watershed
- Independent Consultants
- Ditch companies
- Basin Roundtables
- State and federal govt partners
- CCA
- Republican river district reps should be volunteer, not paid
- Re-draw county boundaries to emulate actual watershed drainages
- The push needs to come from the federal agencies
- Any or all could be effective
- I don't know
- Local crop insurance company
- Hard to say
- Definitely NOT an environmental group who do not understand the difference between privately owned aquifer water and public water.
- Landowners

Figure 10. If you were to participate in watershed management planning meetings, which of the following would be helpful?



Seven out of ten producers (70 percent) indicated that "having a better understanding of watershed management plans" would be helpful if they were to participate in planning meetings. Having greater knowledge and access to information about watershed and stream management planning was also expressed multiple times in the comments producers shared.

The nature of agricultural production often leaves producers with little time to attend meetings. More than half of the respondents (56 percent) said that not holding meetings during harvest or irrigation season would be helpful. Almost one-third indicated that being able to connect with meetings via conference call would help and almost one in five (18 percent) felt that having a free meal during meetings and/or getting reimbursed for mileage costs associated with attending would be helpful.

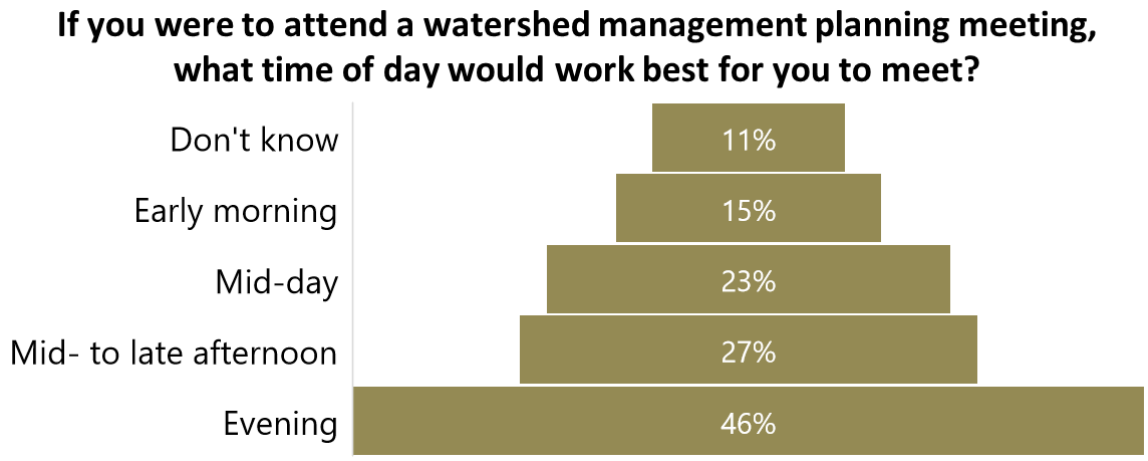
Several respondents shared thoughts in the "Other" category as well, and their comments are shown below. Predominant themes among the comments included the importance of scheduling meetings at times and locations that work best for producers Providing more information to producers about watershed and stream management plans and related topics was also expressed as a need. Multiple respondents also commented on the importance of keeping meetings brief and to-the-point, and avoiding acronyms and jargon.

Producer Comments in response to the question "If you were to participate in watershed management planning meetings, which of the following would be helpful to you?"

- Outreach to all Ag water users
- Make water rights owner attendance a priority.
- Web type meeting
- Webinar

- How to find out what is being done in our area of El Paso County
- Not holding meetings during hunting, calving season
- Schedule time suitable for farmers and ranchers
- Holding them in the evenings. Some people have a job as well
- Make it AFFORDABLE, if not FREE
- Not interested
- Get rid of all the acronyms and jargon; it's hard on non-experts and makes sensible discussion nearly impossible
- Convenient time and places to attend
- I lack knowledge to lead in this area
- Historical local perspective of water rights and agricultural production in the county
- Internet data access, (existing plans)
- Evening meeting
- Staff
- Short meetings that get to the point. No 30 min power point/droning on by some "expert"
- Need definitions up front
- Beer at mtgs!...(not really)
- Strictly followed agendas and time management
- Later in the evening
- Better understanding of current water laws
- Meetings within 50 miles of watershed, rather than in major urban areas
- Recognition that ranching is part of agriculture
- Information about technical and financial support to implement watershed projects
- Direct mail to educate us about why and how
- It is hard to be a producer and an effective/thoughtful participant in meetings of this complicated nature. Ease of access to information and scheduling are key
- Night meetings

Figure 11. What time of day works best to meet?



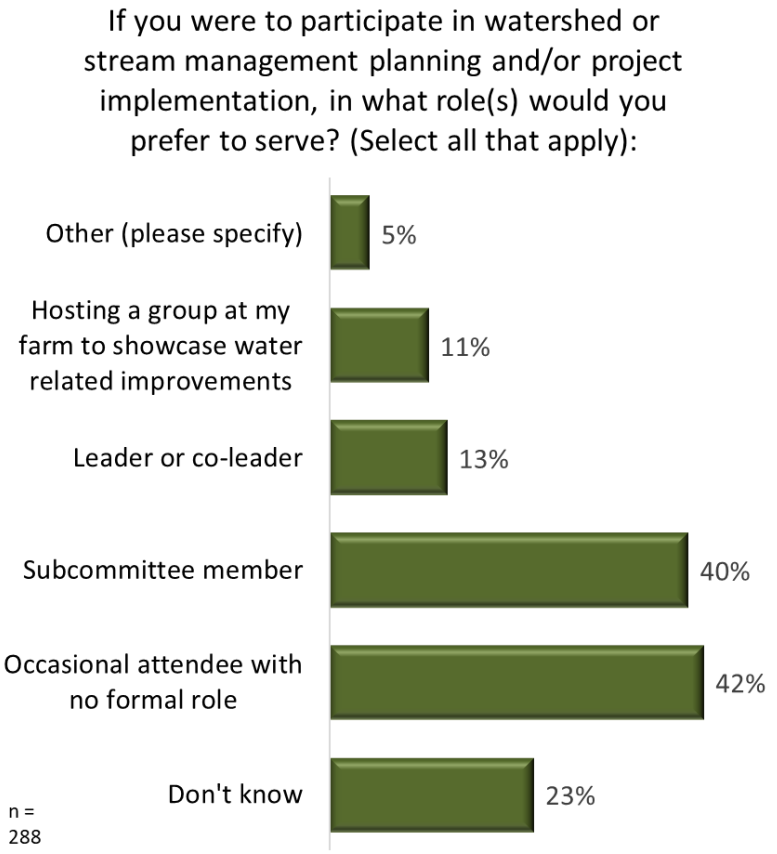
Evening meetings work best for almost half (46 percent) of the survey takers. Roughly one-fourth indicated mid- to late afternoon meetings and mid-day meetings work best. Only fifteen (15) percent found mid-morning to be a good time for meetings, and 11 percent indicated “don’t know.”

Figure 12. Producer-preferred roles in watershed management planning

Overall, respondents were less certain how they would participate in local watershed and stream management planning activities. Forty-two (42) percent said that they would simply like to attend occasionally and have no formal role. Almost the same number – 40 percent – indicated they would serve on a subcommittee. Thirteen (13) percent – more than one in ten - of the responding producers would serve as a leader or co-leader on local watershed / stream management planning efforts**.**

Eleven (11) percent expressed interest in hosting groups at their farm or ranch to show others their water-related improvements, which could include irrigation water delivery or efficiency improvements, stock watering upgrades, or management practices being used.

Almost one-fourth of respondents checked the "don't know" box on this question. This question did not have an option to select "no role" so some of the respondents may have been using "don't know" as a proxy to indicate they weren't interested in participating in stream / watershed management planning. Based on the comments received (shown below), it appears that others felt they lacked adequate knowledge on watershed management plans to determine a role in which they might want to serve.

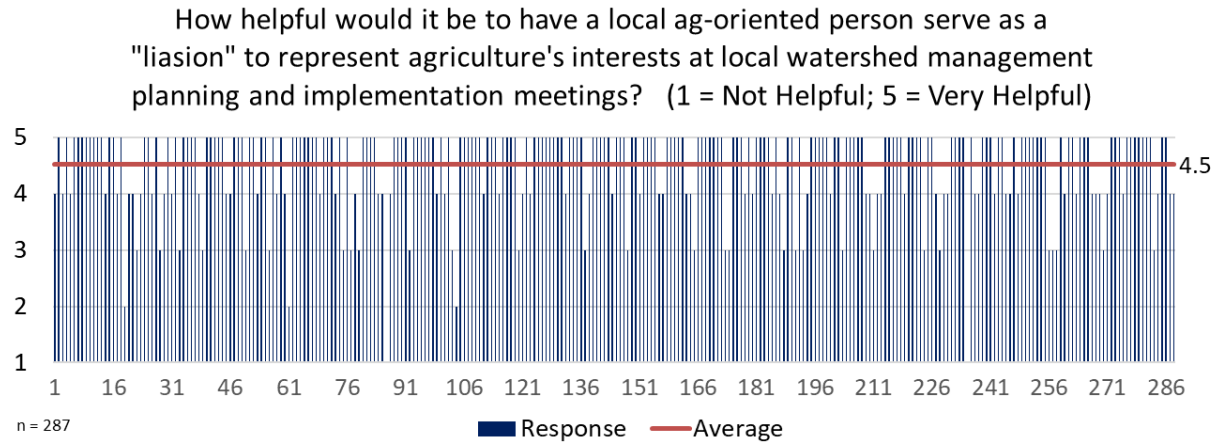


Producer Comments to the question "If you were to participate in watershed or stream management planning and/or project implementation, in what role(s) would you prefer to serve?"

- Communicate with other ranchers and encourage them to come.
- From a media perspective and a dry-lander - The BARN would cover & archive whatever the group wants.
- Not interested.
- Meetings I have attended seem to have no visible results; the sense is that time has been wasted.
- Not qualified to direct policy.
- Project implementation.
- 2-yr term, then regular member.
- I don't know enough about watershed management planning to know what role would be appropriate.
- Depends on the project.

- Host organization (ie: Local Conservation District/Watershed Association.
- Overcommitted with ag organizations and conservation district.
- Focus group.

Figure 13. Would an agricultural "liaison" be helpful?



Most producers felt it would be helpful to have a local ag-oriented person serve as a "liaison" in watershed and stream management planning discussions. The thin blue lines on the chart above represent individual producer responses. Based on a scale from 1 to 5 (1 = not helpful, 5 = very helpful), the average response was 4.5.

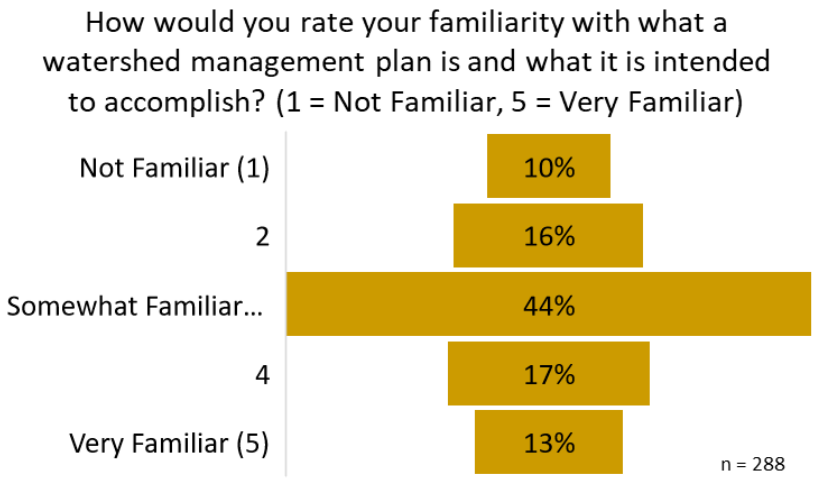
Support for the "liaison" concept may stem from producer perceptions that they lack adequate time and knowledge to fully engage on watershed or stream management planning. As mentioned previously, the Ag Water NetWORK has developed a training course in collaboration with the Colorado Ag Water Alliance to help prepare producers and ag-oriented individuals who are interested in serving in this capacity.

Figure 14. Producer Familiarity with Watershed Management Plans

Forty-four (44) percent of producers indicated they are somewhat familiar with watershed plans and their purpose. About one-fourth said they have little or no familiarity.

A full 30 percent gave their level of familiarity a "4" or "5" rating.

In Figure 10 (shown previously), 70 percent of producers said that having a better understanding of



watershed and stream management plans would be helpful for them if they were to participate in watershed planning activities. This aligns with the 70 percent of respondents in the chart above that rated their level of familiarity at a “3” or less.

Figure 15. Producer Interest in participating in local watershed management planning activities

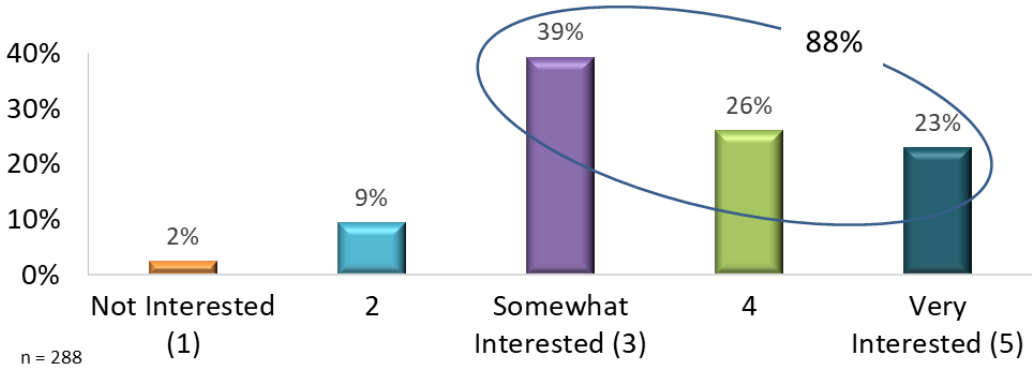


Figure 15 shows the breakdown of responses to the question “Please use the scale below to rate your overall interest in participating in a local watershed management planning initiative (1 = Not Interested, 5 = Very Interested.” Almost half (49 percent) of the producers used a “4” or “5” rating to describe their level of interest in watershed management plan participation. In total, almost 9 out of 10 producers expressed at least some interest in getting involved with watershed / stream management planning activities. Given the time constraints that agricultural producers face, this high level of interest underscores the importance producers place on water and water planning initiatives.

C. Conclusions and Recommendations

Producers expressed a need to know more about watershed and stream management planning and implementation. Greater understanding would likely lead to greater producer input and participation in the planning and implementation process. Providing producers with brief and concise information about watershed and stream management planning can help raise the level of understanding about the process and its potential results. Methods of communications may include email, direct mail, websites, texts and social media.

Producers are also limited by the amount of time they have available to engage in planning and implementation meetings and activities. The survey responses suggest that holding meetings in the evening and enabling producers to join meetings via tele-conference will likely increase their involvement. Summarizing and posting or emailing meeting highlights and action items may also serve as a way for producers to stay updated.

Irrigation infrastructure, irrigation system efficiency and the amount of water available for irrigation were challenges cited by more than half of the respondents. Water storage, which is related to the quantity of water available – was also seen as a problem, along with water rights issues, by about 4 out of 10 producers. Identifying watershed planning and implementation outcomes that help producers address these challenge areas is also likely to help producers see a justification for their involvement in the process.

Agricultural producers are interested in watershed management planning. Almost 9 out of 10 producers indicated they were at least "somewhat interested" in participating in a local watershed management planning initiative. However, producers cite multiple hurdles in their capacity to engage on watershed or stream management planning efforts. The following recommendations are based on the survey responses and comments and are intended to help watershed and stream management planning groups and organizations better engage agricultural producers in the planning and implementation process.

Watershed Planning and Implementation:

- Provide concise information to producers to help them better understand watershed and stream management planning and implementation processes and outcomes.
- Keep meetings short, with well-defined objectives and specific timelines.
- Avoid acronyms and jargon in literature, presentations and in discussions.
- Improve communications so producers can easily stay informed.
- Avoid meeting during local hunting, calving, irrigation and harvest seasons.
- Hold meetings in the evening and enable phone conferencing.
- Improve coordination between groups to reduce confusion and improve efficiency.
- Reach the project implementation phase sooner to help sustain stakeholder enthusiasm and engagement.
- Watershed or stream management planning efforts need to have a specific purpose and clear, tangible benefit for agricultural producers to get involved.
- Funding is needed for ag water projects, especially projects that improve infrastructure, storage, and efficiency.

Agricultural viability and water rights:

- Increase public awareness and appreciation for the benefits of agricultural water uses (food, fiber, fuel, habitat, open space, scenic value, groundwater recharge, etc.).
- Address agricultural viability and ag water rights protection. There is concern that agricultural water rights may not be fully protected as demand continues to grow.
- Streamline the ag water leasing (Alternative Transfer Mechanism) process.

D. General Comments from Respondents

The last element of the survey was the general comment section, which stated "Please add any questions or thoughts you would like to provide about local watershed management planning." About one-fourth of the survey respondents provided thoughts and questions. Their comments are displayed below, and generally fall broadly under a few key themes:

- ✓ Information - more information is needed on the purpose of watershed and stream management planning and how it relates to and benefits agriculture.
- ✓ Meetings need to be kept as brief as possible and held during times of the day and year that work better for producers. Meetings should have well-defined purpose(s) and tangible goals with definitive timelines, a collegial atmosphere, and minimal use of jargon and acronyms.
- ✓ Ag water rights and agricultural viability protection needs to be addressed.
- ✓ Funding is needed for agricultural water-related projects – infrastructure, storage, efficiency.
- ✓ Better coordination between groups and organizations will help reduce confusion and be more efficient and cost-effective.

Producer Comments:

- What are the limitations that will be put on the watershed area? How will you integrate your plan to educate people and politicians who are not familiar with the water resources' responsibilities and uses?
- Ag Water right owners work during the day!
- Where can I review the current watershed plan?
- The sooner we get active the better for the future of Ag
- Need to have and definite purpose and goal to get involvement
- Too much western slope water is being used by eastern slope municipal water users. We must keep agricultural water available for agriculture even if it means heavily heavily curtailing suburban and urban water.
- Water is extremely important to me but I have been involved with the community for many years and am tired of attending meetings.
- Not informed well enough at present to answer.
- Having local experienced [people engaged]
- No need for a plan in the North Platte at this time.
- Funding sources to assist with irrigation infrastructure and water storage for agriculture?
- Cooperation of all land owners in a watershed is critical. This means allowing access for soil health, sedimentation, moisture logging data collection.
- There needs to be more education of the public as to how much water it takes to produce specific food. In order to show the impact of the need for farmers not just Cities.
- Colorado growth needs to mandate water use change in urban planning. Unprofitable Ag use needs shepherded into beneficial water consumption as well.
- Have people involved that understand ditches and water rights.
- Watershed management planning should include a balance of representation between agricultural and conservation interests.
- I have recently been appointed by Rio Grande County to serve as their representative at our Basin Round Table. There are many things that I need to learn about water issues specific to the San Luis Valley and I look forward to learn about these issues.
- Local watershed planning is vitally important, especially in light of climate change, unbridled population growth and drought conditions. It's important that such meetings deliver tangible results and don't devolve into unending commitments on the part of participants. In other water meetings I've attended the knowledgeable professionals have talked to each other with little acknowledgement of layperson's input. It's very discouraging to attend such meetings and leave with the feeling that hours have been wasted with little or no progress being made. One walks out of most meetings feeling that only the professionals have the answers, and that most decisions have been made, with lay-person input only window dressing.
- There is a lot of pressure to sell to possible companies to move water and we need to protect our ag interests. [Need to incentivize] farmers and ranchers to keep their rights and not sell them.

- Implementation of ecosystem services to help fund watershed work and keep producers viable.
- I think it is important to be informed about this necessary plan
- Water is a huge issue in the industry.
- In Fort Collins particularly, we need more education and input on the NISP project.
- CCA needs have resources to play a coordinating role with ag producers across the state to support ag viability.
- In this highly polarized time, the leader of such a group must be outgoing and be able to relate to people one on one. The leader must also be strong enough to keep control of the meeting which can sometimes be contentious.
- Make sure the State Priority system is maintained - so urban & suburban areas don't end up with more clout in management than rural areas.
- Why is it critical for Ag.to be a part of the process?
- The water compacts need to be restructured! So much has changed since they were written. Colorado needs to quit giving away our water.
- Locally generated plans may be more successful?
- Tap the brakes! We have lots of time.
- Colorado is a very diverse state, and I applaud the efforts so far undertaken. I think we are on the right track, and will soon be able to address prioritized financial help (via state wide legislation) to protect Colorado's interests in the Compact etc.
- The ag community better get involved! 1. To protect water rights 2. Ag has a big target attached! 3. Tap into moneys to enhance water delivery and efficiency.
- Must be inclusive to work
- With more and more people moving in and using water coupled with the ongoing drought, all parties are going to have to work to make sure water is available.
- Colorado River compact issues answers would need to be part of the discussion.
- There is confusion as to what problem watershed management planning is intended to solve and how it will solve the problem and at what costs.
- I am concerned that watershed management planning may take the place of or neuter the priority system of water management.
- Unfortunately, from my perspective in the upper Gunnison River Basin, we are faced with a situation of "what is ours is ours and what is yours is ours as well". The interests of the Front Range and California come before agricultural interests overall, and that is in spades here. Our new governor seems to be totally front range oriented, so I believe it will only get worse.
- How do watershed programs impact non-tributary wells?
- Important for ag to have a place at the table along with environmentalists, but ag should not be afraid of environmental advocates.
- We are new to owning agricultural land and are trying to learn all we can about how best to manage our own water. We'd like to be part of ongoing efforts to maintain the environment while improving agricultural practices.
- An attempt to get users involved so we would have community buy in.

- Work on water value in various regions of the state.
- Would this include wetland habitat restoration, preservation, etc.?
- Thanks for your work on this, let me know how I can help in the future.
- Protection and retention of Ag water rights is of the highest concern of mine.
- What safeguards can be in place to keep plan free of politics?
- Using survey monkey supports HSUS which is against animal agriculture...there is better tools
- The representative should not be a politician or county person, but an Ag Person that represents traditional and new and upcoming farmers.
- A plan was developed recently as a requirement for $ through NRCS program called Regional Conservation Partnership Program--RCPP. CO R Conservation District provided leadership and staff time to get funding and work done.
- Conservation
- This questionnaire was filled out by someone who's ex is a rancher and doesn't care about any of this, but should!
- Where can I access the Gunnison watershed plan online?
- I own 40 acres of non Ag land and the previous owner didn't keep up on the water rights. I do take care of another parcel where I irrigate and grow and cut hay and keep my horses there in the winter. I would like to know how to better grow hay and utilize the flood irrigation.
- The Water Conservancy lead locally is a real estate agent. My water rights are some of the best in the drainage, however I have trouble getting my water due to subdivision of ag lands above me. I don't compete well for selenium reduction because I set above the salt bearing strata. What can be done to help producers like me?
- Our dry land farm is being returned to grasses that we work with a rancher and an intensive rotational grazing plan. This is important because we are able to help the rancher as she moves her cattle to/from allotments in the mountains. This is vital for her operation; it is vital for us to be able to hold in the poor tired soil with viable and strong grasses. Ultimately this impacts watershed management. Dry land agriculture is part of watershed management. It's a whole picture.
- "Ag" is not one thing, and one person would have a hard time speaking for all ag interests.
- Assistance with water management would be very helpful.
- More transparency in water managers' decisions regarding how far to draw down/how much to retain in storage during drought years.
- It seems that there are several organizations all working on watershed management but are not working on it together. It's challenging to know which meetings/organizations to be involved in. More specifically, it's challenging to know who actually has the capacity to affect change on a local level. While the CO water plan is a great start, I haven't experienced any local benefits/changes yet.
- Livestock producers need educated on better grazing practices to retain water and reduce run-off and evaporation.

V. Appendix

Survey Questions:

1. Do you own or lease agricultural land in Colorado? If no, you do not need to complete this survey.

2. In which county / counties do you own or lease ag land? (respondents could select up to 3 counties)

3. How many acres do you utilize for agricultural production (owned and leased)?
None
1 to 250 acres, 251 to 500 acres, 501 to 750 acres, 751 to 1,000 acres, 1,001 to 2,500 acres, More than 2,500 acres

4. Related to the previous question, how many acres do you irrigate (owned and leased)?
I don't own or lease ag water rights
Mutual ditch company shares, Decreed surface water rights, Tributary groundwater (well) right Non-tributary groundwater (well) right, Private irrigation company, Government agency (ex. Bureau of Reclamation), Water Conservation / Conservancy District

5. If you own or lease water rights, please indicate the type(s) of irrigation water rights that you own / lease (Select all that apply):
I don't own or lease ag water rights, Mutual ditch company shares, Decreed surface water right(s) Tributary groundwater (well) right, Non-tributary groundwater (well) right, Private irrigation company, Government agency (ex. Bureau of Reclamation), Water conservation / conservancy district

6. For your operation, what water-related challenge(s) would you most like to improve upon? (Select all that apply): Water quality, Amount of water, Delivery Infrastructure, Irrigation efficiency, Water Storage, Water Rights Issues, Technology, Other (please specify)

7. Are you currently involved with a local organization that is working on a watershed management / integrated water management planning effort and/or have you been previously? (Y / N)

8. Imagine you are helping create a watershed management plan in your area. What do you think the top three (3) priorities should be? (Select up to 3 answers):
Adding more water storage, Improving water quality, Creating a drought contingency plan
Forest health / fire mitigation, Stream or river channel and riparian area restoration,
Preserving and enhancing existing uses (agriculture, etc.), Irrigation infrastructure improvement, Groundwater management planning

9. Watershed management planning requires local leadership. From the list below, which entities are well suited to lead or co-lead watershed planning efforts in your area?
Local conservation district, Water conservation / conservancy district, Local agricultural organization, County, Environmental / Conservation group, Coalition of all local water interests, Other (please specify)

10. If you were to participate in watershed management planning meetings, which of the following would be helpful to you? (Select all that apply): Attending meetings via conference call, Free

meal during meetings, Mileage reimbursement, Not holding meetings during harvest, irrigation season, Having a better understanding of watershed management plans, Other (please specify)

11. If you were to attend a watershed planning meeting, what time of day would work best for you to meet? Early morning, Mid-day, Mid- to late afternoon, Evening, Don't know

12. If you were to participate in watershed or stream management planning and/or project implementation, in what role(s) would you prefer to serve? (Select all that apply):
Leader or co-leader, Subcommittee member, Occasional attendee with no formal role, Hosting a group at my farm to showcase irrigation / other water-related improvements, Don't know, Other (please specify)

13. How helpful would it be to have a local ag-oriented person serve as a "liaison" to represent agriculture's interests at local watershed management planning and implementation meetings? Not helpful, no label, Somewhat helpful, no label, Very helpful

14. Overall, how would you rate your familiarity with what a watershed management plan is and what it is intended to accomplish? Not familiar, no label, Somewhat familiar, no label, Very familiar

15. Please use the scale below to rate your overall interest in participating in a local watershed management planning initiative: Not interested, no label, Medium interest, no label, High interest

16. Comments Section: “Please add any questions or thoughts you would like to provide about local watershed management planning”

Cabela’s gift card winners:

5/1/2019: Shellie Gies, agricultural producer from Hotchkiss in Delta County. $100 Cabela's gift (final drawing).

4/17/2019: Dusty Tallman, agricultural producer from Brandan, CO in Kiowa County. $50 Cabela's gift card; 7th drawing.

4/9/2019: Julie McCaleb, agricultural producer from Anton, CO in Washington County. $50 Cabela's gift card; 6th drawing.

3/26/2019: Brenda Anderson, agricultural producer from Del Norte in Rio Grande County. $50 Cabela's gift card; 5th drawing.

3/12/2019: Bob Duzik, rancher from Moffat County. $50 Cabela's gift card; 4th drawing.

2/28/2019: Cameron Genter, small dairy farmer near Boulder. $50 Cabela's gift card; 3rd drawing.

2/15/2019: Dalton Montgomery; agricultural producer near Dolores in Montezuma County. $50 Cabela's gift card; 2nd drawing.

1/30/2019: Mark Smith, ag producer from Hotchkiss in Delta County. $100 Cabela's gift card; 1st drawing.