



Stream Management Planning Workshop
October 7th, 2019; 10 a.m. – 3 p.m.
Westin Riverfront Resort Ballroom, Avon, CO

NOTES

Welcome, Introductions - Name one alternative (besides CWCB) cash funding source for your SMP process or implementation of projects.

- Local foundations and community foundations
- Stakeholders involved in the project
- Be creative (e.g., TNC's Yampa River Fund)
- Local water-related businesses (i.e.: New Belgium Brewing)
- US Bureau of Reclamation (USBR) Salinity Program
- Fish Passage – Trout Unlimited
- Conservation Fund, Boulder
- Your organization's general funds
- Basin Roundtable (these are CWCB funds, but can match Watershed Restoration grant funds)
- Land/water nexus – conservation easements
- Towns/local government (e.g., City of Ft. Collins – Natural Areas, Pitkin Healthy Rivers Fund)
- Water districts (e.g., Southwest Water Conservation District)
- Walton Family Foundation
- USBR WaterSMART – Planning and Implementation
- Private landowners within the planning area
- Conservation districts
- Colorado State Conservation Board
- River Network
- Forever Our Rivers Foundation
- The Nature Conservancy
- Utilities
- 319 non-point source grant program

TOPIC 1: Engaging Stakeholders

Community Engagement Strategies

Holly Loff, Eagle River Watershed Council

After initial disappointing turnout at community events, the Eagle River Community Water Plan developed a novel approach to gain input from the broader community.

- Created an ad-hoc community engagement committee that first decided to have evening community meetings in an open house format. Texting could be used to submit questions and poll on watershed impacts and high priority stream reaches. Maps on the walls to get info on areas of concern. Also took written and on-line surveys. We had

really poor participation. 5 people in Avon, 15 people in Eagle, zero at a Spanish meeting. What to do?

- Marketing could have been better.
- How can we utilize our key stakeholders to help get the word out? We didn't have a huge budget.
- Instead of making people come to us, we should go to people to ensure we get their priorities.
 - So, we started having booths.
 - Created posters for the booth (and we raffled a raft off too) and as people walked by, asked for them to weigh in with 3 raffle tickets for each of two boards - one is on things that could impact human and environmental water uses, and the other was priority issues to focus on during assessments.
 - We moved away from dots because stickers were hard to remove AND because people might be influenced by others' dot voting.
 - This helped us to start conversations with local people. Running a booth, sometimes people avoid you, but this created a way for people to stop and engage. Non-threatening and being able to vote.
 - We also had a station at the recreation center during kids camp to target parents.
- *How will it be used?* Conversations are the biggest piece for us as it gives us an opening to talk with people. If, for example, there is a high priority on golf courses and snowmaking for water, we'll know we're on the wrong track. It also helps us let people know about the Community Water Plan and spread the word about it.
- We've also started holding monthly stakeholder meetings. We are asking CWCB for additional funds in a second grant to support this. First hour is a hosted lunch and networking. We then have an educational presentation (Big River issues & DCP, climate change and the economy, Eagle River Water & San District tour) then we have a business portion of the meeting on updates on the work of the plan.
- We could do a better job getting the press to attend, but we also need to create a safe space for conversations where the press isn't there.
- We created business cards for the stakeholders that have the website address and project purpose/key questions on them.
- *Q: Did you differentiate between residents and tourists?* For dots, we tried to differentiate, but it didn't really work. Now, we ask them if they live there. If they are out of the area we don't say no. We could use different color tickets. It does matter what people who don't live here think because its relevant to their experience and the economy. We have the option to split things out if we saw differences between the two groups. The plan is hopefully going to be adopted by the county for permitting processes in the future so we want both sets of people.

How to Get Farmers & Ranchers to Love You (and Your Project)

Marilyn Bay Drake, Prairie Public Relations

Greg Peterson, Colorado Ag. Water Alliance (CAWA)

In addition to holding senior water rights, agriculture is the social and political driver in many rural areas. Their involvement in water management planning is central to identifying projects and implementing actions. Greg and Marilyn offered strategies and data that can help SMP leaders navigate how to engage agricultural stakeholders.

Marilyn:

- There are win-win opportunities when farmers work with communities on SMPs
- I've been working with Nicole to identify media outlets and to create videos, feature stories, news releases, and fact sheet pamphlets about the role of ag in streams. All of it is housed on the [CAWA website](#).
- Need to make sure we are speaking the same language. That doesn't mean "dumb it down," it means provide definitions for terminology and stay away from jargon.
- Farmers and ranchers, as well as rural communities, need to understand what's at stake
- Take time to learn about farming/ranching in your community (e.g., calving/lambing schedule may be different on each farm, but don't expect ag to be available during critical times). Try to get invited to ranches/farms, build relationships, really understand how the operations work.
- Info you can find out after/while relationships are being built: timing/season, biggest motivator, water rights

Greg:

- Get farmers/ranchers to like your project by understanding what they're doing and caring about them (State, media, government, etc give them the impression that they don't matter). They feel like they have been on the defensive for decades, so we need to take the time.
- Mid-Nov to mid-March is the best time generally to get them to come to meetings and be available, but it still depends on the operation
- *Q: What do producers want from SMPs?* Security, infrastructure upgrades, better communication about how ditches work, funding, ditch lining projects, head gate improvements, opportunity to communicate/a voice/to not be demonized/respect
- Cattleman's survey of approximately 300 ranchers showed that 88% would be interested in being involved in an SMP. They are very interested but need to find points of connection.
- Difference between protecting and threatening water rights.
- Installing measuring devices aren't usually in their best interests unless they feel like they're being shorted. May have incentive to show that they are using water responsibly (transparency involved in measuring).

Discussion:

- Need to be compromises on both sides. Chris provided an example where it worked for an irrigator to increase in-stream flows. Scott described the Middle Colorado SMP where there is a non-consumptive and a consumptive piece that work in parallel.

- Callie reminded folks that local conservation districts are not water districts or conservancy districts, they are the old NRCS soil conservation districts, made up of at least 66% ag. Use these as a touchstone, also go to Cattleman's or Farm Bureau to host meetings, etc. and ag will be more likely to attend.
- Jake, West Slope Conservation Center: We've been working with landowners who have piped ditches using USBR salinity funding and doing the habitat enhancement work they are required to do. It's been a great way to be a resource to them and develop relationships.
- Gretchen: In the Mancos they going beyond habitat replacement credits with salinity funding; also working with producers to value other benefits to SMPs (e.g., enhanced economic production of land – hunting/fishing, etc.).

CWCB Perspective on Stream Management Planning

Chris Sturm, Colorado Water Conservation Board

- Keep in mind that plans are actionable – groups need to starting thinking about implementation funding before the plan is complete.
- Don't just focus on what needs to be fixed. Also look at what needs to be protected. Areas where ag operations provide return flows for high quality riparian habitat. High wet meadows that can attenuate floods and store sediment after future fires. Areas with currently good fish habitat and flows – are they protected?
- Connect with the local land planners with local government. Do you know what their plans are?
- Over use of federal lands and finding places where overuse by recreation has a negative environmental impact. Restoration project stretches become attractive to stand up paddlers but then the wildlife populations are impacted by increased human use (e.g., heron rookery stopped producing during SUP season, whitewater parks vs. fish passage).

LUNCH: Explore www.coloradosmp.org

Kim Lennberg, Alba Watershed Consulting

The online SMP Resource Guide is near completion, please use it as a resource. **We're looking for volunteers to review/provide feedback on sections – please let Kim or Nicole know if you can assist with this!**

TOPIC 2: Assessment Methodologies

Methods for Assessing Flow & What To Do in a Data-Poor Environment

Scott Schreiber and Adam Kremers, Wright Water Engineers

Explored the strengths and challenges of using StateMOD to assess flow and identify flow-impaired reaches. Discussion included approaches that can supplement or help to verify StateMOD results at a reach scale (e.g., pressure transducers, temporary stage readers, etc.).

Scott:

- Using State MOD for flow assessments can be challenging

- Some groups found disconnect between the model and what the group knew to be the truth (e.g., Upper Gunnison, looking at dry points in the river).
- Reasons because of spread out gauges, inconsistency of records, etc.

Adam:

- Working on S. Platte, S. Boulder Creek, St. Vrain and Left Hand, Uncompahgre, and Big Thompson SMPs. These are stream management plans – where water is, where is isn't, where it can go, NOT a stream restoration plan. No SMP is the same, there can be multiple phases to each SMP.
- Tap the resources that are available, local and useful – understanding where your water rights are being held
- Database/Models Explanation -
 - **HydroBase** - Centralized data repository for all the ways that we collect data in Colorado, well data, irrigated acreage, water commissioner reports
 - **State CU** – Who is shorted, how they are shorted
 - **State MOD** – Why we are shorted - Helps with planning in general – how stressed are the rivers, effects of climate change on the rivers
- **What results you get out of State MOD** - Understanding of natural flow, physical flow (how much water is visibly there) and available flows (what is available and when vs. what is actually there)
 - Important to think about these results on a multiple year time scale – 1-3 years, etc.
 - Limitations:
 - State-wide model
 - Monthly model (sometimes doesn't give enough information for daily or weekly fluctuations which is challenging for SMPs) – can leave information out; good way to start and point you in the right direction but isn't the end all be all of information (also now available through the technical update to the Water Plan); the answers you need may be from daily estimates
 - Aggregates smaller amounts/structures – at the stream management planning scale the smaller diversions are sometimes the most important – those are elevated within the State MOD, sometimes might need a different model to look at it from a different perspective to get the correct/accurate information and fact check
 - Data gaps
 - Inaccurate information – irrigated acres, uses, etc.
 - Example: Uncompahgre – could identify shortages, didn't capture the diurnal fluctuations which are on an hourly basis – needed to create an hourly point-flow model
 - Example: Wolf Creek Pass storage for San Luis Valley; zero data – through interviews with irrigation users, shareholders, and piecing out diversion records were able to back the water up to the

reservoir and synthesized records from SNOTEL data to figure out how much water the reservoir would store

- How to fill in the gaps:
 - StreamStats for ungauged systems
 - Talk with locals - irrigators, water commissions, reservoir shareholders
 - DWR/State Engineers Office providing funding for flow measurement
 - Start collecting data
 - Fill missing data – nearby stream gauging, diversion records
 - Think about the big controlling mechanisms – reservoirs, municipalities, irrigated acres, etc.
 - Bring along someone that understands the jargon to help be a liaison
 - Make sure that the information we find out is then feeding back to the databases for future SMPs

Refer to handout/PowerPoint from Lotic Hydrological – which provides guidance on approaches if State MOD is not working well for a stream system.

Discussion: *What have you been doing? Would better guidance/better gauges be helpful?*

- **N. Fork** – we just don't have the gauges – how do we know what to improve/how to quantify benefits without the data; need to gather data, get a season's worth of data, make comparisons to historical and potential to spreadsheet model to start understanding
- **St. Vrain Left Hand** – thought they had a lot of data but realizing that they don't have enough; need to ask what we're actually trying to do with these process; nervous about saying to the stakeholders that they need more data (after \$300K and years of effort, that's a tough ask of stakeholders); need to come up with successes management-wise AND say that they need more data; hard sell to local funders for stream gauges; be okay with using intuition and best judgment, learning by doing, should be highlighted as success – do something, learn from it and move on
- **Crystal** – clear on the low-flow areas, using gauges to confirm/get more info, funding for install but the challenge is the ongoing O&M; learning process is also tricky – understanding when its best to calibrate gauges
- Resetting baseline every year – maybe coming out of SMP with short-term plan/model could be useful – what can we try and learn from
- Adaptive management planning is important – you have to have thresholds for actions and be processing data fast enough to have an action you can respond with; need tools that are more flexible and real-time that are based on agreed upon thresholds and be okay with some years where you have to count your losses because its too challenging; need new ways of communicating – thinks they have enough data but not enough flexible tools for how to use it
- Challenging enough when evaluating historical and existing data but what about the future – there are a lot of questions and unknowns

- Problems at two scales - Have a general understanding of operations within a basin vs. if goal is to protect a fishery in a specific place – need more detailed information
 - An issue with every plan
 - Tools from emergency response or other framework to communicate as the implementation moves forward
- *Is StateMOD a decision support tool – does it have the capacity to map out different scenarios/flow mechanisms and their response to those management difference.*
 - Could model the ecological demand in the area based on the instream flow demand; scenario where the amount of water you want in there can or can't be in the stream per month
 - Maps the inputs and outputs of the water, but how do we go beyond
- *Rotating gauges – is there a demand for something like that? Statewide NGOs have staff that have the ability to do cross-sections, semi-regular flow measurements; some places don't have access to this type of data. Is there a need and what can we do about it? Do people have enough tools and info?*
 - Tools exist to connect the availability of flow to the conditions they are trying to protect – benefits for the environment and the people; invest in solid experimental designs and studies that show these benefits; experience in Left Hand (macroinvertebrate data-up and downstream)
 - Is there need for a decision support tool that can serve all watersheds that can show the responses in the changes in hydrology, Crystal River did some of this, so did Bill Miller on the S. Platte, TNC on the Yampa – potential for communication between the Decision Support System and ecological benefits
 - Expert informed process to develop theoretical response curves – if you do this, this and this you could expect to see this, this and this...
 - Daniel – environmental flow targets in Rio Grande – cross-sections (R2Cross), ideal flow requirements for fish, building a linear regression through the watershed based on the hydrology modelling – if you have this up at the top, will you get the result you need at the bottom of the watershed. Helping to get at low flow recommendations.
- *How do you get from state-wide modeling to your local efforts? What is the scale of the problem?*
 - Tributaries is the biggest challenge
 - \$20K/year for install/maintenance
 - Protect the gauges that you have
- Getting someone who is familiar with StateMOD on your team is important

Assessing Irrigation Infrastructure: Considerations and Approaches

Luke Gingerich, J-U-B ENGINEERS, Inc.

Daniel Boyes and Emma Reesor, Rio Grande Headwaters Restoration Project

Overview of methodologies for assessing irrigation infrastructure, the type of data to collect, challenges (i.e., access and privacy of data), and how to incorporate non-consumptive impacts into your data collection (i.e., fish passage, geomorphology, etc.).

Luke:

- Considerations
 - Diverse interests – different agricultural operations
 - Business oriented – concerned about stream health but their decision-making process is business oriented (revenues, cash flows)
 - Risk – if something is working, doing something different is a business risk
- Approaches
 - What is needed to increase agricultural productivity/profitability? Where is there a nexus with other needs/benefits? Can we use infrastructure assessments as a process to discover multiple benefit?
 - Takes time to have a progression of change – start with what management changes need to take place, then what infrastructure change is needed, then can produce environmental and management benefits.
 - Service area? Where is the water going? How is it being utilized? Are there actions that can increase productivity for the owner?
 - What impact does the use have on the stream? Is it worth the effort?
 - What values does your project add for the agricultural community? Have to have benefit for it work. If the risk is on the owner its harder to move it forward.
 - Non-consumptive impacts tend toward qualitative in a high-level assessment.
 - Can the SMP achieve or strive to provide better agriculture management? Maybe we add to a downstream user's portfolio to help deliver water to the environment. Use the agricultural water rights as a mechanism to achieve what the environmental community wants AND benefit the producer.
 - Build confidence that any management, diversion improvements or foregone diversion is valued and protected. And the value of the water right is maintained and enhanced moving forward.
 - Recognize the economic, cultural, environmental benefits that exist now. What are the long-term impacts to our work. For example, the Grand Valley's bird population is significantly down because of salinity control.

Daniel:

- 205 structure assessments
 - Created a PDF for each structure, and spreadsheet to track diversion structure condition; DWR and Water Commissions will be utilizing that
 - Type of head gate – general description
 - What repairs needed
 - Decree/priority/what's it irrigating
 - Lots of qualitative assessment – from the folks who know the structure
- Also looked at channel migration – what is the trajectory of the stream and how will it impact the diversion structure you're assessing (using arial imagery); what might be causing problems and how to plan for that
- Developed a rating scale for the diversions

- Big water year – took opportunity to update structures; interest in knowing when structures fail
- Where can we have the most/multiple benefits
 - Prairie Ditch Diversion Dam – incorporated sediment transport, boat passage – delivering water at high and low flows
- How do you access structures?
 - Use the water commissioners, conservancy districts and other partners that had existing relationships with landowners to help them visit/gain access – not really a challenge for them but could be in places with less trust
- Building a relationship has a lot of potential outcomes
 - Long-standing relationships coming out of these assessments that be helpful for these planning efforts
 - Two ditch companies contemplated combining diversions; has also led to work with habitat replacement plans

Discussion:

- Did you look for aggregate opportunities for geomorphic benefit/opportunities?
 - Mostly ditch by ditch; first step to make the assessment, and identify reach where they could do consolidation
 - Saguache Creek – there is potential to consolidate as they implement the plan
 - Often is cost prohibitive or politically prohibitive
 - Have you carried that cost over 100 years? Might have some change in that perspective
 - If some of the funding is coming from organizations like TU – we should be considering who’s getting the benefit, not just the producer.
- Do the senior water rights holders question the “newer way” of doing things?
 - Evolving science but if there are clear multiple benefits then that helps
 - Higher calling is multiple benefits not necessarily how it looks
 - Work with each ditch company – what are the needs, what are your challenges/concerns, fear of risk, what would you like (here’s the options, and can talk to the other people who have implemented)
- Data privacy
 - Showed them how much of the data is already publicly available – from CDSS
 - Extremely important that if they don’t want to be a part of the process beyond the assessment, their data will not go into a report, will only identify their diversion if they are okay with it
 - Building trust – having worked with neighbors, existing relationships helped a ton
 - Need to be careful/cognizant but the bulk of the data is already out there
 - If you don’t have the relationship at all – how do we navigate this? It’s up there to interpret however you want? It’s true that its online but how do you help people to understand in an agricultural setting.

- Focus on the education – more important on an outward facing perspective rather than the ditch owners and water users.
- Trusting you to be a mouth-piece for the ag community – take the time to make sure that its being represented directly.
- Fear is there – that someone (media, etc.) might twist the information – they are used to that – just keep that in mind.
- Tell the whole story and the whole big picture.
- Role that we can have within these processes within the community – be a partner. Great example – Rio Grande – decades long relationships.

Interactive Discussion - Baseline Conditions

- Kim: We have to organize data on current conditions into a framework, and use that to compare it to some kind of baseline. Pre-human (pristine) conditions, functional ecological condition, some other desired future conditions. We need a standard benchmark to compare data against within a watershed in order to standardize grades across evaluators. It doesn't mean all variables will have or can even ever have an "A" grade. But how are you defining your baseline?
- Scott: COSHAF gives you a very detailed definition of a "C" grade for variables that can be hard to define during a rapid assessment of a whole watershed. COSHAF is difficult to use for this reason. There is something to be said for knowing what the desired condition could be (not a pristine reference condition). Also, in COSHAF, there are variables that will always have an "F" like if you are in a canyon environment where there is no floodplain connection. "F" doesn't mean it's "bad".
- Jessie: LHWC developed an adaptive management process for our watershed outside of a SMP. We look not only at the existing conditions, but at the past, present and potential future conditions. We have some watershed indicators that we monitor every year and look for trends. It identifies triggers and actions based upon the data. We hired a landscape architect to visualize our future desired condition for the stream.
- Others? South Boulder Creek SMP wanted to look at pre vs post flood conditions so we used historic aerial imagery and on-the-ground surveys to see if the ISFs in that reach were still "correct"
- Sean: SMPs are the epicenter of the Water Plan implementation. But, they are more art than science. The use of artistic visualization can be used to good benefit. COSHAF has been a challenge for me because the grading system is so detailed and it's hard to communicate what an A vs a C means. We should have a discussion as a community of which tool is the "right" or "best" one.
- Claudia: COSHAF was useful for organizing our existing data and identifying the stressors and locations where there are issues. It's helpful in standardizing a large area but it should not be perpetuated as the "best" way to do reach scale analysis.
- Jessie: Lefthand Creek in its "natural state" is a seasonal creek that wouldn't normally have water year round. We were more interested in what is possible in the current ecosystem that we've created over 150 years of development and use.

- Scott: part of the appeal of an SMP is finding the “low hanging fruit” projects that can be developed to build relationships and show progress. What can you do that will provide some positives for the system.
- Daniel: we are not using a standard rating system like COSHAF, but we’ve used our technical experts to combine all of the assessments and find the common ground project assessments.

Small Group Exercise – Prioritize Learning Needs

Priorities for future peer-learning exchanges – in order from most interest to least.

- 8 – How to maintain momentum after and SMP process concludes/keeping engagement
- 7 – Methods of prioritizing/collating existing data from various sources and determine what’s relevant/what’s enough
- 6 – alternative funding for projects after implementation
- 6 – Quantify non-consumptive benefits and creating meaningful metrics for how flows support both non-consumptive /consumptive uses
- 6 – Tools beneficial to consumptive users/examples of SMP tools that work for ag
 - Expert: Daniel Boyes, Adam Kremers, Scott Schreiber
- 6 – how best to include reservoir environmental pool operation plan in an SMP (considering stakeholders)
- 5 – best practices for stakeholder engagement to balance, time, interests, expertise and be inclusive
- 5 – state water policy/law and ag water rights
- 5 – ongoing dialogue from CWCB/info from CWCB – Water Plan
- 4 - How to measure riparian zone functionality/connectivity
 - Expert: Rusty Lloyd
- 2 – How to determine what to assess and to what extent
 - Expert: Adam Kremers
- 2 – Big picture – what approaches have been used, what works and what doesn’t
 - Expert: Nicole Seltzer
- 2 – Examples of SMPs outside of Colorado
 - Expert: Rusty Lloyd (e.g., Nevada/Virgin River Integrated Water Management)
- 1 – Recreational use surveys – balance need for detailed info vs. overwhelming respondents
- 1 – best practices for pre-qual/selecting engineering/consulting firms