Virtual Stream Management Planning Workshop Series

Workshop 3: Diversion Assessments
October 1st, 2020 | 10:00 – 11:30am

Participants: Nicole Seltzer, Stacy Beaugh, Kim Lennberg, Mikhaela Mullins, Phil Brink, Gretchen Rank, Luke Gingerich, Ken Sandstedt, Callie Hendrickson, Hally Strevey, Heather Lewin, Ian Wilson, Kendra Young, Sean Cronin, Peter Skidmore, John Semich, Chris Sturm, Gary Swanson, Darren Beck, Buffy Lenth, Dan Omasta, Erika Donaghy, Ashley Giles

Why Diversion Assessments? – Phil Brink

Diversions in Colorado are critical to agricultural producers. Colorado has more than 16,000 ditch/diversion structures, many of which need repair or upgrade. They range from old wooden structures in various states of disrepair to state-of-the-art concrete structures. Historically, people used what they had and built what they could afford. A 2016 survey of agricultural producers conducted by the Ag Water NetWORK covered topics including sentiments toward SMP/IWMPs, feelings about ATMs, priorities, and challenges. Many commented that priorities for local SMPs should include preserving existing water uses (such as ag), improving irrigation infrastructure, drought contingency planning, and multi-benefit projects that include agriculture.

Diversion Assessment in the Yampa Basin – Nicole Seltzer and Luke Gingerich

The Yampa diversion assessment goals included **establishing relationships with irrigators and building knowledge of their needs** – they supplemented the engineering work with interviews of 100+ irrigators by IWMP segment coordinators, where they listened to the irrigators and got their input on existing issues, concerns about water management in the basin, interactions with recreation, and many other topics. Another goal was to provide irrigators with something of value – input on the integrity and functionality of their systems and recommendations for improvements. They also see this diversion assessment as a tangible step in a long planning process (allowing them to have interim implementation project(s)/results). Another goal is to begin to understand the state of infrastructure in a basin that houses more than 1,000 structures. The **overall goal of the assessment is to help identify locations that warrant further study/action on multi-benefit projects**. Costs were approximately $60k for engineering/analysis and $30k for interviews.

The Yampa diversion assessment project made sure to be **very sensitive about private information**. Irrigators had to opt in once to allow access to their sites, and then after the assessment and interview were completed, the structure reports were given ONLY to the owners. The owner had another conversation with the segment coordinator and opportunity to ask questions, and then they had to opt in again if they were willing to share the results with a larger group. If not, the results were scaled up and anonymized.

The selection process involved application of these criteria: (1) in one of the project areas, (2) in NCNA reaches, (3) diversion rate (amount of flow relative to proximal diversions, for example, a

10 cfs diversion near a 2 cfs diversion would carry more weight than the 2 cfs diversion), (4) structure density (prioritized structures in more dense areas), (5) calling structures (structures dominating reach during lower flows), and (6) willingness to participate.

Owners had the final say on the information they discussed – the engineers had the feeling they were working FOR the owners as opposed to the BRT.

Variables assessed included (1) ability to divert the full water right, (2) integrity of structure, (3) elevation drop (whether the structure posed a fish passage barrier during any time of year), (4) boat passage/hazards, (5) sediment aggradation or bank incision, and (6) riparian cover. **The diversions were scored to highlight their potential for a multi-benefit project** (higher scores mean significant opportunities for multi-benefit project).

Zoom chat box has the Q/A for this section, with excellent questions and responses – please check it out!

Mancos Conservation District Diversion Assessments – Gretchen Rank

Assessments on the Mancos were conducted between 2006-2010. Many of the diversions on the Mancos have historically been push-up dams that require at least annual maintenance or rebuilding, and don't really work well with a highly variable river like the Mancos. Rebuilding is inefficient, costly, and rough on the ecosystem. The process kicked off with **Phase 1**, which was facilitated by the fact that many ditch owners were already actively involved with the conservation district. It included data collection, diversion mapping, design preparation, and identification of stream flow opportunities at ~40 diversions. **Phase 2**, the implementation phase, started downstream at diversions in the worst shape with the greatest need to divert water at low flows. They had 3 pilot test subjects who took on a lot of uncertainty as to whether these improvements would work. Before/after photos showed riparian improvement, a better-sustained pool, and improved bank stabilization with less erosion. **Phase 3** added 3 more diversions that were more technical and higher up in the watershed. Gretchen showed many great photos and had accompanying anecdotes.

Overall, the improvements have been a success: both owners and water commissioners love them because they are low maintenance, multi-benefit (encourage riparian vegetation to come back, improve water quality, improve aquatic habitat), and can still handle a range of flows and deliver the full decree of water. Now that the Mancos SMP is underway, there is a huge benefit because they already have buy-in from irrigators who see benefits both to economics and the health of their property.

The plan was to monitor/assess the improved structures every five years, but they realized they needed to monitor much more frequently – the District Conservation Technician is currently monitoring in both spring and fall each year. Mancos is a small town and Gretchen often receives feedback personally. **This approach works well in the Mancos because they have a highly functional and well-staffed conservation district**.

<u>Final thoughts</u>:

Nicole

- If you don't have the relationships with landowners/irrigators, you have to start there. Talk about *them* first to develop trust.

- Be creative about funding these projects; many grant programs have stretched budgets, but look at NRCS, state funds, etc.

Luke

- Figure out how the process will provide value to agricultural users.
- Be genuine; make sure the people involved really recognize the importance of agriculture in river basins – ag is the dominant use on all west slope rivers
- Segment coordinators were key as a trusted local contact, engineers assisted with technical questions.

Gretchen

- Finding out specific issues and values of landowners is critical, as is involving them in the entire process. They know how the river works even though they are not engineers, and tapping into this knowledge is integral to project success.
- Look for a champion – a willing landowner to pilot your project. This is important for overall outreach. Mancos had 3 early adaptors, and then momentum began to increase as other owners saw improvements work and how they are beneficial both to the infrastructure in question and the ecosystem as a whole.