**Upper San Juan Watershed Enhancement Partnership**

**MEETING NOTES**

STEERING COMMITTEE MEETING: March 1, 2019

Where: West Conference Room, Ross Aragon Community Center, 451 Hot Springs Blvd, Pagosa Springs, CO

When: 9 am – 11 am

**NEXT MEETINGS:**

* + **Friday, March 22, 9-11am**, Town Council Chambers
  + **Public Meeting=Thursday, April 25, 6-8pm,** CSU Extension Office
  + **Friday, April 26, 9-11am,** Town Council Chambers

**Attendees:** Aaron Kimple, Mandy Eskelson, Becky Guilliams, Tim Haarmann, Al Pfister, Tobi Rowher, James Dickhoff, Pat Bennett, Joe Crabb, Brian Boughton, Justin Ramsey, Mely Whiting, Ryan Unterreiner

**Action Items:**

* Report feedback on San Juan Summary from River Network by March 8(Steering Committee)
* Answer stream gauge questions on purpose and uses by March 20 (Steering Committee)
* Compile list of specific landowners to invite to public meeting (Steering Committee/Al)
* Add historic gauges to online and printed master map (MSI)
* Start preparing goals and agenda for April public meeting (Steering Committee)
* Continue refining Report Review, draft to Steering Committee by March 22 (Al & Mandy)

**9:00 – 9:15 Welcome & Introductions**

* Touch on themes from previous meeting/3 goals:
  1. Actions: Determine existent gauges and potential appropriate future locations
  2. Planning: Review relevant studies/data and determine gaps
  3. Future: Discuss future of this group

**9:15 – 10:15 Map & Data Review**

* **DWR Resources & Historic Data (Joe Crabb)**
  + Mention of gauge & weather station in East Fork, installed after large land slide, but not used currently. Many historic gauges around, especially for San Juan-Chama project, but installed for specific purposes.
  + Also bridge radar gauge in town of Pagosa, installed by USGS. Last year was the first time DWR used town gage, but it’s been there since 1935 and relocated with river features. Part of stream gaging network and could be used for safety (i.e. flood warning like East Fork).
* DWR uses gauges for water administration, so keep this limitation in mind to have DWR support, justify the cost and maintenance. DWR measures discharge, maintains equipment, and mentors groups.
  + Clarification on New Mexico Chama withdrawals: NM doesn’t have water right from Chama diversion; rather it’s a compact embedded within Boulder County Compact and CO water storage scheme, which accounts for reservoirs.
    - While there are rumors that NM will double their draw, the state is not guaranteed any flow because it’s based on water availability and cannot do a call on water. During the first years, allowed a monthly bypass to sweep whole river, but now it’s daily to maintain flows. If project cannot carry more water, there will be a need to propose changes to it, subject to NEPA, environmental laws, etc. However, there would be a warning and comment period.
  + ALP question on if entity holds water right? Not sure.
* **Hydrographer Presentation (Brian Boughton)** gauge location, costs, maintenance, capabilities
  + DWR stream gauges managed by 2 staff, within limited time and resources, focusing mainly on managing water rights and compacts.
    - * **Two most important questions to ask when considering a stream gauge** (use these answers to move backwards and dictate gauge location and placement)
    - **What is the purpose? What do you want to accomplish?** 
      * Example: Azotea tunnel (10ft flume in a tunnel) outlet where Chama diversion ends up in NM. Network of historic stream gauges to quantify how much water NM could take and model construction (1930’s, 50’s). Most of these gauges are no longer in operation, but a few still are in Banded Peak (stopped in 1990’s, then taken over by DWR).
      * What’s the relationship with BOR on these gauges? They monitor in tandem, using their own equipment as backup. They rely on DWR stream gauge data to measure how much they are withdrawing/bypassing. DWR does the maintenance and operation.
      * Example: Parshall flume on the La Plata. Discussed advantages and disadvantages, the need for a control, and accuracy challenges once past bankfull levels.
  + How does stream gauge work?
    - Measures river stages, mostly looking at what is the equivalent discharge with this stage. Discharge measures what’s actually in the river and combines with rating and hydraulic theories to determine accuracy if direct measurements and theories align.
  + Different methods & equipment discussed (see presentation for details), including access, structure stability, controls, acoustic meters, weirs, rock vane structures, cableways & carts, cantilevers, satellite telemetry. etc.
    - **While equipment costs may vary considerably, the highest costs come from operations, maintenance and staff time**.
      * Questions:
      * How long does it take to establish the relationship? Depends on location of gauge. If controlled by a weir or concrete structure, can be as soon as it’s been stabilized. For less controlled structures, (i.e. natural riffles subject to fill and scour, bit more unstable) may need to reestablish a rating. Requires several years of constant monitoring to get initial assessment and may require correlation between old and new equipment.
      * What do the rating curves mean (i.e. discrete events or gradual)? Triangles on rating curve could be feature in river, event, different controls (bankfull, floodplain), whereas the space between the triangles is where control is in full operation, grouped means transition, defining different pieces of full spectrum.
      * What is the reliability of these measurements? Monitoring is done multiple times a year to calibrate, measure and provide maintenance, with frequency around once every 2 weeks in the summer, which is why operations and maintenance costs so much. This frequency increases with storm events to provide reliable data of peaks.
      * What is the difference between USGS and other gauges for pricing? USGS seems to be the most expensive, but there are cheaper options. DWR uses similar standards to USGS, but pricing depends on the agency funding structure. It’s the same equipment, but agencies charge differently for their staff time.
      * Are labor costs cheaper if we use bridge structures to counter flow and sediment fluctuations? Hard structures still have maintenance with location changes, but there may be cost savings with bridge structure due to ease of access.
  + Considerations:
    - Costs variable on use, location, installation, access, staff availability, etc.
    - What you are trying to measure (high/low flows, range, discharge, velocity, temperature).
    - Where are you trying to measure (access, equipment capacities/inaccuracies with flow level, structure exposure, property type, cell service for satellite communication).
    - Determine type of uses/projects that would support long term planning, with multiple values/interests covered (administrative, ditch management, rec, environmental, etc.)
    - Possibility to use historic gauges, add new equipment like water temperature.
    - Use of existing features for gauge stabilization and reading accuracy (i.e. how Emway surf way used to measure but turned into recreation use as well).
    - Need for perpetual operations and maintenance funding. CWCB interested in helping with installation, but up to community afterwards.
    - Nationwide permitting for stream devices.
    - Limited state availability for checking operation of gauge, not calibration though.
    - Correlating old equipment with new
    - Alternatives to measure, other than gauges, using smaller equipment, but run risk of localized or inaccurate interpretations.
  + How does a gauge fill the data gap for resilient water use?
    - Frame question how gages can inform water management with or without a call on water rights. Determine where it helps with management and where it helps with administrative?
    - Future developments of junior water rights interacting with stream flows
* Master Map: printed & online Story Map on website-hope to cover this more at next meeting with this information about stream gauges in mind.

**10:15 – 10:30 Report Review/Highlights**

* Still refining organization to make sure it’s easy to navigate and captures relevant data
* Hoping to have draft to Committee by next meeting to review and give feedback

**10:30 – 10:50 Goals for next public meeting**

* Refer back to identified stakeholder issues, values, opportunities.
* Designing agenda: think about goals/public messaging, outcomes, how this will inform Committee efforts.
* Outreach to riverfront property landowners to get their input on immediate issues (i.e. specific subdivisions)
* Structure break out sessions around different interest groups rather than geographic region, to help us see overlap/connections.
  + Assign Steering Committee representative of different interest to each group to ensure multiple values are discussed.
  + Possibly target conversations toward riparian and streambank impacts but tie to properties and ditches. Be cognizant of public access concerns for property owners, emphasize funding not contingent on regulation.

**10:50—11:00 Conclusion/Next meeting**