



**BUILDING UNITY FROM DISASTER:
LESSONS LEARNED FROM A
COMMUNITY FORUM**

Chara J Ragland, Ph.D., Querencia Environmental

Shannon Manfredi, Animas River Community Forum

Sustaining Colorado Watersheds Conference

“Coming Together – the Confluence of Science and Society”

Avon, Colorado

11 October, 2017

Gold King Mine Spill: The Crisis

"On August 5, 2015, a U.S. Environmental Protection Agency (EPA) work crew digging into the Gold King Mine (GKM) Level 7 adit near Gladstone, Colorado, triggered a blowout and ongoing discharge of impounded mine water. The EPA reported that more than 3 million gallons of acidic mine water containing sediment, heavy metals, and other chemicals discharged into Cement Creek, which flows into the Animas River, and into New Mexico where the Animas River joins the San Juan River before flowing into the Navajo Nation and Utah. EPA also estimated that more than 400,000 Kg of metals entered the Animas River as a result of the GKM discharge."

From the "Animas, San Juan Spring Runoff Preparedness Plan" drafted by 24 state, tribal, county, municipal and federal agencies. March 24, 2016.

Response to Gold King Mine Spill: Concerns

- Initial notification of spill was correct but not according to an official plan
- Communication breakdown: Agricultural community initially not in the loop; tribal notifications were not consistent
- Jurisdiction for closing river for recreational use was unclear
- Networks not well established prior to emergency
- Public information responses vary

Initial response: CO Div. Reclamation and Mining Safety and EPA persons called CO Department of Public Health and Environment spill line at 12:40. Sheriff noticed on county road but no information until 3:30. Calls to watershed group and CO Division of Natural Resources. All Emergency Managers were new and did not know each other (exchanging business cards at notification event). County leadership and command post stood up. Downstream notification from 1:30 pm but no clear picture until 8 pm at which time reached out to NM partners. It hit Durango by 11 pm. Gap between state and local health department – led to ineffective recreational river closure. It should start with local jurisdiction and expand to state. City of Durango was not well coordinated with the county. Southern Ute Tribe notified at 1:53. They notified the NM state hotline. The Ute Mountain Ute tribe received an informal notice. The Navajo Tribe put up caution tape and signs before the Ute Mtn. tribe had a chance. Inter-jurisdictional communication was strong. The CO Parks and Wildlife Dept. was short staffed but able to focus on ground level response and coordinated well with state health department. The Dept. of Agriculture was not involved from the beginning, and has local relationships with the agricultural community. The Animas and San Juan are both significant sources for agricultural use from just north of Durango and downstream in New Mexico and tribal lands.

Response to Gold King Mine Spill: Needs

We need to communicate.

We need to make a plan.

We recognize that we need to:

- Build Trust – don't play the name and blame game
- Locals First – Local responses are in place and nimble
- Local Knowledge – institutional, public, and 'old timers'
- Build community networks BEFORE an incident

Build Trust: Be explicit in meetings and messaging NOT to name names or place blame. It is not a productive part of the conversation.

Locals: In Durango, the sheriff and county responded and local politicians called state people who are not as nimble or informed. Local politicians serve best when visible and stay out of the way of those who are 'doing'. Don't fight the range of reactions. Be visible, be calm, be persistent with reimbursement.

Local knowledge: In Durango, there is a lot of local expertise due to the college, Mountain Studies Institute, and a number of regional offices for CO Parks and Wildlife, USGS, NFS, tribal natural resource managers, and people active for decades in local mining and environmental issues, to name a few. Multiple sources of information build trust in information. This knowledge is crucial to response and recovery.

Established community networks are key to rapid and effective response. These need to be established and reinforced on a regular basis.

Animas River Community Forum: Mission

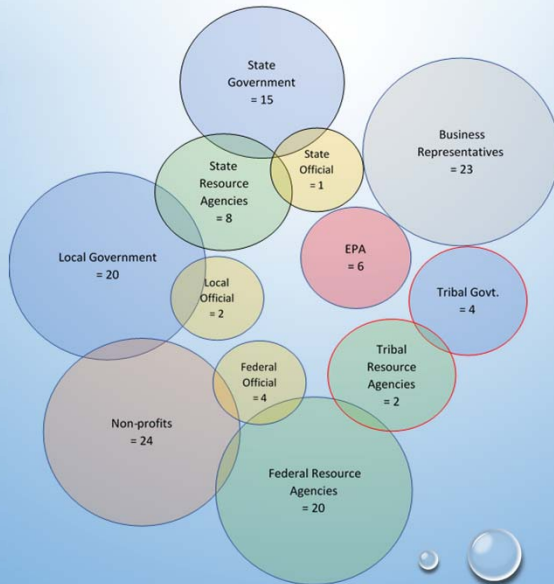
- **Promote** communication, coordination and collaborative action;
- **Foster** public confidence;
- **Support** resiliency in our communities; and
- **Enhance** planning, improved public safety and health for the future

All while honoring the institutional authorities and decision making of governmental and community organizations.

10 days after the spill, a number of stakeholders and citizens came together to form the Animas River Community Forum. It took a month or so to arrive at a common purpose and mission statement.

Animas River Community Forum: Members

**Total Members
= 129**



This is the current membership of the ARCF. This is the group that is communicating and making plans.



Animas River Community Forum: Outcomes to Date

- Emergency response improvement
- Public engagement
- Monitoring gaps analysis
- Facilitate dialogue

Outcomes to Date: Emergency Response Improvement

“Animas, San Juan Spring Runoff Preparedness Plan”
drafted by 24 state, tribal, county, municipal and
federal agencies. March 24, 2016.

Ongoing Challenges:

- Communication network must be kept up to date due to staff changes
- Crises in the watershed include more than mine spills (fire and floods are imminent)

The response preparedness plan addresses emergency operations and incident command; continuous monitoring throughout the watershed for turbidity, conductance, and pH; seasonal surface water quality sampling; Lake Powell sediment monitoring; drinking water monitoring; aquifer and water-well monitoring; procedures for flooding of residential areas; procedures for storing potentially contaminated flood sediment; training for first responders; and public notification and communication procedures.



Outcomes to Date: Public Engagement

- Community engagement
- Web page development
- Engagement committee
- Citizen Superfund Workgroup

Add notes from Shannon's presentation

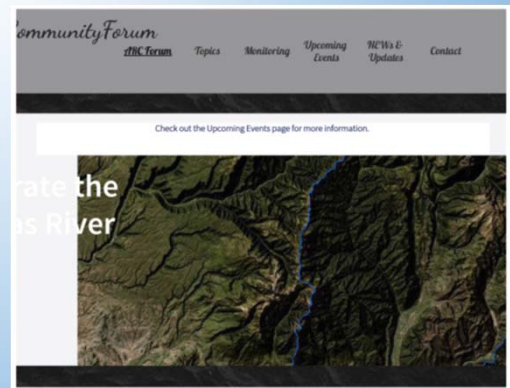
Outcomes to Date: Public Engagement

Community Engagement

- 2 forums regarding Gold King Mine spill information with question and answer sessions (fall 2015)
- 3 forums targeted information to specific user groups (rafting, recreation, and irrigation) regarding water quality (prior to Spring runoff 2016)
- One Year Anniversary event Celebrating Community Response to GKM Spill (August 2016)
- Presentations at 2 conferences and for 3 community groups (2017)

Outcomes to Date: Public Engagement

Web page development
animasrivercommunity.org
Requires funding for personnel to
maintain – an ongoing challenge.



This is an important representation of the ARCF, but requires funding to maintain. Currently, it is in need of updating.

Outcomes to Date: Public Engagement

Engagement Committee: formed to develop a communication plan for the ARCF

Accomplishments:

- Refining communication methods to be most effective
- Updating website
- Developing ways for effective resource leveraging among partners

Purpose and goals. Outcomes thus far. This is a relatively young committee.

Outcomes: Monitoring Gaps Analysis Committee

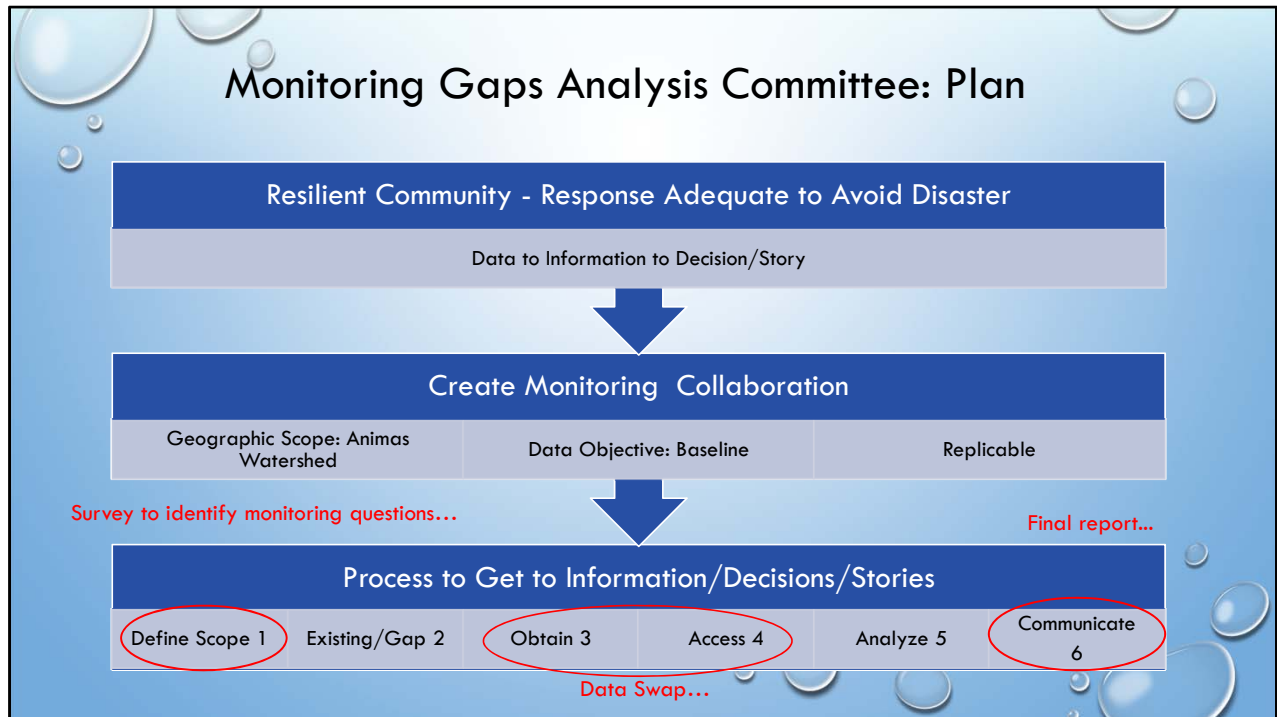
Committee Goals:

Identify and make available timely and important information for decision makers and the public

Identify our resources and community in order to establish a resilient community that is able to avoid and/or respond to disasters impacting our environment, economy and quality of life

Goals of this committee.

Monitoring Gaps Analysis Committee: Plan



This is the plan developed by the committee to define the scope of the gap analysis process, obtain relevant data, and communicate this to the broader public.

Monitoring Gaps Analysis Committee: Community Survey

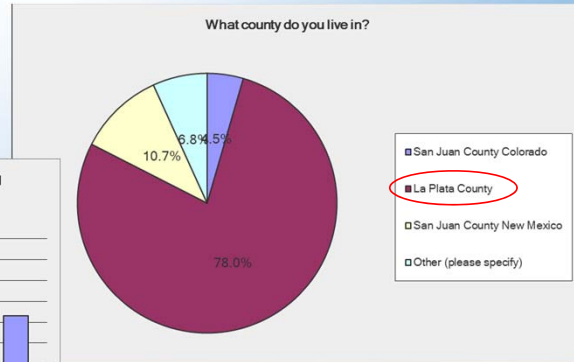
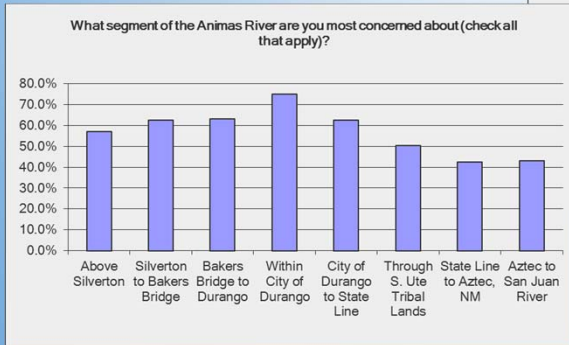
1. How **do you use** the Animas River?
2. What **segment of the Animas River** are you most concerned about?
3. How would you **rate the health or resilience** of the Animas River?
Why?
4. What **concerns** do you have about the Animas River regarding: **public health; health or resilience of the river; and other concerns?**
What **information would help you evaluate** those concerns?
5. How would you prefer to **access information** about your concerns?
6. **Who should be included** in this conversation?

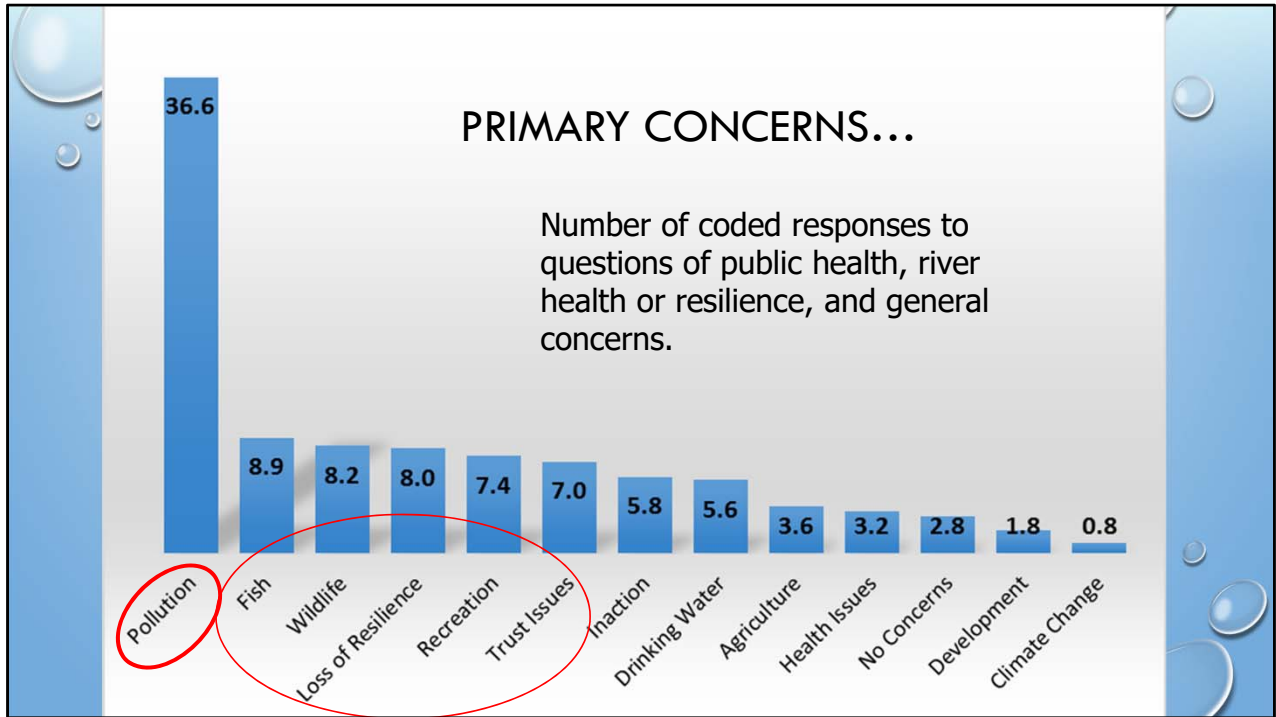
Who responded to the survey....

Female: 41%

Male: 59%

188 total responses





Maybe cut this slide?

Survey Results: Monitoring Priorities

Short term priority: Is the river safe for users in real time?

Long term priority: Is the river maintaining overall sustainability of physical and biological parameters impacting resilience?

1. Monitoring **quantifies and documents** river use (daily and weekly), river health (quarterly and yearly), and agricultural use (quarterly)
2. **Trends** in river measures followed over long periods of time (decades) and changes in river and environmental health identified and addressed
3. **Quality of life** questions identified and addressed

Survey Results: Communication Priorities

1. Data sharing: **cooperative and collaborative.**
2. Transparent monitoring methods: **multiple sources and reliable**
3. **Accessible** data: understandable and available online and in news media
4. **Usefulness:** What does it mean for people's use and enjoyment of river, and what are the 'implementation' factors?

Monitoring Exchange

1. Opportunity to learn about current monitoring efforts
2. Gather information from data providers that address →
3. Goal is to provide the right information to the right people at the right time for timely response and quality of life

Why Monitoring-for what decisions, decision makers?

What you are collecting

Where collecting

When collecting

How collecting/analyzing

Where store data/format

Availability – How can we obtain

Next step in the monitoring gaps analysis process. Convened 18 groups currently collecting data throughout the watershed.

Report: Questions and Potential Monitoring Indicators

Concerns about the Animas River:	Potential monitoring indicators:
Is my water safe to drink?	Clean Water Act (CWA) Drinking Water Standards (DWS)
Is my water safe to play in?	CWA Recreational Use Standards (E. coli), EPA Region 8 Recreational Screening Levels (water and sediment)
Is food produced with my water safe to eat?	CWA Agricultural Use Standards (crops and livestock), Fish ingestion standards
Is the river safe for fish and wildlife?	CWA Aquatic Life Standards, Colorado CWA Sediment Advisory Standards
How is the overall function (ecological) of the Animas River system?	Colorado CWA Multi Metric Index, Fishery Community Structure and Function Metrics

Product of the committee is a report intended to reach a broad lay audience and focus on action steps and stimulating conversation. The report is based on 10 questions that capture the concerns, short- and long-term, of respondents. This chart shows the first five questions along with specific data sets that can be used to address the question.

Report: Questions and Potential Monitoring Indicators

Concerns about the Animas River:	Potential monitoring indicators:
What is impacting the natural system?	Multiple impacts: flood, fire, development, mines, etc.
What is the trend in river system condition?	Multiple indicators: indicators for previous questions as well as Riparian Community Structure and Function Metrics, and flow regime
Can the river sustain impacts?	Not yet determined how this might be answered, but it is a question we are keeping in mind, and are open to suggestions.
How is the river supporting community quality of life or not? Economics, aesthetics?	Recreation, business interests. Currently working on defining the quality of life parameters.
What is my impact and what can I do?	Each report section addresses possible individual actions

These are the final five questions addressed in the report. In the report, there is an emphasis with the final four questions to pose questions and suggest actions for increasing river health and resilience.



Animas River Community Forum: Facilitate Dialogue

We need to talk. And we do...

- Coordinated exchange of information
- Ongoing collaboration between Forum members
- Citizen Superfund Workgroup

A key role identified by all partners is to facilitate dialogue. This is being done in a number of ways.

Animas River Community Forum: Facilitate Dialogue

Coordinated exchange of information

Outcomes:

- Emergency management updates
- Helpful for cost reimbursement

1. Coordinated exchange of information happens through bi-monthly meetings and a Forum coordinator who updates partners and disseminates information to all partners.
2. The emergency management plan has been updated since the spill and will continue to be updated on an annual basis. Maintaining an active dialogue mean people remain connected and comfortable communicating with each other.
3. Local representatives for Senator Bennet, Senator Gardner, and Congressman Tipton, i.e, Forum Partners, were kept informed of local government reimbursement challenges during ARCF bi-monthly meetings. To date San Juan County has been reimbursed \$350,887 of the \$357,365 they requested. La Plata County has also been reimbursed at a comparable rate to their requested rate. La Plata County Reimbursed 100%

Animas River Community Forum: Facilitate Dialogue

Ongoing collaboration between Forum members

- Regular meetings
- Email updates and website
- Promote and support watershed events and partner initiatives
- Support committee initiatives and collaborative efforts

Currently, meetings are bi-monthly, but will likely be less frequent into the future.

We are looking for ways to keep the website up to date and have coordinated efforts to send out timely emails.

Numerous watershed events and partnerships are ongoing.

Both the Gaps Analysis committee and Engagement committee have ongoing projects – the future of which is under discussion as current funding will be coming to an end in the next year or so.

Animas River Community Forum: Facilitate Dialogue

Citizen Superfund Workgroup

Why?

- Potentially over \$100 million taxpayer funds utilized in cleanup efforts of the Bonita Peak Mining District Superfund site over the next 15-20 years.

Goals:

- Help the community better understand the issues involved in the cleanup
- Develop recommendations or community goals

Four local watershed groups – Animas River Stakeholders Group, Animas River Community Forum, Animas Watershed Partnership and Trout Unlimited – will host 4 meetings and a tour of mine and remediation sites to inform local citizens of the issues.

Animas River Community Forum: What Next?

Partner goals:

- Dialogue and Communication
- Collaboration to leverage resources

Requirement = ARCF sustainability:

- Evolution of organization structure to maintain networks
- Financial security to support endeavors

Collective strength of partners, access to information (monitoring data), opportunities for collaborative action, outreach (engagement), superfund, watershed resiliency.

From my perspective, this group has shown that it has developed the knowledge, insured decision space, and taken responsibility – all requirements for successful collaborative processes.

Future success requires evolution of the organizational structure away from dependence on small grants to support coordinator by single organization. We are exploring ways for partners to share responsibility through rotating support or shared support.

Financial support needed to support committee work in gap analysis and reporting; engagement efforts; and maintenance of viable network.



ARCF Partner Support

Financial Support:

Southwestern Water Conservation District

Colorado Water Conservation Board through the Water Supply Reserve Account

Division of Reclamation, Mining & Safety, a division of the Colorado Department of Natural Resources

Fiscal Sponsor: Mountain Studies Institute

In Kind Contributors: San Juan Public Lands Center (NFS and BLM), La Plata County, Town of Silverton, City of Durango



ARCF Steering Committee

Marcie Bidwell, Mountain Studies Institute

Brian Devine, San Juan Basin Public Health

Laura Marchiano, Region 9 Economic Development District

Ann Oliver, Animas Watershed Partnership

Ellen Roberts, Attorney

Matt Thorpe, Colorado Parks & Wildlife