

Big Sky Sustainable Water Solutions Forum
Stakeholder Meeting
DRAFT Agenda
January 12, 2017, 1:00-4:00 PM
Big Sky Water & Sewer District Conference Room
561 Little Coyote Road

1:00 PM: Welcome

1:05: Overview and Objectives

- Overview of goal setting and options analysis phases
- Objective of January Meeting: Begin to form a common vision and goal for the Big Sky area water resources.

1:10-1:15: Public Comment

1:15-1:40: Stakeholder Reflection and Filling in Gaps

- Is there any information missing?

1:40-2:45: Best Case/Worst Case Scenarios

- Small groups
- Report out to entire group; identify major themes and topics

2:45-3:40: Major Themes and what Success Looks Like

- Small groups Discuss themes and what success might look like
- Reports out to entire group

3:40-3:45: Public Comment

3:45-4:00: Closing Question

Discussion Question Input

In the last three meetings (August 31, September 28, and November 3) participants answered these three questions. These are ideas people had in the meeting or submitted on the survey. Some of these were answered at some meeting or with posted resources. Others can't be answered with existing information or are ideas or expressions of potential values.

Stakeholders may also have information that can answer these questions or offer information on any other areas. If that is the case, send links to Karen Filipovich (karen.filipovich@gmail.com) for posting on the project web page or be prepared to briefly share information.

Ecological Health of the River Systems

If Big Sky strives to be a model community in this focus area, what elements does this include?

- Scientific baseline, understanding where we were originally and where we are now. Defining the desired condition, scientifically, and in terms of values.
- Historical perspective is really important. Before this was a Big Sky, this area was a liquidated logging area. If we accept current and future conditions, we have to look back and see what has been regained.
- Regulatory framework. What was water quality in 1974 at the time of the Clean Water Act?
- Sustainability, don't want to exceed the capacity of the environment that you're in
- Resource conservation, water, and using it wisely.
- Community awareness, starting in the Big Sky area, and a general understanding of why this is important.
- Clearly defining our community values as a way to help identify our goals.
- Ensuring that the "river comes first" includes downstream.
- If you look at these examples, they are reactive. We need a proactive plan. How do we recognize our goals and make sure they are maintained?
- Include Madison, Gallatin, and the West Fork.
- The proximity of the highway and the confined space along the Gallatin leads to a lot of problems. Need to include MDOT in this discussion.
- Scenic and recreational impacts need to be included.
- Need to include water quantity and figure out minimum flows for streams.
- Regarding the zone of influence, we have an arbitrary rectangle. What we do here should benefit those outside of our zone of influence.
- We need to recognize as many winners and as few losers as possible.
- Need to think about what doubling the population would look like in terms of impact with additional housing (up and downstream), well and septic, transportation and how it affects housing.
- Let the river come first. Understanding our economic interests, but acknowledging that the river is the golden goose.
- Need to balance with economy and impact of Big Sky.
- Need to remember the river comes first. The economy is tied to the river.

- Communication within the community. Balancing development needs and the needs of the river system.
- Utilizing wastewater as a resource to the system, instead of a burden.
- Low Impact Development (LID) to deal with stormwater issues.
- Fish is a good start. Additionally, understanding from folks from Heritage Program as to what rare elements might be using the water resources of Big Sky.
- Understanding of pre-development watershed health (baseline), today's watershed health, survey of expected development/land transformation trends, and dialogue about how pollution sources related to development must be limited based on dual goals of protecting water quality & restoring baseline conditions
- Water quality, quantity (stream flow/fish), water conservation & efficiency, productive use of gray water, water capture (water spout urns, etc.)

Given what you heard, what are the most important things to address in this area?

- Economic impacts of a healthy river – both direct and indirect benefits.
- Ensuring that the Gallatin valley is considered, not just Big Sky.
- Identifying tipping point. What are our values and when is too much going to run the river and other things we value? (For instance, when will development affect the experience of being at Big Sky, as opposed to an urban area?)
- Holistic approach – ensure we look at the ecosystem as a whole and tie together natural and human dimensions.
- Wetlands and ties between land and water.
- Understanding our reference condition – both what was and what is desired.
- Ensuring that our reference state also is informed by the possibility of future change (climate change, invasive species, and people). We don't want to set a goal for a future state we can't achieve.
- Finding a way to improve the impairments listed on the TMDL. Maybe this means further understanding? For example, Kristin mentioned the possible diurnal fluctuation in elements (Total N). Does this possibly mean the system is impaired at the warmest part of the day but not at night? I don't know that but I do know if MDEQ is standing on certain numeric criteria that is preventing other means of wastewater disposal and there is the potential for that criteria to fluctuate in the field then there is a problem that needs to be further understood.
- Stormwater
- Clearer information on how the standards required by DEQ for water quality affect the ecological elements discussed during the meeting. I know the DEQ claims their standards are more restrictive than what is needed for fisheries; however, how do they relate to other species? Granted - some of this information might be unknown.
- The previous coalition meeting did not connect the dots between the concept of baseline condition and the disparity between that reference point and our current (degraded) watershed condition, nor the regulatory implications thereof. Lots of emphasis on science (a good thing), and known vs. unknown scientific

studies/resources on environmental conditions, but next to no substantive discussion on what, for example, a TMDL (aka, pollution diet) for the West Fork watershed means in terms of legal requirement to reduce existing pollution loading to local waterways. Such a candid, technical discussion is key to a transparent dialogue of the legal framework in which this stakeholder group must create solutions. We need to connect the dots, now, between baseline conditions, existing conditions, and regulatory implications.

What else would we like to know before we start thinking about alternatives to address concerns in this area?

- Get Big Sky wetlands mapped.
- More detailed summary of build out.
- Information on critical wildlife habitats. Where is the big horn winter range? Where does wildlife congregate?
- Condition of surrounding upland forest (vegetative changes, wildfire risk).
- Accurate big picture on the hydrology. Where are we gaining, where we losing, etc?
- List of species of concern for the area (wildlife and plants).
- Research such as a new University of Montana paper about gravel rivers as the most important wildlife habitat in the west.
- Wastewater uptake values if discharged in forest vs. upland field vs. turf vs. wetlands vs. river vs. snowmaking. This answer is complex, but I am trying to be general in order to understand the potential multi faceted approach to disposal because irrigating on turf 50' next to the west fork isn't working.
- How many septic systems are in the west fork and south canyon that potentially leach into the alluvium? 3.
- More specific information on why the West fork and South fork are impaired. . Is it the case that over storage of effluent in winter leads to over irrigation on Golf Course leads to too much effluent running off into surface waters leads to impaired river? This isn't an anti development pitch, development is going to happen, rather it is to paint the picture a clear picture.
- Expect more concerns related to ecological health in the water quality and quantity sections.

Clean Water Supply and Availability

If Big Sky strives to be a model communities in this focus area, what elements does this include? Given what you heard, what are the most important things to address in this area?

- Establishing the desired state
- Development regulations on the amount of green space, water features, ponds (changing and convincing those that have to change direction)
- Is development of confined aquifers sustainable?
- Scientific credibility: do not want to set up effort to fail. Tie growth to watershed health.
- Maintain legal rights and framework
- Understanding existing regulatory framework
- Integrate good long term climate models
- Reminiscent of Integrated Water Resource Plan: Find out what we have, what maximum build-out is, and how to balance that (looking out 25 or 50 years)
- Lots of opportunities with innovative storm water impacts: high water in spring – can be captured; storm water rain garden/wetland
- Efficiency in treating and using water – how treatments affects processes
- Water meters on all public system and effective tiered rates
- Establishing nature of GW/SW connection
- DNRC has guidelines on shallow aquifer recharge: if in capturing water, not just storm water, if downstream senior water right objects, you need a water right
- Building a much higher awareness in the community of needing to conserve water

What else would you like to know before we start thinking about alternatives to address concerns in this area?

- Uncertainty on GW development of exempt wells and what the legislature will do in January: How much could you take legally now?
 - DNRC: What do you want aquifer to be maintained at? You can have a controlled groundwater area in the Meadow. The bureau could help with that. MBMG can add in factors like climate change.
- Pre and post water balance or budget: technically, post development there is more water due to increased impervious services
- CSKT claims – pre 1855, good for instream flow, potentially bad for development
- What if community dynamics shift towards more families and year-round residents?
- Modeling and monitoring should be complementary activities. Do we have adequate monitoring in the system for the groundwater and surface water systems?

Wastewater Treatment and Disposal

If Big Sky strives to be a model community in this focus area, what elements does this include?

- Ways to keep water in the community for as long as possible, holistic treatment
- Making sure septic systems are maintained
- Keeping water quantity and quality as good as it is now as it leaves BS area
- Requiring septic tanks get inspected with sale of house
- Upgrading treatment plant to beyond where it has to be

- Maintain and improve water quantity throughout the basin, where we're withdrawing water and where we're disposing water
- Complete understanding, as Ron does, of quantity picture for the whole area, consumptive as part of picture, looking at infrastructure in the basin and the community as a whole, as best as you can keep the analytical side in focus, unless you know what is going on you're running in the dark
- Realistic and comprehensive solution for the canyon
- Match zoning with water & sewer
- Eliminate septic systems and get everyone on a centralized system
- Invest in both built and natural infrastructure, new concept
- Factor in impacts of climate change (lower flows, earlier runoff)
- An educated community actively participating in the solutions, understanding how their actions at home affects water quality and quantity
- Look for ways to integrate management choices, holistic
- Thinking about the message, and how we can involve the community, and think about the story we tell – "the story of stuff", simple and compelling, the story of water and people in this place and share with the people here full time and part time and we need to get people on board sooner rather than later
- Treating sewage to a higher level than what is required. This could help to change a liability (effluent) into an asset which is used to recharge groundwater, augment low stream flows, irrigate new developments, etc. This could also help the potentially negative public perception of a direct discharge into the Gallatin River. The technology to treat further exists, it just costs more.

Given what you heard, what are the most important things to address in this area? What else would we like to know before we start thinking about alternatives to address concerns in this area?

- We have a lot hot tubs that have to be emptied and filled, and that's a lot of water. What are the impacts?
- Need community buy-in and understanding
- As we identify the solutions, we need to identify the funding sources
- Innovative, practical incentives
- Don't forget about wetlands, and other natural, holistic solutions
- Build on the south canyon, there's a lot of question marks with drain fields, and there's more work needed
- Make sure that we include the local and downstream community
- Water conservation – the less water we use the less we have to treat
- Extending the sewer to the 191 corridor. Installing the infrastructure allowing new developments in town center to irrigate with treated effluent.
- What is the best way to deal with hot tub water? What is the best way to deal with pharmaceuticals? What are the most suitable areas in the 191 corridor for application of treated effluent? What are the costs and capabilities of engineered wetlands?