

**Big Sky Sustainable Water Solutions Forum
Stakeholder Meeting**

Agenda

May 24, 2017

1:00-4:00 pm

**Big Sky Chapel Basement
510 Little Coyote Road**

Meeting Objective:

- Discuss and analyze options and alternatives to address goals

1:00: Welcome

1:05-1:10: Public Comment

1:10-3:00: Analysis of Issues and Options

- Brief overview of analysis from April 27 meeting, matrix and “big questions” to address today.
- Small group assignments – by focal area
 - Discuss any remaining issues with objective areas.
 - Begin to analyze alternatives for action, using objective criteria

3:00-3:40: Analysis of Issues and Options – Large Group

- Present out answers to big questions – what general strategy (or questions to answer, if known) and identification of options.
- Questions and comments from other participants – things missing, controversies, clear winners.
- Focus on “big question” areas – current “yes” and “no” tabs

3:40-3:55: Overview of Management and Implementation Options

3:55-4:00: Public Comment

4:00: Closing

BSSWS Adopted Goals and Draft Objectives

Goals were adopted on 3/30/17. Objectives were discussed and approved by focus groups on 4/27/17, but have not been formally adopted.

Overall Vision Statement

Big Sky strives to be a model mountain community by protecting and improving water resources, sustaining ecological health of the watersheds, and supporting a vibrant local economy.

Ecological Health of the Rivers

Goal

A healthy and resilient river system sustained through a principled approach to watershed stewardship that includes human activities and natural processes that maintain and enhance stream, riparian and wetland conditions and connections, ensuring water remains clean and cold.

Objectives

- Maximize water quantity, protect existing high quality and improve degraded water quality
- Identify, sustain, and enhance high-value riparian corridors and wetland areas
- Sustaining aquatic communities while enhancing native populations.

Water Supply and Availability

Goal

Manage and balance surface and groundwater supplies for a vibrant community sustaining a broad spectrum of uses and values including fisheries, wildlife, recreation, agriculture, municipal and domestic needs.

Objectives

- Maximize existing ground water and surface water resources by conservation, efficient management, and reuse of reclaimed water
- Maintain sufficient, high quality year-round in-stream flows to meet ecological needs (quality and quantity)
- Increase system resiliency to address drought and climate variability

Wastewater Treatment and Reuse

Goal

Develop and implement holistic wastewater and stormwater management, utilizing best available technologies and practices, to meet Big Sky's long-term community needs and protect and improve the ecological health of the river systems.

Objectives

- Ensure wastewater does not have a negative impact on the ecological health of the river systems and groundwater resources
- Address onsite septic systems in sensitive areas
- Identify alternative strategies for land application of treated wastewater

Big Sky Sustainable Water Solutions Forum Stakeholder Meeting

Notes

April 27, 2017

1:00-4:00 pm

Big Sky Water & Sewer District Conference Room
561 Little Coyote Road

Stakeholders Attending: Guy Alsentzer, Upper Missouri Waterkeeper; Scott Bosse, American Rivers; Rich Chandler, Yellowstone Club, GRTF Board; Mike DuCuennois, Yellowstone Club, BSWSD Board; Susan Duncan, AGAI; Ron Edwards, BSWSD, GRTF Board; Kristin Gardner, GRTF; Jim Hart, Madison County Commissioner; Tom Moore, Gallatin City-County Health Department; Dave Moser, FWP; Mike Richter, MBMG, GRTF Board; Ann Schwend, DNRC; Suzan Scott, BSOA; Tim Skop, Gallatin County Planning Dept.; Torie Haraldson, GLWQD; Darcie Warden, GYC; Brian Wheeler, Big Sky Resort; BSWSD Board; Steve White, Gallatin County Commissioner; Ennion Williams, Big Sky Trout, Big Sky Vacation Rentals; Ciara Wolfe, Big Sky Community Organization.

Public Attending: **Emily Casey, GRTF;** Rich Addicks, GRTF Board; Rich McEldowney, Confluence; Adam Johnson, BSCO; Steve Johnson, resident; Stephanie Lynn, GRTF; Philip Kiedrowski, Redleaf Engineering

Notes and Support: Troy Benn, Jeff Dunn, Karen Filipovich

Detailed Notes

Updates from Participants:

All attendees were invite to offer updates on their activities as they relate to water resources in the Big Sky area. Activities include:

- Yellowstone Club: Working on large upgrade to the treatment facilities. Its three year stormwater permit is up for renewal in July 2017 and YC is working with DEQ on that.
- Greater Yellowstone Coalition: There is a fish restoration project underway in the Big Sky area with FWP.
- Steve Johnson: Waiting for the Mother's Day hatch.
- Gallatin County Commission: Gallatin Gateway a Water & Sewer District now and conversion and is likely done by the end of 2017. County helped get project off the ground.
- Give Big is May 4 and 5. Many nonprofits, including GRTF are teaming up for a donation drive on May 4 and 5. Go to givebigv.org or individual organizations for more information.
- Fish, Wildlife and Parks: Working with GYC on fish restoration project. Working on probable the last year of fish sampling on Yellow Mule; fish populations are improving after the spill.
- Confluence: Working on some wetland delineations in the area. Do expect that some permitting will be done as well. Wetpol is also coming to Big Sky, the first time it has ever been in North America, on August 21-25.

- Gallatin County Planning: Continue to work on permitting for new structures. Those permits typically require a review of water.
- Upper Missouri River Keeper: Have two litigations at the state level that could affect local water resources. The first is about treatment levels of wastewater. The second is about the state municipal stormwater permit.
- Big Sky Resort: Gearing up golf course for the beginning of the growing season.
- Big Sky Water & Sewer District: Have issued an RFP for an engineering analysis for the SBR plant and pipes. This includes analysis of several options for future expansion.
- Gallatin City-County Health Department: Continue to work with septic system permitting.
- Gallatin Local Water Quality District: Continue to work in Big Sky with MBMG and on monitoring groundwater as need and funding allow.
- Big Sky Owners Association: Working with GRTF on conservation programs to increase efficiency of home water use; continue on the pond project that will take an existing pond completely off the West Fork and enhance fisheries; and working with the BSWSD on little Coyote.
- Big Sky Community Organization: Working on trail and natural playscape on Kircher Park, which is by stream. Working on Ousel Falls project to install safety rails and decrease trampling. This project will include revegetation and signing as well as changing its status to an on-leash only trail for dogs. Ousel Falls trail sees up to 800 users/day and the entire BSCO trail systems had 400-450 thousand trail users on it last year, so managing the system as BSCO gets a handle on use is important.
- Big Sky Trout: Fishing guide season is underway.
- Madison County Commission: Continues to be interested in how the Big Sky decisions affect the Madison watershed and county. Work by Madison CD and Ethan Kunard continues on the Watershed Restoration Plan and drought planning for the Madison watershed.
- Gallatin River Task Force: GRTF is working with the community on a drought/water supply variability plan. A meeting was held before this meeting and the next meeting will be on May 24, from 10:30-12. Emily Casey is working on expanding the Big Sky Water Conservation plan, with outdoor sprinkling rebates rolling out and movement toward commercial water use rebates. The restoration project on the golf course working with the Big Sky Resort has been implemented. The project will reduce the amount of sediment and nutrients that could go into the West Fork. GRTF is working on the Custer-Gallatin Forest on access on the Gallatin River at Moose Creek this year and that project will reduce erosion. In addition, the volunteer monitoring will continue and will look at Magnesium, Sodium, and Total Dissolved Solids this year; all associated with road maintenance. They are also working with children on a Clean, Drain, and Dry project. Finally, Stephanie Lynn is looking for ways to reach out to visitors.
- American Rivers: Work continues on Wild and Scenic designation for several Montana rivers, including the Gallatin. Fourteen hundred Montana citizens and over 1,000 businesses have signed in support of the package. There is a new film, "Every Bend" out on it. American Rivers is also involved in the Custer-Gallatin Forest Planning Process.
- MSU Extension/Greater Gallatin Watershed Council: Working as a Watershed Corps member with the watershed and interested in the lower Gallatin valley.
- AGAI: Continue to be concerned about how decisions in Big Sky might affect the valley. Additionally, Mountain Time Arts will be working in the lower valley on art related to watersheds this summer, including an event at Four Corners.

- DNRC watershed planning continues to work with drought coordinators in both the Gallatin and Madison basins.

Public Comment:

There was no public comment.

Analysis of Issues and Options:

Karen Filipovich briefly reviewed the decisions the stakeholders had made with goals, indicators, and objectives, and summarized the challenges and opportunities identified by this group and provided an overview of the work participants would be doing in focus areas. This meeting was focused on identification of potential priorities and analysis of options.

The groups focused on the three topic areas and began discussing options:

Ecological Health of the River Systems

Objectives remained as stated in the previous meeting:

- Maximize water quantity, protect existing high quality and improve degraded water quality
- Identify, sustain, and enhance high-value riparian corridors and wetland areas
- Sustaining aquatic communities while enhancing native populations.

Tools and Strategies:

In examining options, the ecological health focus group focused on options pertaining to a sustainability dashboard and education and outreach. The participants thought that community understanding and support for ecological health required significant monitoring, education and outreach.

Sustainability Dashboard:

Focus group participants thought that gathering data and disseminating it to the community would be useful. Topics discussed for inclusion included:

- Snowpack
- Streamflow
- Aquifer condition
- Drought resilience index
- Wetlands – stormwater

Need for both education and outreach on these topics were identified. Together, the sustainability dashboard would be an important watershed health communication tool.

Some further ideas explored for education and outreach were:

- Ophir project – work with school students for podcasts
- Explore Big Sky – work on a quarterly column

Water Supply and Availability:

This group agreed on its **objectives**:

- Maximize existing ground water and surface water resources by conservation, efficient management, and reuse of reclaimed water.
- Maintain sufficient, high quality year-round in-stream flows to meet ecological needs (quality and quantity)
- Increase system resiliency to address drought and climate variability

The group also identified four areas that are potential priorities for action:

1) Protect the Meadow Aquifer.

Tools: education and outreach, site specific project and BMPs could be used in combination to address this priority. Tools include identification of groundwater and surface water connections through the Montana Bureau of Mines and Geology study and model (currently in development); water balance and a water budget, a drought management plan, and a controlled groundwater area.

Benefits identified:

- Environmental: Water quality, aquatic life, wetlands and resilience to climate variability
- Water Supply and Availability: Surface water and ground water
- Wastewater Treatment and Reuse: Meet community needs and improve ecological health of the river systems.

Feasibility:

Technical:

- Opportunities: MBMG GWIP study/model; scenarios of ground water withdrawal amounts.
- Questions: Treatment wetlands – in west pasture? (City of Billings has done this) BSOA ponds – add wetlands? Ponds are privately owned.

Policies, Regulation and Laws:

- Challenges: Permitting necessary for “new” wetland. Wetland and mitigation credits may be a challenge to establish.

Economics and Costs:

- Opportunities: MBMG and their modeling.
- Challenges: Costs are an unknown

Community interest and support were not evaluated.

2) Best Management Practices - Water Conservation.

Types of Tools: education and outreach, incentives, site specific projects, BMPs, data collection and assessment, policies, regulations and laws, and system and planning. Specific tools that might be of use

here include: a drought management plan, work with HOAs on water conservation guidelines, rain water capture through rain gardens and rain barrels, water metering and tiered pricing, conservation measures to reduce summer irrigation demand [could be used in conjunction with purple pipe], incentive programs like pricing and “trout friendly” designation, community water supply and conservation education, outreach to landscape managers, and education to increase awareness for testing newly constructed water systems.

Benefits:

- Environmental: water quality, aquatic life, riparian and/or wetlands and resilience to climate variability.
- Water supply and availability: surface water ground water.
- Wastewater Treatment and Reuse: None identified.

Additional Comment: GRTF is addressing many of these issues through their water conservation program.

Feasibility:

Technical:

- Opportunities: Tiered pricing, purple pipe. These are already used in parts of Big Sky.
- Questions: Can water sewer district regulate new houses or developments for “smart” water use?

Policies, Regulations and Laws:

- Opportunities: Currently voluntary; needs to be required. Users in the district easier to reach.
- Challenges: HOAs may not allow xeriscaping; may encourage excessive water use with covenants on lawn and watering, pavement use. Need policy/rules/regulations to support incentive programs. No overall governing entity to administer across Big Sky.
- Questions: Yellowstone Club/District Water? “Exempt wells” – ways to meter new wells? Need water bill statistics to guide refinements.

Ideas: Check sheet with the district – Criteria for “trout friendly” certification – reduce by (x)%

Community Interest and Support:

- Opportunities: Ad campaign, Mailings, social media
- Challenges: HOA mandate Enforcement? Need to develop a “trout friendly” logo and system
- Questions: Green building awards; low flow, xeriscape, water use “Big Sky Green certified?” - in paper, etc. for outreach. Building suppliers like Earth Elements.

Implementation of Tool or Strategy:

- Gallatin River Task Force is working on rebate and conservation program on a part-time basis. It could be expanded by keeping current staff permanently and increasing hours to full-time.

What would make it easier to implement and more effective?

- Exempt wells – awards, suggestions

- Consumptive use?
- Ponds – evapotranspiration?
- For smart water use
- Appropriate goal?

Does this make it easier to implement other tools?

- “In Big Sky, we do this.” – by building a community norm, easier to have people residing or visiting Big Sky to
- BSWSD agreement with water user groups (MOU) – is this really broad?

3) **Stormwater capture: Permeable pavement, bioswales, rain gardens, etc.**

Tools that could be used include working with HOAs on guidelines, rain water capture techniques, and strengthening stormwater requirements for future development. Benefits:

Questions: Do we need a permanent “stormwater” position in the community?

Feasibility:

Technical:

- Opportunities: Increase groundwater storage, increase resiliency to climate change, demonstration project

Costs: Unknown

Policies, Regulation, Laws:

- Opportunities: New development, certain amount of runoff “allowed”
- Challenges: Existing subdivision regulations require pavement
- Unknowns or questions: Ordinance – for “stormwater fee;” impervious surfaces pay per square ft.

Economics and Costs:

- Questions: Resort tax for funding? Stormwater fee for funding?

Community Interest and Support:

- Not addressed

Implementation of Tool or Strategy:

- Not addressed.

4) **Treated Wastewater Reuse: Treatment Wetland/Purple Pipe Infrastructure**

Tools could include constructed wetlands, purple pipe and expanded land application.

Benefits:

- Indicated that would be beneficial to water supply (conservation, potentially groundwater)

Feasibility:

Technical:

- Opportunities: Year-round disposal of wastewater (constructed wetlands, recharge groundwater, instream flows)
- Challenges: Private land, public perception

Policies, Regulation, and Laws:

- Not addressed yet.

Economics and Cost:

- Opportunities: Resort tax, GRTF, BSWSD
- Challenges: Potential unknowns

Community Interest and Support:

- Not addressed.

Implementation of Tool or Strategy:

- Not addressed.

Wastewater Treatment and Reuse:

This group agreed on its objectives:

- Ensure wastewater does not have a negative impact on the ecological health of the river systems and groundwater resources.
- Address onsite septic systems in sensitive areas
- Identify alternative strategies for land application of treated wastewater (group also discussed when it is appropriate, proper and desirable?)

Focus are participants discussed several different approaches.

Land Application of Treated Wastewater:

The group discussed land application as an option. This group had a wide-ranging discussion about wastewater treatment, capacity and projection of future needs. The main focus for alternatives were mainly focused around treatment and its first objective.

Currently, land application and septic system leach fields are the only forms of wastewater disposal. Land application is used by all three large centralized systems (BSWSD, YC, and Moonlight) and is also used by the small systems located in the Canyon.

A key challenge for land application is finding appropriate storage and places to apply the treated wastewater. Currently, the Meadow golf club currently uptakes about 140 million gallons/year and the

total system, including the Yellowstone Club and at Spanish Peaks (storage currently being built) golf clubs can uptake around a total of 170 million gallons of treated wastewater for the year. At build-out projections of current lots, 330 gallons of treated wastewater will be produced on an annual basis.

Currently, the state of Montana does not require a discharge permit for land application, unless it discharges to ground or surface water. Currently, there is also land application on forest areas and small application plots in the Canyon area in addition to the golf courses. Land application could be expanded via purple pipes, but there are considerations of land available and the storage requirements for winter storage, since land application needs to be done during the growing season.

170 million gallons/per year is the rough estimate of total treated wastewater that can be handled on the three golf courses, but more work would need to be completed to get a more accurate estimate (YC, BSR, and the Spanish Peaks). Forest application is also used – large private land holdings in YC, Moonlight do have further potential for application. However, several stakeholders see it as a wasted opportunity and a possible issue for supply, since water needs to be fully consumed.

Other Reclaimed Water Options:

- Snowmaking a possibility raised.

Surface Discharge to Gallatin:

- BSWSD has an RFP to do further analysis on options for meeting future capacity demands and potential for discharge is part of the analysis.
- Participants did discuss whether the water quality of treated wastewater could be raised in conjunction with surface discharge, land application or any other method of reuse.

Treatment:

Options for treatment were listed:

- Treating for drinking reuse – “toilet-to-tap” is technical possible, but expensive
- Mixed levels of treatment for various reuse methods (land application, surface flows, drinking water) could be a possibility
- Infrastructure expansion was briefly discussed. There are some places in the existing boundaries that may be possibilities (i.e. Firelight) and options that could be extended in phases (Conoco, school, Corral), but such an expansion would require voter approval.
- Nutrient trading may be possible if septic tanks are replaced with a centralized service and there is some kind of permit in place for treated wastewater.

Upper Missouri Riverkeeper suggested the water quality standard for aquatic life. The standard is Total Nitrogen at .3 mg/l and Total Phosphorus at .03 mg/l for the growing season. Maximum temperature was also a possibility expressed at around 60 degrees Fahrenheit or less. It was suggested that if water was treated to this level, then it would have not detrimental effect on the river system.

The BSWSD observed that meeting that standard for treatment might not be possible. The best plants in Montana treat to around 3 mg/l for total Nitrogen. [Note: Butte appears to be the only plant in Montana that can treat to this standard]. Another idea was to further explore split streams of wastewater for different reuses.

Cost and other considerations:

How much would a system that purifies wastewater more than current systems cost? What role would the counties pay? Bonding has been the typical method in both Gallatin and Madison counties and likely the method ahead. State funding may provide some portion of it.

What is the public perception of this? What about an expansion of this? Where is the intersection between economic, social and political factors?

Outreach:

- What is the group going to do to address public concerns and questions?

Big Picture:

- High quality treatment levels for ecological health important: Barriers: cost, public perception, prioritization
- Opportunities: public perception, sequencing, prioritization

There is a need to further discuss the trade-offs between the environmental benefit, costs and public interest in the methods used to treat and reuse wastewater.

Analysis of Issues and Options – Full Group

All three groups reported out their initial analysis and suggested areas. These reports are summarized in the section above. The participants will continue their work at the May 24 meeting.

Public Comment

There were no public comments.

The meeting adjourned at 4:00pm.