

Bluff Town Water Study Kickoff Meeting

11-12-2019

1. Introductions:
 - a. Sunrise: Trent Brown, PM; Jesse Ralphs, Project Engineer
 - b. Bluff Town Representatives
2. Project Scope and Overview
 - a. Water Study Elements
 - b. Process and Methods
 - c. Discuss Bluff Town Guiding Objectives and Priorities
3. Schedule
 - a. 50% Update Meeting ~Week of January 27th or February 3rd
 - b. 90% Pre-Final Presentation ~Week of April 27th
 - c. Delivery of Final Study ~Week of May 11th or 18th
4. Starting Points:
 - a. Culinary Water Study – Bluff Water Works Special Service District May 2011
 - b. Listening to Bluff
 - c. Town of Bluff General Plan
 - d. 40 Year Water Right Plan for Bluff Service Area
5. Data and Information to Obtain/Confirm
 - a. Existing Water System Drawings and/or Maps
 - b. Growth Rate/Projections
 - i. Not specifically addressed in General Plan
 - ii. Options include:
 1. Use historical data; likely around 1%
 2. Bluff Town identifies a more aggressive growth target
 3. Engage a general planner to compare with other “startup” communities and develop a growth rate.
 - c. Confirm Bluff Town limits
 - d. Current connections and connection types
 - e. Water usage data; as detailed as possible; monthly billing summaries work well
 - f. Current water rate/fee schedule
 - g. Identify known or anticipated areas of future growth
6. Discussion of Items of Local/Institutional Knowledge
 - a. Challenges/problems with existing system to address
 - b. Opportunities and avenues for future improvements/expansions
 - i. Untapped sources, potential water rights purchases, etc.
7. Open Discussion/Additional Considerations

Minutes/Notes:

Attending – Jesse, Trent, Mayor Ann Leppanen, Brant Murray, Jim Sayers, Linda Sosa, Luanne Hook, Kaitlin (?), Skip Mayer, Amur (sp?), Female Citizen with Dark Curly Hair (I failed to record the name).

1. List of Reports, Documents, and Plans that were discussed as being available for review:
 - a. 1996 Water Master Plan – Richard Grose (4 Corners Area)
 - b. 1995 Water System Report (Jones and Demille) (Same as 1996 master plan?)
 - c. 2005 Bluff Aquifer Study
 - d. 2019 USGS Aneth Area Water Study
 - e. 1986 Hydrogeological Study of the Navajo Aquifer
 - i. Has good coverage of data on existing wells and arsenic source
 - f. Existing Town Limits Map (Mary Gillam – already received)
 - g. Water system drawings
 - i. It was discussed that the drawings may not be all inclusive or entirely correct; Skip can help identify known errors
 - h. CAD files of 2012 Water System Improvements
 - i. Arsenic treatment plant and new tank
 - i. Zoning Map – available on website
 - j. Appendices to the General Plan (link has been found on website)
 - k. Current water rate structure
 - l. Billing and Usage data over the past year

2. List of Local Knowledge Resources (People) that would be accessible for discussion:
 - a. Marx Powell – Chair, Bluff Water Works – mxpowell@frontiernet.net, 435-672-2248
 - b. Gene Stevenson – resident, Geologist – 435-672-2277
 - c. Mary Gillam – resident, Geologist, Town boundary mapping
 - d. Melvin Gains – longtime resident; institutional knowledge of water system
 - e. Anthony Lott – Fire authority representative (435-459-0704; sjclubluffire@gmail.com)
 - f. Skip Meier – institutional knowledge, system CAD files, system mapping
 - g. Brant Hart – Water Board, BLM employee

3. Project representatives for Bluff Town: Mayor Leppanen is the grant project manager; any of the council may be contacted in relation to the water study

4. Scope and Overview Discussion:
 - a. Elements of the study included in contract scope include:
 - i. Hydrogeological Assessment
 1. Scope includes

- a. Review and summary of publicly available studies, data, reports, etc.
 - b. Estimates of groundwater quantity and quality within Bluff Town boundaries/service area
 - c. Assessment of surface water availability, quantity and quality
 - d. Recommendations for locations for surface water collection and storage
 - 2. Brant expressed particular interest in the aquifer recharge and discharge rates of the aquifer.
 - ii. Water Rights Analysis
 - iii. Demographics
 - 1. Discussion of growth rate
 - a. General plan and Listening to Bluff do not specify an anticipated growth rate for Bluff Town
 - b. Discussed that water resources will be a major factor in ability to support growth; may limit growth
 - c. Town does not have a general planner; the Council and committee developed the general plan (and did a great job with it 😊)
 - d. Options include waiting to see the results of the hydrogeological assessment to develop a growth rate, or hiring a planner now to develop a growth rate.
 - i. Discussion was to wait and see what the hydrogeological assessment determines; then decide how to proceed with growth rate planning.
 - 2. It was discussed that the number of hotel beds has doubled in the past 3 years, and the number of rentals is increasing.
 - a. The new hotels include pools and hot tubs
 - iv. Water needs assessment
 - v. Capital Facilities Plan
 - vi. Summary Report
- b. There was discussion of water system mapping, and the benefits of a GIS map
 - i. Not currently in scope of contract but could be easily added if desired by Town.
- c. Discussion of current and future wastewater solution; septic, LUWDS, etc

- i. Not currently in scope, but we would be happy to assist if the Town has interest in looking into it further

5. Schedule

- a. End of January or first of February better for 50% review than middle of January due to scheduling and existing commitments

6. Data and Information to Obtain

- a. Mostly covered in the list of documents above
- b. It was discussed that the town does not currently chlorinate for disinfection purposes (chlorine added for arsenic removal)
- c. The 2012 water project added the arsenic removal plant and the third tank (200k gal).
 - i. Capacity of the Pureflow arsenic system to be confirmed with the as-built drawings
 - ii. The arsenic treatment plant is located near the Corral Well; the purpose is to reduce the water from the east wells enough to be able to blend with the Corral Well and the 194 Well for use in the system.
 - iii. The plant uses ferric chloride and chlorine to oxidize the Arsenic III to Arsenic 5 to facilitate removal. Sulfuric acid is added to then get rid of the sodium hydroxide.
- d. The Town boundary exhibit is similar to the exhibit provided prior to incorporation, with a modification to the land included in Section 36. A revised hard copy exhibit was provided, and Mary has sent the electronic files to the current boundary.

7. Discussion of Items of Local/Institutional Knowledge

- a. Oil and gas mining, and potential fracking on the federal and SITLA lease lands to the northeast of Bluff are of concern
- b. There are many private wells around Bluff
- c. Not many lawns; most outdoor watering in Town is gardens
- d. The native groundwater is salty; when you drop the pH, it becomes very corrosive. There have been problems with failing water heaters, etc, when the plant has discharged water without adequately bringing the pH back up.
- e. Population doubles in the summer
 - i. Mostly outdoors people that stay outdoors and get water in town
 - ii. Many fill up water at the K&C (convenience store), which has its own artesian well with a tap on it.
- f. BLM has its own well at Sand Island, which supports operations there.
- g. The Mission has its own well
 - i. The Town has considered an MOA in the past to sell water to the mission; not pursued recently

- ii. There is a settlement of Navajo just south of the mission that may get water from the Mission. The Nation also has their own well.
- h. There is an existing well in Section 16. This Section is private, and zoned A2. Possible location of future development

8. Open Discussion/Additional Considerations

- a. Jim discussed the existing farm that pulls water from the San Juan River for use in a secondary system and would be interested in knowing of the feasibility of doing something similar for the Town.
- b. Linda acknowledged that some parts of the existing system are very old; interested in looking at a lifecycle analysis of the existing system.
 - i. It was discussed that we can certainly provide some general recommendations and estimates based on type of material, which may provide some indication of the age of the pipe if not otherwise shown on drawings.
- c. Jim indicated that the line crossing Cottonwood Wash is exposed at times; some concern over the security and integrity of that pipe.
- d. The treatment plant was built in 2012; there was interest expressed in including a lifecycle analysis and recommendations for future replacement or upgrades to the plant as it ages.
- e. Blanding has already, or is planning to tap into the same aquifer; there is interest in the impact that this would have to Bluff Town.
- f. Jim noted that the developed Town area and proximity is the expected future service area.
- g. Guyman Ranch and Copper Cliffs are areas of potential growth.
- h. There are springs in Butter Wash

Site Tour Notes:

- The 194 Well is located below the tank
- Copper Cliffs development is located south of Town, and is already subdivided and zoned residential
 - o Need to look at the capacity of the existing system to serve this area
- Gravel pit south of Sand Island – may potentially be developed in the future
- Airport is on the very south end of Town limits
- The east end of the system suffers from low water pressure
- Skip mentioned that the wells that are high in arsenic are relatively shallow wells that don't punch through the confining layer. The two wells that have acceptable arsenic

concentrations (Corral Well, 194 Well) were drilled through the confining layer. The confining layer geology may be contributing to the high arsenic in the shallow wells.

- It was discussed that a point of future discussion will be related to the feasibility and increased efficiency that may be realized by drilling additional deeper wells rather than operating an arsenic treatment plant.
- There is a very large solar installment planned on SITLA land to the north of Bluff Town, just west of Hwy 191; concern may be the runoff generated, or the change in drainage courses and how that may affect Bluff Town (flooding).