

Town of Weaverville – Town Council Water Committee  
January 18, 2022  
Analysis and Recommendation on Water Treatment Plant Expansion

Outline:

- Background
- Q&A Session 1/11/22 with Trent Duncan and Dale Pennell
- Recommendation
- Attachments

Outline of background info for developing questions for Water Committee Meeting

(see attached proposals for additional content)

TOWN OF WEAVERVILLE

Weaverville Town Limits = Approximately 2,054 acres

Current Town population = 4,100

Population growth last 10 years = 46%; average last 30 years = 25%

Active water meters = 3,089 (verify based on last quarterly report); 211 are commercial/industrial

NC Water allocation per household = 400 Gallons per day

Average water use per meter = approximately 210 gallons (mixed residential and commercial) - verify if we can break this down between residential and commercial

Approximately 146 undeveloped acres within Town limits = approximately 850 additional units or nearly 180,000 gallons per day of additional demand based on 210 gallons a day average

Question: How do residential ADUs play into this future water use development?

WATER TREATMENT PLANT

Built in 1996 (25 years old) and was laid out to accommodate expansion.

NCDEQ approved raw water withdrawal = 4.0 MGD

Raw Water Intake Capacity from the Ivy River = 1.5 MGD

Current Raw Water pumped from the Ivy River = 727,344 Gallons per day (verify with latest numbers)

Approximately 90% of intake available as finish water

Current Daily Average versus WTP Capacity = 48%

Comprised of approximately 65 miles of 2-20 inch lines

7 reservoirs with 3.7 MG total capacity (Question: how much of this capacity can we currently use?)

4 pump stations

Proposed expansion = 1.5 MGD additional capacity

Weaverville Water Boundary = Approximately 13,500 acres

IVY RIVER

Creates boundary between Buncombe and Madison Counties

Ivy River Watershed drainage area at WTP intake consists of 112 square miles

Average daily flow = 34 MGD or approximately 7 MGD during extreme low flow events

Protected by NC legislature and classified as a WS-II water supply by NCDEQ

Considered environmentally sensitive, limited water source; protection, conservation,

### EXPANSION

Construction timeframe = 52 months, approximately 4.5 years.

Estimated construction costs = \$13.5M

### IMPROVEMENTS

Generators, Permanent Air Scour Unit, Holding Tanks, Sludge piping building upgrades, Sediment basin concrete repairs/coating

Aging infrastructure

Asheville Interconnect - upgrade lines from 8 inch to 12 inch and add booster pump station - Est. const. Costs = \$10.1M and purchase water from AVL

### REVENUE SOURCES

Capital Reserve Fund - Water Fund established June 2018

Grants - in progress

Other Grants or Programs we might qualify for?

Water Rate increases?

Low interest/long term USDA loans

Partner with Buncombe County?

### **August 2017 McGill Preliminary Report**

Growth projection 80% WTP capacity by 2021; this projection inaccurate.

WTP expansion and waterline upgrade estimated costs = \$7.5M

### **April 2018 Withers Ravenel Preliminary Report**

Weaverville-Mars Hill Interconnect - 200,000 Gallons per day emergency commitment.

Question: when was agreement made, has it ever been used, and can they get water from AVL or Woodfin?

Recommendations in report:

- Improve system loops and capacity
- Lowest cost = purchase water from Asheville and upgrade interconnect and lines = est. costs = \$5.18M
- Waterline expansion - Clarks Chapel/Ollie Weaver - 17,600 LF of new lines at \$2.53M
- USDA loan (40 years at 2.13%), \$2.46M with annual payment of \$296K
- Question: payoff timeframe? 9 years?

### **October 2021 Withers Ravenel Draft Report**

Proposed to rate increase of 5%/Year for 4 years

Population Growth of 25% over last 30 years

Grants recommended to offset costs

WTP expansion = in-stream aquatic habitat study and development of aggressive drought management plan.

Recommends WTP expansion at \$13.5M as alternate 2

Recommends purchase water from AVL with line upgrades and pump station at \$10.1M as alternate 5

Alternate 1 = no action (does not address critical system upgrades)

(verify) Alternate 2-3 = groundwater wells/combo - expensive and engineering considerations

### THOUGHTS

- Latest report addresses population growth, system concerns, alternative water sources, and includes cost analyses.
- WTP is in need of improvements now; generators, etc.
- Growth is here, need to plan for additional demand - NC water allocation versus real average is quite different.
- Have time to make a thorough informed decision.
- Low storage/1-1.5 days reserve if WTP offline.
- Question: Improvements/Upgrades, Interconnect, Expansion - all of these are important and can we assign priorities?

Q&A Session 1/11/22 with Trent Duncan and Dale Pennell

(see meeting transcript for discussion/answers to below)

Questions regarding WTP and possible future expansion:

1. The Weaverville Water Boundary is approximately 13,500 acres (scaled the map); see McGill Town of Weaverville Water System Map with zoning map overlay. Is this water system boundary map accurate and does it represent the current and future service area to be supplied by the Town and WTP? Much of this area is outside the current 2,054 acres within the Town limits.
2. Is there a water master plan or is one being developed?
3. Is there or can there be a water footprint map developed?
4. Would want to see overlay of actual customers, how many customers in town and how many out of town?
5. Can the unused portion of the NC DEQ approved raw water withdrawal of 4.0 MGP be used by other nearby municipalities, like Mars Hill?
6. What are the other options for north Buncombe County residents and/or Madison County residents to get water should the WTP not be expanded for future growth? What are the practical limitations of those?
7. Regarding the 7 reservoirs with 3.7 MG total storage capacity, what capacity can be filled currently? If only 1 to 1.5 days storage, this seems like a safety issue. How can current storage capacity be more fully utilized?
8. What is the average residential usage?
9. Is the current average usage of 210 gals per meter increasing or decreasing over time? Do we know how this usage compares to other municipalities?
10. What does the WTP need right now? Generators, scour unit, holding tanks, etc.
11. What portion of the WTP expansion includes these items? Maybe this is in the Withers Ravenel report.
12. Do we have an independent source to advise when/if current construction costs will decrease?
13. Currently the Town has a 40-year USDA loan of \$2.46M for the Clark's Chapel/Ollie Weaver waterline extension. What is the current annual payment and what is the expected payoff date?
14. What is the status on the original loan (25 years ago) to build the plant how much do we owe and when will it be paid off?
15. Regarding the June 2018 Capital Reserve Fund – Water Fund, how much is currently in the fund and how much can be used towards current debts, WTP improvements and expansion?
16. The current issues appear to be lack of generators and minimal storage.
17. Priorities appear to be the need for new equipment, repairs, increased storage, AVL interconnect upgrades, WTP expansion.
18. What is Withers financial stake in this?

## Recommendation of the Town Council Water Committee

Following several water expansion proposals from WithersRavenel, meetings with the Save the Ivy organization and a 1/11 meeting with Trent Duncan and Dale Pennell, the water committee is recommending the following:

1. Short term improvements to WTP within next six months pending grant monies status
  - a. Facility needs to be world-class, safe and efficient at all times
  - b. Trent's team requesting generators, chemical system, etc for several years
  - c. Funding can occur through capital reserves and ARP funds, and grant monies and other sources
  - d. Proposed motion at next Town Council meeting:
    - i. Provide Trent's team what he needs ASAP
    - ii. Investigate any other efficiencies to be gained in existing facility
    - iii. Apply to all available Federal, State, local/regional funding opportunities
  
2. Regional concept for WTP
  - a. 80% of the area served by WTP, and 30% of users are outside town borders
  - b. This disparity will grow, since current town area can only support about 850 more units/180,000 gals per day
  - c. New users from WTP will come from Buncombe County, Marshall, Mars Hill and Madison County
  - d. 100% funded by water users; Weaverville taxpayers do not fund this growth or benefit from it
  - a. WTP has been 100% managed by plant personnel and Town Council
  - b. Meanwhile, similar organizations like MSD (Sewer) and Asheville Airport are run by boards with regional stakeholders
  - c. Proposed Motion at next TC meeting:
    - i. Continue Al Root/Selena's efforts to have regional involvement in WTP - see the 2013 Ivy River Watershed Source Water Protection Plan
    - ii. Form a committee to investigate the feasibility of a regional water authority, with potential stakeholders from Buncombe County, Marshall, Mars Hill, Madison County and Friends of the Ivy, Madison and Buncombe County Soil & Water Conservation District, Land-of-Sky Regional Council, etc. - See NC DEQ Surface Water Protection Program for the Ivy River
  
3. WTP expansion – delay decision 6 – 9 months or longer as needed depending on results of #2
  - a. Town council and WTP staff need to be responsible stewards for Ivy River water resources AND support WTP users
  - b. Existing water capacity will support all potential growth within town borders and currently approved development projects for the foreseeable future; we don't have to act today, though we understand a plan to address future water needs should be implemented in the near future.

- c. Proposed cost of \$13 mil for expansion is almost double earlier quote of \$7mil; current uncertainty around when/if costs will trend downward
- d. Future development outside town borders will continue to happen with or without town's involvement
- e. Friends of Ivy group have raised important environmental, measurement and efficiency questions to be considered moving forward
- f. Proposed Motion at next TC meeting:
  - i. Delay expansion of current WTP indefinitely (anticipate 6-9 months or longer depending on results of #2), while we implement #1 and #2
  - ii. Consider any potential impacts on near term development requests outside town borders

## Attachments

Engineering studies and proposals

[Link to Transcript/meeting notes from 1/11/22](#)

[2013 Ivy River Watershed Source Water Protection Plan](#)

[NC DEQ Surface Water Protection Program for the Ivy River \(note p.7\)](#)