

WINNIPESAUKEE RIVER BASIN PROGRAM

ADVISORY BOARD MEETING MINUTES

December 19, 2019 – Belmont Corner Meeting House

Members Present: The meeting was called to order by Wes Anderson (Laconia), assistant chair, at 10:05 am. Sharon McMillin (NHDES), Rene Pelletier (NHDES), Johanna Ames (Tilton), Jeanne Beaudin (Belmont), Glen Brown (Northfield), Scott Dunn (Gilford), Justin Hanscom (Franklin), and Trish Stafford (Sanbornton) were present at that time. Guests included Wright-Pierce (W-P) representatives Jeff Pinnette and Mike Theriault. Phil Warren (Meredith) arrived shortly thereafter.

Minutes: Glen moved, seconded by Scott, to approve the November 17, 2019 meeting minutes as written. The motions passed.

Monthly Summary Report: Sharon provided the following updates. They were based on the *Monthly Summary Report* for November 2019.

- Flow Metering Services Study – There were no updates.
- Asset Management/Collection System Evaluations Initiative – There were no updates.
- WRBP Infrastructure Ownership/Responsibilities – There were no updates.
- Governance Work Plan – There were no updates.
- Rate Assessment Formula – W-P's Phase 1 draft report was presented at today's meeting.
- Replacement Fund (Reserve Account) Legislation – The pipeline lining repair funded from the replacement fund has been completed. The invoices should be out shortly.
- Commercial Discharge Permit (CDP) – Current priorities have been dental offices, food service establishments, and facilities with regulated waste disposal. Changes in use or expansion may trigger permitting or permit modifications. Any facilities suspected of using or discharging PFC-containing materials have been prioritized for permitting and inspections.

W-P Phase I Draft Report Presentation & Rate Assessment Formula Discussion: Jeff Pinnette handed out copies of a document entitled *Flow-Based Allocation Study – Task II Findings*, dated December 19, 2019. The document contained the presentation slides created from this study. Jeff continued with W-P's presentation.

W-P's review consisted of two parts. The first part assessed the accuracy of the flow metering installations. There were 18 permanent WRBP flow metering sites, 11 permanent EST flow metering sites, and 3 temporary EST flow metering sites. W-P's evaluation indicated that almost all of the installations were at an adequate level of accuracy by industry standards; and, that the meter installations themselves were not the problem.

The second part of W-P's review assessed the calculation methodology. The industry standard for the accuracy of a flow meter is approximately 3 to 5 percent. However, if measuring the flow contributions between members by using the difference of two or more flow meters and including smaller flow contributions, it creates cumulative errors and an accuracy problem even though the flow meters themselves were accurate. The core issue here has been the flow of the downstream portion of the

interceptor being high relative to the southern member communities' flows needing to be measured. W-P was tasked with determining options to resolve this issue; which W-P did by conducting the flow-based allocation study.

Task 1 under the study was a data collection task. Task 2 assessed the feasibility and cost of sub-basin flow monitoring for the portions of Belmont, Northfield, Tilton, and Franklin that have the accuracy problems. Task 3 was included in the scope of work based upon the assumption that further sub-basin flow monitoring might not be feasible and an alternative "hybrid" approach might be needed.

In some areas, the study found that further sub-basin flow monitoring did not make a lot of sense and would be financially costly. Data collection for Task 1 was successful for GIS mapping of sewer systems in the member communities. Data collection for Task 2 was less successful in assembling data for possibly continuing on to Task 3.

A chart entitled *Flow Metering Results 2015-2018* on page 6 of W-P's handout indicated that 10.3% of the four southern member communities had "unaccounted for flows" (i.e. there were portions of those communities where the metering calculations created too high an error for billing accuracy of that cumulative 10.3% of total collection system flows). The goal of the study was to apportion the unaccounted for flows between Belmont, Northfield, Tilton, and Franklin because only partial, accurate metering data was available for these member communities. The unaccounted for flow represents approximately 550,000 GPD of flow. W-P developed GIS maps depicting areas (sub-basins) with accuracy problems for the study; which were included as pages 4 through 8 of the handout.

The problem area for Belmont was the BT1 sub-basin; for Tilton, the TN1 sub-basin; for Northfield, the NF1 sub-basin; and for Franklin, the STP1 sub-basin. Approximately 21 additional meters would be required to measure 70 to 80 percent of the total land area for each sub-basin. However, W-P recognized that land area does not accurately represent sewered area in those communities. One year of flow metering would cost approximately \$255K and the total cost would be approximately \$262K including location recognition and installation costs. Likely, several metering locations would not be feasible.

In W-P's opinion, while flow metering was usually the preferable option, additional flow metering was not feasible or financially viable. Therefore, W-P recommended moving forward with Task 3 in order to determine a repeatable hybrid methodology for flow contribution allocation in these four member communities; noting that this option had a relatively low cost compared to the additional flow metering. W-P recognized that selective additional flow metering may still be desirable.

In order to determine a repeatable hybrid calculation methodology, W-P further recommended estimating flows for the four sub-basins in question and then using those flows to do apportioning. Estimating could rely on a combination of factors including water use and I/I; the latter may be higher than actual water use in some cases due to the condition of the sewer piping. In order to move forward with Task 3, it would be necessary for the member communities to assemble data in GIS or by sub-basin.

Jeff asked if there were any questions. Sharon asked if the 3 to 5 percent error per flow meter indicated was regardless of whether a meter was located on a lateral. Jeff affirmed that area velocity meter had significant inherent error but that he could not quantify such percent error in each

proposed location. Sharon acknowledged that Franklin and Belmont have recently completed I/I studies; and, that Northfield recently replaced all of its sewer pipes. She asked what W-P's "gut feeling" was with regard to the percent error it might expect for I/I. For instance, if a member community has new PVC pipe, would this be factored in. Mike affirmed that W-P looked at the type of pipes, their diameter, their material types and condition or age and factored them into their estimates when conducting I/I studies.

Sharon asked if W-P expected the range of error for a meter used in an I/I study to be roughly equivalent to those used elsewhere in a sub-basin for flow-metering based on previous experience, noting that W-P had estimated an approximate 30 percent in the problem sub-basins even with the additional flow meters. Jeff noted that one of the benefits in this instance was the availability of a flow metering estimate for the remaining flows, which would allow W-P to perform a sensitivity analysis of the I/I allowance. Theoretically, it could be calibrated into the actual flow rate as one means of finalizing apportionment, and to ensure that the I/I numbers made sense in that context. Admittedly, it was a difficult question to answer with regard to whether the error in I/I estimates would compare to the error in any actual flow metering.

Phil asked how I/I was addressed in the interceptors. Jeff noted that this was outside of W-P's scope of work. Sharon noted that there were flow meters for the northern communities, and that the data there was accurate for billing purposes and included those communities' respective I/I. Phil asked if I/I was part of the 10.3%. Sharon explained that the four southern communities had partial metered data and the 10.3% represented the remaining portions, including any I/I from those areas.

Wes suggested the Advisory Board look at the proposals from W-P and the WRBP and determine which direction to choose for moving forward with Task 3. Sharon handed out copies of a document entitled *Proposed Hybrid Model for Determining Flow Contribution from Unmetered Locations in Belmont, Franklin, Tilton, & Northfield*. W-P did not hand out a separate proposal for Task 3.

Sharon explained that Glen had requested Northfield's 2015 through 2019 water billing totals from the Tilton-Northfield Aqueduct Water system. That information would be used to create a 4-year rolling average similar to that already calculated for the remaining members. Save for three properties, all Northfield's sewer users are on the water system and, therefore, has virtually 100 percent water use data. Franklin also committed to providing its water billing inventories. All but one sewer user in the sub-basin is on City water. Later on, I/I factors can be taken into account; however, "water in equals water out" was the best place to start to estimate sewer flow contributions from the remaining portions of these two members.

Property information can be entered into Excel spreadsheets by type (ex. a subdivision, single residence, trailer park, etc.) and exceptions reports can be generated on an annual basis to reflect type and use changes. Flow data for the year can also be entered. These spreadsheets will become a repeatable method to capture estimated flows from just the areas in questions.

More work will be required to enter Belmont and Tilton data into the spreadsheets. For Belmont, it will be essential to identify sewer users that do not flow through the Belmont pump station. Property records for non-Belmont pump station users will be used in lieu of water flow data when such data is not available. Standard sewer units will be determined by using property records and TR-16, M&E 5th edition, and Env-Wq 704.03 design standards.

For Tilton, it will be essential to identify sewer users that do not flow through the TS-1, TF-1, and Tilton Main Street flow meters. W-P determined that these meters are accurate for billing purposes. The first steps will be to obtain water use data for Tilton sewer customers billed by the Tilton-Northfield Aqueduct, because 100 percent water use assumes 100 percent sewer volume. For those properties not on the water system, standard sewer units will be determined by using property records and TR-16, M&E 5th edition, and Env-Wq 704.03 design standards. This was the best way to complete the hybrid methodology. WRBP staff and EST's flow metering crew can provide a "reality check" (site visit) for any locations in Belmont and Tilton that may require one.

Advisory Board members all agreed that no one approved spending upwards of \$262K on additional flow metering. Wes acknowledged the importance of gathering available water consumption data. Scott acknowledged that W-P staff or WRBP staff could do the work; however, that WRBP would not charge extra for the work and W-P would. He asked what the turnaround, completion time would be for each.

Sharon reiterated that she and the WRBP staff had already started the work for Northfield and Franklin, and that WRBP staff would need to obtain water user data and property information from Belmont and Tilton before being able to complete a hybrid calculation methodology for those two member communities. She noted that W-P would also need the same data if they did the work.

Jeanne expressed concern, not because she felt it would be difficult to obtain water user data for Belmont, as much as the fact that it would be time consuming for her limited staff. She also expressed concern about Belmont's Planning Board in that much of its information were not digitized. Sorting through the properties, if sorting was required, would require a large amount of manual labor, especially where campgrounds and the like were concerned. Belmont's online property database was not overly user-friendly, either.

Sharon reiterated that all she really needed from Belmont initially was billing lists identifying sewer users that did not go through the Belmont pump station. With that, online property database data, and DES' public water user data, WRBP staff could add Belmont's data into the hybrid calculation methodology spreadsheets. WRBP staff or EST could do a site visit for any properties in Belmont that may require a "reality check." Jeanne reiterated that it would take at least a month to clear time in her calendar to schedule working on this type of project.

Johanna acknowledged that this would be a hard sell for Tilton when there was such a large margin for error. Rene asked if it was not true that the hybrid calculation methodology will achieve the smallest margin of error outside of spending upward of \$262K on additional flow metering, which no one wanted to do. He also asked if it was not true that the additional flow metering would still have a 20 to 30 percent margin of error. Scott acknowledged that the current allocations were based on a methodology that no one could validate. In his opinion this was problematic, and a new methodology would be a significant improvement.

Johanna expressed concern because she did not have any staff members to assist her. Helping W-P out with their study this past summer and fall consumed approximately two weeks of her time. Sharon asked her if she had a billing inventory list of sewer users by address. Johanna affirmed that she did, but that interpreting it would be difficult. She also affirmed that she had already provided W-P with a copy of the list. Sharon asked Johanna if she could forward a copy of the list to the WRBP staff.

Wes acknowledged that all of the Advisory Board members present had agreed to no further flow metering for these four areas. He asked Belmont and Tilton to provide their billing lists to the WRBP as soon as they could manage doing so.

Authority Workgroup Update: Go decisions were made by Gilford, Sanbornton, Northfield, Belmont, Meredith, Laconia, and Bay District. (Bay District had provided its go decision to Wes by email prior to the meeting.) A no-go decision was made by Tilton and, initially, by Franklin. Sharon questioned if the go-decision vote today was authorizing the \$300-\$500K previously estimated to do the roadmap's Step 3 work. Wes indicated that the majority vote today was only to move forward with getting a quote on to moving forward with Step 3 of the roadmap; not to actually proceed with the work. That would require another vote. Franklin then indicated that getting this quote was acceptable to them. Sharon noted that DAS was not present at the meeting; although, DAS' vote would not change the majority vote.

Replacement Fund Legislation Update: Wes announced he would be sending something out next week with generic options and asked the other Advisory Board members to provide him with feedback in order to help facilitate a more productive discussion at next month's meeting.

Other Business: The meeting was adjourned at 11:30 am. The next meeting will be held at the Corner Meeting House in Belmont on Thursday, January 16, 2019 at 10:00 am. The minutes were prepared by Pro-Temp Staffing.