



Water and Sewer Advisory Committee March 10, 2022 Meeting Minutes – DRAFT

The Water and Sewer Advisory Committee held its regular monthly meeting at BCTV, 10 Meetinghouse Road, Bedford, NH on Thursday, March 10, 2022.

Attendees: Mike Sills (Resident), Richard Moore (resident), William Carter (Town Councilor – alternate), Jerome Spooner (Environmental Coordinator). Danielle Evansic (resident), Becky Hebert (Planning Director) arrived later in the meeting.

Absent: Bill Duschatko (Town Council), Scott Bourcier (resident).

1. **Call to Order and Roll Call**

The meeting was called to order at 7:30am by acting chairperson Environmental Coordinator Jerome Spooner.

2. **Approval of Minutes – March 15, 2018 Meeting**

Mr. Spooner stated that since we were still waiting for a few members to arrive, we would move onto agenda item #3, and come back to the approval of the minutes later in the meeting.

3. **Sewer Enterprise Fund Rate Study**

Mr. Spooner introduced Michael Trainque and John Jackman of Hoyle Tanner, and Associates.

Mr. Jackman explained that the sewer rate study project was started last fall. The last sewer rate study conducted was over 15 years ago. The last increase to sewer rates was 10 years ago. He further explained that they have developed an excel spreadsheet to analyze the sewer rates. They have also created a SOP or user manual that explains the methodology used on each of the worksheets within the spreadsheet.

Mr. Jackman continued to explain that the spreadsheet has been discussed and reviewed with the Finance Department. Mr. Jackman explained that the spreadsheet looked at the Operations & Maintenance (O & M) costs of the system.

Mr. Sills asked if residential customers are charged by flow. Mr. Spooner responded that they are charged by flow or a flat rate.

Mr. Jackman stated that Manchester has a 2% increase in O & M. It may be greater, due to inflation. The Town of Merrimack might also increase the rate. Any increase should be charged to users to cover the costs of the program.

Mr. Sills asked if Merrimack bills the Town, and then the Town bills the users. Mr. Spooner and Mr. Jackman responded "yes".

Mr. Jackman explains that there are three different categories of customers: residential, commercial, and Greenfield Farms. If the Town of Merrimack increased their rates, it would affect the customers in Greenfield Farms.

Mr. Jackman reviewed the current sewer rates: \$3.22 per 100 cubic feet for residential, \$7.47 per 100 cubic feet for commercial, and \$96.47 per quarter per unit in Greenfield Farms.

Mr. Moore asked where the sewer is treated in Merrimack. Mr. Spooner responded that it goes to the Pierson Pump Station then to the Merrimack Wastewater Treatment Plant.

Mr. Jackman continues to discuss Manchester rates. It is a complex formula with many variables. He took the historical average for the projections in the spreadsheet. Mr. Jackson then discussed debt payments, current debts and the City of Manchester Capital Improvement Plan, which is 5 years.

Mr. Sills explained most of this was built under 1960-1972 money, so it was 75-20 funded. He then asked if these last ones have been nothing funded, there is no state or federal share when they do these projects.

Mr. Jackman responded that there is another line to address that. We do not know if there will be principal forgiveness or grant funding and a lot of times it comes in in the year you make the payment. Payment is made and then they give you money back as principal forgiveness. He does not take that into consideration in debt payments because that would be considered revenue. It is addressed in the revenue section.

Mr. Jackman continues to discuss what the Town's total expenses are for the wastewater division. He explains that Bedford does not take out loans themselves they are done by Manchester or Merrimack, so if in fact if any of these loans do have any principal forgiveness in the future, the Finance Department will add the numbers in to reflect that.

Mr. Sills asked if the principal forgiveness would be added into the Grant Section.

Mr. Jackman responds "yes" and explains the category can be renamed but there are a lot of different ways money can come in so to keep it simple it is currently under State Aid Grant but it can be expanded.

Mr. Jackman goes on to explain that currently the town annually bills for 106,244 units for residential, 147,800 units for Commercial, and 255 units for Greenfield Farms. Greenfield Farms cannot expand so it will be a fixed number. It is important to know how much wastewater we are selling to know how much revenue we are bringing in.

Mr. Jackman then explains what the Town currently charges for a fee. The average resident pays \$635.88 per year and average commercial pays \$4,738.48 per year.

Ms. Evansic asks why there is no projected growth for the units over the next 6 years.

Mr. Jackman explained that the number can be changed at the very beginning if you know that the unit is going to increase. Two things occur when you do that, when you put in an increase for residential or commercial it will also generate a connection fee and then the connection fee goes into the capitol reserve account.

Ms. Evansic asked if the numbers take in to account projects that are pending construction.

Mr. Jackman explained that is what the Planning Department is for. They will know the future projects and when they will occur. We can put those numbers into the spreadsheet and predict what the revenue will be.

Ms. Hebert asks if the 106,244 units for residential, and 147,800 units for Commercials include projects where building permits have been issued and that construction is ongoing.

Mr. Spooner responded with “no” because we cannot do the cost if we do not know what the flow is. These numbers are only based on what the town currently takes in and what we bill.

Ms. Hebert explains that the flow is usually calculated as part of the planning process. Then proceeds to ask about Bow Lane and projects that are ongoing. She asked if the model being shown takes those larger projects those into account.

Mr. Spooner explains that those projects are not calculated into it because it only shows what we currently take in for flow.

Mr. Jackman explains that those projects can be added right into the spreadsheet.

Mr. Sills asked if these are only sewer projects and not septic projects.

Mr. Spooner and Ms. Hebert responded with “yes”.

Mr. Spooner explains that for Bow Lane, they must figure out if that will be a residential or commercial charge.

Ms. Hebert responds “how are other apartments handled in Town”, and she was assumed multifamily would be included in commercial rates. Ms. Hebert then asked if the multifamily projects are included in the commercial rate on the spreadsheet.

Mr. Jackman explains that he did not break it out, he was just utilizing what we receive based on billing rates.

Mr. Jackman continues to explain that the town collects \$342,106 in revenue from residential, \$1,104,066 for commercial, and \$98,393 from Greenfield Farms. The Town’s net revenue is \$47,237.

Mr. Sills asked if the net revenue goes negative if that would increase the taxes for all residents.

Mr. Spooner responded with “no” and explained that only the users will be affected by that and fees would increase for them.

Mr. Jackman continues and explains that currently the revenue account and Capital Reserve account are not funded properly. All connection fees should be placed in the Capital Reserve account to pay for capital projects, i.e. rehabbing old sewer, or capital projects that can be funded and paid for in a year. A proper balance for the revenue should be a minimum of 3 months or a safe number between 9 months or a year.

Mr. Jackman explains that if rates don’t increase the Town’s revenue will go negative in a few years because our expenses will be greater than what the income is to cover those expenses. Mr. Jackman shows another option where \$1,000,000 stays in the revenue account and the rest of the money is moved to the Capital Reserve account for a balance of \$4,795,167. This is a good amount depending on how the Town wants to fund projects. Do we want to fund projects by utilizing capital funds or borrowing money and pay as you go? This is a good capital reserve because it allows the town to do a lot of preventive maintenance and small capital projects without having to borrow money, but again the net revenue would still become negative in a couple of years.

Mr. Jackman shows a third model based on a 4% increase to rates starting in 2023 for residential, commercials, and greenfield farms. He recommends greenfield goes higher than 4% but he just wanted to demonstrate how the net revenue would sustain with the increase. Based on his chart the net revenue would stay positive for a few years, then go back to negative, and then back to positive until 2030. Mr. Jackman explains that having a steady annual increase can flatten out and/or meet expenses as the town goes forward.

Mr. Jackman explains that this is a tool for the town to start generating a visual way of communicating what is needed for operating the wastewater system and tries to take into consideration everything that it impacts.

Mr. Jackman closed it out by asking if anyone has any questions.

Mr. Sills explained that the 5% is the least we can do to keep track of a system this big and based on the age of it. It is closed to the end of life.

Mr. Jackman responded by saying that it was big discussion he had with the Town. The age of the system and knowing that some of the coating has worn off. He is looking at what kind of capital projects are coming up and what the Town is going to work on to incorporate those projects into the rate study.

Mr. Spooner explains his plan is to start improvements at the siphon station and then move his way out past that.

Mr. Sills asked if coating the pipes would disturbed traffic.

Mr. Spooner responded “no”.

Mr. Jackman asked if anyone has anymore questions.

Mr. Spooner said that there will be another meeting to discuss what the committee wants to do moving forward.

Mr. Sills asked if this will still be structured to make sure resident who aren't on sewer won't have to pay anything for it.

Mr. Spooner responded “yes”. Mr. Spooner also explained the town bought extra flow to Manchester. First, we bought half a million then another million.

Mr. Sills asked what is our contract with Manchester right now.

Mr. Spooner responded 1.5 million and we average with .5 million currently.

4. **Sewer Inventory GIS Update – Asset Manager (see attached PDF)**

Mr. Spooner introduced the GIS Coordinator, Brandon Boisvert, to give his presentation on the current wastewater system.

Mr. Carter explained he had to leave.

Mr. Boisvert began by giving a background to ArcGIS, definitions, and then asked if anyone had questions.

Mr. Boisvert explained he met with Mr. Spooner in 2021 to see how they can improve the inventory for the sewer system. Mr. Boisvert suggested to move everything to ArcGIS online platform at a low cost. The license for Mr. Spooner is a couple hundred dollars a year.

Mr. Boisvert explains that he and Mr. Spooner had to develop a comprehensive geodatabase structure from scratch. Mr. Spooner was previously using Google Maps which is not as powerful or easy to work with. Mr. Boisvert and Jerome incorporated all the information they had and realized where they were short on things. They both modified it until they were satisfied with the design. Mr. Boisvert explains they met with Mr. Jackman to review the design with him as well.

Mr. Boisvert continued to explain that they began by transferring all the data they currently had, but it still was not complete or accurate. Mr. Spooner began collecting data in the field and verified the data that was transferred into the system. They also used As-Built plans to find buried infrastructure and locate them with the tablet.

Mr. Boisvert explains that the wanted Mr. Spooner to be able to edit/add information on his computer at his desk and not just on the tablet. They created a data editing application, which is also on the ArcGIS platform to do data editing in the office.

Mr. Sills asked if this is accessible on his or anyone's computer.

Mr. Boisvert responded that this application is private and he has the ability to decide who has access to it. Currently only he and Mr. Spooner have access.

Mr. Boisvert then shows the map with all the data on it and explains where you can see manholes, sewer connections, and pipes with the structures data.

Ms. Evansic asked how much of this information is field verified.

Mr. Spooner responded "most of it". He explained that they have walked everything and it took them 3 years to camera all the main interceptors and laterals off it. Most of it has been verified from 2015 to 2017. They took all that information and added it into the system as well. If there was something they were not sure of they went out into the field with the site plan to verify it.

Mr. Sills asked if they looked for leakage when they put the camera down the lines.

Mr. Spooner responded with "yes".

Mr. Boisvert continued. He explained all the features they have on the map. They added everything as big as a pipe to as small as a pressure gage. It is important to know what all of our assets are.

Mr. Spooner explained they put a cost to everything as it relates to the sewer study so we know how much it will cost to fix and replace them.

Mr. Boisvert explained that this also helps with the planning process to know what needs to be updated.

Mr. Moore asked how they get the plans into the system.

Mr. Spooner explained that it is called georeferencing. The plan is scanned and overlaid into the system and then verified in the field.

Mr. Boisvert explained most of the system was roughly mapped out already. Mr. Spooner will send him the plan for new projects and he will georeference it. Mr. Boisvert explains that Mr. Spooner will go out in the field with the plan and map it on ArcGIS and then go back to the office and add in the feature information. The information supplied on the As-Built Plans are very important to maintain the inventory correctly.

Mr. Boisvert continues to explain how he created a dashboard to analyze all the data on the system. The dashboard is updated in real time as more data is added into the system. The dashboard can be shared with anyone because the data cannot be edited.

Ms. Evansic asked if there is a way to track maintenance or repairs to individual locations or stretches of pipe.

Mr. Boisvert and Mr. Spooner responded “we have not done that yet”. Mr. Boisvert explains that it can be done and it will be the next step in the process.

Mr. Boisvert continues to demonstrate how the dashboard works and explains that what is shown is only a view of the data, nothing can be edited. The dashboard is not finalized and can be changed to show different features. The data that Mr. Spooner is adding can be used to understand the system in the form of a pie chart or bar graph. The chart is linked to the map, if the screen is zoomed in the chart will only pull from the data shown. The dashboard can be changed to display anything we want and it is a great way to see the whole picture.

Mr. Spooner explains that having all this information means we can put a cost to it all and see how much it is costing the Town.

Mr. Boisvert explains we can calculate the cost of the features right from the dashboard and see the value of the system.

Mr. Moore asked if there is a way to add in the age of the features.

Mr. Boisvert explains that it would be a good idea to see what percentage of the system is over or under a certain age. There are a lot of different ways to view all the data.

Mr. Boisvert gives an overview of the sewer system one more time and asked if anyone has any questions.

Ms. Evansic said that she thinks it would be useful to the Planning Department if there was a way to show capacity. To visualize what we currently use for flow compared to the full potential.

Mr. Spooner explains that there could be a section on the dashboard that is linked to his excel spreadsheet that has the monthly flow rates from his bills from Manchester and Merrimack.

Ms. Hebert said that it is all great information and helpful for all departments to see everything in one place.

Mr. Boisvert explains the data is also already shared publicly on the Town website and closes out his presentation.

5. **Motion to Close**

Mr. Spooner explains this is the last item on the agenda and asks for a motion to close out the Water and Sewer Advisory Meeting.

Ms. Herbert moves to adjourn at 8:54am. Mr. Moore and Ms. Evansic second that.

SEWER INVENTORY

How We Are Using ArcGIS Online to Map and Inventory our Sewer System

Definitions

ArcGIS Online: A web based complete mapping and analysis solution.

Geodatabase: A database designed to store, query, and manipulate geographic information and spatial data.

Field Maps: A mobile solution that allows you to capture data, perform inspections, take notes, and share information with the office.

Data Design

- Worked with Jerome Spooner to develop a comprehensive geodatabase structure
- Designed, tested and modified until fully satisfied
- Reviewed with John Jackman

Data Collection and Field Access to Data

- Transferred existing data into the geodatabase
- Utilized Field Maps application to perform new data collection and to field verify existing data
- Field Maps also allows for quickly locating assets in the field

Data Editing

- Developed a web-based data editing application for easy data editing in the office

<https://bedfordnh.maps.arcgis.com/apps/webappviewer/index.html?id=d7774f1f748646a5a2aaf59b571e20e4>

Data Analysis

- Developed an accessible Dashboard to provide insights on the sewer system
- Updates in real time as data is collected and edited
- Plans to further develop this over time to provide additional insights

<https://bedfordnh.maps.arcgis.com/apps/dashboards/5ff5e9b8832a4be9bb182283fbb21e8f>

Summary

- Building a comprehensive inventory of the sewer system, with accurate locations and detailed descriptions of the system's features
- Extracting insights from data and gaining a better understanding of our system everyday
- Potential to do much more using the ArcGIS Online Platform