

**Hooksett Sewer Commission  
Meeting Minutes  
February 4, 2020**

This meeting was called to order at 12:00pm. Present were Chairman Sidney Baines, Commissioner Frank Kotowski, Commissioner Richard Bairam, Superintendent Bruce Kudrick, Guy Beloin and Kim Langlois.

**Approve and Sign Manifest**

**Read Correspondence**

**Approve Minutes:** Commissioner Richard Bairam made motion to approve the meeting minutes of January 21, 2020. Commissioner Frank Kotowski seconded. All in favor, the motion was carried unanimously.

**Financial Report:** Guy came in to give a brief overview of the Sewer Commission accounts

**Scheduled Appointments:** 12:00pm John Jackman and NHDES representatives **RE: Asset Management**  
John Jackman and Superintendent Bruce Kudrick gave a brief presentation on where the Hooksett Sewer Commission is at with the Asset Management Program. (The printed form of the presentation is attached.)

12:30pm Matt Peterson from Keach Nordstrom **RE: Granite Heights Phase II**  
Phase II of Granite Heights will include 96 single family (2-3 bedroom) homes. The developer would like to start in the spring of this year. Matt quickly went over the previously presented plans for Granite Heights. Bruce let Matt know about the \$595,000.00 system development fee that would be due at the time of sewer installation. Matt wanted to go back and talk to the developer regarding the information he had gathered and asked to be put on the agenda for the next commissioners meeting.

**Superintendents Report:**

**Violations:** There have been no violations at the plant

**Town of Bow:** Nicholas Sceggell from Dubois and King along with a Town of Bow representative will be coming to the next Commissioner's Meeting on February 18, 2020.

**Presentation:** Underwood Engineering and Superintendent Kudrick are going to be giving a presentation to the operators at the plant in Franklin, NH on the spillage that happened at the Hooksett Sewer plant back in 2011.

Solar Energy will be down at the plant on Thursday this week (02-06-20) to walk the property.

Bruce passed out a rough draft of the changes to be made to the *list of items the Board approves providing and or reimbursing*. (See attached)

**Old Business:** None

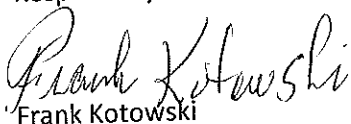
**New Business:** The next sewer commission meeting is February 18, 2020  
Applications for the Superintendent's position will be reviewed at the next commissioners meeting.

**Non- Public Session:** The sewer commission did not go into non-public session.

**Public Input:** Hooksett Resident William Louis from 1 Lennox Street came in to discuss questions he had regarding his deduct credits with the sewer commission. William also had questions regarding how the deduct meters are read and how the credits are given. The Sewer Commission was able to answer Mr. Louis' questions to better help him understand his bill.

**Adjournment:** Commissioner Frank Kotowski made motion to adjourn at 1:53pm. Commissioner Richard Bairam seconded. All in favor, the motion was carried unanimously.

Respectfully Submitted,

  
Frank Kotowski

Clerk

## Outline for Hooksett Phase 1 Asset Management Program

Attachment 1

### Hooksett Wastewater Collection System Asset Management Program

With this asset management program, the Hooksett Wastewater Treatment Facility (HWWTF) is taking the first step on a journey to optimize their investments in sewer infrastructure at sustainable levels and provide its ratepayers the quality of service they expect while meeting state and federal regulatory obligations. To develop this program, the HWWTF commissioned a team of asset management professionals from Hoyle, Tanner & Associates, Inc. (Hoyle, Tanner) to lead its staff through a series of interactive asset management workshops and trainings where essential insight and information contributed to the creation of this program.

All asset classes maintained by the HWWTF are being assessed in a two-phase approach. The first phase is covered in this program.

#### **Phase 1 – Horizontal Assets**

- Wastewater Collection System
- Wastewater Pumping Stations

#### **Phase 2 – Vertical Assets**

- Wastewater Treatment Plants
- Wastewater Pumping Stations Continued

HOOKSETT  
SEWER DEPARTMENT  
DATE RECEIVED 2-18-20

INITIAL	COMMENTS
B	
9/25	

The HWWTF should consider the asset management program developed herein as a continuous, never-ending, effort. As the tasks in this program are completed, the HWWTF will update asset evaluations and identify new tasks and goals to be completed.

### HWWTF's Level of (Asset Management) Maturity

In the presentation to the Commissioner we would like to take the before and after approach. Because the program is changing all the time, it will be good to have a snapshot of the journey.

In the presentation it will be broken out into different sections to help show progress in many areas.

### Elements of This Program

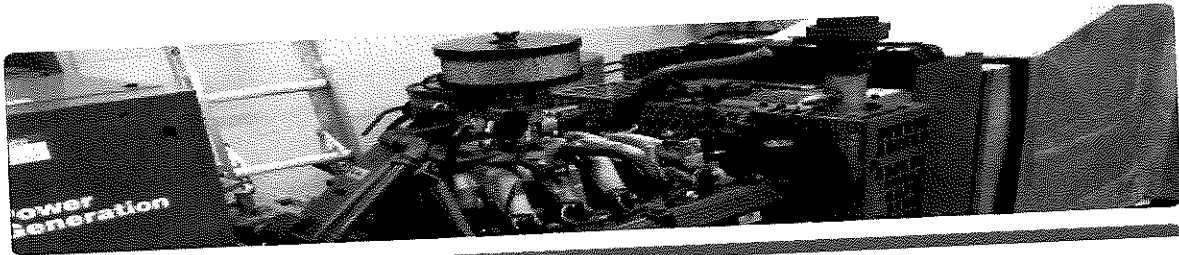
The following are the core tasks that we would like to cover in the presentation: Pump Station Record Keeping and Assessment, Mapping, Centralization of Data, Work Order, Standard Operating Procedures, and Financial Projections. Because many of these tasks are built upon each other, it is difficult to break them out.

### Pump Stations and Assessment

Hooksett Sewer is currently building custom digital forms to collect information and meet the needs of the HWWTF. The form developed for the pump station is shown below in Figure 1. This form may look complex, but it is built so the end user sees a very simple form out in the field. You can see in Figure 2 how the form collects and stores all the data that was gathered in the digital form. The Asset Management program is developing using forms, dashboards, folders, and reports on Google Drive. The focus of this part of the program has been to update and organize pump station data. To date, forms have been created that easily allow operators to log data from all pump stations. The pump station data

## Outline for Hooksett Phase 1 Asset Management Program

includes daily checklists, pump hours, flow readings, generator maintenance, and operator notes. The data is logged in real time and is immediately ready for review.



### Pump Station Form

\* Required

#### Operators \*

- ☐ Bruce
- ☐ Brian
- ☐ Scott
- ☐ John
- ☐ Leo
- ☐ Mike

Choose

Merrimack St PS

Main St PS

Martins Ferry PS

Golden Gate PS

Next

Kmart PS

ogle Forms.

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Figure 1: Pump Station Form

# Outline for Hooksett Phase 1 Asset Management Program

Merrimack Street					select A, B, C, M, N, O, P, Q, R, V, W, X WHERE C = Merrimack St PS					
Timestamp	Pump 1: 24 Hour Runtime	Pump 2: 24 Hour Runtime	24 Hour Flow	Weekly Generator Runtime	Timestamp	Operators	Pump 1 Hours	Pump 2 Hours	Flow Reading	Merrimack St Checklist
11/19/2019 7:38:48	3.1	0.0	93848	0.85	11/19/2019 7:38:48	John, Leo	5364.5	5541.3	27440707	Visuals of pumps and seals (Daily), Compressor PSI, Blow out tubes (Tuesday), Pump Down (Tuesday, Th
11/20/2019 7:32:11	2.8	0.0	90325	#DIV/0!	11/20/2019 7:32:11	Brian, Leo	5397.3	5541.3	27457662	Visuals of pumps and seals (Daily)
11/21/2019 8:00:11	2.8	0.0	90997	#DIV/0!	11/21/2019 8:00:11	John, Mike	5370.2	5541.3	27495853	Visuals of pumps and seals (Daily), Compressor PSI
11/22/2019 7:44:08	2.7	0.0	88738	#DIV/0!	11/22/2019 7:44:08	John, Mike	5372.9	5541.3	27475351	Visuals of pumps and seals (Daily), Compressor PSI
11/23/2019 8:41:24	2.8	0.0	-228653926	#DIV/0!	11/23/2019 8:41:24	John	5378.7	5541.3	27480336	Visuals of pumps and seals (Daily), Compressor PSI
11/24/2019 7:37:32	3.5	0.0	930748775	#DIV/0!	11/24/2019 7:37:32	John	5376.0	5541.3	27494133	Visuals of pumps and seals (Daily), Compressor PSI
11/25/2019 8:40:30	4.7	0.0	147828	#DIV/0!	11/25/2019 8:40:30	Leo, Mike	5382.8	5541.3	27500501	Visuals of pumps and seals (Daily), Compressor PSI
11/26/2019 7:49:48	3.4	0.0	108588	0.80	11/26/2019 7:49:48	Brian, Mike	5397.1	5541.3	27519745	Visuals of pumps and seals (Daily)
11/27/2019 8:09:14	3.2	0.0	102753	#DIV/0!	11/27/2019 8:09:14	John, Mike	5360.3	5541.3	27530160	Visuals of pumps and seals (Daily), Compressor PSI
11/28/2019 6:39:32	4.0	0.0	123531	#DIV/0!	11/28/2019 6:39:32	Leo	5393.9	5541.3	27541229	Visuals of pumps and seals (Daily), Compressor PSI
11/29/2019 7:07:00	3.7	0.0	116488	#DIV/0!	11/29/2019 7:07:00	Bruce	5397.8	5541.3	27552583	Compressor PSI (2-3 PSI)
11/30/2019 8:40:09	3.9	0.0	122382	#DIV/0!	11/30/2019 8:40:09	Mike	5401.6	5541.3	27555504	Visuals of pumps and seals (Daily), Compressor PSI
12/1/2019 8:02:55	3.9	0.0	123817	#DIV/0!	12/1/2019 8:02:55	Mike	5405.4	5541.3	27577836	Visuals of pumps and seals (Daily), Compressor PSI
12/2/2019 7:54:26	3.9	0.0	124028	#DIV/0!	12/2/2019 7:54:26	Brian, Mike	5409.6	5541.3	27591024	Visuals of pumps and seals (Daily), Blow out tubes (T
12/3/2019 8:07:33	3.4	0.0	105924	#DIV/0!	12/3/2019 8:07:33	Brian, John	5413	5541.3	27601753	Pump Down (Tuesday, Thursday), Sump Pumps (Me
12/4/2019 8:56:20	0.0	4.0	103813	#DIV/0!	12/4/2019 8:56:20	Brian, John	5413	5545.4	27612168	
12/5/2019 7:45:26	0.0	3.8	93525	#DIV/0!	12/5/2019 7:45:26	Brian, John	5413	5549	27621372	Visuals of pumps and seals (Daily)
12/6/2019 9:18:23	0.0	3.8	98538	#DIV/0!	12/6/2019 9:18:23	Leo, Mike	5413	5553	27631656	Visuals of pumps and seals (Daily), Compressor PSI
12/7/2019 8:45:59	0.0	3.8	98174	#DIV/0!	12/7/2019 8:45:59	Leo	5413	5558.7	27645558	Visuals of pumps and seals (Daily), Compressor PSI
12/8/2019 8:41:13	0.0	4.5	118596	#DIV/0!	12/8/2019 8:41:13	Leo, Mike	5413	5565.7	27654127	Visuals of pumps and seals (Daily), Compressor PSI
12/10/2019 7:47:16	0.0	4.8	121015	0.85	12/10/2019 7:47:16	Leo, Mike	5413	5570.3	27678768	Blow out tubes (Tuesday), Pump Down (Tuesday, Th
12/11/2019 7:37:16	0.0	4.8	126550	#DIV/0!	12/11/2019 7:37:16	Brian, John	5413	5576.1	27685251	Visuals of pumps and seals (Daily)
12/12/2019 7:56:35	0.0	4.6	119260	#DIV/0!	12/12/2019 7:56:35	Brian, Leo	5413	5579.8	27700237	Visuals of pumps and seals (Daily), Compressor PSI
12/13/2019 8:04:57	0.0	4.5	119002	#DIV/0!	12/13/2019 8:04:57	Leo	5413	5584.3	27711624	Visuals of pumps and seals (Daily), Compressor PSI
12/14/2019 7:14:23	0.0	4.6	182913	#DIV/0!	12/14/2019 7:14:23	Bruce	5413	5588.7	27729683	
12/16/2019 8:08:10	0.0	7.0	127527	#DIV/0!	12/16/2019 8:08:10	Bruce	5413	5595	27742762	Compressor PSI (2-3 PSI), Pump Down (Tuesday, Th
12/16/2019 8:09:44	0.0	6.7	178434	#DIV/0!	12/16/2019 8:09:44	Leo, Mike	5413	5602.7	27760745	Visuals of pumps and seals (Daily), Compressor PSI
12/17/2019 7:46:56	0.0	5.1	131440	0.80	12/17/2019 7:46:56	Brian, Mike	5413	5607.7	27772851	Visuals of pumps and seals (Daily), Blow out tubes (T
12/18/2019 7:31:30	0.0	5.2	133331	#DIV/0!	12/18/2019 7:31:30	Brian, Leo	5413	5612.8	27786877	Visuals of pumps and seals (Daily)
12/19/2019 7:52:59	0.0	4.7	122581	#DIV/0!	12/19/2019 7:52:59	Brian, John	5413	5617.6	27799316	Visuals of pumps and seals (Daily)
12/20/2019 7:51:04	0.0	4.6	120821	#DIV/0!	12/20/2019 7:51:04	Brian, Leo	5413	5622.2	27811364	
12/21/2019 5:32:22	0.0	4.5	118460	#DIV/0!	12/21/2019 5:32:22	Brian	5413	5628.3	27822740	
12/22/2019 5:33:27	0.0	5.2	134289	#DIV/0!	12/22/2019 5:33:27	Brian	5413	5631.5	27838506	
12/23/2019 8:31:20	0.0	5.1	133889	#DIV/0!	12/23/2019 8:31:20	Brian, Mike	5413	5637.2	27850552	Visuals of pumps and seals (Daily)
12/24/2019 7:32:49	0.0	4.8	123858	0.80	12/24/2019 7:32:49	Brian, Leo	5413	5641.5	27862442	Visuals of pumps and seals (Daily)
12/25/2019 8:40:30	0.0	4.4	147828	#DIV/0!	12/25/2019 8:40:30	Leo, Mike	5382.8	5541.3	27500501	Visuals of pumps and seals (Daily), Compressor PSI

Merrimack St PS

Golden Gate PS

Marina Ferry PS

Keene PS

Form Responses 1

Ready To Deploy

<

Figure 2: Data Collection Spreadsheet

With a lot of feedback from the Superintendent and staff we wanted the field staff to be able to evaluate the information right in the field as they enter the data into the forms. To do so, the staff developed report dashboards to provide this information in a visual format that gives them feedback and allows them to see and correct bad data or respond to a problem with the equipment. See Figures 3 and 4. Each pump station has its own report dashboard. Reports give operators instant feedback on pump station performance. It compares and graphs daily runtimes and flows. Color coding even has been added to indicate results that are outside desired parameters. The reports can also be printed and shared online easily.

## Outline for Hooksett Phase 1 Asset Management Program

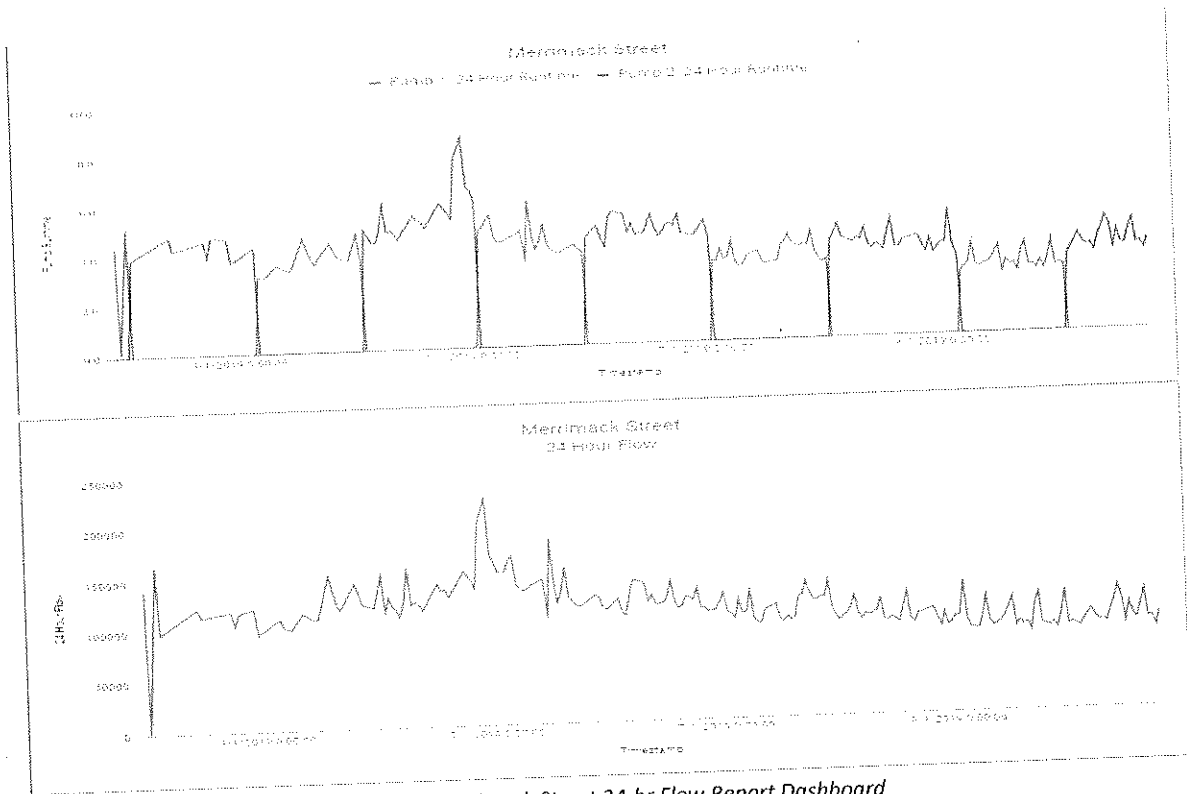


Figure 3: Merrimack Street 24-hr Flow Report Dashboard

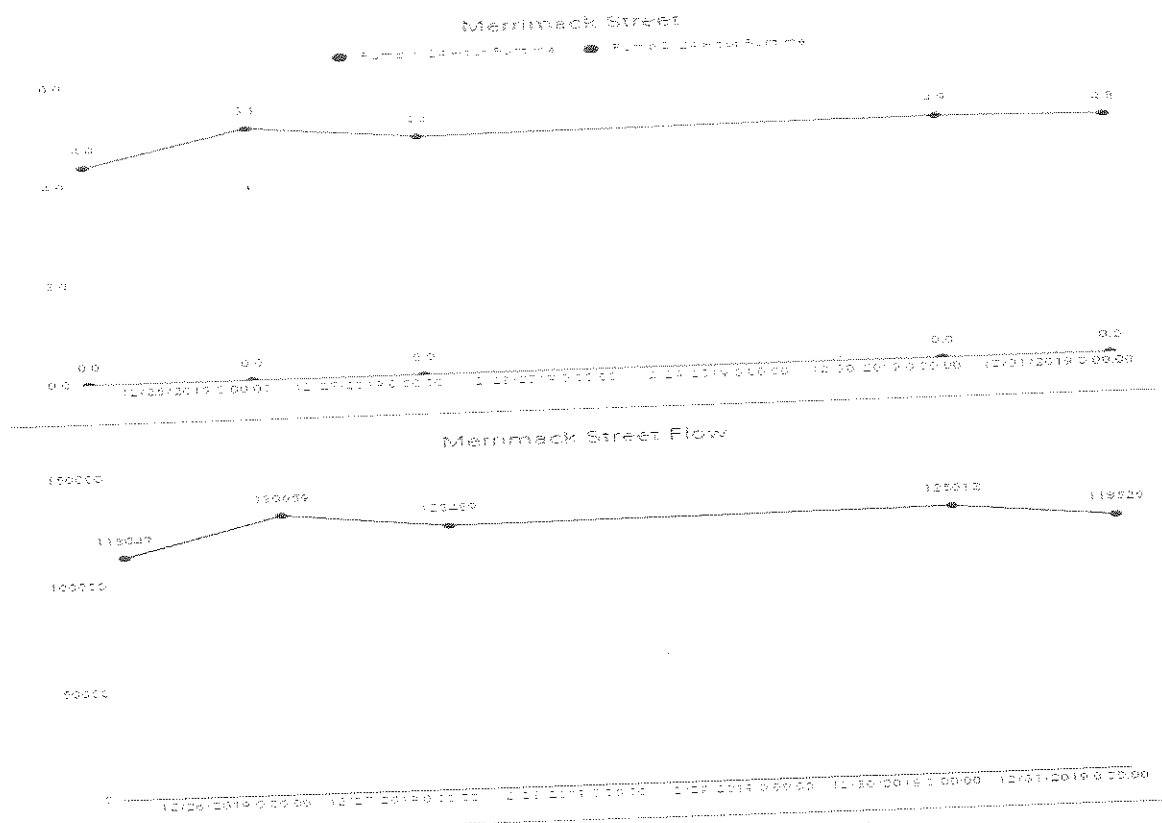


Figure 4: Merrimack Street Pump Run Report Dashboard

In addition to pump station reports, recorded comments can also be viewed in snapshot format on the

# Outline for Hooksett Phase 1 Asset Management Program

Station Notes tab, as shown in Figure 5.

Merrimack Street Notes	
3/5/2019 8:47:35	Swapped pumps. Pump 1 is now lead
4/2/2019 9:24:35	Swapping pumps. Pump 2 is now lead
7/2/2019 8:02:19	Swapped pumps. Pump 1 is now lead
7/19/2019 7:43:46	Greased pumps, pump motors, and shafts
8/2/2019 8:02:29	Swapped pumps. Pump 2 is now lead
9/5/2019 8:13:15	Swapped pumps. #1 now lead
Timestamp	Notes
Merrimack Street Generator Notes	
4/2/2019 9:24:35	Added water to battery
4/18/2019 7:49:54	Power outage 4/17/19. Generator did not run
7/2/2019 8:02:19	Topped off battery water
7/25/2019 8:03:47	Topped off battery water
8/27/2019 7:22:17	Topped off battery water
10/24/2019 10:12:34	Generator was serviced
10/29/2019 8:04:58	Topped off battery water
11/5/2019 7:56:49	Alarm was off, seemed okay when reset
Timestamp	Notes
Main Street Notes	
5/28/2019 11:09:51	light out in station
8/27/2019 7:47:49	Turned off pump 1 for excessive runtime (3867.8)(274.4)
9/23/2019 8:26:05	1329.3, 355.1
10/7/2019 8:23:35	Pump 1 1332.6 pump 2 368.6
10/28/2019 8:03:28	1338.3, 376.3
11/12/2019 7:43:09	Pump 1 was off, put back into auto
11/25/2019 8:18:42	Happy turkey day week
Timestamp	Notes
Martins Ferry Notes	
2/1/2019 11:09:08	Pump was clogged with grease after the pump down
4/1/2019 8:56:29	Switched to pump 2
4/10/2019 8:39:28	Changed flow chart
4/17/2019 8:20:30	Changed flow chart
4/24/2019 8:28:11	Changed flow chart
5/1/2019 8:47:04	Swapped pumps. Pump 1 is now lead Changed flow chart
5/22/2019 8:41:50	Changed flow chart
5/29/2019 8:42:43	Changed flow chart
5/31/2019 8:39:17	Swapped pumps. #2 now lead
7/1/2019 8:40:05	Swapped pumps. Pump 1 is now lead

Figure 5: Station Notes

## Outline for Hooksett Phase 1 Asset Management Program

### Maps

Hooksett had information on the collection system in many locations and in several different forms. The large map on the wall was done in AutoCAD and was not georeferenced, but it was labeled with all the IDs used by the HWWTF and all their inspections. Second, they had the collection system in GIS, but data was incomplete and incorrectly labeled. The need to put this data together and to update it with age, diameter, material, ownership, location and install year was critical to the asset management program. This included a lot of work from the superintendent and with his knowledge we were able to put all this data together; this data was being built throughout the project.

It was also important for this map to be accessible to all staff and for them to feel comfortable using it. Previously, the staff used a field map from a binder folder. The data developed in ESRI was exported into KML files, which can be used in Google Maps and Google Earth. In Google Maps the staff can edit the attributes and add data. The staff can build a map for a project and save it after the project.

Hooksett Sewer is also using a digital map of the current sewer system for managing assets in the field. This map is opened on Google Earth or Google Maps and shows accurate locations of the entire sewer system by overlaying the map on a current satellite image. Operators are now able to use a cellular tablet with a GPS location service to overlay their current location on the map and use this feature to compare their location to assets in the field even if they are not visible on the surface. See Figures 6 and 7.



Figure 6: Sample Map



## Outline for Hooksett Phase 1 Asset Management Program



Figure 7: Sample Tablet Screen

Different layers of the map can be created. Layers help group the assets for analysis, comparison, or by common needs. Hooksett Sewer has developed layers with color coding strategies that specify pipe material and pipe age. These layers can be used to determine life expectancy of the asset. Knowing the life expectancy will allow for accurate budgeting of repair and replacement costs from year to year. See Figures 8 and 9.

# Outline for Hooksett Phase 1 Asset Management Program



Figure 8: Gravity Main by Material Layer

## Outline for Hooksett Phase 1 Asset Management Program



Figure 9: Gravity Main by Diameter Layer

Other layers that have been developed include sewer services, sewer manholes, line cleanings, and easements. Sewer manholes are labeled for inventory purposes and serve as accurate markers in the field. Sewer manhole structure condition will also be individually monitored for repair or replacement costs (budgeting). Line cleaning maps will provide a record of service to the line, highlighting potential problem areas and budgeting annual line cleaning costs. Easement maps indicate sewer easements that are typically cross-country sewer lines and require special annual maintenance to maintain access to the line. See Figures 10 and 11 for more examples.

## Outline for Hooksett Phase 1 Asset Management Program



Figure 10: Manholes, Gravity Main, Services Layers

## Outline for Hooksett Phase 1 Asset Management Program

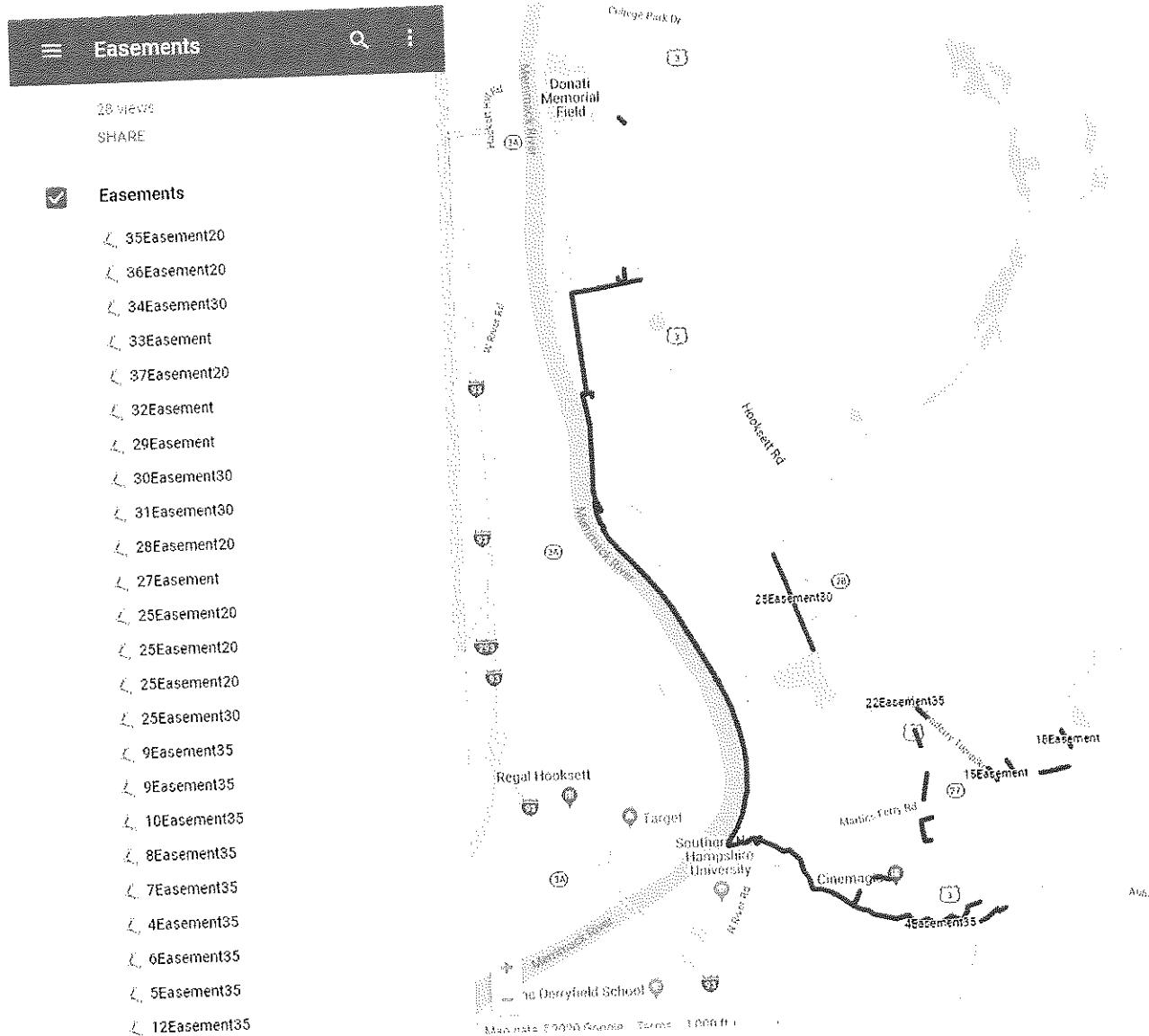


Figure 11: Sewer Easements Layer

### Data Centralization

It is important to help by providing good communication and the best way is to provide data to the people that need it. The Superintendent had great information, but it was difficult for staff to access it without him. This provides a heavy dependence on one person. His knowledge was critical to the asset management program. The Superintendent was great in providing the information and allowing us to organize it in one central Google Drive. Some of the different folders provided in this location are Site Plans, SOP folder, Tie Cards and several others.

## Outline for Hooksett Phase 1 Asset Management Program



Figure 12: Site Plans Folder

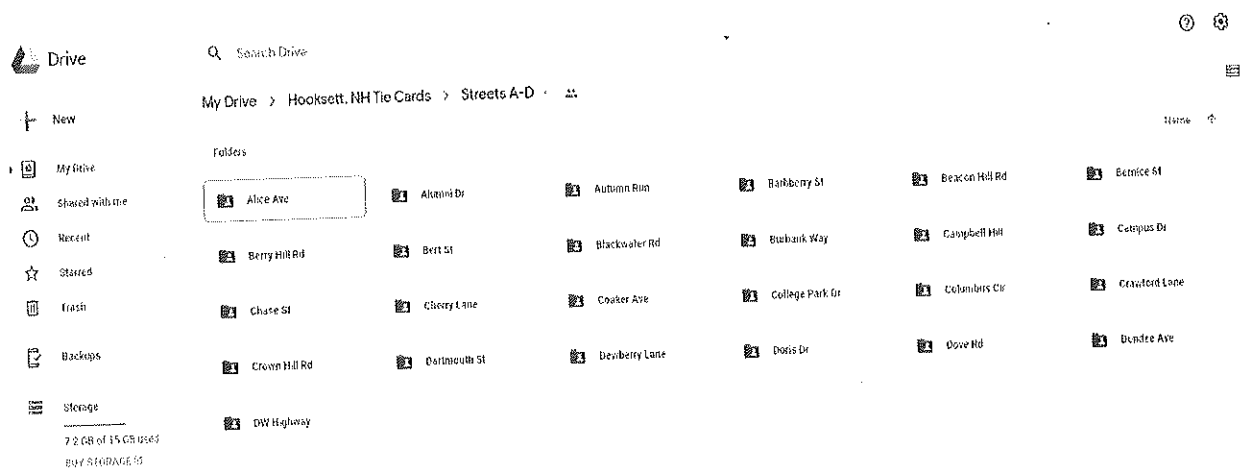


Figure 13: Tie Cards Folder

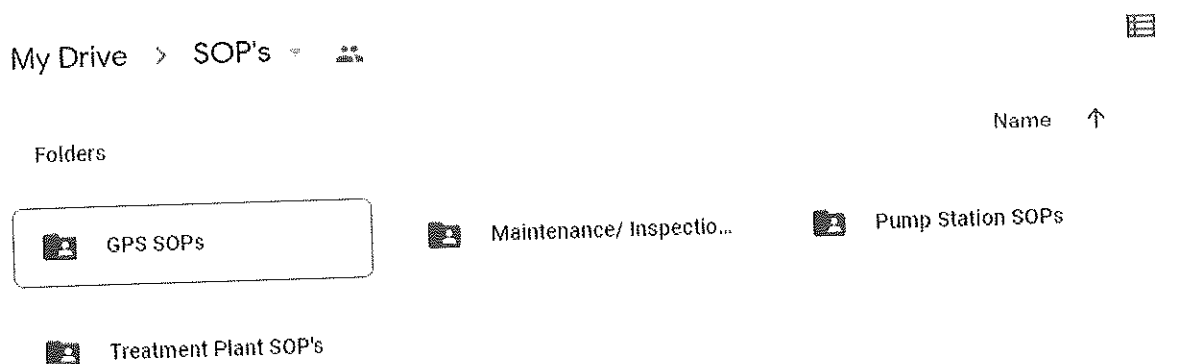


Figure 14: SOPs Folder

## Outline for Hooksett Phase 1 Asset Management Program

### Security

The concern everyone has is "How safe is our data?". To avoid accidental edits, staff is trained on backing up the data and are very good at doing so. There is a more automated way, but there will need to be some future investment in the program for that to occur. The other concern is someone malicious just getting access to the data. The staff has set up accounts for each employee and can control what they can access and what they can edit. Also, staff is notified by email if any other device logs onto the account without permission. Additional security can be added in the future.

### Work Orders

The best way to explain this is with the development of work form along with the development of workflow. For any process to work, it needs to fit with the current operation and be able to adapt to future changes. As part of this program, it was important for staff to have a good understanding of what they can do with the tools now and into the future. It is also important for them to be able to continue learning how to use the tools. A great benefit to using Google tools is that there are YouTube training videos to help staff learn.

These work forms HWWTF has developed can be used for work orders, condition assessment, inspections, permits and more. With the knowledge currently on staff there is no limit to what they can use this for.

With the use of the Google Calendar they can schedule recurring work orders (including annual easement clearings) as needed. Scheduled work orders will be both on their Google Calendar and emailed to them. This will be developed much further in phase 2 of the asset management program.

### Standard Operating Procedures

One of the biggest needs from the asset management program was to capture the undocumented information from the Superintendent. It goes without saying that the Superintendent was on board and willing to put his heart into having a successful program. The development of both written SOPs and creating video content while working with an intern's knowledge and editing skills was a great combination. This increased our tool set and provided the ability to become more creative in the program. This also created a culture of creating additional SOPs in the future. This will be a great way of passing down knowledge to new employees and a way to prevent problems in the future. Additionally, all of these SOPs are available through the Google Drive and thus available to staff at any time.

Sample SOP with Video link:

# **Standard Operating Procedure for Golden Gate Drive Pump Station**

**31 Golden Gate Drive**

**Phone: 622-8851**

**SCADA: 624-6851**

Videos: GOLDEN GATE

- Upon entering, look around the station to see if anything looks or sounds unusual.
- On Friday, record the hours of the pumps using the sheet provided in the pump station off of the new panel.
- In the wintertime, turn on the heating system and make sure the vents are closed.
- In summer, turn the heat off.
  - a. The vents should be open and the automatic temperature sensor will turn on by itself to cool the station as much as possible
- Every 45 days, maintenance the alarm on the SCADA system will go off to indicate that the rag basket needs to be cleaned.
  - a. Put a crane in the Davit Base hole so that you can lift the basket up
  - b. Clean the basket
  - c. Take the rags out and put them in a bucket with garbage bags in it and take to landfill
- In October, the Vac truck will clean the station and clean the float balls.



## Outline for Hooksett Phase 1 Asset Management Program

### Financial CIP

This is where everything comes together. In the first steps of the asset management program it is important to understand what you own and what is its value. The main focus of this part was what would be the driving asset for the collection system. If a manhole fails, it normally can be repaired within the current budget so we do not use manholes for financial predictors for capital investment projects. We will use the sewer pipes as they have a great financial impact. For us to develop the CIP for the sewer system we needed certain sets of data. By updating the GIS/Map we were able to develop an asset management worksheet for capital planning. This data came from the GIS and can be updated annually with current construction costs and current GIS data. We could include pictures but it would show a large worksheet. The bottom line is the Commission is responsible for roughly \$55 million in collection system assets. With that in mind it is always good to ask what percentage should be spent on the system of that size yearly. Example: If you use  $\frac{1}{2}$  of a percent that would be \$275,000 dollars a year. If you are spending \$50,000 a year you are investing 0.09 percent. This is just an example but it helps with understanding future investments. Figure 15 below shows the 100-year projected capital expenditures expected for the collection system.

Hooksett Collection System Capital Planning

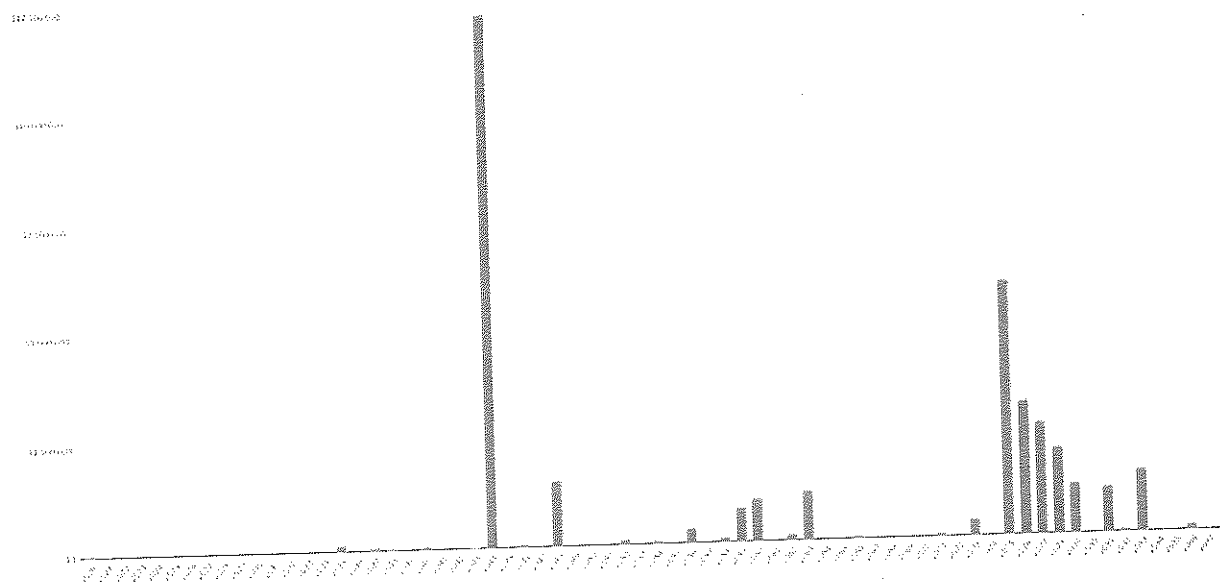


Figure 15: 100-Yr Capital Expenditure Projection

### Summary

What is different from past operations?

#### Pump Stations:

In the past Hooksett Sewer logged daily pump station data by having the operator write it on paper forms at the pump station. The operator was also responsible for calculating daily flows, calculating

## Outline for Hooksett Phase 1 Asset Management Program

pump hours, and recording maintenance notes. Most of that information was recorded and stored at the pump station until month end. See Figure 16.

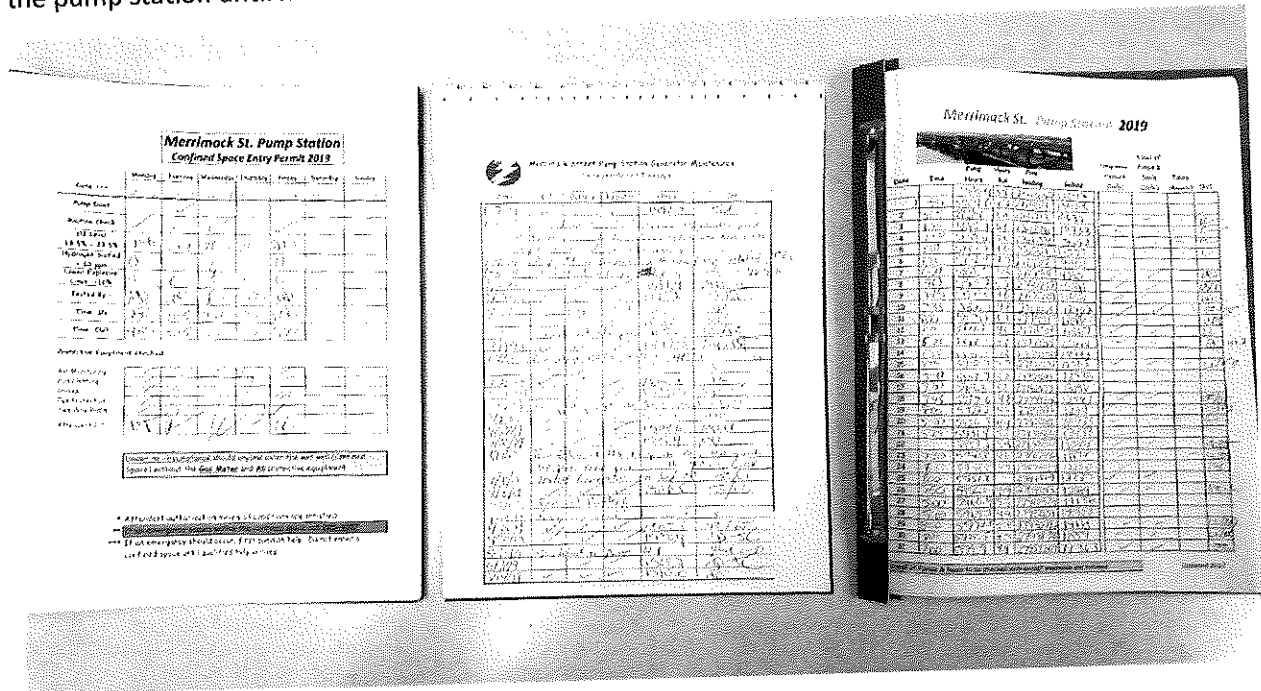


Figure 16: Handwritten Maintenance Logs

After monthly data was collected it was manually entered into a spreadsheet at the treatment plant. When all recordings were entered on the spreadsheet data trends could then be fully evaluated.

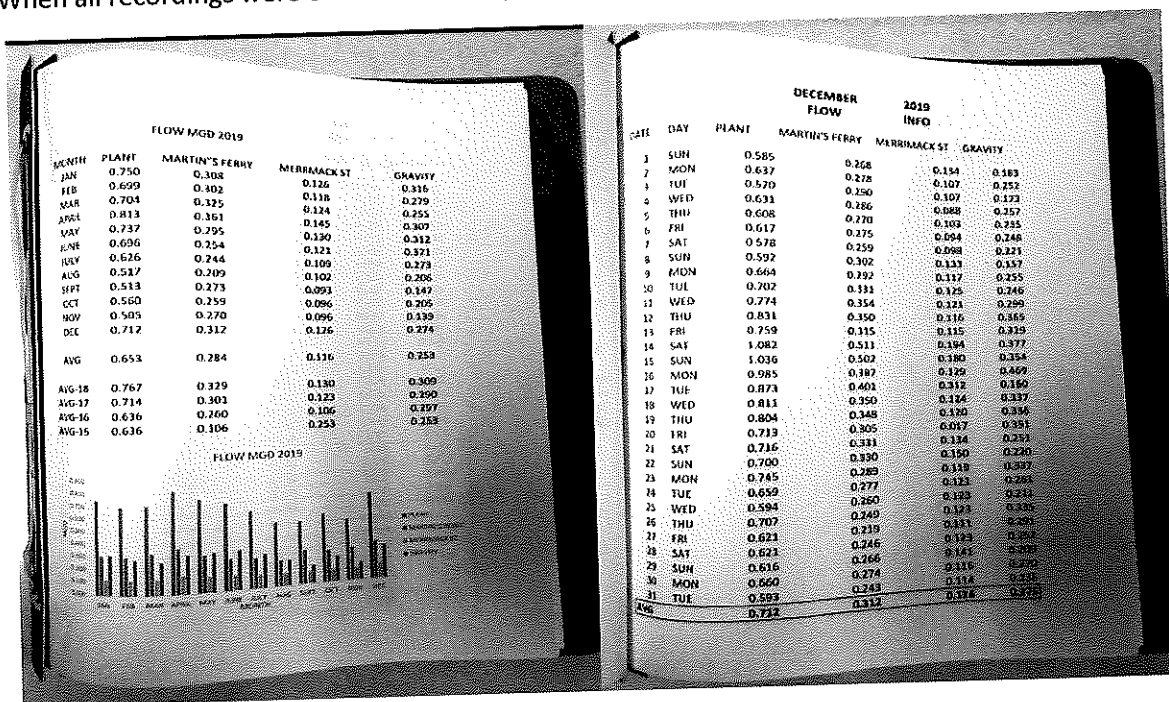


Figure 17: Monthly Spreadsheet

## Outline for Hooksett Phase 1 Asset Management Program

### Findings

- Operating this way can create a delay in action, loss in data, and allow for simple mistakes.
- Major problems in pump station operations could be easily overlooked until the monthly data is logged into a spreadsheet for analysis. Month to month analysis could leave problems unattended to for days or weeks with potential for more damage and higher repair costs.
- Monthly data logged on paper can be easily lost or destroyed without any backup. Less frequent maintenance and repair data could get easily lost, overlooked, or is unorganized.
- Inaccuracies in data could develop from simple mathematical mistakes in the field.
- Transcribing errors were likely every time the data is manually copied from one form to another.

### Maps (plans):

Site plans and GIS mapping were primary tools used to locate sewer assets. To locate sewer assets, operators would search through numerous site plans or GIS maps before finding the details for the location.

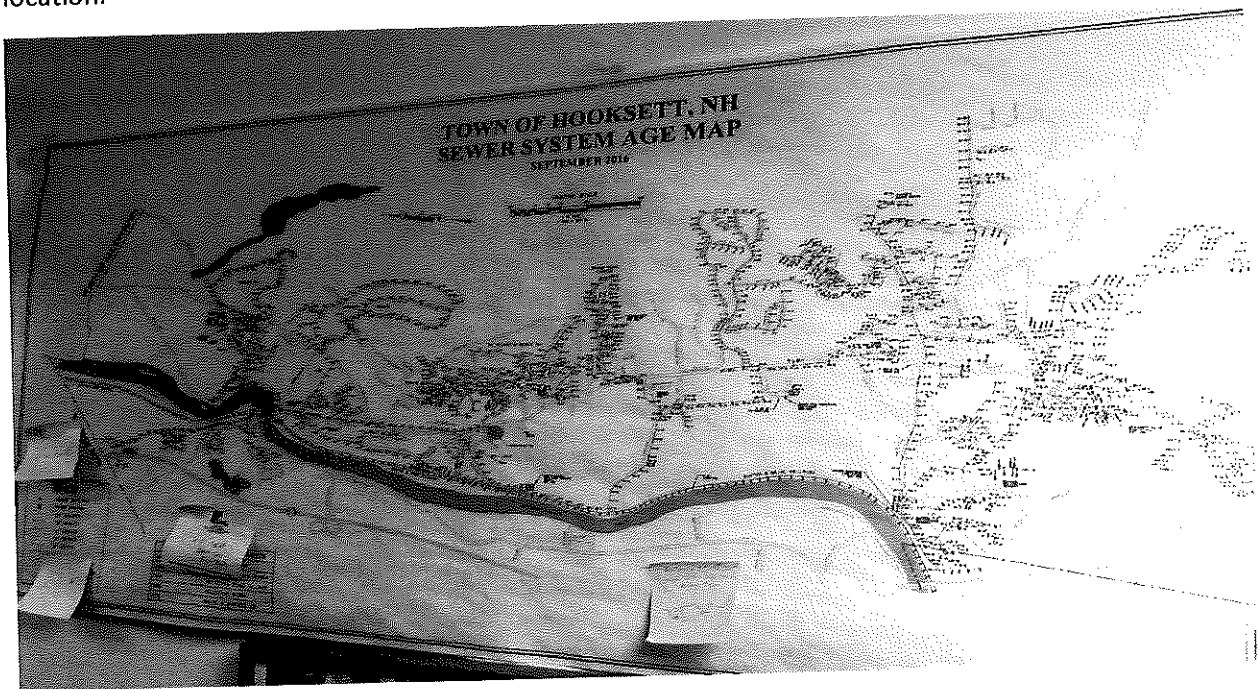


Figure 18: Paper Map

## Outline for Hooksett Phase 1 Asset Management Program



Figure 19: Map Drawers

When the asset location was found on the plans the operator would bring the site plans (or copy of the site plans) along with GIS mapping out into the field to visually locate the asset. The plans often gave the operator a place to start looking but many times the asset is not visible and further investigation is required.

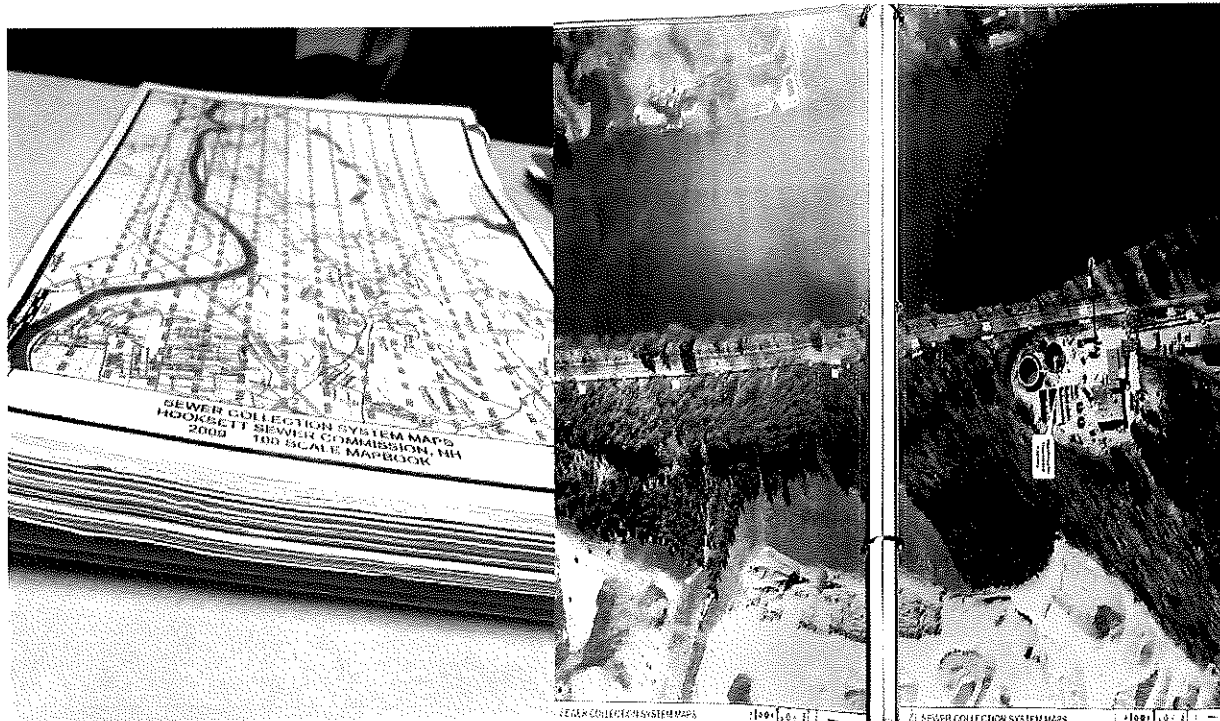


Figure 20: Sample GIS Points

## Outline for Hooksett Phase 1 Asset Management Program

### Findings

- Searching through site plans could often be time consuming, especially critical in emergency situations.
- The printed site plan is large and awkward to use effectively in the field.
- Copies of site plans may need to be made so originals are not damaged in the field. Site plans or GIS didn't have a way to match up the operator's current location to the asset (GPS location service).



Figure 21: Sample Tablet Screen

## Outline for Hooksett Phase 1 Asset Management Program

### B. iii. What data is now available to us and how can we access it?

A cost analysis graph was created on Google Drive to improve the capital investment plan and yearly budgeting. The graph shows a yearly cost estimate for replacing assets based on age, material, and condition. Analysis of this graph will help reduce excessive cost build up for some budget years by understanding how to improve the management of the asset's service, repairs, and replacement to prolong their years of service and level out maintenance costs from year to year.

Real time pump station reports on Google Drive are now available to operators in the field. The reports include graphs and trend lines that give operators instant feedback on pump hours and station flows. The reports also give operators access to all pump station service notes that have been logged.

A cellular tablet provides operators with remote access to a map of the sewer system on Google Drive and Google Maps allowing for easy asset reference in the field. The tablet also uses Google Drive to access digital copies of plans, tie-cards, SOPs, and other resources.

INTEROFFICE MEMORANDUM

TO: BOARD OF SEWER COMMISSIONERS  
FR: BRUCE M. KUDRICK, SUPT.  
RE: LIST OF EMPLOYEE REIMBURSEMENTS  
DATE: JANUARY 21, 2020

The following is a list of the items the Board approves providing and or reimbursing:

1. \$125.00 yearly for steel toed boots. Uniforms (11 sets and two jackets) that are supplied and cleaned by a uniform company. (Sweatshirts 2 per year / t-shirts 5 per year if needed.)
2. Education reimbursement for
  - a. Any courses associated with DES that pertain to wastewater (see section 7, Education, Training in Personnel Plan).
  - b. Sacramento Course. Note: Must be done on time. If not the Sewer Commission will not pay for a second attempt. If not completed in time or the course is not passed, the employee will reimburse the Sewer Commission.
  - c. Any books that pertain to wastewater treatment. Approval by Superintendent and Board of Commissioners. (see section 7, Education, Training in Personnel Plan).
  - d. Other courses would need to be examined by the Board.
  - e. No time will be lost for going to school. (see section 7, Education, Training in Personnel Plan).
3. Licenses –
  - a. Biyearly renewal of operator's grade license (see section 7, Education, Training in Personnel Plan).
  - b. Operator's license upgrades will result in a \$1.00/hr raise (laborer to grade I/grade I to grade II/ and so on) providing the testing was approved by the Board of Commissioners.
  - c. No raises will be given for a grade IV operating license or collection system grade licenses.
  - d. Raises for an operator-in-training (OIT) certificate for grades I, II, or III, will begin when the operator has met the full requirements for that grade.
  - e. The operator must supply the Sewer Commission with a letter from the New Hampshire certification committee indicating that the required operating experience has been met. The raise will begin with the date of that letter.
  - f. Initial CDL license. Employees are responsible for renewals.
  - g. Medical card, if needed and required by the State DMV for licenses, will be paid for by the Department.
4. Medical and dental insurance is 100% paid for by the department. If an employee elects not to take the insurance there will be a pay period adjustment. Upgrades to the dental insurance and/or any supplemental AFLAC are the responsibility of the employee. Note: Can change at any time.

5. The Sewer Commission will pay mileage from the Treatment Plant to school in Franklin. Employees attending courses will receive mileage payment for a round trip of 68 miles. Employees do not have to leave from the plant. Can leave from home and mileage from there to school will be paid. Other school location will be case by case. Must show certification of completion.
6. Membership to NHWPCA and WEF as approval by Superintendent and Board of Commissioners.
7. If an employee uses a personal vehicle on Sunday/Holiday, mileage will be paid for 11 miles for checking stations.
8. These reimbursements/payments may be changed at any time.