

A Flow Service Provider Truly On the Cutting Edge

Cutting Edge Group, LLC

The prioritization of municipal sewer system rehabilitation work to reduce inflow and infiltration (I&I), is based largely upon the selection of projects that will most quickly provide the largest return on investment. Strategies to determine this vary from municipality to municipality, however, performing service lateral rehabilitation work first is critical to the success of any comprehensive municipal rehabilitation program. Failure to do this will allow groundwater to travel around any repairs. To expeditiously locate areas within the system that are in need of rehab work, reliable flow meters that provide accurate flow data are a critical component.



When the Cutting Edge Group, LLC, (CEG) a design-build firm located in Lake George, New York, was contracted to provide flow services for the Village of Whitehall, New York, their first task in the pilot study was to monitor the flow of the Village's service laterals. The Village of Whitehall is located on the Vermont border at the south end of Lake Champlain. Records indicate that portions of the system were replaced in the mid seventies, mid eighties, and early nineties.

Much of the municipal collection system is the original VCP pipe which is estimated to be over 75 yrs old. As with many Villages the private side of the collection system receives very little maintenance. Based on a detailed study of the methodologies associated with the Village's most successful rehabilitation project, it was suspected that the laterals or other private sources of inflow may be contributing significantly to the problem. Work done for the pilot study would provide scientifically defensible data explaining this phenomenon.

To determine the most cost-effective method to collect the flow data required for their study, CEG performed a thorough investigation to compare the costs of flow meter purchase versus rental, as well as the use of available outside services to collect the flow data. This evaluation placed an emphasis on establishing an approach that would minimize the number of costly trips to the site as well as the number of confined space entries needed to ensure the proper operation of the meter.

During this search, CEG was introduced to Hach Company's Data Delivery Services (DDS). With Data Delivery Services (DDS), web-enabled Flo-Dar flow meters provide 24/7 access to flow data via any web browser eliminating the need for site visits to collect flow data or maintain the meters. The award-winning Flo-Dar flow meter



Heavily debris-laden flow in Whitehall, NY monitored by non-contact Flo-Dar sensor utilized in DDS program.

provides a revolutionary approach to open channel and sewer flow monitoring by utilizing a non-contact radar velocity/area sensor. Flo-Dar's unique non-contact measuring technology means trouble-free sewer flow monitoring. The sensor utilizes digital doppler radar velocity sensing technology with ultrasonic pulse echo level sensing. Flo-Dar's unique non-contact measuring technology eliminates sensor fouling associated with submerged sensors, allowing for accurate, trouble free flow monitoring. Independent testing performed by Alden Laboratory confirms Flo-Dar's accuracy, as does the satisfaction of thousands of users worldwide.

The flexibility of DDS allows for either a totally hands-off approach to flow monitoring by providing installation and any maintenance requirements or in the case of CEG, allows the experienced flow service provider the ability to install and maintain the meters themselves for additional cost savings.

According to Tom Davey, Member of the Cutting Edge Group, LLC, "The conclusion that we came to was to select DDS based on the pricing structure. It's definitely a cost savings! We did a very thorough investigation of what was out there and the costs associated with each. We started out by pricing the purchase of several meters and then we went back and looked at rental fees. When we compared the prices provided by Hach with every other company out there and when you really look at the *big picture*, we found that DDS was the most cost effective way to go." Line sizes to be monitored in the Village's collection system were primarily 8" lines with an occasional larger or smaller pipe size.

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DDS Flo-Dar Sensor monitoring flow in 8" Sewer Line

The first task of the pilot study performed with the Flo-Dar meters was to monitor the flow of the service laterals prior to scheduled rehabilitation work. Pipe bursting and slip lining were performed and the meters were reinstalled to determine the effects of the rehab work. Davey adds, "We took the service laterals up to the property line and what we found out was that the expenditures associated with

mainline rehabilitation at these locations didn't have any effect on the I&I. In essence, private side laterals are what was contributing most of the I&I on those streets."

Based on the results of the pilot study, the Village expanded CEG's contract to allow for a more thorough I&I program for other areas within the jurisdiction. DDS Meters have been relocated several times and as if this writing the contract is still being extended. Now very familiar with Flo-Dar's capability, CEG has come to rely on the meters for various tasks. When a water main break occurred and the actual location in a large tract couldn't be pinpointed, Mowatt installed the Flo-Dar meters. One of the meters indicated a large spike in flow, quickly isolating the water main break. Mowatt adds, "The Flo-Dar's helped us eliminate a specific area so that we could drastically cut our time down to find the leak. We have found that the meters do much more than just measure water flow going by. It's a much more valuable tool than that! It has really worked well."

Internet access to their flow data is a feature that has allowed CEG to monitor their flows right from their desk versus performing site visits to ensure that the meters are fully operational. Davey adds, "The ability to get the information on line was very helpful. From the online data, you can get a good indication while reviewing that data whether



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there's some type of problem. If you are regular on looking at that data you can detect problems and react to them versus having to radically go out and respond and do an inspection from site to site. It's a real nice feature." While submerged sensor style meters had been used in prior years to monitor open channel flow in the Village, they were plagued with sensor maintenance issues such as fouling which now is eliminated with the use of the Flo-Dar non-contact flow meters. He adds, "I feel that DDS is a very reliable and user-friendly

program that is in place. We're absolutely on-board with using the latest and greatest technology particularly having internet and cell phone access to the meters. We're a real advocate for programs like that."

Appropriately named, Cutting Edge Group LLC's name represents their desire to provide their customers with results that are based on the use of the most cutting edge technology such as Data Delivery Services, as it will provide our clients with the absolute best available service. Going forward Cutting Edge Group states that they 'absolutely' plan on the continued use of DDS. Dave Baker, DDS Business Development Manger for Hach Company, adds, "What started out to be a short term flow study has turned into Cutting Edge using our DDS meters for nearly two years. When we (Hach) can see our customers benefit from this service to the degree we've seen Cutting Edge Group benefit from it, we know we are doing something right. And that's what it really is all about. We do the right thing for our customers, and together we do the right thing for our environment. It's a great feeling."