

SPOTLIGHT ON THE CITY OF HUDSON

Rob Perry | Superintendent of Public Works for the City of Hudson

The City of Hudson operates and maintains a 1A Rapid Sand Filtration Water Plant as well as a 3A Activated Sludge Wastewater Treatment Plant. Although both of these facilities have been upgraded in the past 10-yrs, the bulk of the infrastructure is 100+ yrs old. Managing compliance to ever-evolving regulations with assets that have been in place before the invention of the electric light bulb, proves to be a very complex solution that requires long-term goals, maximum use of internal manpower and materials and continual search for outside sources of funding to help defer rate increases to consumers.

WATER

Our current water system was designed and constructed in the early 20th Century. Using steam engines, horse and wagons and brute force, a 15-mile transmission main was carved out of the earth following stream beds and traversing flat fields. In the middle of this transmission system lies a 80 MG reservoir impounded by a small class "C" dam with a 400 ft² chemical feed building that injects sodium permanganate to begin the treatment process. Partially treated water hits the new water filtration plant that was constructed in 2007.

Financing of the new water plant proved very challenging, as the \$10 million cost would cause the water rates to more than double. In this instance, there was a rare opportunity to lease city owned property to a 3rd party for the purpose of mining with a face value of \$7 million and will account for 70% of the cost of the plant upgrade. However, there is no similar opportunity for the upgrade of 20 miles of water distribution pipe, of which 25% is 4" cast iron pipe, which is very old, corroded and fragile.

For many years the city's practice, like many others, was to patch and fix water mains until replacement was absolutely necessary, and then bond the project and contract with an outside company. However, after evaluating the nature of the work involved with making repairs, and comparing those to the skills required to install new mains, there was not much difference. From that point, the city has undertaken proactive measures to budget for materials annually as well as necessary equipment to install 750-1,000 linear foot (LF) of new DI water main each year. Pipe, fittings, hydrants, full trench and road restoration costs the city about \$50 per LF, which is compared to \$250 per LF when the city contracts with a private company.

SEWER

The sanitary system is in many cases much older than the water system and is comprised largely of clay tile, ACP, brick and laid-up stone structures. As we are an old river community, original mains were combined in order to flush sanitary settling into the receiving body, which in our case, is the Hudson River or associated water body. About 50 years ago, these flows were redirected to a wastewater treatment plant (WWTP) that the city just completed a \$12.5 million upgrade to in 2012.

Due to limiting economic factors in our city, and our status as "shovel ready", we were a proud recipient of \$4.9 million principal debt forgiveness as part of ARRA and another \$1.62 million in Green Project Reserves. As the city had previously been awarded \$200,000 for a back-up generator from DEC and another \$600,000 CDBG from Office of Community Renewal, the net amount to be financed (after short-term loan payments of \$600,000), is \$4.9 million or \$165,000 per year. As part of construction, the city included the conversion of an old digester into a septage receiving station for the purpose of taking residential and non-residential septage from commercial haulers.

Locally owned septage haulers previously had to haul their waste to either Albany or Beacon for disposal. After a brief market analysis, it was easy to see that a closer disposal site would not only provide more productivity and decrease costs associated with longer hauls, but also reduce greenhouse gasses from longer drives and offer lower cost for waste disposal for some local businesses that are not currently served by municipal sewer systems. Revenue in 2014 was forecast at \$175,000 and we anticipate exceeding that goal by 15-20%, which does three (3) things for the City of Hudson resident:

1. Pays 100% of debt service associated with upgrade,
2. Provides funds to subsidize necessary construction projects, and
3. Keeps residential user rates FLAT.

Current sanitary construction projects that are undertaken by city employees include separation of stormwater from the combined sanitary system. By utilizing the same philosophy as we do with water projects, we are able to construct separate stormwater lines, then divert stormwater from the combined system, which allows us to decrease flow to the WWTP >>>

and keep organic contaminants out of our stormwater. Similar to water projects, there is a tremendous savings by conducting these operations with existing city forces.

Our in-house project costs are so low because there is no bonding and surety, or need to pay prevailing wage. Most designs and project management are done in-house, and there is no charge for mobilization, and of course... no margin for profit. However, it is essential that you have a qualified workforce that is not only technically capable to handle these responsibilities, but also motivated to do a good job. If you can move past the usual patronage machine, you'll find qualified individuals willing to make a decent wage coupled with the security and overall benefit packages that municipalities can offer.

WHAT IS NEXT

1. We all are aware of the shortage that exists of qualified operators, particularly in wastewater and that this trend will only become worse. Therefore, it is critical to start with a current inventory of what is actually in your system. Map files that are fifty years old are not going to give you the accurate information that you can easily access with current technology. Taking an inventory allows your current employees to "re"-familiarize themselves with the system while allowing a fresh set of eyes to look for potential risks and OPPORTUNITIES. New operators do not read maps, they read phones and you'll need to transfer as much institutional knowledge to new operators as possible so that future decisions are smart and cost-effective.

2. We are all familiar with the term "shared services" as it is

a famous tag-line by all politicians. We also know that highway, water and sewer managers have been borrowing and trading supplies, equipment and manpower for many years: "We do not need a sound bite to be a good neighbor". That said, there has to be greater focus on merger of systems. It will be increasingly difficult for water and wastewater systems to FIND qualified employees, then retain them as competition and certainly wages will begin to increase. Operators in the private sector operate multiple sites on a daily basis because it is feasible and cost-effective, and municipalities will need to employ the same principles.

3. You have to gain the respect of elected officials and residents so that your plans and goals will be supported. There is only one way to accomplish this...YOU need to selflessly promote the actions of your employees and the success of your projects. Morale will increase and so will the funding.

BIO

Rob Perry is Superintendent of Public Works for the City of Hudson, NY, and has held that position since 2008. He is directly responsible for operational control, financial management and strategic planning of the Water, Sewer, Cemetery and Public Works Departments. Collectively they represent 30 FT and PT employees, \$4.5+ million annual budget and \$30+ million in assets. He has earned an MBA from the University of Hartford, a BS from St. John Fisher College and an AS from Columbia Greene Community College. He has also successfully completed operations and lab coursework in Water and Wastewater Treatment from SUNY - Ulster. 💧💧💧