SUSTAINABILITY - NOT JUST A CATCH PHRASE ANYMORE

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If you have been in the water or wastewater industry for any length of time you have undoubtedly become accustomed to catch phrases meant to inspire action. Words or phrases such as asset management, rate setting, capacity development and sustainability become convoluted without a clear message of what they encompass and what they really mean. When talking with Operations Specialists on sustainability or sustainable management practices they often say, "oh yeah, I know what you mean, you're talking about that asset management stuff". Sometimes our messages get crossed. It is important to remind ourselves to use the proper terminology for the goal we are attempting to achieve. In simplified terms, and as one of our staff personnel describe it, a sustainable system provides a desired level of service to its customers at a fair and reasonable cost. In truth, sustainability encompasses asset management, energy efficiency, water or wastewater accountability and capacity development – financial, managerial and operational.

In 2019, The New York Rural Water Association, along with approximately 20 other state rural water associations, were tasked with completing a "Sustainability Assessment Pilot" by the National Rural Water Association in conjunction with USDA, Rural Development. The purpose of this pilot was to document a holistic approach to enhance long-term sustainability of small systems to protect the federal government's investment, enhance economic development potential and facilitate the continued delivery of safe drinking water to rural residents. Whew, as a realist, this appeared to be a daunting task to say the least! However, the first two systems selected by our state Rural Development Office were thrilled to sign on when approached regarding this pilot. Both systems were towns that had recently adsorbed a water system due to dissolution of the village governmental entities. In each case, town officials were thrust into the water and wastewater industry and were welcome to any education and guidance to get them started with proper and efficient managerial practices.

You may be asking yourself, what is included in a sustainability or sustainable management plan? For our purposes, we include a financial assessment, governance policy, energy efficiency, rate analysis, water loss/I&I, asset management, mapping, and operational review.

Financial Assessment – Information from annual audits, financial statements and operating budgets need to be reviewed in an attempt to evaluate the financial health and well-being of the system. We typically review items such as operating revenue, operating expense, depreciation (if included), reserves and debt service. These are crucial pieces of information when conducting the evaluation. As my father always told me, "James, you can't afford to buy anything until you pay yourself". Those words ring true during an assessment. A water or wastewater system needs to have the financial capacity to reserve funds for future capital improvements or for emergency response. The financial assessment has some key ratios and other indexes to take into consideration.

1) **Operating Ratio** – this is a calculation of the operating revenue divided by the operating expense, and should be 1.25 or higher. If the system employs depreciation practices, the calculation would be operating revenue divided by operating expense (including depreciation), and should be 1.0 or higher.

2) **Debt Service Ratio** – measures a systems capacity to pay debt service (principal and interest), and is calculated by taking operating revenue minus operating expense and then dividing by debt service (principal and interest). This ratio should be 1.2 or higher.

3) **Affordability Index** – this is the most important calculation in my opinion and can be used to educate elected officials on the financial well-being of their system in regard to their rates. It is computed by taking the average monthly utility bill (water or wastewater) and dividing by the Median Household Income (MHI) which may be identified using census data. USEPA considers an Affordability Index greater than 2.5 for water or wastewater as unaffordable.

4) **Reserves** – these accounts often have many different names – capital reserves, emergency reserves, vehicle reserves, etc...but they are all either accounted for or unaccounted for accounts. Each jurisdiction may vary, but accounted for reserves are generally named and can only be used for that specified use without public referendum. Therefore, most accounting firms recommend a combination of reserve accounts. In New York State, most utilities try to achieve budgeting between 5-10% of their operating revenue into reserve accounts annually.

Governance Policy – this review merely gauges the management of a system to ensure the proper structure and controls are in place. Is there adequate, competent staffing, do they have written policies and procedures, do they conduct an annual audit, do they have an internal audit committee, are >>>

written water/wastewater use policies adopted, and are written fee schedules provided to customers? These are just a few of the questions that need to be answered during an assessment.

Energy Efficiency – we elect to include an energy efficiency assessment. Many times this assessment can identify cost saving and/or operational issues which can be addressed reducing expense, saving energy and optimizing the overall operation of the utility.

Rate Analysis – how many of you have been asked to provide rate information for either systems within a utilities general area, or of a similar size? Every utility is different, and as such, rates will vary based on technologies, geographic area covered, number of connections, etc...Before setting rates, we encourage systems to thoroughly review their operating expenses. In many cases, there are a multitude of expenses that have little to nothing to do with running the utility. You cannot effectively have a sustainable utility if they are robbing from Peter to pay Paul. Last, the Affordability Index will provide a great reference for the elected officials as they adopt and establish rates.

Water Loss/I&I – an assessment should include a water loss of I&I study. While not true for all states, NY has plentiful water supplies and therefore many utilities also have a higher than average unaccounted for water loss. This generally also impacts the I&I for a wastewater system to some degree. Proper meter selection and installation, water use policies and procedures, and leak detection services can reduce this avoidable loss of revenue.

Asset Management/Mapping – given the technology available today, we incorporate these two items. Identifying your assets and maintaining projections on cost of replacement can provide a useful tool especially when budgeting for the reserve accounts we mentioned earlier. Asset management is not just pumps, additive feed system components and treatment plant equipment, it is also distribution and collection system piping and appurtenances. Many low cost and easy to use mapping systems are available today that will provide GPS coordinates of your assets, but also provide software to manage cost and asset replacement intervals.

Operational Review – an often forgotten portion of a sustainability assessment. Have you ever heard, "but we've always done it this way"? Yeah, me too. I may have even uttered those words once or twice in my life! This may be the most difficult portion of an assessment as most of us do not want to be critical of our peers. However, technologies change, many low cost advancements are available to reduce operational expense allowing utility personnel to focus more of their efforts toward more necessary critical components of the system. Positive reinforcement and education can lessen the resistance.

If you're still reading this article, you have probably figured out I'm a water and wastewater geek. Yeah, I know, my wife reminds me on a daily basis. I prefer to call it a passion, but either way, how do we get utilities involved? As mentioned earlier, for this pilot we were fortunate to enlist two systems who were completely new to the industry. Their local elected officials were eager to learn what could, and needed to, be done to create a more sustainable utility. What about those systems who have been in business for a long time and have no idea where to start?

In New York, we are very fortunate to have Wastewater Technician, Steve Grimm. Several years ago Steve identified the need for sustainable practices in the wastewater industry and was searching for solutions, when along came the Workshop In A Box (WIAB). Admittedly, Steve is not a classroom trainer. I personally think he does a fantastic job in the classroom setting, but he on the other hand, prefers field training. Steve took the WIAB and developed a field usable committee approach to evaluate a systems performance in ten key management areas as well as, to aid in developing and implementing a plan to improve lower performing areas. Enrolling a utility is the most difficult component. Steve provides education to wastewater systems identified during on-site technical assistance calls that appear to need further assistance with sustainable management practices.

Once a utility is identified, he works with them to establish a sustainability committee. This committee generally includes himself as facilitator, the chief elected official (Mayor or Supervisor), clerk, one additional board member, the chief utility operator, and two utility customers or residents. The last two members are critical to the success of the process as they represent the public who will ultimately support and fund the recommended improvements. Steve starts with a "kickoff meeting" to include general information on the assessment. Future meetings are scheduled monthly with a time limit of no more than two hours, and committee members are provided tasks or "homework assignments" to be completed between meetings. These assignments are vital to keep the committee members engaged and moving toward their common goal. The final step in this process is developing the draft system management improvement plan. This plan outlines actions to be taken to address their key management areas needing improvement. Upon completion, the committee presents the plan to the entire board for approval. Generally, to attain the goals identified, 8-10 meetings will be required to complete the entire process. To date, Steve has worked with six wastewater systems, with great success in each and every case. Those wastewater systems have implemented new practices, improved efficiencies both financial and operational, and tout a much improved relationship with the customers they serve. Thank you Steve for your dedication and commitment to the systems we serve and for assisting them with techniques to provide...**Quality on Tap!** 💧💧💧