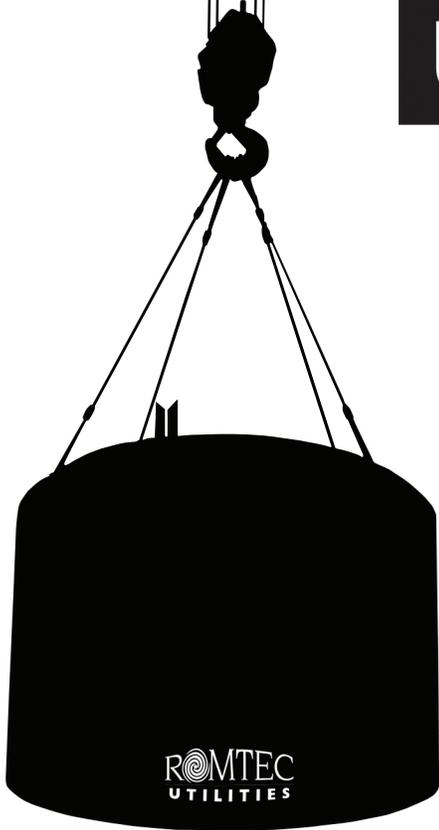


ROMTEC

UTILITIES



Developing a Successful & Reliable Water Collection Department

Romtec Utilities
Technical White Paper

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Developing a Successful & Reliable Water Collection Department



Figure 1: Conducting Start-Up Training

Introduction

For the past 50 years, most collection systems have been designed and built without design standards and without much operational control from the pump station or lift station owner. In many cases, each pump or lift station project involved a different engineering firm and a different contractor. This process results in each pump and lift station being different and the collections department being responsible for the operation of a variety of different lift station designs that leads to ongoing problems and short life-cycles. In other words, if a city public works department or a utility district approves of using different civil engineering firms and the lowest bidder to complete each new and different lift station project, then the wastewater or stormwater collections department must be happy working in a collection system with no standardization and frequent problems.

Developing, managing, and maintaining wastewater and stormwater pump stations is an important job for a public utility district. These pump and lift stations operate at all hours of the day and night and unfortunately, have a tendency to fail at the worst of times. In wastewater, these times are typically holidays when increased numbers of people to an area stress the system, and in stormwater, it's smack in the middle of the five-year storm. How does a water collection department handle these unfortunate circumstances while managing pump and lift stations?

Each utility district has unique characteristics in terms of district size, experience, personnel, resources, and culture. Understanding these aspects of each district is the first step toward developing a successful framework for a collections department. When the alarm goes off at midnight on New Years Eve, it is important to have a lift station that a collections department understands and can manage.

To establish this foundation, Romtec Utilities has observed a common process that has proven successful in many municipal utility districts across the country. The first step is to establish specification preferences for all the major systems of a packaged lift station. The next step is to develop a forward thinking design standard that can be applied to every new pump or lift station specification. The final important step is to maintain a support relationship with an industry expert like Romtec Utilities, who will manage the design and construction of each new lift station. These steps will establish the basis for an ongoing process that will help any collections department succeed in managing its water collection system.

Establishing Specification Preferences

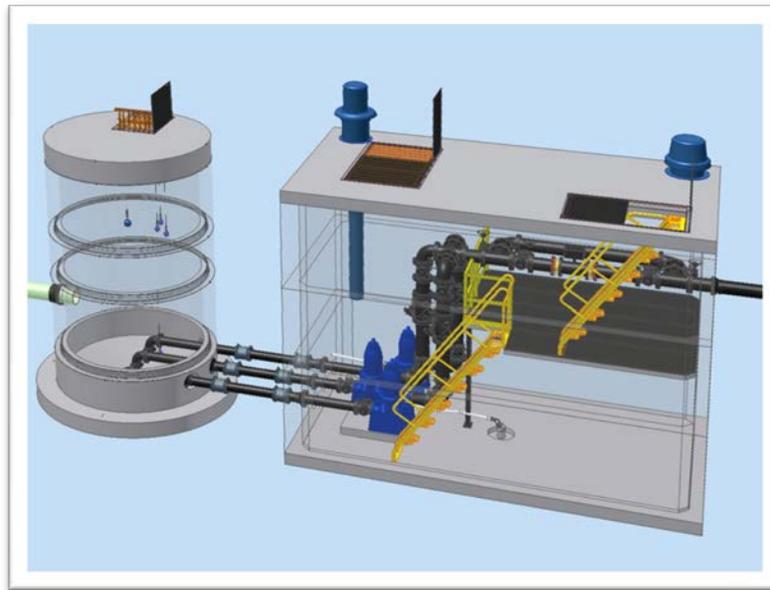


Figure 2: A Preferred Dry Pit Design

There are two predominant considerations for establishing preferences. The first and foremost is budget. There are very few utility districts that can afford to ignore the price tag. The second major consideration is the experience of the staff. Pump and lift station design and engineering can be accomplished with countless options. The experience of a staff in terms of familiarity with equipment or trustworthiness

of a manufacturer is important because experience is very valuable for understanding a system.

In a typical pump or lift station project, the budget looms over the entire process, and without a clear set of preferences, the process of reaching a target price with the appropriate equipment can become drawn out. When this occurs, a collections department can become mired in design versus price negotiations. This kind of financial inefficiency can siphon time and funds from other projects because most engineering firms charge by the hour.

Romtec Utilities sells complete packaged pump stations that are designed and built specifically for each individual owner. This is accomplished by staying true to the goals of the owner throughout the entire process. When budget preferences are specified at the beginning, Romtec Utilities will meet that budget with the appropriate designs quickly. By developing an understanding of the costs of a pump station in terms of design, supply, installation, and maintenance, a city and its collection department will save money that it can surely use elsewhere. Romtec Utilities is an excellent resource for reaching this understanding.

After budget preferences, the next major consideration for establishing pump station specification preferences is the experience of the staff. A city's staff is going to be best served by using familiar equipment that utilizes the total experience of the department. The department might prefer a particular control panel layout or alarm communications. Even if the technology is not the latest and greatest, a collections department will be best suited by utilizing systems it understands and with which it has experience.

Remember, staff members of a collection department know things that an engineering firm does not. This experience can lead to certain design choices that may not be typical. Romtec Utilities asserts that each pump and lift station should be site-specific because no one knows more about the conditions of a district than the people who work there. When developing equipment preferences, it is extremely valuable to use in-house experience.

Preferences can be specified in extreme detail, but remember that the goal is building lift stations that are the same. For a collections department, establishing preferences should simply be a process of determining which qualities of a pump station project –whether price, equipment, or otherwise– are important to keep the same. When these preferences are ironed out, they should be published as the lift station design standards on the city or district's website.

Creating Design Standards

Design standardization can result from many practices. It can develop organically over time from key personnel. It can also be an organized effort that is established for all future projects. Standards may also attempt to recreate an affinity with a specific pump station configuration. However it occurs, creating design standards is in the best interest of a utility district and its collection department to make sure new pump stations match its preferences.



Figure 3: A Standardized Equipment Layout

There are many ways that design standards help develop a successful collection department. The most recognizable benefit is developing better familiarity and understanding of all the lift stations under a department's management. When the alarm goes off at midnight on New Year's Eve, it won't matter which station in the system fails because each station will be the same and require the same actions. This helps collection departments avoid untimely delays and downtime. It also reduces frustration with troubleshooting and inspections.

Beyond the operation of a lift station, design standards help increase the speed with which projects can get approved. A clear standard can be used by engineers to develop correct plans early in the review period. Romtec Utilities is particularly well suited to meet standards by repeating designs and engineering practices. This process then takes less time for the utility district to review.

Another common way that design standards help develop successful collection departments is by reducing the need for large inventories. When each pump or lift station in a district is designed the same, there is less need to keep a back up inventory for each individual station. This would typically not be the case if each station is different. Reducing the size of the inventory saves money and storage space, and it also reduces the opportunity for components to get damaged or otherwise deteriorated.

The final benefit of implementing design standards is related specifically to working with Romtec Utilities. Romtec Utilities provides on-site start-up and training services for every lift station. This work with an on-site technician can be video recorded and used at any time to train new staff members or provide a reference for specific aspects of the lift station. Design standards make each lift station in a collection system the same from an operation stand point, so personnel training can be replicated in-house after the standards have been implemented.

Maintaining a Relationship with an Expert



Figure 4: Romtec Utilities Provides Lifelong Assistance

The final step to developing a successful collection department is to have a working relationship with an industry expert that understands your design standards and district. Maintaining a relationship with a company like Romtec Utilities is important for a few reasons. Experts accumulate knowledge from daily work about an entire industry that is typically beyond the focus of a collection department. Experts also are equipped to help very rare or complex problems.

Industry experts build a constant knowledgebase of trends, advancements, and regulations that might not immediately be seen at the district level. Having this type of contact can help a collection department continue to develop its standards when changes are necessary. Romtec Utilities talks to hundreds of utility districts annually. The information learned in these conversations and conferences can prove extremely valuable to other districts, especially when a collection department has implemented successful methods for saving time and money.

This same knowledge base can also be beneficial when particular regulations start to trend across districts. Sometimes Romtec Utilities will suggest a change to adapt to regulations that are likely to be implemented. This could be a way for a district to avoid penalties or training responsibilities, but it could also be a way to save money. Currently, Romtec Utilities is seeing a shift in controller preferences from proprietary pump station controllers to PLC (programmable logic controllers) devices. This is resulting in changes to the design standards of many districts. Romtec Utilities frequently advises past and current customers of the success that districts are having by switching from "Brand-X" controller to a PLC device. This shared experience helps the ongoing development of any collection department.

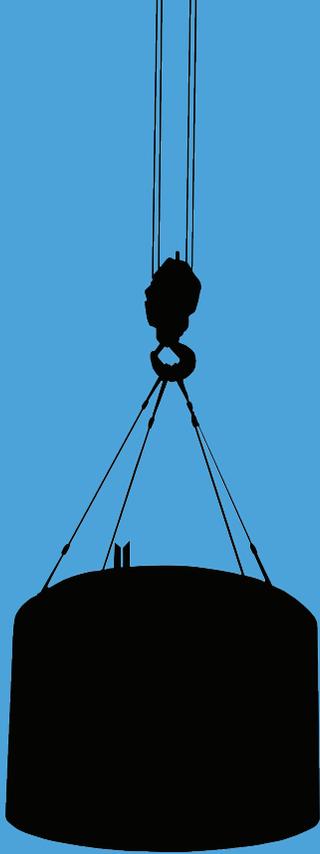
Another advantage to maintaining a relationship with a company like Romtec Utilities is that lift stations can on rare conditions experience very complicated and difficult problems. In those situations, it is extremely beneficial for a collection department to have the help of an expert that is familiar with its standards and systems. Customers and clients who continually interact with Romtec Utilities will be able to be helped easily. This assistance extends to any aspect of the lift station and even the surrounding district conditions for any Romtec Utilities' lift station project.

Romtec Utilities is able to provide this assistance because each lift station is expertly documented and archived in a secure private computer network. This type of documentation allows the engineers at Romtec Utilities to understand a lift station question even if the project is years old. These types of situations are rare, but Romtec Utilities has been able to assist collection departments in solving complicated problems even after the warranty period is over. Many times this was accomplished quickly and at no cost to the customer.

Conclusion

Developing a successful collection department can be accomplished any number of different ways, but this article outlines a process that Romtec Utilities has seen be

successful in many utility districts. The important thing to remember about this process is that it should reflect the unique design preferences and characteristics of each department. The goal is not to be like one district or another. The goal is to have an efficient and economical department capable of serving the local district and community. Romtec Utilities enjoys seeing departments develop successfully and is willing help any client or customer work toward this goal. Implementing preferences, standards, and a professional relationship can happen immediately on any new pump or lift station project.



About Romtec Utilities

Romtec Utilities, Inc. designs, manufactures, supplies, and installs site specific packaged pump stations. Our pump stations include detailed drawings and specifications in the CSI format with all structural, mechanical, communication, and electrical plans. Our documentation also includes a complete bill of materials, a well-defined scope of work and services, and a complete system warranty. Our complete packaged systems serve commercial, municipal, state, federal, agricultural, and industrial applications for virtually any type of water-pumping system.

Romtec Utilities, Inc. began operation in 2000 in Roseburg, Oregon. The US economic conditions at that time fostered the growth of a booming housing market, and Romtec Utilities did a lot of business working with developers and public agencies who needed packaged lift stations. Romtec Utilities distinguished itself by offering quality designs, fast lead times, and an ability to get projects approved and installed quickly.

In the wake of the 2008 Financial Crisis, the market changed and so did Romtec Utilities. Romtec Utilities made a rigorous evaluation of its product offering to become more cost competitive. We also placed more emphasis on working with industrial clients with a broad range of applications.

In the following years, Romtec Utilities underwent dramatic changes that have ultimately made us a better company. We expanded our interests to include more stormwater, more wastewater, and more industrial water applications. We improved our vendor relationships to provide our customers with more products and capabilities at lower prices. We developed an efficient and precise documentation process to foster fast and clear communications, and we strengthened our field services and repair capabilities.

We have completed hundreds of projects across the United States and have supplied packages for international installations. Contact us for assistance. We love to talk about pumping systems of every type, shape, and size!



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