

Wastewater Service Provider Cleans Up With New Processes.

Client:

A nationwide provider of wastewater treatment services was struggling to meet the year-end goals of a municipal contract. USC Consulting Group worked with them to realign their processes with smarter scheduling and planning methodologies, helping them to avoid costly fines.

Challenge:

As part of its water treatment service offering to a major Midwestern city, our client was responsible for thoroughly cleaning and maintaining sewer lines across the region. In the company's contract with the regional utility, the company must maintain (clean, inspect, test, and repair) more than 2.6 million feet of sewage pipe annually, revisiting locations on a specific frequency to ensure optimum performance.

However, in the 4th quarter of 2015, the company had fallen significantly behind. Although already 75% through the year, they had not yet reached 60% of their contracted footage. Management and work crews needed to boost their efficiency quickly and effectively but, as a similar shortfall in 2014 indicated, were in need of some highly focused help to zero in on which of their processes were holding them back and how to prioritize a strategy for recovery.

Process:

Solution 1: Personnel Scheduling

When the company deploys a cleaning crew to an area, each job requires two employees: a Vactor Operator and a Laborer. Though Laborers possess a general skill set, Vactor Operators receive specialized training to safely and effectively operate advanced, truck-mounted sewer cleaning equipment. Early in our engagement we noticed a problem with the imbalance in crew assignments. After working to establish Reasonable Expectations for each task, we worked with the client to develop a Resource Capacity Plan to match available crewing to the work that needed to be accomplished by the end of the year.

Next, we assisted the management team in devising a workforce organizational strategy. In doing so, we found that there was not enough human capital nor work hours necessary to accelerate to the pace needed to meet their year-end footage goal. Two temporary laborers were added to remedy the crewing imbalances and six Saturday work days were planned. Using GIS data-intelligence, Planners and Managers were able to target sewer segments that were due for cleaning yet had a history of low debris. The

temporary increase in additional labor costs was insignificant when compared to the cost to the company of falling short of its year-end targets with the city.

Solution 2: Truck scheduling

Traditionally, the company had divided their equipment resources evenly between their cleaning crews and their diagnostic crews. However, this method of allocating equipment was not aligned with the available labor resources. If all of the diagnostic labor resources were available they could only deploy three of their five trucks, idling 40% of their equipment. On the other side, the cleaning crews could deploy up to seven trucks with only 5 assigned. By operating this way our client inadvertently prevented their cleaning crews from achieving additional output because they did not have the access to the necessary equipment.

By integrating a fleet availability matrix tool into the truck scheduling processes, Supervisors can now identify which equipment resources are available and which labor resources can be assigned. This small, but strategic change in their planning and execution methodologies allowed them to boost the utilization of their available equipment resources from the mid 60% range to over 90%. Additionally a higher degree of transparency was achieved to better schedule equipment and labor resources to complete work. As a 'fine-tuning' step, Vactor Operators with more experience were assigned older equipment and newer equipment was assigned to lesser experienced Operators, minimizing another contributor to the department's equipment availability issues.

Solution 3: Job scheduling

At the beginning of each workday employees had previously been asked to build their own daily work plans. Whether it was determining which portion of a basin map they were going to work or which work orders they wanted to complete, the critical element of assigning work from the broader perspective of contract performance was not fully taking place. Without supervisory oversight, critical planning elements such as work sequencing priorities, work area groupings, and travel time considerations were not being factored into the daily assignment process.

We restructured the daily planning and timesheet processes by requiring that supervisors not only designate specific assignments, but also calculate and communicate an expectation for the amount of footage to be completed. This placed responsibility and accountability for performance back into the hands of the supervisors where it needed to be.

Performance Results:

During the first three quarters of 2015 our client serviced an average of approximately 13,000 feet of pipe weekly which equated to about 700 feet of pipe, per truck, per day.



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After implementing our recommended changes to scheduling and capacity management, they have been able to average more than 65,000 feet of pipe per week or 1,800 feet per truck per day, an increase of over 250%!

Conclusion:

The company was able to overcome its deficit and reach its annual footage goal before Christmas 2015, and now has a solid process and a plan in place to not only achieve its 2016 goals, but to do so at a reduced cost and with less reliance on sub-contracted services.