

The Plumbing vs. Management Dilemma

Reducing Water/Sewer Costs Without Losing Functionality

By: Frank Fix, Master Plumber

“You cannot have a core of excellence in higher education if you don’t demonstrate a commitment to facilities. It is time to recognize that facilities provide the center piece around which all other functions of higher education take place.”

Dr. Ernest L. Boyer, Carnegie Foundation for the Advancement of Teaching.

GETTING OFF THE DIME: Today, the cost of water/sewer is proportionately one of the fastest growing business expenses in the United States. As water tables are being drawn down to critical levels all across the country, government leaders are learning the hard way that you can’t just legislate change; you can only bring it about through the use of pricing. The city of Albuquerque, New Mexico, perhaps gives us the best example of this. With an aquifer almost totally depleted (and a perk rate of over 1,000 years to refill it) Albuquerque’s city fathers decided two years ago to mandate that by January, 2003, everyone living in the city had to replace their toilets with 1.6 gal low flow units.

The resistance to this program was tremendous. Talk radio shows were filled with callers vowing to defend their property with firearms and to fight “being ordered by their local government to do anything that costs them money unnecessarily.” The leaders of the Albuquerque renovation program were stunned and confused by the lack of cooperation. “We are running out of water,” one project leader begged a detractor on a radio show, “What are you going to do when we have no water?”

“Maybe I’ll dig an outhouse!” the caller answered, “But no one is going to make me get rid of my perfectly good toilets!”

What was Albuquerque’s combined water/sewer rate at the time they were trying to force this mandate? As unbelievable as it may sound, the city’s rate was less than the national average, at the time, of \$5.50 per thousand gallons. Is it any wonder that this type program, without a stick or carrot to produce incentive, failed to achieve its objective? If, instead of demanding that everyone change out their toilets, the Albuquerque city fathers had quietly increased the water/sewer rates to match those of Boston, San Francisco and Sarasota Florida’s rates of around \$12.00 per thousand gallons, the same callers who were ready to fight to keep their old toilets might have been calling in to find out where they could get the best deal on new 1.6 gal low flow fixtures.

At the Federal Water Conference held at Disney World in October, 2002, the common thread of accepted wisdom that most of the presenters referred to in their talks was “*only pricing can produce conservation and that current water/sewer prices are way too cheap across the United States to produce substantially less consumption.*” One Water District in Florida, for example, announced at the conference that they were planning to actually double water rates, every two years for the next 4 years (that would be \$2.20 to \$4.40 to \$8.80). Add in \$3.00 to \$5.00 sewer charges to that water costs and everyone in that District is going to be paying the current Sarasota rate of \$12.00 per thousand gallons.

Will this bring about conservation? You bet it will! A \$40.00 water/sewer bill ten years ago received very little attention. Today that same bill is \$120.00 and causing some annoyance. When, in five or six years, your \$350 to \$400 water/sewer bill rivals your utility electric bill (or in many cases is greater than) it will get everyone's undivided attention.

CONFLICTING OBJECTIVES: As water/sewer rates rapidly increase across the country during the next several years, pressure will build on management to find new ways to reduce consumption. If it hasn't already, business will begin to look at these runaway costs as totally unacceptable and will demand that management produce solutions. Good luck to those supervisors who continue to think that "Water/sewer is too small a percentage of the overall expense costs to worry about." Management is going to have to develop a "hands on" approach, become more involved, and certainly become a lot more knowledgeable about their plumbing systems than they are today.

Most facility supervisors and directors have never seen the inside of a commercial flush valve. They rely totally on their plumbing staffs to keep the systems maintained and operating in good order. They would no more make a plumbing system decision without their plumber's input than they would make an electrical decision without their electrician's input. But caution should be the watch word here, for the main reason that the plumber's objectives may be far different than those of management.

Except for repairing or preventing leaks, many plumbers do not have a burning desire to reduce water consumption. They should have, but they don't. I speak from experience. Plumbers feel this way with good reason. They look at any type of water use reduction as having a direct relationship towards increased maintenance requirements; in other words, reducing the water flow could create more work for the plumber. In many cases this assumption would be correct.

The early 1.6 gal low flow toilets, brought on by passage of the 1993 Energy Act, were a disaster for one reason or another. In their haste to comply with the order, many manufacturers produced flawed designs that failed to clear properly using such small amounts of water. The early fixtures were called "*Four Flushers*" and jokes about their poor performance were commonplace. Newly constructed facilities were required by law to have them installed so there was really no one to blame for their malfunctions except Congress. It bore the brunt of criticism and there was once even a bill before Congress to do away with the minimum flush 1.6 gal toilet.

On the other hand, aggressive management who sought to be the first on their blocks to dramatically cut water/sewer cost by renovating their systems with the new 1.6 gallon fixtures paid a high price in the abuse and criticism they had to endure. Much of this complaining was led by their own plumbers, who were now forced to carry plumber's snakes and plungers with them most of the work day. It is important to note here that this tremendous backlash, as a result of renovating with these new fixtures, set the stage for where we are today, with the plumbers in total charge of what happens within their facilities.

CASE IN POINT: During our years in the full service "turn key" performance contracting business we have discovered many buildings where the water use was excessive to the point of almost being criminal. We once audited an entire school district where all the fixtures, including those 1.6 gallon low flow units in newly constructed facilities, were all being serviced with Sloan A-36-A Kits which produced a 4.5 gallon flush cycle. Do you think those plumbers who are responsible for flushing a 1.6 gallon fixture with 4.5 gallons of water are concerned about saving water? I don't think so.

"I am looking for something to put more water down the tube, not less," we had the head plumber of a new hospital recently tell us. This fellow, I'll call him Charlie, had just successfully retrofitted all of the

brand new 1.6 gallon low flow toilets in his facility with A-38-A (3.5 gallon) kits. Now, his toilets were using twice the water they were designed to use. We pointed out to Charlie what we thought was a tremendous waste of water, “Flushing 3.5 gallons through a 1.6 gallon fixture is pretty wasteful, don’t you think?” we asked.

“Can’t help that,” Charlie said with authority. “The nurses were all complaining that they couldn’t clean bed pans with 1.6 gallons. They wanted more water so I am keeping them happy. I don’t get paid to save water, I get paid to make everything work right and to keep everybody happy.”

We certainly couldn’t argue with Charlie wanting to keep everybody happy, but we wanted to offer our solution. We told him about using a 2.5 Conservacap, that when used with his 3.5 gallon kits would take 1 gal back out of the flush cycle. “You can flush a bed pan with 2.5 gallons of water easily,” we told him. “And with the new 1.6 china it would be more than enough water to clear every time.”

Charlie wasn’t convinced, “Everything is working well right now,” he smiled. “I am not sure that I want to experiment around trying to fix something that ain’t broke.” We pointed out that as the cost would be less than \$6,000 and the savings could be as much as \$70,000 annually it might be a worthwhile experiment. But the plumber obviously felt that he had no real incentive. Our visit with management, after we left Charlie, was even more enlightening. When we suggested that a \$6,000 investment in Conservacap could probably save the hospital at least \$4,000 maybe even \$6,000 per month, the Director of Facilities became confused.

“How can that be?” he asked. “We have brand new 1.6 low flow fixtures.” He had no idea what was going on. We pointed out to him that his plumber had been forced to modify all of his fixtures to make the nurses happy. This is not an unusual case. It is our contention that there are thousands of buildings operating today with new 1.6 gallon low flow fixtures that actually have the A-38-A (3.5 gallon) kits installed in them. In some cases this is happening with management’s knowledge. In many other cases, management doesn’t have a clue.

MANAGEMENT’S PERSPECTIVE: The best advice we can offer management is to seriously get involved in understanding your plumbing system and its requirements. If you think that your facility has all new 1.6 gallon low flow toilet fixtures and that you are doing all you can do with your fixtures to reduce water/sewer costs, go check out your maintenance supply shed or closet and see what sort of flushometer repair kits are in inventory. If you see all A-41-A (1.6 gallon) Kits, you are on the right tract. Buy your plumber lunch and tell him how much you appreciate his good work.

If, during your inventory inspection, you see a combination of A-41-A (1.6 gallon) and A-38-A (3.5 gallon) kits, be on guard. You don’t need to jump to conclusion here, there is a chance that the plumbers are still servicing most fixtures with the A-41-A (1.6 gallon) kits and just using the A-38-A when they have a special clearing problem that requires more water. It is still worth having a meeting with the plumber and asking him face to face, eye to eye, “Charlie, how many of our low flow fixtures are operating with 3.5 gallon kits in them?” If Charlie tells you that he is not sure, that could be a bad sign. The only answer that should be acceptable is “Hardly any of them, except for the few problem units that we have.” And he should be able to tell you where those units are located.

If, during your inventory inspection, all you find are A-38-A (3.5 gallon) kits or worse yet, like the School District, we mentioned earlier, all you find are A-36-A (4.5 gallon) kits, you might want to ask, “Charlie, how long have you been with our organization, not counting today?” The obvious problem

here is that Charlie has no interest whatsoever in helping your organization reduce water/sewer costs and you have very little chance of instilling that desire in him. Now, if you like the guy a lot (some plumbers, like myself, are very lovable) then you might want to make the effort. Ask him to show you how a flush valve works and explain to him that you have got to find a way to reduce water/sewer costs and you are counting on him to help you achieve your goals. Remember, a plumber's life is a lonely one. We get very little respect from management, and we feel it. I always equate it to the old Matt Dillon lead-in on the radio program version of Gun Smoke:

“Marshall (Plumber) is a chancy job. You're the last man people want to be around and yet the first one they call on when there's trouble. Being Marshall (Plumber) makes a man watchful and little lonely...”
William Conrad (as Matt Dillon)

THE PLUMBER'S PERSPECTIVE: Any good plumber, worth his salt, should have a genuine interest in reducing water use. After all, if he can't do it, who will. I have no patience with those in my profession who take the easy (and lazy) way out of applying more water to reduce maintenance headaches. This is unprofessional and totally unacceptable.

The 1.6 gallon low flow fixture is here to stay. When designed and incorporated into new construction they generally work extremely well and do an excellent job conserving water. Plumbers should really welcome these products with open arms as some of the new piston driven flushometers require little or absolutely no maintenance. On the other hand, using 1.6 gallon low flow fixtures to renovate an existing system requires more thought and consideration.

Today, all plumbers have legitimate concerns about how well some of our older systems will handle substantially less fluid flows through them. There is no question that a 4 inch waste line installed thirty or forty years ago, probably no longer has the same carry capacity that it once did. In these situations, we are justified in having concerns about going to all new 1.6 gal fixtures. There are hundreds of documented cases where facilities have had to replace sewer lines to accommodate a renovation to new low flow fixtures, after the fact. This can be very expensive in older high-rise buildings where long lateral lines, accompanied by right angle turns, seem to continually stop up when fluid flow is reduced by two-thirds.

THE CONSERVACAP PITCH: One of the reasons I helped to develop Conservacap was to provide an acceptable interim step (between 3.5 gallons and 1.6 gallons) that would allow plumbers to solve these dilemmas without having to replace existing sewer systems and without wasting the water that a return to an A-38-A (3.5 gallon) kit would cause. Today, I always explain to plumbers that we developed Conservacap on a functionality basis, not a water saving criteria. In other words, the emphasis was on making sure that the fixture cleared, not on how much water could we save. As a performance contractor, our company could NOT afford or allow call-backs. The cap had to do its job, and the savings were secondary. This is why our 2.75 Conservacap only saves $\frac{3}{4}$ of a gallon per flush instead of a full gallon. We wanted and needed that extra $\frac{1}{4}$ gallon cushion in the flushing cycle.

A Conservacap renovation is guaranteed first to create NO maintenance problems, which is why it has become so popular. Unlike a total fixture replacement, Conservacap is affordable, easy and quick to install and can obtain $\frac{1}{2}$ the savings of a total fixture change out with just a fraction of the cost.