

DON'T OUTRUN THE WATER!

by Pape-Dawson Engineers, Inc. **JUNE 2021**

When it comes to utilities, we all have modern expectations. When you turn on the faucet, water flows. When you depress the toilet lever, it flushes. Builders need to make sure their projects don't outrun the infrastructure's reach—or their faucets might disappoint.

Before you embark on major construction, consider municipalities' infrastructure, especially water and wastewater, as a part of your [due diligence](#). Never assume the utilities will simply be there. According to Mark Ramseur, P.E., Pape-Dawson Engineers, Inc.'s Managing Principal of Central Texas, there are two problems new construction might encounter, depending on location.

The first problem is a result of available land located outside a municipality's service area. While spreading out provides the advantage of ample space, area utilities may be lacking. A recent project Pape-Dawson is designing encompasses 1,500 homes but can only provide water for 600 of them. A significant water distribution project will make up the difference.

Look into the specifics to determine water and wastewater availability. Mark supplies some details: "You may need to get a wastewater treatment permit, for example. On the small end, that might mean a commercial septic system. For

larger projects, you may need a discharge permit through [TCEQ](#)."

Depending on the location, permitting can present difficulties. "Many developments end up being protested by someone," Mark says. [NIMBY](#)-minded neighbors or environmental concerns can easily add a year or two to a construction timeline.

The second problem arises when builders assume utility availability in populated areas. Being surrounded by developments does not guarantee capacity to meet your water and wastewater needs. "Even within city boundaries, capacity can be limited," warns Mark, who has seen delays result from such issues. "There can be problems not only with the existence of pipes, but also their planned capacity." If you're changing the likely utility needs, research the infrastructure to confirm the carrying capacity can satisfy the new construction.

Mark recommends verifying early in the process to avoid cost and schedule issues. "Identify problems and make sure you have time to deal with them. Incorporate the utilities' specifics into your costs, pro forma, and other plans—then move forward with your eyes wide open."

"We go through this with municipalities often,"

he says. “It’s not a hard process.” Before engaging the city, [GIS systems](#) can provide an initial look to confirm there are pipelines large enough to service your project. “Lines aren’t the only need, though,” adds Mark. “You have to account for infrastructure, elevated water storage, pumping stations, and treatment plants. Plan for [fire flow requirements](#), too. The amount of fire flow needed will vary depending on the project specifics. Again, it is good to verify there is enough capacity for your planned development.

Some projects may require alternative water sources. Rural water supplies often support smaller customers (like ranchers or homesteads) but may lack the capacity to serve larger projects. Expected water demand may dictate investigating other sources, such as wells or regional water groups. [Water reuse](#) is another option, Mark says. “We haven’t seen much of it, but that may be changing.”

It’s difficult to deny that water is and will continue to be crucial to development, which has spawned significant efforts to provide it. “The droughts starting in 2010-2011 brought water availability to the forefront and led to the trend of taking water from one part of Texas to satisfy needs of another part,” he notes. The [Alliance Water](#) and [Vista Ridge](#) lines are important examples.

Those deals come with their share of costs and controversies, says Mark. And to add another complexity: you may be forced to pay now—even if you don’t need it now—to ensure water availability at a later date.

From Mark’s perspective, water infrastructure can rarely condemn a project. But, he says, “Solutions are getting more expensive and they’re taking more time.” That’s something to understand and plan for up front.