

Aging Infrastructure

Much of the nation's water infrastructure was built **decades ago** and requires ongoing maintenance, rehabilitation, and replacement. Water system infrastructure includes pipelines, wells, pumps, reservoirs, treatment facilities, pressure-reducing stations, control systems, and emergency backup equipment.

Infrastructure investments are often not visible to customers because many facilities are underground or located away from neighborhoods. However, these assets are **essential to maintaining reliable service**.

Replacing aging infrastructure can help reduce water loss from leaks, improve reliability, lower long-term maintenance costs, enhance emergency preparedness, and extend the life of critical facilities.

Questions We Heard

- **Why replace infrastructure that still appears to work?**

Water and wastewater infrastructure **can continue to function** while becoming increasingly susceptible to leaks, breaks, failures, or reduced performance. Waiting until infrastructure fails can result in emergency repairs, service interruptions, property damage, and higher costs. **Proactive** rehabilitation or replacement allows Camrosa to address aging or deteriorating assets in a planned manner, coordinate projects with other construction, and **prioritize improvements** before failures occur.

Customers who participated in Camrosa's outreach efforts generally supported proactive infrastructure rehabilitation or replacement rather than waiting for failures to occur. While rehabilitation or replacement projects can be expensive, emergency repairs are often more costly and disruptive.



Tank Rehabilitation in Process



Tank Rehabilitation Completed

- **How are replacement priorities determined?**

Replacement priorities are based on a combination of asset age, condition, failure history, criticality, consequences of failure, operational performance, water loss, regulatory requirements, and the cost and timing of replacement. **Not every older asset needs immediate rehabilitation or replacement**, and a newer asset may warrant attention if it has experienced repeated failures and presents a significant risk. Camrosa uses asset management and infrastructure planning to evaluate these factors and prioritize investments where they provide the **greatest reduction in risk and benefit to customers**.

• Can technology help identify leaks sooner?

Yes. Technology can help Camrosa identify leaks and other developing problems **before they become major failures**. Examples include acoustic leak detection, advanced metering, pressure monitoring, flow monitoring, SCADA data, and other sensors and analytical tools. These technologies can help identify unusual changes in flow or pressure, locate underground leaks, monitor equipment performance, and allow staff to respond before a problem results in a significant water loss or service interruption. **Technology is a tool** that complements, rather than replaces, field inspections and experienced operations staff.

Several customers also expressed interest in improved leak detection and customer notification systems. New technologies like the customer portal being tested by Camrosa, can help us identify leaks earlier and provide customers with faster alerts about unusual water use.



Acoustic Leak Detection

• How does infrastructure planning affect future rates?

Infrastructure planning helps Camrosa understand what needs to be replaced, when it will likely need to be replaced, and how much those investments are expected to cost. Developing an Integrated Master Plan that incorporates long-term capital improvement planning allows Camrosa to spread costs over time, build appropriate reserves, pursue grants and low-interest state and federal financing, and avoid relying solely on emergency repairs or short-term funding.

Good infrastructure planning does not necessarily mean lower rates in the short term, but it can help make future rate increases more **predictable** and **manageable**. It also helps ensure that current and future ratepayers contribute appropriately toward infrastructure that provides benefits over many years.

• What happens if infrastructure investments are delayed?

Delaying infrastructure investments can sometimes reduce short-term costs, but it can also increase long-term costs and risks. As infrastructure continues to age, the likelihood of leaks, breaks, equipment failures, and other problems generally **increases**. Deferring needed replacements can result in more frequent emergency repairs, service interruptions, water loss, property damage, and higher construction costs when work can no longer be planned or coordinated.

REACTIVE APPROACH vs. PLANNED APPROACH

 REACTIVE APPROACH	 PLANNED APPROACH
 Wait for failure	 Assess condition and risk
 Emergency repairs	 Planned replacement
 Unplanned costs	 Predictable costs
 Service interruptions	 Minimized customer impacts
 Limited project coordination	 Coordinate with other projects
 Higher risk of property damage/water loss	 Reduce likelihood and consequences of failure

Delays can also affect Camrosa's ability to maintain reliable service and meet future regulatory or operational requirements. In some cases, a planned replacement can be completed for a known and manageable cost, while an unexpected failure may require an immediate and more expensive response.

Strategic planning allows Camrosa to distinguish between investments that can reasonably be deferred and those where delay creates unacceptable risk. The objective is not to replace infrastructure simply because it is old, but to make timely investments based on condition, risk, criticality, cost, and the consequences of failure.