TXWIN
TEXAS WATER
Infrastructure Network

Collaborative
Water Resolution LLC

Texas Water Capital Needs Survey and Analysis

Introduction & Background

This year marks the 4th Texas Water Capital Needs Survey conducted by the Texas Water Infrastructure Network (TXWIN) with Collaborative Water Resolution LLC, an Austin-based water research and public opinion consultancy led by Dr. Todd H. Votteler. TXWIN is a nonprofit 501c (6) trade association founded in 2013.

TXWIN represents companies that build water & wastewater treatment plants, pipelines, flood control and other projects for municipal and regional water utilities, industrial and commercial clients, and federal entities. TXWIN membership includes some of the most respected Texas and national construction companies as well as leading state and national suppliers, fabricators, manufacturers, and construction law firms.

The first Texas Water Capital Needs survey was conducted in 2020 with the initial goal of identifying key trends and challenges in water infrastructure needs during the height of the COVID pandemic. In our first survey we discovered that that market demand for water infrastructure and construction activity was not diminishing. We are still experiencing many of the same market dynamics associated with the pandemic marketplace such as inflation and decreased material availability.

The survey has evolved over time to capture more key data points relevant to water infrastructure investment needs with key input from policy makers and Texas water stakeholders.

Survey Process

The 2024 Survey was formulated in collaboration with water stakeholders in the owner, design and construction community and TXWIN members. TXWIN partnered with all the major water groups, soliciting their feedback and input to ensure that we are capturing key data points. We also depend on these groups to assist us with disseminating the survey to their members in the water infrastructure owner community.

We would like to sincerely thank our valued partners including the Texas chapter of the Association of Water Board Directors (AWBD), the American Waterworks Association (AWWA) Texas Section, the Texas Water Association (TWA), the Texas Rural Water Association (TRWA), the Texas Water Foundation (TWF), and the Water Environment Association of Texas (WEAT).

Survey Methodology

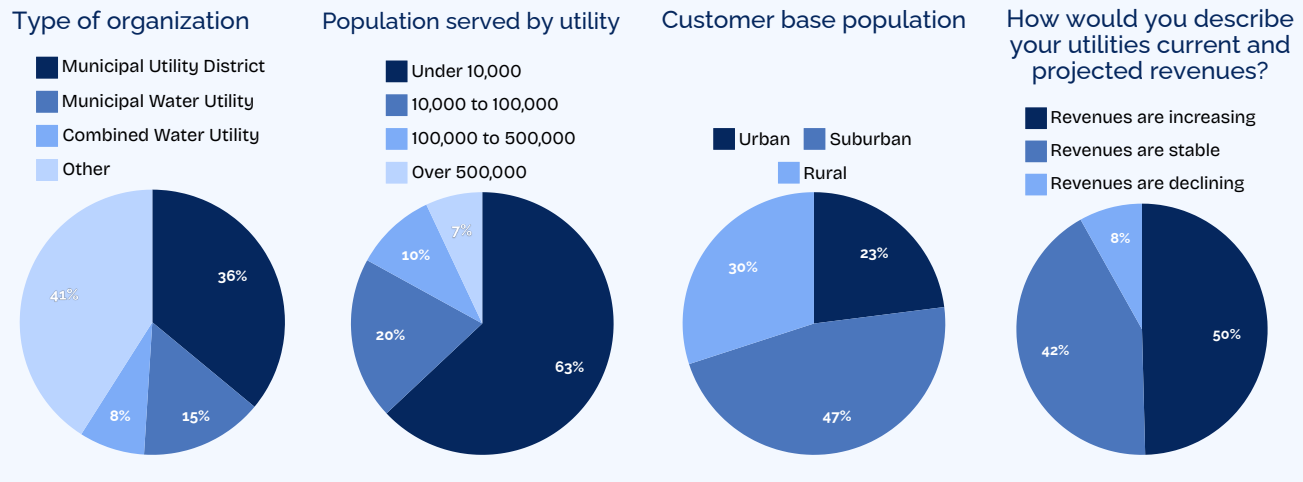
The 2024 Survey conducts a much deeper dive into data based on population demographics. We thought that it was especially critical to look at how of infrastructure needs and drivers, impact on economic development data, funding and procurement trends differed based upon population demographics. The survey is targeted to top management of water utilities who have familiarity with the survey subject matter. The survey had approximately 250 respondents this year, which was the largest response rate to date.

As opposed to the 50-year planning cycles in the State Water Plan and State Flood Plan, we asked respondents to identify their capital need projections in the next ten and twenty-year periods. We also include wastewater in our study which is essential to our water stewardship and deserves more attention as there is not presently a Texas State "Clean Water Plan". Currently our state planning process does not take the cost of clean water infrastructure into account, and we don't have a good inventory of these needs other than the Clean Water SRF Intended Use Plan. This is important when we consider the actual scope, costs, and demand for capital investment in this area.

In addition to the topline responses received, this year we have conducted further analysis based on population demographics. Therefore, the survey was able to gather more data on the magnitude of needs, procurement preferences, and economic development impacts according to the size of utility service areas.

Key Respondent Demographics

From a demographic perspective the 2024 TWCNS respondent sample is representative of the size, range, and type of water utilities in Texas from municipal and regional water utilities, river authorities, to municipal utility districts, special utility districts, privately owned and operated water utilities, and others. The survey was targeted to upper management of water utilities across the state with knowledge of funding, procurement, and infrastructure conditions.



2024 Texas Water Capital Needs Survey Findings

The majority of respondents indicated that their revenues were stable or increasing. The majority of respondents also indicated that the number of connections in their service areas were stable or increasing which reflects the tremendous growth we are experiencing as a state.

While 52.7% of respondents indicated that they were experiencing an increased number of connections, only 1.6% of respondents indicated that they were experiencing a decrease in the number of connections, and 45.7% of respondents indicated that their customer base was stable.

In terms of the most significant water infrastructure needs the top four results were:

1. 27% Water treatment
2. 24% Water main replacement and rehabilitation
3. 23% New or alternative water supplies
4. 15% Wastewater treatment

The drivers for these investment needs are also significant as we identify the forces associated with funding. Aging infrastructure represented the top driver of with 55% of respondents indicating this was the primary factor, followed by population growth demands at 21%, and regulatory compliance as a driver of infrastructure needs for 12% of the respondents.

We also included 2 new questions on economic development in this year's survey because we are increasingly looking at the impact of water availability and infrastructure conditions on the Texas economy.

Economic Development by Population Demographic

There is a growing recognition that water is a driving force of the Texas economy. Here are some population specific data samples on the impact of water supply infrastructure and wastewater infrastructure on economic development. Over the last several years we have seen an increase in moratoriums on development due to water supply and treatment constraints, so we thought it was worthwhile to examine how water availability and wastewater treatment capacity, or lack thereof, have influenced economic development in communities across Texas. For example:

Concerns about water supplies are affecting economic growth and development

Notably, 13.5% of respondents indicated that economic development projects within their service area had been halted, hindered or cancelled due to water supplies in the last five years. Moreover, nearly one-third of all respondents indicated that they were concerned that future development projects could be limited by water availability.

Wastewater infrastructure also has a bearing on growth. Similarly, 9% of respondents indicated that economic development projects had been halted, hindered or cancelled over the past five years due to insufficient wastewater treatment capacity. Nearly one out of four (22.3%) of respondents indicated a concern that wastewater infrastructure could impair future development.

For entities serving populations between 1,000 – 5000:

Water Supply Infrastructure

- 10% cancelled, halted or hindered economic development projects.
- 7% were concerned about future economic activities.
- 65% indicated there were no impacts or concerns.

Wastewater Infrastructure

- 5% cancelled, halted or hindered economic development projects.
- 6% were concerned about future economic activities.
- 43% indicated there were no impacts or concerns.

For entities serving populations between 25,000 – 50,000:

Water Supply Infrastructure

- 31% cancelled, halted or hindered economic development projects.
- 38% were concerned about future economic activities.
- 31% indicated there were no impacts or concerns.

Wastewater Infrastructure

- 7% cancelled, halted or hindered economic development projects.
- 46% were concerned about future economic activities.
- 30% indicated there were no impacts or concerns.

These numbers are fairly consistent until we examined the 250,000 – 500,000 population brackets, which represent larger cities, and areas with suburban growth and increasing numbers in our rural areas adjacent to population centers. What we see demonstrated here is that the majority of respondents indicated that they either had cancelled or delayed economic development or were concerned about future impacts.

For entities serving populations between 250,000 - 500,000:

Water Supply Infrastructure

- 25% cancelled, halted or hindered economic development projects.
- 33% were concerned about future economic activities.
- 38% indicated there were no impacts or concerns.

Wastewater Infrastructure

- 29% cancelled, halted or hindered economic development projects.
- 29% were concerned about future economic activities.
- 42% indicated there were no impacts or concerns.

The uptick continues in the 500,000 to 1 million plus population bracket, which seems to be the most significant economic development impacts, so we have identified a trend here which correlates with population demographics.

For entities serving populations between 500,000 – 1 million:

Water Supply Infrastructure

- 60% were concerned about future economic activities.
- 40% indicated there were no impacts or concerns.
- None indicated that they had halted or hindered economic development projects.

Wastewater Infrastructure

- 20% cancelled, halted or hindered economic development projects.
- 40% were concerned about future economic activities.
- 40% indicated there were no impacts or concerns.

For entities serving populations over 1 million:

Water Supply Infrastructure

- 27% cancelled, halted or hindered economic development projects.
- 27% were concerned about future economic activities.
- 40% indicated there were no impacts or concerns.

Wastewater Infrastructure

- 27% cancelled, halted or hindered economic development projects.
- 9% were concerned about future economic activities.
- 63% indicated there were no impacts or concerns.

It is evident that water can be a driver or barrier to economic development with significant concerns expressed across respondent demographics.

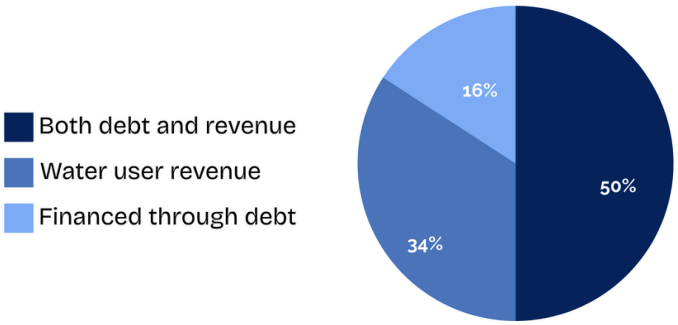
Funding & Financial Assistance Preferences

Project financing, access to capital and various government programs are essential to address Texas's water capital needs. In the survey we sought to identify issues related to financing projects and financial assistance preferences .

Some 19% of respondents indicated current inflationary/economic issues impacted or had impaired their ability to access affordable financing, bonds, or commercial paper from private sector providers, with 39% indicating they were presently concerned about the cost of financing, and/or the ability to access affordable debt financing in the future.

Fifty percent of the respondents indicated that they preferred funding capital programs with a mix of debt/financing and revenues charged to customers, with 34% indicating that the majority of their capital expenditures are paid for by water user fees and reserves, followed by 16% indicating a preference for debt financing.

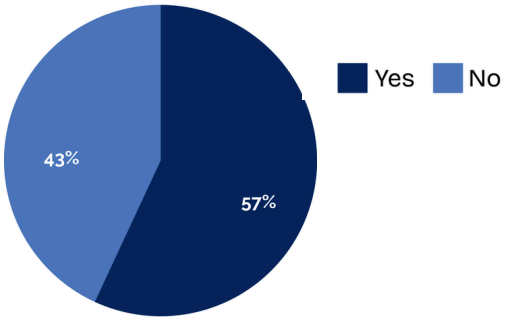
How do you prefer to fund your capital programs?



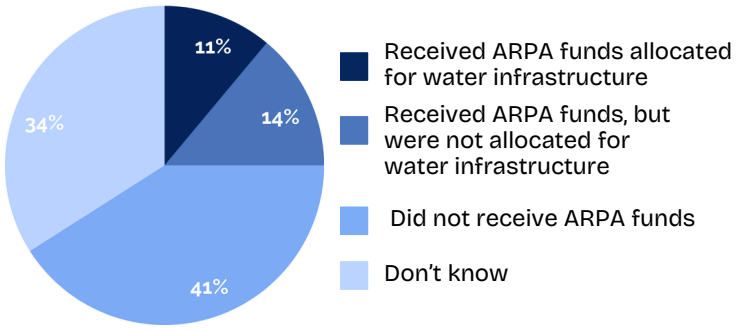
Some 57% of respondents indicated that their water rates were sufficient to fund current and future capital programs, **while 43% of respondents indicating their current rate structure were not sufficient to meet such demands.**

Only 11% of respondents indicated that their water system had received funding from the American Rescue Plan Act (ARPA).

Are your water rates sufficient to fund current and future capital programs?



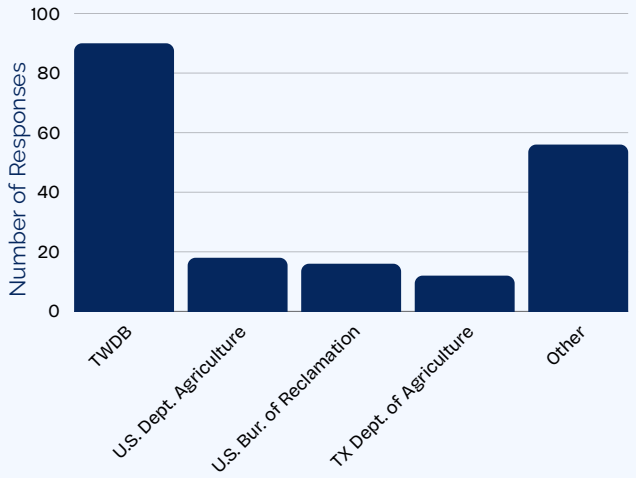
Did your local government receive any ARPA funding allocated for water infrastructure projects?



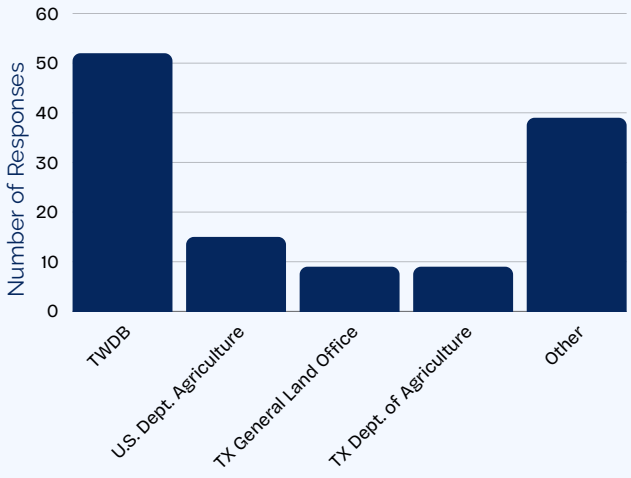
Some 98% of respondents indicated that the Texas Water Development Board (TWDB) was the top government entity that the majority of respondents indicated that they had either applied or intended to apply to for financial assistance in the current year.

Some 48% of respondents indicated that they had received funding from TWDB in the past five (5) years. The U.S. Department of Agriculture (USDA) was ranked second with 14%.

To which state and federal agencies have you applied to or plan to apply to for funding?



From what state and federal agencies has your utility received funding in the past 5 years?



Some 9% of respondents indicated that they had project in the FY24 in either the Clean Water or Drinking Water State Revolving Fund (SRF) Intended Use Plans.

Some 87% respondents who indicated they had not applied to TWDB for SRF funds indicated that they had not applied for SRF funding because the application process and administrative requirements are too cumbersome (30%).

Some 45% of respondents indicated that they preferred to self-fund or utilize other funding programs, 14% indicated they intended to apply for SRF funds in FY25', with 23% of respondents citing other reasons they elected not to apply for federal assistance.

Some 32% of respondents with projects in the FY24 IUPs indicated that they were concerned about increased costs due to increased domestic sourcing requirements included in the Infrastructure Investment and Jobs Act (IIJA), "build America Buy American Act (BABA) inclusion with 41% indicating they were uncertain of BABA cost impacts.

Texas Water Fund SB 28 & Prop 6

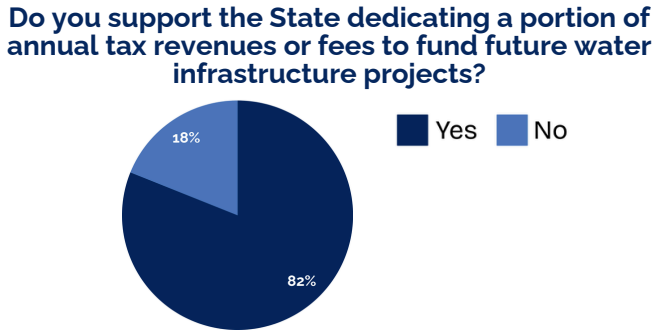
Some 75% of survey respondents indicated they were interested in pursuing funding from the new Texas Water Fund, or the new Texas Water Supply Funds passed by voters in Proposition 6 once these programs become available.

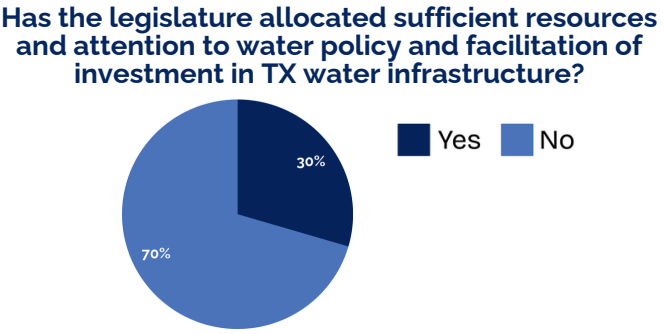
Some 86% of respondents indicating interest in these new funds noted a preference for grants, followed by low-interest loans (56%) and principal forgiveness (51%).

Approximately 56% of respondents indicated that they would prefer a "state only" fund, such as the Rural Water Assistance Fund, State Water Implementation Fund for Texas (SWIFT) etc., to avoid additional federal requirements such as American Iron & Steel (AIS), BABA or National Environmental Policy Act (NEPA) (federal environmental reviews).

Some 82% of respondents indicated that they support the State dedicating a portion of annual tax revenues or fees similar to the way highways are funded in Texas to ensure a consistent reliable revenue stream to assist with funding future water infrastructure projects.

Notably 70% of respondents indicated that the Texas Legislature has not allocated sufficient resources and attention to address water policy and facilitate investment in Texas water infrastructure and water supplies.





Capital Needs

While the survey does not identify a topline figure for total capital investment needs, we can surmise that these figures over the next 10 and 20 year periods are well in excess of current state and federal projections. Some noteworthy cumulative responses included:

- In terms of areas of greatest need ranked by respondents, water treatment represented the greatest infrastructure needs (26.8%) followed closely by water main replacement or repair (23.6%), developing new water supplies (23.3%), and wastewater treatment (15 %).
- Aging infrastructure was identified as the most significant investment driver in Texas at 55.2%, followed by demands associated with population growth at 21.1 %, and regulatory compliance at 12.1%.
- Flood control, developing new or alternative water supply facilities, wastewater conveyance or rehabilitation, and climate change represented the least significant drivers of capital investment needs, however it should be noted that this varies by the type and size of population served and the type of water utility.
- Some 23.5% of respondents indicated that 25-50%, of their water mains needed repair or replacement and 15.6 % indicated that 50-75% of their water mains were in need of repair or replacement.

Population Specific Data

1,000 to 5,000 Population

Top 5 areas of need

1. Water treatment
2. Water main rehab or replacement
3. Wastewater treatment
4. New or alternative water supplies
5. New water storage

Top 5 drivers of infrastructure investment

1. Aging infrastructure
2. Regulatory compliance
3. Population growth
4. Supply diversification
5. Flood control and mitigation

5,000 to 10,000 Population

Top 5 areas of need

1. Water treatment
2. Wastewater treatment
3. Water main rehab and replacement
4. New or alternative water supplies
5. New water storage

Top 5 drivers of infrastructure investment

1. Aging infrastructure
2. Regulatory compliance
3. Population growth
4. Supply diversification
5. Flood control and mitigation

25,000 to 50,000 Population

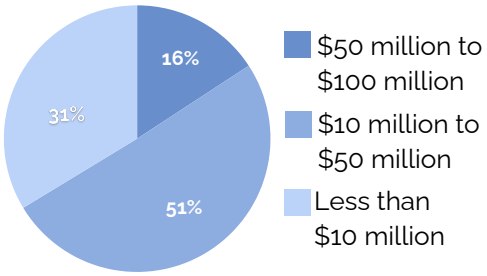
Top 5 areas of need

1. Water treatment
2. New or alternative water supplies
3. water main rehab and replacement
4. Wastewater treatment
5. New water storage

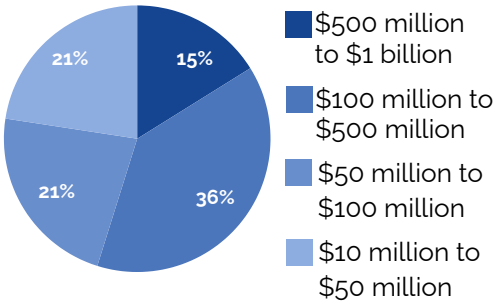
Top 5 drivers of infrastructure

1. Aging infrastructure
2. Flood control and mitigation
3. Supply diversification
4. Climate change
5. Regulatory compliance

Estimated capital construction costs over the next 10 years



Estimated capital construction costs over the next 20 years



250,000 to 500,000 Population

Top 5 areas of need

1. New or alternative water supplies
2. Water treatment
3. Wastewater treatment
4. New water storage
5. Water main rehab replacement

Top 5 drivers of infrastructure

1. Supply diversification
2. Population growth
3. Aging infrastructure
4. Regulatory compliance
5. Climate change

250,000 to 500,000 Population

Top 5 areas of need

1. New or alternative water supplies
2. Water treatment
3. Wastewater treatment
4. New water storage
5. Water main rehab replacement

Top 5 drivers of infrastructure

1. Supply diversification
2. Population growth
3. Aging infrastructure
4. Regulatory compliance
5. Climate change

500,000 to 1,000,000 Population

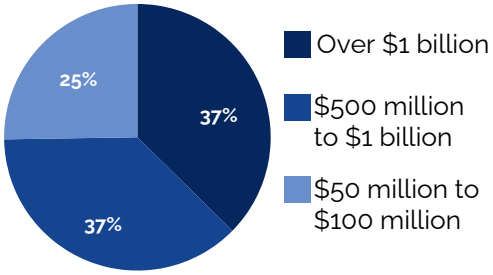
Top 5 areas of need

1. Water treatment
2. Wastewater treatment
3. New or alternative water supplies
4. Water main rehab replacement
5. New water storage

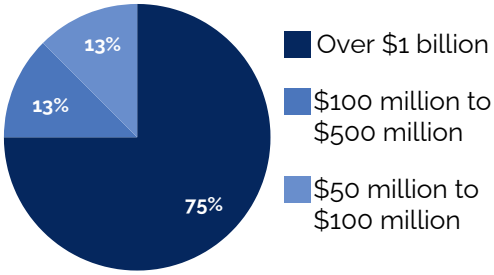
Top 5 drivers of infrastructure

1. Aging infrastructure
2. Population growth
3. Regulatory compliance
4. Supply diversification
5. Flood control and mitigation

Estimated capital construction costs over the next 10 years



Estimated capital construction costs over the next 20 years



1,000,000 Plus Population

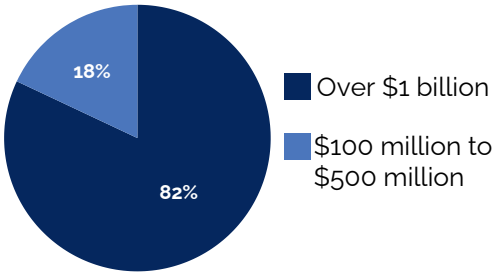
Top 5 areas of need

1. Water treatment
2. Wastewater treatment
3. New or alternative water supplies
4. Water main rehab replacement
5. New water storage

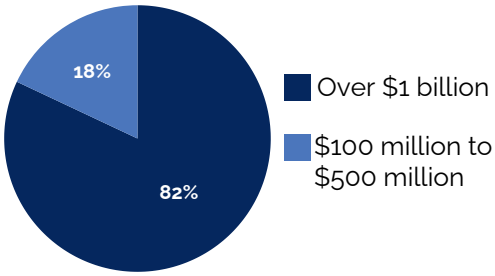
Top 5 drivers of infrastructure

1. Aging infrastructure
2. Population growth
3. Regulatory compliance
4. Supply diversification
5. Flood control

Estimated capital construction costs over the next 10 years



Estimated capital construction costs over the next 20 years



Near Term Capital Expenditure Projections

Texans are increasingly concerned and aware that water infrastructure is a key factor in our sustained economic prosperity. Provision of water and wastewater service is critical for maintaining and expanding the Texas Economy. Some 66% of respondents indicated that they have already committed funds for capital projects in FY 24/25' and 20% indicated that they expected to commit funds in 2024.

Meeting the Water Supply Needs of Texas

Texas' water utilities are working to expand their water supply portfolios to meet the needs of a growing and drought-prone state. This survey polled utilities on their planned projects and strategies for meeting growing water demands. Some 71% of respondents indicated that they had enacted conservation measures and/or drought contingency plans in the last two years. Some 43.4% of respondents indicated that they had projects in the current State Water Plan, which serves as the state's roadmap for developing water supplies needed during extended drought conditions.

The survey results offer unique insights into the types of water supply projects and management strategies utilities plan to deploy to meet growing water demands. Water conservation was the most common strategy referenced, with 52% of respondents citing conservation as key water management strategy. The same number of respondents prioritized water main repair and replacement.

While water conservation was frequently cited, many utilities are exploring avenues for developing new water sources. Over one-third of respondents (36%) anticipate developing additional groundwater supplies or purchasing of surface water rights (36%). Some 25% of respondents indicated pursuing additional wholesale purchases or inter-basin transfers. Approximately 20% of respondents indicated that they were interested in utilizing water reclamation, and 20% indicated interest in pursuing reuse or direct potable reuse Approximately 9% of respondents indicated that they were interested in reservoir construction.

Texas' water utilities are also exhibiting some innovative, forward-thinking when it comes to tackling future water supply challenges. At least 12% of respondents are evaluating aquifer storage and recovery (ASR) strategies. Desalination, too, is a leading consideration in the innovation arena. Some 12% of respondents are looking at brackish groundwater desalination, and 11% of respondents are evaluating seawater desalination to augment future water supplies. Some 10% of respondents indicated that they were interested in cleaning produced water — a byproduct from oil and gas extraction — as a new water supply.

Some 71% of respondents indicated they had enacted conservation measures and/or drought contingency plans. Some 45 % of respondents indicated that drought had not impacted infrastructure repair costs the majority of respondents in indicated some degree of related infrastructure costs which were significant in nature with 39% of respondent indicating increased costs of 5-25%, and approximately 15% indicated increased costs ranging from 25-75%.

Other Related and Emerging Issues

While only 22% of respondents identified the cost of complying with new federal PFAS regulations, 46% of respondents indicated that they were uncertain of the impacts on their utility.

Construction Budgets & Procurement Preferences

Some 29% of respondents indicated that they cancelled, delayed or re-bid capital projects over the last two years due to inflation, or cost escalation, with 54% indicating they had not, with 17% noting they were presently struggling with the issue.

Some 76% of respondents indicated they had increased budgets to account for increased construction costs due to inflationary conditions and supply chain issues. Some 43% indicated that they had reduced project scope with 63% indicating they had just elected to delay projects. Notably 14% of respondents indicated they had incorporated escalation clauses into contracts, and 10% indicated that they had increased shared contingency funds to minimize risk.

Some 72% of respondents indicated that they expected material prices and supply chain issues through the end of 2024 with 23% indicating they anticipated materials, supplies and prices will stabilize at current levels.

Some 53% of respondents indicated that they were concerned about having an adequate number of qualified bidders on your projects, and 62% of respondents indicated they prequalified contractors for their projects.

Some 35% of respondents indicated it was their preference to use traditional design-bid build to solicit and execute projects, with 32% noting it was contingent on the size and complexity of projects. Roughly 16-17% of respondents indicated that they used other methodologies as well, and that traditional design-bid-build was not their preference.

Some 19% of respondents indicated that they are presently using or considering using Construction Manager-at-Risk (CMAR) for capital programs, and 38% of respondents indicated that they are presently or would consider utilizing Design-Build with their capital programs.

Of note only 7% of said respondents indicated that they were not statutorily allowed to utilize design-build with 36% indicating current state regulations were not a key factor in our choice not to utilize design-build for water infrastructure projects.

Some 58% of respondents in this group indicate that they were unaware of current population limits impact on their ability or to utilize design-build.

As an important editorial note, 36.3% of survey respondents self-identified as Municipal Utility Districts or (MUDs) which are not governed by Texas Government Code 2269 which does not have statutory authority to utilize alternative or collaborative procurement and project methodologies including CMAR and design-build. Similarly, certain private investor owned utilities and water supply corporations are not governed by Texas Government Code 2269.

In terms of other contracting and procurement preferences, 77% of respondents indicated they have used the competitive sealed proposal (CSP) procurement methodology in the past, or currently using CSP for their capital programs.

Job order contracting (JOC), construction manager agent, or energy savings procurement contracting (ESPC) methodologies represented the least utilized alternative to other available methodologies for capital programs at 6%, 6% and 3% - respectively. Some 85% of respondents indicated they were not using or have not previously used these methodologies.

Some 14% of respondents indicated that they were currently using, or have used Public Private Partnerships (PPP) or other alternative private financing options to build, operate and maintain facilities

Notably 89% of respondents indicated that they have not changed procurement approaches or project delivery methods to mitigate costs or schedule risk due to current market conditions.

Conclusion

The 2024 Texas Water Capital Needs Survey underscores the critical importance of addressing aging infrastructure as the primary driver for investment in Texas water systems. With significant capital needs estimated over the next decade and beyond, it is evident that sustained investment is essential to meet the growing demands of population growth and ensure regulatory compliance.

Moving forward, continued attention and resources are needed to address these challenges and facilitate sustainable investment in Texas water infrastructure to support economic prosperity and ensure reliable water supplies for the future.

Special thanks go out to the following organizations including the Association of Water Board Directors (Texas), the American Waterworks Association (AWWA Texas Section), the Texas Rural Water Association (TRWA), the Texas Water Conservation Association (TWCA), the Texas Water Foundation (TWF), and the Water Environment Association of Texas (WEAT).

TXWIN would also like to extend our gratitude to numerous friends of TXWIN, and our member volunteers for assisting us with writing and reviewing the 2024 TWCNS content. Additional thanks go out to numerous other organizations and individuals who assisted us in disseminating and the survey to the owner community.

Cumulative survey results and additional data can be accessed on our website at www.txwin.org/24twcns.

Additional inquiries from media, academia or industry publications can email info@txwin.org to acquire or discuss data and survey methodology. Inquiries from Legislative staff should be directed to TXWIN Executive Director Perry l. Fowler at plf@txwin.org.

Follow us on our LinkedIn page and X @TX_WIN.

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