

# National City Water Survey Examines Water Resources, Priorities, Trends

The United States Conference of Mayors' Urban Water Council (UWC) conducted a survey of the nation's principal cities to examine water resources priorities and trends. Mayors were asked in the survey to provide current information in four key water resources areas: issues and priorities; recent and planned major capital investments in water and wastewater infrastructure; adequacy of water supplies; and water conservation activities. The UWC has tracked these four areas (and other subjects) of concern for over a decade.

The survey was distributed to nearly 1,200 cities with mayoral forms of government. These are considered the nation's principal cities because they have populations of 30,000 or greater. Nearly 35 percent of the principal cities (414 cities) responded to the survey, and form the basis for this report, *National City Water Survey 2005*. The following information is derived from the executive summary.

## Water priorities, issues

The top priorities identified include a combination of chronic "every-day" problems associated with maintaining and rehabilitating aging water and wastewater infrastructure, and a number of priorities associated with potential "catastrophic events."

- The chronic "every-day" problems include the number one priority—aging infrastructure (identified by 60.6 percent of the survey cities) and priorities four and five: permits and regulatory issues (also referred to as unfunded federal mandates, at 45.2 percent), and water quality (42.3 percent), respectively.

- The potential "catastrophic events" issues include the number two priority: water infrastructure security (54.6 percent); the number six priority, flooding (38.4 percent); and the number seven priority, emergency planning and management for storms and hurricanes (34.3 percent).

- Concern over water supply availability was identified as the third highest priority (46.4 percent); three other related priorities were identified among the top 10 concerns: drought management (32.6 percent); regional conflict over water use (26.8 percent); and water rights (25.1 percent).

## Water/Wastewater infrastructure investment, financing

The nation's principal cities are engaged in wide ranging and significant investment in building and rehabilitating the five major forms of water and wastewater infrastructure during this decade: water supply; water treatment plants; water distribution systems; wastewater treatment plants; and wastewater collection systems.

- 92 percent of the survey cities made major capital investments in water infrastruc-

ture between 2000 and 2004; 92 percent of the cities plan to make major capital investments between 2005 and 2009.

- 23 percent of the survey cities made simultaneous major capital investments in all five water infrastructure categories.

- Significant investment in underground infrastructure has been made or planned:

- 83.7 percent of cities invested in water distribution pipes, and 72.2 percent of cities invested in wastewater collection pipes during the first half of the decade.

- 79 percent of cities plan investment in water distribution pipes, and 69.8 percent of cities plan investments in wastewater collection pipes for the second half of the decade.

- Roughly one-half of the survey cities either made or plan major capital investments in water supply, water treatment plants and wastewater treatment plants.

- Many smaller cities made or plan water infrastructure investment during this decade, but clearly a higher proportion of large and medium size cities are making investments than smaller cities.

Traditional municipal financing methods continue to dominate city water infrastructure capital investments.

- A small majority of cities (52.3 percent) relied on a single-source for water infrastructure financing in the first half of the decade, but a small majority of cities (53.5 percent) plan to use multiple-source financing during the second half of the decade.

- The financing method used most frequently by the survey cities was the category "other," which was described as "Pay-As-You-Go." This approach relies on user charges, rate increases and capital reserves generated from user charges. Twenty-one percent of the survey cities relied on a Pay-As-You-Go single-source finance method between 2000 and 2004; Pay-As-You-Go was used in combination with other financing methods by 51.7 percent of the survey cities.

- The following multi-source financing methods are used by cities for water infrastructure investments: Pay-As-You-Go, 51.7 percent; revenue bonds, 46.1 percent; State Revolving Fund (SRF) loans, 38.3 percent; general obligation bonds, 28.8 percent; and private activity bonds, 0.8 percent.

## Adequacy of city water supply

Water supply availability was identified as the third top priority by the survey cities. For the most part, cities try to be self-sufficient when it comes to water supplies. Two-thirds of the survey cities provide their own water supply; and roughly 19 percent of the cities are served by private water companies. Some cities face a convergence of issues, including drought management, water rights, inter-basin transfers, ground water depletion, and regional conflict over

water use that may impact their ability to provide adequate and affordable water in their communities.

- 55.6 percent of the survey cities indicated that they have an adequate water supply for more than 20 years.

- 35 percent of the survey cities indicated that they have an adequate water supply for less than 20 years; they could face a critical water shortage by 2025.

- Water shortages may be more pronounced in medium size cities. Sixty-nine percent of the cities that do not have adequate water supplies for more than 20 years have made major capital investments in water supply infrastructure between 2000 and 2004.

## City water conservation activities

The potential for cities to experience critical water shortages in 2015 and 2025 elevates the importance of water conservation activities. Even if cities do not face a critical water shortage it makes good economic and environmental sense to conserve water resources. The survey findings indicate that cities are currently actively engaged in water conservation programs.

- Two-thirds of the survey cities indicated they had water conservation plans in place. A high proportion of large cities (about 80 percent) indicated they had programs. The proportion of smaller cities with conservation programs was lower (58.6 percent).

- Cities were three times more likely to have water conservation programs where water supply infrastructure investments were made in the period 2000 to 2004.

- Cities planning to make major capital investments in water supply infrastructure for the period 2005 to 2009 are nearly four times as likely to have an established water conservation program.

- Two system-wide methods that can be effective in water conservation programs are automated meters because they accurately gauge use and billing; and altering water rate structures as a demand-management tool.

- Traditional water meters remain the most common conservation technique, employed by 72.5 percent of the survey cities. However, 68.8 percent of the cities indicated they would consider modernizing with automated water meters if they could save water or money.

- While the number of cities altering water rate structures is fairly constant over the three population size categories, the proportion of cities employing the technique is clearly related to increasing population size. Almost half of the larger cities use the technique, while only about 40 percent of medium size cities and about 30 percent of smaller size cities do.

The survey can be viewed in its entirety on the Web at: [usmayors.org/74thwintermeeting/nationalcitywatersurvey2005.pdf](http://usmayors.org/74thwintermeeting/nationalcitywatersurvey2005.pdf). ■