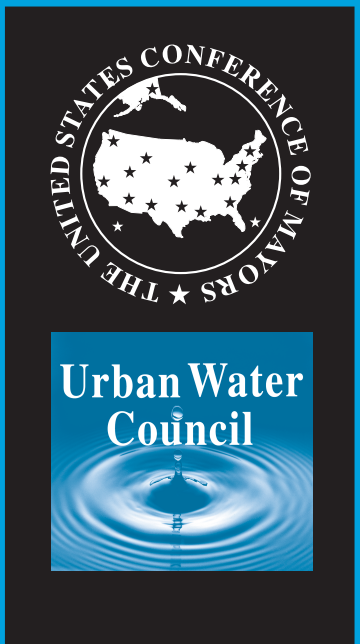
THE U.S. CONFERENCE OF MAYORS URBAN WATER COUNCIL

National City Water Survey 2005

A Report Prepared by The United States Conference of Mayors Urban Water Council

November 15, 2005
Washington, D.C.



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Acknowledgement

The U.S. Conference of Mayors' Urban Water Council would like to acknowledge and thank the 414 city Mayors and their staff who provided survey information for this report.

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Prepared by:

Richard F. Anderson, Ph.D.
Senior Advisor, Urban Water Council

Brett Rosenberg
Environmental Programs Associate

Judy Sheahan
Assistant Executive Director

Executive Summary

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. The survey response, in this case, was greater than usual. Thus, the survey information provides a robust data base.

Water Priorities and Issues

The top priorities identified, measured by frequency of survey response, 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", (see Table 2).

- 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 ten concerns: drought management (32.6 percent); regional conflict over water use (26.8 percent); and, water rights (25.1 percent).

Water and Wastewater Infrastructure Investment and 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, (see Tables 3, 4-B and 5).

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

    - 79.0 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 (see Tables 6, 7 and 8):

- 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. 21.0 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.

- In descending order of frequency, 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, (see Table 11).

- 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 (see Table 12).

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. See Tables 13 through 15.

- 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 gage 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 (Table 15). 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.

Introduction

The Urban Water Council (UWC) is a Task Force of The U.S. Conference of Mayors. It is open to all Mayors, and its purpose is to provide a forum for discussion of issues impacting how cities provide and protect community water and wastewater services. Some of the issues that the UWC focuses on include: development and rehabilitation of surface and subsurface water infrastructure; water infrastructure financing; watershed management; water supply planning; water conservation; wetlands construction and education programs; and water system program management and asset management. Additionally, the UWC serves as an educational clearinghouse for cities by compiling and disseminating water resources "Best Practices."

Periodically, the UWC conducts national surveys to determine trends in water resources programs and planning in the nation's large population cities. Generally speaking, the surveys conducted over the last decade address specific areas of concern regarding water resource issues that are prominent at any given time. This report is intended to identify trends in 2005 from Mayors and their cities participating in the survey.

The 2005 survey focused on four areas of concern: general water problems and priorities; infrastructure investments; water supply issues; and water conservation measures. These are briefly described below.

General Water Priorities and Problems

Mayors were asked to identify which of 24 water resources issues is either a current or future problem for their cities. The list of 24 water resources issues was derived from discussions with Mayors and their staffs, as well as consultation with federal agencies. The list was not intended to be comprehensive. An 'other' response category was included to allow cities to identify issues that were not on the pre-selected list. Mayors were also asked to rank the five most pressing water resources issues on the list. This convention was intended to distinguish priorities among the problem issues, providing invaluable information for federal policy discussions.

Water and Wastewater Infrastructure Investment

Water and wastewater infrastructure development, rehabilitation and financing have been critical concerns for the UWC since its inception in 1995. The American Society of Civil Engineer's Report Card on Infrastructure suggests that water and wastewater infrastructure is in serious need of rehabilitation in America. The US EPA estimates that new investment necessary to comply with existing law will cost more than $534 billion by the year 2019. Conventional wisdom suggests that local government far outspends state and federal government for water and wastewater infrastructure in the United States.

Mayors were asked to respond to questions concerning five categories of major capital investments in the past 5 years (2000-2004) and the next 5 years (2005-2009). The five categories include: water supply; water treatment plant; water distribution systems; wastewater treatment plant; and, wastewater collection systems.

Additional questions focused on how the cities did or will finance these projects. The major forms of financing include: general obligation bonds, revenue bonds, the Clean Water Act or Safe Drinking Water Act State Revolving Fund loan programs (SRF); private activity bonds; and 'other'. It is common for cities to use multiple forms of financing on major capital investments in water related projects. A special focus was placed on the use of SRF financing to determine its extent in capital spending. An open-ended question asked cities to explain why they do not rely on the SRF financing option.

Water Supply

The U.S. Geological Survey (USGS) recently reported that substantial reductions in water consumption have been achieved in both the agricultural and industrial sectors in the United States since 1985. Water consumption related to electricity production remains stable and accounts for the greatest single category of use. The municipal sector, however, is the only sector that continues to grow. The USGS estimates that municipal water use has increased 25 percent since 1985. The USGS suggests that growth in this sector tracks population growth, in spite of reduced consumption due to water conservation programs.

The survey asked Mayors to identify whether their water supplies are owned by the city, or if they contract with a private water provider. Similarly, the survey asked Mayors if they or their private water provider has established and implemented a water supply plan.

The survey also asked Mayors if their cities have an adequate future water supply for the next 10, 20 or greater than 20 years. Additional questions were geared toward determining if city water supplies rely on groundwater, surface water, or some combination. Finally, the survey asked if cities were contemplating shifting water supply from groundwater to surface water.

Water Conservation

Cities may face future water shortages because there is a finite supply of potable water and the population of the United States continues to increase. Therefore, in order to avert critical shortages that would adversely impact local and regional economies, and most certainly impact the quality of life for our citizens it is imperative that cities establish, implement and succeed in their water conservation programs. Water conservation is a hedge against water shortages. While it will not prevent water shortages, it has considerable potential to forestall critical shortages and buy the time necessary to advance technology, market forces and federal, state and local policy developments to ensure adequate and affordable water supplies in the future.

Similar to the water supply questions asked in the survey, the water conservation questions asked Mayors if they or their private water provider have established and implemented water conservation programs. Mayors were asked if their city administration operates a water conservation department.

Other questions were intended to determine if cities were actively experimenting with conservation. For example, Mayors were asked if their cities were altering water use rate structures as a form of demand management. They were also asked if they were modernizing meter technology to accurately audit and bill water consumption.

Materials and Methods

The United States Conference of Mayors (USCM) represents cities with populations of 30,000 or greater. There are roughly 1,200 cities in this size category, and the Urban Water Council (UWC) conducted a saturation survey, (including all cities in this population group, regardless of whether or not they were members of the USCM).

The survey (Attachment A) was mailed or faxed to the Mayor's office in each city. Mayors were asked to fill out the survey questionnaire and either mail or fax them back to the UWC. The survey was also available on the USCM website, and could be filled out and transmitted via a web-based format. Roughly one half of the 414 responding cities provided their response information via the internet.

The 414 city respondents were categorized by population size (Table 1) in order to examine some of the findings relative to size of city. The categories were delineated as follows: 170 smaller cities (41 percent); 140 medium sized cities (34 percent); 104 large cities (25 percent).

Table 1
414 City Survey Respondents Categorized By Population Size (City Size)

Sort by Population Size	(%)
Smaller Cities — Less Than 50,000	41
Medium Cities — 50,000 to 100,000	34
Large Cities — Greater Than 100,000	25

Follow-up efforts involved one or more telephone calls to urge Mayors to respond to the survey questionnaire in the case of survey non-response. Additionally, telephone follow-up was conducted to improve question non-response. Telephone interviews were conducted with half a dozen cities that submitted multiple survey responses. Each of these cases was dealt with by questioning the Mayor or the Mayor's representative about which survey responses were correct and should be included in the tabulation of findings. These cases involved situations where the city might own/operate either the water or wastewater treatment facilities, and/or a private water service provider might be involved. In each case, the convention followed was to include the priorities and information provided by the Mayor's office; or, based on the Mayor's advice, include the private water service provider's information.

The survey questionnaire information was computer coded for data input. Statistical analyses were performed via a mixture of applying the Statistical Package for the Social Sciences software (SPSS), or by applying statistical procedures provided in Microsoft Excel. Simple frequencies of data distributions and arithmetic averages were calculated and reported, as appropriate. Bivariate analyses involved sorting and filtering and the application of crosstabulations for descriptive purposes. Special attention was paid to open-ended questions. The convention used for analyzing these variables was to review each response and construct broad categories of similar responses. Professional judgment was used in these cases; and multiple reviews of the same responses conducted.

Attachment A reports the percentage of cities answering individual questions. The percentages reported were based on 414 cities, the total sample of survey respondents. The reader is cautioned here that the text of this report and the tables presented may vary from reliance on the 414 cities as the denominator in calculating percentages. Each "Table" of findings will indicate the "N", or number of cases (cities) used to make the calculations presented in the table if it does not rely on the full 414 city responses. For example, in Table 3 the percentage of cities making infrastructure investments in a particular category is based on the total number of cities making water and wastewater infrastructure investment for that time period.

Findings

City Water Resource Priorities

General Water Issues and Priorities

Mayors were asked to identify which of 24 water resources issues is either a current or future issue or priority for their cities. The list of issues was derived from discussions with Mayors and their staffs, as well as consultation with federal agencies. The list was not intended to be comprehensive. An 'other' response category was included to allow cities to identify issues that were listed.

The survey cities identified their water resource issues and priorities, which are listed in Table 2 in descending order of frequency. The top three priorities were: aging infrastructure (60.6 percent); water system security (54.6 percent); and, water supply availability (46.4 percent). These findings indicate that cities are concerned about a mixture of ***"every-day"*** problems and ***"catastrophic events."***

The most frequently identified priority is aging water resources infrastructure. This is a chronic or "every-day" problem experienced by many cities. Maintaining and replacing existing water infrastructure has long been a critical challenge for cities. The cost of maintenance and replacement is considerable. The U.S. Environmental Protection Agency (USEPA) has estimated a water and wastewater infrastructure "Needs Gap" of over $500 billion in investment to comply with water laws by the year 2019.

Another ***"every-day"*** problem that is high on the priority list is ensuring an adequate water supply. This was identified by 46.4 percent of the survey cities, and ranked number three on the list of 24 issues. Other issues related to water supply were among the top ten priorities identified: drought management; regional conflict over water use; and water rights. Additionally, the 11th and 13th priority issues were related to water supply, i.e., ground water depletion and inter-basin transfers, respectively.

The second most frequently identified priority was water infrastructure security and protection; this is generally viewed by cities as a potentially "catastrophic event" issue. This has become an important concern, especially since the 9/11 terrorist attacks in the United States. Congress and the USEPA have directed resources toward vulnerability assessments at large and medium sized water supplies and distribution systems. Both public and private water suppliers have been aggressively developing vulnerability plans in an attempt to secure water supplies from chemical and biological sabotage.

Other ***"catastrophic event"*** issues included the 6th and 7th priorities: flooding, and emergency planning and management for storms and hurricanes, respectively. Note that the survey was conducted in the first quarter of 2005, long before the hurricanes Katrina and Rita struck and devastated Gulf Coast communities.

Permits and regulatory issues ranked as the 4th most important priority. This issue has been a subject of considerable concern to the Conference of Mayors for some time. It is generally considered a priority because it involves unfunded federal mandates that are extremely costly for cities to meet. Another recent survey conducted by the Conference of Mayors identified unfunded federal water mandates as the single largest category of costs facing the nation's principal cities.

The top four priorities were examined based on city size (based on population). Aging infrastructure was identified as a priority by 40.4 percent of small cities, 33.6 percent of medium cities, and 26 percent of large cities. Water system security was identified as a priority by 36.6 percent of small cities, 29.9 percent of medium cities, and 33.5 percent of large cities. Water supply availability was identified as a priority by 34.9 percent of small cities, 33.9 percent of medium cities, and 31.2 percent of large cities. Permits and regulatory issues were identified as a priority by 35.7 percent for both small and medium cities, and 28.6 percent of large cities. Other than aging infrastructure, that appears to be especially problematic for small cities, the other three top ranking priorities do not substantially vary by city size.

Table 2
City Water Resource Priorities

Rank Order	Water Resources Issue	Percent Of Cities
1	Aging Water Resources Infrastructure	60.6
2	Security/Protection of Water Resources Infrastructure	54.6
3	Water Supply Availability	46.4
4	Permits, Regulatory Issues	45.2
5	Water Quality of Urban Streams and Rivers	42.3
6	Flooding	38.4
7	Emergency Planning and Management for Storms, Hurricanes	34.3
8	Drought Management	32.6
9	Regional Conflict Over Water Use	26.8
10	Water Rights	25.1
11	Groundwater Depletion	23.4
12	Sediment Management	19.6
13	Inter-basin Transfers	16.2
14	Best Practices – Technology Transfer	13.0
15	Endangered Species	11.6
16	Loss of River Corridors/Green-space	10.6
17	Loss of Wetlands	10.4
18	Other	9.7
19	Water Transportation (Channels, Ports, Dredging)	8.5
20	Beach/Shoreline Erosion	7.5
21	Neglected/Decaying Waterfront Areas	6.8
22	Channel/Harbor Adequacy	4.8
23	Insufficient Water-Oriented Recreation	3.9
24	Waterborne Traffic	3.4

Water and Wastewater Infrastructure Investment and Financing

Major Capital Investment

The survey cities were asked to identify the types of water infrastructure investment they made over the last five years, and what investments they are planning to make over the next five years. The investments were limited to major capital investments as determined by the survey cities. This information is intended to provide a broad view of water infrastructure investment by cities, encompassing a decade's worth of spending activity. Not surprisingly, cities have been very active in making water infrastructure investments. Ninety-two percent of the survey cities made major capital investments in water and wastewater infrastructure between 2000 and 2004; 92.0 percent of the survey cities plan to make similar infrastructure investments between 2005 and 2009.

The survey findings indicate that cities are making extensive major capital investments in the underground (or sub-surface) infrastructure involving pipes (Table 3).

- 83.7 percent of the responding cities made major capital investments in water distribution systems between 2000 and 2004
- 72.2 percent of the responding cities made major capital investments in sewage collection systems between 2000 and 2004

More than 50 percent of the responding cities made major capital investments in water supply, water treatment and wastewater treatment infrastructure between 2000 and 2004.

Table 3
Major Capital Investments in City Water and Wastewater Infrastructure

Infrastructure	2000 – 2004* (% of Cities)	2005 – 2009** (% of Cities)
Water Supply	61.5	59.3
Water Treatment Plant	56.5	49.6
Water Distribution System	83.7	79.0
Wastewater Treatment Plant	55.5	52.8
Wastewater Collection System	72.2	69.8

* Actual investments made by 382 cities, percentage of cities based on a total of 382 cites, not 414 cities.
** Planned investments by 381 cities, percentage of cities based on a total of 381 cites, not 414 cities.

Water infrastructure investment planning over the next five years indicates a similar pattern of major capital spending.

- 79.0 percent of the responding cities plan major capital investments in water distribution systems between 2005 and 2009
- 69.8 percent of the responding cities plan major capital investments in sewer collection systems between 2005 and 2009

Roughly 50 percent of the responding cities plan major capital investments in water supply, water treatment and wastewater treatment infrastructure between 2005 and 2009.

Actual (2000–2004) and planned (2005–2009) water infrastructure capital investments were examined to determine if city size (measured by population) had any effect on investment decisions. Two comparisons were made. First, infrastructure categories for both actual and planned investment were sorted by city size (Table 4-A). For each category, the percentage of small, medium and large cities was calculated. As expected, the smaller cities made up the higher proportions of investments with few exceptions. This was expected because the smaller cities represented 41 percent of the survey city population.

Table 4-A
Major Capital Investments in City Water and Wastewater Infrastructure and Size of City

Infrastructure Category	Small Cities %	Medium Cities %	Large Cities %
Actual Investments 2000–2004			
Water Supply	35.3	34.9	29.8
Water Treatment Plant	35.8	34.9	29.3
Water Distribution System	39.7	33.1	27.2
Wastewater Treatment Plant	36.8	31.1	32.1
Wastewater Collection System	38.2	33.1	28.7
Planned Investments 2005–2009			
Water Supply	34.5	31.9	33.6
Water Treatment Plant	36.0	32.0	33.8
Water Distribution System	38.9	33.2	27.9
Wastewater Treatment Plant	35.4	32.3	32.3
Wastewater Collection System	37.6	33.8	28.6

Second, each infrastructure category was sorted by city size represented by the proportion of cities in a particular city size category (Table 4-B). Thus, the calculation employed the use of the overall proportion of cities in a particular size category as the denominator. A trend (Table 4-B) indicated that as city size increased so did the percentage of cities making water infrastructure investment. This trend appears to be more pronounced in the water supply, water treatment plants and wastewater treatment plants categories. The trend was slightly less pronounced for the infrastructure categories involving water and sewer pipes. While there may be a greater number of smaller cities making or planning water infrastructure investment, clearly, a higher proportion of large and medium size cities are making investments than smaller cities.

Table 4-B
Major Capital Investments in City Water and Wastewater Infrastructure by Proportion of City Size Category

Infrastructure Category	Small Cities %	Medium Cities %	Large Cities %
Actual Investments 2000–2004			
Water Supply	47.6	58.6	66.3
Water Treatment Plant	44.7	54.3	60.6
Water Distribution System	73.5	76.4	83.0
Wastewater Treatment Plant	45.3	47.8	67.3
Wastewater Collection System	61.8	65.7	75.0
Planned Investments 2005–2009			
Water Supply	44.7	52.1	71.1
Water Treatment Plant	38.8	40.7	61.5
Water Distribution System	68.2	72.1	79.8
Wastewater Treatment Plant	41.2	46.4	62.5
Wastewater Collection System	58.2	64.3	72.1

It is common for cities to make multiple investment commitments to the same category of water or wastewater infrastructure over extended periods of time (Table 5). For example, 72.0 percent of cities making a major capital investment in water distribution systems in 2000 to 2004 also plan to make major capital investments in water distribution systems in 2005 to 2009. The other infrastructure categories exhibited similar but less intensive levels of repeat investment: 62.3 percent of cities plan repeat major capital investments in wastewater collection systems (sewer pipes); 47.9 percent in water supply; 45.5 percent in wastewater treatment plants; and 39.0 percent in water treatment plants. This finding indicates that the level of financial commitment to water infrastructure by cities is both significant and sustained.

The survey data revealed that the level of city capital investment in water infrastructure is not only significant and sustained, but is in some cases rather broad. 23 percent of the survey respondents indicated that they had made simultaneous major capital investments in all five of the infrastructure categories listed in Table 3 between 2000 and 2004. The proportion of cities that plan simultaneous major capital investments in all five infrastructure categories increases to 27.2 percent for the 2005 to 2009 period.

Table 5
Percentage of Repeat City Major Capital Investments in Water Infrastructure by Category

Repeat Infrastructure Investment	Investment 2000-2004 and 2005-2009 (% of Cities)*
Water Supply	47.9
Water Treatment Plant	39.0
Water Distribution System	72.0
Wastewater Treatment Plant	45.5
Wastewater Collection System	62.3

* Percentage of cities based on a total of 382 cites, not 414 cities.

Financing Mechanisms

As mentioned above, 92 percent of the survey cities made major capital investments in water and wastewater infrastructure between 2000 and 2004. Of those cities, 97.4 percent reported the type of financing employed.

The survey responses were examined to determine how frequently the cities relied on single and multiple source financing, (Tables 6 and 7). Five categories of capital investment financing were considered in the survey. 52.3 percent of cities relied on a single source of financing for their major capital investments in water and wastewater infrastructure.

Table 6
Frequency of Single-Source Financing Of Major Capital Investments in Water Infrastructure

Type of Financing	2000 – 2004 (% of Cities)	2005 – 2009* (% of Cities)
General Obligation Bonds	9.4	7.3
Revenue Bonds	15.9	13.9
Private Activity Bonds	0.0	0.0
State Revolving Fund	5.9	4.6
Other	21.0	20.6
Overall % of Cities Using Single-Source Financing	52.3	46.5

* Planned major capital investments in water infrastructure.

"Other" was the most frequently identified form of single-source financing, accounting for 21.0 percent of cities. Survey respondents described "other" financing to include: capital reserves from user charges; increased user rates; and transfer from the general fund. These are generally referred to by the survey respondents as "pay-as-you-go" approaches to financing.

The second most frequently identified single-source financing category was revenue bonds, at 15.9 percent. General obligation bonds accounted for 9.4 percent; and the State Revolving Fund Loan (SRF) accounted for only 5.9 percent. Private activity bonds accounted for less than one percent.

Nearly 48 percent of the survey cities utilized multiple financing sources. They rank in order of frequency as follows: "Other" combined with either general obligation bonds, revenue bonds, private activity bonds or the state revolving fund loan at 51.7 percent; revenue bonds and other financing at 46.1 percent; the state revolving fund loan program and other financing at 38.8 percent; general obligation bonds and "other" financing at 28.8 percent; and, private activity bonds and other financing at 0.8 percent.

Table 7
Frequency of Multiple-Source Financing
of Major Capital Investments in Water Infrastructure

Type of Financing	2000 – 2004 (% of Cities)	2005 – 2009* (% of Cities)
General Obligation Bonds	28.8	28.0
Revenue Bonds	46.1	50.8
Private Activity Bonds	0.8	1.4
State Revolving Fund	38.3	38.6
Other	51.7	53.5

* Planned major capital investments in water infrastructure.

A similar pattern of water and wastewater infrastructure financing is planned by the survey cities for the years 2005 to 2009 (Table 6). Slightly over 96 percent of the cities planning major capital investments in water and wastewater infrastructure reported the types of financing methods they anticipate using. Roughly 46 percent of the survey cities plan to utilize single source financing. In descending order of importance, they identified the following plans: "other" 20.6 percent; revenue bonds 13.9 percent; general obligation bonds 7.3 percent; the state revolving fund loans 4.6 percent; and, private activity bonds at 0.0 percent.

Not surprisingly, the 2005 to 2009 financing plans for water infrastructure investment utilizing multiple financing sources is similar to the earlier five year period, (Table 7). In descending order, they are: "other" 53.5 percent; revenue bonds and other financing 50.8 percent; state revolving fund loans and other financing 38.6 percent; general obligation bonds and other financing 28.0 percent; and private activity bonds and other financing 1.4 percent.

Table 8 provides a summary of both single source and multiple source financing of major capital investments in water and wastewater projects. The main diagonal of Table 8 depicts single source financing, while the remaining cells depict multiple financing approaches.

Table 8
Frequency of Single-Source and Multiple-Source Financing
Of Major Capital Investments in Water Infrastructure (% of Cities)*

Finance Method	General Obligation Bond	Revenue Bond	Private Activity Bond	State Revolving Fund	Other
General Obligation Bond	9.4	6.5	0.3	12.7	9.2
Revenue Bond		15.9	0.3	16.2	17.3
Private Activity Bond			0.0	0.3	0.3
State Revolving Fund				5.9	15.6
Other					21.0

* Based on 371 cities reporting finance methods for the period 2000 to 2004.

Survey cities (53.1 percent) indicated that they were willing to consider a Public-Private Partnership (PPP) approach to water infrastructure projects if cost savings in operation and maintenance or construction could be achieved. Slightly over 17 percent of the survey cities did not provide a response to this question. City size does not appear to influence the willingness to consider PPPs. The 53.1 percent of cities that said they would consider a PPP approach had the following city size distribution pattern: 51 percent of small cities; 53 percent of medium cities; and, 58 percent of large cities.

The Role Played by the SRF

The State Revolving Fund loan program (SRF) appears to play a consistent role in the way cities finance major water and wastewater infrastructure capital investments over periods of 2000 to 2004 and 2005 to 2009. The SRF provided a single-source of financing for 5.9 percent of the survey cities in 2000-2004 and is expected to provide financing for 4.6 percent of the survey cities in 2005-2009. In this respect the SRF is the fourth most important source of financing.

The SRF provided one component of multiple-source financing for 38.3 percent of the survey cities in 2000-2004. It is expected to be one component of multiple-source financing for 38.6 percent of the survey cities in 2005-2009. In this respect the SRF is the third most important source of financing.

Generally speaking, the SRF is not a major source of financing for water infrastructure investments among the survey cities. It does, however, play a significant role for the 5.9 percent of the survey cities where it provides 100 percent of project financing. The SRF also provides a substantial (over 50 percent) source of financing for another 17.2 percent of the survey cities (Table 9). It appears to be somewhat more important as a source of financing for smaller cities (Table 10).

Water Supply Information, Issues and Priorities

Two-thirds of the survey cities provide their own water supply; roughly 19 percent of the cities are served by private water companies. Nearly three-quarters of the survey cities have a water supply plan. The survey cities rely on a combination of ground and surface water, (51.7 and 70.3 percent, respectively). Switching from ground water to surface water supplies is rare; with only 6.8 percent of the survey cities planning to switch.

The survey findings suggest that a critical water shortage could occur by 2025 in cities nationwide. Thirty-five percent of the survey cities indicated that they have an adequate water supply for less than 20 years; 55.6 percent indicated that they have an adequate water supply for more than 20 years (Table 11).

Table 9
Frequency of SRF Financing Of Major Capital Investments in Water Infrastructure, 2000-2004

Percent of Major Capital Investment	% of Cities
10 % or less	5.9
20 % or less	3.0
50 % or less	7.3
> 50 % but < 100 %	17.2
100 %	5.9

Table 10
Frequency of SRF Financing Of Major Capital Investments in Water Infrastructure, 2000-2009

Percent of Major Capital Investment	% of Small Cities	% of Medium Cities	% of Large Cities
10 % or less	1.0	1.3	3.5
20 % or less	0.3	0.5	2.2
50 % or less	3.5	1.6	2.2
> 50 %	10.2	8.6	4.3

Table 11
Adequacy of Current Water Supply and City Size

Adequacy of Water Supply	% of Small Cities	% of Medium Cities	% of Large Cities
10 Years or Less	19.3	24.0	17.3
20 Years or Less	15.3	19.2	22.4
Greater than 20 Years	65.3	56.8	60.2
Number of Cities (NOT %)	150	125	98

When city size, based on population, is taken into account, it appears that about a third of small cities will face potential water shortages by 2015 and 2025. The problem is more pronounced for medium size cities with 43.2 percent; and 39.7 percent of large cities.

Water supply availability was identified by 46.4 percent of the survey cities as one of the three top water resources priorities. Focusing on just these (46.4 percent) cities, 68 percent of those cities provide their own water supply while 17 percent rely on private water companies. Cities that provide their own water supply are four times more likely to have indicated water supply availability problems than cities relying on private suppliers. Additionally, focusing just on the 46.4 percent of the survey cities indicating water supply availability as a priority issue, 45.8 percent of those cities will face water supply shortages by 2025, while 44.3 percent have a supply that is adequate for more than 20 years. Eighty-three percent of the cities ranking water availability as a top priority have established water supply plans (even though the supply may be inadequate after 20 years), and 13 percent have no water supply plans for the future.

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 (Table 12). However, 31 percent have not made capital commitments in new water supply infrastructure. More than half (54.8 percent) of the cities with an adequate water supply beyond 20 years have made major capital investments in new water supply infrastructure between 2000 and 2004.

A similar pattern is observed for the period 2005 to 2009 for planned investment (Table 12). Roughly 71 percent of cities without an adequate water supply after 20 years are planning to make major capital investments in water supply infrastructure. More than half (56.6 percent) of the cities with an adequate water supply beyond 20 years are planning major capital investments in new water supply infrastructure between 2005 and 2009.

Table 12
Adequacy of Current Water Supply And
Major Capital Investments in Water Supply Infrastructure
Between 2000 and 2004

Adequacy Water Supply	Not Investing In Water Supply Infrastructure (% of Cities)	Investing in Water Supply Infrastructure (% of Cities)
	2000–2004*	
10 Years or Less	6.3	13.9
20 Years or Less	5.5	12.6
Greater than 20 Years	27.3	34.4
	2005–2009**	
10 Years or Less	5.8	15.7
20 Years or Less	5.2	12.5
Greater than 20 Years	26.4	34.4

* Actual investment based on 366 cities
** Planned investment based on 344 cities

Water Conservation Information, Issues and Priorities

Two-thirds of the survey cities indicated they had water conservation plans in place. A higher proportion of large cities (about 80 percent) indicated they had programs; while the proportion of smaller cities with programs was lower (58.6 percent). Water conservation departments as discrete units of local government are relatively rare (11.1 percent). About half of the survey cities use some percent of automated meters; and the average percent of automated meters in the cities that employed them was 38.4 percent but ranged from less than 1 percent to 100 percent. Traditional water meters remain the most common 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.

A high proportion (82.8 percent) of survey cities that indicated water supply availability was a priority issue had water conservation plans. The vast majority of these cities use traditional water meters (80.7 percent); less than half of them (46.8 percent) use automated water meters and about half of them (50.5 percent) alter water rate structures to improve billing and/or conserve water. Three-quarters of these cities indicated they would consider modernizing their Survey cities that have made or are planning major capital investments in water supply infrastructure are more likely to have established water conservation plans (Table 13). During the period 2000 to 2004, cities were three times more likely to have water conservation programs where water supply infrastructure investments were made. 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. Even where cities did not plan a water supply infrastructure investment, they were slightly more likely to have established water conservation plans.

Table 13
Cities with Water Conservation Programs and Make or Plan Major Capital Investments in Water Supply Infrastructure Between 2000 and 2004 and 2005 and 2009

Has Water Conservation Plan	Not Investing In Water Supply Infrastructure (% of Cities)	Investing in Water Supply Infrastructure (% of Cities)
	2000–2004*	
Yes	23.5	45.3
No	16.9	14.3
	2005–2009**	
Yes	21.5	48.9
No	17.1	12.5

* Actual Investment Based on 391 cities
** Planned Investment Based on 368 cities

Survey cities that have made or are planning major capital investments in water supply infrastructure are less likely to alter water rate structures to achieve water conservation (Table 14). There are two uncertainties concerning these figures that impact how one interprets these findings. First, the survey information does not include knowledge of whether or not altering rate structures in the past significantly reduced the volume of water use. Therefore, it is difficult to say whether the design volume of the water supply infrastructure involved was affected by altering the rate structure. Indeed, the design volume could be driven by population growth, an expanding local/regional economy, or other important factors. Second, cities planning major capital investment in the period 2005 to 2009 may begin altering water rate structures as a conservation measure, and that mechanism may be part of the overall water supply plan.

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 (Table 15). 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.

Table 14
Cities that Alter Water Rate Structures and Make or Plan Major Capital Investments in Water Supply Infrastructure Between 2000 and 2004 and 2005 and 2009

Alters Water Rate Structure	Not Investing in Water Supply Infrastructure (% of Cities)	Investing in Water Supply Infrastructure (% of Cities)
	2000–2004*	
Yes	11.7	25.7
No	26.3	36.3
	2005–2009**	
Yes	11.5	27.9
No	25.4	35.2

* Actual Investment Based on 369 cities
** Planned Investment Based on 347 cities

Table 15
Cities that Alter Water Rate Structures and Population Size*

Alters Water Rate Structure	% of Small Cities	% of Medium Cities	% of Large Cities
Yes	29.1	39.5	48.4
No	70.9	60.5	51.5
Number of Cities (NOT %)	158	124	95

* Based on 377 cities

ATTACHMENT A

URBAN WATER RESOURCES SURVEY
The United States Conference of Mayors Urban Water Council
January 10, 2005

STATEMENT OF SURVEY PURPOSE

The U.S. Conference of Mayors' Urban Water Council (UWC) is gathering information on water infrastructure, water supply/conservation, and water resource problems. The information we hope you provide will help us develop public policy positions, and help us focus priorities on the activities pursued by the UWC to aid local government.

RESPONDENT INFORMATION

Mayor: _____
Water Authority Coordinator: _____
Address: _____
_____
Phone: _____
Fax:_____
E-mail: _____

PART I: Water and Wastewater Infrastructure

	% of Cities	
1) Does your City own a drinking water treatment facility?	65.9 Yes	34.1 No
2) Does your City operate a drinking water treatment facility?	63.5 Yes	36.5 No
3) Does your City own a wastewater treatment facility?	57.5 Yes	42.5 No
4) Does your City operate a wastewater treatment facility?	50.1 Yes	49.9 No

5) Has your City made a major capital investment in the last five years in any of the following infrastructure categories?

	% of Cities		
Water supply	56.8 Yes	40.1 No	3.1 No Response
Water distribution system	77.3 Yes	21.0 No	1.7 No Response
Water treatment plant	51.9 Yes	44.0 No	4.1 No Response
Wastewater treatment plant	51.2 Yes	43.7 No	5.1 No Response
Wastewater collection system	66.7 Yes	27.3 No	6.0 No Response

6) If yes, was that capital investment financed by: (check all that apply)

% of Cities	
25.8	General obligation bonds
41.3	Revenue bonds
0.7	Private Activity Bonds
34.3	State Revolving Fund
45.2	Other

7) If the State Revolving Loan Fund was used, did it comprise:

% of Cities	
5.3	10 % or less of the total project cost
2.9	20 % or less of the total project cost
6.5	50 % or less of the total project cost
20.8	more than 50 % of the total project cost

8) Does your City plan to make a major capital investment in the next five years in any of the following infrastructure categories?

		% of Cities	
Water supply	54.6 Yes	36.0 No	9.4 No Response
Water distribution system	72.7 Yes	21.7 No	5.6 No Response
Water treatment plant	45.6 Yes	45.4 No	9.0 No Response
Wastewater treatment plant	48.5 Yes	42.0 No	9.5 No Response
Wastewater collection system	64.3 Yes	28.7 No	7.0 No Response

9) If yes, will that capital investment be financed by: (check all that apply)

% of Cities	
24.9	General obligation bonds
44.7	Revenue bonds
1.2	Private Activity Bonds
34.3	State Revolving Fund
46.6	Other

10) If the State Revolving Loan Fund will be used, will it comprise:

% of Cities	
6.5	10 % or less of the total project cost
6.3	20 % or less of the total project cost
4.8	50 % or less of the total project cost
19.1	more than 50 % of the total project cost

11) If your City does not rely on the State Revolving Fund Loan program to finance water or wastewater facility capital investment please state why.

_____

_____

12) Would your City consider a Public-Private Partnership approach to water infrastructure projects if cost-savings in operation and maintenance or construction can be achieved?

% of Cities				
53.2 Yes	29.7 No	17.1 NR		

PART II: Water Supply Information

		% of Cities	
1) Does your City provide its own water supply?	66.2 Yes	32.1 No	1.7 NR
2) Does your City rely on a private company to provide its water supply?	18.9 Yes	76.8 No	4.3 NR
3) Does your City have a water supply plan?	74.2 Yes	20.5 No	5.3 NR

4) Does your City have an adequate water supply for the next:

% of Cities	
18.3	10 years
16.7	20 years
55.6	more than 20 years
9.4	No Response

5) Does your city's water supply come from ground water?	% of Cities		
	51.7 Yes	42.3 No.	6.0 NR
6) Does your city's water supply come from surface water?	70.3 Yes	24.4 No.	5.3 NR
7) Does your City plan to switch from ground water to surface water supply?	6.8 Yes	68.8 No.	24.4 NR

8) If yes, why are you switching?_____

PART III: Water Conservation Information

		% of Cities	
1) Does your City have a water conservation program?	66.9 Yes	30.2 No	2.9 NR
2) Does your City have a water conservation department?	11.1 Yes	85.3 No	3.6 NR
3) Does your water supply include water conservation?	59.9 Yes	33.6 No	6.5 NR
4) Does your City use automated water meter reading?	50.2 Yes	43.7 No	6.1 NR
5) Does your City use traditional water meter reading?	72.5 Yes	19.3 No	8.2 NR
6) Does your City alter the water rate structure to achieve water conservation?	34.3 Yes	57.2 No	8.5 NR
7) Would your City consider modernizing with automated meter reading if it could save water or money?	68.6 Yes	10.6 No	20.8 NR

8) Other water conservation measures? _____

PART IV: General Water Resources Problems and Priorities

Here are some water resources issues. Please indicate whether each issue is an existing problem or a forecast problem for your community: (Please mark applicable problems in the box [X] below and rank all that apply the top five problems (1–5) with 1 being the most significant in the line ___ below, please do not assign same rankings).

% of Cities		% of Cities	
46.4	Water supply availability	34.3	Emergency planning and management for storms, hurricanes, etc
16.2	Inter-basin transfers		
23.4	Groundwater depletion	60.6	Aging water resources infrastructure
25.1	Water rights	54.6	Security/protection of water resources infrastructure
38.4	Flooding		
32.6	Drought management	3.9	Insufficient water-oriented recreation
26.8	Regional conflict about water use	19.6	Sediment management
8.5	Water transportation (channels, ports, dredging, etc.)	11.6	Endangered species
		13.0	Best practices technology transfer
45.2	Permits, regulatory issues	42.3	Water quality of urban streams and rivers
6.8	Neglected/decaying waterfront areas		
10.6	Loss of river corridors/greenspace	3.4	Waterborne traffic
10.4	Loss of wetlands	4.8	Channel/Harbor adequacy
7.5	Beach/shoreline erosion	9.7	Other (specify below)

ATTACHMENT B

List of Cities Responding to the Survey

Survey City	State	Population
Anchorage	AK	260,283
Auburn	AL	42,987
Bessemer	AL	29,672
Birmingham	AL	242,820
Dothan	AL	57,737
Florence	AL	36,264
Huntsville	AL	158,216
Montgomery	AL	201,568
Fortsmith	AR	80,268
Little Rock	AR	183,133
North Little Rock	AR	60,433
Springdale	AR	45,798
Avondale	AZ	35,883
Chandler	AZ	176,581
Gilbert	AZ	109,697
Mesa	AZ	396,375
Scottsdale	AZ	202,705
Tucson	AZ	486,699
Alameda	CA	72,259
Alhambra	CA	85,804
Aliso Viejo	CA	45,000
Anaheim	CA	328,014
Bellflower	CA	72,878
Beverly Hills	CA	33,784
Brea	CA	35,410
Buena Park	CA	78,282
Campbell	CA	38,138
Cerritos	CA	51,488
Chino	CA	67,168
Compton	CA	93,493
Concord	CA	121,780
Fairfield	CA	96,178
Folsom	CA	51,884
Fresno	CA	427,652
Gardena	CA	57,746

Survey City	State	Population
Glendora	CA	49,415
Hanford	CA	41,686
Hawthorne	CA	84,112
Hayward	CA	140,130
Hemet	CA	58,812
Inglewood	CA	112,580
La Habra	CA	58,974
La Mesa	CA	54,749
La Mirada	CA	46,783
La Verne	CA	31,638
Lakewood	CA	79,345
Los Angeles	CA	3,694,820
Lynwood	CA	69,845
Manteca	CA	49,258
Modesto	CA	188,856
Norwalk	CA	103,298
Oxnard	CA	170,358
Pasadena	CA	133,936
Pittsburg	CA	56,769
Pomona	CA	149,473
Porterville	CA	39,615
Rancho Palos Verdes	CA	41,145
Redlands	CA	63,591
Redondo Beach	CA	63,261
Redwood City	CA	75,402
Rialto	CA	91,873
Richmond	CA	99,216
Rocklin	CA	36,330
Salinas	CA	151,060
San Bernardino	CA	185,401
San Clemenete	CA	49,936
San Diego	CA	1,223,400
San Francisco	CA	776,733
San Jose	CA	894,943
San Mateo	CA	92,482
Santa Barbara	CA	92,325
Santa Clarita	CA	151,088

Survey City	State	Population
Santa Cruz	CA	54,593
Santa Maria	CA	77,423
Santa Monica	CA	84,084
Seaside	CA	31,696
Simi Valley	CA	111,351
South San Francisco	CA	60,552
Stockton	CA	243,771
Sunnyvale	CA	131,760
Temple City	CA	33,377
Thousand Oaks	CA	117,005
Torrance	CA	137,946
Ventura	CA	100,916
Vernon	CA	91
Vista	CA	89,857
Walnut Creek	CA	64,296
Whittier	CA	83,680
Arvada	CO	102,153
Colorado Springs	CO	360,890
Grand Junction	CO	41,986
Littleton	CO	40,340
Longmont	CO	71,093
Thornton	CO	82,384
Bridgeport	CT	139,529
Manchester	CT	54,740
Norwalk	CT	82,951
Stamford	CT	117,083
Trumbull	CT	34,243
West Haven	CT	52,360
Dover	DE	32,135
Wilmington	DE	72,664
Altamonte Springs	FL	41,200
Clearwater	FL	108,787
Coconut Creek	FL	43,566
Coral Springs	FL	42,249
Deerfield Beach	FL	64,583
Doral	FL	3,295
Dunedin	FL	35,691

Survey City	State	Population
Fort Lauderdale	FL	152,397
Hallandale Beach	FL	34,282
Hialeah	FL	226,419
Holly Hill	FL	12,119
Jupiter	FL	39,328
Key West	FL	25,478
Lakeland	FL	78,452
Largo	FL	69,371
Lauderlakes	FL	31,705
Melbourne	FL	71,382
North Miami Beach	FL	40,786
Orlando	FL	185,951
Pembroke Pines	FL	137,427
Pinellas Park	FL	45,658
Plantation	FL	82,934
Port St. Lucie	FL	88,769
Sarasota	FL	52,715
St. Petersburg	FL	248,232
Tallahassee	FL	150,624
Tamarac	FL	55,588
Tampa	FL	303,447
West Palm Beach	FL	82,103
Athens	GA	101,489
Atlanta	GA	416,474
Augusta	GA	199,775
Dekalb	GA	39,018
Roswell	GA	79,334
Savannah	GA	131,510
Wailuku	HI	12,296
Cedar Rapids	IA	120,758
Iowa City	IA	62,220
Sioux City	IA	85,013
Waterloo	IA	68,747
Coeur d'Alene	ID	34,514
Pocatello	ID	51,466
Addison	IL	35,914
Alton	IL	30,496

Survey City	State	Population
Arlington Heights	IL	76,031
Bartlett	IL	36,706
Belleville	IL	41,410
Berwyn	IL	54,016
Bolingbrook	IL	62,948
Calumet CIty	IL	39,071
Carpentersville	IL	30,586
Champaign	IL	67,518
Chicago	IL	2,896,016
Decatur	IL	81,860
Evanston	IL	74,239
Glen Ellyn	IL	26,999
Glencoe	IL	8,762
Glendale Heights	IL	31,765
Hanover Park	IL	38,278
Highland Park	IL	31,365
Lansing	IL	28,332
Lombard	IL	42,322
Moline	IL	43,768
Naperville	IL	128,358
Niles	IL	30,068
Northbrook	IL	33,435
Oak Brook	IL	8,702
Orland Park	IL	51,077
Park Ridge	IL	37,775
Quincy	IL	40,366
Rock Island	IL	39,684
Rockford	IL	150,115
Schaumnurg	IL	75,386
Tinley Park	IL	48,401
Villa Park	IL	22,075
Wheaton	IL	55,416
Wilmington	IL	5,134
Carmel	IN	37,733
Columbus	IN	39,059
East Chicago	IN	32,414
Elkhart	IN	51,874
Evansville	IN	121,582

Survey City	State	Population
Gary	IN	102,746
Indianapolis	IN	791,926
Marion	IN	31,320
Michigan City	IN	32,900
Kansas City	KS	146,866
Manhattan	KS	44,831
Overland Park	KS	149,080
Topeka	KS	122,377
Frankfort	KY	27,741
Amesbury	MA	16,450
Amherst	MA	34,874
Chicopee	MA	54,653
Everett	MA	38,037
Fall River	MA	91,938
Fitchburg	MA	39,102
Haverhill	MA	58,969
New Bedford	MA	93,768
Pittsfield	MA	45,793
Quincy	MA	88,025
Somerville	MA	77,478
Weymouth	MA	53,988
Worcester	MA	172,648
Annapolis	MD	35,838
Gaithersburg	MD	52,613
Hagerstown	MD	36,687
Bangor	ME	31,473
Lewiston	ME	35,690
Ann Arbor	MI	114,024
Dearborn	MI	97,775
Detroit	MI	951,270
Farmington Hills	MI	82,111
Flint	MI	124,943
Grosse Pointe Woods	MI	17,080
Jackson	MI	36,316
Lansing	MI	119,128
Muskegon	MI	40,105
Novi	MI	47,386
Pontiac	MI	66,337

Survey City	State	Population
Southgate	MI	78,296
Taylor	MI	65,868
Brooklyn Park	MN	67,388
Burnsville	MN	60,220
Duluth	MN	86,918
Minnetonka	MN	51,301
Plymouth	MN	65,894
Richfield	MN	34,439
Woodbury	MN	46,463
Kansas City	MO	441,545
St. Peters	MO	51,381
Biloxi	MS	50,644
Jackson	MS	184,256
Meridian	MS	39,968
Billings	MT	89,847
Butte	MT	34,606
Asheville	NC	68,889
Cary	NC	94,536
Charlotte	NC	540,828
Durham	NC	187,035
Gastonia	NC	66,277
Goldsboro	NC	39,043
Greensboro	NC	223,891
Kannapolis	NC	36,910
Salisbury	NC	26,462
Wilson	NC	44,405
Winston-Salem	NC	185,776
Fargo	ND	90,599
Bellevue	NE	44,382
Grand Island	NE	42,940
Lincoln	NE	225,581
Manchester	NH	107,006
Bayonne	NJ	61,842
Bloomfield	NJ	47,683
Fair Lawn	NJ	31,637
Freehold	NJ	31,537
North Bergen	NJ	58,092
Piscataway	NJ	50,482

Survey City	State	Population
Sayreville	NJ	40,377
Trenton	NJ	85,403
Vineland	NJ	56,271
Wayne	NJ	54,069
Turnersville	NJ	3,867
Alamogordo	NM	35,582
Clovis	NM	32,667
Las Cruces	NM	74,267
Los Lunas	NM	10,034
Rio Rancho	NM	51,765
Sante Fe	NM	62,203
Las Vegas	NV	478,434
Reno	NV	180,480
Albany	NY	95,658
Binghamton	NY	47,380
Endwell	NY	61,179
Freeport	NY	43,783
Hempstead	NY	56,554
Huntington	NY	195,289
Long Beach	NY	35,462
Mount Vernon	NY	68,381
New York City	NY	8,008,278
North Tonawanda	NY	33,262
Rochester	NY	219,773
Schenectady	NY	61,821
Syracuse	NY	147,306
Troy	NY	49,170
Akron	OH	217,074
Bedford Heights	OH	11,375
Canton	OH	80,806
Cleveland	OH	478,403
Cleveland Heights	OH	49,958
Columbus	OH	711,470
Dublin	OH	31,392
East Cleveland	OH	27,217
Fairborn	OH	30,529
Garfield Heights	OH	30,734
Hamilton	OH	60,690

Survey City	State	Population
Huber Heights	OH	38,212
Kettering	OH	57,502
Lancaster	OH	35,335
Lima	OH	40,081
Loveland	OH	11,677
Mansfield	OH	49,346
Marion	OH	35,318
Newark	OH	46,279
North Olmsted	OH	34,113
Shaker Heights	OH	29,405
Solon	OH	21,802
Springfield	OH	65,358
Stow	OH	32,139
Toledo	OH	313,619
University Heights	OH	14,146
Upper Arlington	OH	33,686
Warren	OH	46,832
Westerville	OH	35,318
Westlake	OH	31,719
Broken Arrow	OK	74,859
Lawton	OK	92,757
Norman	OK	95,694
Oklahoma City	OK	506,132
Albany	OR	40,852
Bend	OR	52,029
Eugene	OR	137,893
Hillsboro	OR	70,186
Allentown	PA	106,632
Erie	PA	103,717
Fairless Hills	PA	8,365
Glenshaw	PA	29,757
Harrisburg	PA	48,950
Lower Paxton	PA	44,424
Reading	PA	81,207
Township of Lower Merion	PA	59,850
Upper Darby	PA	81,821
York	PA	40,862
Caguas	PR	40,502

Survey City	State	Population
Canovanas	PR	43,335
Cidra	PR	42,753
Corozal	PR	36,867
Hormigueros	PR	16614
Lajas	PR	26,261
Lares	PR	34,415
Trujillo Alto	PR	75,728
Cumberland	RI	31,840
Pawtucket	RI	72,958
Warwick	RI	85,808
Woonsocket	RI	43,224
Bartlett	TN	40,543
Germantown	TN	37,348
Johnson City	TN	55,469
Murfreesboro	TN	68,816
Beaumont	TX	113,866
Bryan	TX	65,660
Carrollton	TX	109,576
College Station	TX	67,890
Coppell	TX	35,958
Copperas Cove	TX	29,592
Corpus Christi	TX	277,454
Desoto	TX	37,646
Duncanville	TX	36,081
Euless	TX	46,005
Frisco	TX	33,714
Galveston	TX	57,247
Grand Prairie	TX	127,427
Grapevine	TX	42,058
Houston	TX	1,953.631
Hurst	TX	36,273
Irving	TX	191,615
Laredo	TX	176,575
Lewisville	TX	77,737
Longview	TX	73,344
Mission	TX	45,408
Nacogdoches	TX	29,914
Pearland	TX	37,640
Pharr	TX	46,660

Survey City	State	Population
Plano	TX	222,030
Round Rock	TX	61,136
Sugar Land	TX	63,328
Texas City	TX	41,521
Murray City	UT	34,024
Salt Lake City	UT	181,743
Sandy CIty	UT	88,418
Chesapeake	VA	199,184
Manassas	VA	35,135
Newport News	VA	180,150
Richmond	VA	197,790
Alexandria	VA	128,283
Danville	VA	48,411
Norfolk	VA	234,403
Suffolk	VA	63,677
Edmonds	WA	39,515
Everett	WA	91,488
Federal Way	WA	83,259
Kent	WA	79,524
Lacey	WA	31,226
Puyallup	WA	33,011
Redmond	WA	45,256
Renton	WA	53,840
Seattle	WA	563,374
Tacoma	WA	193,556
Vancouver	WA	143,560
Yakima	WA	71,845
Beloit	WI	35,918
Brookfield	WI	38,649
Kenosha	WI	90,352
La Crosse	WI	51,818
Manitowoc	WI	34,053
Milwaukee	WI	596,974
Racine	WI	81,855
Waukesha	WI	64,825
Wausau	WI	38,426
Wauwatosa	WI	47,271
Parkersburg	WV	33,099
Cheyenne	WY	53,011

The Urban Water Council

A Task Force of the U.S. Conference of Mayors

The UWC is open to all Mayors, and functions like a USCM task force. It provides Mayors with a forum for discussion of issues impacting how cities provide and protect community water and wastewater services. Some of the issues that the UWC focuses on include: watershed management; water supply planning; water infrastructure financing; rehabilitation of surface and sub-surface water infrastructure; water conservation; wetlands construction and education programs; water system program management and asset management.

The UWC will continue to develop local government positions on federal legislation, regulations and policy. The UWC acts through the USCM Environment Committee and other Committees, as appropriate, to propose and adopt resolutions on water related matters that benefit the nation's cities.

THE URBAN WATER COUNCIL

The Urban Water Council acts as a task force for the U.S. Conference of Mayors

1620 Eye Street, N.W., Suite 300
Washington, D.C. 20006
Phone: (202)293-7330 • Fax: (202)429-0422
www.usmayors.org/USCM/urbanwater