

WINS: Water Infrastructure National Survey (NACWA)

1. Motivation

This survey is about the Nation's WASTEWATER infrastructure.

A printed version of this survey accompanied the email with the hot link to this site.

After reviewing the printed version, the on-line version can be completed in 30 minutes.

The University of Cincinnati, with support from USEPA's Office of Research and Development, is conducting a national assessment to identify and analyze the most important factors that may affect the performance of public and private water and wastewater systems in the US over the next 50 years. This information will be used, in part, to help USEPA define and prioritize directions for innovative research on sustainable urban water infrastructure.

Factors affecting your wastewater infrastructure might include, among other things, climate change, population growth, economic pressures, funding shortfalls, institutional changes and regulatory requirements.

We believe the best way to identify these and other factors is with feedback from the members of the National Association of Clean Water Agencies (NACWA) who deal with these issues every day.

Please take a moment to complete this ANONYMOUS survey to help us understand which issues are most important and which deserve research priority as you develop plans for renovating, restoring, replacing and expanding your water resources infrastructure in the years ahead.

"Exact" answers are not required; in many cases an order-of-magnitude approximation is acceptable. Some questions can be left blank, if you choose.

You can save your responses and return to the survey at a later time. The survey will remain open until June 30, 2008.

Be assured that there is no way to trace any particular response back to any participating utility. Pooled results from this anonymous survey will be shared with the NACWA executive office by October 1, 2008.

[Last revision on June 2, 2008]

2. Utility Profile

1. What is the approximate size of your service area (sq mi)?

	0 to 10	10 to 100	100 to 1,000	1,000 to 10,000	over 10,000
in 2008	jn	jn	jn	jn	jn
in 2028	jn	jn	jn	jn	jn

2. Approximately, how many service connections do you have in your collection system in 2008?

Number of Connections

3. Approximately, how many people do you serve in 2008?

Number of People

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4. Approximately, what percentage growth in the number of "people served" do you expect in the next 20 years?

	less than 0	0 to 10	10 to 50	50 to 100	greater than 100
Percentage Growth	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>

5. How many people do you employ?

	0 to 9	10 to 99	100 to 499	500 to 999	over 1,000
in 2008	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>
in 2028	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>

6. What is your system-wide AVERAGE DAILY flow (MGD)?

in Summer 2008	<input type="text"/>
in Summer 2028	<input type="text"/>
in Winter 2008	<input type="text"/>
in Winter 2028	<input type="text"/>

7. What is your system-wide MAXIMUM DAILY flow? (MGD)

in Summer 2008	<input type="text"/>
in Summer 2028	<input type="text"/>
in Winter 2008	<input type="text"/>
in Winter 2028	<input type="text"/>

8. Approximately, what is the average annual temperature (F) in your region?

	less than 40	40 to 50	50 to 60	60 to 70	greater than 70
Average Temp (F)	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>

9. Approximately, what is average annual precipitation (inches) in your region?

	less than 10	10 to 25	25 to 40	40 to 55	greater than 55
Average Precip (in)	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>	<input type="text" value="jñ"/>

3. Current Infrastructure and Operation

1. How many wastewater treatment plants do you operate?

2. What is the total design capacity of all the treatment plants in your wastewater system (MGD)?

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3. What types of treatment unit processes do you utilize? (Check all that apply)

- ☐ Activated Sludge
- ☐ Adsorption
- ☐ Aerated Lagoons
- ☐ Anaerobic Digestors
- ☐ Chemical Precipitation
- ☐ Disinfection
- ☐ Filtration
- ☐ Flotation
- ☐ Gas Stripping
- ☐ Nutrient Removal
- ☐ Ozone Chamber
- ☐ Rotating Biological Contactors
- ☐ Screening
- ☐ Sedimentation
- ☐ Stabilization Ponds
- ☐ Trickling Filter
- ☐ UV Light

Other (please specify)

4. How many pumping stations do you operate in your wastewater collection and treatment system?

5. Approximately, how many miles of pipe do you have in your collection system?

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6. Approximately, what percentage of the miles of pipe in your wastewater collection system is constructed with the following materials? (numbers should total to 100):

Asbestos Cement	<input type="text"/>
Cast Iron	<input type="text"/>
Ductile Iron	<input type="text"/>
Concrete	<input type="text"/>
Steel	<input type="text"/>
Polyvinyl Chloride (PVC)	<input type="text"/>
High Density Polyethylene (HDP)	<input type="text"/>
Other	<input type="text"/>

7. Considering all the miles of pipe in your collection system, approximately what percentage is greater than 50 years old?

	0 to 15	16 to 30	31 to 45	46 to 60	greater than 60
Percentage	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

8. Considering all the miles of pipe in your collection system, what is the approximate annual breakage rate (breaks per mile per year)?

	less than 0.1	0.1 to 0.25	0.25 to 0.5	0.5 to 1.0	greater than 1.0
Break/mile/year	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

9. Considering all the miles of pipe in your collection system, approximately what percentage is replaced each year?

	0.0 to 0.5	0.5 to 1.0	1.0 to 1.5	1.5 to 2.0	greater than 2.0
Percentage	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

10. Approximately, what percentage of your system-wide wastewater stream is infiltration and inflow (I/I)?

	0 to 5	5 to 10	10 to 20	20 to 30	greater than 30
Percentage	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

11. Approximately, what percentage of your wastewater infrastructure assets (pumps, pipes, plants, etc) is inspected each year?

	0 to 5	5 to 10	10 to 20	20 to 30	greater than 30
Percentage	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

12. On a scale of 1 (poor condition; frequent problems) to 10 (excellent condition; no problems), indicate the average overall system-wide condition and performance of your pumping stations:

	1 (poor)	2	3	4	5	6	7	8	9	10 (excellent)
Pumping Stations	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

If you assigned a score < 10, please indicate the nature of the problem(s).

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13. On a scale of 1 (poor condition; frequent problems) to 10 (excellent condition; no problems), indicate the average overall system-wide condition and performance of your wastewater collection lines:

	1 (poor)	2	3	4	5	6	7	8	9	10 (excellent)
Collection Lines	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you assigned a score < 10, please indicate the nature of the problem(s).

14. On a scale of 1 (poor condition; frequent problems) to 10 (excellent condition; no problems), indicate the average overall system-wide condition and performance of your wastewater treatment plants:

	1 (poor)	2	3	4	5	6	7	8	9	10 (excellent)
Treatment Plants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you assigned a score < 10, please indicate the nature of the problem(s).

15. Excluding "routine" pipe repairs, indicate the approximate year of the last major upgrade to your facilities (pumping station, major transmission line, WWTP, etc)

	prior to 1990	1990 to 1994	1995 to 1999	2000 to 2004	since 2005
Time Period	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Does your collection system experience sanitary sewer overflows?

☐ Yes

☐ No

☐ Unsure

17. Does your collection system experience combined sewer overflows?

☐ Yes

☐ No

☐ Unsure

18. Are you using a formal asset management program in your wastewater collection and treatment operations?

☐ Yes

☐ No

☐ Unsure

4. Agents of Change

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1. Listed below are six very general categories for issues that may affect the operation of your utility and perhaps require changes in your wastewater infrastructure over the next 40 years. These changes might include upgrades, expansions, replacements, repairs, rehabilitation or possibly downsizing and decommissioning. Please rank the six categories in their relative order of importance according to their anticipated impact on the operation of your infrastructure.

	1 (most important)	2	3	4	5	6 (least important)
Climate Change	1	2	3	4	5	6
Economic Constraints	1	2	3	4	5	6
Environmental Regs	1	2	3	4	5	6
Institutional Change	1	2	3	4	5	6
Lack of Federal Funds	1	2	3	4	5	6
Population Growth	1	2	3	4	5	6

2. Please use this space to elaborate on your rankings and/or to add other factors not mentioned in Question 1. Additional space for other comments is included at the end of this survey.

3. Listed below are ten specific problems which may adversely affect the operation of your wastewater utility over the next 50 years. Please rank the ten problems according to the seriousness of their anticipated impact on the operation and sustainability of your wastewater utility.

	1 (most serious)	2	3	4	5	6	7	8	9	10 (least serious)
Aging Water System Infrastructure	1	2	3	4	5	6	7	8	9	10
Decline in Local Revenue Stream	1	2	3	4	5	6	7	8	9	10
Decline in State or Federal Aid	1	2	3	4	5	6	7	8	9	10
Inadequate Treatment Capacity	1	2	3	4	5	6	7	8	9	10
Increased Cost of Energy	1	2	3	4	5	6	7	8	9	10
Lack of Skilled Work Force	1	2	3	4	5	6	7	8	9	10
Outdated Treatment Technology	1	2	3	4	5	6	7	8	9	10
Reduced Flow in Receiving Water Body	1	2	3	4	5	6	7	8	9	10
Stringent Government Regulations	1	2	3	4	5	6	7	8	9	10
Vulnerable to Cyber and Physical Attacks	1	2	3	4	5	6	7	8	9	10

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4. Please use this space to elaborate on your rankings and/or to add other factors not mentioned in Question 3. Additional space for other comments is included at the end of this survey.

5. Which scenario most closely fits your wastewater utility and its operation over the next 40 years ("size" refers to customer base, annual revenue, areal coverage, utility assets, employee pool, etc):

☐ Utility size is likely to increase.

☐ Utility size is likely to remain unchanged.

☐ Utility size is likely to decrease.

☐ Unsure about future utility size.

Use this space to elaborate on your answer (optional).

5. Thinking Ahead

1. Do you have an infrastructure master plan?

☐ Yes

☐ No

☐ Unsure

6. Master Plan

1. What is your planning horizon (in years)

	1 to 5 yrs	5 to 10 yrs	10 to 20 yrs	20 to 30 yrs	beyond 30 yrs
Time Horizon	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. When was your current infrastructure master plan prepared?

	prior to 1990	1990 to 1994	1995 to 1999	2000 to 2004	since 2005
Time Period	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

3. What is the single largest challenge facing successful implementation of your master plan?

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4. Is your infrastructure master plan available to the public?

- ☐ Yes, the complete plan is available.
- ☐ Yes, but only a summary is available.
- ☐ No, it is not available.
- ☐ Unsure.

7. Next Steps

1. Please use this space to add any other comments that you think are important regarding the performance of your wastewater infrastructure.



2. Would you be willing to participate in a short follow-up survey about your water infrastructure?

- ☐ Yes (you then will be asked to provide contact information)
- ☐ No (you then will be directed to the end of the survey)

8. Contact Information

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1. You arrived on this page because you opted to participate in a short follow-up survey, to be distributed within the next 12 months.

Please provide the contact information requested below.

Be assured, the anonymity of your previous responses in this survey will be preserved.

Your contact information will not be linked with or traceable to any responses you have provided.

Your contact information will be treated as confidential data and will not be shared with anyone under any circumstances.

If you decide not to provide any contact information, simply return to Question 2 in Section 7 and select "No".

=====

Name:	<input type="text"/>
Company:	<input type="text"/>
Address:	<input type="text"/>
Address 2:	<input type="text"/>
City/Town:	<input type="text"/>
State:	<input type="text"/>
ZIP/Postal Code:	<input type="text"/>
Country:	<input type="text"/>
Email Address:	<input type="text"/>
Phone Number:	<input type="text"/>

9. Thank You

This is the last page of the national WASTEWATER infrastructure survey.

You can return any time before June 30, 2008 to modify/update your responses.
(Just use the hot link provided in the email from NAWCA).

Your participation is vital to the success of this national assessment.

Results of this anonymous survey will be provided to the NAWCA Executive Office by October 1, 2008.

To exit from the survey, please click the "Done" button below.