

DWINSA

2011 Drinking Water Infrastructure Needs Survey and Assessment (DWINSA)

**Webcast
March 30, 2011**



Webcast Logistics

- **! Please mute your phones !**
 - ▶ Due to the large number of participants we will take all questions and comments via the computer
- **Questions & Answers**
 - ▶ Submit questions/comments any time during the presentation
 - We will pause to address questions several times and will address as many questions as possible
 - ▶ Just use the "Question and Answer" pane that is located on your screen
- **Technical difficulties??**
 - ▶ Use the "Chat" function to contact our technical support

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Maximize Your Screen



- For a full screen view hit F5 or full screen icon in bottom right
- To return to the regular view, hit F5 again or regular screen icon
 - ▶ You need to be in “regular” view to submit text questions
- Hitting Control + H will also give you a larger view



Welcome



- Welcome and thank-you for joining us
- Why are you here?
 - ▶ You are a water system professional asked to complete the Drinking Water Needs Survey
 - OR*
 - ▶ You are a state coordinator asked to review the survey and send it in to EPA

Topics to be Covered



- DWINSA Purpose and Goals
- How Systems are Selected to Participate
- DWINSA Process
- Survey Packet Contents
- How to Complete the Questionnaire
- Examples
- Using the www.dwneeds.com Website
- State Review of System Responses
- DWINSA Timeline

Why Does EPA Conduct This Survey?



1996 SDWA Amendments



- Established the Drinking Water State Revolving Fund (DWSRF)
- Directs EPA to conduct drinking water infrastructure needs assessment

“[EPA] shall conduct an assessment of water system capital improvement needs of all eligible public water systems in the United States and submit a report to Congress containing the results of the assessment within 180 days after the date of enactment of the SDWA Amendments of 1996 and every 4 years thereafter.”

(SDWA Section 1452 (h))

1996 SDWA Amendments



- Allotment of DWSRF capitalization grant dollars to states

“...funds made available to carry out this section shall be allotted to states ...in accordance with ... a formula that allocates to each state the proportional share of the state needs identified in the most recent survey conducted pursuant to [this Act] except that the minimum proportionate share provided to each state shall be [1 percent].”

(SDWA Section 1452 (a) (1) (D) (ii))

Goals of the Survey



- Produce an accurate assessment of the nation's and each state's drinking water system capital improvement needs
 - ▶ Bottom-up approach
 - Water system involvement
 - ▶ Rigorous documentation requirements
 - ▶ Reflects cost-efficient investment strategies
 - ▶ 20-year time horizon
 - ▶ Statistically valid at state and national level
 - ▶ Credibility and consistency

Report to Congress



- Nation's and States' 20-Year Need Reported to Congress
 - ▶ System size and type
 - Large, medium, small, American Indian, Alaskan Native Village, not-for-profit noncommunity
 - ▶ Current v. Future
 - ▶ New v. Rehabilitation v. Replacement v. Expand/Upgrade
 - ▶ Regulatory v. Nonregulatory
 - ▶ Category of need
- 20-Year Period of 1/1/2011 – 12/31/2030

5 Categories of Need



- Source
 - ▶ Wells, surface water intakes, springs
- Treatment
 - ▶ Complete plants and components
- Storage
 - ▶ Finished water tanks and reservoirs
 - ▶ No raw water reservoirs
- Transmission and Distribution
 - ▶ Include appurtenances
- Other
 - ▶ Emergency power generators
 - ▶ System security
 - ▶ Computer and automation costs

How Are Water Systems Chosen to Participate in this Survey?



2011 State* Survey Statistical Approach



	Large Systems	Medium Systems	Small Systems
Population Definition	>100,000	3,301-100,000	≤3,300
Sample	Census (sampled with certainty)	State Samples (participating states)	National Sample (based on 2007 findings)
Data Quality Objective	For Each Participating State 95% +/- 10% Overall		95% +/- 25% Nationally
Systems Sampled in 2011	610 of 610	2,241 of 8,919	None

*American Indian and Alaskan Native Village systems are also being surveyed in a concurrent effort by EPA Regions and the Navajo Nation

Partially Participating States



- States that receive minimum 1% allocation
 - ▶ Most do not participate in medium system survey (15 states)
 - ▶ Some decided to participate (6 states)
- Systems >100,000 will be surveyed
- Medium system need will be estimated based on data from participating states
 - ▶ Report to Congress will report needs of these states as one
 - ▶ Contributes to total national need



Survey Process



Survey Process

1. Water system receives questionnaire (from EPA or the state)
 - State coordinator may call system to ensure it was received
2. Water system completes questionnaire
 - Record projects related to the five categories of need
 - Collect and prepare documentation of need for all of the projects listed, and documentation of cost if a cost is available
 - State coordinator is available for questions and assistance
3. System sends questionnaire and associated documentation to state coordinator
 - Pre-paid FedEx label provided in original package

Survey Process, cont.



4. State reviews survey and documentation
 - State may call system for more information
5. State sends questionnaire and documentation to EPA contractor
6. EPA contractor reviews submittal and posts finalized data on website
7. State coordinator checks data and provides additional or revised information for modification if necessary
8. After data collection period is closed, EPA contractor develops cost models, costs are assigned to projects submitted without costs, data is analyzed, and EPA prepares the Report to Congress

Survey Packet Contents



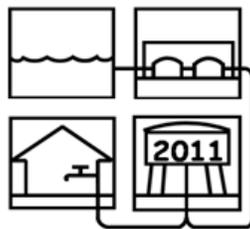
All materials and additional resources are also available at www.dwneeds.com

2011 Survey Packet Contents



- Cover letter from EPA and/or State
- Instructions on how to complete the survey
- Lists of Codes (green booklet)
- Questionnaire
 - ▶ Preprinted with system and state information, but pre-printed materials are not required
- Return instructions
- Website upload instructions
 - ▶ State may have made available to systems > 100,000
- Projects from 2007 DWINSA

Lists of Codes



Drinking Water Infrastructure Needs Survey and Assessment



Use these instructions and lists of codes when you fill out the Needs Survey and Assessment questionnaire. In your documentation please be sure to include project descriptions. Also include copies of the breakdown of cost estimates, if available.

Instructions for Each Column on the 2011 Drinking Water Infrastructure Needs Survey and Assessment Questionnaire

The following instructions apply to columns on all tables in the questionnaire.

Column Title	Instructions
Project Number	Number the projects in each category in sequence, using the range of numbers specified for each category of need.
Project Name	Provide a name that briefly describes and identifies the project.
Type of Need	Refer to List 1 in the Lists of Codes and enter the code(s) that best identifies the project. More than one code may apply to a project if a cost is provided. Use only one code if no cost is available.
Reason for Need	Refer to List 2 in the Lists of Codes and enter the code(s) that best justifies the project. More than one code may apply to a project.
New, Replace, Expand/Upgrade, or Rehabilitate	Identify whether the project is for: -New infrastructure installation where none exists, enter 'N' Resulting infrastructure is entirely new. -Replacement of existing infrastructure, enter 'R' Existing infrastructure is replaced with new infrastructure. -Expansion or Upgrade of a complete treatment plant, enter 'E' Major improvements to an existing complete plant. May add or change unit processes. May result in an increase in capacity. Use for complete treatment plants only. -Rehabilitation of existing infrastructure, enter 'H' Restore existing infrastructure to near new condition.
Current or Future	Identify whether the project is: -Needed now, enter 'C' (even if you cannot start construction now) -Not needed now, enter 'F' (but will be necessary before 12/31/2030)
Regulation or Secondary Purpose	If the project is needed to maintain or obtain compliance with a regulation, secondary MCL, or if one or more of the secondary purpose codes (green or climate readiness) apply, refer to List 3 in the Lists of Codes and enter the appropriate code. Enter '4A' if no code applies.
Cost Estimate	If available, enter the documented cost estimate for this project. Use only existing cost estimates. If no cost estimate is provided and modeling parameters are recorded, EPA will use models to estimate the cost.
Date of Cost Estimate	Enter the month and year (MM/YYYY) of the cost estimate. EPA will adjust cost estimates to current-year dollars.
Documentation	Refer to List 4 in the Lists of Codes and enter the code(s) that applies to the type of documentation provided that explains why the project is needed. If a cost estimate is provided, also enter the code that applies to the type of cost documentation. More than one code may apply to a project. <i>Please enclose the appropriate pages of need and cost documentation, identified by project number.</i>

The following instructions apply to columns on specific tables in the questionnaire.

Column Title	Instructions
Design Capacity	On the <i>Source, Treatment, Storage, and Pumping</i> project table enter the design capacity when applicable - million gallons per day (MGD) for source, treatment, and pumping, million gallons (MG) for storage, and kilowatts (kW) for emergency power. For this survey, "design capacity" is the total volume or the flow that can be produced when all components of the project are operating.
Diameter of Pipe	On the <i>Transmission and Distribution</i> project table enter the diameter of pipe (in inches) that must be rehabilitated, replaced, or installed as new. Use a separate project number and line for different sizes of pipe if a documented cost is not available.
Length of Pipe	On the <i>Transmission and Distribution</i> project table enter the length of pipe (in feet) that must be rehabilitated, replaced, or installed as new for each diameter identified in the previous column.
Size	On the <i>Backflow Prevention Devices/Assemblies, Hydrants, Service Lines, Valves, Water Meter, and Other</i> project table enter the diameter (in inches) for infrastructure that must be rehabilitated, replaced, or installed as new. Use a separate project number and line for different diameters of the same type of need. Diameter is not needed for service line projects.
Number Needed	On the <i>Source, Treatment, Storage, and Pumping</i> project table, if you have multiple identical projects at the same capacity (e.g., rehabilitate 10 wells each with a 0.5 MGD capacity), indicate the total number needed. On the <i>Backflow Prevention Devices/Assemblies, Hydrants, Service Lines, Valves, Water Meter and Other</i> project table, if you have multiple identical projects with the same diameter (e.g., install four 6" diameter valves), indicate the total number needed. If you use this column and provide a project cost, the cost should reflect the entire project (i.e., all 10 wells or all 400 meters, not the cost of an individual well or meter).

- What is a "need?" – Installation or rehabilitation of capital infrastructure needed over the next 20 years.
- What is "independent documentation?" – Documents generated through a process independent of the survey (e.g., CIP, master plan, sanitary survey report).
- What is "survey-generated documentation?" – Documents generated specifically for the survey written by the system or the state.

List 1 – Types of Need



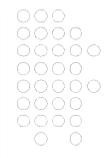
R	Source Codes	M1	Distribution Pipe
T1-T9	Disinfection	M2-M8	Other Distribution Needs
T10-T24	Complete Treatment Plants	S	Storage
T30-T46	Treatment Components	P	Pumps
X	Transmission Pipe	W	Other

LIST 2 — REASON FOR NEED	
Code	Reason the Project is Needed
A1	Project is for existing infrastructure that is or will be old or deteriorated by 12/31/2030.
A2	Project is to correct a deficiency in source water quantity caused by current user demand.
A3	Project is to correct a deficiency in storage capacity caused by current user demand.
A4	Project is to correct existing pressure problems (not related to fire flow).
A5	Project needed as a result of, but not in preparation for, a natural disaster.
A6	Project is to obtain or maintain compliance with an existing regulation (enter the regulation code from List 3 in the Lists of Codes in the regulation column of the questionnaire).
A7	Project is to obtain or maintain compliance with a secondary standard (e.g., iron, taste and odor, and color) (enter regulation code 2A in the regulation column of the questionnaire).
A8	Project is for consolidation with and/or connection to an existing public water system.
A9	Project is for extending service to existing homes without adequate water quantity or quality.
A10	Project is to prevent, detect, or respond to a security event (e.g., fence, locks, protective structures, gates, on-line sensors, motion sensors, alarm systems, generators, communications equipment, analytical equipment)
A11	Use this code if codes A1-A10 do not apply.

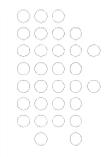
Important Notes:

A description of each project or a copy of the documentation must also be clearly identified by project number and submitted with the completed questionnaire.

Projects **primarily** for meeting expected future population growth or for fire flow are unallowable.



LIST 3 — REGULATION OR SECONDARY PURPOSE	
Code	Regulation or Secondary Purpose
EXISTING SDWA REGULATIONS	
1A	Surface Water Treatment Regulations (Surface Water Treatment Rule, Interim Enhanced Surface Water Treatment Rule, Filter Backwash Recycling Rule, Long Term 1 Enhanced Surface Water Treatment Rule, or Long Term 2 Enhanced Surface Water Treatment Rule)
1B	Total Coliform Rule (published June 1989)
1C	Nitrate or Nitrite Standard
1D	Lead and Copper Rule
1E	Arsenic Rule (10 µg/L Arsenic Standard)
1F	Stage 1 Disinfectants/Disinfection Byproducts Rule (for compliance with the 80 µg/L for TTHMs and 60 µg/L for HAA5s as a <u>running</u> annual average)
1G	Other Regulated VOCs, SOCs, IOCs, or Radionuclides (excludes Radon)
1H	Groundwater Rule
OTHER REQUIREMENTS OR SECONDARY PURPOSES	
2A	Secondary Contaminants (e.g., iron, taste and odor, and color)
2B	State Requirements
2C	Green – Green Infrastructure (e.g., porous pavement, green roofs, etc.)
2D	Green – Water Efficiency (e.g., meters, pressure reducing valves, etc.)
2E	Green – Energy Efficiency (e.g., pump rehab, VFDs, SCADA, etc.)
2F	Green – Environmentally Innovative (e.g., LEED buildings, etc.)
2G	Climate Readiness (e.g., source quality degradation, source quantity availability, or infrastructure vulnerability)
PROPOSED AND RECENTLY PROMULGATED SDWA REGULATIONS	
Needs associated solely with the following proposed or recently promulgated regulations are not allowable and should not be included. The costs for these needs, estimated for each rule's Economic Analysis, will be added to the total national need. These regulations include:	
<ul style="list-style-type: none"> Stage 2 Disinfectants/Disinfection Byproducts Rule (for compliance with the 80 µg/L for TTHMs and 60 µg/L for HAA5s as a <u>locational</u> running annual average) Proposed Revisions to the 1989 Total Coliform Rule Proposed Radon Rule 	
If None of the Above Codes Applies	
4A	Use this code if none of the codes above apply



LIST 4 - DOCUMENTATION	
Code Independent Documentation of Need and/or Cost	
1	Capital Improvement Plan or Master Plan: The plan must address why the project is needed and/or provide a cost.
2	Facilities Plan or Preliminary Engineering Report: Excerpts justifying need and/or cost from the plan or report are acceptable if project-specific.
3	Grant or Loan Application Form: An application form is acceptable if it specifically describes a problem requiring capital expenditures.
4	Engineer's Estimate or Bid Tabulation: These must be project specific and independently generated. They must also be accompanied by an explanation of why the project is needed.
Code Independent Documentation of Need Only	
5	Intended Use Plan/State Priority List: The excerpts must include a description of why the project is needed. Costs from IUPs will not be used - modeling parameters or other cost documentation must be provided.
6	Comprehensive Performance Evaluation (CPE) or Sanitary Survey Results: The results or recommendations may be used to justify need if the state concurs.
7	Monitoring Results: Monitoring results indicating an MCL exceedance or a trending toward an exceedance can demonstrate a need for a project if accompanied by a written statement explaining how the results demonstrate the need.
8	Other Independent Document: Use this code if documentation is independent but none of the codes listed above apply. Examples include: state enforcement order/notice of violation, engineering studies, watermain break report, repair reports, and distribution system studies.
Code Independent Documentation of Cost Only	
9	Cost of Previous Comparable Construction: This may be used to justify costs if the costs are project-specific. It must include documentation of how the costs were derived.
Code Survey-generated Documentation of Need Only	
10	Written by State, EPA Region, or Navajo Nation: Brief description and statement of need written by the state, EPA Region, or Navajo Nation.
11	Written by System: Brief description and statement of need written by the system.
Code Documentation Submitted for 2007 Assessment	
20	Project Relies on 2007 Assessment Documentation: Other documentation codes also apply if additional documentation is submitted for 2011 Assessment.

Questionnaire Format Options

- **Hard-copy**
 - ▶ Mailed to system
- **Excel 3-Table Format**
 - ▶ Each project table on a separate sheet
- **Excel Combined-Table Format**
 - ▶ Project tables combined into one sheet
 - ▶ Required if uploading survey to website
 - Discussed later in webcast
- **All are available at www.dwnneeds.com**

Questionnaire Contents



- Cover Page (may be pre-populated)
- Back Page
- Project Tables
- Inventory Tables (optional)
- Climate Readiness Information

2011 Drinking Water Infrastructure Needs Survey and Assessment		
U.S. Environmental Protection Agency Washington, DC 20460		OMB No.: 2040-0274 Approval Expires: 02/28/2014 Federal PWSID No.: _____
Please verify or correct the following information:		
	Check if Correct as Printed	Corrected Information <i>(Fill in only if preprinted information is missing or incorrect)</i>
Name of System (Community):	<input type="checkbox"/>	
Name of Contact for Water System: <small>(Record name of person completing survey on page 5; may be same person)</small>	<input type="checkbox"/>	
Street Address:	<input type="checkbox"/>	
City, State, and Zip:	<input type="checkbox"/>	
Population Served (if wholesale seller, include population of systems sold to):	<input type="checkbox"/>	
Number of Connections (not including those in consecutive systems):	<input type="checkbox"/>	
Total System Design Capacity: _____ MGD		
Source Water Type (Ground, Surface/GWUDI, etc.):	Check All That Apply: <input type="checkbox"/> Ground <input type="checkbox"/> Purchased Ground	<input type="checkbox"/> Surface/GWUDI <input type="checkbox"/> Purchased Surface/GWUDI
Ownership Type:	Check All That Apply: <input type="checkbox"/> Public <input type="checkbox"/> Native American	<input type="checkbox"/> Federal Government <input type="checkbox"/> Investor-Owned or Private Non-Profit
<small>Public reporting burden for this collection of information is estimated to average 7.51 hours per response. This estimate includes time for reviewing the instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collected. Burden means the total time, effort, or financial resources expended by person(s) to generate, maintain, retain, or disclose or provide information to or for a Federal Agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information; adjust the existing ways to comply with any previously applicable instructions; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.</small>		
<small>Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, OPPI, Regulatory Information Division, U.S. Environmental Protection Agency (1804A), Ariel Rios Building, 1200 Pennsylvania Ave., NW, Washington, DC 20460; and Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, N.W., Washington, DC 20503.</small>		
State Use Only State Reviewer: _____		Telephone Number: _____
Information provided for this survey can be requested by the public. It is our experience that survey information is rarely requested.		
EPA Form 6100-01 1 March 2011		

Respondent Information

Please provide the following information in case we need to contact you for clarification or additional explanation of any of your responses.

Contact Person (Person who completed this questionnaire):

Signature: _____

Telephone Number: _____

Name (please print): _____

Fax Number: _____

Title: _____

E-mail Address: _____

Mailing Address:
(Street Address) _____

Best Time to Reach You: _____

If you have any questions, contact your state coordinator or call the U.S. EPA toll-free Needs Survey Helpline at 1-877-357-9030.

CLOSING: Thank you for your help. Did you remember to:

- Attach all additional project tables to the questionnaire?
- Identify, by project number, available documentation for all needs and costs reported above?
- Put the questionnaire and the documentation in the pre-paid, pre-addressed Federal Express Pak provided and return this questionnaire and the documentation to the address below? (See the pink enclosure for further return instructions.)

EPA Form 6100-01

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March 2011

Project Tables



- Three tables to record projects
 - ▶ Source, Treatment, Storage, and Pumping Projects
 - ▶ Transmission and Distribution Projects
 - ▶ Meters, Service Lines, Backflow Prevention Devices/Assemblies, Hydrants, Valves, etc

Inventory Tables



- Inventory tables for each project table
- Help system consider entire inventory
- Optional: Not required to be completed
 - ▶ *Except* when any pipe project relies on survey-generated documentation – then the total pipe length currently in the system and the design parameters (length) for every pipe project are required
 - “survey-generated documentation” will be discussed later

Source, Treatment, Storage, and Pumping Inventory			
To ensure all potential source, treatment, and storage projects are considered, it may be helpful to complete some or all of this inventory table. However, completion of this table is not required.			
<ul style="list-style-type: none"> • Source Projects are all projects related to collecting and pumping raw water. This includes wells, surface water intakes, springs, off-stream raw water storage, pumps, and well houses. • Treatment Projects are all projects related to disinfection, filtration, or other treatment processes for ground or surface water sources, or for treatment applied in the distribution system. • Storage and Pumping Projects are related to finished or treated water storage, and booster pump stations. 			
Source Water			
Inventory	Needing Replacement	Needing Rehabilitation	New Infrastructure Needs
Total Number and Capacity of Existing Wells or Springs: _____	Wells (pumps included) or Springs: _____	Wells (pumps included) or Springs: _____	Does your system have additional source water capacity needs to meet the needs of current users? (check one) Yes ___ No ___
Total Number and Capacity of Existing Surface Water Sources: _____	Existing Surface Water Intakes (excluding pumps): _____	Existing Surface Water Intakes (excluding pumps): _____	If yes, how many additional sources are necessary?
Total Number and Capacity of Existing Pumps (excluding booster pump stations): _____	Existing Groundwater Pumps (if wells not listed): _____	Existing Groundwater Pumps (if wells not listed): _____	
	Existing Raw Surface Water Pumps: _____	Existing Raw Surface Water Pumps: _____	
Treatment			
Inventory	Needing Replacement	Needing Expansion/Upgrading or Rehabilitation	New Infrastructure Needs
For the sources identified above, enter the number of locations where the following treatment is applied:			
Disinfection (including booster disinfection): _____	Disinfection: _____	Disinfection: _____	Does your system have additional treatment needs for provision of additional public health protection or for aesthetic concerns? (check one) Yes ___ No ___ If yes, what additional treatment is necessary?
Filtration: _____	Filtration: _____	Filtration: _____	
Chemical removal or addition: _____	Chemical treatment: _____	Chemical treatment: _____	
Storage and Pump Stations			
Inventory	Needing Replacement	Needing Rehabilitation	New Infrastructure Needs
Total Number and Capacity of Existing Storage Tanks: _____	Number of Existing Elevated or Ground-Level Storage Tanks: _____	Number of Existing Elevated or Ground-Level Storage Tanks: _____	Does your system have additional storage capacity and/or booster pumping needs to meet the needs of current users? (check one) Yes ___ No ___
Total Number and Capacity of Existing Booster Pump Stations: _____	Number of Existing Booster Pump Stations: _____	Number of Existing Booster Pump Stations: _____	If yes, how much additional finished water storage or booster pumping capacity is necessary?

Transmission and Distribution Inventory

Transmission and distribution projects are the piping needs of a water system. Projects for valves, other valves, and meters that are not part of a transmission or distribution project listed in this table should be recorded in the table on page 6.

On the table below, please provide an estimate of the total feet or miles of pipe in your system, if possible. Completion of this table is not required, but it may be helpful to ensure all potential transmission and distribution pipe projects are considered.

Note: The total feet or miles of pipe in your system is required information if any pipe projects are submitted based solely on survey-generated documentation (documentation codes 10 or 11).

Total feet or miles of pipe in system (Circle or underline feet or miles)

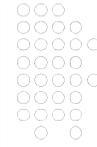
Total Pipe in System <i>(Circle or underline feet or miles)</i>		≤6 inch	8-12 inch	15-42 inch	≥48 inch
_____ Feet or miles	Amount of PVC by pipe size	_____ feet or miles			
Plastic	% of this category/size pipe currently in poor condition or beyond useful life	_____ %	_____ %	_____ %	_____ %
_____ % of total pipe					
_____ Feet or miles	Amount of ductile iron by pipe size	_____ feet or miles			
Ductile Iron	% of this category/size pipe currently in poor condition or beyond useful life	_____ %	_____ %	_____ %	_____ %
_____ % of total pipe					
_____ Feet or miles	Amount of cast iron by pipe size	_____ feet or miles			
Cast Iron	% of this category/size pipe currently in poor condition or beyond useful life	_____ %	_____ %	_____ %	_____ %
_____ % of total pipe					
_____ Feet or miles	Amount of asbestos cement by pipe size	_____ feet or miles			
Asbestos Cement	% of this category/size pipe currently in poor condition or beyond useful life	_____ %	_____ %	_____ %	_____ %
_____ % of total pipe					
_____ Feet or miles	Amount of other by pipe size	_____ feet or miles			
Other	% of other currently in poor condition or beyond useful life	_____ %	_____ %	_____ %	_____ %
_____ % of total pipe					

Meters, Service Lines, Backflow Prevention Devices/Assemblies, Hydrants, Valves, etc

Projects for meters, service lines, backflow prevention devices and assemblies, valves, hydrants and other miscellaneous projects are recorded in this section to accommodate entries of multiple identical items on one line in the project table. Record only projects that are not a part of another project (e.g., water main replacement projects will already include valves, hydrants and other appurtenances). EPA requires documentation of all projects provided. Applicable types of documentation are presented in List 4 of the Lists of Codes. Use only existing documentation of cost. We do not expect you to develop new cost estimates.

Inventory	Needing Replacement	New Infrastructure Needs
Total Number of Existing Water Meters: _____	Number of Water Meters: _____	Number of Water Meters: _____
Total Number of Existing Backflow Prevention Devices/Assemblies: _____	Number of Backflow Prevention Devices/Assemblies: _____	Number of Backflow Prevention Devices/Assemblies: _____
Total Number of Existing Valves: _____	Number of Valves: _____	Number of Valves: _____
Total Number of Existing Hydrants: _____	Number of Hydrants: _____	Number of Hydrants: _____
Total Number of Lead Service Lines: _____		

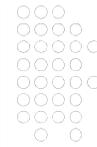
Project Number



Source, Treatment, Storage, and Pur

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, ReHab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)
Ex. 1	Replace Wells 3 and 8 at 0.5 MGD each	R1	A1	R	C	4A
Ex. 2	Rehab Treatment Plant and Booster Station	T10, P2	A1, A6	H	F	1A
1000						
1001						

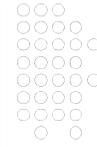
Project Name



Source, Treatment, Storage, and Pur

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1000						
1001						

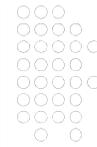
Type of Need



Source, Treatment, Storage, and Pur

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1000						
1001						

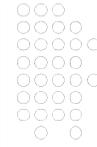
Reason for Need



Source, Treatment, Storage, and Pur

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, ReHab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)
Ex. 1	Replace Wells 3 and 8 at 0.5 MGD each	R1	A1	R	C	4A
Ex. 2	Rehab Treatment Plant and Booster Station	T10, P2	A1, A6	H	F	1A
1000						
1001						

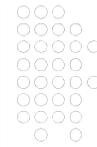
Description N/R/H/E



Source. Treatment. Storage. and Pur

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, ReHab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)
Ex. 1	Replace Wells 3 and 8 at 0.5 MGD each	R1	A1	R	C	4A
Ex. 2	Rehab Treatment Plant and Booster Station	T10, P2	A1, A6	H	F	1A
1000						
1001						

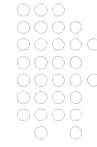
Current vs. Future



Source. Treatment. Storage. and Pur

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, ReHab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)
Ex. 1	Replace Wells 3 and 8 at 0.5 MGD each	R1	A1	R	C	4A
Ex. 2	Rehab Treatment Plant and Booster Station	T10, P2	A1, A6	H	F	1A
1000						
1001						

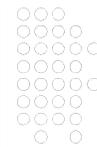
Regulation or Secondary Purpose



Source, Treatment, Storage, and Pur

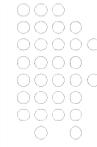
Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, ReHab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)
Ex. 1	Replace Wells 3 and 8 at 0.5 MGD each	R1	A1	R	C	4A
Ex. 2	Rehab Treatment Plant and Booster Station	T10, P2	A1, A6	H	F	1A
1000						
1001						

Design Parameters



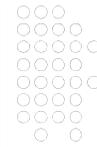
- ▶ Three-table format
 - Each table has specific design parameters
- ▶ One-table format (Excel)
 - All design parameters on the same table in different columns
- ▶ Specific to the type of project
 - See Type of Need Dictionary (www.dwnneeds.com)
- ▶ When needed
 - Required information if no documented cost is provided
 - Requested if cost is provided
 - Used to build cost models
- ▶ Pipe rehab/replacement projects
 - Need length to calculate 10% of total system

Design Parameters



- Pipe
 - ▶ Length and diameter
- Treatment
 - ▶ Capacity in MGD
- Storage
 - ▶ Capacity in MG
- Source
 - ▶ Capacity in MGD
- Appurtenances
 - ▶ Diameter and number needed
- Generator
 - ▶ Kilowatt or horsepower
- Unit costs
 - ▶ Well house
 - ▶ Service lines

Design Parameter – Table 1



Storage, and Pumping Projects

Current or Future	Reg or Secondary Purpose (List 3)	Design Capacity (MG, MGD, kW)	Number Needed (if applicable)	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documentation (List 4)
C	4A	0.5	2	-	-	6, 10
F	1A	5.0	1	\$6,027,000	12/2009	4

Design Parameter – Table 2



and Distribution Projects

<u>C</u> urrent or <u>E</u> uture	Reg or Secondary Purpose (List 3)	Diameter of Pipe (Inches)	Length of Pipe (Feet)	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documen-tation (List 4)
C	4A	12	18,000	-	-	11
C	4A	24	20,000	\$4,200,000	06/2008	1

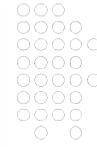
Design Parameter – Table 3



tion Devices/Assemblies, Hydrants, Valves, etc

<u>C</u> urrent or <u>E</u> uture	Reg or Secondary Purpose (List 3)	Size (Diameter in Inches)	Number Needed	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documen-tation (List 4)
C	1D	-	100	\$100,000	05/2010	9, 11

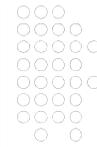
Cost Estimate and Date



Storage, and Pumping Projects

Current or Future	Reg or Secondary Purpose (List 3)	Design Capacity (MG, MGD, kW)	Number Needed (if applicable)	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documentation (List 4)
C	4A	0.5	2	-	-	6, 10
F	1A	5.0	1	\$6,027,000	12/2009	4

Documentation



Storage, and Pumping Projects

Current or Future	Reg or Secondary Purpose (List 3)	Design Capacity (MG, MGD, kW)	Number Needed (if applicable)	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documentation (List 4)
C	4A	0.5	2	-	-	6, 10
F	1A	5.0	1	\$6,027,000	12/2009	4

Climate Readiness Supplemental Question



- New in 2011 DWINSA
- If projects identified in questionnaire are related to climate readiness
 - ▶ Code project with “2G” from List 3 in green booklet in the “Regulatory or Secondary Purpose” column
 - ▶ Also follow-up with additional information
- Response is for system in general
 - ▶ Not for individual project but for 20-year need
 - ▶ Not a reason for need

Climate Readiness Supplemental Questions

If you used code 2G from List 3, in the “Regulation or Secondary Purpose” column of the survey, indicating that you have one or more projects that are related to climate readiness, please answer the following questions. Only one response is requested; do not provide a response for each project.

Projects that included a climate ready component [Project #(s)]: _____

Which of the following secondary consequences of climate change have contributed to your system's need for climate readiness projects?
(check all that apply)

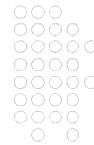
- Source water quality (e.g., water quality degradation affecting treatment processes, alternate sources)
- Source water quantity (e.g., availability affected by snowmelt or weather patterns, or hydraulic patterns)
- Infrastructure Vulnerability (e.g., facility locations affected by sea level rise, increased precipitation intensity)
- Other (please explain) _____

Please describe the data you are relying on to determine climate change consequences and implications.

- Model developed from state-specific data.
- Model developed from region-specific data.
- Other (please describe) _____



Questions?



What Types of Projects Should Be Listed?

Allowable Projects



- **Must be:**
 - ▶ Capital improvement needs
 - ▶ Eligible for SRF funding
 - ▶ In furtherance of public health goals of the SDWA
 - Violation or regulatory requirement is not necessary
 - ▶ Reflects most cost-efficient investment strategies
 - Assumed where commitment is documented
 - ▶ Within the 20-year timeframe of the survey

The 2011 DWINSA 20-Year Timeframe



- Construction cannot have started before January 1, 2011
 - ▶ Can be funded, but “dirt” cannot be moved
 - ▶ Include only those phases that have not begun
- Project cannot be needed after December 31, 2030

Unallowable Projects



- Not considered to be capital needs:
 - ▶ Operation and maintenance costs
 - ▶ Acquisition of most vehicles and tools
 - ▶ Projects solely for conducting studies
 - ▶ Water rights or fee payments
 - ▶ Sample collection or analysis fees
 - ▶ Employee wages and salaries
 - ▶ Other administrative costs

Unallowable Projects



- Not eligible for SRF funding:
 - ▶ Substantial portion accommodates future growth
 - ▶ Substantial portion for fire protection
 - ▶ For source water protection
 - Funded through set-asides
 - ▶ Raw water reservoir or dam-related need

Allowable vs. Eligible



- Allowable:
 - ▶ Projects that can be included in the Assessment and contribute to individual state needs

- Eligible
 - ▶ Projects that can be funded through the DWSRF

Allowable vs Eligible



	DWINSA Allowable	DWSRF Eligible
Dams	No	No
Acquisition of Systems	No	Yes
Refinancing Loans	No	Yes
Source Water Protection Needs	No	Set-Aside Only
Non-PWSs	No	Yes
Growth	No	No
Studies	No	Yes

Unallowable Projects



- Not in furtherance of the public health goals of the SDWA:
 - ▶ Solely for improving appearance
 - ▶ Infrastructure demolition not required for a project
 - ▶ Land acquisition not required for a project
 - ▶ Non-essential buildings and parking
 - ▶ Connecting existing homes that already have an adequate drinking water supply

Unallowable Projects



- Acquisition of existing infrastructure
- Projects driven solely by a non-water related issue
 - ▶ Highway relocation
- Projects that are not the responsibility of the water system
 - ▶ Service lines or backflow prevention that are the homeowner's responsibility
 - ▶ Extension paid by developer

Unallowable Projects



- No Duplication of Need
 - ▶ Multiple projects meeting same need
 - e.g., treat contaminated well and replace that well
 - ▶ Projects with subordinate components
 - e.g., rehab a treatment plant and replace its filters
 - ▶ Recurring need (can include but only once)
 - ▶ More than one system reports the same shared need
 - ▶ Needs for proposed/recently promulgated regs
 - Radon Rule, Revisions to the Total Coliform Rule, Stage 2 DBPR

So What Types of Projects Are Allowable?



Types of Projects to Consider



- Rehabilitation or replacement of existing infrastructure due to age and decline
 - ▶ Wells, tanks, pump stations, treatment
 - ▶ Transmission and distribution pipe
 - ▶ Meters, lead service lines
- Upgrade or expansion of treatment plant
- New infrastructure needed to address a deficiency faced by your current users
 - ▶ Project cannot be substantially for growth or fire flow

Where Do I Find Projects?



- Capital improvement needs listed in your CIP or Master Plan
- Annual replacement programs in planning documents
- General system knowledge
 - ▶ Longer-term projects may not be listed in your CIP, but you may know you'll need to address certain infrastructure within 20 years
- 2007 DWINSA Response for your system

Projects from 2007 Survey



- For systems in both the 2007 and the 2011 surveys, data from the 2007 survey is available
 - ▶ System may have been provided a projects table in their mail-out package
 - ▶ States were provided an electronic version of their systems' 2007 projects
- Accepted projects have data in most columns
- Deleted projects only have data in first four columns
 - ▶ Project number, project name, type of need, and reason for need
- Verify if project is still needed
 - ▶ Many projects may have started construction – don't include
 - ▶ Determine if still needed and scope of project has not changed
- Some projects will need additional documentation
 - ▶ Refer to instructions sent to system and/or state

Project Documentation



Documentation of Need



- Each project must have some form of documentation indicating why the project is needed to meet a deficiency affecting current users
- Must provide enough information to verify the project meets allowability criteria
- Must be dated and be less than 4 years old
 - ▶ If documentation is older than 4 years, provide a signed statement that the project is...
 - Of the same scope, has not begun construction before 1/1/11, and is still a valid need
 - Project approved in 2007 DWINSA and 2011 DWINSA documentation requirements are met

Types of Documentation



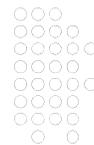
- Independent
 - ▶ Generated through a process independent of the survey (e.g. CIP, Master Plan)
- Survey-generated
 - ▶ Generated specifically for the survey, or in anticipation of the survey
 - ▶ Prepared by the system or the state
 - ▶ Often provided to supplement independent documentation

Independent Documentation



- Capital Improvement Plan (CIP) or Master Plan
- Facilities Plan or Preliminary Engineering Report
- Grant or Loan Application Form
- Engineer's Estimate or Bid Tabulation
- Intended Use Plan/ State Priority List
- Sanitary Survey or CPE Report
- Monitoring Results
- Cost of Previous Construction
- Other

Project Types that Must Have Independent Doc. of Need



- ▶ New surface water intakes
- ▶ New aquifer storage and recovery wells
- ▶ New off-stream raw water storage
- ▶ New, replacement, or expansion/upgrade of complete treatment plant
- ▶ New treatment plant components
- ▶ New ground or elevated storage
- ▶ New pump stations
- ▶ New pipe
- ▶ Pipe replace/rehab in excess of the 10% of the total existing pipe inventory *if* independently documented pipe projects are included

Survey-Generated Documentation



- Written by the water system or written by the state
- Projects reasonably assumed to be needed within 20-years

Project Number	Description	Reason for Need
1004	South Street Tank	This tank, built in 1972, has not had any major work since built. It was poorly constructed and is deteriorated past the point of rehab and needs to be replaced.
1005	Highline Tank	This tank is in adequate condition now, but will need rehabilitation within 20 years.
1006	Weber Booster Station	The booster station is operating poorly. It is 40 years old and has been band-aided together. It currently needs replacement.
1007	Oakvale Treatment Plant	Our plant is operating adequately but will need some rehabilitation within 20 years.

All Forms of Documentation Accepted



- Sources
 - ▶ Replace or rehab well pumps and raw water pumps
 - ▶ Other misc. source projects
- Treatment
 - ▶ Rehab complete treatment plant
 - ▶ Replace or rehab treatment system components
- Pumping
 - ▶ Rehab pump stations
 - ▶ Replace or rehab finished water pumps
- Storage
 - ▶ Rehab ground or elevated storage tank
 - ▶ Replace or rehab hydropneumatic tank
 - ▶ Cisterns (AI/ANV survey only)
 - ▶ New or replace tank cover
- Pipe
 - ▶ Replace/rehab of up to 10% of system
- Other
 - ▶ New or replace meters
 - ▶ Replace generator
 - ▶ Other misc. projects

States Ensure Documentation Requirements Are Met

- Some project types require more detail of the reason for need and are reviewed by the “Weight of Evidence”

2-page summary of doc. requirements is available on www.dwneeds.com

Acceptable Documentation of Need by Type of Need Code				
Code	Need Type	New	Replacement	Rehabilitation
SOURCE				
R1	Well	Weight of evidence - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence - Age, condition, history - Specific deficiency discussed	Weight of evidence - Age, condition, history
R10	Spring Collector			
R2	Well Pump	Weight of evidence - Substantial portion not for growth - Specific deficiency discussed	All forms of documentation accepted	
R8	Raw Water Pump			
R3	Well House	Weight of evidence - Clear indication of need	Weight of evidence - Age, condition, history of well houses for the system	
R4	Eliminate Well Pit		N/A	
R5	Abandon Well	All forms of documentation accepted		
R6	Aquifer Storage and Recovery Well	Weight of evidence - Independent Documentation Required - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence - Age, condition, history - Specific deficiency discussed	Weight of evidence - Age, condition, history
R7	Surface Water Intake			
R9	Off-Stream Raw Water Storage	Weight of evidence - Independent Documentation Required - Specific deficiency discussed - Not for new/recent regulation - Cost estimate required	All forms of documentation accepted (cost estimate required)	
R11	De-stratification	All forms of documentation accepted (cost estimate required)		
TREATMENT COMPONENTS				
T1 - T9	Disinfection		All forms of documentation accepted	
T30 - T44	Treatment components	Weight of evidence - Independent Documentation Required - Specific deficiency discussed - Not for new/recent regulation	N/A	
T45	Treatment Unknown		All forms of documentation accepted (cost estimate required)	
T46	Other		All forms of documentation accepted (cost estimate required)	
T50 - T53	Treatment components (WWW eff)	Weight of evidence - Specific deficiency in process monitoring capabilities discussed - Clear indication not in other project	All forms of documentation accepted	N/A

Assigning Cost

Assigning Costs



- To contribute to the state and national need, each project must have a cost assigned
 - ▶ System provides documented cost estimate
 - Independent documentation required
 - ▶ System provides “modeling parameters”
 - Information for EPA to model cost
 - EPA can model most, but not all, project types

Documenting Cost Estimate



- Do not generate a cost estimate for the survey
 - ▶ Only submit pre-existing estimates
- Include the date prepared (month and year)
 - ▶ Not more than 10 years old (prior to Jan.1, 2001)
- EPA will adjust all costs to January 2011 dollars

Cost Components



- Documented cost estimates should include all aspects necessary for project construction
 - ▶ Design
 - ▶ Engineering
 - ▶ Labor
 - ▶ Materials
 - ▶ Contingencies

Unallowable Cost Components



- Loan origination fees
- Finance charges
- Bond issuance fees or costs
- Loan interest payments



Questions?



Coding and Documentation Examples

Example Treatment Project



- A system states that their 10 MGD conventional filtration plant needs
 - ▶ replacement of filter media
 - ▶ rehabilitation of the 200,000 gallon clearwell
 - ▶ replace all six 3-MGD raw water pumps
 - ▶ upgrade to UV to control *Giardia*
- They have no independent documentation of need.
- They have no costs for these projects.

Treatment Example



Source, Treatment, Storage, and Pumping Projects

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, Rehab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)	Design Capacity (MG, MGD, kW)	Number Needed (if applicable)	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documentation (List 4)
1000	Treatment Plant Rehab	T10	A1, A6	H	C	1A	10	1			11

Name: “Treatment Plant Rehab”

Type	T10	Regulation	1A
Reason	A1, A6	Parameter	10 MGD
Description	H	Cost	-
Current/Future	C	Documentation	11

Example Pump Station Project



- The system reports that they have 4 booster pump stations, each with a capacity of 0.5 MGD. They are all currently adequate but will need to be rehabilitated within 20 years. The system did not provide a cost.

Pump Station Example



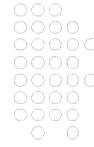
Source, Treatment, Storage, and Pumping Projects

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, Rehab, Expand/upgrade	Current or Future	Reg or Secondary Purpose (List 3)	Design Capacity (MG, MGD, kW)	Number Needed (if applicable)	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documentation (List 4)
1000	Booster Pump Stations	P2	A1	H	F	4A	0.5	4			11

Name: “Booster Pump Stations”

Type	P2	Regulation	4A
Reason	A1	Parameter	0.5 MGD
Description	H	Number Needed	4
Current/Future	F	Documentation	11

Example Meter Project



- A system has 4,000 connections and they will need to replace meters at each connection sometime in the next 20 years. The meter sizes include:
 - ▶ 3,500 @ 5/8-inch
 - ▶ 450 @ 3/4-inch
 - ▶ 50 @ 1-inch
- When they replace their meters, they will be replacing them with radio-read meters as part of their automatic meter reading system (AMR) and leak detection program.

Meter Example



Meters. Service Lines. Backflow Prevention Devices/Assemblies. Hydrants. Valves. etc

Project Number	Project Name	Type of Need (List 1)	Reason for Need (List 2)	New, Replace, or ReHAB	Current or Euture	Reg or Secondary Purpose (List 3)	Size (Diameter in Inches)	Number Needed	Cost Estimate (if available)	Date of Cost Estimate (Month/Year)	Documen-tation (List 4)
3000	5/8" Meters	M8	A1	R	F	2D	0.625	3,500			11
3001	3/4" Meters	M8	A1	R	F	2D	0.75	450			11
3002	1" Meters	M8	A1	R	F	2D	1	50			11

- List three projects at each meter size (decimals, not fractions)
- Include the 2D code for green infrastructure, if applicable



Pipe Projects

How to Assess Needs Associated with Pipe



- Pipe is typically a substantial portion of a system's infrastructure
 - ▶ Often the bulk of system's need
- Next set of slides will go through a step-by-step process for determining pipe projects to include
 - ▶ Start by addressing existing pipe
 - Rehabilitation and replacement
 - ▶ Then consider "new" pipe
 - Extensions or looping

Pipe Rehabilitation and Replacement Projects



- Example system

- ▶ Total pipe in system:

- 160 miles = 844,800 feet
 - Enter 844,800 in the box on the inventory table or in the appropriate cell on the spreadsheet

Transmission and Distribution Inventory

Transmission and distribution projects are the piping needs of a water system. Projects for valves, other valves, and meters that are not part of a transmission or distribution project listed in this table should be recorded in the table on page 6.

On the table below, please provide an estimate of the total feet or miles of pipe in your system, if possible. Completion of this table is not required, but it may be helpful to ensure all potential transmission and distribution pipe projects are considered.

Note: The total feet or miles of pipe in your system is required information if any pipe projects are submitted based solely on survey-generated documentation (documentation codes 10 or 11).

Total Pipe in System (Circle or underline feet or miles)		48" inch	36" inch	24" inch	18" inch
Feet or miles	Amount of PVC by pipe size	feet or miles	feet or miles	feet or miles	feet or miles
% of total pipe	% of this category's pipe currently in poor condition or beyond useful life	%	%	%	%
Feet or miles	Amount of ductile iron by pipe size	feet or miles	feet or miles	feet or miles	feet or miles
% of total pipe	% of this category's pipe currently in poor condition or beyond useful life	%	%	%	%
Feet or miles	Amount of cast iron by pipe size	feet or miles	feet or miles	feet or miles	feet or miles
% of total pipe	% of this category's pipe currently in poor condition or beyond useful life	%	%	%	%
Feet or miles	Amount of asbestos cement by pipe size	feet or miles	feet or miles	feet or miles	feet or miles
% of total pipe	% of this category's pipe currently in poor condition or beyond useful life	%	%	%	%
Feet or miles	Amount of other by pipe size	feet or miles	feet or miles	feet or miles	feet or miles
% of total pipe	% of other currently in poor condition or beyond useful life	%	%	%	%

Pipe Projects Rehab/Replace Example



- Step 1 – Specific Planned Projects

- ▶ Identify any specific pipe rehab or replacement projects in independent documentation

Big Sky Water		2010 Capital Improvement Plan
Big Sky Water will be replacing cast iron pipe at the follow locations (detailed cost estimates can be found in Appendix A):		
Location	Length and Diameter	Cost
Emerald Street	1,100 ft of 8 inch	\$157,113
Main Street	3,100 ft of 12 inch	\$458,583
Fourth Street	2,140 ft of 8 inch	\$305,656
Elm Street	860 ft of 8 inch	\$122,834
Front Avenue	4,500 ft of 8 inch	\$642,735
Aspen Lane	1,400 ft of 6 inch	\$150,542
West Cherry Street	4,900 ft of 8 inch	\$699,867

Pipe Projects

Rehab/Replace Example



- Step 2 – Annual Replacement Program
 - ▶ Add in pipe from annual replacement program that do not duplicate the projects in Step 1
 - CIP Excerpt:

“In addition to the cast iron replacement projects discussed in Section 5.3, Big Sky Water has an annual replacement program for our aging ductile iron mains. We have allocated \$150,000 per year for this program.

Big Sky Water- Annual Pipe Replacement Program				
2011	2012	2013	2014	2015
Cast Iron Mains	Cast Iron Mains	Cast Iron Mains	Cast Iron Mains	Cast Iron Mains
\$150,000.00	\$150,000.00	\$150,000.00	\$150,000.00	\$150,000.00

Pipe Projects

Rehab/Replace Example



- Step 2 – Annual Replacement Program (cont.)
 - ▶ Ensure there is no overlap between specific pipe projects and annual replacement program
 - Specific projects are not included in annual program
 - Listed in same document?
 - ▶ System’s CIP only addresses 5 years - Assess whether this level of rehab/replacement is needed for full 20 years
 - May be appropriate to extrapolate out 20 years
 - ▶ List a project for the 5-year program, or extrapolate to 20 years if appropriate
 - ▶ $\$150,000/\text{year} \times 20 \text{ years} = \$3,000,000$
 - Provide a statement to document the need for the project and that the program will continue for the full 20-years

Pipe Projects Rehab/Replace Example



- Step 3 – Determine if independently documented projects exceed 10% of system total
 - ▶ Total pipe: System has 844,800 feet of pipe
 - ▶ Specific projects total 18,000 feet
 - ▶ Annual replacement program represents 30,000 feet
 - Rule of thumb: \$100/ft
$$\begin{aligned} \$150,000/\text{year} \times 20 \text{ years} &= \$3,000,000 \\ \$3,000,000/\$100/\text{foot} &= 30,000 \text{ feet} \end{aligned}$$
 - ▶ Independently documented projects represent 48,000 feet of pipe
 - ▶ This represents 5.7% of the system
 - $48,000 \div 844,800 = 0.057 = 5.7\%$



If your independently documented projects for rehab and/or replacement address 10% or more of your existing system, do not add any additional projects for rehab/replacement.

Pipe Projects Rehab/Replace Example



- Step 4 – Additional projects based on survey-generated documentation
 - ▶ If your independently documented projects total less than 10% of the system, it may be appropriate to add additional projects based on survey-generated documentation
 - Only add projects if this is true representation of system's need
 - In this example, 5.7% of the system is already represented
 - You could add projects representing 4.3% of the system

Pipe Projects Rehab/Replace Example



- Step 4 – Additional projects based on survey-generated documentation (cont.)
 - ▶ You may add projects representing 4.3% of the system
 - $4.3\% \times 844,800 = 36,326$ feet of pipe
 - ▶ If you know your system's approximate distribution by size
 - (e.g. 10% is 6-inch, 60% is 8-inch, 20% is 12-inch, 10% is 24-inch), you may assign projects accordingly:
 - 6-inch – 3,632 feet
 - 8-inch pipe - 21,796 feet
 - 12-inch – 7,264 feet
 - 24-inch – 3,632 feet
 - ▶ If you do not know your system's pipe size distribution, just list a project for 8-inch diameter pipe
 - 8-inch pipe - 36,326 feet

Pipe Projects

New Pipe Example



- Projects for New Pipe
 - ▶ New pipe is not part of your existing system
 - Therefore, these projects are not part of 10% calculation
 - ▶ When would “new” pipe be for something other than growth or fire-flow?
 - Serve existing homes currently on contaminated wells
 - Loop a section of system that has quality or quantity issues
 - Stagnant water
 - Poor pressure
- Independent documentation required

Pipe Projects

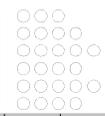
New Pipe Example



- Projects for New Pipe
 - ▶ A mobile home park on the edge of town is served by private wells and septic systems. The wells in the mobile home park have tested positive for high nitrate levels and coliform. The town has agreed to extend drinking water service to the mobile home park since their service is deficient. To annex the mobile home park into the town water system will require 5,000 feet of new 8” mains.
- System has laboratory results and a letter agreeing to extend service to the mobile home park.

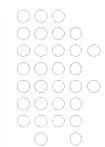
Pipe Projects Example

(this view is of a combined project table)



Project Number <small>(Enter a unique 4 digit number)</small>	Project Name <small>(Provide short description of the project)</small>	Type of Need <small>(Enter code(s) from List 1)</small>	Reason for Need <small>(Enter code(s) from List 2)</small>	New, Expand/ Upgrade, Replace, or Rehabilitate <small>(Enter one: N, E, R, or H)</small>	Current or Future <small>(Enter one: C or F)</small>	Reg or Secondary Purpose <small>(Enter code(s) from List 3 if applicable)</small>	Design Capacity <small>(Enter capacity in MG, MGD, or kW, if applicable)</small>	Diameter or Size <small>(Enter diameter in inches, if applicable)</small>	Length of Pipe <small>(Enter length of pipe in feet, if applicable)</small>	Number Needed <small>(Enter number needed if applicable)</small>	Cost Estimate <small>(Provide cost estimate if available)</small>	Date of Cost Estimate <small>(In mm/yyyy format)</small>	Documentation <small>(Enter code(s) from List 4)</small>
2000	Emerald Street	M1	A1	R	C	4A		8	1,100		\$157,113	06/2009	1,11
2001	Main Street	M1	A1	R	C	4A		12	3,100		\$458,583	06/2009	1,11
2002	Fourth Street	M1	A1	R	C	4A		8	2,140		\$305,656	06/2009	1,11
2003	Elm Street	M1	A1	R	C	4A		8	860		\$122,834	06/2009	1,11
2004	Front Ave	M1	A1	R	C	4A		8	4,500		\$642,735	06/2009	1,11
2005	Aspen Lane	M1	A1	R	C	4A		6	1,400		\$150,542	06/2009	1,11
2006	West Cherry Street	M1	A1	R	C	4A		8	4,900		\$699,867	06/2009	1,11
2007	Annual Pipe Replacement	M1	A1	R	C	4A					\$3,000,000	05/2008	1
2008	Replacement of 6" Cast Iron	M1	A1	R	C	4A		6	3,632				11
2009	Replacement of 8" Cast Iron	M1	A1	R	C	4A		8	21,796				11
2010	Replacement of 12" Cast Iron	M1	A1	R	C	4A		12	7,264				11
2011	Replacement of 24" Cast Iron	M1	A1	R	C	4A		24	2,632				11
2012	Mobile Home Park Main Extension	X2	A9	N	C	1C, 1B		8	5,000				1, 8

Documentation Examples



Independent Documentation



- Planning documents have great information:

“This project will expand the capacity of the water treatment plant from 60 MGD to 81 MGD. Pre-design studies for this expansion were completed in FY09, and major final design work was completed in FY 10. Construction of these new facilities is expected to start in FY 12. Improvements will include new a parallel treatment train consisting of...”

- But they do not always tell why the project is needed.

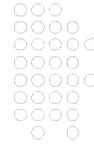
Survey-Generated Supplemental Information



- Add a statement addressing specific deficiency facing current customers

“Project 2004 for the expansion of the treatment plant is needed due to extensive growth in the area over the past decade. The current average day demand is 55 MGD and the current max day demand is 70 MGD. The system routinely operates under water restrictions.”

Example of Inadequate Weight of Evidence



- “Well 5 is old and deteriorated and needs to be replaced.”
 - ▶ This would be adequate for a project listed under “all forms of documentation acceptable,” - such as a pump replacement or rehab, but is not adequate for a weight of evidence review.

Example of Adequate Weight of Evidence



- “Well 5 is 62 years old. It has been our primary well for decades. However, after several rehabs in the past 10 years capacity has diminished from 42 gpm to 27 gpm based on the most recent pumping test. In addition, a video of the well shows a structural flaw in the casing at 102 feet among other issues. We need to decommission this well and replace it with a new well at the original capacity.”

Survey-Generated Doc. Inadequate to Meet WOE



Project Number	Description	Reason for Need
1004	South Street Tank	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2030.
1005	Highline Tank	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2030.
1006	Weber Booster Station	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2030.
1007	Oakvale Treatment Plant	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2030.

Survey-Generated Doc. Adequate to Meet WOE



Project Number	Description	Reason for Need
1004	South Street Tank	This tank, built in 1972, has not had any major work since built. It was poorly constructed and is deteriorated past the point of rehab and needs to be replaced.
1005	Highline Tank	This tank is in adequate condition now, but will need rehabilitation within 20 years.
1006	Weber Booster Station	The booster station is operating poorly. It is 40 years old and has been band-aided together. It currently needs replacement.
1007	Oakvale Treatment Plant	Our plant is operating adequately but will need some rehabilitation within 20 years.

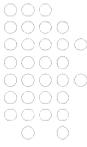


Questions?



**Needs Survey
Website**

dwneeds.com

- 
- Water systems on the webinar are welcome to continue to attend, but if you do not intend to utilize the website, you are welcome to log off at this time.
 - Thank you again for attending our webinar and for your assistance with this important survey.
 - If you have any questions, call the Needs Survey Helpline 877-357-9030 or your state coordinator (on the back of your survey).

Website Purpose



- Online resource
 - ▶ No login needed
- Electronic upload
 - ▶ Optional
- Tracking and reviewing survey data
 - ▶ Highly recommended
- Modifying projects
 - ▶ i.e., submit additional information

How to Access the Website



- Web address:

<http://www.dwneeds.com>

- Questions on how to utilize the website:

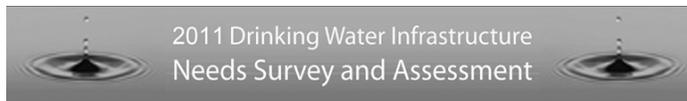
- ▶ E-mail

- Michelle.Lee@cadmusgroup.com

- ▶ Needs Survey Helpline

- 877-357-9030

DWNeeds – Log In Page



Welcome to the 2011 Drinking Water Infrastructure Needs Survey and Assessment Website.

The 1996 Safe Drinking Water Act Amendments directed the EPA to conduct a survey of the infrastructure needs of public water systems every four years. The surveys collect data from water systems nationwide that are eligible to receive Drinking Water State Revolving Fund (SRF) monies regarding their 20-year capital improvement needs to ensure the continued provision of safe drinking water. Data from these surveys are used to develop formulas used by Congress to allot Drinking Water State Revolving Fund grants to each state based on their need. The first Report to Congress was published in 1997 and subsequent reports were published in 2001 and 2005.

For more information on past surveys, [click here](#).

Log In

User Name:

Password:

[Forgot your password ?](#)

Downloads - Available Without Log-in

- [2007 Needs Survey Questionnaire 2-7-07 \(PDF\)](#)
- [2007 Needs Survey Questionnaire 2-7-07 \(Excel\)](#)
- [2007 Needs Survey Cover Letter 8-20-07 \(PDF\)](#)
- [Combined Project Table for Data Upload 4-24-07 \(Excel\)](#)
- [Needs Survey Instructions 2-9-07 \(PDF\)](#)
- [Lists of Codes 5-2-07 \(PDF\)](#)
- [Lists of Codes 5-2-07 Booklet \(PDF\)](#)
- [State Comment Codes 10-30-07 \(Excel\)](#)
- [Additional Project Tables 2-6-07 \(PDF\)](#)
- [Type of Need Dictionary \(PDF\)](#)
- [Needs Evaluation Guide \(PDF\)](#)
- [Upload Instructions 2-6-07 \(PDF\)](#)
- [Survey Return Instructions 2-9-07 \(PDF\)](#)
- [Small System Evaluation Guide \(Word\)](#)

**Downloads
available to
any user –
no password
required**

Log In Page



- To access project data, a username and password are required
 - ▶ States/EPA Regions/Navajo Nation
 - Each state and regional coordinator will receive a user name and password to be entered into the Needs Assessment login page.
 - ▶ Systems >100K
 - One representative from each system serving >100K will receive a username and password, if requested by the state.

What Is On the Website



The screenshot shows the website's home page with a navigation menu (Home, Projects, System Stats, Progress Meter, Contacts, Hot List, Unread Messages, Log Out) and a user profile (User: examplestatems.gov Role: State (Editor)). The main content area includes a 'Home Page' message, 'Administrative Functions' (Change Password, Edit User), a 'Quick Find' search box for PWSID and Project #, and 'Current Filters' for Project and System. The Project filters include All Projects, Not Processed, Deleted, Accepted w/No Cost, Accepted w/Adjusted Cost, and Accepted w/Cost. The System filters include All Systems, Small, Medium, and Large. The Area is set to Mississippi. An 'Apply' button is present. Below the filters is a 'Downloads - Available Without Log-in' section with links to various survey documents and a combined project table.

Project Status



- Website will indicate status of project



Accepted: Project accepted and cost or modeling parameter unchanged



Accepted with Modified Cost: Project accepted but change made that impacts cost



Accepted with No Cost: Project accepted but either no cost or no modeling parameter



Deleted: Project deleted (usually an allowability or documentation of need issue)

Upload Questionnaire



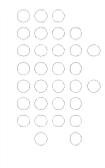
- Systems > 100 K can upload to website

- ▶ State will be notified via email when a system has uploaded their questionnaire
- ▶ If system uploads questionnaire, state must “submit” it to EPA via website

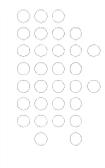
- States can upload to website

- ▶ Projects must be in excel version
- ▶ Entered by state or received from system

- If you're interested in upload, please contact us for assistance if needed.



Questions?



State Review of Questionnaire

Are Projects Allowable?



- If project does not meet allowability criteria – delete
 - ▶ No project information will be included in the database
 - ▶ Won't count as a deleted project
- If allowable need – supplement documentation to clarify project

Is Coding Accurate?



- Correct coding
 - ▶ Strike out and insert correct code
 - ▶ White-out and correct
- Mark up associated documentation
- Ensure projects that will have costs modeled have only one type of need code

Are All Needs Included?



- Planning documents typically focus on 5-10 year time frame
 - ▶ 20-year time frame rare
- Consider all inventory
 - ▶ Add projects for infrastructure expected to require rehab/replacement in 20 years that can be documented with survey-generated documentation
 - Careful not to double count from projects already listed
 - ▶ Obtain list of inventory from sanitary surveys
 - ▶ Contact system to assess whether additional projects should be added

Can Each Project be Assigned a Cost?



- If no cost – include parameters
- Cost greater than 10 years old
 - ▶ Delete and provide modeling parameters
- Try to capture as much cost information as possible
 - ▶ Both cost and modeling parameter
 - ▶ Rebuilding models requires data

Is Each Project Adequately Documented?



- Documentation policies met?
 - ▶ All projects documented?
 - ▶ Weight of evidence met if applicable?
 - Independent document included if needed?
 - ▶ See documentation policy hand-out
- Keep in mind, independent documents might not demonstrate the project is allowable
 - ▶ Additional information will most likely be necessary
- Relying on 2007 documentation
 - ▶ Validation required

What Kind of Documentation Do I Need for My Projects?



Commitment



- For some project types, EPA wants to see that the system is committed to the project:
 - ▶ Projects in the early planning stages
 - ▶ Drought or climate readiness
 - ▶ Redundancy
 - ▶ Green projects and components (if more \$\$ and non-green options exist)
- Required because commitment is often not obvious for these projects

Levels of Documentation



- Two-tiered documentation approach
 - ▶ All forms of documentation accepted
 - ▶ Weight of evidence documentation
 - For certain infrastructure in this category, independent documentation also required
- Level dependent on:
 - ▶ Type of need
 - ▶ New/Replace/Rehabilitation/Expansion
 - Refer to the Type of Need Dictionary and the two-page table of documentation of need by type of need

All Forms of Documentation Accepted



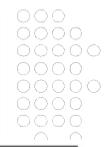
- Sources
 - ▶ Replace or rehab well pumps and raw water pumps
 - ▶ Other misc. source projects
- Treatment
 - ▶ Rehab complete treatment plant
 - ▶ Replace or rehab treatment system components
- Pumping
 - ▶ Rehab pump stations
 - ▶ Replace or rehab finished water pumps
- Storage
 - ▶ Rehab ground or elevated storage tank
 - ▶ Replace or rehab hydropneumatic tank
 - ▶ Cisterns (AI/ANV survey only)
 - ▶ New or replace tank cover
- Pipe
 - ▶ Replace/rehab of up to 10% of system
- Other
 - ▶ New or replace meters
 - ▶ Replace generator
 - ▶ Other misc. projects

Weight of Evidence: Defined



- When the adequacy of documentation of **need** and **allowability** will be determined based on a high level of system-specific and project-specific detail such as:
 - ▶ Age, condition, time since last rehabilitation
 - ▶ Specific reason for project need

States Ensure Documentation Requirements Are Met

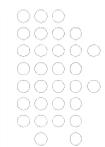


- Please open your documentation summary document

2-page summary of doc. requirements is available on www.dwnneeds.com

Acceptable Documentation of Need by Type of Need Code				
Code	Need Type	New	Replacement	Rehabilitation
SOURCE				
R1	Well	Weight of evidence - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence - Age, condition, history - Specific deficiency discussed	Weight of evidence - Age, condition, history
R10	Spring Collector			
R2	Well Pump	Weight of evidence - Substantial portion not for growth - Specific deficiency discussed	All forms of documentation accepted	
R8	Raw Water Pump			
R3	Well House	Weight of evidence - Clear indication of need	Weight of evidence - Age, condition, history of well houses for the system	
R4	Eliminate Well Pit	All forms of documentation accepted		N/A
R5	Abandon Well			
R6	Aquifer Storage and Recovery Well	Weight of evidence - Independent Documentation Required - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence - Age, condition, history - Specific deficiency discussed	Weight of evidence - Age, condition, history
R7	Surface Water Intake			
R9	Off-Stream Raw Water Storage	Weight of evidence - Independent Documentation Required - Specific deficiency discussed - Not for new/recent regulation - Cost estimate required	All forms of documentation accepted (cost estimate required)	
R11	De-stratification	All forms of documentation accepted (cost estimate required)		
TREATMENT COMPONENTS				
T1 - T9	Disinfection		All forms of documentation accepted	
T30 - T44	Treatment components	Weight of evidence - Independent Documentation Required - Specific deficiency discussed - Not for new/recent regulation	N/A	
T45	Treatment Unknown		All forms of documentation accepted (cost estimate required)	
T46	Other			
T50 - T53	Treatment components (NEW ONLY)	Weight of evidence - Specific deficiency in process monitoring capabilities discussed - Clear indication not in other project	All forms of documentation accepted	N/A

Projects from 2007 Survey



- If documentation requirements have not changed from 2007
 - ▶ Documentation submitted in 2007 should be adequate
 - ▶ Projects must be “validated”
 - This project is still needed
 - The project has not been initiated (ground broken) prior to January 1, 2011
 - The scope of the project has not changed
- If documentation requirements have increased since 2007
 - ▶ Additional documentation will be necessary
- Project accepted with all forms of documentation
 - ▶ May be less time-consuming to provide new survey-generated doc.

Preparing the Submittal



- EPA reviewer cannot read entire document
 - ▶ But must have enough information to evaluate necessity, feasibility, and commitment
- Mark up as you review
 - ▶ Sticky notes
 - ▶ Dog-ear pages
 - ▶ Highlight
 - ▶ Write in margins
 - Project numbers and comments

Submittal from State to Contractor



- E-mail
 - ▶ needssurveysubmittals@cadmusgroup.com
- File transfer site
 - ▶ <https://ftp.cadmusgroup.com/thinclient/Login.aspx>
 - ▶ Contact Cadmus for login information and instructions
- Upload to the website
 - ▶ Discussed in Website portion of webinar
- Hard copy – send surveys and documentation to:

The Cadmus Group, Inc.
2620 Colonial Drive - Suite A
Helena, MT 59601
Attention: Linda Hills
(406) 443-9194

Modifying Projects



- Once questionnaires are submitted and reviewed by EPA contractor, the state will have the opportunity to see if/why a project was deleted or modified
 - ▶ May submit “modifications” for the projects
 - ▶ Independent documentation will have to be mailed or e-mailed
 - ▶ Survey-generated documentation can be submitted via the website

Assessment Timeline



Key Dates



- **March 4, 2011**
 - ▶ Questionnaires sent
- **April 18, 2011**
 - ▶ Systems asked to return questionnaires to state
- **May or June 2011**
 - ▶ Workgroup meeting
 - ▶ Discuss status and issues
- **July 2011**
 - ▶ 1/3 returned to EPA
- **September 2011**
 - ▶ 2/3 returned to EPA
- **November 15, 2011**
 - ▶ Final questionnaires deadline
- **January 2012**
 - ▶ Final modification deadline
- **February 2013**
 - ▶ Report due to Congress