

DWINSA

Needs Survey Training



Welcome and Introductions

- Training agenda and objectives
- Local logistics
- Introductions
- Assessment notebook overview

Major Changes for the 2015 DWINSA

- **Challenge:** *Maintain Assessment credibility, fairness and completeness with significant resource limitations for survey review*
- **Changes for 2015:**
 - Panel approach (with 25% “refresh”)
 - Less time anticipated to update and review 2011 responses
 - Removed some types of projects
 - Types of need with significant review burden but insignificant contribution to state and total national need
 - Allotting technical assistance and review time to states
 - Limited compared to previous DWINSAs

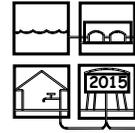
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Outline of Training

- Day 1
 - Policy Framework and Background
 - Survey Instrument
 - Survey Policies
 - Source to Tap Review
 - Mini-Workshops
 - Core Criteria for Documentation of Need
 - Documentation Examples
 - Workshop
- Day 2
 - Revisit Issues from Day 1
 - 2015 Survey Instrument
 - Updating 2011 Projects
 - Workshop
 - EPA/Contractor Role
 - Allotting Tech. Assistance and Review Hours
 - Efficient and Effective State Efforts
 - Assessment Timeline
 - Website
 - Next Steps and Wrap-Up

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Policy Framework and Background



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))

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DWINSA Mission Statement

To assess the capital improvement needs of DWSRF eligible public water systems in the United States and Indian country for drinking water infrastructure construction, rehabilitation, and replacement for the 20-year period 2015-2034. Needs are limited to those documented at the individual project level as necessary to facilitate compliance with national primary drinking water regulations or otherwise significantly further the public health protection objectives of the Safe Drinking Water Act based on sound drinking water engineering practices.

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Goals of the Assessment

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

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Additional Goals

- Some additional benefits and ancillary goals of the survey:
 - Identify key issues and trends within water industry
 - Supported by the panel approach
 - Facilitates keeping a “*finger on the pulse of the industry*”

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2015 DWINSA Components

- Raw data collection
 - Census of large systems
 - Statistical sample of medium systems (fully-participating states)
- Ensuring complete and accurate system-level data
 - Physical description of need by system
 - Needs identified by system
 - Needs identified by state (modeled needs)
 - Cost estimates for each project
 - Independent cost estimate or modeled cost

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2015 DWINSA Components, cont.

- Small systems and not-for-profit non-community
 - No data collection in 2015
 - Use 2007 and 1999 data, respectively
- American Indian and Alaska Native Village systems
 - No data collection in 2015
 - Use 2011 data

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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
 - Computer and automation costs

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Needs Report

- For the Report to Congress, need may be reported by
 - System size and type
 - Large, medium, small, American Indian, Alaska Native Village, not-for-profit noncommunity
 - Current v. Future
 - Regulatory v. Non-regulatory
 - Category of need
 - New v. Rehabilitation v. Replacement v. Expand/Upgrade

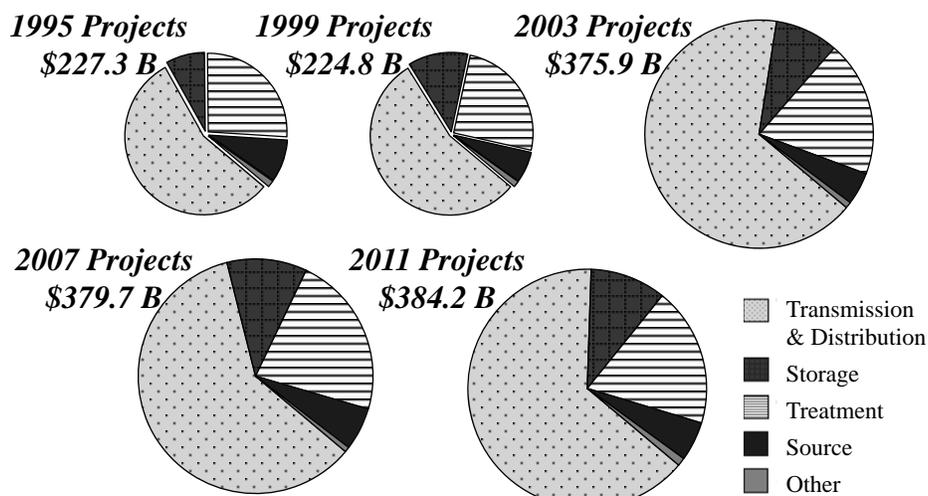
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Green and Climate-Readiness Needs

- EPA will assess needs related to “green” infrastructure or “climate readiness” needs
- The 2011 survey included codes for systems to identify green and climate-readiness needs
 - Very little information obtained
- In 2015 EPA will assess these needs based on project types
 - Type of need and N/R/E/H
- States are encouraged to ask their systems if they have green-infrastructure or climate resiliency-related needs
 - E.g., construct a berm to protect a pump station: code as “Other” type of need and provide a documented cost
 - Include info on the green or climate aspect in the project description

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20-year Need by Project Type

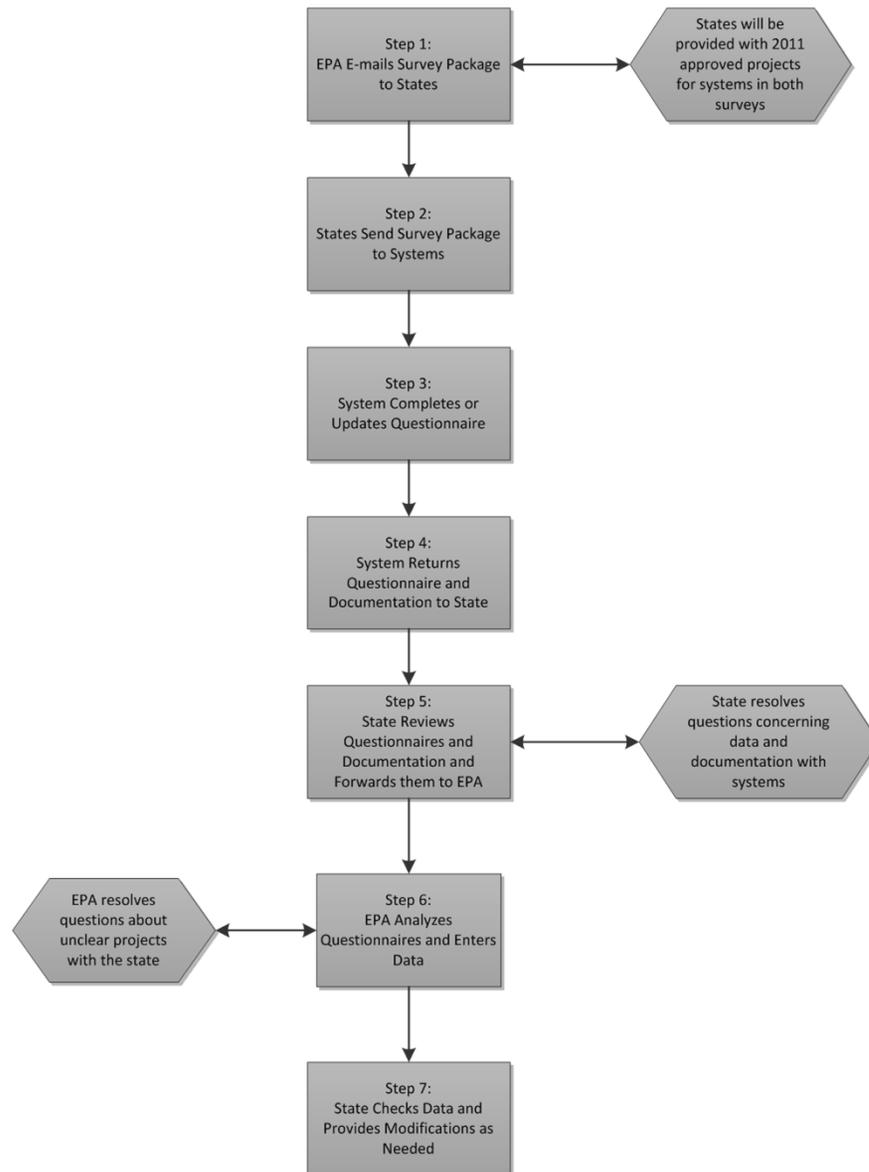


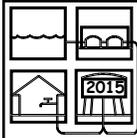
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Historic Allocation

DISTRIBUTION OF DRINKING WATER SRF APPROPRIATION (1995, 1999, 2003, 2007 and 2011 Data)											
State	1995 Allotment	1999 Allotment	2003 Allotment	2007 Allotment	2011 Allotment	State	1995 Allotment	1999 Allotment	2003 Allotment	2007 Allotment	2011 Allotment
Alabama	1.19%	1.00%	1.00%	1.24%	1.91%	Nevada	1.00%	1.00%	1.00%	1.00%	1.43%
Alaska	1.00%	1.00%	1.00%	1.00%	1.00%	New Hampshire	1.00%	1.00%	1.00%	1.00%	1.00%
Arizona	1.02%	1.13%	2.84%	2.01%	1.81%	New Jersey	2.44%	2.30%	2.21%	2.14%	1.90%
Arkansas	1.42%	1.08%	1.26%	1.51%	1.53%	New Mexico	1.00%	1.00%	1.00%	1.00%	1.00%
California	10.83%	10.24%	8.15%	9.35%	9.41%	New York	6.33%	7.75%	4.45%	6.59%	4.80%
Colorado	1.35%	1.65%	1.76%	1.77%	1.74%	North Carolina	1.81%	1.76%	3.37%	2.62%	2.34%
Connecticut	1.00%	1.00%	1.00%	1.00%	1.01%	North Dakota	1.00%	1.00%	1.00%	1.00%	1.00%
Delaware	1.00%	1.00%	1.00%	1.00%	1.00%	Ohio	3.20%	3.05%	3.00%	3.21%	2.78%
Florida	2.90%	2.34%	4.52%	3.27%	3.66%	Oklahoma	1.44%	1.55%	1.61%	1.24%	1.61%
Georgia	2.14%	1.58%	2.81%	2.36%	2.18%	Oregon	1.48%	1.76%	1.46%	1.00%	1.42%
Hawaii	1.00%	1.00%	1.00%	1.00%	1.00%	Pennsylvania	3.15%	3.22%	3.37%	2.93%	3.20%
Idaho	1.00%	1.00%	1.00%	1.00%	1.00%	Puerto Rico	1.44%	1.33%	1.00%	1.00%	1.00%
Illinois	3.48%	3.73%	4.08%	3.77%	4.17%	Rhode Island	1.00%	1.00%	1.00%	1.00%	1.00%
Indiana	1.22%	1.17%	1.40%	1.67%	1.62%	South Carolina	1.08%	1.00%	1.00%	1.00%	1.00%
Iowa	1.58%	1.84%	1.25%	1.71%	1.50%	South Dakota	1.00%	1.00%	1.00%	1.00%	1.00%
Kansas	1.41%	1.15%	1.00%	1.22%	1.14%	Tennessee	1.34%	1.01%	1.04%	1.11%	1.00%
Kentucky	1.52%	1.22%	1.05%	1.44%	1.56%	Texas	7.58%	7.70%	8.24%	6.36%	7.23%
Louisiana	1.40%	1.00%	1.42%	1.89%	1.37%	Utah	1.00%	1.00%	1.00%	1.00%	1.04%
Maine	1.00%	1.00%	1.00%	1.00%	1.00%	Vermont	1.00%	1.00%	1.00%	1.00%	1.00%
Maryland	1.00%	1.16%	1.38%	1.55%	1.70%	Virginia	1.95%	1.38%	1.06%	1.70%	1.66%
Massachusetts	3.85%	3.58%	2.68%	1.86%	1.86%	Washington	2.69%	2.47%	2.14%	2.55%	2.23%
Michigan	2.94%	4.10%	3.46%	3.04%	3.11%	West Virginia	1.00%	1.00%	1.00%	1.00%	1.00%
Minnesota	1.66%	1.98%	1.80%	1.68%	1.79%	Wisconsin	1.34%	1.98%	1.94%	1.72%	1.74%
Mississippi	1.16%	1.00%	1.00%	1.04%	1.04%	Wyoming	1.00%	1.00%	1.00%	1.00%	1.00%
Missouri	1.34%	1.45%	1.94%	1.93%	2.02%						
Montana	1.00%	1.00%	1.00%	1.00%	1.00%	District of Columbia	1.00%	1.00%	1.00%	1.00%	1.00%
Nebraska	1.00%	1.00%	1.00%	1.00%	1.00%	Other Areas *	0.33%	0.33%	0.33%	1.50%	1.50%

Survey and Assessment Data Flow





Statistical Methods & the Modified Panel Approach



Data Quality Objectives

- National
 - Estimate national need
 - Confidence level of 95%
 - Precision target of $\pm 10\%$
- Fully-Participating States
 - Confidence level of 95%
 - Precision target of $\pm 10\%$
- Partially Participating (Opt-out) States
 - Opt-out of medium system data collection
 - No DQO for each state

2015 State Survey Statistical Approach

	Large Systems	Medium Systems	Small Systems
Population Definition	>100,000	3,301-100,000	≤3,300
Data Collection	Questionnaires sent to states	Questionnaires sent to states	2007 findings adjusted to 2015\$
Sample	Census (sampled with certainty)	State sample in fully-participating states (modified panel approach)	National sample
Data Quality Objective	For Each Fully-Participating State 95% +/- 10% Overall		95% +/- 25% Nationally
Systems Sampled (preliminary)	758 of 758	2,098 of 9,247	None

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State Survey Strata

	Population	Surface Water	Groundwater
L A R G E	>100K	Census – All Systems Receive Questionnaire	
M E D I U M	50,001-100K	State Samples for Participating States	
	25,001-50K		
	10,001-25K		
	3,301-10K		
S M A L L	1001-3,300	National Small System Sample (2007)	
	101-1000		
	≤ 100		

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System Populations for DWINSA

- Retail and wholesale population (includes consecutive systems)
 - May double count populations but not used for any other purposes
- Does not include emergency or intermittent/insignificant demand
- Assists in assigning most appropriate stratum based on all consumers served

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Census – Large Systems

- All systems serving populations >100,000 receive the questionnaire
 - Including 1% “opt out” states
- Confidence level of 100%
- Non-responders are assumed to have zero need

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State Statistical Samples – Medium Systems

- Sample for each fully-participating state
- Statistics determine how many systems are needed to achieve precision target
- Precision target for state is 95% +/- 10%
- Modified panel approach
 - ~75% of systems from 2011 reselected for 2015
- 1-percent states may opt-out of medium system survey
 - ~ 15 states

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“Refreshing” the Medium Sample

- EPA will refresh 25% of the medium system sample
- Steps:
 1. States verify/correct 2014 SDWIS frame
 - Source and population of each system
 - Systems may move to different strata than were in for 2011 DWINSAs
 2. Recalculate sample size based on updated inventory

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Steps of “Refreshing,” cont’d.

3. Select all large systems (>100,000 people)
 - Including systems that moved from medium strata in 2011 to large in 2015
4. Return 25% of medium systems to “pool”
5. Select random sample of systems to fill each stratum
 - Systems returned to pool have equal chance to be reselected
 - May also include smalls from 2011 that became medium

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Opt-Out States

- Systems >100,000 will be surveyed
- Medium system need will be estimated based on data from participating states
 - Need for each strata based on participating states
 - Need by strata applied to states’ system inventory
 - Approach does not meet state-specific data quality objectives
 - Report to Congress will report needs of these states as one
 - Contributes to total national need

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Small System Need

- 2007 findings will be adjusted to 2015 dollars
 - May also be adjusted by revised cost models
- Needs collected in 2007 are used to calculate an average small system need per stratum
- Each state's small system need is calculated by multiplying the average need per stratum by number of systems in state's inventory

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Calculating Fully Participating State Need

- Large + Medium + Small for each state
- Total of large systems
 - Sum of system need
 - Systems in census have weight of 1
 - No adjustment for non-response
- Total of medium systems
 - Sum of system need * weight
 - Weight is adjusted for non-response
- State's share of national small system estimate
 - Sum of average need for stratum * number of systems in stratum
 - Also includes not-for-profit noncommunity need from 1999

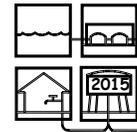
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Total National Need

- Total National Need Includes:
 - Large, Medium, Small, and Not-for-profit Noncommunity Needs for
 - Fully-participating states
 - One-percent opt-out states
 - American Indian
 - Alaska Native Village
 - Cost of proposed or recently promulgated regulations
 - Proposed Radon Rule

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Survey Instrument Walk- Through



Survey E-Packet

- Cover letter from EPA
- Letter from state (optional)
- Questionnaire
 - One Excel file for each system in survey
 - System information prepopulated for cover page
 - For systems that were in 2011 survey, project table will be prepopulated with projects from 2011
- Lists of Codes
- Instructions - for completing survey
- Instructions - for updating 2011 survey data

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The next slides are not provided in the participants' binders. Participants are asked to take the survey instrument from the front pocket of the binder and follow along as the speaker walks through the material

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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

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Documentation Codes 20 & 21

- Code 20 (2007 DWINSA documentation)
 - No longer applicable but may appear in 2011 DWINSA data
 - If project included in 2011 and is still needed
 - Provide validation statement (discussed later)
 - Cadmus cannot access 2007 documentation
- Code 21 (2011 DWINSA documentation)
 - New in 2015
 - Use when the project relies on new documentation submitted in 2011 and documentation is still applicable
 - Provide validation statement

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Questionnaire

- Cover Page
- Back Page
- Project Table
- Inventory Tables
- Documentation Template

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Project Table

- Table to record projects
 - Source, Treatment, Storage, and Pumping Projects
 - 1000's projects
 - Transmission and Distribution Projects
 - 2000's projects
 - Meters, Service Lines, Backflow Prevention Devices/Assemblies, Valves, etc.
 - 3000's projects

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Inventory Tables

- Help system consider entire inventory
- Not required to be completed
 - Total length of pipe in the system should be entered/corrected on the front page

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Project Table

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i>N,E,R,H (New Expand Replace ReHab)</i>	<i>C or E (Current Future)</i>	<i>Regulation</i>	<i>Design Capacity (MG, MGD, or kW)</i>	<i>Diameter (inches)</i>	<i>Length (feet)</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date (mm/yyyy)</i>	<i>Documentation</i>	<i>Remove Modify or Validate</i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A	0.5			2			10	
2000	Replace 8" mains	M1	A1, A6	R	C	1B		8	50,000		\$6,500,000	02/2015	1, 10	*
3000	Replace residential meters	M8	A1	R	F	4A		0.625		13,865			10	

Project Number

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i><u>N.E.R.H</u></i>	<i><u>C or E</u></i>	<i><u>Regulation</u></i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Project Name

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i><u>N.E.R.H</u></i>	<i><u>C or E</u></i>	<i><u>Regulation</u></i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Type of Need

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i>N,E,R,H</i>	<i>C or E</i>	<i>Regulation</i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Reason for Need

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i>N,E,R,H</i>	<i>C or E</i>	<i>Regulation</i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Description N/R/H/E

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i>N,E,R,H</i>	<i>C or E</i>	<i>Regulation</i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Current vs. Future

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i>N,E,R,H</i>	<i>C or E</i>	<i>Regulation</i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Regulation or Secondary Purpose

<i>Project Number</i>	<i>Project Name</i>	<i>Type of Need</i>	<i>Reason for Need</i>	<i>N.E.R.H</i>	<i>C or F</i>	<i>Regulation</i>
1000	Replace well pump #3 and #5	R1	A1	R	F	4A
2000	Replace 8" mains	M1	A1, A6	R	C	1B
3000	Replace residential meters	M8	A1	R	F	4A

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Design Parameters

- Each type of need has specific design parameters
 - See Type of Need Dictionary
- Required information if no cost is provided
- Requested if cost is provided
 - Used to build cost models
- Length required for all pipe projects if any pipe projects have survey-generated documentation
 - Used to determine conformance with 10% pipe replacement/rehab policy (explained later)

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Design Parameter

Source, Treatment, Storage, Pumping Projects

<i>Design Capacity</i>	<i>Diameter</i>	<i>Length</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date</i>	<i>Documentation</i>	<i>Remove Modify or Validate</i>
0.5			2			10	
	8	50,000		\$6,500,000	02/2015	1, 10	*
	0.625		13,865			10	

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Design Parameter

Pipe Projects

<i>Design Capacity</i>	<i>Diameter</i>	<i>Length</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date</i>	<i>Documentation</i>	<i>Remove Modify or Validate</i>
0.5			2			10	
	8	50,000		\$6,500,000	02/2015	1, 10	*
	0.625		13,865			10	

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Design Parameter

Meters, Services, Backflow, Valves

<i>Design Capacity</i>	<i>Diameter</i>	<i>Length</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date</i>	<i>Documentation</i>	<i>Remove Modify or Validate</i>
0.5			2			10	
	8	50,000		\$6,500,000	02/2015	1, 10	*
	0.625		13,865			10	

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Cost Estimate and Date

<i>Design Capacity</i>	<i>Diameter</i>	<i>Length</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date</i>	<i>Documentation</i>	<i>Remove Modify or Validate</i>
0.5			2			10	
	8	50,000		\$6,500,000	02/2015	1, 10	*
	0.625		13,865			10	

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Documentation

<i>Design Capacity</i>	<i>Diameter</i>	<i>Length</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date</i>	<i>Documentation</i>	<i>Remove Modify or Validate</i>
0.5			2			10	
	8	50,000		\$6,500,000	02/2015	1, 10	*
	0.625		13,865			10	

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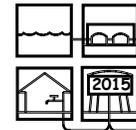
Remove/Modify/Validate

<i>Design Capacity</i>	<i>Diameter</i>	<i>Length</i>	<i>Number Needed</i>	<i>Cost Estimate</i>	<i>Cost Date</i>	<i>Documentation</i>	<i>Remove, Modify, or Validate</i>
0.5			2			10	
	8	50,000		\$6,500,000	02/2015	1, 10	*
	0.625		13,865			10	

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Documentation Template

Summary of Survey-Generated and Independent Documentation for Each Project				Federal PWSID No.:	XX1234567
Project Number	Project Name	Documentation Code(s)	State/System Survey-Generated Statement	Independent Document Name	Independent Documentation Page Number(s)



Survey Policies



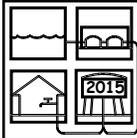
Every Project Must Meet Allowability Criteria and Documentation Policies

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Survey Policies

- Allowability
- Documentation of Need
- Documentation of Cost
 - Existing cost estimate
 - Data to model cost

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Allowability



Allowable Projects

- Must be:
 - Capital improvement needs
 - Eligible for DWSRF 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 Assessment timeframe

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

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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

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Unallowable Projects

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

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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

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Unallowable Projects

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

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Unallowable Projects

- Outside of the Assessment's 20-year Timeframe
 - Construction cannot have started before January 1, 2015
 - Can be funded, but "dirt" cannot be moved
 - Project cannot be needed after December 31, 2034

70

Other 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
 - Extension paid by developer

71

No Duplication of Need

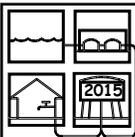
- Multiple projects meeting same need
- Projects with subordinate components
- Recurring need
- More than one system reports the same shared need

72

No Duplication of Need

- Proposed or Recently Promulgated SDWA Regulations
 - EPA does not collect system data on needs for proposed or recently promulgated regulations in the survey
 - EA costs are added to the total national need
 - For 2015, only the Proposed Radon Rule falls into this category

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Documentation of Need



Documentation of Need

- 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, must have a signed statement that the project is...
 - Of the same scope, has not begun construction before 1/1/15, and is still a valid need
 - Validation statements will be discussed more later

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Types of Documentation

- Survey-generated
- Independent

Survey-generated documentation can be used to supplement independent documentation

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Survey-Generated Documentation

- Generated specifically for the survey, or in anticipation of the survey
- Prepared by the system or the state or a representative of the system or state

77

Independent Documentation

- Generated through a process independent of the Assessment
- Must be system and project specific
- Independent documents might not demonstrate the project is allowable
 - Additional information may be necessary to determine allowability

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Independent Documentation

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

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Documentation of Need - Requirements

- Two-tiered documentation approach:
 - All forms of documentation accepted
 - Weight of evidence documentation
 - For certain infrastructure in this category, independent documentation also required
- Requirement depends on:
 - Type of need
 - New/Replace/Rehabilitation/Expansion
[refer to the Type of Need Dictionary and the Documentation Summary Table]

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Documentation Summary

Acceptable Documentation of Need by Type of Need Code					Acceptable Documentation of Need by Type of Need Code				
Code	Need Type	New	Replacement	Rehabilitation	Code	Need Type	New	Replacement	Rehabilitation
R1	Well	Weight of evidence (W) - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence (W) - Age, condition, history - Specific deficiency discussed	Weight of evidence (W) - Age, condition, history	X1	Raw Water Transmission	Weight of evidence (W) - Independent Documentation Required	All forms of documentation accepted within 10% limit (W) Independent documentation required over 10% limit (W)	
R10	Spring Collector	All forms of documentation accepted			X2	Finished Water Transmission	Weight of evidence (W) - Substantial portion not for growth - Specific deficiency discussed	If any preparation or survey-generated documentation, the need to repair, replace and replacement, see new, see need 10% in the 20-year period.	
R2	Well Pump	All forms of documentation accepted			M1	Distribution Mains	All forms of documentation accepted (* Update the number needed)		
R3	Raw Water Pump	All forms of documentation accepted			M2	Lead Service Lines	N/A	All forms of documentation accepted	
R6	Agiler Storage and recovery Well	Weight of evidence (W) - Independent Documentation Required - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence (W) - Age, condition, history - Specific deficiency discussed	Weight of evidence (W) - Age, condition, history	M3	Service Lines	All forms of documentation accepted (W) (statement of system's responsibility required for service lines between the curb stop and the building; statement that not included in pipe projects if from pipe to the curb stop.)		(Rehabilitation not allowed - considered O&M)
R7	Surface Water Intake	All forms of documentation accepted			M7	Backflow Prevention	Weight of evidence (W) - Significant amount of new backflow or replacing over 10% of service lines (W)		(Rehabilitation not allowed - considered O&M)
R9	On-Stream Pipe Water Storage	All forms of documentation accepted (cost estimate required) (* Did the project start?)			M8	Water Meters	Weight of evidence (W) if more than one meter per connection. All forms of documentation accepted if ≤ 1 meter per connection		(Rehabilitation not allowed - considered O&M)
TREATMENT COMPONENTS					M5	Valves	Weight of evidence (W) - Clear indication not included in pipe - Specific deficiency and history of replacement (over 10% of existing or significant amount of new)		(Rehabilitation not allowed - considered O&M)
T1	Ultraviolet	All forms of documentation accepted			M6	Control Valves	All forms of documentation accepted		
T2	Ultraviolet	All forms of documentation accepted			FINISHED / TREATED WATER STORAGE				
T3	Ultraviolet	All forms of documentation accepted			S1	Elevated Storage	Weight of evidence (W) - Independent Documentation Required - Substantial portion not for growth - Specific deficiency discussed	Weight of evidence (W) - Age, condition, history or tank - Specific deficiency discussed	All forms of documentation accepted
T4	Ultraviolet	All forms of documentation accepted			S2	Ground-level Storage	All forms of documentation accepted		
T5	Ultraviolet	All forms of documentation accepted			S3	Hydro pneumatic Storage	All forms of documentation accepted		
T6	Ultraviolet	All forms of documentation accepted			S5	Cover for Existing Finished / Treated Water Storage	All forms of documentation accepted (includes whab of the tank) (* Did the project start?)		N/A
T7	Ultraviolet	All forms of documentation accepted			OTHER				
T8	Ultraviolet	All forms of documentation accepted			W2	SCADA	All forms of documentation accepted		
T9	Ultraviolet	All forms of documentation accepted			W4	Emergency Power	Weight of evidence (W) - Clear indication of need (necessary to operate critical infrastructure to maintain pressure and provide water)		All forms of documentation accepted
T10	Ultraviolet	All forms of documentation accepted			W10	Other	Weight of evidence (W) - System-specific cost estimate required		(Rehabilitation not allowed - considered O&M)
T11	Ultraviolet	All forms of documentation accepted			Type of Need codes not applicable to the 2015 DWWSA but used in the 2011 State DWWSA: R3 Well House, R4 Eliminate Well Pit, R5 Abandon Well, R11 Desalination, M4 Hydrants, W1 Laboratory Capital Costs, W3 Pump Control/Telemetry, W6-W8 Funding and Security related codes.				
T12	Ultraviolet	All forms of documentation accepted			81				

All Forms of Documentation Accepted

- Documentation requirement can be met through a simple statement of need or by independent documentation
- Generally accepted for projects assumed to be required by a system every 20-year survey period
- Project types
 - Most rehabs
 - Some replacements
 - Very few new infrastructure 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

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Weight of Evidence: Purpose

- Allows alternatives to requiring 'hard' documentation for many project types
- Provides opportunity to consider unique projects on a case-by-case basis

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Pipe Rehab/Replacement

- Projects based on independent documentation
 - Accepted if allowable
- Projects based on survey-generated documentation
 - Can not cause system's total pipe rehab/replacement to exceed a total of 10 percent over 20 years
 - Must have total pipe length in system and pipe length for all projects

85

New Pipe Projects

- Water main extensions
 - Generally assumed to be for growth unless adequate evidence otherwise
 - To connect homes that do not currently have an adequate supply (quality or quantity)
 - Looping primarily to address distribution system inadequacies
 - Weight of evidence “bar” is quite high

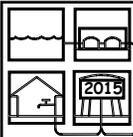
86

Documentation Issues?

Possible Alternatives

- If inadequate WOE, include as much of the project as possible based on the documentation available
- For example, if inadequate WOE for...
 - Well rehab... change to well pump replacement project instead
 - Tank replacement... change to tank rehab
 - Complete plant expansion... change to plant rehab

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Assigning Costs



Assigning Costs

- To contribute to the state and national need, each project must have a cost assigned
 - System provides cost estimate
 - Independent documentation required
 - EPA adjusts cost to 2015 dollars
 - System provides “modeling parameters”
 - Information for EPA to model cost
 - EPA can model most, but not all, project types

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Documented Cost Estimate

- Cost estimates must include the date prepared (month and year) and identify (cover page) the independent cost document
 - Not more than 10 years old (prior to Jan.1, 2005)
 - Older costs are deleted and the cost is modeled
- EPA will adjust all costs to January 2015 \$\$
- Inflationary multipliers for future projects are not accepted

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Cost Components

- Estimates should include all aspects necessary for project construction
 - Design
 - Engineering
 - Labor
 - Materials
 - Contingencies

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Unallowable Cost Components

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

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Cost Documentation

- CIP
- Master Plan
- Facilities plan
- Bid tabulation
- Engineer's estimate
- Grant or loan application form
- Cost of system-specific previous comparable construction

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EPA Models Cost

- Cost models derived from documented costs
- Projects used to build models vary
 - See Type of Need Dictionary
- Cost models take into account construction cost indices
- Projects to be modeled must have design parameters

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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
- Unit costs
 - Lead service lines

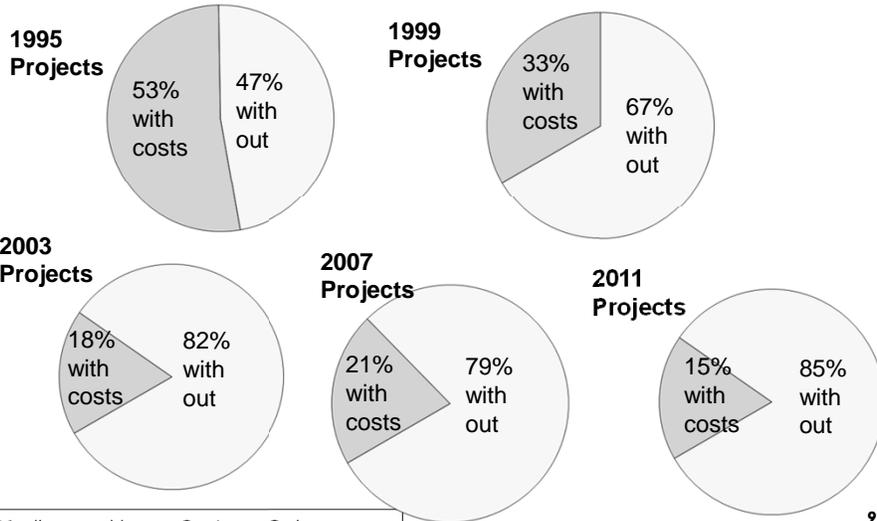
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Projects That Can Not Be Modeled

- Off-stream raw water storage
- Unique system components

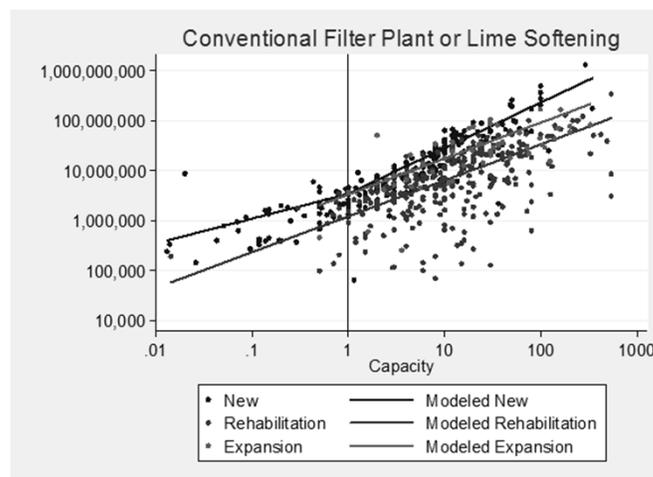
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Projects With and Without Documented Costs*



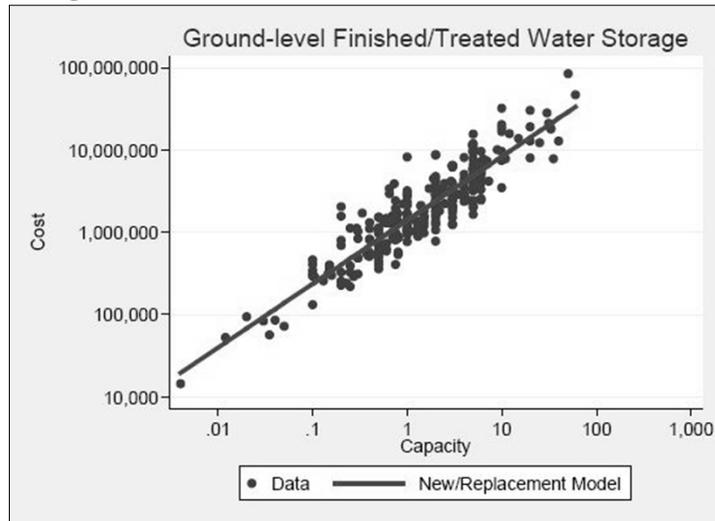
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Conventional Filtration Plant



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New Ground Level Finished Water Storage



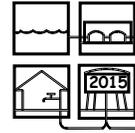
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2015 Models

- Please submit both the modeling parameters and the cost *whenever possible*
- EPA may consider updating some of the cost models
 - Some cost models updated in 2011
 - Some may be updated in 2015

100

Completing a Survey: Source to Tap



Source

Applicable Codes: Sources

R1	Well	R7	Surface Water Intake
R2	Well Pump	R8	Raw Water Pump
R3	Well House	R9	<i>Off-Stream Raw Water Storage*</i>
R4	Eliminate Well Pit	R10	Spring Collector
R5	Abandon Well	R11	De-stratification
R6	Aquifer Storage and Recovery Well		

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Source Projects

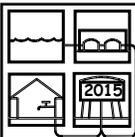
- Allowable projects
 - New sources due to inability to meet current user demand
 - Replacement or rehabilitation of existing sources
 - Reached end of useful life
 - Poor condition creates sanitary risk
- Unallowable projects
 - Raw water reservoirs
 - Source water protection
 - New sources for future growth
 - Insignificant types of need removed for 2015 DWINSA
 - Well houses, eliminate well pits, abandon well, de-stratification

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Example Source Project:

- A system's master plan, dated March 2014, includes the construction of a new 2.0 MGD surface water intake. This is needed to replace one that has been damaged from ice flows. The estimated cost is \$1.4 million.

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Treatment



Applicable Codes: Disinfection

T1	Chlorination	T6	Ultraviolet Disinfection
T2	Chloramination	T7	Contact Basin for CT
T3	Chlorine Dioxide	T8	Dechlorination of Treated Water
T4	Ozonation	T9	Chlorine Gas Scrubber
T5	Mixed Oxidant Type Equipment		

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Applicable Codes: Complete Plants

T10	Conventional Filter Plant	T18	Electrodialysis
T11	Direct or In-line Filter Plant	T19	Activated Alumina
T12	Slow Sand Filter Plant	T20	Manganese Green Sand
T13	Diatomaceous Earth Filter Plant	T21	Ion Exchange
T14	Membrane Technology for Particulate Removal	T22	Groundwater Chemical-feed
T15	Cartridge or Bag Filtration Plant	T23	Iron Adsorption
T16	Lime Softening	T24	Aeration
T17	Reverse Osmosis		

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**Applicable Codes:
Other Treatment Components**

T30	Zebra Mussel Control	T35	Chemical Feed
T31	Corrosion Control (chemical addition)	T36	Chemical Storage Tank
T32	Powdered Activated Carbon	T37	Fluoride Addition
T33	Aeration	T38	Presedimentation Basin
T34	Sequestering for Iron and/or Manganese	T39	Sedimentation/ Flocculation

(continues)¹⁰⁹

**Applicable Codes:
Other Treatment Components**

T40	Granular Activated Carbon	T44	Waste Handling/ Treatment: Nonmechanical or Connection to a Sanitary Sewer
T41	Membrane Filtration	T45	Type of Treatment Unknown
T42	Media Filters	T46	<i>Other (include explanation)*</i>
T43	Waste Handling/ Treatment: Mechanical		

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Treatment Projects

- Allowable projects
 - May be for regulatory compliance, but not necessarily
 - Secondary contaminants
- Unallowable projects
 - Double counting (example: complete plant and any component)

111

Example Treatment Project #1

- The minutes of a town board meeting discuss the recent solicitation for bids for iron removal treatment to address water quality problems related to taste issues and iron staining.
- The board moved to accept the low bid of \$690,000 and sign the contract for the construction of a 1.0 MGD manganese green sand iron removal treatment facility.

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Example Treatment Project #2

- 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 *Cryptosporidium*
- They have no independent documentation of need.
- They have no costs for these projects.

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Example Treatment Project #3

- A system's CIP indicates 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*
- The CIP did not provide costs for these projects.

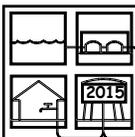
114

Example Treatment Project #4

- A system's January 2014 CIP indicates that their 10 MGD conventional filtration plant needs

– replacement of filter media	\$2,780,000
– rehabilitation of 200,000 gallon clearwell	\$520,000
– replace all six 3-MGD raw water pumps	\$1,050,000
– upgrade to UV to control <i>Giardia</i>	\$1,495,000

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Storage



Applicable Storage Codes

S1	Elevated Finished/Treated Water Storage
S2	Ground-level Finished/Treated Water Storage
S3	Hydropneumatic Storage
S5	Cover for Existing Finished/Treated Water Storage

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Storage Projects

- Allowable projects
 - New, replacement, rehab of storage tanks
 - Cover for existing finished water storage
- Unallowable projects
 - Additional storage to meet fire suppression needs
 - Across-the-board increase in storage to meet Ten States Standards recommendations

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Example Storage Project #1

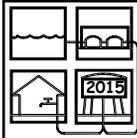
- The system has 3 elevated storage tanks each with a capacity of 0.5 MG. They submit survey-generated documentation indicating that they will all require rehab within 20 years.

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Example Storage Project #2

- A system's CIP indicates that their old 0.75 MG elevated storage tank is no longer structurally sound and due to past growth the system needs considerably more storage. They intend to take down the old tank and replace it with a new 1.5 MG elevated tank.

120



Pumping



Applicable Pumping Codes

R2	Well Pump
R8	Raw Water Pump
P1	Finished Water Pump
P2	Pump Station (booster or raw water pump station-may include clearwell, pumps, housing)

*Remember: Complete plants include raw and finished water pumps

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Pumping Projects

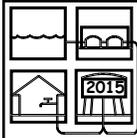
- Allowable projects
 - Finished or raw water pumps
 - When there is not a related complete plant project
 - Booster pump station
- Unallowable projects
 - Increased pump capacity where a substantial portion of the project is fire suppression needs
 - Well pump project if same well is also rehabbed
 - Raw or finished water pumps already included in complete plant project

123

Example Pump Station Project

- The system reports 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.

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Pipe: Transmission and Distribution



Applicable Pipe Codes

X1	Raw Water Transmission
X2	Finished Water Transmission
M1	Distribution Mains

Pipe Projects

- Allowable projects
 - New Pipe
 - Looping to maintain adequate flows and minimize stagnation
 - Connection of existing homes without adequate water quality and/or quantity
 - Replacement/rehabilitation of pipe
 - Allowable within limits
- Unallowable projects
 - Substantial portion for future growth or for meeting fire suppression needs
 - Highway relocation-driven projects
 - When cost is responsibility of a developer
 - To connect homes that currently have an adequate drinking water supply at the time of the Assessment

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Example Pipe Project #1

- A Capital Improvement Plan, dated November 2013, includes the replacement of 25,000 feet of 8-inch cast iron pipe in excess of 70 years old. The CIP estimates that the cost is \$3 million.

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Example Pipe Project #2

- A system records on their inventory that they have 120 miles of pipe in their system. They indicate in survey-generated documentation they need the following pipe projects
 - Replacement of 20,000 feet of 12”
 - Replacement of 43,000 feet of 8 “
 - Replacement of 63,720 feet of 6”

(These projects represent 20% of total pipe in the system)

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Pipe Example #3

- A system records on their inventory that they have 120 miles of pipe in their system. Their Capital Improvement Plan indicates they need the following pipe projects
 - Replacement of 20,000 feet of 12”
 - Replacement of 43,000 feet of 8 “
 - Replacement of 63,720 feet of 6”

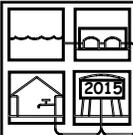
(These projects represent 20% of total pipe in the system)

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Pipe Example #4

- A system has 200 miles of pipe (1,056,000 ft)
- Their 5-year CIP shows an annual pipe replacement program at \$2 M per year.
- System indicates that this is an ongoing program that will last more than 20 years at the same rate.
- System enters a project for \$40 M (no length)

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Additional Distribution Needs



Applicable Codes

M2	Lead (Pb) Service Line Replacement
M3	Service Lines (other than lead service lines)
M4	Hydrants Used for Flushing (not included in another pipe project)
M5	Valves (gate, butterfly, etc.) (not included in another pipe project)
M6	Control Valves (PRVs, altitude, etc.)
M7	Backflow Prevention Devices/Assemblies
M8	Water Meters

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Additional Distribution System Projects

- Allowable projects
 - Meters, lead services, services owned by the system, control valves, backflow prevention
 - Valves not included in pipe projects
- Unallowable projects
 - Valves included in pipe projects
 - Hydrant projects
 - Type of need code removed for 2015 DWINSA
 - Insignificant need and assume are adequately addressed in pipe projects

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Example Additional Distribution System 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, and 50 @ 1-inch.

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Other Projects



Applicable Codes

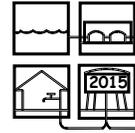
W1	Laboratory Capital Costs for Labs Owned by the System
W2	Computer and Automation Costs (SCADA)
W3	Pump Controls/Telemetry
W4	Emergency Power (enter design capacity as kilowatts)
W5- W9	Security Related Needs
W10	<i>Other</i> (include explanation and cost)*

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Other Needs

- Generators
 - For new projects must be critical infrastructure
 - Cost can be modeled but justify capacity
 - Rehab considered O&M, therefore not allowed
- SCADA
 - System-wide is allowable, only one per system
 - Plant SCADA considered part of a plant
- “Other”
 - Must have a documented cost
 - E.g., climate resiliency-related project such as a berm for a pump station or raising a generator platform

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Core Criteria for Documentation of Need



3 Elements of a DWINSA Project

- Necessity
 - Feasibility
 - Commitment
- Necessity, feasibility, and commitment are all assumed when survey generated documentation is adequate
- Independent documentation is required for projects when one or more of these are common issues

Necessity

- Is the project necessary
“...to facilitate compliance with national primary drinking water regulations or otherwise significantly further the public health protection objectives of the Safe Drinking Water Act based on sound drinking water engineering practices.”

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Feasibility

- For most types of projects feasibility has been assumed or adequately addressed in documentation
- A complex or significant project may warrant additional information to demonstrate it is feasible within the 20-year survey period
 - Project schedule or phases may be determined by physical feasibility
 - No obvious road blocks including permits, environmental review issues, ownership, easements or public acceptances would be anticipated for these projects

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Commitment

- Most projects have commitment clearly demonstrated or implied
- The commitment policy attempts to eliminate projects that are speculative or are contingent on other events
 - Systems will study potential projects and some will never be implemented and some will be replaced by other options
- Financial commitment is not required
 - An allowable need with financial commitment is an accepted project
 - A need with no financial commitment may warrant more detailed documentation that the project is allowable and feasible

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Commitment

- An infrastructure investment need with multiple project options
 - Documented commitment can support the more costly option
 - EPA will not second guess local decisions
 - No documented commitment to an option
 - EPA would default to the least-cost option (including non-infrastructure solutions)
 - Survey is to reflect most cost-efficient investment strategies

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Commitment

- Must be documented for projects related to:
 - Projects in the early planning stages
 - Drought
 - Redundancy
- Required because commitment is often not obvious for these projects

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Projects in the Early Planning Stages that Require Indep. Doc.

- Feasibility studies and preliminary planning documents *might* meet ID requirements
- But, they might not provide sufficient information to document:
 - Necessity
 - Feasibility
 - Commitment

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Early Planning Documents

- Early planning documents vary greatly in purpose and detail
 - The “what-ifs” or conceptual exercises (e.g., new plant or new wells *if* existing source becomes unacceptable)
- VERSUS-**
- Preliminary steps toward identifying solutions to a recognized challenge (e.g., SDWA violation)

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Drought

- Type of need determines the documentation requirements
- System-specific documentation that shows reoccurring or prolonged drought condition issues are impacting the system’s ability to meet current customer’s needs
 - Might not also demonstrate commitment
- The system must document commitment to addressing the issue on a long-term basis

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Redundancy

- Type of need determines the documentation requirements
- System-specific documentation that shows the project is mission-critical or otherwise demonstrates the necessity of the project for current customer's needs
 - (e.g., ease of repair of existing infrastructure, time out of service, etc.)
- The system must document commitment to addressing the issue

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Other Policy Issue: Future Growth in Older Documentation

- Planning documents may discuss needs based on anticipated future growth
 - State may make the case the growth already occurred
 - System-specific document demonstrating growth has occurred
 - Current deficiency
 - Past and present system demand
 - average and max day
 - Past and present population data
 - infrastructure need tied to current population
 - Other system-specific limitation
- General information on growth that has occurred in a certain geographic area may not be enough

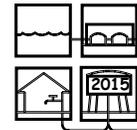
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Other Policy Issue: Annexation

- Annexation alone is not a reason for need
 - Documentation (including independent) of state requirement is not adequate
- Water main extension for annexed area falls under new pipe documentation requirements
 - Public health need/deficiency for existing homes must be identified in independent documentation to demonstrate project allowability
 - Laboratory data regarding poor quality wells
 - Inadequate quantity documented
 - Identify party responsible for cost
 - System? Developer? Home owners?

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Documentation Examples



Planning Documents

- Great information but...

“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 FY13, and major final design work was completed in FY 14. Construction of these new facilities is expected to start in FY 16. Improvements will include new a parallel treatment train consisting of...”

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Planning Documents

- 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.”

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Indep. Documentation – Inadequate for Need

- CIP cost summary table but no project description provided

Twin Peaks Capital Improvement Plan | 2014

<i>Project</i>	<i>Cost</i>
Sky View Water Treatment Plant	\$8,200,000
Main to connect Sky View to new service area	\$4,159,000
2-MG Ground Storage Tank	\$1,900,000
12 th Street Booster Pump Station	\$1,100,000

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Indep. Documentation – Inadequate for Need

<i>Project Number</i>	<i>Project Name</i>	<i>Documentation Code(s)</i>	<i>State/System Survey-Generated Statement</i>	<i>Independent Document Name</i>	<i>Independent Documentation Page Number(s)</i>
1000	Sky View WTP	1	See CIP.	Twin Peaks CIP	8
1001	Booster Station	1	See CIP.	Twin Peaks CIP	8
1002	Ground Storage	1	See CIP.	Twin Peaks CIP	8
2000	WTP Transmission Main	1	See CIP.	Twin Peaks CIP	8

- No additional information provided in survey-generated documentation

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Inadequate Survey-generated Documentation

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 12/31/2034.
1005	Highline Tank	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2034.
1006	East Tank	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2034.
1007	Weber Booster Station	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2034.
1008	Oakvale Treatment Plant	This infrastructure needs replacement because it is old and deteriorated or will be old and deteriorated by 12/31/2034.

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Adequate Survey-generated Documentation

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	East Tank	This steel tank is 60 years old. It was rehabbed 12 years ago, but is in need of replacement now because it is structurally inadequate.
1007	Weber Booster Station	The booster station is operating poorly. It is 40 years old and has been band-aided together. It currently needs replacement.
1008	Oakvale Treatment Plant	Our plant is operating adequately but will need some rehabilitation within 20 years.

158

Repeated Survey-generated Documentation

Project Number	Description	Reason for Need
2007	Cast Iron Pipe Replace	This project is for replacement of old deteriorated cast iron pipe. It was installed over 80 years ago and the system has on-going maintenance issues due to leaks and breaks.
2008	Cast Iron Pipe Replace	This project is for replacement of old deteriorated cast iron pipe. It was installed over 80 years ago and the system has on-going maintenance issues due to leaks and breaks.
2009	Cast Iron Pipe Replace	This project is for replacement of old deteriorated cast iron pipe. It was installed over 80 years ago and the system has on-going maintenance issues due to leaks and breaks.
2010	Cast Iron Pipe Replace	This project is for replacement of old deteriorated cast iron pipe. It was installed over 80 years ago and the system has on-going maintenance issues due to leaks and breaks.

159

Streamline Survey-generated Documentation

Project Number	Description	Reason for Need
2007-2015	Cast Iron Pipe Replacement	These projects are for replacement of old deteriorated cast iron pipe. They were installed over 80 years ago and the system has on-going maintenance issues due to leaks and breaks.
2015-2021	Ductile Iron Pipe Rehab.	These projects are for sections of ductile iron pipe that have been experiencing considerable tuberculation. The pipe is structurally adequate, but cleaning and lining is necessary to bring it back to original capacity.

160

Streamlined in Template Format

Project Number	Description	Reason for Need
2007	Cast Iron Pipe Replace	This project is for replacement of old deteriorated cast iron pipe. It was installed over 80 years ago and the system has on-going maintenance issues due to leaks and breaks.
2008	Cast Iron Pipe Replace	See description for project 2007 above.
2009	Cast Iron Pipe Replace	See description for project 2007 above.
2010	Cast Iron Pipe Replace	See description for project 2007 above.

161

Inadequate WOE

- “The intake in the Elkhorn Reservoir is old and deteriorated and in need of rehabilitation. The intake is necessary to provide adequate water quantity to the customers of Bitterroot Water Department.”

162

Adequate WOE

- “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.”

163

Inadequate Documentation

Program Category: Water

Program Title: Southwest Transit Corridor Improvements

Project includes planning, design and construction of water [REDACTED] infrastructure improvements along the McDonald Transit Corridor. The project is planned to coincide with City departments on major infrastructure projects.

Project Schedule: Begins 2018/2019

Project Cost: \$1,000,000



164

Conflicting Reasons for Need

Project Title: Green Meadow Rd.

Project includes the design and construction of approximately 15,925 linear feet of 24 in main along Green Meadow Rd. The need is based on continued growth in the western County. The project meets the demand by extending water service into the area.

Project Schedule: After 2016

Project Cost: No cost provided

*Pressure problems
Created by existing
Customers. Not for
future growth.*

165

Allowability Issue

- New Raw Water Transmission Main, 108", ~11.7 miles at a cost of \$441 million
- Documentation provided
 - Excerpts from an FY2013 – FY2014 CIP
 - Survey-generated documentation from state

166

Allowability Issue

- CIP Documentation Project Description:

“The Area B pipeline extension project consists of 11.7 miles of 108” diameter pipeline extending from the River to the Utility’s Diversion Structure...This project is designed to increase the Utility’s capability to import up to 370 mgd of untreated water.”

167

Allowability Issue

- CIP Documentation Project Status:

“...the online date for the project is set at FY 2027 but may be accelerated based on factors such as progress on the development of local water supplies including seawater desalination...[Staff] are currently working toward completing an aerial survey and a feasibility study in FY 2016 to determine the best alignment for the pipeline.”

168

Allowability Issue

- Issues with documentation
 - Commitment
 - Even though project is in a CIP, the system only indicates they are committed to a feasibility study and aerial survey but nothing beyond that
 - Survey-generated documentation reiterates CIP. No new details provided.
 - No clear indication why project is needed for current users

169

More than One Project Option

- Excerpt from a Preliminary Engineering Report

3.1 Flowing River Water Treatment Plant Findings

The evaluation of the Flowing River Treatment Plant identified several alternatives to address the capacity issues. The following alternatives were considered. Preliminary estimates are included for each alternative.

Alternative	Description	Cost
1	Add a third treatment train that includes pretreatment and a two-stage reverse osmosis process.	\$2,000,000
2	Build a second water treatment plant on the east side of town.	\$10,000,000
3	Purchase water from the neighboring town of Pleasantville.	\$3,400,000 - Cost includes a new main and booster pump station.
4	Develop a new well source that requires minimal treatment.	\$1,100,000 - Cost includes new transmission main

170

More than One Project Option

Project Number	Project Name	Type of Need	Reason for Need	N,E,R,H	C or E	Regulation	Design Capacity	Diameter	Length	Number Needed	Cost Estimate	Cost Date	Documentation
1000	New treatment plant	T10	A2	N	C						\$10,000,000	01/2013	2

- Survey listed most expensive option but doesn't document option selected
- Need for the project is documented; least cost option is EPA's default

171

More than One Project Option

Project Number	Project Name	Type of Need	Reason for Need	N,E,R,H	C or E
1000	Develop a new well source	R1, X1	A2	N	C
1001	Add a third treatment train	T10	A2	E	C
1002	New treatment plant	T10	A2	N	C
1003	Install pipeline and booster station	X1, P2	A2	N	C

- Survey listed all 4 alternatives and their costs
- Need for the project is documented; least cost option is EPA's default

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Costs Generated for the Survey

- An engineer completes the survey for the system and estimates project costs
- The following is an excerpt of the project table:

Project Number	Project Name	Type of Need	Reason for Need	N.E.R.H.	C or E	Regulation	Design Capacity	Diameter	Length	Number Needed	Cost Estimate	Cost Date	Documentation
1000	Well Cleaning and Rehab	R1	A1	H	F		6.02			6	\$187,000	2015	4, 11
1001	Treatment Facility Upgrades	T10	A1	H	F		7.7			1	\$1,000,000	2015	4, 11

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Costs Generated for the Survey

2015 EPA Drinking Water Needs Survey		
Survey Generated Projects: Documentation of Costs		
PWS Name:	Twin Peaks	PWS ID # ZZ1000001
Project #	Description and Cost	
1000	Average for a well Rehab:	\$25,123
	Engineering and Contingency:	\$6,002
	Unit cost per well:	\$31,125
	Number of wells needing rehabilitation:	6
	Estimated Project Cost:	\$186,750

- Issue
 - An independent party \neq independent documentation
- Review
 - Delete survey-generated cost
 - Delete project if no other documentation of need provided
 - If WOE met and parameters provided, model cost

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Costs Generated for the Survey

2015 EPA Drinking Water Needs Survey		
Survey Generated Projects: Documentation of Costs		
PWS Name:	Twin Peaks	PWS ID # ZZ1000001
Project #	Description and Cost	
1001	The system has allotted approximately \$1M for water treatment facility upgrades	

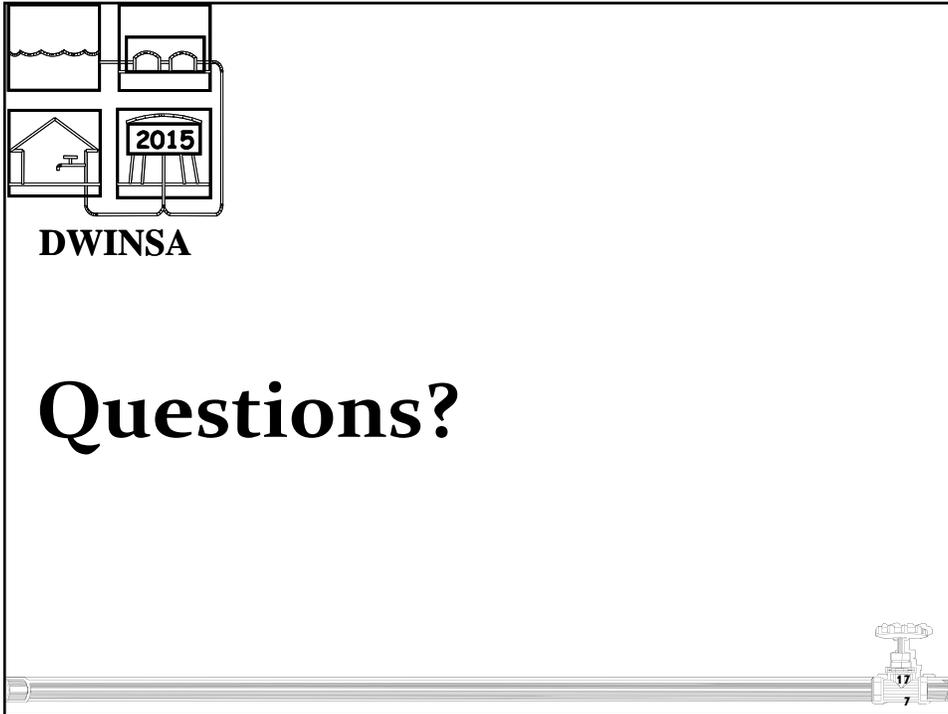
- Issue
 - Cost appears to be survey-generated
- Review
 - Delete survey-generated cost
 - Model cost

175

Credibility

- “Meadow St. Standpipe Rehab”
 - Project title in CIP cost summary table and survey
 - Survey-generated documentation
 - “This pipe will need to be rehabbed”
 - Coded as water main rehab on survey with cost
- “Newport Blvd 12-inch WM Replacement”
 - Project title in CIP cost summary table and survey
 - Survey-generated documentation
 - “This water meter needs to be replaced”
 - Coded as water meter on survey with cost
 - Research found actually a water main

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Documentation Workshop

- You are the primary coordinator for your state and you conduct final reviews of survey submittals from your regional offices
- You receive a survey packet that includes:
 - Questionnaire
 - Survey-generated documentation (from coworker)
 - Excerpts from independent documentation
- Review the submittal to determine if you would consider each project allowable and adequately documented
 - For this workshop, do not focus on project coding