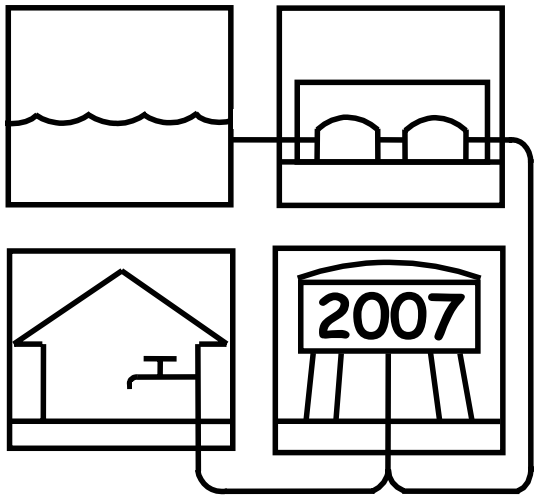
REFERENCE MANUAL



Drinking Water Infrastructure Needs Survey and Assessment

U.S. Environmental Protection Agency
Office of Ground Water and Drinking Water

Prepared by: The Cadmus Group, Inc.
2620 Colonial Drive, Suite A
Helena, MT 59601

This page is intentionally left blank.

Reference Manual Contents

1.0 Purpose of the Reference Manual

The purpose of this manual is to provide guidance to states on the policies and procedures of the 2007 Drinking Water Infrastructure Needs Survey and Assessment (DWINSA or Assessment)[1]. Because states play a significant role in the Assessment, it is critical that each person involved in data collection and review have a clear understanding of the survey instrument, policies, and process. EPA hopes that participating staff will attend training, review the content of this manual periodically, and keep abreast of other Assessment correspondence to maximize the effectiveness of their state's participation.

This Reference Manual has been developed as a desktop aid for persons involved in the implementation of the 2007 Assessment. The 2007 Assessment will not include a survey of American Indian, Alaska native village, or not-for-profit noncommunity water systems. In addition, data collection for systems serving 3,300 or fewer persons will be performed by EPA. Therefore, this document does not address data collection for those systems.

The manual includes a summary of the Assessment method including how systems were selected to be in the state's survey; what projects should be included and how to complete the survey instrument; project documentation requirements; state and EPA responsibilities; use of the interactive website; how systems serving more than 100,000 people can submit the questionnaire electronically to the website; and the data-flow and schedule for the Assessment.

Additional information will be available on an ongoing basis at the 2007 Assessment Website: www.DWNeeds.com, and from the toll-free helpline: (1-888-766-3337).

[1] EPA's previous assessments of infrastructure need in 1995 and 1999 were referred to as "Needs Surveys" because the assessment relied primarily on survey methods. In 2003, EPA relied in part on surveys but also on analysis of previous survey data. Accordingly, the term "assessment" is more appropriate. Hereinafter, these studies will be referred to as the "Drinking Water Infrastructure Needs Survey and Assessment" (DWINSA or Assessment).

2.0 Relationship Between the DWSRF and the DWINSA

In the1996 Amendments to the Safe Drinking Water Act (SDWA) Congress established the Drinking Water State Revolving Fund (DWSRF). In the amendments, Congress directed EPA to conduct an assessment of the nation's drinking water infrastructure needs every four years and to base the states' and tribes' allocation of DWSRF capitalization funds on the findings of the most recent assessment.

Beginning in FY 1997, Congress has appropriated funds for the DWSRF each year. American Indian Tribes and Alaska native villages receive up to 1.5 percent of the total annually appropriated funds. Each state, the District of Columbia, and Puerto Rico receive a minimum of 1 percent of the funds remaining after the American Indian and Alaska native village funds have been deducted. In addition, the Virgin Islands and the Pacific Island territories together receive 0.33 percent of the remaining funds. The remainder of the annual appropriation is distributed to states based on the results of the most recent DWINSA.

The Act also requires EPA to report to Congress the findings of the Agency's assessments. EPA views the assessment as more than just the basis of the states' SRF allotment; the assessment provides the Agency the opportunity to inform Congress and other stakeholders of the critical issues and trends regarding the infrastructure needs of the nation's drinking water industry.

With these objectives in mind, the Agency, working with states and water systems, has established the following mission statement for the 2007 Assessment as follows:

> *To assess the capital improvement needs of DWSRF eligible public water systems in the United States for drinking water infrastructure construction, rehabilitation, and replacement for the 20-year period 2007-2026. 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.*

The information collected in the Assessment is summarized in a Report to Congress. Reports for the 1995, 1999, and 2003 Assessments are available on EPA's website at www.epa.gov/safewater/needssurvey/index.html.

3.0 DWINSA Methods

Through the DWINSA, EPA estimates the total 20-year need of systems eligible to receive DWSRF monies. These include large, medium, and small systems in each state; the District of Columbia; Puerto Rico; the Virgin Islands and Pacific island territories; American Indian systems; Alaska native village systems; and not-for-profit noncommunity systems. The need associated with proposed or recently promulgated regulations, which are taken from the Economic Analysis for each rule, are added to the needs reported by water systems to obtain the total estimated national need.

For the 2007 Assessment, EPA will not collect new data on American Indian, Alaska native village, and not-for-profit noncommunity water system needs. Instead, the findings of the 1999 Assessment will be adjusted to January 2007 dollars and used to estimate the needs of these systems.

To assess the needs of states, the District of Columbia, Puerto Rico, the Virgin Islands, and other territories (referred to as "states" for the remainder of this manual) EPA will collect data from a stratified random sample of water systems using a questionnaire. This data will be used to analyze needs for large, medium, and small community water systems.

For the 2007 Assessment, states that receive a minimum 1-percent of the most recent allotment were given the option of not participating in the state-specific statistical portion of the survey. If a state chooses this option, the needs of systems in that state that serve from 3,301 to 100,000 persons will be estimated based on the inventory of systems in the state and data from participating states. Because this method does not meet the assessment's stringent data quality objectives at a state level, the needs of these "opt-out" states cannot will contribute to the estimate of the total national need but will not be reported individually by state.

3.1 Strata

To determine state need, water systems are grouped (stratified) by size (population served including consecutive populations) and by source (surface or ground water) for reporting purposes and statistical precision. As shown in Exhibit 1, there are 16 possible strata for each state.

The population reported for each system is determined by the state. Consecutive populations are included in the system population because of the belief that, in general, critical infrastructure of the selling-system would need to be sized to accommodate the demand of the population directly served by the system and the consecutive population.

Systems are categorized as surface water if they have at least one source that is surface water or ground water under the direct influence of surface water (GWUDI). Systems are categorized as ground water if they do not have a surface water or GWUDI source and include ground water systems and systems that purchase treated water. The decision to categorize purchased water systems with groundwater systems was based on the belief that, in general, their needs more closely resemble those of ground water systems than of surface water systems with source water treatment.

Exhibit 1: Community Water System Stratification				
	Population		**Surface Water**	**Groundwater**
LARGE	>100,000		Census -All systems receive questionnaire	
MEDIUM	50,001-100,000		State-specific samples for participating states	
	25,001-50,000	or 10,001-50,000*		
	10,001-25,000			
	3,301-10,000			
SMALL	1,001-3,300		National small system sample	
	101-1,000			
	<100			

* In some states, systems serving 10,000-50,000 can be considered one stratum and precision targets can be met. The most efficient sample is drawn for each state.

3.2 Sampling Large Community Water Systems

For the 2007 Assessment, systems serving populations of more than 100,000 persons (including consecutive populations) are classified as large. This is a change from previous assessments where large systems were defined as serving over 50,000 people. Because of the unique nature of systems in this size category and because they represent the majority of the nation's need, these systems are sampled by census – all systems receive a questionnaire.

Because all large systems are sampled, each system is given a weight of 1 (*i.e.* they represent only their system in the total need calculations). When calculating the need contributed by large systems, if a system does not respond to the survey it is assumed that they have no 20-year needs. Therefore, there is no adjustment for non-response.

One-percent states that opt-out of the survey of medium systems will still collect data for large systems.

3.3 Sampling Medium Community Water Systems

For the 2007 Assessment, systems serving populations of 3,301-100,000 are classified as medium-sized. The 20-year needs are collected from a random sample of systems in these strata by state, unless the state has chosen to opt-out of the medium system survey.

In order to produce an estimate of need for each state, EPA set a confidence level of 95% with a precision target of ± 10% for the needs of medium and large systems. An adequate number of systems in the medium strata are drawn for each state to achieve this precision.

The needs of systems in the 50,001-100,000 population strata contribute significantly to each state's total need. Therefore, there was concern that these systems would not be adequately represented if they were drawn as part of the overall state sample. To address this concern, an additional precision target of 95 percent ± 30 percent was added for these strata.

Each system in the medium system sample is given an initial weight. The initial weight is equal to the total number of systems in the strata divided by the number of systems in the sample. These weights are adjusted for non-response after data collection is complete so that all systems in the medium strata are statistically represented.

3.4 Sampling Small Community Water Systems

The 2007 Assessment will collect needs for small systems for the first time since the 1999 Needs Survey. Because small water systems generally do not have the staff or long-term planning tools to respond adequately to a mailed survey questionnaire, data for small systems will be collected through site visits performed by site visitors who receive special training on assessment methodology and who have sufficient expertise in small systems.

A sample of 600 small systems will represent the national need of all small systems. Systems selected will be clustered to minimize travel, and therefore expense, for site visitors. Clusters are chosen randomly. Although all states are included in the small system survey (including one-percent states that opt out of the medium-system assessment) not all states will have a cluster chosen and some states will have many clusters.

The small system sample design for the 2007 Assessment sets a confidence level of 95 percent that the true need is within a range of ± 25 percent of the estimated need within each of the small system strata.

After data collection, the needs of small systems are assigned to states based on the inventory of small systems in each state.

Exhibit 2: Data Collection Method and Precision Targets			
	Small Systems	**Medium Systems**	**Large Systems**
Population Definition	<=3,300	3,301-100,000	>100,000
Data Collection	Site Visits	Questionnaires Mailed	Questionnaires Mailed
Sample	National Sample	State Samples in Participating States	Census (sampled with certainty)
Precision Target	95% Confidence +/- 25% Nationally	For Each Participating State 95% Confidence +/- 10% Overall* 95% Confidence +/- 30% for 50-100K Strata	
Systems Sampled	600 (of 41,883 systems)	2,268 (of 8,770 systems)	589 (of 589 systems)

*The sample design provides a confidence level of 95 percent that the true need is within a range of plus or minus 10 percent of the estimated need. For example, if the total need for large and medium-sized systems in a state is estimated to be $2.0 billion, EPA will be 95 percent confident that the actual total need is between $1.8 billion and $2.2 billion.

4.0 Project Allowability

The goal of the survey is to collect data regarding water systems' 20-year infrastructure needs. To be included in the survey, projects must be SRF eligible capital improvement needs that are in furtherance of the public health protection objectives of the SDWA. A project must also fall within the prescribed timeframe and be adequately documented.

EPA has worked closely with a workgroup of representatives from states and regions to develop policies to support the survey goals. The policies have also been through a peer input and peer review process. Project allowability policies are described in this section of the manual. Because it is easier to list projects that are *not* included in the Assessment, unallowable projects are discussed in more detail than allowable projects. EPA anticipates additional policies and clarifications may be developed as the 2007 Assessment progresses.

4.1 Allowable Projects

As noted above, allowable projects must be SRF eligible capital improvement needs that are in furtherance of the public health objectives of the SDWA. Allowable projects are needed for new infrastructure or to replace, rehabilitate or expand/upgrade existing infrastructure to allow the water system to continue to provide existing customers with safe and palatable water. Projects generally fall in to one of five categories of need: source, treatment, storage, transmission and distribution, and other items such as emergency generators.

> ***"Eligible"*** *refers to projects that may be funded under DWSRF.*
>
> ***"Allowable"*** *refers to projects that can be included in the 2007 DWINSA.*

Timeframe

All projects must be needed during the 20-year period of January 1, 2007 through December 31, 2026. Systems can include projects, even if funding has already been obtained, as long as construction on the project has not started before January 1, 2007. If the project is planned in phases, any phase of the project initiated after January 1, 2007, would be allowable.

4.2 Unallowable Projects

The needs associated with the following types of projects are considered unallowable. If they are submitted as projects they will be deleted from the questionnaire by EPA.

Projects not eligible for State Revolving Fund (SRF) funding:

- Projects solely to accommodate future growth - Due to the speculative nature of growth predictions, projects solely for future growth are not eligible for SRF funding and are therefore not allowed for the survey. This includes projects to entice development,

encourage growth, or accommodate a projected expansion of the service area or population served.

However, projects to connect existing households with inadequate water quality or quantity are allowable. Also, if a need exists or will exist within the 20-year period to accommodate the needs of current customers, then the project can be sized to accommodate future growth.

- Projects solely for fire protection - The SRF program funds projects related to public health protection. Although water systems often also provide fire suppression, these needs are not related to public health objectives. Projects for increasing pipe diameter, providing additional storage or pump capacity, looping water mains, or installing or replacing fire hydrants solely to meet fire suppression needs are not allowed.

  Projects that meet multiple needs may be allowable. For instance, if a system needs a new tank to meet minimum required pressure, and this tank will also provide fire suppression, this need can be allowed. Projects for installation of hydrants can be allowable if they are needed to allow flushing of water mains to maintain water quality in the distribution system.

- Projects for source water protection - Projects for protecting source water, such as fencing or land purchases to increase buffer zones, are not allowed. These types of projects are funded through SRF set-asides.

- Raw water reservoir or dam-related need - Projects related to raw water reservoirs or dams are not allowed as they are ineligible for SRF funding.

*Projects not for capital need*s

The purpose of the Assessment is to collect data on capital projects only. Projects that are not for a specific, tangible capital infrastructure need are not allowed. Although these types of needs are often essential factors of a successful water system they are not capital needs and therefore not allowable for the Assessment.

- Operation and maintenance costs - Costs associated with system operation and maintenance (O&M) are not allowable. Typical O&M projects include water main flushing; painting of equipment as part of routine maintenance (water storage tanks and projects to remove lead-based paints are exceptions); and repair of infrastructure such as fencing, pumps, pipe, or other infrastructure repair that is not considered a major rehabilitation.

- Projects solely for conducting studies - Projects solely for conducting studies are not allowed. Some examples include studies for possible development of new well fields, studies related to changes to or addition of treatment technology, studies to determine the advantages and disadvantages of consolidation with another system, and distribution system hydraulic analyses. Although studies cannot be included as projects, they often serve as documentation for other infrastructure projects.

- Water rights or fee payments - Monies used for water rights or fee payments are non-capital infrastructure uses of funds, and are therefore not allowable for the Assessment.

- Computer software for routine operations - Software is allowable only when it is part of a project for a new supervisory control and data acquisition (SCADA) system or telemetry system. Projects such as off-the-shelf billing software or maintenance schedule programs are not allowable.

- Employee wages and salaries and other administrative costs - These are on-going operational expenses, but are not capital needs.

- Sample collection or analysis fees - The costs of water quality testing, though regularly required, are not capital improvement needs.

Projects not in furtherance of public health goals of SDWA:

- Projects solely for improving appearances - Projects solely for cosmetic improvements are not allowed, as they are not necessary to providing safe drinking water. Some examples of unallowable projects include landscaping, painting, remodeling, and decorative structures.

- Infrastructure demolition - Demolition of infrastructure in and of itself is not allowable. Cost of demolition is allowable only if it is integral to an allowable project (e.g., tearing down an old storage tank to accommodate construction of a new tank at the same site).

- Buildings and parking facilities not essential to providing safe drinking water - Aesthetic, convenience-related, or other non-essential projects are not allowable for the Assessment, nor are parking and garage facilities intended solely for use by employees or the public. New buildings and building improvements are allowable when they are a necessary part of providing safe drinking water. Examples of allowable building needs include: new or improved housing facilities for treatment equipment, including garages for vehicles; buildings used to store maintenance equipment or chemicals used in the treatment process; or office buildings that are necessary for the continued operation of the water system.

- Acquisition of land not required for an allowable project - Project costs to purchase land are not allowable unless the land is an incidental component of another allowable project, such as for siting a new storage tank or treatment plant. Land purchases for source water protection or wellhead protection are not allowable. Cost models for projects without costs are assumed to include a land component where applicable to the type of project.

- Projects to connect existing homes that currently have an adequate drinking water supply - Connecting homes that currently have an adequate supply of drinking water at the time of the Assessment are not allowed.

Other unallowable project types:

- Projects for which construction has begun by January 1, 2007 - Projects for which construction has begun by January 1, 2007 fall outside the time frame of the 2007 Assessment and are not allowed. Construction of new infrastructure must be needed between January 1, 2007 and December 31, 2026. If a project is planned in multiple phases, early phases that have already begun construction by January 1, 2007 are not allowed, but later phases that are planned to begin construction after January 1, 2007 and before December 31, 2026 can be included.

- Recurring infrastructure needs within the 20-year survey period - The Assessment allows each need to be addressed only once for the 20-year survey period.

  Elevated storage tanks may routinely be rehabilitated (sand blasted and painted) several times over a given 20-year period, however only one rehabilitation project per tank is allowable for the Assessment.

  Projects to construct new infrastructure (e.g., installation of a new pump) may not be accompanied by additional projects to rehabilitate the same infrastructure within the 20-year survey period.

- Multiple projects meeting the same need - Two or more projects can not be included to meet one given need. For instance, if a system provides documentation that a well is contaminated, they could record a project to treat the water or a project to abandon the well and drill a new well.

- Projects for compliance with proposed or recently promulgated regulations - Most systems will not have assessed their needs to comply with proposed or new regulations at the time of the survey. Therefore, EPA uses the cost estimates of each rule's Economic Analysis to include these needs. Because these needs can not be included twice, system-specific needs are not allowed.

- Projects driven solely by a non-water-related issue - Projects proposed for a reason other than a direct water system need are not allowed. Common types of projects that are not accepted for this reason include the relocation of water mains required by widening of a highway, the installation of a water canal for environmental protection reasons, or the rerouting of a water main from under a deteriorating bridge.

- Acquisition of existing infrastructure - Acquisition of existing infrastructure is not allowable. Examples of unallowable projects for acquisition of existing infrastructure include the purchase of an existing water system, in whole or in part, or the purchase and relocation of existing infrastructure such as a water storage tank.

- Acquisition of most vehicles and tools - In most cases, vehicles and tools are not allowable. The exception is for large specialized vehicles or tools used directly for treatment or waste disposal. For example, vehicles used to haul waste or sludge are allowable.

- A project that is not the responsibility of the public water system - Projects for which the water system may be doing the actual work, but not ultimately incurring the cost, are not allowed. For example, a homeowner-funded replacement of their service line from the house to the curb stop is not allowed even if the water system may perform the actual replacement and reconnection of the piping.

*Unallowable cost*s

- Interest payments and origination fees associated with a loan - Although the project itself may be allowed, the origination fee and interest payments associated with a loan are not allowable and will be deleted from project costs. If the documentation includes itemized costs with interest listed, it will be subtracted from the cost. If the documentation implies interest payments are included, but the amount cannot be identified, the cost for the project will be deleted and the cost will be estimated using a cost model.

- Shared projects - If two or more water systems intend to share the costs (and benefits) of a project, each system can only include their portion of the cost as a need. This is true even if only one system is selected for the Assessment. If the full cost is included on one questionnaire, the cost will be amended to reflect the system's portion (if the documentation is detailed enough to do this), or the cost will be proportioned by population.

- Costs shared by multiple projects - Project costs unrelated to the provision of safe drinking water are not allowable. For instance, if a community is planning concurrent water and sewer improvements, costs that are shared by both projects (e.g., mobilization) will either be adjusted so that only the portion associated with the water project is included in the cost or the project will be deleted if the appropriate portion cannot be identified.

5.0 Documentation of Need and Cost

Each project must be accompanied by documentation of need and adequate information to assign a cost to the project. Ensuring that system responses contain adequate documentation is one of the most important steps in completing and reviewing questionnaires. In addition to making the Report to Congress more credible, good documentation ensures fairness for determining the allotment of the total need for states. For the Assessment, there are three different groups of documentation:

- **Independent** – Independent documentation is generated through a process independent of the Assessment. Because of this, there is no intentional bias introduced by inclusion of projects with this type of documentation. Examples include a Master Plan, a Capital Improvement Plan (CIP), or Facilities Plan. Independent documentation may be used to justify project need or cost (or both).

- **Survey-generated** – Survey-generated documentation is written documentation generated specifically for the Assessment by the system or the state. This type of documentation relies heavily on the best professional judgment of the person completing the questionnaire. Documentation written by the system is typically based on the system's general knowledge of the condition and history of the system's infrastructure. Documentation provided by the state may be based on interviews conducted with the system or may be based on the state's general knowledge of the system. Survey-generated documentation may be used to justify project need only.

- **Combination documentation** – Combination documentation is a combination of independent and survey-generated documentation to justify project need and/or cost. Independent documentation does not always directly address the allowability of the need, therefore the system or state may add survey-generated documentation to clarify the need for the project. For example, independent documentation such as a CIP may list a project name and cost but may not provide a specific reason for need. In this case, survey-generated documentation could be used to provide the reason for need.

5.1 Documentation of Need

Documentation of need describes the project, provides the scope of the project, and indicates why the project is needed. The documentation must:

- Provide sufficient information for EPA to review the allowability of the project.
- Provide adequate data to check the accuracy of the data entered on the questionnaire.
- Be dated and be less than 4 years old.

Three levels of documentation requirements have been set as policy for the Assessment. They are: projects that require independent documentation of need, projects that are reviewed based on a weight of evidence that the need meets policies, and projects accepted with all forms of documentation. The required level of documentation is dependent on the type of need and

whether the project is for new infrastructure, replacement of existing infrastructure, expansion/upgrade of an existing complete plant, or rehabilitation of existing infrastructure. Projects without adequate documentation of need will be removed from the questionnaire.

Exhibit 3 provides a table of acceptable documentation of need by type of need code.

Documentation Requirements

The following are the types of projects that fall under each category of documentation requirement.

5.1.1 Projects for which independent documentation is required

- New surface water sources and new aquifer storage and recovery wells.
- New, replacement or expansion/upgrade of a complete treatment plant.
- Rehabilitation and replacement of pipe at a rate in excess of 0.5% annually or 10% total.

5.1.2 Projects to which weight of evidence review is applied

- New wells and springs (documentation must address allowability criteria).
- Replacement or rehabilitation of any source (documentation must provide specific information such as age and condition)
- New UV treatment or membrane filtration (documentation must indicate project is not solely for compliance with LT2ESWTR).
- New ground or elevated storage tanks (documentation must indicate system-specific deficiency for current customers).
- Replacement of ground or elevated storage tanks (documentation must provide specific information such as age and condition).
- New pipe (documentation must address allowability criteria).
- Valves and hydrants (documentation must indicate these appurtenances are not included in pipe projects).
- Security (documentation must indicate project-specific need).

Weight of evidence

Reviewers will weigh the evidence provided to determine if the submitted project will be accepted.

Documentation must include sufficient information about the project to verify that the project meets the allowability criteria and justify that the project is needed.

5.1.3 Projects for which all forms of documentation are accepted

- Well pumps, raw water pumps, and other miscellaneous source projects.
- Rehabilitation of a complete treatment plant.
- Treatment system components other than new UV and new membrane filtration.
- Ground-level and elevated storage tank rehabilitation, tank covers, hydropneumatic tanks and cisterns.
- All pump projects.
- Pipe rehabilitation and replacement within policy limits.

- Others including service lines, lead service line replacements, control valves, backflow prevention, meters, controls, and emergency power.

The following are guidelines for submitting documentation:

- If a system provides an existing plan or study document, they may provide the entire document or just the relevant pages that describe the projects. If the latter method is used, include the title page that identifies the document and its date.

- Documentation generated expressly for the Assessment must include a description of the project and justification for the need. It should be signed and dated by the water system or state representative. Adequate information (e.g., actual age, condition, date of last rehabilitation), must be included for the reviewer to assess whether the project is allowable and meets the Assessment policies.

- Projects for which documentation of need is more than 4 years old (earlier than January 2003) can be allowed if additional documentation is submitted and indicates that the project is still necessary, the scope has not changed, and construction did not begin before January 1, 2007. This additional documentation must have a current signature and date.

- Mark the project number on the documentation to facilitate further review by EPA.

Exhibit 3: Acceptable Documentation of Need by Type of Need Code

Code	Need Type	Rehabilitation	Replacement	New
Source				
R7	Surface Water Intake	• Independent • Combination • Survey-generated – weight of evidence review		• Independent or Combination Documentation Required
R6	Aquifer Storage and Recovery Well			
R1	Well			• Independent • Combination • Survey-generated – weight of evidence review
R10	Spring Collector			
R2	Well Pump	• Independent • Combination • Survey-generated		
R3	Well House			
R8	Raw Water Pump			
R9	Off-Stream Raw Water Storage			
R11	De-stratification			
R4	Eliminate Well Pit	N/A		• Independent • Combination • Survey-generated
R5	Abandon Well			
Disinfection				
T1 – T9	Disinfection	• Independent • Combination • Survey-generated Projects for UV light – weight of evidence that it is not solely for LT2 compliance		
Treatment Components				
T30 – T44	Treatment components	• Independent • Combination • Survey-generated – Projects for membrane filtration – weight of evidence that it is not solely for LT2 compliance		
45	Treatment Unknown	N/A		Case-by-case basis
T46	Other	Case-by-case basis		

Complete Treatment Plants					
Code	**Need type**	**Rehabilitation**	**Expansion or Upgrade**	**Replacement**	**New**
T10 – T22	Complete Treatment Plants	• Independent • Combination • Survey-generated	• Independent or Combination Documentation Required		

Code	Need Type	Rehabilitation	Replacement	New
Pipe				
X1	Raw Water Transmission	• Independent • Combination • Survey-generated -within limits	If any project relies on survey-generated documentation, the total system-wide rehab. and replacement rate may not exceed 0.5% annually or 10% for the 20-year period.	• Independent • Combination • Survey-generated – weight of evidence review
X2	Finished Water Transmission			
M1	Distribution Mains			
M2	Lead Service Lines	• Independent • Combination • Survey-generated		N/A
M3	Service Lines	(Rehabilitation not allowed – considered O&M)	• Independent • Combination • Survey-generated	
M4	Hydrants	(Rehabilitation not allowed – considered O&M)	• Independent • Combination • Survey-generated – weight of evidence review (not include in pipe projects)	
M5	Valves			
M6	Control Valves	• Independent • Combination • Survey-generated	• Independent • Combination • Survey-generated	
M7	Backflow Prevention	(Rehabilitation not allowed – considered O&M)		
M8	Water Meters			
Finished / Treated Water Storage				
S1	Elevated Storage	• Independent • Combination • Survey-generated	• Independent • Combination • Survey-generated – weight of evidence	
S2	Ground-level Storage			
S3	Hydropneumatic Storage	• Independent • Combination • Survey-generated		
S4	Cisterns			
S5	Cover for Existing Finished / Treated Water Storage	N/A (Considered part of tank rehabilitation)		• Independent • Combination • Survey-generated
Pumping and Other				
P1	Finished Water Pump	• Independent • Combination • Survey-generated		
P2	Pump Station			
W1	Laboratory	(Rehabilitation not allowed – considered O&M)	• Independent • Combination • Survey-generated	
W2	SCADA			
W3	Pump Controls / Telemetry			
W4	Emergency Power			
W5-W9	Security	(Rehabilitation not allowed – considered O&M)	• Independent • Combination • Survey-generated – Weight of evidence review	
W10	Other	Case-by-case basis		

5.2 Documentation of Cost

There are two primary methods for assigning costs to a project:

1) System provides an independent cost estimate.
2) System provides adequate information for EPA to estimate a cost using a cost model.

Independent cost estimate

The first and most accurate option for assigning a cost to a project is for the system to provide an independent cost estimate. These are typically in the form of an excerpt from a CIP or Master Plan, bid tabulation, or an engineer's estimate. Cost estimates should include all aspects necessary for construction of the project including design, engineering, labor, materials, and contingencies.

Some cost components are not allowable and will be deleted from the cost. These include loan origination fees, finance charges, bond issuance fees or costs, and interest payments on a loan. In addition, inflationary multipliers for future projects are not accepted. Cost estimates must include the date they were prepared. EPA will use this to adjust the cost to January 2007 dollars.

If a cost estimate is given as a range, the lower end of the range is used.

Documentation of cost that is more than 10 years old (earlier than January 1, 1997) will not be accepted because it is assumed construction techniques and treatment technologies may have significantly changed within the last 10 years.

Projects that have adequately documented costs are the basis of the cost models. EPA requests that systems provide both cost and modeling parameters for as many projects as possible so that the data can be used to build new cost models.

EPA models cost

The second option assigning a cost to a project is for the system to provide adequate information for EPA to model the cost. Information that is used for modeling includes the type of need, whether the project is for new, replacement, rehabilitation or expansion/upgrade, and the modeling parameter. The required modeling parameter(s) for each project is dependent on the type of need. For example, finished water storage tanks are modeled based on the storage volume while distribution pipe is modeled based on pipe diameter and length. Refer to the Type of Need Dictionary in the training binder (also available on the website) for complete information on required modeling parameters.

EPA is not able to model all possible types of infrastructure projects. Some projects are too site-specific for cost models to be applied; others are too unique for a cost model to be developed.

6.0 Survey Instrument

6.1 Questionnaire

The 2007 Assessment questionnaire is the data collection instrument for reporting all needs. A copy of the questionnaire is included as Appendix A. Survey data are obtained in a coded format for entry into a computer database. Codes are provided in a separate document called the List of Codes (see Appendix B). Although data collection occurs using the questionnaire, documentation of all projects must be submitted along with every questionnaire.

6.1.1 Cover Page, System Information

Cover pages for mailed questionnaires are printed using information from the Safe Drinking Water Information System (SDWIS) database, as verified by the states or regions. The water system indicates if the information is correct by checking the appropriate box. If inaccurate, the system should provide the correct information. Any changes are maintained in a database for the Assessment. Changes are *not* made to SDWIS.

While most cover page information is self-explanatory, some information is described in Exhibit 4.

Exhibit 4: Information Requested on Cover Page

Contact Information	Physical address to allow Federal Express delivery of the questionnaire. U.S. Mail is used if a street address is unavailable. States assist EPA by reviewing the contact information and addresses before the questionnaires are distributed.
Ownership Type	Ownership type options include Public, Investor Owned or Private Non-Profit, and Federal Government. The system should check all that apply. This information is used to help ensure federal government entities are not included.
Population Served	The total population served directly by the system and by consecutive systems purchasing water from the system. By using total population served, systems are more appropriately stratified. *Example: A wholesaler may be recorded in SDWIS with a population of 25 people that sells water to another system that serves 100,000 people. If the population was not changed to 100,000, this wholesaler would be inappropriately part of the small system survey.*
Number of Connections	Total number of connections for the system - all residential and industrial connections are included. A connection to a consecutive system counts as one connection. *Example: A wholesale water system that sells to five consecutive systems may serve a population of 35,000 through only five connections.*
Total Design Capacity	The flow in million gallons per day (MGD) the system can produce with all sources and treatment on-line. The flow must be recorded in MGD. This information is not available through SDWIS and is not preprinted on the questionnaires. If the system or state does not report a design capacity, the field is left blank in the final data set.
Source	This field is printed with "Ground," "Purchased Ground," "Surface/GWUDI," or "Purchased Surface/GWUDI." Ground water systems include systems that use only ground water. Surface water systems are systems that use surface water or ground water under the direct influence of surface water (GWUDI) in whole or in part. Purchased systems buy either treated ground water or treated surface/GWUDI, but do not include systems that buy raw water. Systems are to check all of the boxes that apply to their type of source water.

6.1.2 Project Tables

The questionnaire is designed with three separate project tables. The project tables address the following project types:

- Source, Treatment, Storage, Pumping, and Other
- Transmission and Distribution
- Backflow Prevention Devices/Assemblies, Flushing Hydrants, Service Lines, Valves, and Water Meters

Exhibit 5: Information Requested on Project Tables

Column	Required	Single or Multiple	
Project Number	Yes	Unique entry needed	This field is used to record a unique project number for each project. Project numbers should be numbered in sequence (e.g., 1000, 1001, 1002, etc. for source, treatment, storage and pumping projects). Project numbers are also recorded on project documentation.
Project Name	Yes	Descriptive name	This field is used to record a descriptive project name for each project. The project name and number are used to track the project and facilitate communication about the project with the state, region, or water system.
Type of Need	Yes	Multiple codes acceptable if cost provided	This field is used to record a code from *List 1-Type of Need* (in the Lists of Codes) and identifies the type of project. The type of need is required so that cost estimates can be modeled. It is also required to assign projects to a category of need.
Reason for Need	Yes	Multiple codes acceptable	This field is used to record a code from *List 2-Reason for Need* that indicates the reason(s) a system needs the listed project. This code is not a substitute for written documentation of need.
New, Replace, Rehab, or Expand/ Upgrade	Yes	Single entry	This code is used to record whether the project is to: • Install entirely new ("N") infrastructure (i.e., install a new storage tank); • Replace ("R") existing infrastructure (i.e., replace pump, abandon existing water mains and install new); • Rehabilitate ("H") existing infrastructure (i.e., clean and line water mains, sand blast and paint storage tank); or • Expand or upgrade ("E") an existing treatment plant (i.e., add a treatment train for more capacity, add membrane filtration, change from direct to conventional filtration). This information is used for cost modeling.
Current or Future	Yes	Single entry	This column is used to identify whether the project is a current ("C") or future ("F") need. A current need is one that is needed now, even if funding is not currently available. A future need is not needed at the present time, but the system anticipates needing to address the issue within the 20-year timeframe of the survey.
Regulation	Not required	Multiple codes acceptable	This column is used to identify projects related to a regulatory requirement. Regulatory codes are in *List 3-Regulation or Requirement*. If no regulatory code applies the entry can be left blank or the 4A code can be used.
Design Parameters	Required if no cost provided	Single entry	The design parameters are dependent on project type: • *Transmission/Distribution* – Diameter of pipe in inches and length of pipe in feet. • *Source/Treatment/Storage/Pumping* – Design capacity in MG, MGD, or kW. • *Backflow Prevention Devices/Hydrants/Service Lines/Valves/Water Meters* – Number and size (i.e., diameter in inches) of new devices When systems can provide a cost estimate for a project, parameters do not need to be included. However, when available provide parameters for input into the cost model.
Cost Estimate	Not required	Single entry	This field is used to record an existing cost estimate, if available. Systems are <u>not</u> expected to develop costs specifically for the Assessment. If no cost is available, EPA will model the cost.
Date of Cost Estimate	Not required	Single entry	This is the month and year on which the cost estimate is derived. It is not the date the project is expected or planned. This information is needed so that all costs can be updated to January 2007 dollars.
Documentation	Required	Multiple codes acceptable	A code from *List 4-Documentation* indicates the type(s) of documentation used to justify the need and cost (if provided) of the project. Copies of the documentation must be submitted with the questionnaire.

6.1.3 Inventory Tables

Inventory tables accompany each project table. These are intended to be used as a tool to help systems identify all potential projects. Completion of the inventory tables is not a required part of the questionnaire. However, one of the policies of the 2007 Assessment is that if a project table includes one or more pipe projects that relies solely on survey-generated documentation to support the need, at a minimum the system must complete the "total feet or miles of pipe" entry of the transmission and distribution inventory table.

Exhibit 6 describes the information requested in each inventory table.

Exhibit 6: Summary of Information Requested by Inventory Tables

	Inventory	Needing Replacement	Needing Rehabilitation (or Expansion/Upgrade)	Needing New
Source, Treatment, Storage, Pumping, and Other Projects	Total inventory of wells, springs, or intakes; the number of locations where treatment is applied; and the total number of storage tanks	Number that need to be replaced (based on inventory)	Number that need to be rehabilitated (based on inventory); number of complete plants that need to be expanded/upgraded	Additional sources, treatment, or storage/booster pumping capacity that are needed
Transmission and Distribution Main	Total length (in feet or miles) of transmission and distribution mains by type and percentage of total pipe	Length or percentage of the mains that are in poor condition or beyond their useful life (by size and type of pipe)		
Backflow Prevention Devices/Assemblies, Flushing Hydrants, Service Lines, Valves, and Water Meter	Valves, water meters, flushing hydrants, lead service lines, and backflow prevention devices/assemblies	Number that need to be replaced (based on inventory)	Number of valves and water meters that need to be upgraded or rehabilitated (based on inventory)	Additional valves, water meters, flushing hydrants, lead service lines, and backflow prevention devices/assemblies that are needed

6.1.4 Respondent Information

The last page of the questionnaire is completed by the system to identify the person who can provide additional information regarding the submittal and how they can be reached. States may also be contacting the systems by using this information.

6.2 Lists of Codes

The blue Lists of Codes booklet (included in Appendix A) contains descriptions of information requested on the questionnaire and four subject specific tables with codes to be entered on the questionnaire. The codes indicate pertinent details of each project and are listed by: (1) type of need; (2) reason for need; (3) regulation or requirement; and (4) documentation.

List 1 – Type of Need

The types of need associated with a project are grouped into seven major categories. Under each category are several types of projects, each with a specific code. Exhibit 7 describes the various projects that fall under each type of need.

Exhibit 7: Descriptions of Types of Need Codes

Raw/Untreated Water Source (Codes R1–R11)	This category includes needs for ground and surface water sources.
Treatment: Disinfection (Codes T1–T9)	This category includes disinfection that may be at the source, treatment plant, or within the distribution system.
Treatment: Complete Plants (Codes T10–T22)	This category includes complete treatment plants and includes all components from raw water pumps through finished water pumps.
Treatment: Other Components/Equipment/ Processes (Codes T30–T46)	This category includes components of the treatment process, such as corrosion control, aeration, and waste handling. Note that a system cannot include a project for a complete treatment plant and then also a project for one of the components of the plant.
Transmission (Codes X1–X2)	This category includes needs for raw or finished water transmission pipes. Finished water transmission mains are considered to be piping up to the point at which a distribution grid is encountered.
Distribution (Codes M1–M8)	This category includes needs for water mains, hydrants, flow control valves, pressure reducing valves, backflow prevention devices, service lines, and meters.
Finished/Treated Water Storage (Codes S1–S5)	This category includes elevated, ground level, and hydropneumatic water storage tanks. It also includes covering uncovered finished/treated water storage.
Pumping Station and Finished Water Pumps (Codes P1–P2)	This category includes finished water pumps and booster pump stations. *Note the code for a well pump and raw water pumps are in the source category as R2 and R8 codes, respectively.*
Other Infrastructure Needs (Codes W1–W10)	Some capital infrastructure needs such as laboratory costs, pump control/telemetry, automation, emergency power, and infrastructure improvements for natural disaster protection cannot be classified in the above categories. These are counted as "other needs." It is often difficult for cost models to be developed for these types of needs. Therefore, a documented cost estimate is needed for most of these projects.

List 2 - Reason for Need

The Reason for Need List provides 11 options describing why a project is necessary. More than one code may apply to a single project. A description of each reason of need code is provided in Exhibit 8.

Exhibit 8: Descriptions of Reason for Need Codes

Code	Description	Example
A1	Project is for existing infrastructure that is or will be old or deteriorated by 12/31/2026.	An elevated storage tank is expected to reach the end of its useful life and require sand blasting, repainting and minor structural rehabilitation within the next 10 years.
A2	Project is to correct a deficiency in source water quantity caused by current user demand.	Existing sources are currently unable to meet max day demand based on 200 gallons per day per capita. An additional well is planned to meet demand
A3	Project is to correct a deficiency in storage capacity caused by current user demand.	The system does not have adequate storage to meet peak demand during summertime irrigation. The system has implemented a water conservation program but additional storage is needed to correct this problem.
A4	Project is to correct existing pressure problems (not related to fire flow).	Part of town experiences loss of pressure during peak flows on a regular basis.
A5	Project needed as a result of, but not in preparation for, a natural disaster.	A storage reservoir has sustained major structural damage as a result of flooding caused by a hurricane.
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).	Lead service lines must be replaced for the system to be in compliance with the Lead and Copper Rule.
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).	Customers regularly complain to the system about taste and odor problems with their water and the system has a treatment plant planned (independent documentation must be included for all complete treatment plants).
A8	Project is for consolidation with and/or connection to an existing public water system.	The system's water supply has become contaminated and they must connect to a neighboring water system to provide safe drinking water to their customers.
A9	Project is for extending service to existing homes without adequate water quantity or quality.	Existing homes that currently use private wells have experienced contamination problems. The system intends to install transmission and distribution pipe to the homes.
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)	The system must install fencing around its storage reservoir to protect the infrastructure from vandalism and possible water quality impacts.
A11	This code should be used if codes A1-A10 do not apply.	A description of the project including the reason it is needed must be provided and clearly identified by project number.

List 3 – Regulation or Requirement

If a project is necessary to obtain or maintain compliance with a regulation or requirement, codes are provided to tie the project to that regulation or requirement. Codes 1A through 1G are for specific drinking water regulations and codes 2A and 2B are for secondary contaminants and state regulations.

Projects for compliance with proposed and recently promulgated regulations should not be included on the questionnaire. Because systems cannot be expected to know what their needs will be for compliance with these regulations, EPA estimates the need associated with these rules based on data from Economic Analyses. If a project is submitted for these regulations, they can be coded with 3A and will be deleted.

One exception to this is projects for covering or treating uncovered finished water reservoirs for compliance with the Long Term 2 Enhanced Surface Water Treatment Rule. Systems will know if they have an uncovered finished water reservoir, and because the compliance date is April of 2009, they are likely to be planning for this in 2007. These needs should be included in the questionnaire.

Not all projects that are necessary for the continued supply of an adequate quantity and quality of water will be associated with one of these regulations. If no regulation applies (but the project is in furtherance of other objectives of the Safe Drinking Water Act), the 4A code can be used or the entry can be left blank.

Exhibit 9: Regulation Codes

EXISTING SDWA REGULATIONS

1A Surface Water Treatment Regulations (SWTR, IESWTR, FBRR, LT1ESWTR, and costs associated with covering or treating uncovered finished water reservoirs required by LT2ESWTR)	1E Arsenic Rule (10 µg/L Arsenic Standard)
1B Total Coliform Rule	1F Stage 1 Disinfectants/Disinfection Byproducts Rule (for compliance with the running annual average)
1C Nitrate or Nitrite Standard	1G Other Regulated VOCs, SOCs, IOCs, or Radionuclides (excludes Radon)
1D Lead and Copper Rule	

OTHER REQUIREMENTS

2A Secondary Contaminants (e.g., iron, taste and odor, and color)	2B State Requirements

PROPOSED AND RECENTLY PROMULGATED SDWA REGULATIONS

3A Needs associated **solely** with the following proposed or recently promulgated regulations are not allowable. These regulations include:

- Stage 2 Disinfectants/Disinfection Byproducts Rule (for compliance with the locational running annual average)
- Long Term 2 Enhanced Surface Water Treatment Rule (other than costs to cover or treat uncovered finished water reservoirs)
- Radon Rule
- Ground Water Rule

If No Regulation Code Applies Use Code 4A or leave column blank if none of the codes above apply (project is in furtherance of other objectives of the Safe Drinking Water Act)

List 4 – Documentation

List 4 provides codes for the types of acceptable documentation used to justify the need and/or estimate of cost. The main types of documentation acceptable for the 2007 Assessment are described in Exhibit 10.

Exhibit 10: Types of Acceptable Documentation

INDEPENDENT	**For Need and/or Cost Documentation**	Capital Improvements Plan (Code 1)
		Master Plan (Code 1)
		Facilities Plan or Preliminary Engineering Report (Code 2)
		Grant or Loan Application Form (Code 3)
		Engineer's Estimate (Code 4)
		Bid Tabulation (Code 4)
	For Need Documentation Only	Intended Use Plan/State Priority List (Code 5)
		Sanitary Survey (Code 6)
		Comprehensive Performance Evaluation Results (Code 6)
		Monitoring Results (Code 7)
		Other Independent Documentation(Code 8)
	For Cost Documentation Only	Cost of Previous Comparable Construction (Code 9)
SURVEY-GENERATED	**For Need Documentation Only**	Written by State (Code 10)
		Written by System (Code 11)

Other forms of documentation will be considered on a case-by-case basis. For instance, water main leak and break records or customer complaint reports can be useful as independent documentation to support other survey-generated documentation.

Exhibit 11: Examples of Applying Codes

	A system intends to construct a new treatment plant because they are in excess of the new arsenic standard. Their intention is to install Activated Alumina
Type of Need Code	**The appropriate type of need is T19 – Activated Alumina complete plant.**
Reason for Need Code	Because the system is providing this treatment to comply with a regulation t**he appropriate reason for need code is A6 – Project is to obtain or maintain compliance with an existing regulation.**
New, Replace Rehabilitate, or Expand/Upgrade	Since the system is installing new infrastructure, **the appropriate description is N for new.**
Regulation Code	In this situation, a regulation directly applies so **the appropriate regulation code is 1E – Arsenic Rule.** If no regulatory code had applied, the 4A code can be used.

7.0 Encouraging System Participation

Water systems face many competing priorities, and it is often difficult for completion of the questionnaire to rise to the top of the priority list. In addition, systems that do not intend to apply for DWSRF monies may lack the incentive to complete a questionnaire. This may be a significant problem for privately-owned systems, even in states that lend money to such systems. Systems may also be disinclined to participate because of concerns about public reaction to the data, or because they lack the time and expertise to complete the survey.

It is in the state's best interest to encourage systems to participate as each response reflects on the total national need and each state's need. EPA has solicited comments on ways to motivate water systems that do not want to participate in the Assessment. The following are some suggested ways that states may encourage water system participation:

- Initiate frequent communication about the Assessment with water systems.
- Conduct site visits to assist systems that do not respond.
- Emphasize the importance of the loan fund and the set asides to the overall success of state drinking water programs.
- Examine options for coordinating the Assessment with capacity development, source water protection, or consumer awareness initiatives.
- Encourage positive reinforcement from other water systems in the area.
- Discuss the relationship between the Assessment and public availability of information. Systems may want to notify their customers of their participation in the Assessment to show their commitment to quality drinking water.
- Work with local chambers of commerce or other municipal organizations to encourage system participation.
- Work with state public utility commissions to encourage responses from systems they regulate.
- Ensure that the surveys reach the right person at the water system (i.e., someone with the ability to complete the questionnaire).

EPA will also engage in some activities to encourage water system participation:

- EPA will work with trade associations to help motivate systems, including the American Water Works Association (AWWA), the Association of Metropolitan Water Agencies (AMWA), and the National Association of Water Companies (NAWC).
- EPA will publish articles in trade newsletters about the importance of the 2007 Assessment.

7.1 Conducting Follow-Up Site Visits

This section contains information that may help states plan and conduct site visits, if needed. A 1997 study, as follow-up to the 1995 survey, showed that systems did not always report all of their needs on the questionnaire. The follow-up survey also discovered several reasons why water systems did not identify needs:

- Belief that the needs were not allowable.
- Lack of existing documentation to support the needs (e.g., CIPs).
- Lack of time to complete the questionnaire.
- Lack of involvement by all necessary personnel.

Site visits or phone interviews are effective ways for states to encourage response and ensure that water systems have identified all their infrastructure needs. The ability to review files and system drawings and discuss needs with the appropriate staff make site visits the most valuable communication tool available to states. Time and cost, however, are substantial. Phone interviews will be less costly and can be a useful tool for improving questionnaire response.

7.2 Suggestions for Targeting Site Visits

EPA estimates that states will need 8 to16 hours to conduct a site visit and complete the questionnaire (excluding travel time). This includes 2 to 3 hours of preparation and logistics, 3 to 5 hours at the system, and 3 to 8 hours to complete the questionnaire and compile the documentation.

In order to use your time most efficiently, states should prioritize which systems they will spend the time to visit. Some of the issues discussed below can help states determine which sites would be beneficial to visit.

Target high need systems

The state's goal should be to collect the best data available from all systems in the sample. However, if time and resources limit the state to conducting only a few site visits, the systems with known substantial needs may be high on the list.

The Potential for Underreporting

Another consideration in choosing which systems would benefit from a site visit is to target systems you expect may underreport needs. To help identify where underreported needs are likely, states should consider previous knowledge of the system, the system's CIP (if it exists), the overall condition of the water system, its age, and whether the system is rural or urban. Underreporting of needs is often a more pronounced issue with rural systems.

Combine Efforts

States should consider whether systems in the survey list are also due for a sanitary survey. If so, efforts can be combined and both forms completed at the same time.

7.3 Procedures for Conducting Site Visits

States may want to conduct site visits to follow up on data provided by systems or to collect the data themselves. The section below describes the procedures that have been used to conduct site visits to small systems in previous Assessments. The general approach also may be useful to states that are organizing site visits to larger systems

Assistance with Generating Documentation of Need

EPA has developed a Needs Evaluation Guide (included in the Assessment Training Binder) to help states assess needs through site visits or telephone interviews. The guide will assist states in identifying all of the system's components and needs, starting with the source and ending with the distribution system. The guide is divided into different categories of need and can be used to develop survey-generated documentation of needs.

Steps for Conducting a Site Visit

Site visits should be conducted by engineers or other professionals with extensive experience working with water systems. The various steps to conducting a site visit are summarized in Exhibit 12.

Exhibit 12: Steps for Conducting a Site Visit	
Preparation and Final Scheduling for the Site Visit	
Step 1	**Contact.** Contact the system to explain the purpose of the site visit and provide general information on the 2007 Assessment and DWSRF. A typical procedure for the preliminary contact follows: • Identify the person with whom the site visitor should meet. • Obtain an estimate of how long the visit will take. • Schedule the site visit within the time frame provided, and consider the location and complexity of the system. • Explain to the contact person what kind of documentation should be made available.
Step 2	**Gather Information.** Ask the system to gather information from their central files. In addition, refer to your state files. Typically, sanitary surveys, plans, specifications, and master plans (when available) contain the most useful information.
Conducting the Site Visit	
Step 3	**Explain Purpose.** Arrive at the system and explain the purpose of the visit and the typical procedures used, and provide information on DWSRF and the Assessment.
Step 4	**Explain Assessment Policies.** Explain the 20-year planning horizon and some important rules (e.g., only address a piece of infrastructure once for the 20-year period). Also mention that some projects typically thought of as "maintenance" should be included in the Assessment.
Step 5	**Interview the System Contact.** Begin assessing the system's needs by walking the contact through their inventory. You may want to use the Needs Evaluation Guide.
Step 6	**Tour System.** After completing the Needs Evaluation Guide, tour the system and view the major components. Then make an independent assessment of condition and needs.
Step 7	**Review Projects.** Review the list of projects that were identified with the system. In the documentation explain the basis for including and excluding projects—a discussion that typically works best if the representative participates. Together modify, add, or delete projects as appropriate.
Preparing the Report	
Step 8	**Prepare Documentation.** Obtain as much independent documentation as possible. If costs are available, take copies of these. Prepare survey-generated documentation for each project that still needs documentation. The system's written documentation should be referenced when available. This is usually done with the system representative.
Step 9	**Prepare Schematic.** A schematic drawing showing key system components should be included with the survey form. Prepare the drawing if it is not available from the system contact(s). This is helpful when back in the office and trying to remember the setup of the different systems.

8.0 Questionnaire Analysis

8.1 Coordination of Efforts Between States and EPA

Based on experience from past assessments, EPA has found that good communication between the state and the EPA contractor results in the most accurate questionnaire completion and the best project acceptance rate. In an effort to facilitate good communication and realize the best possible data collection results, the following procedures will be implemented.

- **State Contact.** EPA will ask each state to assign a lead person to serve as the state contact. In some cases, other staff (e.g., those from state area offices or counties) may be more appropriate to provide certain information and review surveys, but EPA has found that a central contact aids communication.
- **Lead Analyst.** The EPA contractor will assign a lead analyst for each state. While other analysts will review some of the questionnaires for the state, the lead analyst will be the point of contact for the state and will be available to answer questions via phone or e-mail.
- **Senior Contact.** The EPA contractor will provide each state with the name of a more senior contact as well. The state may contact this person if the lead analyst is unavailable, or if the state feels the need to raise its concerns at a higher level. In addition, EPA staff will be available to address state concerns.
- **Communication Procedures.** The state coordinator and EPA contractor will establish procedures for communications at the beginning of the data collection period.
- **First Few Questionnaires.** States are asked to return to EPA the first few questionnaires they have reviewed in March 2007. The EPA contractor will provide each state detailed written comment on the survey content, completeness, and state analysis. This will allow the EPA contractor to provide feedback to the states early in the process. EPA will host a workgroup meeting in April to discuss status of the project and the issues that came up during the first five review process.
- **Website.** The EPA contractor will provide the state with regular updates on the status of questionnaire analysis through the website (see Section 9.0). States and EPA Regions will be able to identify which questionnaires have been received, if changes were made (e.g., to codes or costs), and which projects were deleted and why. If a state cannot access the data system (e.g., because it lacks Internet access), the EPA contractor will provide the information through other means.
- **EPA Regions.** The EPA Regional coordinator will be contacted periodically by the EPA contractor regarding state response rates and participation, and will be involved with resolving response rate issues as necessary.

8.2 State Review of Survey Responses

State participation in questionnaire analysis is critical to obtaining a full and accurate measure of the total need reported for each state. Questionnaire analysis includes reviewing the questionnaire for completeness (e.g., to see if any categories or types of needs were overlooked), ensuring that the coding is accurate, and most importantly, reviewing the

adequacy of documentation. If the state finds that documentation is inadequate, they should obtain or generate additional documentation if appropriate. The key is to provide a reasonable, logical explanation of why the project is needed with sufficient information to describe the extent of the project.

As you review the documentation, highlight key information and mark-up the document with comments and information such as project number. This will facilitate the subsequent review by EPA and make it more likely that the documentation will be accepted.

8.2.1 Review Considerations

The review should consider the following issues.

- ☑ **Ensure that needs are documented and allowable.** Documentation of need explains why the project is needed and gives enough detail to ensure that the size and type of project are accurately recorded. The documentation must demonstrate that the project is allowable and meets the Assessment policies. If the documentation provided by the system is not completely clear, the state may add additional documentation to clarify allowability or the scope of a project. However, the state should supplement, not override the system's assessment of their infrastructure needs.

- ☑ **Ensure that projects cover all areas of need.** Systems are generally able to assess their near-term needs. Many have short term planning documents and most have a good grasp on what infrastructure needs they are facing in the near term. Systems are often limited to these shorter term planning documents, however, and may not have as good a grasp on longer term needs. States should ensure that all infrastructure areas have been considered and obtain or provide additional documentation for projects that have been missed. Inventory tables located in the questionnaire may be helpful in identifying projects that may have been missed.

- ☑ **Ensure that documentation of need is less than 4 years old.** If documentation is dated before January 1, 2003, provide a signed and dated statement or other certification (from the state or the system) indicating that the project is still necessary, is within its original scope, and that construction has not started by January 1, 2007. Phases of a multi-phase project that have not yet begun may be included.

- ☑ **If costs are provided, ensure that they are adequately documented.** Documentation of project costs provides an accurate basis for state and national cost estimates and will be used to build cost models for projects without costs. The cost estimate should include all aspects of the infrastructure project including design, engineering, materials, construction, and contingency costs. However, if a documented cost estimate for an allowable project is more than 10 years old it cannot be used. Please delete the cost and provide modeling parameters so the cost can be modeled.

☑ **If costs are not provided, include modeling parameters that allow EPA to assign modeled costs.** If a project does not have a documented cost estimate, make sure they have provided modeling parameters that allow EPA to estimate costs. If modeling parameters are not included, the state should contact the water system to obtain the necessary information.

☑ **"Unlump" combined projects if necessary.** In some situations projects may combine more than one type of need on a single line (e.g. booster pump station and tank). Consider the following when deciding if these should be separated into multiple projects or "unlumped":

- If the project does not have a cost estimate:
  - The project must be unlumped so that the models can be applied. EPA can apply models for individual types of need only.
- If the project has a cost estimate:
  - Projects should be unlumped when costs are provided and can be separated into the project components. This will allow EPA to use the costs to build the new cost models.
  - Projects should be unumped when there are multiple categories of need (categories are source, treatment, storage, transmission and distribution, and other), they should be unlumped for later data reporting. EPA reports the amount of need in each general category in the Report to Congress.
  - It is not necessary to unlump projects whose components are closely related (such as filter media and sedimentation basin upgrades).

States should also note the following special circumstances:

- **Multiple responses from the same system.** In some systems, more than one department is involved with the water system (e.g., one group deals with treatment while another deals with distribution). In these cases the system may submit more than one questionnaire. The state does not have to combine these onto one questionnaire, but should submit the survey as one package. Also, review the submittals to ensure that no needs were reported twice.

- **Multiple systems that combine their responses on one questionnaire.** In some cases one entity owns or manages multiple systems, or water systems may have consolidated after the state completed review of the SDWIS inventory data. If two or more systems wish to submit a combined questionnaire, and all were selected in the sample, the needs can be reported on one questionnaire. If only one system is included in the sample, then only the needs for that system can be included.

- **Shared projects.** If a water system lists a project that is planned in cooperation with another system, the recorded cost or modeling parameters should represent the portion of the project for which the system in the sample is responsible.

8.2.2 Survey Submittal

Once review is complete the state is responsible for submitting the questionnaire and all appurtenant documentation to the EPA contractor. This can be done electronically via the upload process or hard copy documents can be sent.

The address for mail or other delivery is:

The Cadmus Group, Inc.
2620 Colonial Drive
Suite A
Helena, MT 59601

Attention: Linda Hills
(406) 443-9194

States should aim to submit the first few submittals to EPA within the first month. These first submittals will be reviewed and an in-depth response will be provided to the state to ensure that policies are understood and coding is appropriate. Then the state should continue to send submittals with approximately one-third submitted by May 2007, two-thirds submitted by July 2007, and the full set submitted by October 20, 2007.

8.2.3 Modifications

The final step in the process is for the state reviewer to view the data when it has been reviewed by EPA and is available on-line. If projects have been deleted or amended and the state reviewer is not in agreement with the changes, they may submit modification requests along with documentation supporting the modification via the website.

8.3 EPA Review of Survey Responses

When submittals are sent to EPA, the contractor will conduct a review similar to the state review discussed above. In general the steps below outline this process, although systems serving more than 100,000 people may have uploaded their own data. In these cases the order of activities will be slightly altered.

8.3.1 Initial Analysis

Each state is assigned an analyst who will be the primary contact for the state and is likely to review most of the questionnaires from that state. State coordinators are encouraged to contact their state analyst as needed to answer questions and clarify policies.

As questionnaires are submitted, each will be reviewed in detail by the analyst to ensure that each project is allowable, need is documented, costs can be assigned, and coding is accurate.

8.3.2 Senior Review

After the initial analysis, each questionnaire receives a senior-level review to help ensure consistency in the data analysis. This analysis is conducted by personnel with a background in water supply and treatment as well as extensive knowledge of the Needs Assessment policies and procedures.

8.3.3 Changes and Comment Codes

Analysts and senior reviewers will edit the questionnaire as necessary based on his or her review. Every change applied to a project is given a comment code so that the state can see what changes have been made and how the change impacts the project. Appendix C has a complete list of the comment codes used. The general categories of comments include:

- Comments pertaining to the submittal as a whole
- Comments addressing the allowability of a project
- Comments addressing adequacy of documentation of need
- Comments indicating that a project or portion of a project is included in another project
- Comments indicating that a project has been disaggregated ("unlumped") to model the cost or to capture cost data
- Comments indicating that two or more projects have been aggregated ("lumped") for modeling or other purposes
- Comment that address the cost or modeling parameters for a project
- Comments that indicate other changes have been made based on the submitted documentation
- Comments in response to modifications submitted by the state

8.3.4 Upload to Database

Submittals that were not uploaded by the system or the state are sent to a data entry house that provides "dual data entry" for each submittal. Data is then uploaded to the database and website for review by the state.

8.3.5 Project Status

When the review and upload is complete, each project is assigned one of the following status categories based on the comments it received. States can use this information to determine which projects need follow-up modifications or additional documentation.

- Project allowed unchanged
  Displayed as a green check 

- Project allowed with changes that do not impact cost
  Displayed as a green check 
  Edits or comments may include:
  - Change of project description from current to future or visa versa
  - Change from new to replace or visa versa
  - Change of modeling parameter when a cost is provided

- Project allowed with changes that do impact cost
  Displayed as a yellow exclamation mark
  Edits or comments may include:
  - Change or deletion of cost estimate
  - Change of modeling parameters when no cost is provided
  - Change of new, replace, rehabilitate, or expand/upgrade

- Project allowed but EPA is unable to apply a cost
  Displayed as a red dollar sign 
  Edits or comments may include:
  - No cost or design parameters provided
  - Costs or design parameters deleted for lack of documentation
  - No cost provided and project cannot be modeled

- Project deleted
  Displayed as a red "x" 
  Edits or comments may include:
  - Project does not meet allowability criteria
  - Project not accompanied by sufficient documentation of need

9.0 DWINSA Website

To provide an efficient way of tracking and monitoring questionnaire responses for states and regions, EPA developed a 2007 DWINSA website. As the states return survey questionnaires to EPA, the responses will be entered into the 2007 Assessment database. In addition, some systems will be able to enter or upload their data to the website. All data on the website are protected by a password.

Systems in the census will have access to their own data. States will have access to all data for their state. EPA regional offices will have access to the data of states within their region.

9.1 Accessing the Website

To access the 2007 Assessment website, users need a computer with Netscape Navigator, Firefox, or Microsoft Internet Explorer web browser. The website home page is located at www.DWNeeds.com.

There are a number of important documents available on this page, which can be downloaded without logging into the website. These documents include:

- *Project Table for Data Upload* (XLS) – Microsoft Excel
- *Instructions for Upload of Data (PDF)* – Adobe Acrobat Reader
- *2007 DWINSA Questionnaire* (PDF) – Adobe Acrobat Reader
- *2007 DWINSA Questionnaire* (XLS) – Microsoft Excel
- *Additional Project Tables* (PDF) – Adobe Acrobat Reader
- *Lists of Codes* (PDF) – Adobe Acrobat Reader
- *2007 DWINSA Schedule* (PDF) – Adobe Acrobat Reader
- *2007 DWINSA Type of Need Dictionary with Documentation Policies* (PDF) – Adobe Acrobat Reader
- *Comment Codes Handout* (XLS) – Microsoft Excel
- *Frequently Asked Questions and Answers* (PDF)

A link to the Adobe Acrobat Reader website is also provided for users that need to download the reader to view files.

When users initially open the page, they will be taken to a login page, where they should enter the user name and password provided by EPA. If you do not have a user ID and password, contact the webmaster at webmaster@dwneeds.com. Systems that serve over 100,000 people can also obtain access to the website. Their user ID is their PWSID and their initial password is their state abbreviation. Once they log on, the user will be asked to change their password.

9.2 Home Page

After logging in, users will be taken to the 2007 Assessment Home Page. The home page contains various features to help users navigate their data on the website:

- Filters by project status.
  -  = Deleted projects
  -  = Accepted projects without cost
  - = Accepted projects with adjusted cost
  -  = Accepted projects with cost

> ***Note:*** *Filters apply to every page throughout the website.*

- Filters by system size (small, medium, large).
- A "quick find" option that allows users to search the database for a particular PWSID number and project number.
- Tabs at the top of the screen that users can click to browse the website.
  - Projects Page
  - System Stats
  - Progress Meter
  - Contacts
  - Hot List
  - Unread Messages
  - Log Out

Users can log out of the website by clicking on the "Log Out" tab. The following sections describe information that is provided on the remaining website pages.

9.3 Projects Page

The Projects Page shows all of the projects a user has access to and can be filtered by system size and project status (deleted, accepted without cost, accepted with adjusted cost, and accepted with cost). Note that users with access to multiple PWSIDs may have many screens of projects. If the user wants to limit the quantity of data viewed, the user can apply a filter. The projects can be sorted by the following categories by clicking on the appropriate column header:

- PWSID
- Project number (and project status)
- Date of last update
- Who last updated the project
- Unresolved messages (represented by a numerical code)
- EPA's response to the last modification (represented by a numerical code)
- State notes

Users can obtain details on specific projects from this page by clicking on specific PWSID numbers, project numbers, or other fields.

9.3.1 System View

By clicking on a specific PWSID number, the user can see all the projects submitted for that PWSID under System View. From this view, users with editor access can add new projects one at a time by clicking on the "Add New Project" link. There are five sub-tabs provided in this view, which are summarized in Exhibit 13. Note that this view is available from any page that provides PWSID links.

Exhibit 13: Information Provided by Sub-tabs in System View	
Projects Tab	Provides same information as the general Projects Page, but is limited to a specific PWSID number. Clicking on a project number will take users to the Details tab under Project View. Clicking on any other number will take users to the Message tab under Project View.
Details Tab	Provides information on the system's preliminary weight, survey received date, source, population, respondent information, state contact, and other basic data.
Tracking Tab	Lists important dates, such as date survey was received, ready for QA, and ready for data entry.
Projects Table Tab	Shows all information provided on the questionnaire, including type of need code, reason for need code, modeling parameters, cost estimate, and documentation code.
Upload Tab	Provides user with options for uploading data from an Excel spreadsheet and displays uploaded data and validation errors. Users can modify project data in the web-based data grid.

9.3.2 Project View

By clicking on a specific project number, unresolved message, or last EPA response, the user can obtain details about a project under Project View. There are two sub-tabs provided in this view, which are summarized in Exhibit 14. Note that this view is available from any page that provides links for project information.

Exhibit 14: Information Provided by Sub-tabs in Project View	
Messages Tab	Provides all comments on a given project. Each comment opens a dialog between the EPA contractor and the state. The state can respond to comments and request project modifications from this page.
Details Tab	Provides details on the project including project name, when it was last updated, unresolved comments, type of need code, reason for need code, modeling parameters, cost estimate, documentation code, and threads (i.e., messages from EPA or state). Users can browse through other projects and PWSID numbers using the function the bottom of the screen. User's may also edit this data given the appropriate user permissions.

9.4 System Stats Page

The System Stats Page shows the status of projects by PWSID number and can be filtered by system size. The list shows the preliminary weight of each system as well as the number of projects in each status category (deleted, accepted without cost, accepted with adjusted cost, and accepted with cost). The projects can be sorted by the following categories by clicking on the appropriate column header:

- PWSID
- Date received by EPA
- Preliminary weight
- Date of last update
- Number of projects in each project status category
- State notes

The page also contains links to detailed information and the message board for each system listed. Clicking on a specific PWSID number brings the user to System View, described in Section 9.3.1. By clicking on a project status icon ( ,,  ,or ), users can view all projects (in System View) that fall under that category (accepted, accepted with an adjusted cost, accepted without a cost, and deleted).

9.5 Progress Meter

The Progress Meter shows how the state's response rate is progressing in comparison with the national average and can be filtered by system size. Three meters are presented on this page to summarize a state's status both numerically and as a percentage:

1) **Response Meter –** Shows the number of surveys returned as compared to the state's expected progress.
2) **Accepted Projects Meter** – Shows the number of Accepted with Cost projects and Accepted with Adjusted Cost projects in the state compared to the national average.
3) **Adjusted Accepted Projects Meter** – Shows the number of Accepted with Cost projects and Accepted with Adjusted Cost projects in the state compared to the national average, but excludes duplicate projects.

9.6 Contacts

The Contacts section provides names, mailing addresses, phone numbers and e-mails for the following types of questions:

- How to use the website
- General survey questions
- Statistics, system lists, and logistics
- Problems with the website

The site also provides a link to a complete list of state and regional DWINSA contacts (in PDF format).

9.7 Hot List

The Project Hot List is a tool that allows users to flag projects that they are currently working on. When viewing the details of a project in project view, users have the option to add the project to the hot list by clicking on the plus-sign icon, available on the Projects tab and on the Hot List tab. To remove items from the hot list, click on the minus-sign icon, available on the Hot List tab.

9.8 Unread Messages

The Unread Messages section is used to alert users of comments or modifications that have been posted to projects that have not been read. Messages can be filtered by system size. To open an unread message, users should click on the envelope icon. To mark an unread message as read, users should click on the clipboard icon.

10.0 Direct Data Entry

For systems serving more than 100,000 people, the system or the state has the option of inputting data directly onto the website if they choose. There are three options for completing the 2007 Assessment questionnaire electronically:

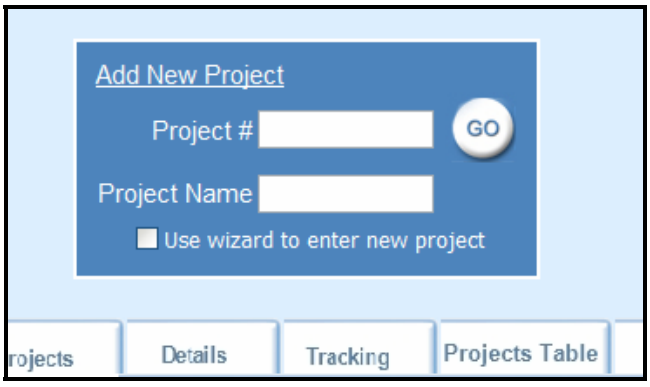
1) Enter information on the website project by project using a single page project data entry model described above in the project details tab.
2) Enter information on the website in a data grid (similar to an Excel spreadsheet) where multiple projects may be entered separately.
3) Upload an Excel spreadsheet into a web-grid, edit any project data values, and merge into the database using a 'wizard' approach.

Using an assigned password, systems will be able to access their own data on the website, and states will be able to access data for all systems in their state.

10.1 Single Page Project Data Entry

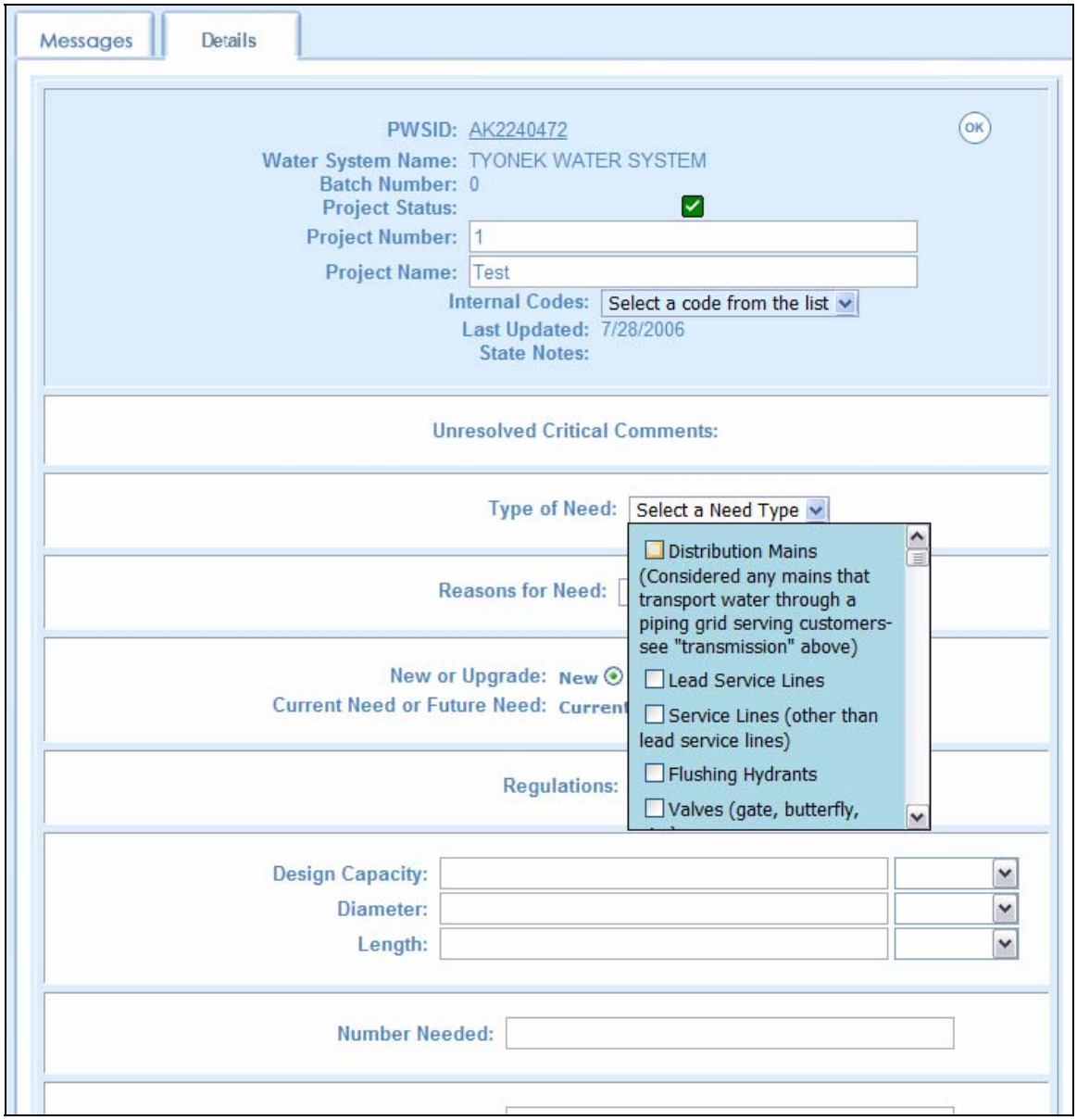
After the water system, state, or region user logs into the website, the user may enter their projects one at a time though the either of two single page project data entry option. To choose this option, the user must click on the "Add New Project" link under System View as shown in Exhibit 15.

Exhibit 15: Add new project function (page detail format)



The user enters a Project Number and Name, clicks "Go." This will take the user to the Project Details view where the user enters data through text entry and selection from a dropdown list. See Exhibit 16. Once complete, the user clicks on an upload button under the data entry section to submit the project. The data will undergo an automatic validation check and be added to the "Projects Table" tab under System view. Users can later edit the data by clicking on the pencil icon.

Exhibit 16: Single Page Project Entry

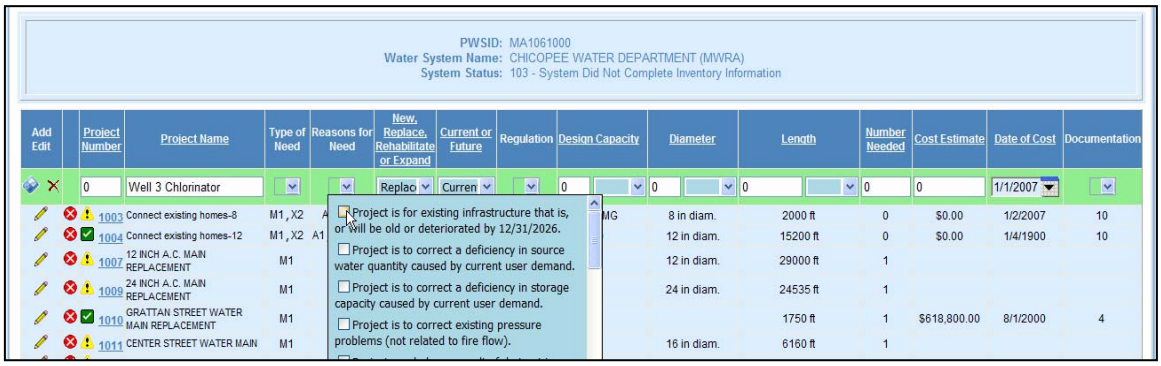


10.2 Project Grid Data Entry

The second option for entering project data is through a single grid (Exhibit 17). The grid is found under the "Projects Table" tab under Systems View. Users can add new rows for additional projects by clicking on the "Add New Row" link in the first row of the grid. The user enters a Project Number and Name. From there the user enters data through text entry and selection from a dropdown list as shown in Exhibit 17.

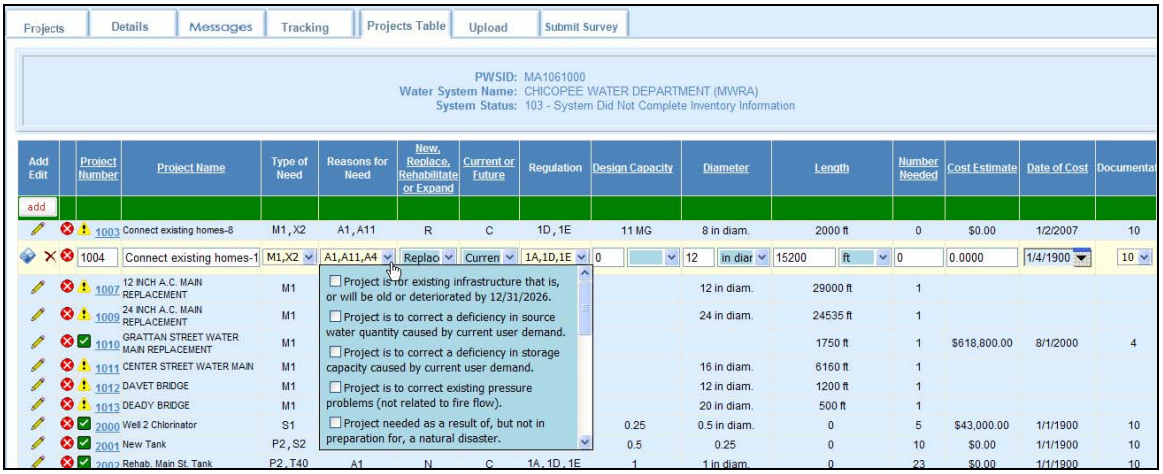
When the project is complete, the user completes the project by clicking the check box save icon at the beginning of the row. The project will undergo an automatic validation check.

Exhibit 17: Add new project function (grid option)



This is also a very helpful view for editing previously entered data as shown in Exhibit 18. For this function the user clicks on the pencil at the beginning of the row and the data in that row are opened to editing.

Exhibit 18: Data Grid Project Entry Screen Edit Function



10.3 Excel Spreadsheet

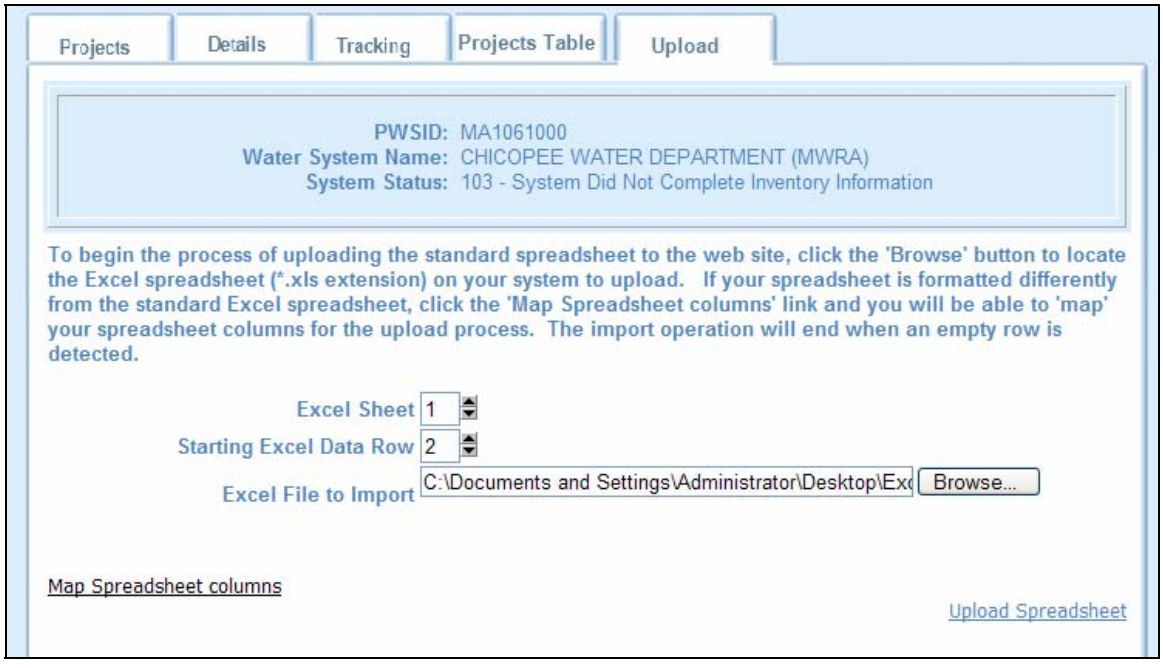
Systems or states may also enter data into an Excel spreadsheet and then upload the spreadsheet to the website. The user can use the formatted Excel spreadsheet provided on the login page of the website at www.DWNeeds.com. A password is not required to access the homepage of the website. The user can also use their own spreadsheet; however this option requires additional steps to map the spreadsheet to the website format.

10.3.1 Using EPA's spreadsheet

Once data has been entered onto the spreadsheet the user will save it to a location on their computer. They must then log onto the website and go to the "Upload" tab under System View. The uploading procedure for the Excel spreadsheet uses a wizard concept, where the first screen asks the user to browse to the location of the file on their computer.

The standard spreadsheet contains data on the first spreadsheet in the file and that the data begins in row #2. If this has been amended by the user, they can indicate which sheet and which row are appropriate on this screen (see Exhibit 19). If the Excel spreadsheet has more than one header row (e.g., the first row of data begins in the third or fourth row rather than the second row), or if the file has more than one sheet, the user can define which row has the first row with actual data (i.e., change number of header rows to 2 or 3) and which sheet contains the data.

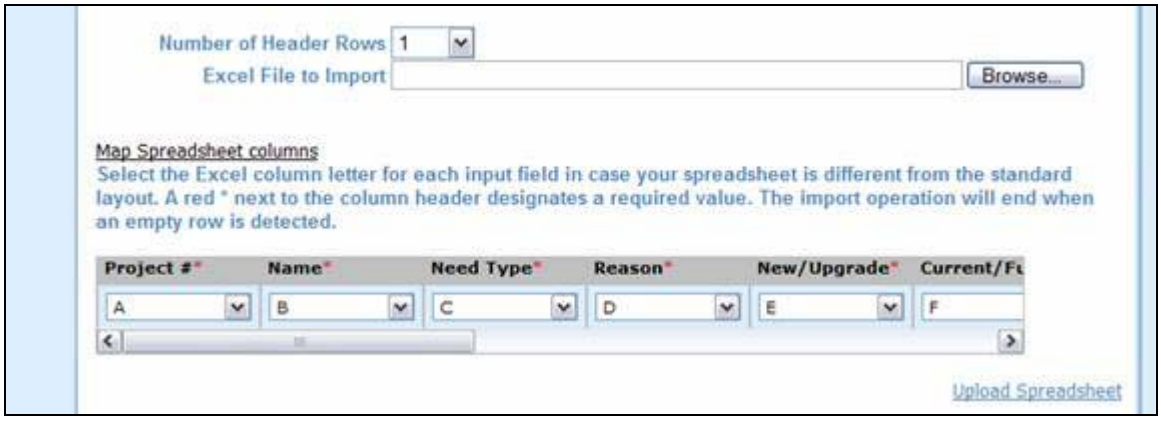
Exhibit 19: Excel Upload Wizard



10.3.2 Using an alternate spreadsheet

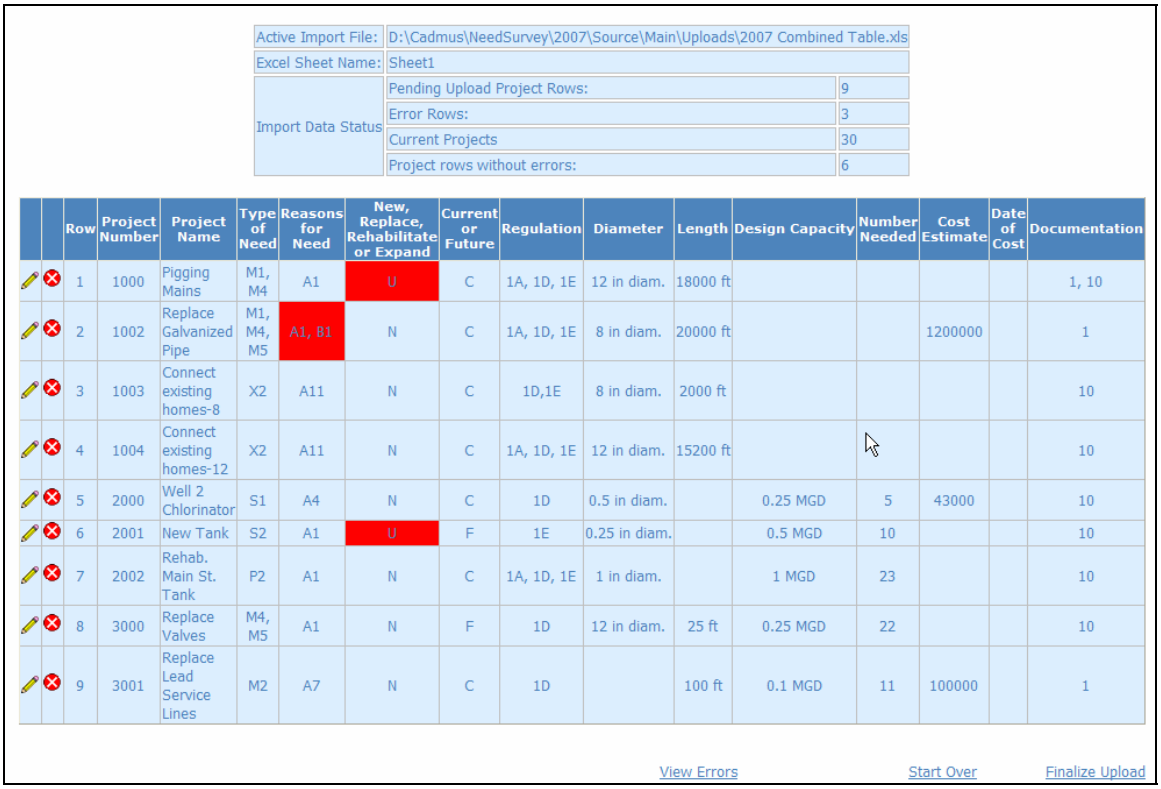
The website also provides a "Map Spreadsheet" button (Exhibit 19) which provides the user with the ability to upload data from a spreadsheet that is not in the format of the EPA spreadsheet or if the EPA spreadsheet has been modified substantially. This feature will "map" the spreadsheet to the format needed for upload. The hyperlink drops-down a mapping table that will allow the user to define their XLS spreadsheet layout (Exhibit 20).

Exhibit 20: Mapping Spreadsheet Columns



After uploading the spreadsheet, the data are automatically checked, and any errors detected during the automatic validation process will be highlighted in red (as shown in Exhibit 21).

Exhibit 21: Uploaded Sample Spreadsheet



Active Import File:	D:\Cadmus\NeedSurvey\2007\Source\Main\Uploads\2007 Combined Table.xls
Excel Sheet Name:	Sheet1
Import Data Status	
Pending Upload Project Rows:	9
Error Rows:	3
Current Projects	30
Project rows without errors:	6

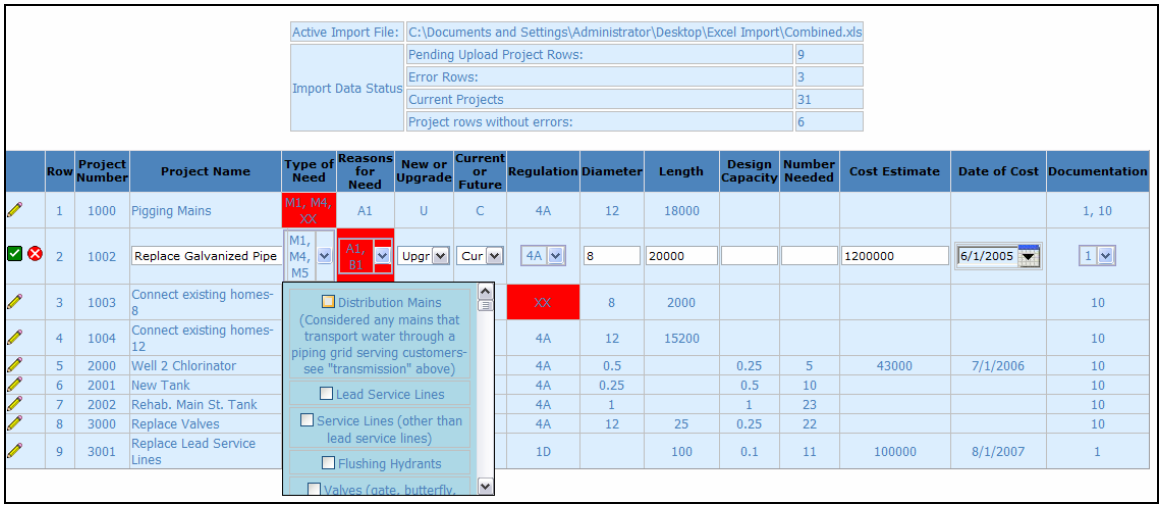
		Row	Project Number	Project Name	Type of Need	Reasons for Need	New, Replace, Rehabilitate or Expand	Current or Future	Regulation	Diameter	Length	Design Capacity	Number Needed	Cost Estimate	Date of Cost	Documentation
✎	✖	1	1000	Pigging Mains	M1, M4	A1	U	C	1A, 1D, 1E	12 in diam.	18000 ft					1, 10
✎	✖	2	1002	Replace Galvanized Pipe	M1, M4, M5	A1, B1	N	C	1A, 1D, 1E	8 in diam.	20000 ft			1200000		1
✎	✖	3	1003	Connect existing homes-8	X2	A11	N	C	1D,1E	8 in diam.	2000 ft					10
✎	✖	4	1004	Connect existing homes-12	X2	A11	N	C	1A, 1D, 1E	12 in diam.	15200 ft					10
✎	✖	5	2000	Well 2 Chlorinator	S1	A4	N	C	1D	0.5 in diam.		0.25 MGD	5	43000		10
✎	✖	6	2001	New Tank	S2	A1	U	F	1E	0.25 in diam.		0.5 MGD	10			10
✎	✖	7	2002	Rehab. Main St. Tank	P2	A1	N	C	1A, 1D, 1E	1 in diam.		1 MGD	23			10
✎	✖	8	3000	Replace Valves	M4, M5	A1	N	F	1D	12 in diam.	25 ft	0.25 MGD	22			10
✎	✖	9	3001	Replace Lead Service Lines	M2	A7	N	C	1D		100 ft	0.1 MGD	11	100000		1

View Errors Start Over Finalize Upload

The users can then:

- "View Errors," which will display only those rows with data errors.
- "Start Over," which will remove the pending data from the database and return the user back to the starting screen to identify an upload spreadsheet.
- "Finalize Upload," will merge to the database ONLY those rows that do not have errors and remove those rows from the pending upload table. Any error rows will continue to be displayed in the grid until corrected, or the user "Starts Over."
- Click on the "pencil" icon to put the row into Edit Mode (Exhibit 22) and allow the user to correct errors and change various data fields in the grid. When finished, clicking on the green button will re-validate the row and refresh the grid.
- Exit the site and return at a later time to this screen. Note that the data on the "Upload" tab is only temporary and must be finalized to be included in the "Projects Table" tab.

Exhibit 22: Uploaded Data in Edit



Active Import File:	C:\Documents and Settings\Administrator\Desktop\Excel Import\Combined.xls	
Import Data Status	Pending Upload Project Rows:	9
	Error Rows:	3
	Current Projects	31
	Project rows without errors:	6

	Row	Project Number	Project Name	Type of Need	Reasons for Need	New or Upgrade	Current or Future	Regulation	Diameter	Length	Design Capacity	Number Needed	Cost Estimate	Date of Cost	Documentation
	1	1000	Pigging Mains	M1, M4, XX	A1	U	C	4A	12	18000					1, 10
	2	1002	Replace Galvanized Pipe	M1, M4, M5	A1, B1	Upgr	Cur	4A	8	20000			1200000	6/1/2005	1
	3	1003	Connect existing homes-8					XX	8	2000					10
	4	1004	Connect existing homes-12					4A	12	15200					10
	5	2000	Well 2 Chlorinator					4A	0.5		0.25	5	43000	7/1/2006	10
	6	2001	New Tank					4A	0.25		0.5	10			10
	7	2002	Rehab. Main St. Tank					4A	1		1	23			10
	8	3000	Replace Valves					4A	12	25	0.25	22			10
	9	3001	Replace Lead Service Lines					1D		100	0.1	11	100000	8/1/2007	1

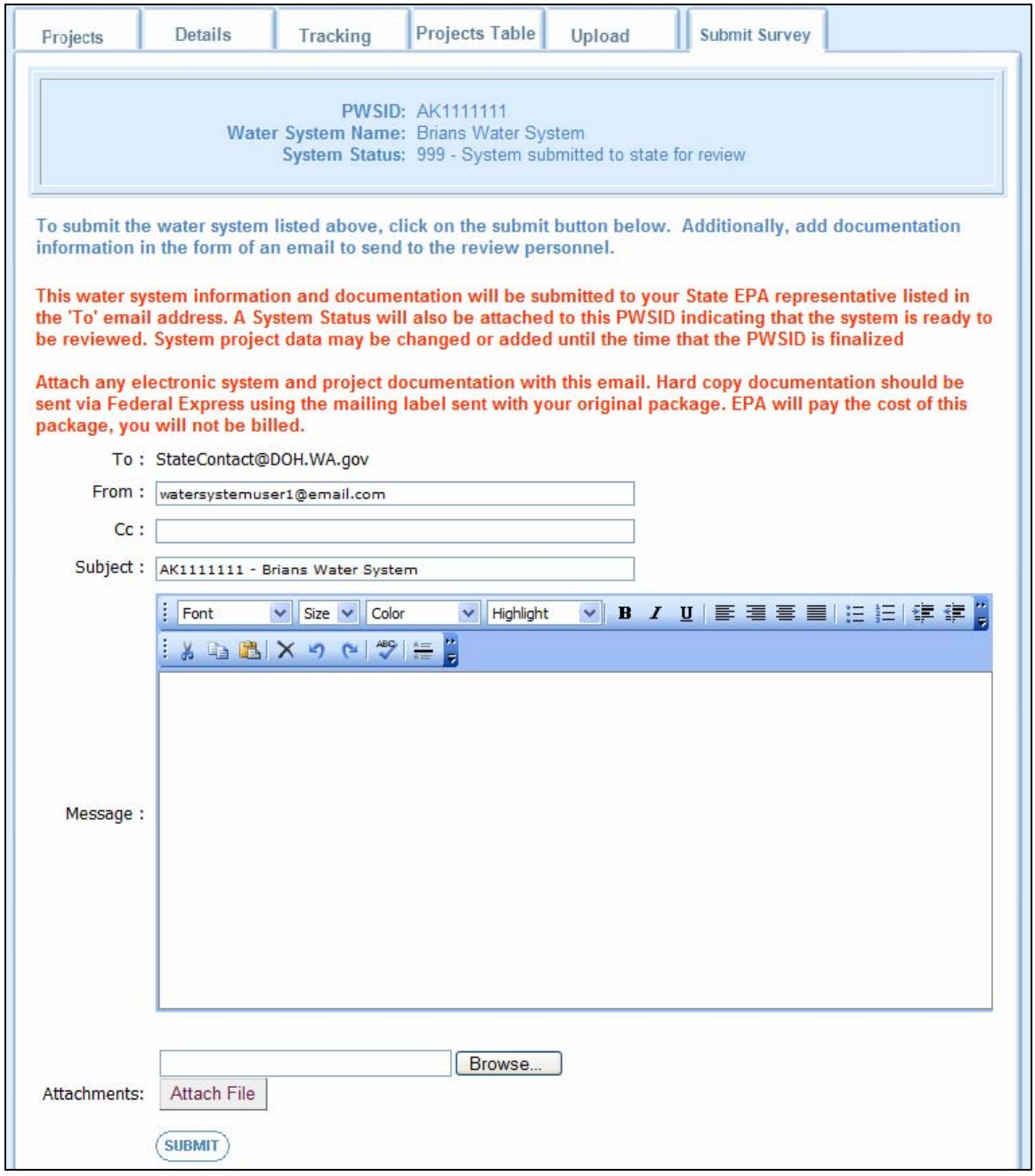
- Distribution Mains (Considered any mains that transport water through a piping grid serving customers-see "transmission" above)
- Lead Service Lines
- Service Lines (other than lead service lines)
- Flushing Hydrants
- Valves (gate, butterfly,

10.4 Upload of Data

10.4.1 Submittal from System to State

When logged in as a Water System user, a survey will be submitted to the state contact by clicking on the 'Submit Survey' tab. The submission form for a Water System user will display an email layout that allows the user to attach system and project documentation and message text to be passed on to the state contact.

Exhibit 23: Submitting a Survey and documentation to the State

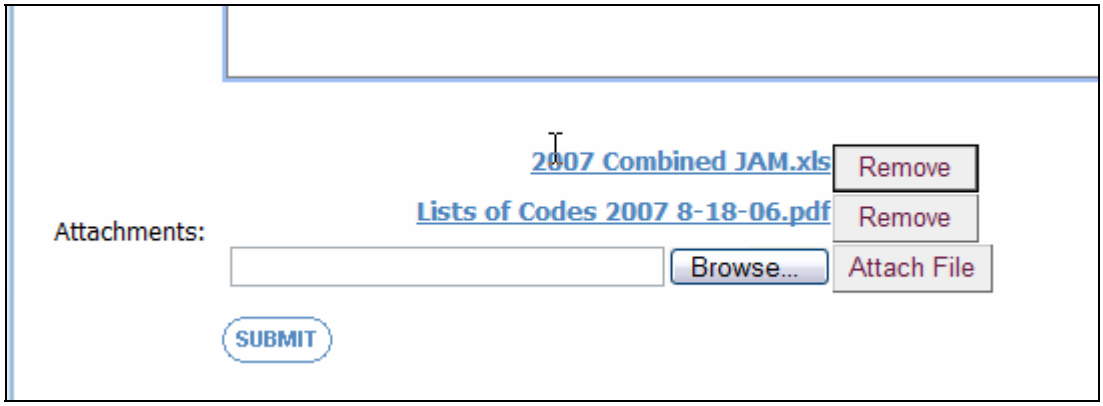


The email survey submission also allows multiple file attachments (and selected removal) to also be sent to the state contact. Note the attachments must be able to traverse destination email firewalls. For example, if you attach a file with an .EXE extension, the destination email system will most likely remove that attachment as a security violation.

You may wish to combine multiple files into a single Zip file (http://www.winzip.com/) to reduce size and ensure delivery through email firewalls.

Similar rules apply to emailing information and attachments via the DWNeeds website as in most any email system. The user must be cognizant of 'large' file attachments that may by rejected by the destination email system.

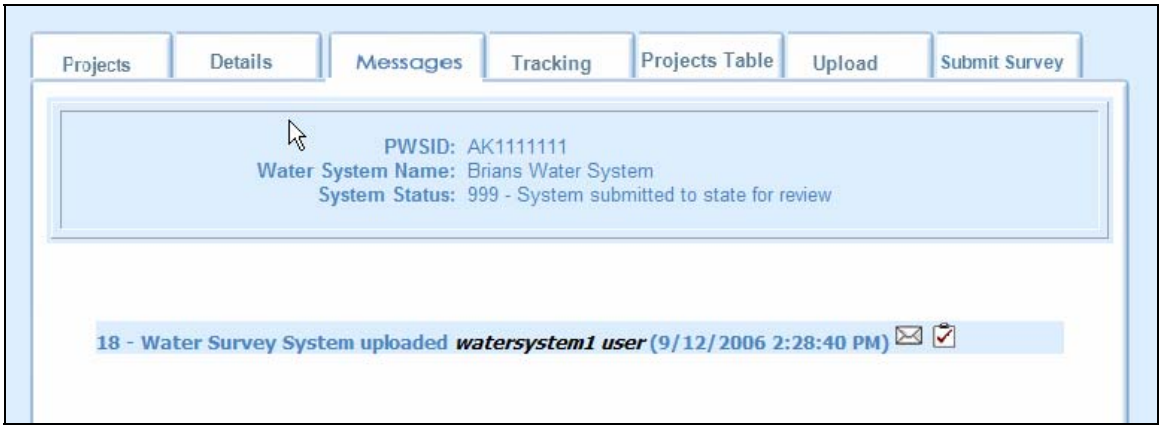
Exhibit 24: Email attachments



Once submitted, a message is created for the project and viewable under the Messages tab (See Exhibit 25 below) for a state user.

Any hard copy documentation should be sent via Federal Express using the mailing label sent with the Water System user's original package.

Exhibit 25: System messages available to State user



Additionally, the System Stats tab which shows a list of systems will have a date displayed for the system(s) submitted to the State.

Exhibit 26: System Stats

10.4.2 Submittal from State to EPA

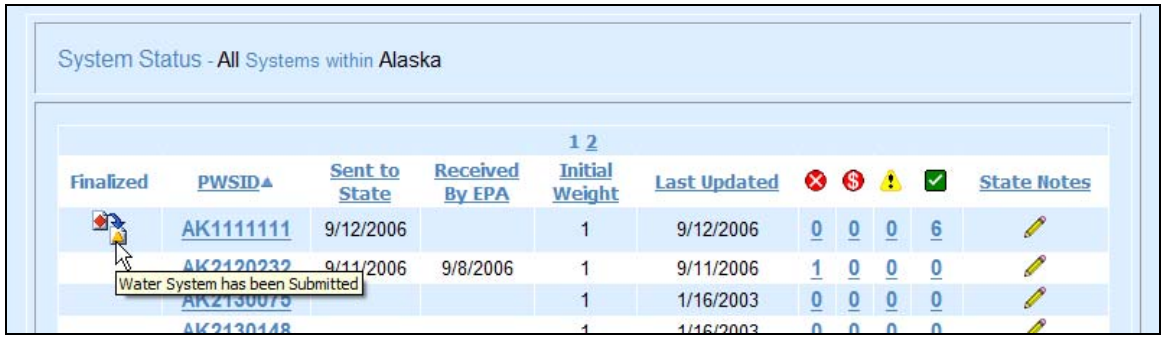
When logged in as a State User, the action of clicking on the 'Submit Survey' tab will submit the data to EPA. The submission form for a State user will display an email layout that allows the user to attach system and project documentation and message text to be passed on to EPA.

For a State user, any hard copy documentation should be sent to:

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

When a state user "submits" a submittal EPA will be notified that the data has been uploaded and documentation has been submitted or will be sent via hard copy. IMPORTANT: The action of a state user submitting data will result in the PWSID and project information being set to Read-Only status. From this point on, any changes must be made through the modification process.

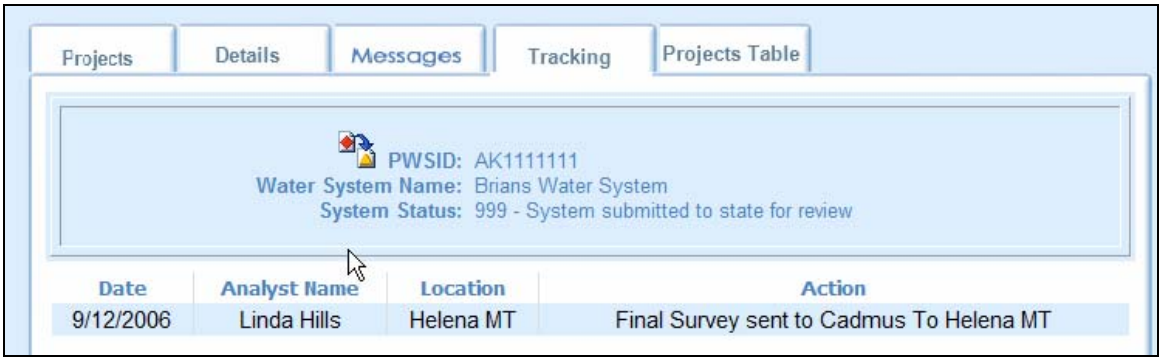
Exhibit 27: System Stats view of a 'Finalized' PWSID



When viewing the list of PWSIDs in the System Stats tab, the first column of the list will display an icon that indicates the corresponding system has been 'finalized' as shown in Exhibit 28.

Subsequent display of the finalized system will display this indication with a 'finalized' icon.

Exhibit 28: Tacking view of a 'Finalized' PWSID



10.5 2003 DWINSA Data

To help systems serving more than 3,300 people save time completing their surveys, EPA will export the information submitted for the 2003 DWINSA into the Excel spreadsheets. However, systems must ensure that these projects are still valid and provide up-to-date documentation of need and cost for each project. This information will be provided in an Excel workbook to each state. The workbook will have one worksheet per water system that was included in the 2003 database and is also selected for the 2007 DWINSA. The 2003 data will be adjusted to match the codes of the 2007 DWINSA. Systems will need to upload the data to the website using the procedure described in Section 8.3.4.

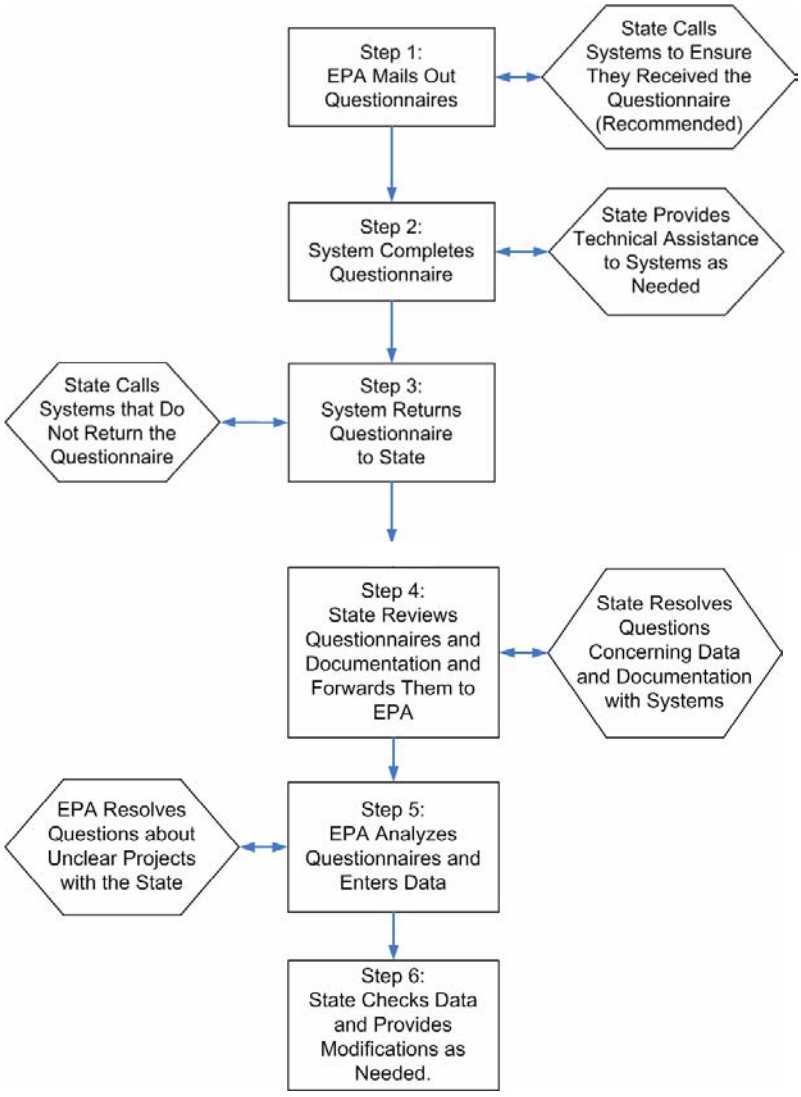
11.0 Data Flow and Schedules

The data flow involves mailing the 2007 DWINSA questionnaires, collecting data, and reviewing survey responses.

11.1 Data Flow for State-Regulated Systems

The data flow for the 2007 DWINSA is outlined in Exhibit 29 and applies to all CWSs regulated by the states that serve more than 3,300 people. The six steps outlined in the flow chart are described below.

Exhibit 29: DWINSA Data Flow for Systems Serving



Step 1: Mail the Questionnaire

The questionnaire packages will be assembled and mailed by the EPA contractor. States will decide if the questionnaire package should include an EPA cover letter, state cover letter, or both. The workgroup believes that systems may be more responsive to cover letters on state letterhead than letters on EPA letterhead. States also have the option of sending the questionnaires to systems directly. The 2007 DWINSA will use Federal Express to send the questionnaires to the water systems.

Step 2: System Completes Questionnaire

Each system is asked to complete the questionnaire and return the results to the state within 30 days. Technical assistance will be available from state contacts and through a toll-free Helpline. States can have a state contact name and phone number (and/or the toll-free helpline number) preprinted on the questionnaire.

Step 3: System Returns Questionnaire to State

EPA will provide a pre-addressed, prepaid Federal Express envelope for systems to use in returning the questionnaire and documentation to the state. If a water system does not return the questionnaire, the state is encouraged to work with the system to complete the questionnaire or complete the questionnaire and documentation for the system.

Step 4: State Reviews Questionnaire and Documentation

State personnel will review all questionnaires and documentation to ensure that needs are completely described and to verify that all projects are documented and coded correctly. The state can contact the EPA contractor with any questions. States should contact the systems to obtain missing information. States can generate documentation of need for projects that do not have adequate documentation. Examples of documentation of need for projects are included in the DWINSA Training Binder. See Appendix B for a sample questionnaire. States send completed questionnaires and documentation to the EPA contractor.

Step 5: EPA Analyzes Questionnaires and Enters Data

The EPA contractor will perform a second level of quality assurance by checking to see that all needs are documented and allowable, and that all costs are documented. Project coding will be verified and the questionnaire will be prepared for data entry. Data entry of project information will occur after EPA contractor review. Projects with inadequate documentation will be deleted, leaving only the project number, name, and type of need for reference. All changes to the questionnaires by the EPA contractor will be identified through the use of comment codes. The list of comment codes is included Appendix A of this guide.

Step 6: State Checks System and Project Status

Each state will have access to its own data through the www.DWNeeds.com website (see Section 9.0). If questions arise, states can contact the EPA contractor. States can also provide modifications for EPA contractor review through the website.

11.2 Project and Data Collection Schedules

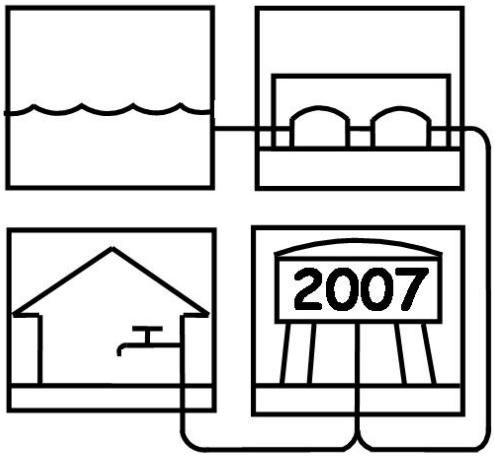
The schedule for completing the 2007 DWINSA is shown in Exhibit 29. To improve the efficiency of questionnaire review, EPA will ask that states return the questionnaires in a series of shipments, beginning in March 2007. This schedule will allow the EPA contractor to balance the workload, provide analysts sufficient time to review each questionnaire, help the state identify overarching problems early, and ensure that the Report to Congress is completed on time.

Exhibit 29: Schedule for Completing the 2007 DWINSA

Task	Date
Survey Design	January – June 2006
States Review and Correct Inventories	April – July 2006
Information Collection Request Submitted to OMB	August 2006
States Submit to EPA Contact Information to be Included on Return FedEx Labels	August 2006
Training Sessions for States and Regions	October – November 2006
Mail Out of Data Collection Instruments to Selected Systems	January 2006
Deadline Given to Systems to Return the Data Collection Instrument to States	March 2007
States Return 5 Questionnaires to EPA for Review and Comment	March 2007
1/3 of Sent Data Collection Instruments Returned by States to EPA	May 2007
2/3 of Sent Data Collection Instruments Returned by States to EPA	July 2007
All Sent Data Collection Instruments Returned by States to EPA	October 20, 2007
No New Projects Will Be Accepted by EPA	October 21, 2007
No Modifications of Submitted Projects Will Be Accepted by EPA	January 20, 2008
All Information in the Data System Finalized	March 2008

Appendix A. Lists of Codes

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.

11-21-2006

Instructions for Each Column on the 2007 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.
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** 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 12/31/2026)
Regulation	If the project is needed to maintain or obtain compliance with a regulation, secondary MCL, or State requirement refer to List 3 in the Lists of Codes and enter the code that applies. Enter '4A' if no regulation 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. ***Please enclose the appropriate pages of need and cost documentation, identified by project number.***

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

Column Title	***Instructions***
Design Capacity	On the *Source*, *Treatment*, *Storage, and Pumping* 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 *Transmission and Distribution* 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.
Length of Pipe	On the *Transmission and Distribution* project table enter the length of pipe (in feet) that must be upgraded, replaced, or installed as new for each diameter identified in the previous column.
Size	On the *Backflow Prevention Devices/Assemblies, Hydrants, Service Lines, Valves, Water Meter, and Other* project table enter the diameter (in inches) for infrastructure that must be upgraded, 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 *Source*, *Treatment*, *Storage, and Pumping* project table indicate the total number of components if you have multiple identical projects at the same capacity (e.g., rehabilitate 10 wells each with a 0.5 MGD capacity). On the *Backflow Prevention Devices/Assemblies, Hydrants, Service Lines, Valves, Water Meter and Other* project table indicate the total number of components. For example, a future project to install four 8" diameter valves would include the size (diameter in inches) of the valves and the number "4" would be entered as the 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, etc.).
- **What is "survey-generated documentation?"** – Documents generated specifically for the survey written by the system or the state.

LIST 1 – TYPE OF NEED

Code	*Type of Need*
RAW/UNTREATED WATER SOURCE	
R1	Well (including pump and appurtenances, not including a well house)
R2	Well Pump
R3	Well House (may include a chemical feed room)
R4	Eliminate Well Pit
R5	Abandon Well
R6	*Aquifer Storage and Recovery Well* [1]
R7	*Surface Water Intake* [1]
R8	Raw Water Pump
R9	Off-Stream Raw Water Storage
R10	Spring Collector
R11	De-stratification
TREATMENT: *Disinfection*	
T1	Chlorination
T2	Chloramination
T3	Chlorine Dioxide
T4	Ozonation
T5	Mixed Oxidant Type Equipment
T6	Ultraviolet Disinfection
T7	Contact Basin for CT
T8	Dechlorination of Treated Water
T9	Chlorine Gas Scrubber
TREATMENT: *Complete Plants (N/R/E require independent documentation)*	
T10	*Conventional Filter Plant (includes CAC technologies)* [2]
T11	*Direct or In-line Filter Plant* [2]
T12	*Slow Sand Filter Plant* [2]
T13	*Diatomaceous Earth Filter Plant* [2]
T14	*Membrane Technology for Particulate Removal* [2]
T15	*Cartridge or Bag Filtration Plant* [2]
T16	*Lime Softening* [2]
T17	*Reverse Osmosis* [2]
T18	*Electrodialysis* [2]
T19	*Activated Alumina* [2]
T20	*Manganese Green Sand (or other oxidation/filtration technology)* [2]
T21	*Ion Exchange* [2]
T22	*Groundwater Chemical-feed* [2]
TREATMENT: *Other Components / Equipment / Processes*	
T30	Zebra Mussel Control
T31	Corrosion Control (chemical addition)
T32	Powdered Activated Carbon
T33	Aeration
T34	Sequestering for Iron and/or Manganese

[1] New installation of ASR well or surface water intake requires independent documentation of need (refer to definition on page 2).

[2] New installation, replacement, or expansion/upgrade of a complete plant requires independent documentation of need (refer to definition on page 2). Rehabilitation does not require independent documentation of need.

LIST 1 — TYPE OF NEED (cont.)

Code	*Type of Need*
T35	Chemical Feed
T36	Chemical Storage Tank
T37	Fluoride Addition
T38	Presedimentation Basin
T39	Sedimentation/Flocculation
T40	Granular Activated Carbon
T41	Membrane Filtration (not complete plant)
T42	Media Filters
T43	Waste Handling/Treatment: Mechanical (not included in another project)
T44	Waste Handling/Treatment: Nonmechanical or Connection to a Sanitary Sewer (not included in another project)
T45	Type of Treatment Unknown
T46	Other (Please include an explanation)
TRANSMISSION: ***(Any mains that transport raw water to the treatment plant, or treated water from the plant to the distribution system grid)***	
X1	Raw Water Transmission
X2	Finished Water Transmission
DISTRIBUTION	
M1	Distribution Mains (Any mains that transport water through a piping grid serving customers - see "transmission" above)
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
FINISHED/TREATED WATER STORAGE	
S1	Elevated Finished/Treated Water Storage
S2	Ground-level Finished/Treated Water Storage
S3	Hydropneumatic Storage
S4	Cisterns
S5	Cover for Existing Finished/Treated Water Storage
PUMP STATION AND FINISHED WATER PUMP	
P1	Finished Water Pump
P2	Pump Station (booster or raw water pump station-may include clearwell, pumps, housing)
OTHER INFRASTRUCTURE NEEDS	
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	Security: Fencing
W6	Security: Other Physical (lights, wall, manhole locks, other locks)
W7	Security: Electronic/Cyber (computer firewall, SCADA, closed circuit TV)
W8	Security: Monitoring Tools (used to identify anomalies in process streams or finished water)
W9	Security: Other Security (describe in documentation)
W10	Other (Please include an explanation)

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 12/31/2026.
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 **solely** for meeting expected future population growth or for fire flow are unallowable.

LIST 3 – REGULATION OR REQUIREMENT

Code	*Regulation or Requirement*
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 costs associated with covering or treating uncovered finished water reservoirs required by Long Term 2 Enhanced Surface Water Treatment Rule)
1B	Total Coliform Rule
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 running annual average)
1G	Other Regulated VOCs, SOCs, IOCs, or Radionuclides (excludes Radon)
OTHER REQUIREMENTS	
2A	Secondary Contaminants (e.g., iron, taste and odor, and color)
2B	State Requirements
PROPOSED AND RECENTLY PROMULGATED SDWA REGULATIONS	
3A	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:
	• Stage 2 Disinfectants/Disinfection Byproducts Rule (for compliance with the 80 µg/L for TTHMs and 60 µg/L for HAA5s as a locational running annual average)
	• Long Term 2 Enhanced Surface Water Treatment Rule (other than costs to cover or treat uncovered finished water reservoirs)
	• Radon Rule
	• Ground Water Rule
If No Regulation Code Applies	
4A	Use this code if none of the codes above apply (project is in furtherance of other objectives of the Safe Drinking Water Act)

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 towards 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:** Brief description and statement of need written by state.
11	**Written by System:** Brief description and statement of need written by system.

Appendix B. DWINSA Questionnaire

Appendix C. Comment Codes

Comments for States			
Code		Printed Comments	Website Status Code
		Overall Questionnaire: Comments for the overall questionnaire should be listed as project number "0000"	
Overall Questionnaire	80	System reported as inactive.	Informational
	82	System reported as a federal facility**.** It will not be included in the 2007 Assessment.	Informational
	84	System reported as inactive due to consolidation with another system.	Informational
	86	System reported as a noncommunity water system.	Informational
	88	System consolidating with another system after Jan. 1, 2007.	Informational
	90	System reported no needs.	Informational
	92	System not participating.	Informational
	94	System needs reported with another system.	Informational
	98	Correction made to system Information (name, address, ownership, population, connections, capacity or source)	Informational
		Allowability	
Allowability	100	Project accepted as submitted with no changes.	Accepted
	110	Project is recorded as unallowable (general).	Deleted
	112	*Portion* of project is recorded as unallowable (general).	Change Impacts Cost
	114	Project is recorded as unallowable because it appears to be solely for future growth.	Deleted
	116	*Portion* of project is recorded as unallowable because it appears to be solely for future growth.	Change Impacts Cost
	118	Project is recorded as unallowable because it appears to be solely for fire protection.	Deleted
	120	*Portion* of project is recorded as unallowable because it appears to be solely for fire protection.	Change Impacts Cost
	122	Project is recorded as unallowable because it appears that construction had begun by 1/1/07.	Deleted
	124	*Portion* of project is recorded as unallowable because it appears that construction had begun by 1/1/07.	Change Impacts Cost
	126	Project is recorded as unallowable because it appears to be solely for O&M.	Deleted
	128	*Portion* of project is recorded as unallowable because it appears to be solely for O&M.	Change Impacts Cost
	130	Project is recorded as unallowable because it appears to be solely for obtaining water rights.	Deleted
	132	*Portion* of project is recorded as unallowable because it appears to be solely for obtaining water rights.	Change Impacts Cost
	134	Project is recorded as unallowable because it appears to be solely for land acquisition.	Deleted
	136	*Portion* of project is recorded as unallowable because it appears to be solely for land acquisition.	Change Impacts Cost
	138	Project is recorded as unallowable because it appears to be solely for conducting studies.	Deleted

	140	*Portion* of project is recorded as unallowable because it appears to be solely for conducting studies.	Change Impacts Cost
	142	Project is recorded as unallowable because it appears to be solely for demolition of abandoned facilities.	Deleted
	144	*Portion* of project is recorded as unallowable because it appears to be solely for demolition of abandoned facilities.	Change Impacts Cost
	146	Project is recorded as unallowable because it appears to be solely for improving appearances.	Deleted
	148	*Portion* of project is recorded as unallowable because it appears to be solely for improving appearances.	Change Impacts Cost
	150	Project is recorded as unallowable because it appears to be solely for interest payments.	Deleted
	152	*Portion* of project is recorded as unallowable because it appears to be solely for interest payments.	Change Impacts Cost
	154	Project is recorded as unallowable because it appears that more than one project meets the same need.	Deleted
	156	*Portion* of project is recorded as unallowable because it appears that more than one project meets the same need.	Change Impacts Cost
	158	Project is recorded as unallowable because it appears to be solely for acquisition of infrastructure.	Deleted
	160	*Portion* of project is recorded as unallowable because it appears to be solely for acquisition of infrastructure.	Change Impacts Cost
	162	Project is recorded as unallowable because it appears to be solely for improving efficiency.	Deleted
	164	*Portion* of project is recorded as unallowable because it appears to be solely for improving efficiency.	Change Impacts Cost
	166	Project is recorded as unallowable because it appears to be a non-capital infrastructure need.	Deleted
	168	*Portion* of project is recorded as unallowable because it appears to be a non-capital infrastructure need.	Change Impacts Cost
	170	Project is recorded as unallowable because documentation did not indicate that existing homes to be connected currently have an inadequate supply.	Deleted
	172	*Portion* of project is recorded as unallowable because documentation did not indicate that existing homes to be connected currently have an inadequate supply.	Change Impacts Cost
	174	Project appears to be a need for source water protection.	Deleted
	176	Project is recorded as a raw water reservoir or dam-related need.	Deleted
	178	Project deleted by state or system.	Deleted
	180	Project is recorded as unallowable because it appears to not be the responsibility of the PWS.	Deleted
	182	*Portion* of project is recorded as unallowable because it appears to not be the responsibility of the PWS.	Change Impacts Cost
	184	Project is deleted because it is driven solely by a non-water-related issue such as highway relocation	Deleted
	186	*Portion of* project is deleted because it is driven solely by a non-water-related issue such as highway relocation	Change Impacts Cost
	188	Project is deleted because all pipe projects exceed 0.5% per year. Documented only with survey-generated documentation.	Deleted
	190	Portion of project is deleted because all pipe projects exceed 0.5% per year. Documented only with survey-generated documentation.	Change Impacts Cost

	192	Project deleted because no total pipe amount reported for system. Documented only with survey-generated documentation.	Deleted
	194	Portion of project deleted because no total pipe amount reported for system. Documented only with survey-generated documentation.	Change Impacts Cost
		Documentation of Need	
Documentation of Need	200	Project is deleted because of inadequate documentation of need (general).	Deleted
	202	*Portion* of project is deleted because of inadequate documentation of need (general).	Change Impacts Cost
	204	Project is deleted because of inadequate documentation of need (documentation is over 4 years old).	Deleted
	206	*Portion* of project is deleted because of inadequate documentation of need (documentation is over 4 years old).	Change Impacts Cost
	208	Project is deleted because of inadequate documentation of need (no signature or date).	Deleted
	210	*Portion* of project is deleted because of inadequate documentation of need (no signature or date).	Change Impacts Cost
	212	Project is deleted because independent documentation required, but none submitted.	Deleted
	214	Portion of project is deleted because independent documentation required, but none submitted.	Change Impacts Cost
	216	Project is deleted because weight of evidence not met, but none submitted.	Deleted
	218	Portion of Project is deleted because weigh of evidence not met, but none submitted.	Change Impacts Cost
		Included Elsewhere	
Included Elsewhere	220	Project is deleted because it is reported on another system's questionnaire.	Deleted
	222	*Portion* of project is deleted because it is reported on another system's questionnaire.	Change Impacts Cost
	224	Project is deleted because it appears to be included in another project based on the documentation.	Deleted
	226	*Portion* of project is deleted because it appears to be included in another project based on the documentation.	Change Impacts Cost
	228	Project is deleted because it is now lumped with another project.	Deleted
	230	*Portion* of project is deleted because it is now lumped with another project.	Change Impacts Cost
	240	Project is deleted because this type of need is allocated to another system due to the consolidation of systems.	Deleted
	242	*Portion* of project is deleted because this type of need is allocated to another system due to the consolidation of systems.	Change Impacts Cost
	244	Project was deleted because it will be included in the cost modeling of another type of need.	Deleted
	246	*Portion* of project was deleted because it will be included in the cost modeling of another type of need.	Change Impacts Cost
	248	Project is deleted because it appears the interconnection will be a shared cost with the other system(s).	Deleted
	250	*Portion* of project is deleted because it appears the interconnection will be a shared cost with the other system(s).	Change Impacts Cost

		Unlumping	
Unlumping	270	Project was unlumped to capture cost information for modeling parameters.	Informational
	272	Project was unlumped to allocate costs to type of need (T&D, Storage, etc.).	Informational
	274	Project was unlumped to allocate costs by regulation.	Informational
	276	Project was unlumped so project costs can be modeled.	Informational
	278	Project was created by unlumping another project so costs can be modeled.	Informational
	280	Project was unlumped to separate components (general).	Informational
	282	Project is deleted because it is now unlumped into other projects.	Deleted
		Lumping	
Lumping	290	Project was lumped (now includes other projects) (general).	Informational
	292	Project was lumped (now includes other projects) to allow use of cost data.	Informational
	294	When modeling costs, this project will include other projects.	Informational
		Project Cost	
Project Cost	300	Cost will be included as documented or modeled as documented.	Cost Accepted
	302	Project cost will not be included unless additional documentation of total cost or modeling parameters are provided (no cost or design capacity).	Accepted But No Cost
	304	Project cost will not be included unless additional documentation of total cost or modeling parameters are provided (no date for cost estimate and no modeling parameters).	Accepted But No Cost
	306	Project cost will not be included unless additional documentation of total cost or modeling parameters are provided (cost estimate is over 10 years old and no modeling parameters).	Accepted But No Cost
	308	Project cost will not be included unless additional documentation of total cost is provided (EPA cannot model this cost).	Accepted But No Cost
	310	Project cost will not be included unless additional documentation of total cost or modeling parameters are provided. Project is unlumped to list components.	Accepted But No Cost
	312	Reported project cost will not be used because of lack of documentation, but costs can be modeled. No additional documentation is needed.	Change Impacts Cost
	314	Project costs for future regulations are modeled based on data from Regulatory Impact Analyses and applied to all community water systems.	Deleted
	316	*Portion* of project cost will not be included because cost documentation does not support reported cost.	Change Impacts Cost
	318	Project cost will not be included unless additional documentation of total cost or modeling parameters are provided.	Accepted But No Cost

		Changes to Match Documentation	
Changes to Match Documentation	320	Information changed to match documentation may also affect modeled costs.	Change Impacts Cost
	322	Information changed to match documentation (general).	Informational
	324	Documentation type changed to match documentation.	Informational
	326	Type of need changed to match documentation.	Informational
	328	Description of project (new or rehab) changed to match documentation.	Informational
	330	Description of project (current or future need) changed to match documentation.	Informational
	332	Regulation changed to match documentation.	Informational
	334	Reason for Need changed to match documentation.	Informational
	336	Cost estimate changed to match documentation.	Change Impacts Cost
	338	Date of cost estimate changed to match documentation.	Informational
	340	Design Capacity or Modeling parameter data changed to match documentation.	Change Impacts Cost
	342	No documented cost or modeling parameters given; modeling parameters estimated based on documentation.	Change Impacts Cost
	344	Modeling parameters given as a range; the lower number was recorded.	Change Impacts Cost
	346	Changes made to the project impact the project's cost. (use only if needed)	Change Impacts Cost
	348	Modeling parameters changed or deleted; EPA will use cost provided. (use only if needed)	Cost Accepted
	350	Project moved to appropriate table - project number changed.	Informational
	352	Type of Need Changed - Treatment technology changed to the Best Available Technology for the contaminant of concern.	Change Impacts Cost
		Revised Documentation	
Revised Documentation	400	Project is now included based on additional/revised documentation.	Accepted
	402	*Portion* of project is now included based on additional/revised documentation.	Change Impacts Cost
	404	Project cost or modeling information is now included based on additional/revised documentation.	Cost
	406	Information changed to match additional/revised documentation.	Informational
	408	Cost estimate changed to match additional/revised documentation.	Change Impacts Cost
	410	This project was added based on additional/revised documentation provided with this water system survey.	Informational
	412	Additional/revised documentation did not clarify that project is allowable.	Informational
	414	Additional/revised documentation did not provide acceptable cost data or modeling parameters.	Informational
	416	Review of additional/revised documentation did not seem to support a revision to data.	Informational
	420	This issue which was affecting the allowability of this project has now been corrected and cleared. However there may be other issues affecting the allowability of this project. (Pair w/ another delete code - not a lump code)	Accepted

	430	This issue which was affecting the cost or modeling of this project has now been corrected and cleared. However there may be other issues affect the cost or modeling of this project. (Pair w/ a Ncost or Acost code.)	Cost Accepted
	444	The disallowed portion of this project has now been allowed based on revised documentation.	Cost Accepted
	500	Modification message constituted a question, no reply available.	Informational
	502	Modification message constituted a comment, no reply needed.	Informational
	510	The modification to this project included additional information that constituted a new project. The new project information will not be added because the deadline for new projects has passed.	Informational
	512	The modification submitted for this project was submitted past the deadline for new modifications. As a result, no changes will be made to this project.	Informational
	514	Modification has already been considered for this project. No further modifications will be accepted.	Informational
	604	Project cost or modeling parameters now changed based on modification of another project (will be paired with 336, 340, 342, 312, 302, 308, 348)	Informational
	606	Project information now changed based on modification of another project (will probably be paired with 320, 326, 328, 330, 332, 334)	Informational
	608	Cost estimate now deleted based on modification of another project (will probably be paired with 312, 302, 308)	Informational
	612	Project is now deleted based on modification of another project (will be paired with a delete code)	Informational
	700	A correction was made to the project after the data entry period closed. See accompanying code for more details.	Informational