

Evaluation of the Drinking Water and Clean Water Infrastructure Tribal Set- Aside Grant Programs

Final Report – Appendices

Promoting Environmental Results
←—————→
Through Evaluation

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APPENDIX A. DWIG-TSA AND CWISA PROGRAM EVALUATION LOGIC MODEL

Goal of Programs: To improve access to drinking water and basic sanitation in Indian country and to improve compliance of community water systems with applicable health-based standards.

INPUTS	ACTIVITIES	OUTPUTS	SHORT TERM OUTCOMES*	MEDIUM TERM OUTCOMES* +	LONG TERM OUTCOMES*
<p>EPA Inputs</p> <ul style="list-style-type: none"> EPA HQ Staff 1.5 FTE DW 1.0 FTE CW EPA Regional Staff Program Guidances (CWA, SDWA, EPA HQ Guidance, EPA Regional Guidance, ARRA Guidance) Information on Infrastructure Need: IHS SDS List Drinking Water Infrastructure Needs Survey Applications / Response to Regional Solicitations Other Regional Information and Knowledge Program Funding from Congress <p>Other Inputs</p> <ul style="list-style-type: none"> IHS Staff (HQ and Area) Tribal Staff 	<p>HQ Program</p> <ul style="list-style-type: none"> Set program goals and mission Allocate funding according to formula/ need Collect / analyze project data ARRA IA Administration Monitor and report on measures <p>Regional Programs</p> <ul style="list-style-type: none"> Project solicitations, ranking, & selection Provide funding Monitor and report on project progress Consult with Tribes and IHS to confirm accuracy of need <p>IHS and Tribes</p> <ul style="list-style-type: none"> Submit applications Implement projects and report on progress Conduct Tribal Needs Survey and annual summary of needs 	<p>HQ Program</p> <ul style="list-style-type: none"> Funding to Regions Reports on program progress for accountability reports Annual Guidances <p>Regional Programs</p> <ul style="list-style-type: none"> Ranked list and selected projects Number of projects funded Reports on project and program progress to HQ through tracking spreadsheets, etc. Suggested changes or additions to SDS List <p>IHS and Tribes</p> <ul style="list-style-type: none"> Project Work plans Project outputs (e.g., changes in deficiency levels, new infrastructure) Reports on project progress to EPA Regions (through reports or STARS) Changes to SDS list based on input 	<ul style="list-style-type: none"> Regions fund projects that best address program goals and tribal needs (Regional project selection information) HQ funds Regions with highest demonstrated programmatic need on tribal lands (EPA Allocation Formula) 	<ul style="list-style-type: none"> Through FY2011, in coordination with other federal agencies, provide safe drinking water access to 100,700 AI/AN homes and basic sanitation access to 52,300 AI/AN homes (STARS) By 2011, 86 percent of the population in Indian country served by CWSs will receive drinking water that meets all applicable health-based drinking water standards (SDWIS) By 2015, in coordination with other federal agencies, reduce by 50 percent the number of homes on tribal lands lacking access to safe drinking water and access to basic sanitation (STARS) 	<ul style="list-style-type: none"> 100 percent of the population in Indian country served by PWSs receives water that is compliant with the NPDWRs (SDWIS) Full access to basic sanitation to serviceable homes in Indian country (STARS)

* Data Source for measuring outcome in parentheses; + These medium-term outcomes reflect the programs' strategic measures identified in 2010 in the *FY2011-2015 EPA Strategic Plan*, but also include the strategic targets from the *FY2006-2011 EPA Strategic Plan*, for historical purposes.

APPENDIX B. INTERVIEW GUIDES

Common Introduction: A Note to Interviewees

A Ross & Associates evaluator will ask the questions in this guide during your telephone interview. The interview is not intended to be a test of your knowledge, and you do not need to prepare your responses in advance of the interview. If you have any questions about the interview or evaluation, please contact Anna Williams or Amy Wheelless, Ross & Associates, by phone at 206-447-1805 or by email at anna.williams@ross-assoc.com / amy.wheelless@ross-assoc.com.

The interviews will be anonymous—the evaluators will not be sharing our notes or attributing comments to particular individuals. However, we will be identifying trends and themes, and may give noteworthy examples from the different organizational perspectives (primarily EPA, IHS, and tribal staff). For this reason, and given the small number of people involved at EPA with these programs and who will be interviewed, it may be possible in some instances to deduce who shared what views.

Unless noted otherwise, the questions below are referring to the typical annual selection process, and project selected through that process, not the ARRA projects or process.

EPA Headquarters

Program Implementation

1. Please describe your role with EPA and its tribal water infrastructure grant programs.
2. As you understand it, please briefly describe EPA Headquarters's communication and coordination with the following parties around project selection, management, implementation, reporting, etc.
3. EPA Regions
4. IHS Area Offices
5. IHS Headquarters
6. Tribes
7. Other (e.g., other agencies)
8. Are there ways in which you think communication and coordination could improve with the parties listed above for these infrastructure grant programs?
9. Has the ARRA program implementation differed in ways that you think would enhance or inhibit project/program performance? Are there insights or lessons from the ARRA process that can inform, or set an example, for the more routine annual program implementation?

Program Achievements and Performance Measurement

10. For the questions below, please refer to Attachment I, which lists EPA's historic and current program strategic goals and measures.
11. Do you think that the "real story" of progress and achievements enabled by the DWIG-TSA and CWISA programs is accurately reflected by the nationally reported strategic targets?
12. If not, why not?

13. Which, if any, of the following factors do you think could be influencing EPA's ability to help meet the water infrastructure needs in Indian Country?
- › EPA mandate, scope, and regulatory authority (e.g., relative to IHS's)
 - › Funding levels (e.g., overall project funding, funding provided by EPA, funding provided by community itself)
 - › Project duration
 - › Accuracy, completeness, and currency of information on infrastructure needs in Indian Country
 - › Accuracy, completeness, and currency of information in the IHS STARS system (e.g., deficiency levels, SDS ranking)
 - › Tribal capacity
 - › Operation and maintenance costs associated with infrastructure projects
 - › Grant type (interagency agreement or direct grant)
 - › Population density (people per square mile)
 - › Landscape / ecosystem factors
 - › Implementation of new rules
 - › Type of infrastructure project; i.e., new/replacement and centralized/decentralized
 - › Age of existing infrastructure
 - › Role of existing guidelines (e.g., helping or hindering progress)
 - › Available tools for assessing technical, managerial, and financial capacity of water systems
 - › Other factors

Program Improvements

14. Please share your thoughts on changes (if not already covered) that could be made at EPA, IHS or another party to improve water infrastructure grant program effectiveness. Feel free to reflect on the following topics or others that are not on this list:
- › Program mission and goals (please explain why a change from the current would be desirable)
 - › Program implementation
 - › Determining tribal needs
 - › Allocating resources
 - › Selecting projects
 - › Implementing projects
 - › Coordination and communication
 - › Performance measures
 - › Tracking and reporting
15. Is there anything else on water infrastructure grant programs that you would like to share with us today?
16. Would you like to share any feedback for us about the evaluation?

EPA Regions

Grant Program Implementation

1. [DWIG-TSA] How does your region identify, prioritize, and select DWIG-TSA projects? (See Attachment I with the information we have already gathered on your region’s selection process. Please elaborate on, or, if needed, correct the information in this table.)
2. [CWISA] Has your region exercised any discretion when selecting projects (other than in rank order from the SDS priority list)? If so, please explain. (See also, the following question on factors influencing project selection.)

Scale of Influence	
0	= Not at all influential
1	= Rarely influential – other factors are much more important and influential
2	= Occasionally influential – other factors are more or more frequently influential
3	= Frequently influential – along with other factors
4	= Very influential – other factors are much less influential
5	= Extremely influential – other factors are not factored in at all
DK	= Don’t know

3. On a scale of 0-5 below, please rank the influence of each of the following factors on project selection for your program(s):

National guidelines ¹
Long-term infrastructure sustainability
Tribal financial, technical, and managerial capacity
Input from the Tribes
Input from IHS staff
SDS ranking information from the IHS STARS database
Information from the IHS STARS database <i>other than</i> the SDS ranking information
Input from other parties (please identify who)
The December 2009 Drinking Water Enforcement Response Policy ²
Other national Agency goals, guidances, priorities, etc. (e.g., Administrator goals and priorities, National Program Manager (NPM) guidances
Regional guidance (please specify)
Other regional priorities or factors (please give examples)
Other factors (please identify)

4. Has the project selection process changed over the years? If so, why and (roughly) when?

¹ For Drinking Water: EPA Office of Water. *Drinking Water Infrastructure Grants: Tribal Set-Aside Program*. EPA, October 1998 816-R-98-020. For Clean Water: EPA Office of Water. *Guidelines and Requirements for Applying for Grants from the Indian Set-Aside Program*. April 1989, WH-546

EPA Office of Water. *Notice of Change: Indian Set-Aside Program National Project Priority List*. Memorandum from Stephen Allbee, Chief, Municipal Assistance Branch to Regional Construction Grant Program Managers. March 21, 1995.

² See: http://www.epa.gov/compliance/resources/policies/civil/sdwa/drinking_water_erp_2009.pdf

5. Please describe your communication and coordination with the following parties around project selection, management, implementation, reporting, etc. Are there ways in which you think communication and coordination could improve with each of these parties?
6. EPA Headquarters
7. IHS
8. Tribes
9. Other (e.g., internally within the region; other agencies)
10. Approximately how much staff time (in FTE) does your region spend on the DWIG-TSA and CWISA programs?
11. Across how many individuals and offices are these responsibilities spread (for each program)?
12. Please summarize the staff roles and responsibilities (for both DWIG-TSA and CWISA staff)
13. Has the ARRA program implementation differed in ways that you think would enhance or inhibit project/program performance? Are there insights or lessons from the ARRA process that can inform, or set an example, for the more routine annual program implementation?

Grant Program Achievements/Performance, Factors Underlying Performance, and Performance Measurement

14. Are you familiar with nationally reported progress on achieving the national DWIG-TSA / CWISA goals?
 15. If yes to question 10, where do you access or receive information on national progress?
 16. If yes to question 10, do you think that the “real story” of progress and achievements enabled by the DWIG-TSA and CWISA programs is accurately reflected by the nationally reported information?
 17. If not, why not?
 18. What underlying factors do you think are (or could be) influencing program progress and results?
 - › (See list below of possible influencing factors.)
 19. [DWIG-TSA] With regard to providing drinking water infrastructure
 20. [DWIG-TSA] With regard to public water systems meeting health-based drinking water standards
 21. [CWISA] With regard to providing access to wastewater/sanitation infrastructure
- Factors that could influence program results and progress:
- › EPA mandate, scope, and regulatory authority (e.g., relative to IHS’s)
 - › Funding levels (e.g., overall project funding, funding provided by EPA, funding provided by community itself)
 - › Project duration
 - › Accuracy, completeness, and currency of information on infrastructure needs in Indian Country
 - › Accuracy, completeness, and currency of information in the IHS STARS system (e.g., deficiency levels, SDS ranking)
 - › Tribal capacity
 - › Operation and maintenance costs associated with infrastructure projects
 - › Grant type (interagency agreement or direct grant)
 - › Population density (people per square mile)
 - › Landscape / ecosystem factors

- › Implementation of new rules
 - › Type of infrastructure project; i.e., new/replacement and centralized/decentralized
 - › Age of existing infrastructure
 - › Role of existing guidelines (e.g., helping or hindering progress)
 - › Available tools for assessing technical, managerial, and financial capacity of water systems
 - › Other factors
22. Do you think that the current (FY 2010) and proposed (FY 2011) program goals and indicators are the right ones? (See Attachment II for a list of the goals and indicators)
23. If not, why not, and what goals/indicators do you think would be preferable? Are there barriers to making the changes you would recommend?

Program Improvements

24. Please share your thoughts on changes (if not already covered) that could be made to improve DWIG-TSA and CWISA program effectiveness. Feel free to reflect on the following topics or others that are not on this list:
- › Program mission and goals (please explain why a change from the current would be desirable)
 - › Program implementation
 - › Determining tribal needs
 - › Allocating resources
 - › Selecting projects
 - › Implementing projects
 - › Coordination and communication
 - › Performance measures
 - › Tracking and reporting
25. Is there anything else on the DWIG-TSA and CWISA programs that you would like to share with us today?
26. Would you like to share any feedback for us about the evaluation?

IHS Headquarters

Program Implementation

1. Please describe your role with IHS and any interaction you have with EPA and its tribal water infrastructure grant programs.
2. Please briefly describe IHS Headquarters's communication and coordination with the following parties around project selection, management, implementation, reporting, etc.
3. EPA Headquarters
4. EPA Regions
5. IHS Area Offices
6. Tribes
7. Other (e.g., other agencies)

8. Are there ways in which you think communication and coordination could improve with the parties listed above?
9. Has the ARRA program implementation differed in ways that you think enhances or inhibits project/program performance? Are there insights or lessons from the ARRA process that can inform, or set an example for, the more routine annual program implementation?

Program Achievements and Performance Measurement

10. For the questions below, please refer to Attachment I, which lists EPA's historic and current program strategic goals and measures.
11. Given your knowledge of project tracking through the IHS STARS database, are the STARS data sufficiently suited for gauging EPA program performance with the current/proposed "access" measures?
12. Please describe any ideas or plans, even if conceptual and/or far off in the future, for modifying the STARS system and/or the underlying data that could enable EPA or any federal agency to gauge program performance differently in the future.
13. How do you define drinking water infrastructure *need* for tribal homes?
14. How do you define wastewater/sanitation infrastructure *need* for tribal homes?
15. Which if any of the following factors do you think could be influencing EPA's ability to help meet the water infrastructure needs in Indian country:
 - › EPA mandate, scope, and regulatory authority (e.g., relative to IHS's)
 - › Funding levels (e.g., overall project funding, funding provided by EPA, funding provided by community itself)
 - › Project duration
 - › Accuracy, completeness, and currency of information on infrastructure needs in Indian Country
 - › Accuracy, completeness, and currency of information in the IHS STARS system (e.g., deficiency levels, SDS ranking)
 - › Tribal capacity
 - › Operation and maintenance costs associated with infrastructure projects
 - › Grant type (interagency agreement or direct grant)
 - › Population density (people per square mile)
 - › Landscape/ecosystem factors
 - › Implementation of new rules
 - › Type of infrastructure project; i.e., new/replacement and centralized/decentralized
 - › Age of existing infrastructure
 - › Role of existing guidelines (e.g., helping or hindering progress)
 - › Available tools for assessing technical, managerial, and financial capacity of water systems
 - › Other factors
16. Do you have any suggestions for supporting tribal community compliance with the Safe Drinking Water Act given both the different roles and responsibilities of EPA and IHS and the way that drinking water projects are chosen and implemented?

Program Improvements

17. Please share your thoughts on changes (if not already covered) that EPA (or EPA together with IHS or another party) could make to improve water infrastructure grant program effectiveness. Feel free to reflect on the following topics or others that are not on this list:
 - › Program mission and goals
 - › Program implementation
 - › Determining tribal needs
 - › Allocating resources
 - › Selecting projects
 - › Implementing projects
 - › Coordination and communication
 - › Performance measures
 - › Tracking and reporting
18. Is there anything else that you would like to share with us today?
19. Would you like to share any feedback for us about the evaluation?

IHS Area Offices

Program Implementation

1. Please describe your role with IHS and any interaction you have with EPA and its tribal water infrastructure grant programs.
2. Please describe your IHS office's communication and coordination with the following parties around: (1) project prioritization; (2) project selection; (3) project management and implementation; and (4) project reporting and tracking.
3. EPA Headquarters
4. EPA Regions
5. IHS Headquarters
6. Tribes
7. Other (e.g., other agencies)
8. Are there ways in which you think communication and coordination could improve with the parties listed above?
9. Has the ARRA program implementation differed in ways that you think enhances or inhibits project/program performance? Are there insights or lessons from the ARRA process that can inform, or set an example for, the more routine annual program implementation?

Program Achievements and Performance Measurement

10. For the questions below, please refer to Attachment I, which lists EPA's historic and current program strategic goals and measures.
11. Given your knowledge of project tracking through the IHS STARS database, are the STARS data sufficiently suited for gauging EPA program performance with the current/proposed "access" measures?

12. Please describe any ideas or plans, even if conceptual and/or far off in the future, for modifying the STARS system and/or the underlying data that could enable EPA or any other federal agency to gauge program performance differently in the future.
13. How do you define drinking water infrastructure *need* for tribal homes?
14. How do you define wastewater/sanitation infrastructure *need* for tribal homes?
15. Which if any of the following factors do you think could be influencing EPA's ability to help meet the water infrastructure needs in Indian Country:
 - › EPA mandate, scope, and regulatory authority (e.g., relative to IHS's)
 - › Funding levels (e.g., overall project funding, funding provided by EPA, funding provided by community itself)
 - › Project duration
 - › Accuracy, completeness, and currency of information on infrastructure needs in Indian Country
 - › Accuracy, completeness, and currency of information in the IHS STARS system (e.g., deficiency levels, SDS ranking)
 - › Tribal capacity
 - › Operation and maintenance costs associated with infrastructure projects
 - › Grant type (interagency agreement or direct grant)
 - › Population density (people per square mile)
 - › Landscape / ecosystem factors
 - › Implementation of new rules
 - › Type of infrastructure project; i.e., new/replacement and centralized/decentralized
 - › Age of existing infrastructure
 - › Role of existing guidelines (e.g., helping or hindering progress)
 - › Available tools for assessing technical, managerial, and financial capacity of water systems
 - › Other factors
16. Do you have any suggestions for supporting tribal community compliance with the Safe Drinking Water Act given both the different roles and responsibilities of EPA and IHS and the way that drinking water projects are chosen and implemented?

Program Improvements

17. Please share your thoughts on changes (if not already covered) that EPA (or EPA together with IHS or another party) could make to improve water infrastructure grant program effectiveness. Feel free to reflect on the following topics or others that are not on this list:
 - › Program mission and goals
 - › Program implementation
 - › Determining tribal needs
 - › Allocating resources
 - › Selecting projects
 - › Implementing projects

- › Coordination and communication
 - › Performance measures
 - › Tracking and reporting
18. Is there anything else that you would like to share with us today?
19. Would you like to share any feedback for us about the evaluation?

Tribal Government Staff

Program Implementation

1. Please describe your involvement with EPA's tribal water infrastructure grant programs.
2. Please describe your overall impression of these programs including how well they are helping to meet the water infrastructure needs in Indian Country.
3. If your tribal community (or a community within the tribal organization you work with) received funds through the DWIG-TSA or CWISA grant programs, was it a direct grant from EPA, was the funding routed through IHS, or both of these?
4. Are there advantages and disadvantages to having projects funded through direct grants with EPA or grants through IHS?
5. Please briefly describe any communication that you or your tribal organization has with the following parties around these water infrastructure grant programs.
6. EPA Headquarters
7. EPA Regions
8. IHS Headquarters
9. IHS Area Offices
10. Other (e.g., other agencies)
11. Are there ways in which you think communication and coordination could improve with the parties listed above?
12. Do you know about the different implementation of the grant programs under ARRA? Has this implementation had any impact on your tribal organization?

Program Achievements and Performance Measurement

13. Please share your thoughts on what achievements the tribal water infrastructure grant programs have been able to achieve? Have they really made a difference? Why or why not?
14. Which, if any, of the following factors do you think could be influencing EPA's ability to help meet the water infrastructure needs in Indian Country:
 - › EPA mandate, scope, and regulatory authority (e.g., relative to IHS's)
 - › Funding levels (e.g., overall project funding, funding provided by EPA, funding provided by community itself)
 - › Project duration
 - › Accuracy, completeness, and currency of information on infrastructure needs in Indian Country

- › Accuracy, completeness, and currency of information in the IHS STARS system (e.g., deficiency levels, SDS ranking)
 - › Tribal capacity
 - › Operation and maintenance costs associated with infrastructure projects
 - › Grant type (interagency agreement or direct grant)
 - › Population density (people per square mile)
 - › Landscape / ecosystem factors
 - › Implementation of new rules
 - › Type of infrastructure project; i.e., new/replacement and centralized/decentralized
 - › Age of existing infrastructure
 - › Role of existing guidelines (e.g., helping or hindering progress)
 - › Available tools for assessing technical, managerial, and financial capacity of water systems
 - › Other factors
15. Do you have any comments on the EPA's grant program performance goals and indicators? (See Attachment I for a list of historic and current goals and indicators.)
16. Do you have any suggestions for how EPA could better support tribal community regulatory compliance with the federal Safe Drinking Water Act?
17. Do you have any suggestions for how EPA, working with other federal partners, could better support access to safe drinking water and sanitation infrastructure for tribal homes?

Other Program Improvements

18. Please share your thoughts on changes (if not already covered) that EPA (or EPA together with IHS or another party) could make to improve water infrastructure grant program effectiveness. Feel free to reflect on the following topics or others that are not on this list:
- › Program mission and goals
 - › Program implementation
 - › Determining tribal needs
 - › Allocating resources
 - › Selecting projects
 - › Implementing projects
 - › Coordination and communication
 - › Performance measures
 - › Tracking and reporting
19. Is there anything else that you would like to share with us today?
20. Would you like to share any feedback for us about the evaluation?

APPENDIX C. DWIG-TSA REGIONAL IMPLEMENTATION PROCESSES

Region	Project Solicitation	Selection Factors	Use of SDS List	Consideration of Compliance/Public Health Impacts	Regional Guidances
1	Biennial solicitation to tribes for projects	The priority ranking system is based loosely on IHS SDS ranking guidelines. Includes health impact, infrastructure needs, existing deficiency level, readiness to proceed, tribal affordability, O&M capability, and tribal compliance.	Used SDS ranking system to help develop Regional ranking system. SDS list does not include all projects that Region 1 funds	Ranking includes health impact (30/148) and if the project will address tribal compliance issues (15/148 + 5 bonus)	Region 1 Priority Ranking System (2008)
2	Coordinator works directly with tribes to identify projects	Selection is based on knowledge of tribal needs	SDS list is one information source	Based on Regional knowledge, including compliance information (not quantified)	<i>No written guidance provided</i>
4	Funding is allocated on a rotational basis between the six tribes. One grant is given each year to one tribe, and the recipient rotates on a yearly basis, and alternates between the smaller and bigger tribes.	During the calendar year prior to its scheduling funding year, a tribe submits a 5- year plan with proposed projects. EPA works with tribe to refine project list, as necessary.	Refers to SDS list as one information source.	No explicit weighting in written guidance; once projects are solicited from the tribe, Region 4 works with the tribe to identify the projects with the highest public health impact (not quantified)	Draft Guidance and Prioritization Procedures (September 2001)
5	Region picks projects off the IHS SDS list, unless the Region knows of extenuating circumstances (e.g., project is not ready to implement) or there are projects that the Regions wants to fund that are not on the IHS SDS list (e.g., due to IHS eligibility)	Selection based on IHS SDS Ranking	Uses SDS list for selecting projects, unless the Region knows of other information	SDS list uses Health Impact as a weighting factor in ranking (30/108)	Region 5 Guidelines for the Allocation of Drinking Water Set-Aside Funds to Tribes
6	Biennial solicitation to tribes for projects	Projects are ranked based on weighting factors including compliance issues, disinfection needs, and capacity at the system.	Does not use SDS list. Region coordinates with IHS SDS list to ensure projects are not double-funded.	SDWA Compliance is high weighting factor in project ranking; different compliance issues are ranked differently (e.g., bacteria MCL issues = 10 points X the number of months in violation)	Biennial Intended Use Plans for Region 6 DWIG-TSA (2008)

EVALUATION OF THE DRINKING WATER AND CLEAN WATER INFRASTRUCTURE TRIBAL SET-ASIDE GRANT PROGRAMS

Region	Project Solicitation	Selection Factors	Use of SDS List	Consideration of Compliance/Public Health Impacts	Regional Guidances
7	Annual solicitation to tribes for projects	Projects selected based on information from solicitation, sanitary survey, site visits, knowledge of tribes, evaluation of the tribes' needs, and SDS list to identify projects. There are no formal weighting criteria. If there are more projects to be funded than funds available, the region will look to maximize use of funds.	The SDS list is one component of project selection.	Based on Regional knowledge, including compliance information, and SDS list, which includes Health Impact as a weighting factor in ranking (30/108)	Region 7 Standing Operating Procedures for Direct Implementation (2010)
8	Annual solicitation to tribes for projects	Projects are ranked based on many factors, including: public health improvements, addressing a lack of safe water supply, improvements in public safety, improvements in ability to comply with regulations, and improvements in environment.	Does not use SDS list	"Improvements in Public Health" is highest weighting factor (70/300); "Improvements in ability to comply" provides the second highest point total (50/300)	Region 8 DWIG-TSA Program Guidelines (January 2010)
9	Annual solicitation to tribes for projects	Projects are first ranked on the level of health improvement they would address. If funding cannot be provided for all eligible projects within the same health category, further criteria for ranking include: consolidation of water systems, addressing secondary standards, level of population served and tribal population served, whether the system is tribally owned, and total grant amount.	Does not use SDS list	Region first prioritizes projects based on health improvement (e.g., First funded projects: those that have demonstrated illness attributable to the water system)	Region 9 DWIG-TSA Guidance and Procedures for Applying for Assistance (2010)
10	Regional allocation is divided between Alaska and PNW subregions, proportional to community water system needs, as reflected in IHS SDS list. Tribes do not need to submit project proposals.	Selection based on IHS SDS Ranking. The IHS Alaska Area SDS ranking criteria includes compliance concerns. The Portland Area SDS ranking criteria does not include compliance concerns, so Region 10 includes a compliance factor to add onto SDS scores when determining the final project list for the subregion.	Uses SDS list for selecting projects, but adds in compliance information for final projects. Region reserves right to skip over SDS projects that are not ready to proceed or the correct type of funding is not available to address the deficiency identified in the SDS project.	SDS list in Alaska Area explicitly includes compliance concerns as part of weighting and ranking of projects. In Portland Area, a compliance factor is added to SDS scores when determining project rankings (12 points, on top of 108 points in SDS). This compliance factor is based on MCLs and length of exposure to MCLs.	Final Guidelines: DWIG-TSA Program Region 10 (August 1999)

APPENDIX D. RESULTS OF CORRELATION ANALYSES

Note: Correlations looked at CWISA and DWIG-TSA projects together, except where noted. These correlations included both infrastructure grant projects in analyses for project duration because the evaluation determined that average project duration between the two programs was not different enough to warrant separate analyses.

1. Correlation between IHS area and project duration? *Summary response: No.*

General Descriptive Statistics:

- › Number of Projects = 402, these projects contain data needed to define duration (MOA_signed_date and construction_complete_date). Ongoing projects do not have a construction complete date.
- › Average Project Duration = 1227 days
- › Areas that are positively correlated with project duration: Aberdeen, Albuquerque, Bemidji, Phoenix, Portland, and Tucson
- › Areas that are negatively correlated with project duration: Alaska, Billings, California, Nashville, Navajo, and Oklahoma
- › Of the 12 areas, the only statistically significant correlations are for Nashville and Portland, but the correlation coefficients are low and thus the correlation is not strong.³
 - Projects located in Nashville are associated with shorter duration
 - Projects located in Portland are associated with longer duration

Area	Projects in Area ¹	Percent of Total	Completed Projects with Duration Data ²	Percent of Total	Average Project Duration (days) ³	Correlation Coefficient	t-stat	t-crit	Significant?
Aberdeen	57	6%	34	8%	1323	0.04	0.807	1.96	No
Alaska	198	20%	78	19%	1209	-0.012	-0.242	1.96	No
Albuquerque	53	5%	26	6%	1492	0.096	1.928	1.96	No
Bemidji	60	6%	27	7%	1327	0.037	0.746	1.96	No
Billings	25	3%	3	1%	972	-0.03	-0.607	1.96	No
California	56	6%	10	2%	966	-0.057	-1.147	1.96	No
Nashville	83	8%	44	11%	773	-0.219	-4.489	1.96	Yes
Navajo	239	24%	87	22%	1148	-0.057	-1.136	1.96	No
Oklahoma	35	4%	7	2%	1059	-0.031	-0.615	1.96	No

³ In general, a correlation coefficient with an absolute value greater than 0.8 is considered strong, while that with an absolute value less than 0.5 is considered weak.

EVALUATION OF THE DRINKING WATER AND CLEAN WATER INFRASTRUCTURE TRIBAL SET-ASIDE GRANT PROGRAMS

Area	Projects in Area ¹	Percent of Total	Completed Projects with Duration Data ²	Percent of Total	Average Project Duration (days) ³	Correlation Coefficient	t-stat	t-crit	Significant?
Phoenix	91	9%	33	8%	1386	0.065	1.312	1.96	No
Portland	55	6%	36	9%	1603	0.163	3.298	1.96	Yes
Tucson	44	4%	17	4%	1287	0.017	0.349	1.96	No
TOTAL	996		402						

Notes:

(1) We are missing area designation for approximately 100 projects. This would not affect results of the correlation.

(2) We compared the percent of the total number of projects within an area to the percent of completed projects with duration data and the percents are approximately equal. Thus, we have no reason to believe that one or more areas are disproportionately affected by missing/incomplete data.

(3) Project duration defined as the difference between MOA_signed_date and Construction_complete_date data found in STARS.

2. Correlation between EPA Region and project duration? Summary response: No.

General Descriptive Statistics:

- › Number of Projects = 402, these projects contain data needed to define duration (MOA_signed_date and construction_complete_date). Ongoing projects do not have a construction complete date.
- › Average Project Duration = 1227 days
- › Regions that are positively correlated with project duration: Region 5, Region 6, Region 7, Region 8, and Region 10
- › Regions that are negatively correlated with project duration: Region 1, Region 2, Region 4, and Region 9
- › Of the 9 regions, the only statistically significant correlations are for Region 1, Region 4, and Region 7, but the correlation coefficients are low and thus the correlation is not strong.
- › Projects located in Region 1 and Region 4 are associated with shorter duration
- › Projects located in Region 7 are associated with longer duration

Region	Projects in Region	Percent of Total	Completed Projects with Duration Data ¹	Percent of Total	Average Project Duration (days)	Correlation Coefficient	t-stat	t-crit	Significant?
Region 1	33	3%	18	4%	769	-0.136	-2.754	1.96	Yes
Region 2	14	1%	2	0%	799	-0.042	-0.834	1.96	No
Region 4	40	4%	20	5%	757	-0.148	-2.993	1.96	Yes
Region 5	66	6%	27	7%	1327	0.037	0.746	1.96	No
Region 6	79	7%	34	8%	1347	0.05	1.007	1.96	No
Region 7	39	4%	17	4%	1573	0.1	2.013	1.96	Yes
Region 8	117	11%	26	6%	1270	0.016	0.317	1.96	No

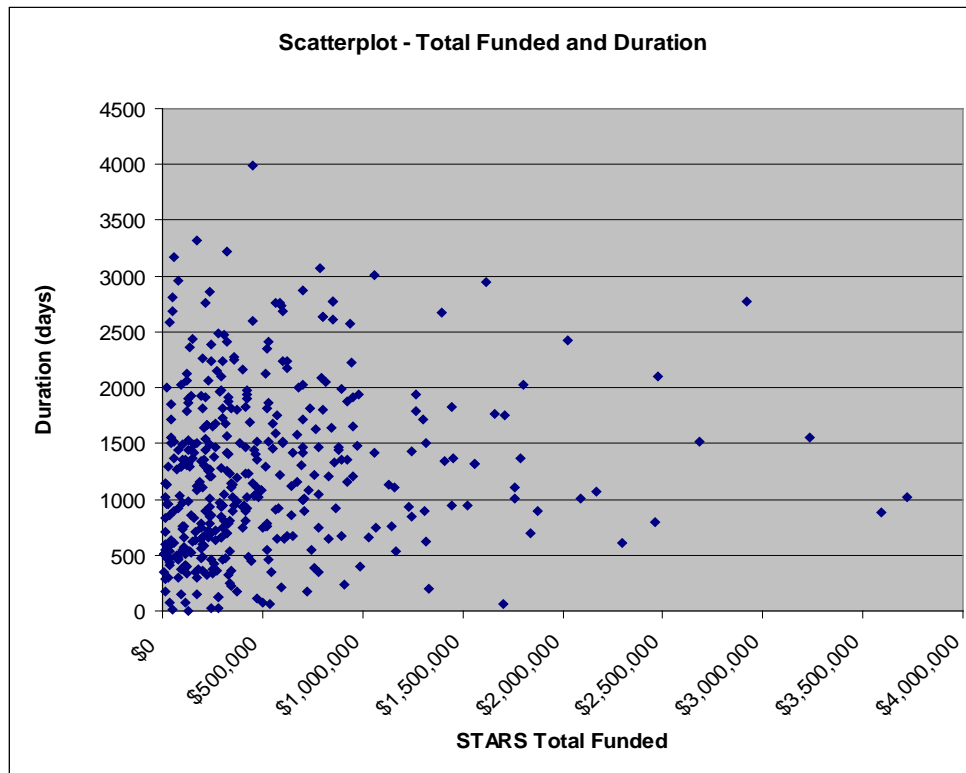
EVALUATION OF THE DRINKING WATER AND CLEAN WATER INFRASTRUCTURE TRIBAL SET-ASIDE GRANT PROGRAMS

Region	Projects in Region	Percent of Total	Completed Projects with Duration Data ¹	Percent of Total	Average Project Duration (days)	Correlation Coefficient	t-stat	t-crit	Significant?
Region 9	449	41%	144	36%	1174	-0.054	-1.074	1.96	No
Region 10	255	23%	114	28%	1333	0.092	1.857	1.96	No
TOTAL	1092		402						

Notes:

(1) We compared the percent of the total number of projects within a region to the percent of completed projects with duration data and the percents are similar or equal. Thus, we have no reason to believe that one or more areas are disproportionately affected by missing/incomplete data.

3. Correlation between project funding levels and project duration? *Summary response: Yes, but weakly.*



Correlation Coefficient	t-stat	t-crit	Significant?
0.147	2.970	1.96	Yes

- › General Descriptive Statistics:
 - Number of Projects = 402 (with duration data), 400 with needed funding data
 - Average Duration = 1229 days; Average Funding = \$509,360
- › Project duration is positively correlated with funding amount – projects with more funding are associated with longer duration.
- › This relationship is statistically significant, but the correlation coefficient is low and thus the correlation is not strong.
- › Funding information can be found in two places within STARS: Fund_Advice_Snapshot and Project_Costs_Snapshot. Both are from PDS, and both can be used to produce per-project cost estimates by aggregating cost data for each project. For the most part, the sources produce similar project costs. However, for a minority of projects, sources have missing data or conflicting data. Thus, for projects that are missing cost data from one source, we used the other source. For projects where cost data conflict, we used to the higher cost figure.

4. **Correlation between project funding from a community and project duration? *Summary response: No.***

Projects with Tribal Funding	Average Duration for a project with Tribal Funding (days)	Correlation Coefficient	t-stat	t-crit	Significant?
28	1,095	-0.050	-0.995	1.96	No

- › General Descriptive Statistics:
 - Number of Projects = 402 (with duration data), 28 with Tribal funding
 - Average Duration = 1229 days average across 402 projects; 1095 days for 28 projects with tribal funding.
- › Thus, project duration is negatively correlated with project having received tribal funding.
- › This relationship is not statistically significant.

5. **Correlation between whether a project is a direct grant and project duration? *Response: Cannot analyze because only 2 of the 402 projects in the universe with complete project duration data were direct grants.***

6. **Correlation between project level DLs and community DLs? *Summary response: No.***

Project Type/Community DL	Number of Communities with Projects	Number of Projects in these Communities	Correlation Coefficient	t-stat	t-crit	Significant?
CW/Sewer DL	347	696	0.047	0.882	1.96	No
DW/Water DL	354	556	-0.058	-1.086	1.96	No

- › The analysis finds no statistically significant relationship between changes in CW project DLs and changes in the community sewer DL.
- › The analysis finds no statistically significant relationship between changes in DW project DLs and changes in the community water DL.

Methodology: To explore the correlation between project DLs and community DLs, we used the following method:

1. *Community data:* Community DLs are reported by home type in STARS, not by the community as a whole. Thus, for each community served by one or more EPA projects, we calculated:
 - a. The weighted-average (by homes served) of the water DLs in both 2004 and DL in 2009
 - b. The weighted-average (by homes served) of the sewer DLs in both 2004 and DL in 2009.
 - c. We then calculated the change in the water and sewer DLs for each community between 2004 and 2009.
2. *Project data:* We took the most recent data reported on the IDL and FDL for each EPA project, and calculated a weighted average IDL and FDL (by homes served) for projects in each community served by an EPA project. We then calculated the change from the IDL to the FDL for each project.
3. We then ran two separate correlations :
 - a. The change in community-level sewer DL over the timeframe of this analysis and the change in clean water (CW) project DLs.
 - b. The change in community-level water DL over the timeframe of this analysis and the change in drinking water (DW) project DLs.

Notes:

1. We used all projects in this correlation, not just completed projects, because community DLs factor in the predicated results of ongoing projects. IHS enters a new (prospective) community DL when they enter a new project into PDS. It is not clear if IHS revises the DL once the project is complete.
2. Summing the number of projects in the table above gives a number greater than the EPA project universe considered for this analysis. The sum is greater because some projects are associated with more than one community and thus may impact more than one community DL.
3. This analysis looks only at EPA-funded projects, and relationship of EPA-funded projects to community DLs. Although it is not central to the evaluation of EPA's programs, it should be noted that it is possible that results of this correlation analysis would differ if we looked at *all* projects in the community, not just ones funded by EPA. However, we do not see how we could look at the relationship between all projects in a community and community DLs because STARS does not indicate (in any of the numeric fields at least) if a project is a drinking water or clean water/sewer project, despite the fact that they record separate community-level DLs for water and sewer.

APPENDIX E. DETAILED DATA TABLES

Data Notes: Most information, except where noted, is organized by “funding year” – the year in which funds were awarded to a project. Funding year is equivalent to calendar year, rather than federal fiscal year. In addition, except where noted, data tables are for EPA-funded projects that are funded between 2003 and 2009, excluding ARRA projects. ARRA projects are discussed separately.

DWIG-TSA Implementation

Table 1. Number of DWIG-TSA Projects, by EPA Region and Funding Year

Region	2003	2004	2005	2006	2007	2008	2009	Total
1	0	0	4	0	4	3	0	11
2	0	1	1	0	2	0	1	5
4	1	1	1	1	1	1	1	7
5	4	2	4	8	4	3	4	29
6	2	3	2	2	3	0	2	14
7	2	4	1	3	3	3	2	18
8	2	4	6	4	8	7	4	35
9	19	16	11	13	6	7	9	81
10	16	14	10	7	8	4	8	67
Total	46	45	40	38	39	28	31	267

Note: This table includes all projects funded by EPA between 2003-2009, excluding ARRA projects, but including direct grants and IAs with IHS. Projects that are funded multiple times over multiple years under the same PDS number are considered separate projects for this count. There are 257 unique projects within this timeframe.

Table 2. EPA Funding of DWIG-TSA projects, by EPA Region

Region	Average	Median	Minimum	Maximum
1	\$148,273	\$113,000	\$14,000	\$358,000
2	\$435,820	\$300,000	\$198,400	\$928,852
4	\$433,314	\$456,000	\$150,000	\$603,900
5	\$229,360	\$161,850	\$12,700	\$590,696
6	\$251,639	\$258,120	\$50,000	\$619,000
7	\$113,853	\$104,080	\$14,152	\$300,800
8	\$255,850	\$189,119	\$2,100	\$711,401
9	\$426,793	\$236,000	\$10,000	\$2,603,000
10	\$480,261	\$340,000	\$50,915	\$2,382,300
All	\$354,942	\$230,000	\$2,100	\$2,603,000

Table 3. Total Funding to DWIG-TSA projects, by EPA Region

Region	2003	2004	2005	2006	2007	2008	2009	Total
1	\$0	\$0	\$351,000	\$0	\$765,000	\$515,000	\$0	\$1,631,000
2	\$0	\$928,852	\$198,400	\$0	\$778,348	\$0	\$273,500	\$2,179,100
4	\$423,000	\$150,000	\$603,900	\$431,300	\$489,000	\$480,000	\$456,000	\$3,033,200
5	\$584,595	\$361,000	\$1,138,550	\$982,050	\$1,219,500	\$724,600	\$1,641,136	\$6,651,431
6	\$669,000	\$613,741	\$110,000	\$662,000	\$1,068,200	\$0	\$400,000	\$3,522,941
7	\$248,400	\$312,050	\$300,800	\$365,000	\$251,100	\$304,740	\$267,260	\$2,049,350
8	\$569,150	\$743,962	\$1,442,760	\$1,285,259	\$1,781,075	\$1,709,430	\$1,423,100	\$8,954,736
9	\$4,767,946	\$7,021,574	\$7,368,442	\$3,120,457	\$3,766,209	\$2,940,790	\$5,584,776	\$34,570,194
10	\$5,203,837	\$4,715,182	\$4,896,673	\$5,237,410	\$3,256,372	\$4,467,000	\$4,401,000	\$32,177,474
Total	\$12,465,928	\$14,846,361	\$16,410,525	\$12,083,476	\$13,374,804	\$11,141,560	\$14,446,772	\$94,769,426

Table 4. Total Number and Funding of DWIG-TSA IAs and Direct Grants, by EPA Region

Region	Direct Grants	Direct Grant \$	IAs	IA \$	Total	Total \$
1	0	\$0	11	\$1,631,000	11	\$1,631,000
2	1	\$928,852	4	\$1,250,248	5	\$2,179,100
4	3	\$1,524,200	4	\$1,509,000	7	\$3,033,200
5	0	\$0	29	\$6,651,431	29	\$6,651,431
6	1	\$208,741	13	\$3,314,200	14	\$3,522,941
7	0	\$0	18	\$2,049,350	18	\$2,049,350
8	21	\$4,725,011	14	\$4,229,725	35	\$8,954,736
9	10	\$5,612,701	71	\$28,957,493	81	\$34,570,194
10	0	\$0	67	\$32,177,474	67	\$32,177,474
All	36 (13.5%)	\$12,999,505 (13.7%)	231 (86.5%)	\$81,769,921 (86.3%)	267	\$94,769,426

Table 5. Number of Homes Served by DWIG-TSA Projects, by EPA Region and by Funding Year (from PDS)

Region	2003	2004	2005	2006	2007	2008	2009	Total
1	0	0	61	0	586	270	0	917
2	0	225	97	0	543	0	0	865
4	75	200	224	0	195	177	351	1,222
5	118	350	794	1,230	0	56	727	3,275
6	448	826	284	767	100	0	631	3,056
7	267	790	175	844	274	637	0	2,987
8	0	0	856	983	582	955	1,531	4,907
9	11,500	2,530	2,622	6,628	1,285	590	313	25,468
10	1373	641	1,415	1,660	615	774	971	7,449
Total	13,781	5,562	6,528	12,112	4,180	3,459	4,524	50,146

Note that there are homes served multiple times in this count. "Served" indicates a home benefited from or was impacted by an EPA project, versus "provided access". This table does not include direct grant projects or projects that could not otherwise be connected to IHS STARS PDS. The above table accounts for approximately 79% of unique DWIG-TSA projects (204 out of 257).

DWIG-TSA Project Selection

DWIG-TSA SDS Information

The below tables present information available from SDS for EPA DWIG-TSA projects funded between 2004 and 2009, excluding ARRA projects. As there is only data from 2004-2009 from IHS STARS for this evaluation, projects funded by EPA in 2003 do not have SDS information for this evaluation. These tables include approximately 34% of the EPA, non-ARRA, projects funded between 2004 and 2009 (72 out of 214). Some funded projects are associated

with multiple SDS projects. For DWIG-TSA, regions are not required to choose projects from the SDS list, which could explain at least part of the reason behind the low percentage of projects with SDS information.

Table 6. Area Priority Ranking Information of DWIG-TSA Projects Selected by EPA by IHS Area and EPA Region (from SDS)

IHS Area	# of Projects	Minimum	Maximum	Average	Median
Aberdeen	4	1 (0.5%)	65 (26.0%)	27.00	22
Region 7	1	65 (26.0%)	65 (26.0%)	65.00	65
Region 8	3	1 (0.5%)	31 (11.4%)	14.33	11
Alaska (R10)	26	1 (0.2%)	163 (32.6%)	30.00	17
Albuquerque	1	73 (34.0%)	73 (34.0%)	73.00	73
Region 6	1	73 (34.0%)	73 (34.0%)	73.00	73
Region 8	0	n/a	n/a	n/a	n/a
Bemidji (R5)	11	2 (0.9%)	51 (29.0%)	22.36	14
Billings (R8)	0	n/a	n/a	n/a	n/a
California (R9)	10	3 (2.0%)	218 (93.2%)	53.60	9
Nashville	8	1 (0.6%)	75 (36.9%)	23.38	5.5
Region 1	1	64 (32.3%)	64 (32.3%)	64.00	64
Region 2	3	1 (0.6%)	6 (3.0%)	4.00	5
Region 4	4	2 (1.1%)	75 (36.9%)	27.75	17
Region 6	0	n/a	n/a	n/a	n/a
Navajo (R9)	1	307 (43.7%)	307 (43.7%)	307.00	307
Oklahoma	2	6 (1.9%)	142 (42.8%)	74.00	74
Region 6	1	142 (42.8%)	142 (42.8%)	142.00	142
Region 7	1	6 (1.9%)	6 (1.9%)	6.00	6
Phoenix	6	5 (2.0%)	114 (44.7%)	49.33	27
Region 8	1	16 (6.4%)	16 (6.4%)	16.00	16
Region 9	5	5 (2.0%)	114 (44.7%)	56.00	36
Portland (R10)	9	1 (0.5%)	80 (40.4%)	15.11	4
Tucson (R9)	1	9 (5.8%)	9 (5.8%)	9.00	9
Overall	79	1	307	35.77	14

Note: The above is the minimum, maximum, average, and median priority rankings, by area, for all EPA projects funded between 2004 and 2009. For the minimum and maximum, the percentile ranks within that year's area SDS list is in parentheses. This information is presented by area, as SDS lists are by IHS areas, rather than in EPA regions. Where multiple EPA regions work with an IHS area, the region's specific information is presented.

Below, the table presents the average deficiency level score of all EPA-funded projects in a particular EPA region. The deficiency level score is a 0 to 18 score that is a component of computing the priority ranking for SDS:

- › DL-4 or 5: 18 points
- › DL-3: 12 points
- › DL-2: 6 points
- › DL-1: 0 points

Table 7. Average of Deficiency Level Scores of DWIG-TSA projects, by EPA Region, excluding ARRA (from SDS)

EPA Region	Deficiency Level Score Average	# of SDS projects
1	6.00 (DL-2)	1
2	14.00 (DL-3 to DL-4/5)	3
4	12.00 (DL-3)	4
5	12.55 (DL-3 to DL-4/5)	11
6	15.00 (DL-3 to DL-4/5)	2
7	12.00 (DL-3)	2
8	12.00 (DL-3)	4
9	15.88 (DL-3 to DL-4/5)	17
10	15.43 (DL-3 to DL-4/5)	35
All	14.51 (DL-3 to DL-4/5)	79

Table 8. Deficiencies Funded from SDS list for DWIG-TSA projects, by EPA Region, excluding ARRA (from SDS)

EPA Region	Deficiency Level Score			# of SDS projects
	6 (DL-2)	12 (DL-3)	18 (DL-4/5)	
1	1	0	0	1
2	0	2	1	3
4	2	0	2	4
5	3	4	4	11
6	0	1	1	2
7	1	0	1	2
8	0	4	0	4
9	1	4	12	17
10	1	13	21	35
Total	9 (11.4%)	28 (35.4%)	42 (53.2%)	79

As the deficiency level is just one of eight criteria for determining the priority ranking of a project (18 possible points out of 108), projects with lower deficiency levels can be in the top rankings of areas. In the latest year of SDS data available for this evaluation (2009), the top 10 SDS needs (including solid waste, water, and sewer projects) in all of the 12 IHS areas accounted for:

- › 72 DL-4 or DL-5 home needs (60%)
- › 33 DL-3 home needs (27.5%)
- › 15 DL-2 home needs (12.5%)

DWIG-TSA PDS Information

The below tables present information available from SDS for EPA DWIG-TSA projects funded between 2003 and 2009, excluding ARRA. These tables include information for approximately 79% of all DWIG-TSA projects funded between 2003 and 2009, excluding ARRA (204 out of 257); these tables exclude PDSs that were funded multiple times by EPA to eliminate some duplication in project and home counting.

Table 9. Project-level IDL and FDLs of DWIG-TSA projects, excluding ARRA (from PDS)

IDL	FDL					Total	Total Without DL-0
	0	1	2	3	4		
0	28	0	0	0	0	28 (13.7%)	n/a
1	0	3	0	0	0	3 (1.5%)	3 (1.7%)
2	1	38	5	0	0	44 (21.6%)	44 (25.0%)
3	4	55	0	7	0	66 (32.4%)	66 (37.5%)
4	0	42	0	3	15	60 (29.4%)	60 (34.1%)
5	0	3	0	0	0	3 (1.5%)	3 (1.7%)
Total	33	141	5	10	15	204	176

Note: DL-0 needs appear to be situations where the IDL and FDL have not been entered for the project in STARS PDS or deficiencies were determined not to exist. Percentages are provided including and excluding the DL-0 designations to account for any data gaps.

Table 10. Home IDL and FDLs of DWIG-TSA projects, funding years 2003-2009, excluding ARRA (from PDS)

IDL	FDL					Total	Total Without DL-0
	0	1	2	3	4		
0	11,304	0	0	0	0	11,304 (22.5%)	n/a
1	0	199	0	0	0	199 (0.4%)	199 (0.5%)
2	118	13,267	2,024	0	0	15,409 (30.7%)	15,409 (39.7%)
3	459	9,261	0	3,315	0	13,035 (26.0%)	13,035 (33.6%)
4	0	5,024	0	1,388	3,624	10,036 (20.0%)	10,036 (25.8%)
5	0	163	0	0	0	163 (0.3%)	163 (0.4%)
Total	11,881	27,914	2,024	4,703	3,624	50,146	38,842

Note: DL-0 needs appear to be situations where the IDL and FDL have not been entered for the project in STARS PDS or deficiencies were determined not to exist. Percentages are provided including and excluding the DL-0 designations to account for any data gaps.

Compliance Information

Table 11. Compliance Information for Evaluation Universe (SDWIS: 2004-2008)

Universe	# of systems/projects	# with at least 1 HB violation	# with repeat HB violations
All EPA Tribal Systems (CWSs)	733	314 (42.9%)	195 (26.6%)
EPA-funded Systems	249	116 (46.6%)	83 (33.3%)
Non-Grantee Systems	496	198 (39.9%)	112 (22.6%)

Note: Does not include 51 projects with no PWSs or PWSs that could not be linked to SDWIS data pull.

Table 12. Number of Violations at EPA-funded PWSs (SDWIS: 2004-2008)

HB/MR	Vcode	Violation Name	Number of Violations
HB	1	MCL, Single Sample	27
	2	MCL, Average	461
	21	MCL, Acute (TCR)	12
	22	MCL, Monthly (TCR)	173
	37	Treatment Technique State Prior Approval	40
	41	Treatment Technique (SWTR and GWR - failure to maintain adequate treatment; LT2 -failure to provide the level of treatment appropriate for bin classification)	260
	42	Failure to Filter (SWTR)	6
	43	Treatment Technique Exceeds Turb 1 NTU	29
	44	Treatment Technique Exceeds Turb 0.3 NTU	68
	46	Treatment Technique Precursor Removal	56
	57	OCCT Study Recommendation	2
	58	OCCT Installation/Demonstration	3
	65	Public Education	4
MR	3	Monitoring, Regular	4592
	4	Monitoring, Check/Repeat/Confirmation	8
	6	Notification, Public	8
	23	Monitoring, Routine Major (TCR)	760
	24	Monitoring, Routine Minor (TCR)	386
	25	Monitoring, Repeat Major (TCR)	68
	26	Monitoring, Repeat Minor (TCR)	84
	27	Monitoring and Reporting Stage 1	1157
	29	M&R Filter Profile/CPE Failure	20
	31	Monitoring (UNFILTERED), Routine/Repeat (SWTR-Unfilt and GWR-Unfiltered) - Major & Minor	4
	36	Monitoring, Routine/Repeat (SWTR-Filter and GWR-Unfiltered)) - Major & Minor	769
	38	M&R Filter Turbidity Reporting	220
	51	Initial Tap Sampling for Pb and Cu	4
	52	Follow-up and Routine Tap Sampling	74
	53	Initial Water Quality Parameter WQP M&R	2
71	CCR Complete Failure to Report	322	
72	CCR INADEQUATE REPORTING	26	
75	PN Violation for NPDWR Violation	1	

Note: HB = Health-based violation, MR = Monitoring and Reporting Violation

Table 13. SP-3 Calculations for Funded Projects

EPA Funded PWSs	# of Projects	Total Population	Population in Compliance	SP-3 Result	SP-3 Results for all Tribal CWSs (2009)
All Systems	279	214,686	164,093	76.4%	81.2%
All Systems, excluding Alaska	219	196,899	152,297	77.3%	
Systems with Completed Projects ⁴	75	44,566	34,701	77.9%	
Systems with Completed Projects excluding Alaska	65	40,002	30,683	76.7%	

The nationally reported results for SP-3 for 2009 are calculated on four quarters of data, spanning July 2008 to June 2009. To more accurately compare to this information with available detailed SDWIS data, this evaluation looked at the compliance information across the four quarters of calendar year 2008 compared against the nationally reported results of federal fiscal year 2009. This information does not include the 51 projects that had PWSIDs that could not be linked to provided SDWIS information.

CWISA Implementation

Table 14. Number of CWISA Projects, by EPA Region and by Funding Year

Region	2003	2004	2005	2006	2007	2008	2009	Total
1	2	2	1	0	1	0	1	7
2	0	1	1	1	1	0	1	5
4	9	3	0	4	1	1	3	14
5	1	5	7	2	1	3	5	24
6	5	3	3	3	5	2	3	24
7	2	1	0	1	1	1	0	4
8	7	7	6	4	4	3	6	36
9	54	23	34	20	42	26	35	224
10	17	12	9	10	9	11	5	65
Total	95	57	61	45	65	47	59	429

Note: This table includes all projects funded by EPA between 2003-2009, excluding ARRA projects, but including direct grants and IAs with IHS. Projects that are funded multiple times over multiple years under the same PDS number are considered separate projects for this count. There are 402 unique projects in this timeframe.

Table 15. EPA Funding of CWISA projects, by EPA Region

Region	Average	Median	Minimum	Maximum
1	\$312,171	\$264,200	\$200,000	\$618,000
2	\$165,000	\$102,000	\$55,000	\$376,000
4	\$101,950	\$83,057	\$10,000	\$446,200
5	\$82,332	\$50,000	\$9,600	\$388,420
6	\$271,268	\$221,905	\$12,000	\$975,600
7	\$179,051	\$175,000	\$74,000	\$289,000
8	\$252,072	\$191,668	\$12,100	\$740,000
9	\$202,284	\$122,500	\$6,108	\$1,889,000
10	\$534,807	\$421,000	\$60,600	\$2,225,639
All	\$258,530	\$1506,000	\$6,108	\$2,225,639

⁴ Completed as of the end of 2008

Table 16. Total Funding of all CWISA projects, by EPA Region and Funding Year

Region	2003	2004	2005	2006	2007	2008	2009	Total
1	\$504,200	\$510,000	\$618,000	\$0	\$353,000	\$0	\$200,000	\$2,185,200
2	\$0	\$100,000	\$376,000	\$192,000	\$102,000	\$0	\$55,000	\$824,965
4	\$477,500	\$631,200	\$0	\$381,500	\$278,000	\$44,183	\$328,557	\$1,830,440
5	\$178,200	\$474,400	\$299,500	\$235,580	\$388,420	\$125,790	\$274,077	\$1,975,967
6	\$1,035,000	\$1,521,100	\$362,000	\$590,600	\$1,000,000	\$1,081,886	\$919,854	\$6,510,440
7	\$224,000	\$150,000	\$0	\$289,000	\$200,000	\$211,305	\$0	\$850,305
8	\$1,628,300	\$1,519,800	\$2,114,000	\$1,112,100	\$1,238,000	\$788,821	\$925,652	\$9,248,573
9	\$7,663,600	\$8,692,100	\$7,493,000	\$5,731,800	\$6,338,600	\$3,908,320	\$3,865,939	\$43,046,177
10	\$8,193,300	\$6,531,900	\$5,073,000	\$4,858,200	\$6,443,000	\$4,174,624	\$3,766,921	\$37,194,306
Total	\$19,904,100	\$20,130,500	\$16,335,500	\$13,390,780	\$16,341,020	\$10,334,929	\$10,336,000	\$103,666,373

Table 17. Total Number and Funding of CWISA IAs and Direct Grants, by EPA Region

Region	Direct Grants	Direct Grant \$	IAs	IA \$	Total	Total \$
1	0	\$0	7	\$2,185,200	7	\$2,185,200
2	0	\$0	5	\$824,965	5	\$824,965
4	11	\$679,000	10	\$1,461,940	21	\$2,140,940
5	0	\$0	24	\$1,975,967	24	\$1,975,967
6	0	\$0	22	\$5,964,940	22	\$5,964,940
7	0	\$0	6	\$1,074,305	6	\$1,074,305
8	8	\$1,432,317	29	\$7,894,356	37	\$9,326,673
9	2	\$1,050,000	230	\$42,643,359	232	\$43,693,359
10	0	\$0	73	\$39,040,945	73	\$39,040,945
All	21 (4.9%)	\$3,161,317 (3.0%)	406 (95.1%)	\$103,066,012 (97.0%)	427	\$106,227,329

Note: Two Region 6 projects were listed as being both direct grants and IAs – they are not included here.

Table 18. Number of Homes Served by CWISA Projects, by EPA Region and Funding Year

Region	2003	2004	2005	2006	2007	2008	2009	Total
1	473	0	229	0	118	0	63	883
2	0	40	81	0	60	0	0	181
4	49	511	0	1,431	65	1,045	200	3,301
5	41	1,584	98	222	0	127	0	2,072
6	639	749	211	548	1,332	454	962	4,895
7	0	18	0	24	23	125	0	190
8	1,470	1,284	2,261	1,656	1,167	128	168	8,134
9	3,305	6,567	4,549	7,872	6,525	1,373	776	30,967
10	1,362	999	514	581	1,003	914	823	6,196
Total	7,339	11,752	7,943	12,334	10,293	4,166	2,992	56,819

Table 19. Number of Homes Served by CWISA Projects, by IHS Area and Funding Year

IHS Area	2003	2004	2005	2006	2007	2008	2009	Total
Aberdeen	1,265	775	926	988	972	0	133	5,059
Albuquerque	272	600	135	548	1,184	382	4	3,125
Anchorage	1,040	692	453	581	614	650	163	4,193
Bemidji	41	1,584	98	222	0	127	0	2,072
Billings	47	527	1,200	668	195	128	35	2,800
California	225	82	199	216	245	389	294	1,650
Navajo	2,116	1,642	1,833	5,957	5,455	564	144	1,7711
Nashville	943	551	310	1,431	277	1,117	263	4,892
Oklahoma	104	149	211	24	137	125	958	1,708
Phoenix	919	3,905	1,101	1,667	742	393	323	9,050
Portland	322	307	61	0	389	264	660	2,003
Tucson	45	938	1,416	32	83	27	15	2,556
Total	7,339	11,752	7,943	12,334	10,293	4,166	2,992	56,819

Note that there are homes served multiple times in these above counts. "Served" indicates a home benefited from or was impacted by an EPA project, versus necessarily "provided access". This table does not include projects that could not be connected to IHS STARS PDS. The above accounts for approximately 85% of unique CWISA projects funded between 2003 and 2009 (343 out of 402).

Project Selection

CWISA SDS Information

The below tables present information available from SDS for EPA CWISA projects funded between 2004 and 2009, excluding ARRA projects. As there is only data from 2004-2009 from IHS STARS for this evaluation, projects funded by EPA in 2003 do not have SDS information for this evaluation. These tables include approximately 82% of the EPA, non-ARRA, projects funded between 2004 and 2009 (255 out of 310). Some funded projects are associated with multiple SDS projects.

Table 20. Area Priority Ranking Information of CWISA Projects Selected by EPA for Funding Years 2004-2009, excluding ARRA projects, by IHS Area and EPA Region

IHS Area/ EPA Region	# of Projects	Minimum	Maximum	Average	Median
Aberdeen	9	2 (1.0%)	12 (5.7%)	6.89	7
Region 7	0	n/a	n/a	n/a	n/a
Region 8	9	2 (1.0%)	12 (5.7%)	6.89	7
Alaska (R10)	37	1 (0.2%)	152 (27.2%)	20.00	15
Albuquerque	8	2 (0.9%)	21 (9.8%)	8.75	8
Region 6	7	2 (0.9%)	21 (9.8%)	8.86	8
Region 8	1	8 (4.1%)	8 (4.1%)	8.00	8
Bemidji (R5)	19	11 (6.1%)	152 (66.4%)	79.89	79
Billings (R8)	12	1 (0.7%)	34 (24.0%)	6.92	4
California (R9)	28	1 (0.4%)	120 (40.4%)	19.36	11
Nashville	18	1 (0.5%)	13 (6.5%)	5.33	4.5
Region 1	3	2 (1.3%)	6 (3.0%)	4.00	4
Region 2	4	1 (0.6%)	9 (5.1%)	5.00	6
Region 4	9	1 (0.5%)	13 (6.5%)	6.00	5
Region 6	2	1 (0.5%)	9 (4.6)	5.00	5
Navajo (R9)	107	1 (0.1%)	536 (76.4%)	67.35	20
Oklahoma	9	4 (1.2%)	36 (11.0%)	18.44	16
Region 6	6	4 (1.2%)	27 (8.3%)	14.83	14
Region 7	3	15 (4.6%)	36 (11.0%)	25.67	26
Phoenix	14	4 (1.6%)	109 (42.7%)	25.64	11.5
Region 8	0	n/a	n/a	n/a	n/a
Region 9	14	4 (1.6%)	109 (44.0%)	25.64	11.5
Portland (R10)	6	5 (2.5%)	92 (46.9%)	22.33	8
Tucson (R9)	10	1 (0.7%)	40 (26.0%)	10.70	2
Overall	277	1	536	40.06	14

Note: The above is the minimum, maximum, average, and median priority rankings, by area, for all EPA projects funded between 2004 and 2009, excluding ARRA. For the minimum and maximum, the percentile ranks within that year's area SDS list is in parentheses. This information is presented by area, as SDS lists are by IHS area, rather than in EPA regions. Where multiple EPA regions work with an IHS area, the region's specific information is presented.

Table 21. Average Deficiency Level Scores of CWISA projects (SDS), by EPA Region

EPA Region	Deficiency Level Score Average	# of SDS projects
1	12.00 (DL-3)	3
2	15.00 (DL-3 to DL-4/5)	4
4	11.33 (DL-2 to DL-3)	9
5	7.89 (DL-2 to DL-3)	19
6	14.40 (DL-3 to DL-4/5)	15
7	18.00 (DL-4/5)	3
8	14.18 (DL-3 to DL 4/5)	22
9	16.19 (DL-3 to DL- 4/5)	159
10	15.07 (DL-3 to DL-4/5)	43
All	14.99 (DL-3 to DL-4/5)	277

As the deficiency level is just one of eight criteria for determining the priority ranking of a project (18 possible points out of 108), projects with lower deficiency levels can be in the top rankings of areas. In the latest year of SDS data available for this evaluation (2009), the top 10 SDS needs (including solid waste, water, and sewer projects) in all of the 12 IHS areas accounted for:

- › 72 DL-4 or DL-5 home needs (60%)
- › 33 DL-3 home needs (27.5%)
- › 15 DL-2 home needs (12.5%)

Table 22. Deficiency Levels of CWISA projects (SDS), by EPA Region

EPA Region	Deficiency Level Score			# of SDS projects
	6 (DL-2)	12 (DL-3)	18 (DL-4/5)	
1	0	3	0	3
2	0	2	2	4
4	3	4	2	9
5	14	4	1	19
6	3	3	9	15
7	0	0	3	3
8	2	10	10	22
9	10	28	121	159
10	0	21	22	44
Total	32 (11.6%)	75 (27.1%)	170 (61.4%)	277

Note: Of the 170 DL-4/5 projects, 15 of these projects would have a final deficiency level of DL-4, indicating that no access was provided.

CWISA PDS Information

The below tables present information available from SDS for EPA CWISA projects funded between 2003 and 2009, excluding ARRA. These tables include information for approximately 85% of unique CWISA projects funded between 2003 and 2009, excluding ARRA (343 out of 402); these tables exclude PDSs that were funded multiple times by EPA to eliminate some duplication in project and home counting.

Table 23. Project-level IDL and FDLs of CWISA projects

IDL	FDL					Total	Total Without DL-0
	0	1	2	3	4		
0	24	0	0	0	0	24 (7.0%)	n/a
1	0	5	0	0	0	5 (1.5%)	5 (1.6%)
2	2	36	5	0	0	43 (12.5%)	43 (13.5%)
3	7	76	5	6	0	94 (27.4%)	94 (29.5%)
4	7	72	2	7	13	101 (29.5%)	101 (31.7%)
5	2	72	0	0	2	76 (21.2%)	76 (23.8%)
Total	42	261	12	13	15	343	319

Note: DL-0 needs appear to be situations where the IDL and FDL have not been entered for the project in STARS PDS or deficiencies were determined not to exist. Percentages are provided including and excluding the DL-0 designations to account for any data gaps.

Table 24. Home IDLs and FDLs of CWISA projects

IDL	FDL					Total	Total Without DL-0
	0	1	2	3	4		
0	7,178	0	0	0	0	7,178 (12.6%)	n/a
1	0	1,103	0	0	0	1,103 (1.9%)	1,103 (2.2%)
2	367	13,705	3,048	0	0	17,120 (30.1%)	17,120 (34.5%)
3	3,054	18,920	1,360	380	0	23,714 (41.7%)	23,714 (47.8%)
4	591	3,905	195	334	743	5,768 (10.2%)	5,768 (11.6%)
5	108	1,795	0	0	33	1,936 (3.4%)	1,936 (3.9%)
Total	11,298	39,428	4,603	714	776	56,819	49,641

Note: DL-0 needs appear to be situations where the IDL and FDL have not been entered for the project in STARS PDS or deficiencies were determined not to exist. Percentages are provided including and excluding the DL-0 designations to account for any data gaps.

Project Completion and Duration Information

DWIG-TSA

Note: The below tables include information on **all** unique EPA projects provided for this evaluation with milestone data in, excluding ARRA projects PDS (403 of 462 projects, or 87%). When an EPA region has funded a project under the same PDS number multiple times, the milestone information is only included once in the calculations. Projects for these tables fall between EPA funding years of 1997 and 2009.

Table 25. DWIG-TSA projects with construction completed, by IHS Area and EPA Region

Area/Region	Construction not Complete	Construction Complete	Total	Paperwork Complete
Aberdeen	13	20	33	5
Region 7	9	13	22	2
Region 8	4	7	11	3
Alaska (R10)	37	54	91	41
Albuquerque	8	19	27	11
Region 6	6	18	24	10
Region 8	2	1	3	1
Bemidji (R5)	11	20	31	4
Billings (R8)	9	0	9	n/a
California (R9)	18	6	24	2
Nashville	18	27	45	5
Region 1	7	14	21	4
Region 2	4	2	6	1
Region 4	7	11	18	0
Region 6	0	0	0	n/a
Navajo (R9)	34	9	43	1
Oklahoma	11	4	15	1
Region 6	7	2	9	1
Region 7	4	2	6	0
Phoenix	17	16	33	15
Region 8	2	2	4	2
Region 9	15	14	29	13
Portland (R10)	8	26	34	24
Tucson (R9)	9	9	18	0
Total – DWIG-TSA	193 (47.9%)	210 (52.1%)	403	109 (51.9% of projects complete)

Table 26. Construction Duration (MOA signed to Construction Complete) for DWIG-TSA projects, by IHS Area and EPA Region (days)

Area/Region	Average	Median	Minimum	Maximum	# of Projects
Aberdeen	1,289	1,074	77	3,169	20
Region 7	1,516	1,155	653	3,169	13
Region 8	868	512	77	2,945	7
Alaska (R10)	1,173	1,102	64	2,759	54
Albuquerque	1,547	1,417	386	3,224	19
Region 6	1,601	1,454	386	3,224	18
Region 8	580	580	580	580	1
Bemidji (R5)	1,480	1,437	178	3,324	20
Billings (R8)	n/a	n/a	n/a	n/a	0
California (R9)	1,114	1,158	410	1,509	6
Nashville	872	749	14	1,961	27
Region 1	849	710	79	1,961	14
Region 2	799	799	748	849	2
Region 4	914	797	14	1,720	11
Region 6	n/a	n/a	n/a	n/a	0
Navajo (R9)	1,475	1,310	976	2,875	9
Oklahoma	1,288	1,081	638	2,354	4
Region 6	950	950	638	1,262	2
Region 7	1,627	1,627	899	2,354	2
Phoenix	1,420	1,460	336	2,858	16
Region 8	2,674	2,674	2,489	2,858	2
Region 9	1,241	1,411	336	2,254	14
Portland (R10)	1,599	1,494	242	3,068	26
Tucson (R9)	901	839	505	1,415	9
All	1,282 (3.51 years)	1,202 (3.29 years)	14 (0.04 years)	3,324 (9.11 years)	210

Table 27. Duration Final Report (Construction Complete to Final Report Complete) for DWIG-TSA projects, by IHS Area and EPA Region (days)

Area/Region	Average	Median	Minimum	Maximum	# of projects
Aberdeen	728	620	241	1,653	5
Region 7	947	947	241	1,653	2
Region 8	582	620	334	792	3
Alaska (R10)	679	565	61	2,243	41
Albuquerque	643	260	43	2,387	11
Region 6	682	236	43	2,387	10
Region 8	260	260	260	260	1
Bemidji (R5)	2,194	2,195	1,370	3,015	4
Billings (R8)	n/a	n/a	n/a	n/a	n/a
California (R9)	1,327	1,327	915	1,738	2
Nashville	749	815	159	1,429	5
Region 1	733	671	159	1,429	4
Region 2	815	815	815	815	1
Region 4	n/a	n/a	n/a	n/a	0
Region 6	n/a	n/a	n/a	n/a	n/a
Navajo (R9)	728	728	728	728	1
Oklahoma	690	690	690	690	1
Region 6	690	690	690	690	1
Region 7	n/a	n/a	n/a	n/a	0
Phoenix	467	493	18	941	15
Region 8	307	307	292	322	2
Region 9	492	537	18	941	13
Portland (R10)	502	501	105	932	24
Tucson (R9)	n/a	n/a	n/a	n/a	0
All	681 (1.69 years)	559 (1.53 years)	18 (0.05 years)	3,015 (8.26 years)	109

CWISA

Note: The below tables include information on **all** unique EPA projects provided for this evaluation with milestone data in, excluding ARRA projects PDS (457 out of 554 projects, or 83%). When an EPA region has funded a project under the same PDS number multiple times, the milestone information is only included once in the calculations. Projects for these tables fall between EPA funding years of 1993 and 2009.

Table 28. CWISA projects, by IHS Area and EPA Region

Area/Region	Construction not complete	Construction Complete	Total	Paperwork Complete
Aberdeen	7	14	21	0
Region 7	0	2	2	0
Region 8	7	12	19	0
Alaska (R10)	47	21	68	7
Albuquerque	11	7	18	1
Region 6	9	7	16	1
Region 8	2	0	2	n/a
Bemidji (R5)	16	7	23	1
Billings (R8)	13	3	16	0
California (R9)	22	4	26	1
Nashville	12	17	29	6
Region 1	1	4	5	0
Region 2	4	0	4	n/a
Region 4	6	9	15	6
Region 6	1	4	5	0
Navajo (R9)	89	78	167	10
Oklahoma	10	3	13	2
Region 6	7	3	10	2
Region 7	3	0	3	n/a
Phoenix	25	16	41	12
Region 8	0	1	1	1
Region 9	25	15	40	11
Portland (R10)	4	10	14	8
Tucson (R9)	13	8	21	0
Total – CWISA	269 (58.9%)	188 (41.1%)	457	48 (25.5% of projects complete)

Table 29. Construction Duration (MOA signed to Construction Complete) for CWISA projects, by IHS Area and EPA Region (days)

Area/Region	Average	Median	Minimum	Maximum	# of Projects
Aberdeen	1,371	1,326	449	2,638	14
Region 7	1,890	1,890	1,141	2,638	2
Region 8	1,285	1,326	449	2,047	12
Alaska (R10)	1,326	1,315	127	2,768	21
Albuquerque	1,341	1,376	324	2,392	7
Region 6	1,341	1,376	324	2,392	7
Region 8	n/a	n/a	n/a	n/a	0
Bemidji (R5)	892	853	300	2,086	7
Billings (R8)	972	761	492	1,664	3
California (R9)	745	393	26	2,168	4
Nashville	615	505	5	1,415	17
Region 1	488	372	202	1,007	4
Region 2	n/a	n/a	n/a	n/a	0
Region 4	564	666	5	1,213	9
Region 6	857	791	432	1,415	4
Navajo (R9)	1,110	948	149	2,683	78
Oklahoma	753	940	217	1,101	3
Region 6	753	940	217	1,101	3
Region 7	n/a	n/a	n/a	n/a	0
Phoenix	1,436	1,330	461	2,774	16
Region 8	2,688	2,688	2,688	2,688	1
Region 9	1,352	1,299	461	2,774	15
Portland (R10)	1,616	1,333	471	3,990	10
Tucson (R9)	1,720	1,824	1,124	2,414	8
All	1,174 (3.22 years)	1,045 (2.86 years)	5 (0.01 years)	3,990 (10.93 years)	188

Table 30. Duration Final Report (Construction Complete to Final Report Complete) for CWISA projects, by IHS Area and EPA Region (days)

Area/Region	Average	Median	Minimum	Maximum	# of Projects
Aberdeen	n/a	n/a	n/a	n/a	0
Region 7	n/a	n/a	n/a	n/a	0
Region 8	n/a	n/a	n/a	n/a	0
Alaska (R10)	686	602	293	1,489	7
Albuquerque	412	412	412	412	1
Region 6	412	412	412	412	1
Region 8	n/a	n/a	n/a	n/a	n/a
Bemidji (R5)	2,186	2,186	2,186	2,186	1
Billings (R8)	n/a	n/a	n/a	n/a	0
California (R9)	984	984	984	984	1
Nashville	490	337	121	1,368	6
Region 1	n/a	n/a	n/a	n/a	0
Region 2	n/a	n/a	n/a	n/a	n/a
Region 4	490	337	121	1,368	6
Region 6	n/a	n/a	n/a	n/a	0
Navajo (R9)	587	467	105	1,261	10
Oklahoma	483	483	313	652	2
Region 6	483	483	313	652	2
Region 7	n/a	n/a	n/a	n/a	n/a
Phoenix	807	665	21	2,310	12
Region 8	21	21	21	21	1
Region 9	878	715	238	2,310	11
Portland (R10)	1,214	711	292	3,403	8
Tucson (R9)	n/a	n/a	n/a	n/a	0
All	782 (2.14 years)	609 (1.69 years)	21 (0.06 years)	3,403 (9.32 years)	48

ARRA Implementation

Table 31. Number of CWISA Projects and Funding of ARRA projects, by Region

Region	Funding	# of Projects
1	\$346,670	1
2	\$1,343,330	1
4	\$1,700,000	3
5	\$1,590,010	6
6	\$4,430,760	8
7	\$7,160	1
8	\$6,417,660	7
9	\$22,300,460	46
10	\$21,863,950	23
Total	\$60,000,000	96

Table 32. Number of DWIG-TSA Projects and Funding of ARRA projects, by Region*

Region	Funding	# of projects
1	\$668,800	6
2	\$698,000	2
4	\$1,100,000	3
5	\$1,291,800*	5*
6	\$2,865,600	7
7	\$765,700	5
8	\$3,139,600	6
9	\$8,448,500	13
10	\$10,620,900	16
Total	\$29,598,900*	63*

*Note: during the course of the evaluation, one additional DWIG-TSA project in Region 5 was allocated funding. This project was funded in the amount of \$401,100, which brought the total number of ARRA DWIG-TSA projects to 64, and total ARRA DWIG-TSA funding allocated to \$30,000,000. This project is included in the summary information in the report narrative, but was not included in analyses for this evaluation.

Table 33. Average Funding of CWISA Projects (ARRA versus non-ARRA (2003-2009))

Region	Non-ARRA	ARRA
1	\$312,171	\$346,670
2	\$165,000	\$1,343,330
4	\$101,950	\$566,667
5	\$82,332	\$265,002
6	\$271,268	\$553,845
7	\$179,051	\$7,160
8	\$252,072	\$916,809
9	\$202,284	\$484,793
10	\$534,807	\$950,607
All	\$258,530	\$625,000

Table 34. Average Funding of DWIG-TSA Projects (ARRA versus non-ARRA (2003-2009))

Region	Non-ARRA	ARRA
1	\$148,273	\$111,467
2	\$435,820	\$349,000
4	\$433,314	\$366,667
5	\$229,360	\$258,360
6	\$251,639	\$409,371
7	\$113,853	\$153,140
8	\$255,850	\$523,267
9	\$426,793	\$649,885
10	\$480,261	\$663,806
All	\$354,942	\$469,824

Table 35. Average IDL of CWISA Projects, ARRA versus non-ARRA projects, by Region (PDS)

Region	Non-ARRA	ARRA	Overall
1	2.60	3.00	2.67
2	3.00	3.00	3.00
4	2.75	3.33	2.87
5	1.86	4.00	2.50
6	2.96	3.88	3.19
7	4.00	2.00	3.60
8	3.00	3.00	3.00
9	3.63	3.74	3.65
10	3.28	3.30	3.29
All	3.35	3.56	3.39

Table 36. Average IDL of DWIG-TSA Projects, ARRA versus non-ARRA projects, by Region (PDS)

Region	Non-ARRA	ARRA	Overall
1	2.33	2.33	2.33
2	3.00	2.00	2.67
4	3.00	3.33	3.11
5	2.67	3.00	2.74
6	3.00	2.86	2.95
7	2.63	2.80	2.67
8	1.92	3.17	2.32
9	2.65	3.85	2.84
10	2.72	2.18	2.64
All	2.65	2.93	2.71

Note: For non-ARRA projects, Table 34 and Table 35 only include projects that could be linked to PDS information in STARS (85% of unique CWISA projects funded between 2003 and 2009, or 343 out of 402 and 79% of unique DWIG-TSA projects funded between 2003 and 2009, or 204 out of 257).

Table 37. Homes Served by ARRA Projects (PDS)

Region	CWISA	DWIG-TSA	Overall
1	50	2,051	2,101
2	228	1,311	1,539
4	1,170	2,163	3,333
5	59	387	446
6	500	1,480	1,980
7	125	858	983
8	1,583	2,916	4,499
9	6,178	5,604	11,782
10	2,159	5,588	7,747
All	12,052	22,358	34,410

Note: The “homes served” value likely double counts some homes as some tribes received multiple grants from one or both programs.

APPENDIX F. INFORMATION SOURCES

General information on the DWIG-TSA and CWISA Programs

DWIG-TSA Program Overview. Available: http://water.epa.gov/grants_funding/dwsrf/allotments/tribes.cfm

CWISA Program Overview. Available: <http://water.epa.gov/type/watersheds/wastewater/Clean-Water-Indian-Set-Aside-Grant-Program.cfm>

EPA Headquarters Documents

Drinking Water

Bergman, Ron. *Memorandum to Regional Drinking Water Branch Chiefs Regions I, II, IV-X: Drinking Water Infrastructure Grants-Tribal Set Aside (DWIG-TSA) Program Guidance for projects funded using the American Recovery and Reinvestment Act of 2009.*

Corr, Elizabeth. *Memorandum to Regional Ground Water and Drinking Water Branch Chiefs Regions I, II and IV - X: Final Allotments for the FY 2004 Drinking Water Infrastructure Grants Tribal Set-Aside Program (DWIG-TSA).* March 2004.

Dougherty, Cynthia. *Letter to Tribal Leaders on Drinking Water Infrastructure Needs Survey.* September 2010.

Fellows, Elizabeth. "Drinking Water State Revolving Fund (DWSRF) Program Policy Announcement: Eligibility of Using DWSRF Funds to Create a New Public Water System." *Federal Register*. Volume 63, No. 212. November 1998.

Heare, Steve. *Memorandum to Regional Drinking Water Program Managers Regions I, II, IV-X: Availability of FY 2007 DWSRF Tribal Program Funds.* May 2007.

Enyeart, Ray. *Memorandum to Drinking Water Tribal Set-Aside Program Coordinators Regions I, II, IV-X: Drinking Water Infrastructure Grants Tribal Set-Aside Program -- Guidelines on Using Funds to Create New Public Water Systems.* December, 1998.

Enyeart, Ray. *Memorandum to Drinking Water Tribal Set-Aside Program Coordinators Regions I, II, IV-X: Financial Information for the Drinking Water Infrastructure Grants Tribal Set-Aside Program – FY97 & FY98 Carryover and FY99 NOA – DRAFT.* December, 1998.

US EPA Office of Water. *Drinking Water Infrastructure Needs Surveys.* Available: <http://water.epa.gov/infrastructure/drinkingwater/dwns/index.cfm>

US EPA Office of Water. *Drinking Water Infrastructure Grants Tribal Set-Aside Program Final Guidelines.* October 1998. Available: http://www.epa.gov/ogwdw/dwsrf/allotments/tribes/pdf/guidelines_dwsrf_tribal.pdf

Clean Water

Allbee, Stephen P. *Memorandum to Regional Construction Grants Program Managers Regions I-X: Notice of Change – Indian Set-Aside Program National Project Priority List.* March 1995.

Frace, Sheila. *Memorandum to Clean Water Indian Set-Aside Program Coordinators: Clean Water Indian Set-Aside (CWISA) Program Guidance for projects funding using the American Recovery and Reinvestment Act of 2009*. March 2008.

Frace, Sheila E. *Memorandum to Regional Water Division Directors: Clean Water Indian Set-Aside (CWISA) Program Guidance for Projects Funded Using the American Recovery and Reinvestment Act of 2009*. July 2009.

Frace, Sheila E. *Memorandum to Water Division Directors Regions I, II, IV-X: Eligibility of Lateral Connections Under the Clean Water Indian Set-Aside Grant Program*. September 2007.

Hochberg, Adriana. *Memorandum to Regional Clean Water Indian Set-Aside Program Coordinators: Guidance for Allocating FY 2006 Clean Water Indian Set-Aside (CWISA) Grant Program Funding*. March 2006.

Hochberg, Adriana. *Memorandum to Clean Water Indian Set-Aside Program Coordinators: Guidance for Allocating FY 2007 Clean Water Indian Set-Aside (CWISA) Grant Program Funding*. April 2007.

Hogye, Steve. *Memorandum to Regional CW Indian Set-Aside Program Coordinators: Guidance for Allocating FY 2005 Clean Water Indian Set-Aside (CWISA) Grant Program Funding*. January 2005.

Marrs, Alicia. *Memorandum to Clean Water Indian Set-Aside Program Coordinators Regions I, II, IV-X: Guidance for Allocating FY 2008 Clean Water Indian Set-Aside (CWISA) Grant Program Funding*. April 2008.

Marrs, Alicia. *Memorandum to Clean Water Indian Set-Aside Program Coordinators Regions I, II, IV-X: Guidance for Allocating FY 2009 Clean Water Indian Set-Aside (CWISA) Grant Program Funding*. May 2009.

US EPA. *Clean Water Indian Set-Aside Grant Program: Answers to Frequently Asked Questions*. March 2007. Available: <http://water.epa.gov/type/watersheds/wastewater/upload/CWISA-tribal-faq-highres.pdf>

US EPA Office of Water. *Guidelines and Requirements for Applying For Grants From [Clean Water] The Indian Set-Aside Program*. April 1989. <http://water.epa.gov/type/watersheds/wastewater/upload/CWISA-guid1989.pdf>

US EPA Office of Water. *Notice of Change: [Clean Water] Indian Set-Aside Program Addendum*. March 1995. Available: <http://water.epa.gov/type/watersheds/wastewater/upload/CWISA-add1989.pdf>

Other

US EPA, Tribal Water Infrastructure Meeting via ARRA: Evaluation Response Summary. December 2010.

US EPA Office of Inspector General. *Costs Claimed by the Alaska Native Tribal Health Consortium Under EPA Interagency Agreement DW 75-95754001*. September 2010. Available: <http://www.epa.gov/oig/reports/2010/20100930-10-4-0241.pdf>

US EPA Office of Water. *Tribal Drinking Water and Clean Water Access Measure Modification*. January 2010.

US EPA Office of Water. *National Water Program Guidance: Fiscal Year 2010*. April 2009. Available: http://www.epa.gov/ocfo/npmguidance/2010/fy10_guidance.htm

US EPA Office of Water. *National Water Program Guidance: Fiscal Year 2011*. April 2010. Available: http://www.epa.gov/ocfo/npmguidance/2011/fy11_guidance.htm#OW

EPA Regions Drinking Water Guidances and Documents

US EPA Region 1. *Priority Ranking System*. 2008.

US EPA Region 4. *Drinking Water Infrastructure Grants Tribal Set-Aside (DWIG-TSA) Construction Program: Draft Guidance and Prioritization Procedures*. September 2001.

US EPA Region 5. *Guidelines for the Allocation of Drinking Water Set-Aside Funds to Tribes*.

US EPA Region 6. *Preapplication Conference Agenda*. January 2009.

US EPA Region 6. *2008 Intended Use Plan for Tribal Set-Aside Program Cover Letter*. 2008.

US EPA Region 6. *2008 Intended Use Plan for the EPA Region 6 Drinking Water Tribal Set-Aside Program*. 2008.

US EPA Region 7. *Oversight of Public Water Systems in Indian Country: Standing Operating Procedures for Direct Implementation*. 2010.

US EPA Region 7. *Drinking Water Infrastructure Grants Tribal Set-Aside (DWIG-TSA) Process*.

US EPA Region 8. *Project Solicitation Guidance*. 2010.

US EPA Region 8. *Summary of Application and Award Process for Drinking Water Infrastructure Grants (DWIG) Tribal Set-Aside (TSA) Funds*.

US EPA Region 8. *Drinking Water Infrastructure Grants Tribal Set-Aside Program Guidelines*. January 2010.

US EPA Region 9. *U.S. Environmental Protection Agency, Region 9 Drinking Water Tribal Set-Aside Program 2010 Guidance and Procedures for Applying for Assistance*. 2010.

US EPA Region 10. *Final Guidelines: Drinking Water Infrastructure Grants Tribal Set-Aside Program*. August 1999.

Indian Health Service (IHS)

Hawasly, Ramsey. "Indian Health Service (IHS) Office of Environmental Health and Engineering (OEHE&E) Division of Sanitation Facilities Construction (DSFC)." PowerPoint Presentation.

Indian Health Service. *FY 2011 Online Performance Appendix*.

Indian Health Service. *Strategic Plan 2006-2011*. Available:
http://www.ihs.gov/planningevaluation/index.cfm?module=dsp_pe_strategic_planning

Indian Health Service Office of Environmental Health and Engineering Division of Sanitation Facilities Construction. *Five-Year Strategic Plan (2006-2011) 2009 Performance Scorecard*. January 2010.

Indian Health Service Sanitation Facilities Construction Program. *Public Law 86-121 Annual Report for Fiscal Years 2002, 2003, 2004, 2005, 2006, 2007*. Available:
<http://www.ihs.gov/dsfc/index.cfm?module=documents>

Indian Health Service Division of Sanitation Facilities Construction. *Sanitation Deficiency System (SDS): Guide for Reporting Sanitation Deficiencies for Indian Homes and Communities*. May 2003. Available: <http://www.ihs.gov/dsfc/documents/SDSWorkingDraft2003.pdf>

Indian Health Service Division of Sanitation Facilities Construction. *Sanitation Tracking and Report System (STARS) User Manual*. September 2008.

Infrastructure Task Force

Infrastructure Task Force Access Subgroup. *Meeting the Access Goal: Strategies for Increasing Access to Safe Drinking Water and Wastewater Treatment to American Indian and Alaska Native Homes*. March 2008.

Infrastructure Task Force Access Subgroup. *Overview of Tribal Infrastructure Funding Application Processes and Recommended Streamlining Opportunities*. October 2010.

Federal Infrastructure Task Force on Tribal Access to Safe Drinking Water and Basic Sanitation Tribal Technical Assistance Workgroup. *Tribal Access Workgroup Report: Strategies for Improving Technical Assistance Delivery in American Indian and Alaska Native Communities*. March 2010.

Office of Environmental Health and Engineering Division of Sanitation Facilities Construction. *Criteria for the Sanitation Facilities Construction Program*. June 1999.

Data Sources

STARS Data exports and pivot tables. Provided by IHS to evaluators in June 2010.

US EPA compiled DWIG-TSA spreadsheets for EPA-funded projects in each EPA region. Provided to evaluation in Spring 2010.

US EPA compiled CWISA spreadsheet for EPA-funded projects in each EPA region. Provided to evaluation in Spring 2010.

US EPA Safe Drinking Water Information System (SDWIS) data exports. Provided to evaluation in Spring and Summer 2010.

US EPA Safe Drinking Water Information System summary information for GPRA reporting. Provided to evaluation in Spring 2010