Meeting the Access Goal

Strategies for Increasing Access to Safe Drinking Water and Wastewater Treatment to American Indian and Alaska Native Homes

Prepared by the
Infrastructure Task Force Access Subgroup

US Environmental Protection Agency

Indian Health Service

US Department of Agriculture

Department of Housing and Urban Development

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EXECUTIVE SUMMARY

Throughout Indian Country and in Alaska Native Villages a disproportionate percentage of tribal homes lack access to safe drinking water and safe wastewater disposal. According to 2007 data from the Indian Health Service (IHS) approximately 13% of American Indian/Alaska Native (AI/AN) homes do not have safe water and/or wastewater disposal facilities. This is an extremely high percentage compared with the 0.6% of non-native homes in the United States that lack such infrastructure as measured in 2005 by the US Census. The lack of access to these basic services in Indian Country continues to threaten the public health of tribal communities.

This document is a manifestation of the federal government's most recent interagency effort to address the long standing problem of lack of access to sanitation facilities in Indian Country. In 2007, a group of federal agencies assembled an Infrastructure Task Force and signed two Memoranda of Understanding (MOU) to achieve the commitments made by the United States in 2002 under the United Nations Millennium Development Goals for improved access to safe drinking water and basic sanitation in Indian Country. Specifically, the United States committed to reduce the number of tribal homes lacking access by 50% by 2015, moving toward the Congressional policy of providing drinking water and sanitation services to all tribal communities and homes.

The Infrastructure Task Force is comprised of representatives from several federal agencies, many of which have the ability, responsibility and authority to provide drinking water and wastewater infrastructure services in Indian Country, as well as tribal representatives. The Infrastructure Task Force established an Access Subgroup (referred to here as the Subgroup) to develop an implementation plan to achieve the Access Goal, and this document presents the recommendations of the Subgroup.

From March 2007 to January 2008, through a structured approach to capture input from participants, the Subgroup scoped, identified, ranked, prioritized and categorized barriers, and recommended solutions that are described in this document. A complete list of the barriers, recommendations, and a discussion of the process to establish them is included in the body of this document. In summary, the barriers and recommended solutions that the Subgroup developed can be divided into three major themes:

A. Infrastructure Funding,

B. Operations and Maintenance Funding, including support for tribal utility capacity development,

C. Programmatic Coordination

The highest ranked recommendations to increase access to safe drinking water and wastewater disposal were:

1. All partner agencies should work together in the budget process to increase or leverage funding for both infrastructure and operations and maintenance, where statutory authority exists, to meet the Access Goal.
2. All partner agencies should provide better coordination and outreach on the programs that are currently available to fund Access related infrastructure, as well as operations and maintenance where statutory authority exists, within Indian Country.
3. All partner agencies should investigate unused/underutilized infrastructure funding that can be used toward the Access Goal.

4. A workgroup should be established to investigate innovative and previously used alternatives to piped water and sewer in hard to serve areas of Alaska and the Navajo Nation, and to identify funding for pilot projects and subsequent implementation.
5. Federal partners should work together to formally coordinate technical assistance services and adopt common standards for pre-construction documents, planning and design standards.

The Subgroup used the IHS Sanitation Tracking and Reporting System (STARS) database to assess the current data on the number of homes that lack access and to determine the progress needed to achieve the Access Goal. Information in STARS was essential for initiating work on the Access Goal although the Subgroup identified enhancements to that database to improve ability to track progress towards the Access Goal. Specific recommendations on those enhancements to the STARS database to accommodate needs of other agencies are included in this document. The Subgroup believes that this data system with enhancements is critical to achieving the funding and interagency collaboration efficiencies described in this document.

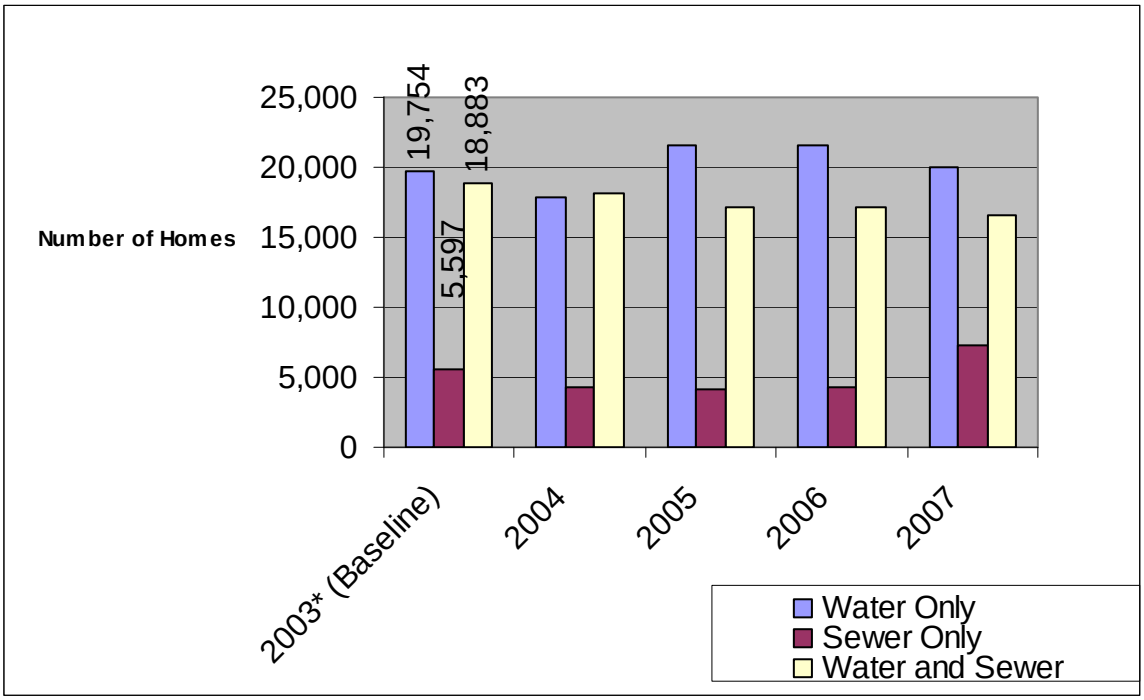
Conclusion

The Subgroup believes that the goal to increase Tribal access to safe drinking water and wastewater disposal cannot be met and sustained by 2015 without increased funding for infrastructure, as well as funding for operations and maintenance including support for tribal utility capacity development. Estimates indicate that an increase of 40 to 50% over the current level of AI/AN water and wastewater infrastructure funding is needed to be able to reach the Access Goal. These estimates are discussed in detail in Section IV.A of this document. However, the Subgroup believes that significant progress can be made through the implementation of many of the recommendations in this document by making available funding more accessible, using available funding more efficiently and creatively, improving interagency coordination to increase effectiveness of existing resources, and collecting additional data to describe the problem and target solutions. The Subgroup encourages the Infrastructure Task Force to consider these recommendations carefully, to consult with tribes regarding implementation of these recommendations, and to support the continuing involvement of each federal agency and tribes towards accomplishing this important goal.

I. Background on the Lack of Access to Water and Sanitation: A Tribal Challenge

One of the most important public health challenges facing American Indians and Alaska Natives (AI/AN) is the disproportionate lack of access to safe drinking water and basic sanitation. According to 2007 figures from the Indian Health Service (IHS), approximately 43,800 occupied housing units, or 13% of AI/AN homes in Indian Country lacked access to safe drinking water and/or safe wastewater disposal infrastructure (See Figure 1). This is an extremely high percentage as compared with the 0.6% of non-native homes in the United States that lack such infrastructure as measured in 2005 by the US Census. The human health and the environment of tribal peoples and Alaska Natives without access to these basic services continue to be threatened.

Figure 1: Number of AI/AN Homes by Problem Type and Year which Lack Access*



*** Data Source**: Public Law 86-121 Annual Reports 2003, 2004, 2005 and STAR 2006 and 2007 Sanitation Deficiency System (SDS) Summary Reports

There are approximately 570 federally recognized Indian tribes and Alaska Native Villages in the United States that vary greatly in terms of their culture, language, population size, land base, location and economic status. Despite these variations, many AI/AN communities share several characteristics. In particular, most are located in remote and often environmentally challenging areas. According to the US Census, about 25 percent of American Indians and Alaska Natives live below the poverty level, compared with about 9 percent of non-Hispanic Whites[1]. Despite the widely publicized financial success of some tribes that own gaming operations, most tribal governments continue to lack adequate independent sources of income from either economic development or governmental revenues such as taxes. Additionally, most AI/AN communities remain relatively small and/or have a low population density resulting in a higher cost per household to construct and maintain sanitation facilities. These

[1] "The American Community—American Indians and Alaska Natives: 2004 American Community Survey Reports," U.S. Census Bureau, p. 16 (May 2007).

common circumstances pose continuing challenges to providing the most basic sanitation services and infrastructure to AI/AN communities.

Recognizing the continuing need for access to water and wastewater infrastructure in AI/AN communities throughout the United States, Congress has articulated the federal policy "that all Indian communities and Indian homes, new and existing, be provided with safe and adequate water supply systems and sanitary sewage waste disposal systems as soon as possible." 25 U.S.C. § 1632 (a)(5). To implement this policy Congress has charged the IHS with "primary responsibility and authority . . . to provide the necessary sanitation facilities and services," 25 U.S.C. 1632(b)(1). It has consistently appropriated some level of funding to the IHS, as well as to other federal agencies such as the Environmental Protection Agency, to improve public health and living conditions in Indian Country through improved access to drinking water and sanitation facilities.

In 2007, a group of federal agencies assembled an Infrastructure Task Force (referred to here as the Task Force) and signed two Memoranda of Understanding (MOU) to achieve the commitments made by the United States in 2002 under the United Nations Millennium Development Goals for improved access to safe drinking water and basic sanitation in Indian Country. Specifically, the United States committed to reduce the number of tribal homes lacking access by 50% by 2015, moving toward the Congressional policy of providing drinking water and sanitation services to all tribal communities and homes.

"Access" defined

Congress provided a definition to IHS for sanitation deficiency levels [25 U.S.C. Sec. 1632(g)(4)]. For the purposes of the Task Force the criteria utilized by IHS was adopted as a definition of "access to safe drinking water and wastewater disposal". Lack of access is identified as homes ranked by the IHS with a deficiency level 4 or 5, which are described below.

Deficiency Level 4:	"An Indian tribe or community with a sanitation system which lacks ***either*** a safe water supply system or a sewage disposal system."
Deficiency Level 5:	"An Indian tribe or community that lacks a safe water supply ***and*** a sewage disposal system."

The IHS has considered a safe water supply system and/or a safe sewage disposal system to be one that complies with EPA regulations. Several examples of deficiency levels for water supply and sewage disposal conditions are included in the working draft "Sanitation Deficiency System Guide for Reporting Sanitation Deficiencies for Indian Homes and Communities, May 2003, Appendix E." This is included as Appendix C of this document.

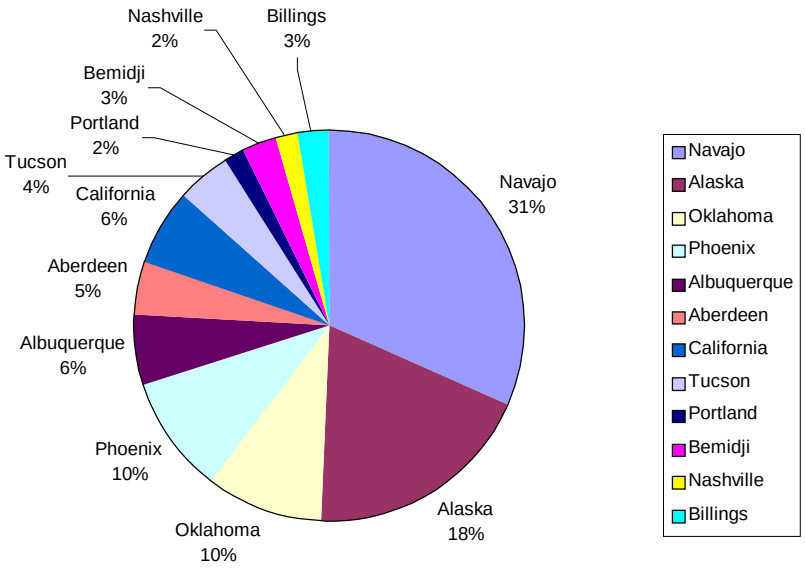
In general the majority of the AI/AN homes that lack access are located in the southwestern United States and Alaska (See Figure 2). The situation is particularly prominent in, although not exclusive to, the interior and western Alaska Native Villages and the Navajo Nation.

Thousands of Alaska Natives do not have indoor plumbing and must haul water to their homes and transport human waste in 5-gallon "honeybuckets" to open lagoons near their villages. These unsanitary conditions continue to have detrimental impacts upon the human health of Alaska Natives via waterborne and water washed illnesses. Significant progress over the decades has been made to reduce the number of homes in Alaska Native Villages and rural Alaska communities that lack access from 90% in 1960 to 13% in 2005 (housing information collected by the State of Alaska for the Alaska Native

Villages and rural Alaska communities program). Despite this, progress for the remaining homes will be a particular challenge for a variety of reasons, including low economies of scale, high operational costs, extreme topography and climate, geographic remoteness, and lack of available safe water sources.

A large percentage of the tribal homes that lack running water are also found within the Navajo Nation. An EPA funded report for the Navajo Nation Environmental Protection Agency found that approximately 30% or 14,347 households within the Navajo Nation haul water[2]. It should be noted that this is a higher number of homes than are currently identified in this category in the IHS STARS data system. Under current practices, Navajo people who haul their water face several sanitation related health risks. These include unsanitary hauling methods and source water obtained from unregulated watering points. Interviews with 45 individual residential water haulers reveal the average annual cost of hauling water is $1,000 per household or approximately 5% of the average annual household income. The average trip distance was 14 miles one way[3]. For comparison, a typical household connected to a Navajo Tribal Utility Authority system pays approximately $450 per year and receives 10 times the amount of water.

Figure 2: Geographic Distribution of AI/AN Homes Which Lack Access to Safe Drinking Water and Wastewater Disposal by IHS Area*



Data Source: Indian Health Service 2003 Sanitation Facilites Construciton Program Annual Report

II. Goals and Objectives of the Task Force and Subgroup

Recognizing that many federal agencies are involved in various aspects of providing safe drinking water and basic sanitation in Indian Country, the United States Government assembled the Task Force to craft and sign a new MOU to improve interagency collaboration to address the long standing problem of lack

[2] Sanitary Assessment of Drinking Water Used by Navajo Residents Not Connected to Public Water Systems Report, Ecosystem Management, Inc. p. 1 (Dec 2004).

[3] Ibid., p. 23

of access in Indian Country. The Task Force was comprised of representatives from several federal agencies, many of which have the ability, responsibility and authority to provide such services. This effort had been preceded by several other interagency collaborations, including a previous MOU between IHS, US Department of Housing and Urban Development (HUD), and US Department of the Interior (DOI), to address lack of access in tribal communities in past decades. The National American Indian Housing Council (NAIHC), a non-profit tribal organization addressing the housing interests of tribes nationwide, was instrumental in organizing Task Force meetings to advance the most recent MOU.

By June 2007 the MOU entitled "Federal Government Efforts in the Delivery of Infrastructure Services and Financial Assistance in Indian Country in Support of Tribal Communities" was signed by the following agencies:

- US Environmental Protection Agency
- US Department of Health and Human Services (of which the IHS is an agency)
- US Department of Agriculture
- US Department of Housing and Urban Development and
- US Department of the Interior.

The purposes of the MOU (also known as the Umbrella MOU) are:

A. To establish the structure and procedures necessary to gain a common understanding of the programs and policies of each party as they pertain to housing and infrastructure efforts.
B. To enhance the efficient leveraging of funds on both federal and tribal levels.
C. To work collectively and collaboratively with Tribes in order to understand the manner in which the delivery of federal services contributes to infrastructure in support of tribal housing and buildings.
D. To identify issues, programs, initiatives and areas of attention necessary to be addressed, and to provide parties with opportunities to establish separate additional agreements to address these issues.
E. To establish structures and procedures necessary to allow and facilitate the exchange of data and information in the most appropriate manner.

At the same time, the Agencies also signed an MOU entitled "Federal Strategy to Meet the Commitments Made by the United States under the United Nations Millennium Development Goals for Improved Access to Safe Drinking Water and Basic Sanitation in Indian Country."

The purposes of this MOU (also known as the Access MOU) are:

A. To establish structures and procedures to gain a common understanding of the programs and policies of each party that pertain to providing infrastructure services in Indian Country, to identify barriers and programmatic inefficiencies, and to work toward implementing solutions to overcome these barriers and inefficiencies.
B. To work collectively and collaboratively with tribal governments to understand how the delivery of Federal services contributes to providing access to safe drinking water and basic sanitation in Indian Country.

C. To establish organizational structures and procedures that facilitate the exchange of data and information related to providing access to safe drinking water and basic sanitation in Indian Country for the purposes of measuring progress and identifying progress.

Under the Access MOU, the Task Force created the Access Subgroup (referred to here as the Subgroup) to advance the purposes of the Access MOU through the development of an Implementation Plan. The Task Force agreed that the goal of the Plan should be to:

- *Strive to reduce by 50 percent over the 2003 baseline data the number of homes lacking access to safe drinking water and safe wastewater disposal by 2015.*

The Subgroup determined that the universe of homes to which this goal refers is the set of tribal homes that is captured in the IHS STARS database. This goal will be successfully achieved if, based on 2003 baseline statistics, over 22,000 tribal homes (approximately 6.9%) which currently do not have access to safe drinking water and safe wastewater disposal, receive it by 2015 (see Table 1). However, it should be noted that the number of homes lacking access to safe drinking water and safe wastewater disposal fluctuates from year to year for a variety of reasons including but not limited to the construction of new homes, homes served by water and wastewater systems that fall out of compliance, new environmental regulations, population growth and climate change impacts upon infrastructures and households.

Table 1: Access Goal Summary Data[1]

Year	Total Number of Tribal Homes	Number of Tribal Homes Lacking Access				
		Water Only	Sewer Only	Water and Sewer	Total[2]	% Total
2003[3] (Baseline)	**319,070**	19,754	5,597	18,883	44,234	13.9%
2004	307,584	17,833	4,252	18,214	40,299	13.1%
2005	316,624	21,574	4,080	17,118	42,772	13.5%
2006	323,521	21,568	4,295	17,169	43,032	13.3%
2007	334,218	20,018	7,287	16,557	43,862	13.1%
2015 (Goal)					**22,118**	**6.9%**

[1] **Data Source**: Public Law 86-121 Annual Reports 2003, 2004, 2005 and STAR 2006 and 2007 Sanitation Deficiency System (SDS) Summary Reports

[2] The Total = (Water Only) + (Sewer Only) + (Water and Sewer)

[3] Prior to FY 2004 "Homes without potable water" was a separate data field in STARS and not derived from the homes categorized as DL4 for Water.

Tribal Participation**:**

Over the course of the last year, the Co-Chair of the National Tribal Caucus and the Policy Advisor for the EPA Region 9 Tribal Caucus (with constituent Tribes in the states of California, Arizona and Nevada) have participated regularly in the work of the Subgroup, including conducting outreach to tribal representatives and receiving and providing to the Subgroup tribal input regarding the identification of barriers to access and the recommendations documented here. Additionally, the Subgroup has benefited from the periodic participation of representatives from the Navajo Nation, Chippewa-Cree Tribe and the Penobscot Nation. The Subgroup intends to continue collaborating with these tribal representatives, and to broaden the scope of tribal participation, as its work continues.

The Subgroup also recommends conducting a nationwide consultation process on this document to ensure maximum tribal input before the strategies for achieving the Access Goal are finalized. As recommendations are adopted and implemented, the Task Force with active participation of tribal representatives should also identify and define the roles and commitments that tribal governments play; the barriers they experience in owning, operating, and maintaining infrastructure in a sustainable manner; and how the respective governments can work together to improve this aspect of access.

Federal Participation

The level of participation from each signatory Agency on the Subgroup varied significantly. As a result, this document may not identify the full scope of barriers, opportunities and solutions that might exist within all agencies and through continued interagency collaboration. Similarly, this document may appear to place inordinate focus on barriers and solutions of those agencies that had a higher level of staff participation on the Subgroup. It is not likely that these agencies play a correspondingly inordinate role in addressing lack of access and the implementation of solutions. Moving forward, the Task Force should strive to realize full and active cross agency participation in this work to fill in gaps in existing information and to continue the important work of identifying barriers, opportunities, and solutions with all agencies. The Task Force is fully cognizant that cross agency participation is critical to the success of meeting the Access Goal.

III. Improving Data to Define Lack of Access to Safe Drinking Water and Safe Wastewater Disposal

For the purpose of identifying the homes that lack access to safe drinking water and safe wastewater disposal, the Subgroup agreed to use the IHS STARS data system, one component of which is the Sanitation Deficiency System (SDS) database. The SDS database was created as a result of the Indian Health Care Improvement Act, which requires IHS to maintain an inventory of sanitation deficiencies for Indian homes and communities; to prioritize the correction of those deficiencies in the form of projects; and to report these deficiencies to the US Congress annually. Data from the STARS database are used throughout this document.

The Subgroup viewed the IHS STARS data system as the best available data source to characterize the lack of access problem in AI/AN Communities. Other possible data sources were considered including the EPA "Drinking Water Infrastructure Needs Survey and Assessment." However EPA's assessment is completed on a 4 year cycle and is based on estimating infrastructure future needs rather than a direct measure of current needs. The EPA assessment also does not quantify the needs of homes that are not on a community water system. Unlike EPA's process which is an extrapolation from a statistical

sampling of a limited number of tribes, the IHS approach is to work collaboratively with each Tribe on an annual basis to ensure that housing counts and water and wastewater infrastructure needs data are up to date.

While the STARS data system was selected as the best source of data at this time, it was also recognized that the database was designed for IHS and may not satisfy the needs of all the federal partners. The Subgroup discussion about the STARS database focused on the following topics:

1. The need for additional outreach to ensure federal partners, tribes and other participating parties are aware of STARS and that it captures the universe of homes which lack access to water and wastewater.

   The Indian Health Care Improvement Act requires that the IHS consult with a tribe prior to reporting sanitation deficiencies for that tribe, in order to both identify all eligible needs and obtain tribal priority scores. Collective tribal consultation (i.e., through Tribal Advisory Committees) is also practiced. IHS formally documents this tribal consultation process annually to ensure that it is thoroughly conducted. The IHS provides training to tribes and holds meetings annually to review SDS policies, criteria, and procedures.

2. The need to clarify the current IHS guidance for ranking deficiencies for all participating parties including federal partners.

   Improvements to the guidance documents used by the IHS to establish the deficiency level of each housing group are recommended. For each tribal community the status of the identified infrastructure deficiencies in that community are tracked in a Community Deficiency Profile (CDP) in STARS. Homes in the CDP are assigned sanitation deficiency levels ranging from 1 to 5 based on the condition of the water, wastewater, and solid waste facilities serving the homes. The working draft "Sanitation Deficiency System Guide for Reporting Sanitation Deficiencies for Indian Homes and Communities, May 2003" provides IHS staff and compacted tribes guidance on how to uniformly evaluate sanitation deficiencies. That document provides specific examples of deficiency descriptions categorized by deficiency level. The Subgroup identified redundancies and vague descriptions in this important Appendix and recommends clarification.

3. The need to enhance the SDS database to include the root cause or special condition that causes a house or housing group to be identified as a deficiency level 4 or 5.

   In addition to clarifying the guidance on defining deficiency levels, it was recognized that there is currently not a good link between the CDP housing group(s) and their respective projects to correct the deficiency. The Subgroup recommends the "Special Requirements" data field in SDS be enhanced to describe a wider variety of conditions which cause deficiency levels 4 or 5. Identification of these conditions will allow identification of the root causes of the deficiencies. This is important because various deficiencies require different solutions. Examples of the conditions identified were the need for pipeline extensions to serve low density communities, treatment facilities to meet changes in water and wastewater regulatory standards, and new individual wells and septic systems. The underlying cause of identically rated deficiencies will lead to very different approaches to resolving those deficiencies. For example, the solution for a DL 4 deficiency due to non-compliance with the EPA Safe Drinking Water Act standards is very different from the solution to provide water service to a remotely located DL 4 home.

4. The need to ensure that the data fields related to public water system identification (PWSID) numbers are consistently populated.

The Subgroup recommended the federal partners ensure that the EPA PWS Identification data field in SDS be consistently maintained for identifying deficiencies associated with a specific Public Water System (PWS). In addition to determining the proportion of the access problem related to homes already connected to a PWS, this will assist in potential or ongoing epidemiological studies investigating links between exposure to drinking water contaminants and health outcomes.

5. Opportunities to improve the STARS data through collaboration between EPA and IHS when EPA required sanitary surveys are performed.

   Completing Sanitary Surveys is an area where collaboration between EPA and IHS may improve the information available to define the lack of access problem and improve efficient delivery of federal services. Sanitary surveys of community water systems (CWSs) are required under the Surface Water Treatment Rule and the Ground Water Rule. EPA Regions are responsible for Sanitary Surveys for tribal CWSs under the Agency's primacy requirements for tribal drinking water systems; Sanitary Surveys may be performed by EPA, IHS, or other technical assistance providers. Much of the information collected by IHS to describe the CDP would inform the Sanitary Survey process, and vice versa. An interagency standardized survey instrument for collecting the sanitary survey information does not exist. The Subgroup agrees efficiencies may be realized if a standard instrument were developed jointly between EPA and IHS to meet the needs of both agencies. This would enhance system compliance with EPA Safe Drinking Water Rules and IHS data entry into the SDS system.

The recommendations for improving the STARS data system are summarized in Table 2. These data improvements are critical to achieving the funding and interagency collaboration efficiencies described later in this document.

Table 2: Summary of Recommended Improvements to STARS for Tracking Tribal Homes which lack Access to Safe Drinking Water and Wastewater Disposal

Group Statement: A better description of the homes lacking access to safe drinking water and wastewater disposal will allow partner agencies to work more effectively toward achieving the Access Goal.	
Recommendation	**How this improves Access**
IHS should enhance the ability in STARS to identify special conditions and maintain the PWS Identification field.	Improves understanding of the distribution of homes that lack access so resources can be used more effectively.
When IHS annually meets with the appropriate tribal leaders and staff to review updated STARS data prior to establishing final project rankings, other technical assistance (TA) providers and federal partners, should be included.	Ensures the entire universe of homes without access is captured in the database.
IHS and EPA should work collaboratively to develop a sanitary survey format that will facilitate problem identification and data entry into the STARS database.	Utilizes federal resources more efficiently allowing agencies to devote more time towards planning and implementing projects that increase access.
IHS should clarify the SDS guidance to ensure that the determination of sanitation deficiency levels is uniformly understood and evaluate the impacts of changing the project ranking system to assign project points based on a change in the deficiency level.	Ensures that the project ranking criteria are uniformly applied in all tribal communities.

IV. Barriers and Solutions to the Lack of Access Problem

The Subgroup identified 24 barriers that limit access to safe drinking water and wastewater disposal. The Subgroup members ranked the barriers using weighting factors, and a total score was derived for each barrier. The barriers were rank ordered based on the sum total score. Appendix B contains a complete list of the identified access barriers, and Table 3 shows the top ranked barriers.

Table 3: Barriers to Access to Safe Drinking Water and Wastewater Disposal Ranked in the Top Five Tiers

Rank	Barrier
1	There are insufficient federal funds to meet the 2015 Access Goal
1	Sanitation services to remaining homes that completely lack access (first service homes) have a high unit capital cost
2	Infrastructure is recapitalized before its design life as a result of minimal maintenance and repair; dollars are diverted from homes that do not have Access
2	Sub-optimal tribal utility O&M capacity (Technical, Financial, and Managerial)
3	Prohibitive O&M costs for marginal housing densities and systems in remote geography or harsh climate
4	Funding for O&M costs at those agencies that have authority to provide it has not been appropriated by Congress
4	Remote locations and land ownership issues result in the construction of tribal homes without adequate consideration of access to drinking water and sanitation facilities
5	Engineering support is limited by program budgets resulting in reduced project planning, design, construction oversight, and technical assistance to help tribes operate and maintain systems
5	Funding for technical assistance is decreasing
5	Not all federal funding can be used for service lines to individual homes, house plumbing and individual wells
5	Available funding does not always go to those homes with the greatest public health need

Subgroup participants were requested to provide individual input in proposing recommended solutions for each of the barriers. Before prioritizing the recommendations, the Subgroup placed each recommendation into one of three categories that attempt to describe the type of action needed to implement the recommendation. Descriptions of the categories, the recommended implementation timeframe of each, and the presumed difficulty to implement each are described in Table 4.

Table 4: Access Goal Recommendation Category Definitions

Recommendation Category	Recommended Implementation Timeframe	Implementation Difficulty
Subgroup Mission Change: These recommendations are those that the Subgroup feels they could influence most directly, using the existing Subgroup structure established to develop the Access Implementation Plan. Work on these recommendations would require the Task Force to direct the Subgroup to proceed.	1 to 2 years	Easy
Practice Change: These recommendations require one or several of the federal partner agencies to change current practices that were perceived to be impeding the delivery of federal services towards reaching the Access Goal. These types of recommendations would require the Agency leads to direct their staff to implement the changes. To proceed with these recommendations would require a commitment by the Agency leads of the Task Force to make the recommended change(s).	1 to 4 years	Moderate
Policy Change: These recommendations require a change to the current policy, regulation or statute under which the federal programs are currently operating to improve and enhance the ability of the federal programs to meet the Access Goal. These recommendations would require a commitment solely or jointly by the Agency leads to work towards the recommended changes.	2 to 6 years	Difficult

After agreeing to this classification, each of the Subgroup participants was asked to evaluate the perceived impact each of the recommendations would have on meeting the Access Goal. Table 5 summarizes the response rate by federal agency or department.

Table 5: Recommendation Ranking Response Rate

Federal Agency	Number of Task Force Subgroup Members	Number of Responses	Response Rate
EPA	6	6	100%
IHS	3	2	67%
USDA	4	2	50%
HUD	1	0	0%
DOI	1	0	0%
TOTALS	**15**	**10**	

The outreach efforts of the Tribal representatives revealed broad support for identifying the need for additional funding for infrastructure as well as funding for operations and maintenance of tribal drinking water and wastewater systems as high priority. The Tribal representatives on the Subgroup chose not to vote to prioritize the specific barriers or solutions due to the high variability of tribal needs and challenges in different parts of the country.

As the Subgroup worked through this process, three distinct themes emerged from the recommendations: Infrastructure Funding; Operational and Maintenance Cost, including Tribal Utility Capacity; and Programmatic Coordination. The following discussion presents the barriers and recommendations, followed by the top five recommendations presented in priority order and organized by these themes.

A. Infrastructure Funding

The barriers included in this category are:

- *There are insufficient federal funds to meet the 2015 Access Goal (Rank Position 1)*
- *Sanitation services to remaining homes completely lacking (first service) access have a high unit capital cost (Rank Position 1)*
- *Engineering support is limited by program budgets resulting in reduced project planning, design, construction oversight, and technical assistance to help tribes operate and maintain systems (Rank Position 5)*

The evidence that these barriers exist was examined in a 2006 white paper titled "Marginal Cost Analysis" prepared by IHS for the Office of Management and Budget. The principal conclusion of this analysis is that to reduce the percentage of AI/AN homes without safe drinking water from the 2006 level of 12% to 6% (a 50% deduction) by 2018 (three years later than the Access Goal) an additional $47.5M annually in project funds and $5.7M annually for additional staffing will be needed. To reach this conclusion the analysis assumed that construction inflation would remain constant, that the EPA will not introduce any additional drinking water regulations requiring infrastructure, and that the level of funding from all federal agencies does not dramatically decrease. The IHS estimates that the current funding to support their program staff is less than 40% of need based on a workload model used to distribute staffing funds.

Table 6 summarizes the FY 2006 federal funding for AI/AN water and wastewater infrastructure construction. The Project Data System (PDS) component of the IHS STARS data system was used to estimate the amount of EPA, USDA and IHS funds contributing toward projects serving homes without access. Some access funding may not be captured in this table because not all federal or tribal funds are tracked in the PDS. Tribes, other federal agencies, states and non-governmental organizations construct sanitation facilities independent of the IHS. The choice to do that is left to the tribe. HUD funds identified in Table 6 were not tracked through the PDS database. It is unclear if any DOI funds are used to specifically address access infrastructure projects.

Table 6: Summary of FY 2006 Federal Funding Used to Support Access to Safe Drinking Water and Wastewater

Agency	Access Projects	All Projects[6]
EPA[1]	*$36,763,000*	**$60,863,000**
Drinking Water Infrastructure Grant		
Tribal Set-Aside		$12,562,000
Clean Water Act		$13,301,000
Alaska Native Village		$35,000,000
USDA[2]	*$20,634,000*	**$53,860,000**
Alaska Native Village		$24,750,000
Rural Utility Program Grant		$20,417,000

Rural Utility Program Loan		$8,693,000
IHS[3]	*$54,771,000*	**$93,600,000**
HUD[4]	*$7,259,000*	**$12,179,000**
Public Infrastructure (ICDBG)		$7,259,000
Imminent Threat		$4,920,000
DOI[4]	No Information Available	No Information Available
Other[5]	*$4,872,000*	**$8,326,000**
Total	*$124,299,000*	

[1]Based on IHS Project Data System (PDS) - 60.40% of EPA water and wastewater funding went toward access projects
[2]Based on a combination of IHS PDS and USDA data, 38.31% of water and wastewater funding went toward access projects
[3]Based on IHS PDS - 58.52% of IHS water and wastewater funding went toward access projects
[4]Not included in IHS PDS
[5]Other – non-federal and tribal funding from PDS
[6]All projects includes projects serving homes other than those lacking access and projects with solid waste scope.

Based on fiscal year 2006 federal funding and the conclusions of the IHS Marginal Cost Analysis, a 40 to 50% increase over current funding for AI/AN water and wastewater infrastructure will be required to meet the Access Goal.

The Subgroup's recommended solutions to address the lack of resources directed toward tribal water and sewer infrastructure are summarized in Table 7.

Table 7: Infrastructure Funding Barriers and Solutions

Barrier Statement	Solution Recommendations
There are insufficient federal funds to meet the 2015 Access Goal	a. The Access Goal cannot be met without increased funding. The federal agencies should consider this reality when preparing future agency and program budget requests. b. The agencies should investigate opportunities for tribes to access unused/underutilized infrastructure funding (for example from EPA, USDA, BOR, USACE) to achieve the Access Goal. c. The agencies should facilitate providing information to Tribes about non-federal water and wastewater infrastructure and utility operational funding sources. d. EPA should advocate to increase the cap on CWA and SDWA SRF tribal set-asides from 1.5% to 3.0%.
Sanitation services to remaining homes that completely lack access (first service homes) have a high unit capital cost	a. The Task Force should establish a work group to examine possible technical alternatives for increasing access in Navajo and Alaska Areas. The Task Force should support pilot projects to develop and promote alternatives to piped water and sewer in hard to serve areas. b. The Task Force should review threshold cost criteria policies used for project rankings to consider favoring higher deficiency level homes with higher unit cost thresholds and make recommendations to IHS.
Engineering support is limited by program budgets resulting in reduced project planning, design, construction oversight, and technical assistance to help tribes operate and maintain systems	a. Agencies that manage project proposals should formally identify the true cost of engineering design and project management services and include these costs as a separate line item in the project cost breakdown. b. Agencies that manage projects should require planning and preliminary engineering prior to funding projects. This would identify whether there is a need for IHS staff or a contractor to complete design and/or project management. c. The agencies should establish standard formats for required pre-construction documents (i.e. NEPA Requirements) for water and wastewater infrastructure projects funded by IHS, EPA and USDA. d. EPA-HQ, USDA-HQ and IHS-HQ should develop and sign an MOU that streamlines the project application process, funding documents, and project administration requirements when a Tribe requests design and project management

	assistance from IHS using USDA or EPA funds. e. The Subgroup should examine the potential for EPA and USDA to use SDS for funding prioritization. f. The Task Force should endorse the HHS proposal[4] to establish, staff, and locate the proposed Health and Medical Response (HMAR) Team with commissioned Corps USPHS Engineering officers that will assist IHS in closing the access gap to safe drinking water and wastewater disposal on tribal lands.

The Subgroup concluded the fundamental barrier to reaching the Access Goal is insufficient funding. The Subgroup recognizes that allocation of new funding to increase tribal access is a particular challenge in this current climate of stagnant or decreasing federal budgets. While requests for funding are a sensitive topic across the federal government, it is a legitimate topic of this work.

In addition to the primary recommendation that additional funding be directed to access in Indian Country, the Subgroup recommends that agencies investigate opportunities for tribes to access unused/underutilized infrastructure funding to achieve the Access Goal. For example, NAIHC reported in July 2007, that $9.4 million in drinking water and wastewater funds remained available to tribes out of $16.3 million appropriated to USDA Rural Development[5]. The Subgroup has not yet determined the total amount of funding from the signatory Agencies or other potential federal partners such as the Department of Interior's Bureau of Reclamation and Bureau of Indian Affairs, or the Army Corps of Engineers, which has gone (or is currently) unused or underutilized.

The Subgroup recommends that the cap should be increased on Clean Water Act (CWA) and Safe Drinking Water Act (SDWA) tribal set-asides from 1.5% to 3.0% to provide additional funding toward the Access Goal. The Subgroup further recommends that EPA amend the CWA and SDWA Tribal Set Aside program guidances to allow for funding of individual facilities including septic tank/drain fields, wells, service lines and interior plumbing for homes that lack access.

As described in Section I of this document, lack of access is particularly acute in areas that are remote and/or subject to harsh climates, such as within the Navajo Nation and Alaska Native Villages. Such areas typically have high unit capital costs that make access prohibitively expensive or hard to maintain. The Subgroup recommends that technical alternatives be explored for such areas, and that pilot projects be developed and promoted to provide alternatives to piped water and sewer within the Navajo Nation and Alaska Native Villages.

The true cost of engineering design and project management services should be included in the overall costs as a separate line item in the project cost estimates to ensure that projects can be completed as budgeted. This can be specified in interagency agreements or memoranda. Also, an MOU between USDA, EPA, and IHS that describes the project application process, project budget, funding documents and project inspection requirements when a Tribe requests design and project management assistance from IHS using USDA or EPA funds can streamline paperwork and expectations across agencies.

Table 8 summarizes the Subgroup's top five Infrastructure Funding recommendations.

[4] http://www.hhs.gov/budget/09budget/2009BudgetInBrief.pdf p 93.

[5] http://www.naihc.net/NAIHC/files/ccLibraryFiles/Filename/000000001358/Quickfacts-7-18-07.pdf

Table 8: Top 5 Recommendations: Infrastructure Funding

Recommendation	Recommendation Category
The Access Goal cannot be met without increased funding. The federal agencies should consider this reality when preparing future Agency and program budget requests.	Policy Change
The agencies should investigate opportunities for tribes to access unused/underutilized infrastructure funding (for example from EPA, USDA, BOR, USACE) to achieve the Access Goal.	Subgroup Mission Change
EPA should advocate to increase the cap on CWA and SDWA SRF tribal set-asides from 1.5% to 3.0%.	Policy Change
The Task Force should establish a work group to examine possible technical alternatives for increasing access in Navajo and Alaska Areas. The Task Force should support pilot projects to develop and promote alternatives to piped water and sewer in hard to serve areas.	Subgroup Mission Change
EPA should amend SDWA and CWA Tribal Set Aside Guidances to allow for the funding of individual facilities, wells, service lines and interior plumbing for homes that lack access.	Policy Change

B. Operational & Maintenance Cost and Tribal Utility Capacity

The barriers included in this category are:

- *Some infrastructure is recapitalized before its design life as a result of minimal maintenance and repair; dollars are diverted from homes that do not have Access (Rank Position 2)*
- *Sub-optimal tribal utility O&M capacity (Technical, Financial, and Managerial) (Rank Position 2)*
- *Prohibitive O&M costs for marginal housing densities and systems in remote geography or harsh climate (Rank Position 3)*
- *Funding for O&M costs at those agencies that have authority to provide it has not been appropriated by Congress (Rank Position 4)*
- *Funding for technical assistance is decreasing (Rank Position 5)*

The Subgroup believes that to meet the Access Goal in a sustainable manner it is critical that the Agencies partner with tribes to understand the importance of utility management and acquire the necessary capacity and skills to operate and maintain the infrastructure provided. Without such commitment from both the Agencies and the tribes, the Access Goal will not be sustainable.

Currently, no quantitative data exists to evaluate the relationship between the quality of tribal utility management and the impact on infrastructure resources for homes without access. However, it was a widely held belief within the Subgroup that sub-optimal technical, financial and managerial operation and maintenance capacity within tribal utilities results in federal resources being diverted from serving homes without access to rebuilding water and wastewater systems that are on the verge of failure. While recapitalization of infrastructure due to deferred maintenance is common in small community water and wastewater systems and is not unique to tribal systems, the federal government is in a unique position to assist tribal systems through many existing programs. The tribes and partner agencies collectively need to select and provide sanitation facilities that are sustainable based on the capacity of individual tribes or utilities to own, operate, and maintain them.

Presently, there is no source of sustained federal funding for the operation and maintenance of drinking water and wastewater infrastructure on tribal lands. Statutory authority does exist for the Secretary of the Department of Health and Human Services to provide operation and maintenance assistance to tribes through Public Law 86-121 enacted in 1954 and Public Law 94-437, "Indian Health Care Improvement Act" as amended. However, direct financial assistance has not been funded by the US Congress to allow the IHS to support these activities[6]. In addition, HUD is authorized to transfer funds to IHS for providing sanitation facilities and services (25 USC 1632(b)(3)). Currently, EPA and USDA are not authorized to support operational costs at facilities. The lack of funding is particularly acute in homes in areas with marginal housing densities and systems in remote geography or harsh climates such as the case on the Navajo Reservation and in Alaska. The operations and maintenance costs in these areas are inherently prohibitive, resulting in no or temporary access.

Table 9 summarizes the Subgroup's recommended solutions to address operational and maintenance cost and improvement in tribal utility capacity.

Table 9: Operational & Maintenance Cost and Tribal Utility Capacity Barriers and Solutions

Barrier Statement	Solution Recommendations
Infrastructure is recapitalized before its design life as a result of minimal maintenance and repair; dollars are diverted from homes that do not have Access	a. Agencies should continue to support TA providers with funding tied to measurable outcomes (i.e. Decrease in SDWA/CWA violations) that build tribal capacity. b. Agencies should promote the use of asset management concepts and tools through national meetings and local TA providers targeted at small systems. c. Agencies should agree on minimum design requirements for projects funded by all federal partners which ensure all federally funded infrastructure projects are delivered in "operable condition" to allow tribes to properly manage their utilities (e.g. provide as-builts, sample taps on wells, septic tank risers).
Sub-optimal tribal utility O&M capacity (Technical, Financial, and Managerial)	a. EPA should insert into its General Assistance Program (GAP) Guidance the option of allowing tribes to use GAP funding for labor costs associated with the organization and establishment of tribal utilities, to assess asset inventories and conditions, and for studies regarding full cost rates and utility affordability. b. The Task Force should establish a workgroup comprised of the partner agencies and TA providers to assess if the existing TA resources available are adequate to meet the goal of having sustainable Tribal utility operations departments. c. EPA should request revisions to the Safe Drinking Water Act and guidelines to allow PWSS funds to be provided directly to Tribes that have not been granted treatment as a state (TAS) to implement capacity development programs. d. The Subgroup should develop an infrastructure workshop including agenda topics and reference materials that cover a) the types of federal programs that are available, b) how to apply for the services the programs provided and c) success stories of federal-tribal partnerships. e. The Subgroup should develop a regional interagency welcome package for new tribal officials including the Tribal Resource Directory and summary information on the existing federal water and wastewater funding programs. f. Federal partner agencies should attempt to quantify the tribal utility technical, financial and managerial capacity.
Prohibitive O&M costs for marginal housing densities and systems in remote geography or harsh climates	a. The Task Force should increase awareness of the concept of rural utility cooperatives and/or other regionalization concepts among tribal utilities. b. The Task Force should establish a financial mechanism through public or private sources to subsidize O&M in systems where high unit cost or affordability present problems.
Funding for O&M costs	a. The Task Force should advocate for funding of operational activities by including

[6] see 25 U.S.C. § 1632(b) authorizing the Service to provide "operation and maintenance assistance for . . . tribal sanitation facilities when necessary to avoid a health hazard or to protect the Federal investment in sanitation facilities; and 25 U.S.C.§ 1632(e)(1), authorizing the Service to "provide financial assistance to Indian tribes and communities in an amount equal to the Federal share of the costs of operating, managing and maintaining the facilities . . . .")

at those agencies that have authority to provide it has not been appropriated by Congress	O&M funding in agency and program budget requests where statutory authority exists. b. The Subgroup should complete a comprehensive evaluation of tribal operations and maintenance costs and develop an operations and maintenance allocation methodology to be used to advocate for federal funding of operational activities where statutory authority exists. c. The Task Force should establish a steering committee to advocate for funding from non-governmental organizations to supplement federal funding for tribal O&M operations. d. The Task Force should bolster tribal community planning and improve knowledge among tribal housing authorities of the importance of covering full cost utility pricing for existing and additional housing units.
Funding for technical assistance is decreasing.	a. The agencies should formally coordinate the provision of technical assistance service to ensure adequate geographic and topical coverage are provided.

To address the lack of operational and maintenance funds, the Subgroup recommends increasing flexibility in the use of existing program funds and advocating for new funding for operation and maintenance activities where statutory authority exists. Simultaneously, a comprehensive evaluation of true operations and maintenance costs of tribal systems should be undertaken to support future budget requests. In addition, the subgroup should seek initial funding for operations and maintenance in order to provide immediate on the ground assistance in high priority situations, to provide tangible information to justify future needs, and to establish criteria to ascertain priorities and allocation formulas. The subgroup's focus on operations and maintenance funding is particularly pertinent since it appears that such funding has not been requested through existing authorities.

The Subgroup believes that, in order to maximize progress towards the Access Goal, operations and maintenance funding should be requested in addition to existing funding and not at the expense of capital funds. In a time of competing budget priorities, capital funding is most important for making progress toward the Access Goal. The Subgroup also recommends that the Task Force identify other potential public or private sources to subsidize operations and maintenance in systems where high unit cost or affordability present problems.

While direct operations and maintenance funding is currently not provided, many of the federal partners are funding technical assistance to support tribal utility development. The provision of these services can be bolstered through formal interagency coordination to ensure adequate geographic and topical coverage are provided. The agencies can also enhance the provision of technical assistance through the use and development of asset management concepts and tools, increasing awareness and use of rural utility cooperatives and/or other regionalization approaches.

Along these same lines the Subgroup recommends the establishment of a workgroup comprised of the partner agencies and TA providers to assess if the existing TA resources available are adequate to meet the goal of having sustainable Tribal utility operations departments. As part of this workgroup, funding agencies should agree on minimum regional design requirements to ensure all federally funded infrastructure projects are delivered in "operable condition" to allow tribes to properly manage their utilities (e.g. provide as-built drawings, sample taps on wells, septic tank risers).

Table 10 summarizes the Subgroup's top five recommendations for improving operations and maintenance and tribal utility capacity.

Table 10: Top 5 Recommendations: Operational & Maintenance Cost and Tribal Utility Capacity

Recommendation	Recommendation Category
The agencies should formally coordinate the provision of technical assistance service to ensure adequate geographic and topical coverage are provided.	Subgroup Mission Change
Agencies should agree on minimum design requirements for projects funded by all federal partners which ensure all federally funded infrastructure projects are delivered in "operable condition" to allow tribes to properly manage their utilities (e.g. provide as-builts, sample taps on wells, septic tank risers).	Practice Change
The Task Force should establish a workgroup comprised of the partner agencies and TA providers to assess if the existing TA resources available are adequate to meet the goal of having sustainable Tribal utility operations departments.	Subgroup Mission Change
The Task Force should advocate for funding of operational activities by including O&M funding in agency and program budget requests where statutory authority exists.	Policy Change
The Subgroup should complete a comprehensive evaluation of tribal operations and maintenance costs and develop an operations and maintenance allocation methodology to be used to advocate for federal funding of operational activities where statutory authority exists.	Subgroup Mission Change

C. Programmatic Coordination

The barriers included in this category are:

- *Remote locations and land ownership issues and poor housing project planning result in the construction of tribal homes without adequate consideration of access to drinking water and sanitation facilities (Rank Position 4)*
- *Not all federal funding can be used for service lines to individual homes, house plumbing and individual wells (Rank Position 5)*
- *Available funding does not always go to those homes with the greatest public health need (Rank Position 5)*

The Subgroup identified areas where a lack of interagency coordination may result in insufficient project funding, duplicative paperwork, and construction delays. Improvements in coordination and public outreach can increase access by providing greater funding and programmatic efficiencies, allowing more efficient use of both government and tribal staff time, and keeping construction projects on schedule.

Each of the federal partner programs has limitations on how infrastructure funding can be used to achieve the Access Goal (see Table 11).

Table 11: Summary of Federal Funding Programs that Support Water and Wastewater Infrastructure

Federal Agency	Infrastructure Funding Programs	Access Goal Funding Limitations*
Environmental Protection Agency	Tribal Drinking Water Grant Set Asides	Funds infrastructure for public water systems only.
	Clean Water Act	Only wastewater projects
	Alaska Native Village Infrastructure	Geographically Limited

Indian Health Service	Regular Funds	Limited to serving "Existing" AI/AN homes (non residential or non AI/AN units require contributed funds)
	Housing Funds	Limited to serving "New" or "Like New"AI/AN homes.
Housing and Urban Development	Indian Community Development Block Grant	Funds may be used for many purposes, including water/wastewater projects.
	Indian Housing Block Grant	
Department of the Interior	No information available	No information available
US Department of Agriculture	Rural Utility Program	Not all funds are grants
	Alaska Native Village	Geographically Limited

* No funds are explicitly available to support Operation & Maintenance expenses of tribal utilities.

The IHS funds are the least restricted because they provide funding for both water and wastewater projects and can be used for community and individual water and wastewater infrastructure as well as house plumbing in certain situations. HUD's Indian Housing Block Grant program provides funding for affordable homes in a safe and healthy environment. The funding is not specifically identified or targeted at water and wastewater infrastructure projects and is not easily tracked in the current HUD database. As a result, it is difficult to estimate the amount of annual HUD funds appropriated or spent to meet the Access Goal. USDA has some grant funding that is made available exclusively for the federally recognized tribes and rural Alaska villages; however the majority of USDA Funds to meet the Access Goal will be guaranteed and direct loans. EPA cannot use its drinking water infrastructure grants to support drinking water access for individual homes. By working together more effectively, each agency can take advantage of the flexibilities afforded by other federal programs.

Table 12 summarizes the subgroup's recommendations to reduce the limitations of existing federal programs to address the Access Goal.

Table 12: Programmatic Limitations Barriers and Solutions

Barrier Statement	Solution Recommendations
Remote locations and land ownership issues result in the construction of tribal homes without adequate consideration of access to drinking water and sanitation facilities	a. EPA should support tribal planning through the use of the EPA GAP grants to ensure homes are constructed with access to water and wastewater infrastructure. b. Agencies should limit federal funding of the construction of new tribal homes that do not have access to safe drinking water and wastewater disposal upon occupancy.
Not all federal funding can be used for service lines to homes, house plumbing and individual wells	a. EPA should amend SDWA and CWA Tribal Set Aside Guidances to allow for the funding of individual facilities such as septic tank/drain fields, wells, service lines and interior plumbing for homes that lack access. b. The Task Force should promote the use of USDA and HUD funds for construction of bathrooms for homes that lack access.
Available funding does not always go to those homes with the greatest public health need	a. The agencies should establish a minimum percentage of funding annually toward Access projects for each federal program.

To address these limitations, the Subgroup recommends that the Agencies work "smarter" with existing funds through greater interagency coordination and the establishment of common guidelines. For

example, the Subgroup recommends that Agencies ensure that new federally funded tribal homes have access to safe drinking water and wastewater disposal upon occupancy. It recommends that the Task Force promote the use of USDA and HUD funds for construction of bathrooms in homes that lack access and do not meet IHS "like new" housing guidelines so they can be connected to water services.

To reduce construction delays and improve timely use of infrastructure funds, the Subgroup recommends that planning and preliminary engineering reports be required prior to funding projects. To reduce start-up time, the Subgroup recommends that standard formats be required for pre-construction documents (e.g., NEPA Requirements) for water and wastewater infrastructure projects funded by IHS, EPA and USDA. IHS and EPA should also work collaboratively to develop a sanitary survey format that will facilitate problem identification and data entry into the existing database to track sanitation conditions on tribal lands.

The Subgroup recommends expanding the allowable uses of currently available funds. This can be achieved by revising guidelines for existing funds to improve planning efforts, provide technical assistance, build capacity, and fund labor costs. For example, EPA could provide tribes the option of using GAP funding for labor costs associated with the establishment of tribal water utilities, to assess asset inventories and conditions, and for studies regarding full cost rates and utility affordability. EPA could support tribal planning through the use of the EPA GAP grants to ensure federally funded homes are constructed with access to water and wastewater infrastructure or future owners of privately funded homes are aware of the hurdles to providing access to remote home sites.

Table 13 presents the Subgroup's top five recommendations for improving programmatic coordination.

Table 13: Top 5 Recommendations: Programmatic Coordination

Recommendation	Recommendation Category
The Task Force should promote the use of USDA and HUD funds for construction of bathrooms for homes that lack access.	Practice Change
Agencies should limit federal funding of the construction of new tribal homes that do not have access to safe water and wastewater disposal upon occupancy.	Policy Change
The agencies should establish a minimum percentage of funding annually toward Access projects for each federal program.	Policy Change
The agencies should establish standard formats for required pre-construction documents (e.g., NEPA Requirements) for water and wastewater infrastructure projects funded by IHS, EPA and USDA.	Policy Change
EPA should support tribal planning through the use of the EPA GAP grants to ensure homes are constructed with access to water and wastewater infrastructure.	Policy Change

V. Timeframe for Implementing Recommendations

As described in Table 4, the Subgroup categorized each recommendation by the type of action and timeframe needed to implement the recommendation, characterized as Subgroup Mission Change, Practice Change, and Policy Change. The Subgroup found that for the most part, Subgroup Mission Changes are actions that can be implemented in the near-term, require the involvement of each federal agency as well as tribal participation, and may identify additional actions that can be taken to achieve the Access Goal. The comprehensive list of Subgroup Mission Changes is presented in Table 14 in the

order in which the Subgroup believed the actions would have the most impact on achieving the Access Goal.

Table 14: Subgroup Mission Changes

1	The agencies should investigate opportunities for tribes to access unused/underutilized infrastructure funding (for example from EPA, USDA, BOR, USACE) to achieve the Access Goal.
2	The Task Force should establish a work group to examine possible technical alternatives for increasing access in Navajo and Alaska Areas. The Task Force should support pilot projects to develop and promote alternatives to piped water and sewer in hard to serve areas.
3	The agencies should formally coordinate the provision of technical assistance service to ensure adequate geographic and topical coverage are provided.
4	The Task Force should establish a workgroup comprised of the partner agencies and TA providers to assess if the existing TA resources available are adequate to meet the goal of having sustainable Tribal utility operations departments.
5	Agencies should promote the use of asset management concepts and tools through national meetings and local TA providers targeted at small systems.
6	The Task Force should increase awareness of the concept of rural utility cooperatives and/or other regionalization concepts among tribal utilities.
7	The Subgroup should develop an infrastructure workshop including agenda topics and reference materials that cover a) the types of federal programs that are available, b) how to apply for the services the programs provide and c) success stories of federal-tribal partnership.
8	The Subgroup should complete a comprehensive evaluation of tribal operations and maintenance costs and develop an operations and maintenance allocation methodology to be used to advocate for federal funding of operational activities where statutory authority exists.
9	The Subgroup should examine the potential for EPA and USDA to use SDS for funding prioritization.
10	The agencies should facilitate providing information to Tribes about non-federal water and wastewater infrastructure and utility operational funding sources.
11	Federal partner agencies should attempt to quantify the tribal utility technical, financial and managerial capacity.
12	The Subgroup should develop a regional interagency welcome package for new tribal officials including the Tribal Resource Directory and summary information on the existing federal water and wastewater funding programs.

Most Subgroup Mission Changes can provide research and detailed analysis to support or improve specific longer term Practice or Policy Changes. Several of the Practice and/or Policy Changes would be implemented by a single agency but would affect all agencies working toward the Access Goal if adopted. For this reason it will be important for the Task Force, Subgroup, and Tribes to work together so that outcomes are effective for all parties involved.

Some recommendations may follow a logical stepwise progression. For example, the Subgroup could pursue the Subgroup Mission Changes to formally coordinate the provision of technical assistance to ensure adequate geographic and topical coverage are provided (Table 14 item 3), and to assess if existing TA resources are adequate to meet the goal of having sustainable Tribal utility operations departments (Table 14 item 4). As part of this process, the Subgroup may catalog elements that tribes are missing from new infrastructure projects that prevent them from operating in an optimal manner. This could provide the information to implement the Practice Change of the Agencies agreeing on minimum design requirements for projects funded by federal partners that ensure all projects are delivered in “operable condition” (Table 15 item 2). Finally the Subgroup, having become familiar with

the processes at each Agency, would be able to provide recommendations for the Policy Change to establish standard formats for required pre-construction documents (Table 16 item 3).

The comprehensive lists of Practice and Policy Changes are presented in Tables 15 and 16.

Table 15: Practice Changes

1	The Task Force should promote the use of USDA and HUD funds for construction of bathrooms for homes that lack access.
2	Agencies should agree on minimum design requirements for projects funded by all federal partners which ensure all federally funded infrastructure projects are delivered in "operable condition" to allow tribes to properly manage their utilities (e.g. provide as-builts, sample taps on wells, septic tank risers).
3	Agencies that manage projects should require planning and preliminary engineering prior to funding projects. This would identify whether there is a need for IHS staff or a contractor to complete design and/or project management.
4	Agencies that manage project proposals should formally identify the true cost of engineering design and project management services and include these costs as a separate line item in the project cost breakdown.
5	Agencies should continue to support technical assistance (TA) providers with funding tied to measurable outcomes (i.e. Decrease in SDWA/CWA violations) that build tribal capacity.
6	The Task Force should bolster tribal community planning and improve knowledge among tribal housing authorities of the importance of covering full cost utility pricing for existing and additional housing units.

Table 16: Policy Changes

1	The Goal of Access cannot be met without increased funding. The federal agencies should consider this reality when preparing future agency and program budget requests.
2	EPA should advocate to increase the cap on CWA and SDWA SRF tribal set asides from 1.5% to 3.0%.
3	The agencies should establish standard formats for required pre-construction documents (e.g., NEPA Requirements) for water and wastewater infrastructure projects funded by IHS, EPA and USDA.
4	The Task Force should advocate for funding of operational activities by including O&M funding in agency and program budget requests where statutory authority exists.
5	The Task Force should establish a financial mechanism through public or private sources to subsidize O&M in systems where high unit cost or affordability present problems.
6	The Task Force should review threshold cost criteria policies used for project rankings to consider favoring higher deficiency level homes with higher unit cost thresholds and make recommendations to IHS.
7	Agencies should limit federal funding of the construction of new tribal homes that do not have access to safe water and wastewater disposal upon occupancy.
8	EPA should amend SDWA and CWA Tribal Set-Aside Guidances to allow for the funding of individual facilities, wells, service lines and interior plumbing for homes that lack access.
9	The Task Force should endorse the HHS proposal to establish staff and locate the proposed Health and Medical Response (HMAR) Team with commissioned Corps USPHS Engineering officers that will assist IHS in closing the access gap to safe water and wastewater disposal on tribal lands.
10	EPA should insert into its GAP Guidance the option of allowing tribes to use GAP funding for labor costs associated with the organization and establishment of tribal utilities, to assess asset inventories and conditions, and for studies regarding full cost rates and utility affordability.
11	EPA should request revisions to the Safe Drinking Water Act and guidelines to allow PWSS funds to be provided directly to Tribes that have not been granted treatment as a state (TAS) to implement capacity development programs.

12	EPA should support tribal planning through the use of the EPA GAP grants to ensure homes are constructed with access to water and wastewater infrastructure
13	The agencies should establish a minimum percentage of funding annually toward Access projects for each federal program.
14	EPA-HQ, USDA-HQ and IHS-HQ should develop and sign an MOU that describes the project application process, funding documents and project inspection requirements when a Tribe request IHS's design and project management assistance using USDA or EPA funds.
15	The Task Force should establish a steering committee to advocate for funding from non-governmental organizations to supplement federal funding for tribal O&M operations.

The Subgroup also developed data recommendations that are actions that should be implemented in the short term but may affect the long term approach to achieving the Access Goal as more and better data are collected to describe the homes that make up the Access problem. Table 17 summarizes these recommendations.

Table 17: Improved Data

1	IHS should enhance the ability in STARS to identify special conditions and maintain the PWS Identification field.
2	IHS should clarify the SDS guidance to ensure that the determination of sanitation deficiency levels is uniformly understood and evaluate the impacts of changing the project ranking system to assign project points based on a change in the deficiency level.
3	When IHS annually meets with the appropriate tribal leaders and staff to review updated STARS data prior to establishing final project rankings, other technical assistance (TA) providers and federal partners (as necessary), should be included.
4	IHS and EPA should work collaboratively to develop a sanitary survey format that will facilitate problem identification and data entry into the STARS database.

IHS STARS data system enhancements will improve successful implementation of other recommendations within this report by facilitating better understanding of the access problem by all agencies.

The Subgroup suggests that the Task Force seriously consider implementing recommendations from each category as part of its work plan. Each of the themes presented in Section IV can be addressed through recommendations in each action category; the Subgroup recommends that the Task Force carefully consider at which level (Subgroup, Practice, or Policy) the recommendations will achieve the greatest results for each theme. Although certain recommendations from each category might come in a logical order with Subgroup implementation preceding Practice and Policy changes, the use of iterative feedback from recommendations implemented simultaneously will allow measurable results to be experienced during the timeframe of the Access Goal.

VI. Conclusion

The Subgroup believes that the goal to increase Tribal access to safe drinking water and safe wastewater disposal cannot be met and sustained by 2015 without increased funding and an increased focus on tribal utility capacity development. However, the Subgroup believes that significant progress can be made through the implementation of many of the recommendations in this document.

Through a structured approach to capture input from participants, the Subgroup developed lists of ranked barriers and recommendations. The highest ranked recommendations were:

1. All partner agencies should work together in the budget process to increase or leverage funding for both infrastructure and operations and maintenance, where statutory authority exists, to meet the Access Goal.
2. All partner agencies should provide better coordination and outreach on the programs that are currently available to fund Access related infrastructure, as well as operations and maintenance where statutory authority exists, within Indian Country.
3. All partner agencies should investigate unused/underutilized infrastructure funding that can be used toward the Access Goal.
4. A workgroup should be established to investigate innovative and previously used alternatives to piped water and sewer in hard to serve areas of Alaska and the Navajo Nation, and to identify funding for pilot projects and subsequent implementation.
5. Federal partners should work together to formally coordinate technical assistance services and adopt common standards for pre-construction documents, planning and design standards.

The existing STARS data system provides the only comprehensive data source for tribal access information. The Subgroup recommendations for enhancing the database are vital and need to be implemented in conjunction with the other recommendations in this report to meet the needs of other federal partners while accurately tracking the progress made toward the Access Goal. The Subgroup believes that these data improvements are critical to achieving the funding and interagency collaboration efficiencies described previously. These recommendations are:

1. IHS should enhance the ability in STARS to identify the special conditions and maintain the PWS Identification field.
2. IHS should clarify the SDS guidance on determining sanitation deficiency levels and consider the impacts of changing the project ranking system to assign project points based on a change in the deficiency level.
3. IHS and EPA should work collaboratively to develop a sanitary survey format that will facilitate problem identification and data entry into the STARS database.

Using available funding more efficiently and in innovative ways, improving interagency coordination to increase effectiveness of existing resources, collecting better data to describe the problem of providing access, and targeting solutions will result in increased access to safe drinking water and wastewater disposal in Indian Country. The Subgroup encourages the Task Force to consider these recommendations carefully, to consult with tribes regarding implementation of these recommendations, and to support the continuing involvement of each Federal Agency in working towards accomplishing this important goal.

VIII. Appendix

A. Authority and Roles of Participating Federal Agencies

EPA

EPA has authority and works to provide access to safe drinking water and basic sanitation through three separate programs: 1) implementation of the Safe Drinking Water Act, 2) implementation of the Clean Water Act, and 3) implementation of the Alaska Native Village Infrastructure Program.

- The Safe Drinking Water Act (SDWA) (42 U.S.C. 300f, et seq.)
  - Authorizes EPA to set drinking water standards and requires public water systems (PWSs) to comply with the National Primary Drinking Water Regulations.
  - Authorizes EPA to provide infrastructure grants for tribal public water systems as part of the Drinking Water State Revolving Fund provisions

EPA supports access to safe drinking water on Indian Lands through Safe Drinking Water Act (SDWA) oversight and compliance assistance, and Drinking Water Infrastructure Grants Tribal Set-Asides (DWIG TSA) from the Drinking Water State Revolving Fund. Each year 1.5% of the total Safe Drinking Water Act State Revolving Fund appropriation is set aside to fund construction of drinking water infrastructure in Indian Country. EPA provides a guidance describing eligible and ineligible projects. The total Set-Aside amount is divided among the Regions using a formula that considers both the EPA Drinking Water Needs Survey and the IHS SDS priority list. Each EPA Region has developed their own Program Guidelines with Region specific proposal deadlines and ranking criteria. Often EPA funds are mixed with funds from other agencies' programs to complete projects. In recent years the total allotment nationwide has been near $12.6 million.

- The Clean Water Act (CWA) (33 U.S.C. 1251, et seq.)
  - Authorizes EPA to implement pollution control programs such as issuing permits to regulate wastewater discharged from publicly owned wastewater plants and industrial operations.
  - Funding for constructing tribal wastewater treatment facilities is also covered under the CWA.

Each year, 1.5% of the total Clean Water Act State Revolving Fund appropriation is set aside to fund construction of wastewater infrastructure in Indian Country. The regional funding allotments are calculated by the IHS using the SDS priority list. EPA Regions and IHS Area offices work together to determine the projects to be funded from each IHS Area's SDS priority list. To be selected, projects must be within the fundable range of the top priority projects. Often IHS or other agencies will supply funding to complete a project. In FY 06, total funding for the CWISA Program was $13.3 million.

- PL 104-182 (Alaska Native Village Infrastructure Program)
  - Authorizes the EPA administrator to make grants to the State of Alaska for "the development and construction of water and wastewater systems to improve the health and sanitation conditions in the (Alaska) villages."

All Alaska Native Villages and rural Alaska communities are eligible for funding under the program. EPA annually awards grants to the State of Alaska, according to the amount appropriated by Congress. The funds are incorporated into the Village Safe Water Program managed by the State Department of Environmental Conservation. The program includes an annual grant application process for water and wastewater projects. Projects are prioritized based on an established State of Alaska point system which includes health impact, sustainability criteria and other factors. Projects are funded

according to the prioritization score and the amount of Federal and State funds available for that year. This program has been funded since 1995 at an average of $30 million per year.

IHS

IHS has authority and works to provide access to safe drinking water and basic sanitation through the Sanitation Facilities Construction Program.

- PL 86-121 (42 U.S.C. 2004a)
  - Authorizes IHS to construct, improve, extend, or otherwise provide and maintain, by contract or otherwise, essential sanitation facilities, including domestic and community water supplies and facilities, drainage facilities, and sewage- and waste-disposal facilities, together with necessary appurtenances and fixtures, for Indian homes, communities, and lands.
  - Authorizes IHS to acquire lands, or rights or interests therein, to make such arrangements and agreements with appropriate public authorities and nonprofit organizations or agencies and with the Indians to be served, and to transfer any facilities provided under this section, to any State or Territory or subdivision or public authority thereof, or to any Indian tribe, group, band, or community or, in the case of domestic appurtenances and fixtures, to any one or more of the occupants of the Indian home served thereby.

All federally recognized Tribes are eligible for funding under the program. IHS identifies sanitation deficiencies and develops projects to address those deficiencies. Water, wastewater and solid waste projects are eligible for funding through the 86-121 program. In FY 2006, total funding for the program was $ 92 million.

- PL 94-437 (Indian Health Care Improvement Act) Section 302; (25 U.S.C. 1632)
  - Requires IHS to develop and begin implementation of a 10-year plan to provide safe water supply and sanitation sewage and solid waste disposal facilities to existing Indian homes and communities and to new and renovated Indian homes.
  - Authorizes IHS to provide financial assistance to Indian tribes and communities in an amount equal to the Federal share of the costs of operating, managing, and maintaining the facilities provided.
  - Requires IHS to report which sets forth -
    (A) the current Indian sanitation facility priority system of the Service;
    (B) the methodology for determining sanitation deficiencies;
    (C) the level of sanitation deficiency for each sanitation facilities project of each Indian tribe or community;
    (D) the amount of funds necessary to raise all Indian tribes and communities to a level I sanitation deficiency; and
    (E) the amount of funds necessary to raise all Indian tribes and communities to zero sanitation deficiency

The Indian Health maintains a priority list of sanitation deficiencies identified in cooperation with Tribes which is updated annually. Projects to eliminate all of those deficiencies are included in the deficiency list which is annually reported to Congress. Although maintenance is specifically authorized by the Act, funding for this has not been provided by Congress.

HUD Office of Native American Programs

- Indian Community Development Block Grant (ICDBG)

The ICDBG Program provides eligible grantees with direct grants for use in developing viable Indian and Alaska Native Communities, including decent housing, a suitable living environment, and economic opportunities, primarily for low and moderate income persons. The program funds federally recognized Indian Tribes, bands, groups, or nations, and Alaska Native Villages (including Alaska Indians, Aleuts, and Eskimos) and, in certain circumstances tribal organizations. Funds are awarded on a competitive basis for housing rehabilitation; land to support new housing, new housing constructions,

homeownership assistance projects, public facilities and improvements, economic development, public services, micro enterprise programs, and planning.

The ICDBG program can provide funding for recipients in the following categories:

Housing
Housing rehabilitation, land acquisition to support new housing construction, and under limited circumstances, new housing construction.

Public Facilities and Improvements
Infrastructure construction, e.g., roads, water and sewer facilities; and, single or multipurpose community buildings.

Economic Development
Wide variety of commercial, industrial, agricultural projects which may be recipient owned and operated or which may be owned and/or operated by a third party.

The program regulations provide for two categories of grants, Single purpose and Imminent Threat. Single purpose grants are awarded on a competition basis pursuant to the terms published in an annual Notice of Funding Availability (NOFA). In FY 07, HUD received $59.4 million in appropriations for this program. Within the appropriation, there is typically a set-aside for the noncompetitive, first-come, first-served, funding of grants to eliminate or lessen problems which pose an imminent threat to public health or safety. In FY 07, Congress set-aside $3.96 million from the ICDBG appropriation for this purpose.

- Indian Housing Block Grant (IHBG)

The Native American Housing Assistance and Self-Determination Act of 1996 (NAHASDA), created the IHBG program. It provides annual grants, on a formula basis, to all eligible Indian tribes or tribally designated housing entities (TDHEs). The funds may be used for a wide range of affordable housing activities including site improvement and the development of utilities and utility services. Eligible IHBG recipients are Federally recognized Indian tribes or their tribally designated housing entity (TDHE), and a limited number of state recognized tribes who were funded under the programs authorized by the United States Housing Act of 1937 (USHA). An eligible recipient must submit to HUD an Indian Housing Plan (IHP) each year to receive funding. At the end of each year, recipients must submit to HUD an Annual Performance Report (APR) reporting on their progress in meeting the goals and objectives included in their IHPs. Eligible activities include housing development (including rehabilitation), assistance to housing developed under USHA, housing services to eligible families and individuals, housing management services, crime prevention and safety, and model activities that provide creative approaches to solving affordable housing problems. In FY 07, HUD received $623.7 million in appropriations for this program.

- Section 184 Loan Guarantee

Because the federal government holds most land in Indian country in trust, the land cannot be mortgaged. Congress established the Section 184 Indian Housing Loan Guarantee Program in 1994. Section 184 provides loan guarantees to private lenders approved by HUD/FHA, the U.S. Department of Veterans Affairs, or the U.S. Department of Agriculture so that they will issue mortgage financing for projects located on such land. This program is designed to offer home ownership, property

rehabilitation, and new construction opportunities for eligible tribes, Indian Housing Authorities and Native American individuals and families wanting to own a home on trust land or land located in an approved Indian or Alaska Native area. The loans must be issued for one- to four-family homes located in Indian or Alaska Native areas. The loans may be used for construction, acquisition, refinancing, or rehabilitation of homes. Borrowers must be: Indians or Indian families who will occupy the property as a principal residence and who meet the credit and underwriting standards of the program; Indian housing authorities, including TDHEs; or Indian Tribes. Eligible borrowers apply for loans through private mortgage lenders that prepare the documents and submit them to the ONAP Denver Program Office for approval. In FY 07, HUD received $251 million in appropriations for this program.

USDA-Rural Development, Rural Utility Programs

USDA, Rural Utility Programs provides loans, grants and loan guarantees for drinking water, sanitary sewer, solid waste and storm drainage facilities in rural areas and cities and towns of 10,000 or less. Public bodies, non-profit organizations and recognized Indian tribes may qualify for assistance. USDA also makes grants to nonprofit organizations to provide technical assistance and training to assist rural communities with their water, wastewater, and solid waste problems.

Consolidated Farm and Rural Development Act (7 U.S.C. 1926)

- The Agency is authorized to make loans and grants to public bodies, federally recognized Indian tribes, and organizations operated on a not-for-profit basis (such associations must be controlled by a local public body or broadly based ownership of the local community.)
- Funds are used to finance the development, storage, treatment, purification, or distribution of water or the collection, treatment, or disposal of waste in rural areas. (Water, sanitary sewer, storm sewer, solid waste)
- Projects must serve a rural area—cities and villages not to exceed 10,000 population
- Grant funding is available to low income communities not to exceed 75% of project costs and should result in reasonable user costs
- Facility may be centralized systems, cluster systems, or individual single-site installations--applicants must own, operate, maintain, and control the facilities or service
- Facilities must be for public use. Facilities must be installed so as to serve any potential user within the service area who desires service and can be feasibly and legally served.

Program Funding: Revised Continuing Appropriations Resolution, 2007, Public Law 110-5, dated February 15, 2007:

Guaranteed Loans	$75,000,000
Direct Loans	$990,000,000
Grants	$456,390,000

FY2007 Appropriations include the following set asides:

Empowerment Zones/Enterprise Communities (EZ/EC) and Rural Economic Area Partnership (REAP) Zones of $15,863,453.82 Loans and $10,300,000 Grants

Colonias—Section 306C WW Grants of $24,750,000

Native American—Section 306C WW Grants of $16,335,000 grant funds

- Projects must serve Tribes/service areas where the per capita income is not more than $15,110 and the unemployment rate is not less than 5.50%

Rural Alaskan Villages Grants of $24,750,000

Emergency and Imminent Community Water Assistance Grants (ECWAG) of $13,691,700 grant funds

Additional USDA, Rural Utility Service, Water and Environmental programs and FY07 funding levels include:

Technical Assistance and Training Grants, $18,067,500—eligible non-profit organizations to identify and evaluate solutions to water problems and waste disposal problems in rural areas and technical assistance to improve the management, operation, and maintenance of water and waste facilities

Solid Waste Management Grants, 3,465,000—eligible non-profit organizations, public bodies, Federally recognized Indian Tribes, academic institutions to provide technical assistance and training to reduce the solid waste stream through reduction, recycling, and reuse; training to enhance landfill operator skills; and technical assistance for landfill closures

Non-profit Individual-Owned Water Well System Grant, $990,000

Water and Wastewater Revolving Funds, $495,000

B. Identified Barriers to Access to Safe Drinking Water and Wastewater Disposal

Funding and Capital Costs
There are insufficient federal funds to meet the 2015 Access Goal
Sanitation services to remaining homes that completely lack access (first service homes) have a high unit capital cost
Funding for O&M costs at those agencies that have authority to provide it has not been appropriated by Congress
Homes without electricity increase the difficulty and cost of providing Access
Engineering support is limited by program budgets resulting in reduced project planning, design, construction oversight, and technical assistance to help tribes operate and maintain systems
Emergency funding not readily available
Long Start-Up Process
Each agency has it's own application process, resulting in confusion and inefficient use of time and money
Application funding cycles and timing all increase the costs and requirements of the tribes
Engineering timing and Preliminary Engineering requirements, plans and specs, bidding requirements
Lack of early engineering support
Operations and Maintenance
Some infrastructure is recapitalized before its design life as a result of minimal maintenance and repair; dollars are diverted from homes that do not have Access
Prohibitive O&M costs for marginal housing densities and systems in remote geography or harsh climate
Tribal operations policies
Sub-optimal tribal O&M capacity (Technical, Financial, and Managerial)
Funding for technical assistance is decreasing
Statutory/Legal Barriers
Allotment land/trust land/ROW issues
NEPA implementation protocols differ from agency to agency
HUD funds tribes based on formula allocations and dollars go to all eligible activities. The Tribes decide what they want to do with the money, and DW and WW are eligible uses of that money. HUD cannot specify that the money must go to DW or WW projects. This can result in new homes being built that do not have access.
The EPA SDWA funding does not serve homes without piped water facilities. EPA cannot fund private wells.
Not all federal funding can be used for first service (service lines to individual homes, house plumbing and individual wells
EPA cannot provide O&M funding to public water systems
Tribal Planning and Political Issues
Remote locations and land ownership issues result in the construction of tribal homes without adequate consideration of access to drinking water and sanitation facilities
Available funding does not always go to those homes with the greatest public health need
Cultural issues

C. SANITATION DEFICIENCY SYSTEM Guide for Reporting Sanitation Deficiencies for Indian Homes and Communities, Working Draft, Appendix E: Guidance on Assigning Deficiency Levels

Attached as a separate .pdf file

SANITATION DEFICIENCY SYSTEM

S D S

Guide for Reporting Sanitation Deficiencies
for Indian Homes and Communities

WORKING DRAFT

May 2003

Division of Sanitation Facilities Construction
Office of Environmental Health and Engineering
Indian Health Service

Department of Health and Human Services
Public Health Service
Indian Health Service

Appendix E - Guidance on Assigning Deficiency Levels

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL V (DL5): Unsafe water supply and wastewater disposal facilities. Deficiency
5		Use Level IV (DL4) for water and Level IV (DL4)for sewer

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL IV (DL4): Unsafe water supply or wastewater disposal facilities. Deficiency
4	Water	No piped water in home (exception - designed water hauling system or central watering facility where piped water is not economically or technically feasible.), or
4	Water	Surface water with no filtration, or
4	Water	Surface water with no treatment, or
4	Water	Seasonal dry wells or springs, or
4	Water	Spring or well source incapable of providing drinking water that complies with regulations for microbiological contaminants, or
4	Water	Unprotected spring or well (open spring, open well), or
4	Water	Water does not meet all MCL's at the tap for primary contaminants set by EPA, or
4	Water	Major system component failure makes system inoperable; e.g., pump on an individual water system, water storage tank failure on a community water system, etc, or
4	Water	Water source providing less than 30 gpcd for more than 20 days per year, or
4	Water	Five psi pressure under dynamic water flow conditions occurs daily in the distribution system, or
4	Water	Individual water haul system with on-site storage and plumbing (and piped water is feasible), or
4	Water	Summer distribution system with watering point remainder of year, or
4	Water	Watering point or washeteria (improved facilities feasible), or
4	Water	An unusual situation where deteriorated water distribution/ storage/treatment/ source facilities makes system inoperable, or deteriorated facilities or facility components not correctable by routine maintenance will cause system failure within 2 years, or
4	Water	Water storage on a fill-and-draw system provides less than 1/3 of applicable gpcd design standard for community for period when filling is not possible, or
4	Water	Community water source provides less than 35 gpcd for 10 days during the year on a regular basis, or
4	Water	Community water system without water routinely for more than 10 days/year (inadequate facilities -no O&M problems).

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL IV (DL4): Unsafe water supply or wastewater disposal facilities. Deficiency
4	Sewer	No piped wastewater in home (privies), or
4	Sewer	Sewage surfacing from failed drainfield on individual site, or
4	Sewer	No sewage treatment facility. (Septic tank, or community sewage system has a discharge without treatment.), or
4	Sewer	Sewage treatment facility failure creating health hazard in residential area; e.g., sewage surfacing from community drainfield is accessible to residents, sewage discharge to a dry stream bed accessible to residents, or
4	Sewer	Documented ground water (drinking water aquifer) contamination by septic tank systems, or
4	Sewer	Sewer backups into homes caused by high groundwater in absorption system (every year occurrence), or
4	Sewer	Sewer backup into homes caused by construction design or deteriorating facilities at least 2 times per year, or
4	Sewer	Wastewater surfacing on individual home site continuously or minimum 20 days/year, or
4	Sewer	Routine raw sewage discharge to environment
4	Sewer	Deteriorated facilities or facility components not correctable by routine maintenance which will create DL4 conditions within 2 years; e.g., stream erosion of lagoon dike will cause failure and discharge of raw sewage, or
4	Sewer	Honey-bucket haul systems (individual or community), or
4	Sewer	Piped greywater only, or
4	Sewer	No piped wastewater (exception--utility authority sewage hauling program with on-site storage and plumbing), or
4	Sewer	Unrestricted access to partially treated sewage discharge to environment within 500 feet of occupied homes; e.g., a. Overflowing wastewater lagoons, b. Sewage surfacing from community drainfield.

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL III (DL3): Deficiencies related to environmental compliance, lack of solid waste disposal facilities, conditions where potential health threat is significant because facilities are not capable of routinely meeting standards to protect public health. Deficiency
3	Water	Significant problem with water quantity; system incapable of routinely maintaining established minimum pressure for public health: (i) May be source problem; (ii) May be storage problem; (iii) May be water main size problem, or
3	Water	Significant water leakage problems due to deteriorated piping or joints, or
3	Water	Environmental compliance problem with water system, or
3	Water	Individual wells or springs with yields of less than 1 gpm or less than 75 gpcd capacity, or
3	Water	Water distribution system leakage that exceeds 15 percent of the design flow for the entire system, or
3	Water	Water main breaks, water treatment facilities inoperable, or system without water for more than 4 times/yr caused by improper design, construction, or deteriorating pipe, or
3	Water	An unusual situation where deteriorated water distribution/ storage/treatment/ source facilities makes system inoperable, or deteriorated facilities or facility components not correctable by routine maintenance will cause system failure within 4 years, or
3	Water	Water pressure less than 10psi, 25% of the time or daily during peak use periods, or
3	Water	Utility authority water haul program with on-site storage and plumbing (feasible project for piped water), or
3	Water	Water storage tank leakage not associated with piping connections, fittings, controls, etc, or
3	Water	Water storage on a fill and draw system provides less than 2/3 of applicable design standard for gpcd storage for user population during non-fill period, or
3	Water	Treatment facility at full capacity (24 hrs/day) to meet gpcd domestic use for community facilities, or
3	Water	Corrosion control to comply with safe drinking water act requirements, unless required to meet MCLs, or
3	Water	Water treatment that does not comply with surface water treatment rule but meets MCLs, or
3	Water	Cross-connections with non-potable sources (distribution, storage, treatment, etc).

Deficiency Level	Proposed Sanitation Facility Type	LEVEL III (DL3): Deficiencies related to environmental compliance, lack of solid waste disposal facilities, conditions where potential health threat is significant because facilities are not capable of routinely meeting standards to protect public health. Deficiency
3	Sewer	System periodically incapable of complying with sewage discharge permit. (Facility related, not O&M), or
3	Sewer	Periodic sewer overflows due to inadequate system main sizes, or
3	Sewer	Contamination of groundwater due to deficient treatment facility; e.g., periodic percolation from sewage lagoons into groundwater prior to adequate treatment, or
3	Sewer	An unusual situation where deteriorated facilities not correctable by routine maintenance will cause failure of any sewer system component within 4 years and create a DL4 condition, or
3	Sewer	Utility authority sewage hauling program with on-site storage/plumbing and feasible piped sewage system, or
3	Sewer	Violations of discharge permit because of inadequate facilities more than 10% of the time, or
3	Sewer	Overflowing lagoon without discharge permits (total retention design) more than 10% of time, or
3	Sewer	Lagoon seepage at least 10 times current applicable standard in primary or secondary cell with ground water less than 50 feet below surface, or
3	Sewer	Progressive lagoon dike erosion not correctable by routine maintenance will cause dike failure within 3 years, or
3	Sewer	Dike seepage where seepage creates a continuous flow of sewage effluent in a defined channel, or
3	Sewer	Sewage treatment plant not complying with discharge permit because of inadequate facilities 10% of time, or
3	Sewer	Deteriorated sewage treatment plant component not correctable by routine maintenance will fail within 4 years and create DL4 conditions, or
3	Sewer	Primary lagoon cell does not hold any liquid, or
3	Sewer	Sewage treatment plant at capacity with current flow, or
3	Sewer	Sludge disposal facilities required to comply with new regulation, or
3	Sewer	Community drainfield with surfacing sewage effluent located more than 500 feet from occupied homes, or
3	Sewer	Documented ground water contamination by septic tank systems (not drinking water aquifer), or
3	Sewer	Sewage surfacing from drainfields at individual sites, or
3	Sewer	Cesspools or similar type facilities used for waste disposal, or
3	Sewer	Seepage pits for graywater without settling tanks, or
3	Sewer	Sewage lift station overflows--resulting from design, construction, or deteriorating facilities--more than 3 times per year, or
3	Sewer	Sewer overflows due to inadequate main sizes which occur more than 3 times per year, or

Deficiency Level	Proposed Sanitation Facility Type	**LEVEL III (DL3): Deficiencies related to environmental compliance, lack of solid waste disposal facilities, conditions where potential health threat is significant because facilities are not capable of routinely meeting standards to protect public health.** Deficiency
3	Sewer	Sewer system infiltration which exceeds 20% of the system design flow (sewer mains, wet-wells, manholes, service lines etc.). Continuous or at least 10 occurrences per year, or
3	Sewer	Sewer system exfiltration which exceeds 10% of system design flow (may be greater deficiency if causing contamination of drinking water aquifer, etc.), or
3	Sewer	Utility sewage haul systems with household plumbing connected to a storage tank and piped sewage feasible, or
3	Sewer	More than three sewer main breaks per year caused by improper design, construction, or deteriorating pipes, or
3	Sewer	Sewer main construction, design, or root problems which cause plugging with overflows more than 3 times per year.
3	Solid Waste	Disposal site in non-compliance with regulations due to major inadequacies in facilities or equipment, or
3	Solid Waste	Contamination of groundwater or surface water by solid waste disposal site, or
3	Solid Waste	Open dump; i.e., site does not meet EPA regulations for municipal solid waste landfill, or
3	Solid Waste	Landfill does not meet site location criteria, or
3	Solid Waste	Landfill with unrestricted access; i.e., no fence, or
3	Solid Waste	Scattered open dumping with no collection, transfer station or disposal site reasonably available and development of a solid waste management program for the Area is feasible and workable, or
3	Solid Waste	Solid waste management program never had adequate equipment to properly operate site.

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL II (DL2): Deficiencies generally related to providing improved service where facilities meet all environmental regulations and potential health threat is minimal and facilities are capable of closely meeting current standards established to protect public health. Deficiency
2	Water	Facilities that do not meet current design standards; e.g., additional water source, additional water storage, increase main size, includes need to increase system capacity, chlorination not required by current regulations, or
2	Water	Facilities that cause infrequent problems related to Public Health Standards; e.g., low pressure situations, or
2	Water	Facilities that fail to meet secondary drinking water standards, or
2	Water	Major deficient facilities that require replacement because of physical condition; e.g., main replacement, storage tank replacement, etc., or
2	Water	Facility deficiencies such as inaccurate as-builts or equipment operating guides, or
2	Water	Facilities that do not provide piped water in homes, which were specifically designed and constructed as centralized or water haul facilities, for economically feasible or technical considerations, or
2	Water	Individual wells or springs do not provide water meeting secondary drinking water standards, or
2	Water	Deteriorated individual water supply facilities not correctable by routine maintenance, or
2	Water	Deteriorated water mains not correctable by routine maintenance (see exceptions DL3 and DL4), or
2	Water	Current system operating pressure less than design standard of 20 psi, or
2	Water	Pumping cycle for pumps exceeds design standard; e.g., 16 hours, with a design standard of 12 hours, or
2	Water	Water meters needed and requested, or
2	Water	Deteriorated service lines require replacement, or
2	Water	Looping of water line required to correct water quality or pressure problems in system, or
2	Water	Direct line from water source to storage needed to correct water treatment or distribution problems, or
2	Water	Inoperable hydrants or gate valves require replacement, or
2	Water	Water main size does not meet current standards and is causing operational problems, or
2	Water	Watering point, washeteria, or water haul system with no feasible improved facilities project, or
2	Water	System leakage that causes operations problems, or
2	Water	Excessive pressure surges in water mains causing operational problems, or
2	Water	Additional flush hydrants to correct water quality problems, or
2	Water	Correcting problems with different overflow elevations on storage tanks, or
2	Water	Deteriorated water storage facilities not correctable by routine maintenance, or

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL II (DL2): Deficiencies generally related to providing improved service where facilities meet all environmental regulations and potential health threat is minimal and facilities are capable of closely meeting current standards established to protect public health. Deficiency
2	Water	Inadequate storage for current use; e.g., 1-day storage, design standard 2-days storage based on applicable gpcd design criteria, or
2	Water	Water storage facility for fill and draw system does not meet design standard for current use, or
2	Water	Fencing around water storage facilities, or
2	Water	Providing safety cages on water storage tanks, or
2	Water	Tank rehabilitation that requires more than normal maintenance associated with painting, or
2	Water	Storage tank coatings do not meet current standards, or
2	Water	Deteriorated water treatment facilities not correctable by routine maintenance, or
2	Water	Treatment units daily operating period exceeds current design standard; e.g., operating 20 hours/day, design standard 12 hours/day with applicable per capita consumption design standard, or
2	Water	Chlorination or fluoridation equipment needed to comply with current design standard (not required by regulations or because of history of microbial violations) , or
2	Water	Water treatment does not provide water meeting secondary drinking water standards, or
2	Water	Separate room for chemicals needed at water treatment facility, or
2	Water	Water treatment plant exceeds design life, has numerous operating problems, and requires replacement for efficient, effective operation, or
2	Water	Fencing around water treatment facility to meet design standard requirements, or
2	Water	Correcting iron bacteria problems, or
2	Water	Water source does not meet current design standard; e.g., one well current design standard, 2 wells needed for community water system (additional water source economically feasible), or
2	Water	Water does not meet secondary drinking water standards, or
2	Water	Surface water intake problem, or
2	Water	Fencing around water source, or
2	Water	Abandoning existing wells in accordance with standards, or
2	Water	Iron bacteria problems, or
2	Water	Well construction or spring development problems, or
2	Water	Well located in a floodplain causing operational problems, or
2	Water	Water source without automatic controls causing operational problems, or

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL II (DL2): Deficiencies generally related to providing improved service where facilities meet all environmental regulations and potential health threat is minimal and facilities are capable of closely meeting current standards established to protect public health. Deficiency
2	Water	Pollution source - water source separation, do not meet current standards, but no documented contamination problems on record, or
2	Water	Above ground well discharge causing operating problems, or
2	Water	Deteriorated water source not correctable by routine maintenance, or
2	Water	Deteriorated facilities not correctable by routine maintenance, or
2	Water	Water system components that do not meet current Area design standards. Water use and flows for determining system component deficiencies are based on current Area gpcd domestic use criteria. Excessive water use does not create deficiencies, or
2	Water	Control system modifications required for efficient, effective operation which are not causing operational problems, or
2	Water	Standby electrical power needs, or
2	Water	Cross connection problems with potable water sources, or
2	Water	Modification of facilities required to comply with seismic standards, or
2	Water	Modifications to increase efficiency and effectiveness, solve operational problems and reduce cost, or
2	Water	Water system component that is causing continuing routine operating problems and requires replacement (excessive maintenance required).
2	Water	Watering point, water haul system, or washeteria with no feasible improved facilities project.

Deficiency Level	Proposed Sanitation Facility Type	LEVEL II (DL2): Deficiencies generally related to providing improved service where facilities meet all environmental regulations and potential health threat is minimal and facilities are capable of closely meeting current standards established to protect public health. Deficiency
2	Sewer	Facilities that cause infrequent problems related to public health concerns; e.g., infiltration, exfiltration, etc., or
2	Sewer	Facilities that do not meet current design standards including reserve system capacity, or
2	Sewer	Facilities have potential for creating problems; e.g., replace septic tanks with community sewage facilities when there is high probability of future ground water contamination due to septic tank density, or
2	Sewer	Facility deficiencies such as lack of accurate as-builts or equipment operating guidance, or
2	Sewer	Abandoned on-site wastewater facilities not properly closed, or
2	Sewer	Septic systems which do not meet current design standards: a. high ground water; b. inadequate separation from water sources; c. small sites with no replacement alternative; d. structural damage to tank or subsurface disposal system, or
2	Sewer	No available site for septage (waste pumped out of septic tanks) disposal, or
2	Sewer	Tree and weed growth in bottom of lagoon because of facility deficiencies, or
2	Sewer	Lagoon dike seepage, or
2	Sewer	Lagoon dike erosion, or
2	Sewer	Deteriorated sewage treatment plant components not correctable by routine maintenance causing operational problems, or
2	Sewer	Old, unused sewage treatment facilities not properly abandoned, or
2	Sewer	Ocean outfall problems, or
2	Sewer	Lagoon organic loading exceeds standards, or
2	Sewer	Lagoon liner repair, or
2	Sewer	Single cell lagoon with operational problems, or
2	Sewer	Sewer systems including lift stations and force mains with overflow problems, or
2	Sewer	Inadequate sewer system as-builts, or
2	Sewer	Deteriorated sewer mains which are causing operational problems, or
2	Sewer	Deteriorated sewage lift stations causing operational problems, or
2	Sewer	Infiltration that exceeds 10% of design flow, or
2	Sewer	Exfiltration that exceeds 5% of design flow, or
2	Sewer	Sewer main root or construction problems which cause backups and/or overflows, or

Deficiency Level	Proposed Sanitation Facility Type	**LEVEL II (DL2): Deficiencies generally related to providing improved service where facilities meet all environmental regulations and potential health threat is minimal and facilities are capable of closely meeting current standards established to protect public health.** Deficiency
2	Sewer	Sewer service line root or construction problems, or
2	Sewer	Cleanouts needed on force main, or
2	Sewer	Utility sewage haul systems with household plumbing and on-site storage (piped sewage not feasible), or
2	Sewer	Sewage treatment and collection facilities that do not meet current design standards based on current flows, or
2	Sewer	Standby and emergency power needs, or
2	Sewer	Safety hazards to utility personnel associated with sewage lift stations, treatment plants etc, or
2	Sewer	Deteriorated sewage treatment collection or disposal facilities not correctable by routine maintenance, or
2	Sewer	Utility authority sewage hauling program with on-site storage and plumbing and no feasible piped sewer system.
2	Solid Waste	Facilities - collection and disposal facilities nearing capacity which require expansion, or
2	Solid Waste	Facilities without adequate equipment or equipment does not meet current standards, or
2	Solid Waste	Facilities or studies related to hauling off-site, or
2	Solid Waste	Inadequate collection equipment, or
2	Solid Waste	Transfer station needs (note a project to construct a transfer station is a DL2 project unless an existing DL3 disposal site is properly closed or use of the disposal site is terminated by restricting access or other means), or
2	Solid Waste	Inadequate collection system storage facilities, or
2	Solid Waste	Inadequate on-site storage of wastes, or
2	Solid Waste	Old dump site not properly closed with restricted access, or
2	Solid Waste	Improperly operated site because of lack of adequate equipment, or
2	Solid Waste	Inadequate storage facilities at site for site maintenance equipment, or
2	Solid Waste	Current landfill site will be at capacity within 4 years requiring new site, or
2	Solid Waste	Existing off-reservation non-tribal landfill closing within 4 years requiring transfer station or disposal site on reservation, or
2	Solid Waste	Site improvements needed to meet current design standards.

Deficiency Level (DL)	Proposed Sanitation Facility Type	LEVEL I (DL1): Deficiencies are related to routine repair replacement or maintenance needs. Deficiency
1	Water	Items such as painting water storage tanks, replacing standby pumps, equipment repair, or
1	Water	Correcting drainage problems around wells and springs, or
1	Water	Routine building repairs, individual or community, or
1	Water	Replacing well caps or well seals, or
1	Water	Fixing hydrants or gate valves, or
1	Water	Repairing minor leaks piping connections, control connections, etc, or
1	Water	Painting hydrants or treatment equipment, or
1	Water	Repairing or replacing markers, or
1	Water	Updating as-builts, or
1	Water	Repairing backup pumps, or
1	Water	Repairing fencing or replacing locks, or
1	Water	Replace chemical feed equipment.

Deficiency Level	Proposed Sanitation Facility Type	LEVEL I (DL1): Deficiencies are related to routine repair replacement or maintenance needs. Deficiency
1	Sewer	Items such as painting facilities, replacing standby pumps, equipment repair, or
1	Sewer	Repairs to individual systems, or
1	Sewer	Drainage control, or
1	Sewer	Weed control in lagoon dikes, or
1	Sewer	Repairs to backup equipment, or
1	Sewer	Repair to standby equipment, or
1	Sewer	Lagoon fencing repairs, or
1	Sewer	Sewage treatment plant painting, or
1	Sewer	Manhole repairs, or
1	Sewer	Lift station painting, or
1	Sewer	Repair to controls.
1	Solid Waste	Painting facilities, repairing fences, repairing equipment, replacing minor pieces of equipment, or
1	Solid Waste	Repairs to on-site buildings, or
1	Solid Waste	Fence repairs, or
1	Solid Waste	Painting needs, or
1	Solid Waste	Equipment repairs, or
1	Solid Waste	Maintenance on transfer stations.
1	Solid Waste	Indian-owned homes have access to municipal solid waste landfill but do not to use it.