The Sanitation Facilities Construction Program
of the Indian Health Service

Public Law 86-121

Annual Report for 2007

U.S. Public Health Service
Department of Health and Human Services

This Annual Report for Fiscal Year 2007 was produced by the Indian Health Service Sanitation Facilities Construction Program to make available frequently requested information about the Program. Additional information can be obtained by writing to the following address:

Indian Health Service
Sanitation Facilities Construction Program
12300 Twinbrook Parkway
Room 610, Twinbrook Metro Plaza
Rockville, MD 20852

Website: www.dsfc.ihs.gov

Editor: Carol L. Rogers, P.E.

The Sanitation Facilities Construction Program
Annual Report for 2007

Table of Contents

Preface

The Indian Health Service (IHS) Sanitation Facilities Construction (SFC) Program continues to identify and report the sanitation needs of American Indians and Alaska Natives while carrying out a Program to meet those needs in cooperation with tribal governments. Those needs are summarized in this report as well as some of the accomplishments of the Program during the reported fiscal year. The Program's continuing challenges include improving community water supplies, wastewater treatment systems, and solid waste disposal facilities in culturally diverse and oftentimes remote areas–from Alaska to Florida and from Maine to California. The projects highlighted in this report illustrate typical SFC Program efforts in addressing these specific challenges.

Since it was created by Public Law 86-121 in 1959, the SFC Program has worked in partnership with tribal governments to construct essential sanitation facilities. As a result of over 48 years of cooperative efforts, many tribes have developed the administrative and technical capability to construct their own sanitation facilities with engineering support from IHS. The majority of all the SFC Program's construction work is accomplished by either tribes, tribal organizations, or Indian-owned construction firms. A number of tribes continue to assume responsibility for their respective SFC programs, while the IHS SFC Program continues to work with tribes and others to support the tribal Self-Governance/Self-Determination decision making process under the authority of the Indian Self-Determination and Education Assistance Act. One goal of the SFC Program is to make available program information in an open, accurate, and efficient way; this report, prepared annually since 1993, is one means of achieving that goal.

The Sanitation Facilities Construction Program

Introduction

On July 31, 1959, President Dwight D. Eisenhower signed Public Law (P.L.) 86-121. Under this Act, Indian Health Service (IHS), Sanitation Facilities Construction (SFC) Program, is authorized to construct essential sanitation facilities for American Indian and Alaska Native (AI/AN) homes and communities. Since 1959, over 291,000 homes have been provided sanitation facilities, and this achievement has helped to significantly improve the health of the AI/AN people. The gastroenteric and postneonatal death rates among the Indian people have been reduced significantly, primarily because of the increased prevalence of safe drinking water supplies and sanitary waste disposal systems.

Figure 1: 1959 photo of Elko, Nevada, the location of the first SFC.

The SFC Program is unusual among Federal programs because IHS personnel work cooperatively, as close partners, with tribes in providing vital water, wastewater disposal, and solid waste disposal facilities to Indian communities and Alaska villages. Enhancing tribal capabilities and building partnerships based on mutual respect are the major keys to the success of the SFC Program.

Protecting the health of and preventing disease among AI/AN populations are primary IHS objectives. In the clinical environment, physicians, dentists, nurses, and other medical care providers work to restore the health of patients; however, preventing illness is the most effective way to improve health status. Improving the environment in which people live and assisting them in interacting positively with that environment results in significantly healthier populations. Providing sanitation facilities and better quality housing are environmental improvements that have proven track records in that regard.

The SFC Program Mission

Today, as it has for over 48 years, the SFC Program works with the AI/AN people to eliminate sanitation facilities deficiencies in Indian homes and communities.

The IHS mission is to raise the health status of AI/AN people to the highest possible level. IHS carries out its mission by providing for comprehensive primary and preventive health services for the AI/AN people. The SFC Program supports the preventive health part of IHS's mission by providing sanitation facilities construction projects, in consultation with AI/AN tribes, for cooperative development and continued operation of safe water, wastewater, and solid waste systems and related support facilities. Studies by the United States Public Health Service (USPHS) and others have shown that access to safe water and sanitary waste disposal is essential to reducing the incidence of waterborne communicable diseases and that families that have access place fewer demands on the health care system. The U.S. Environmental Protection Agency (EPA) has included access to safe water and sanitary waste disposal in its Strategic Plan.

In partnership with tribes, the SFC Program provides the following:

1. *Develops and maintains an inventory of sanitation deficiencies in Indian and Alaska Native communities for use by IHS and to inform Congress.*

2. *Provides environmental engineering assistance with utility master planning and sanitary surveys.*

3. *Develops multi-agency funded sanitation projects; accomplishes interagency coordination; assist with grant applications; and leverages IHS funds.*

4. *Provides funding for water supply and waste disposal facilities.*

5. *Provides professional engineering design and/or construction services for water supply and waste disposal facilities.*

6. *Provides technical consultation and training to improve the operation and maintenance of tribally owned water supply and waste disposal systems.*

7. *Advocates for tribes during the development of policies, regulations, and programs.*

8. *Assists tribes with sanitation facility emergencies.*

Tribal Involvement

The SFC Program employs a cooperative approach for providing sanitation facilities to AI/AN communities. During fiscal year (FY) 2007, tribes, tribal organizations, or Indian-owned construction firms administered approximately $121 million in construction funds. Many tribes participated by contributing labor, materials, and administrative support to projects.

Each sanitation facilities construction project is initiated at the request of a tribe or tribal organization. Consultation with the tribal government is maintained throughout every phase of the construction process, from preliminary design

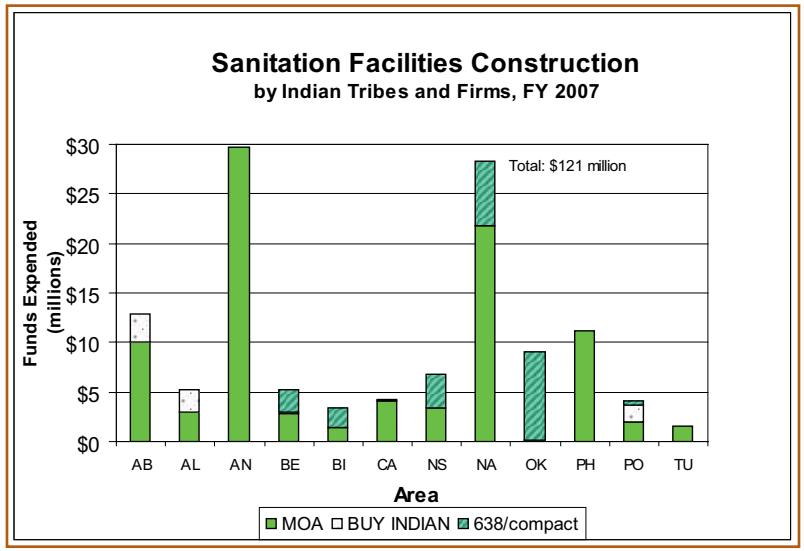


Figure 2: Funds expended by AI/AN tribes and Indian-owned firms in FY 2007 by IHS Area.

Figure 3: Tank diver inspecting and cleaning water storage tank, NM.

to project completion. Operation and maintenance of these facilities by the AI/AN people, with ongoing technical assistance from IHS, ensures the long-term health benefits associated with improved sanitation conditions. In addition to construction work, a number of tribes assume responsibility for the administration of their own SFC Program, under Titles I and V of P.L. 93-638, the Indian Self-Determination and Education Assistance Act, as amended. Tribes from the Anchorage, Billings, California, Nashville, Navajo, Oklahoma City, and Phoenix Areas are managing their own SFC Program through Self-Governance compacts (Table 1).

The IHS SFC Program seeks the advice and recommendations of the national Facilities Appropriation Advisory Board and Area-specific Tribal Advisory Committees. These groups review program policies and guidelines and provide input on the future direction of the SFC Program.

Figure 4: IHS engineers at the final inspection for pumphouse expansion for Desmet community, ID.

TABLE 1
Tribes that Managed the SFC Program in FY 2007 Under Title I or V of P.L. 93-638, as Amended

IHS Area	Tribe
Anchorage	Alaska Native Tribal Health Consortium
Billings	Confederated Tribes of Salish & Kootenai (Flathead)
	Rocky Boys (Chippewa-Cree)
California	Hoopa Valley Tribe
Nashville	Chitmacha Tribe of Louisiana
	Mississippi Band of Choctaw Indians
	St. Regis Mohawk
	Eastern Band of Cherokee
Navajo	*Navajo Nation
Oklahoma City	Cherokee Nation of Oklahoma
	Absentee Shawnee Tribe of Oklahoma
	Choctaw Nation of Oklahoma
	Chickasaw Nation of Oklahoma
	Wyandotte Tribe of Oklahoma
	*Modoc Tribe of Oklahoma
	The Seminole Nation of Oklahoma (in Chickasaw Compact)
Phoenix	Ely Shoshone Tribe
	Gila River Pima-Maricopa Indian Community
	Yerington
* Title I	

"The Year" in Review

In FY 2007, over $94 million was appropriated for the construction of sanitation facilities. In addition to those appropriated funds, the SFC Program received more than $41 million in direct contributions from other Federal agencies including EPA and from non-Federal sources such as tribes and State agencies. The tribes also receive significant contributions that are used for project funding. With all of these contributions, the SFC Program's construction budget for the fiscal year totaled well over $135 million.

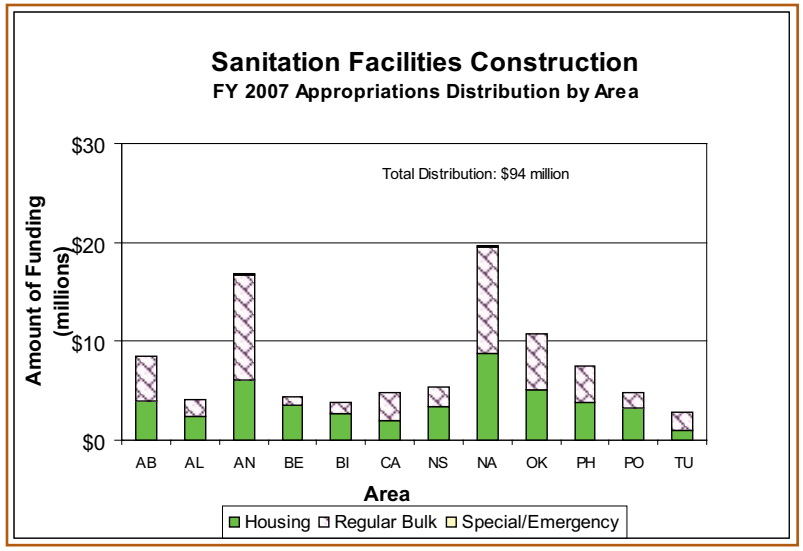


Figure 5: Distribution of SFC Project appropriations, by Area, for FY 2007.

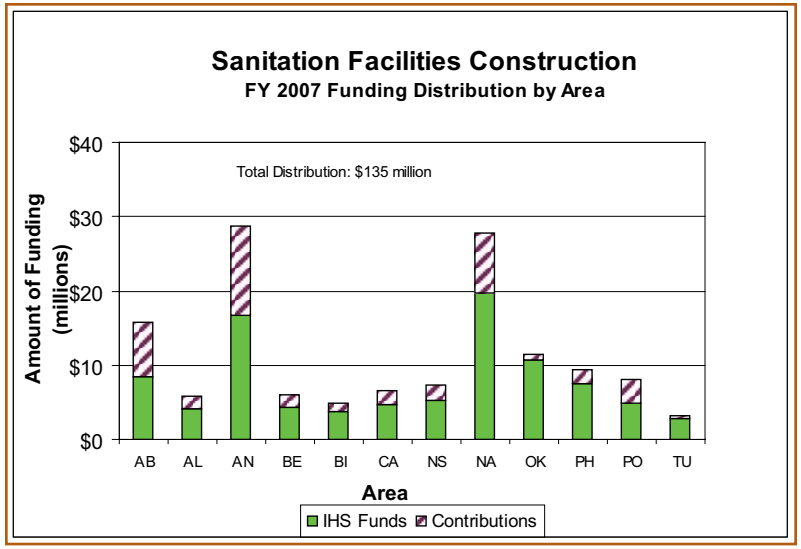


Figure 6: Total distribution of SFC Project funds in FY 2007, including all contributions and HUD funds.

Using the appropriated and contributed funds, the SFC Program initiated 457 projects to provide essential sanitation facilities to an estimated 1,619 new and like-new homes; 2,079 existing first service homes; and 18,121 existing homes. The new housing units provided with sanitation facilities included 41 U.S. Department of Housing and Urban Development (HUD) sponsored units (served with contributed funds); 86 Bureau of Indian Affairs-Home Improvement Program (BIA-HIP) sponsored units; and 1,492 units constructed by tribes, individuals, and other entities. In FY 2007, the SFC Program provided sanitation facilities to a total of 21,819 homes. These statistics are summarized in Table 2 on the following page.

TABLE 2
IHS Sanitation Facilities Construction Program Statistics for FY 2007

SFC Program Budget:

IHS SFC Appropriation =	$	94,003,000
HUD Contributions (Housing + CDBG*) =	$	305,452
Other Contributions =	$	40,791,997
Total Funding in FY 2007 =	$	135,100,449
Total IHS SFC Appropriations since 1959 =	$	2.4 billion

SFC Projects:

Number of Projects Undertaken in 2007 =	457
Total Number of Projects Undertaken since 1959 =	13,307

Homes Provided Sanitation Facilities in FY 2007:

• Number of New and Like-New Homes Served	
HUD-sponsored Homes =	41
BIA-sponsored Homes =	86
Tribal and Other Homes =	1,492
Subtotal	1,619
• Number of Existing First Service Homes Served =	2,079
• Number of Previously Served Homes Provided Upgraded Sanitation Facilities =	18,121
Total Number of Homes Served in 2007 =	21,819

*CDBG-HUD Community Development Block Grant program

Homes Provided Sanitation Facilities since 1959:

• Number of New and Like-New Homes	
HUD-sponsored Homes =	61,532
BIA-sponsored Homes =	22,939
Tribal and Other Homes =	79,162
Subtotal	163,633
• Number of First Service Existing Homes =	113,273
Total Number of Homes Served =	276,906

Sanitation Deficiency System (SDS) Information:

Total Estimated Cost of Sanitation Deficiencies =	$2.37 billion
Total Estimated Cost of Feasible Projects =	$1.102 billion
Total Number of Projects/Phases Identified =	3,213
Number of Feasible Projects Identified =	2,333
Estimated Total Number of Existing Homes Without Potable Water =	36,575
Estimated Total Number of Homes That Lack Either a Safe Water Supply or Sewage Disposal System, or Both (Deficiency Levels 4 and 5) =	43,862

Figure 7: Wastewater treatment lagoon in Kayenta, AZ.

Figure 8: Startup of an Advantex water reclamation facility serving 20 homes, NM.

Seven sanitation facilities construction projects are highlighted on the following pages. These projects represent a small fraction of the total construction workload undertaken by the SFC Program, over 450 projects in 2007. They were selected to illustrate typical cooperative efforts undertaken by IHS, the tribes, and other Federal and State agencies to provide safe water supply, sanitary sewage disposal, and solid waste facilities for AI/AN homes and communities.

Shungopavi Expansion
Second Mesa, Arizona

The Second Mesa Hopi village of Shungopavi, Arizona, is in the Eastern Arizona District of the Phoenix Area IHS. Under a unique, ongoing construction agreement between the Hopi Tribe and the Navajo Engineering Construction Authority (NECA), several water and sewer expansion projects were completed to provide indoor plumbing and first-time community water and sewer service to over thirty homes in the village. The projects also included a new sewer outfall line down the steep slope of the mesa and expansion of the existing total retention lagoon below the mesa.

Figure 9: Engineering technician Erwin Tewa shoots grade on the new 8″ PVC sewer line extension in Shungopavi Village.

Proficient project management was critical to complete construction of the new water and sewer mains within the time requirements of the ceremonial schedule, especially in sensitive cultural areas of the village. Funding for these projects was secured under several memorandums of agreement (MOAs) between the Hopi Tribe, IHS, EPA, and the village of Shungopavi.

Figure 10: NECA crew who constructed the water and sewer expansion.

The expansion also provided access to sanitary infrastructure to new homes constructed in the village. Proposed projects that can be connected to the recently completed projects include a community sewer lift station to serve an additional 40 homes currently without running water on the outer edge of the village and a new water supply well, pumphouse, and water storage tank funded by EPA.

Sewage Lift Stations Along the Colorado River, Arizona

The IHS Phoenix Area's Western Arizona District SFC staff is working with the Fort Mojave and Chemehuevi Tribes to upgrade and replace sewage lift stations. At Chemehuevi, IHS is assisting in upgrading the lift stations that were built in the late 1970's by the U.S. Department of Commerce, Economic Development Administration (EDA). These stations serve tribal housing. They are located close to Lake Havasu and are critical components in preventing sewage from reaching surface waters. The main community lift station was replaced in 2006 (PH 03-B92), one was upgraded in 2007 (PH 05-S89), and two more are scheduled for replacement in 2008 (PH 05-S89 and PH 04-S77). Construction is being completed through tribal procurement with IHS providing design and inspection services.

Figure 11: IHS project engineer Roger Hargrove discusses construction with tribal operators and contractors.

At Fort Mojave, deteriorated concrete lift stations are being replaced with lift stations that have corrosion-resistant fiberglass wet wells. The original stations were built in the early 1990's without IHS assistance and were damaged by hydrogen sulfide-related corrosion accelerated by the desert heat. The groundwater level in the area is high, and installation of wet wells required the use of coffer dams. The stations are along the main sewer trunk line feeding the wastewater treatment plant. The entire system serves over 1,000 homes and businesses. Backup electrical power was included in the design and consists of propane-powered generators. The generators and controls are housed inside of a small concrete building for protection. The wastewater system is operated for the tribe by a private contractor, OMI, Inc. The work is being funded by EPA under Project PH 04-S74 and U.S. Department of Agriculture Rural Development (USDA RD) under Project PH 04-C71.

Figure 12: Roger Hargrove inspects lift station discharge piping and valves.

Makah Water Treatment Plant
Neah Bay, Washington

The Makah Water Treatment Plant (WTP) replacement project was a unique challenge for tribal utilities and Portland Area IHS engineers because the surface water treatment facility is in a region characterized by high flows during certain times of year, and drought conditions in others. In November 2007, the Makah Tribe, IHS, EPA, USDA RD, and the Makah Tribal Housing Authority neared completion on a project to provide a replacement water treatment system to serve this community of 660 homes. This project showcases the challenges associated with designing a surface water treatment system that can accommodate dramatic shifts in both flow rates and water quality.

Neah Bay's annual precipitation rate averages 100 inches; however, despite this high annual average, Neah Bay frequently experienced drought conditions and water shortages. In 1987 and 1995, low flows during the summer months led to the Educket Reservoir running dry. Between the years of 2001 and 2003, the reservoir reached critically low levels. By contrast, winter months on the Olympic Peninsula are characterized by high flows, with 75% of the annual rainfall occurring during the months between October and March. Measurements of the raw water quality during episodes of high flows frequently indicated turbidity spikes exceeding 100 NTU.

The existing WTP serving the Neah Bay community was a package plant constructed in the early 1970's. Though operational, the treatment plant had exceeded its useful life and could not reach its original capacity, even under optimal conditions. Thirty-five years of community growth had increased water usage to an average daily demand of 222,600 gallons per day (gpd), and maximum daily demand of 445,200 gpd. The existing WTP also struggled to produce water that met current drinking water standards.

Figure 13: Educket Reservoir, Waatch River Watershed under normal conditions.

The new Makah WTP was a collaborative effort between funding agencies and, most important, the Makah Public Works operators and the IHS design engineer. The new plant has a design capacity of 720,000 gpd. Its 100,000-gallon holding sedimentation tank and time-based treatment system can accommodate the high turbidity conditions during periods of high flows.

Figure 14: Educket Reservoir under severe drought conditions.

The new WTP is equipped with chemical injection, rapid mix, dual variable speed flocculation, dual 100-square foot multimedia filters, and the capacity to treat a wide range of incoming raw water quality. Those features give operators the control they need to be responsive to varying conditions throughout the year, and provide a more stable water supply. Other features were included in the plant for adaptability, such as filter effluent pumps and a 30,000-gallon chlorine contact chamber. All of these features allow operators to implement additional treatment options as drinking water regulations change.

Figure 15: Sedimentation tank rebar and forms. An estimated 80,000 pounds of rebar was required for the construction of the sedimentation tank and building.

Figure 16: New Makah WTP near completion.

Winnebago Wastewater Treatment Plant
Winnebago, Nebraska

In 2006, EPA-Region 7 and Aberdeen Area IHS jointly funded a project to construct a new wastewater treatment facility for the Village of Winnebago on the Winnebago Indian Reservation in northeast Nebraska. The completed project corrected sewage disposal deficiencies and provide much-needed wastewater disposal infrastructure for the growing community. In addition to the $756,000 provided by EPA and $100,000 provided by IHS, the Winnebago Tribe of Nebraska contributed $44,000 to the project.

Figure 17: Completed settlement pond cell with riprap.

The community of Winnebago includes a new IHS hospital, school, 392 IHS-eligible homes, 42 homes ineligible for IHS services, and several commercial establishments. An analysis of the hydraulic and organic treatment capacity of the lagoon system revealed that the existing system was inadequate to meet the needs. As a result, the quality of effluent discharged from the lagoon system did not meet the requirements of the EPA National Pollutant Discharge Elimination System (NPDES) permit. EPA responded by placing the Village under a compliance order directing them to expand and upgrade their wastewater treatment facility.

Figure 18: Aeration diffuser piping placed on bottom of aeration cell.

In addition to the compliance order, there was a need to address sewage flows from the St. Augustine Mission,* the BIA complex,* and the Pow-Wow Grounds housing area* and include these facilities in the project. The sewage collection system consists of 8-inch and 12-inch gravity sewer mains, four lift stations, and a 6-inch sewer force main. The old lagoon system had five cells, covering 17 acres, and seasonally discharged to Omaha Creek.

* funded by contributions

IHS initially proposed to construct a new primary cell (11 acres). However, during the design, IHS learned that a large gas main was located directly beneath the area of the proposed lagoon expansion. The cost to re-route the gas main around the site would have been approximately $350,000, so another option was needed. Because no other nearby locations were available for an 11-acre cell, IHS proposed converting the seasonally discharging system to a continuously discharging system. The existing primary cell was divided into three smaller aerated cells and a settling basin. Three of the other existing cells were renovated and used for storage, and the last existing cell was converted to an artificial wetland to provide additional treatment prior to discharge.

Figure 19: 18-foot x 24-foot blower building under construction.

A blower building with mechanical equipment was constructed, and two existing discharge structures were combined into a single discharge point.

Figure 20: View of nearly completed project.

The new wastewater treatment system consists of three 0.8-acre (10-foot deep) extended aeration cells with coarse bubble diffusers, a 2-acre (12-foot deep) settling basin, three storage lagoons totaling 8.5 acres, and a 2-acre wetland cell. The new NPDES permit allows for continuous discharge and established new effluent limits for the discharge to Omaha Creek. In January 2006, construction for the project was awarded to the tribe to administer tribal force account activities for the lagoon dirt work and tribal subcontracting for the piping, blower building, and related construction. Construction for Phase I (aerated cells and the wetland cell) was initiated in June 2006, and Phase II (removal of sludge from existing cells and reconfiguring the piping) construction was initiated in July 2007.

Spirit Lake Solid Waste
Fort Totten, North Dakota

The Fort Totten Indian Reservation is located in east central North Dakota and is home to the Spirit Lake Tribe. Approximately 6,000 people reside on the reservation, which covers 405 square miles and borders Devils Lake, the largest natural lake in the State. The principal communities are Fort Totten, St. Michael, Tokio, and Crow Hill, but most residents live in scattered home sites across the reservation.

Prior to 1997, the tribe operated an unapproved dumpsite, and many residents burned their domestic waste. To comply with EPA regulations, the dump was closed and with funding from a USDA RD loan, the tribe implemented its own collection system.

Figure 21: Setting pre-cast concrete wall panels for transfer station building.

Waste was hauled from communities and scattered sites in a compactor truck to a transfer station owned and operated by the City of Devils Lake, north of the reservation boundary. This was never viewed as a viable long-term method of waste disposal for the tribe. Another way to effectively deal with an increasing amount of solid waste needed to be found.

Meetings were held between the Spirit Lake Tribe, RD, and Aberdeen Area IHS, and an MOA was signed to develop the Spirit Lake Solid Waste Project. This project provided for a $1.05 million solid waste transfer station, scale, and inert waste disposal site. Later, the tribe, RD, IHS, and BIA entered into a second MOA to provide solid waste collection and transfer equipment enabling the tribe to haul waste to a sanitary landfill near Grand Forks. Tribal and Federal contributions totaled $2.35 million, with approximately half the funding provided by IHS. The project also provided a satellite transfer station to serve rural customers, closure

Figure 22: Workers prepare for concrete pour in transfer station load-out area.

Figure 23: Transfer station near completion.

Figure 24: Twenty-five cubic yard, rear load compactor truck purchased for Spirit Lake Tribe Solid Waste Program.

of the unapproved dump, and recycling equipment. IHS maintained project engineer responsibilities and worked closely with the tribe and Federal partners.

The transfer station has a design capacity of 200 tons per day, allowing for the expansion of service to nearby communities located outside the reservation. It is the tribe's intention to expand its service area and revenue base, which will optimize operation and maintenance of the system. With assistance from IHS and the Midwest Assistance Program, improvements have been made to the billing and accounting functions of the tribe's solid waste program.

An updated integrated solid waste management plan was drafted that included additional recommendations for improvements and expansion. There are currently 19 businesses and 308 residential units billed for services. The solid waste program also serves the Native American Housing Self-Determination Act (HUD/NAHASDA) units under a separate contract. The improvements provided by the Spirit Lake Solid Waste Project will ensure the tribe and its members have a sufficient infrastructure to handle the waste generated on the Reservation for several decades.

Baboquivari Regional Water System Intertie
Tohono O'odham Nation, Arizona

The Tohono O'odham Nation, Tohono O'odham Utility Authority (TOUA), USDA RD progam, EPA, Ki:Ki Association (Tribal Housing Department), and the Tucson Area IHS partnered together to complete the $3.6 million Baboquivari Regional Water System Intertie (BRWSI). The BRWSI project combined four independent community water systems into one regional water system to serve approximately 241 homes in the Tohono O'odham Nation communities of Topawa, South Komelic, Cold Fields, and Choulic.

Figure 25: Installing 24-inch tee and valve assembly.

Originally, five different projects were funded to provide individual community upgrades for the communities to address low well yields, low system pressures, and elevated levels of arsenic. However, it was realized that a regional water system would better serve the communities and optimize operation and maintenance for the TOUA. Additional funding was obtained, and a total of 10 projects funded the construction of the BRWSI.

Construction of the BRWSI project included three phases completed in late 2007 as outlined below:

Figure 26: Installation of the watermain.

Watermain and Appurtenances

Each of the four communities in the project had independent community water systems. The goal of the regionalization project was to combine all the systems together via 12-inch and 8-inch high-density polyethylene (HDPE) watermain. A 12-inch main was used for the first 7 miles to provide sufficient water capacity and pressure to the communities and to provide fireflow to the new Tohono O'odham Cultural Center Museum. The project also provided water to a new Ki:Ki Association housing development. SunWestern Contractors of Tucson, Arizona, was awarded the contract to construct approximately 11 miles of 12-inch and 8-inch HDPE watermain including 41 wash crossings, 77 gate valves, 32 air release valves, 26 hydrants, and 2 pressure-reducing stations.

Elevated Storage Tank

Each of the four communities in the project had its own water storage tanks, and three of them had ground tanks that provided very limited pressures to the homes. The tribe wanted to address this issue by constructing a 300,000-gallon elevated water tower located just south of the community of Topawa. The regional system was designed to include an existing 200,000-gallon elevated water tank in the community of Topawa; the three ground tanks in South Komelic, Choulic, and Cold Fields were taken off-line. Pittsburg Tank and Tower Company of Sebree, Kentucky, was awarded the contract to construct the 300,000-gallon elevated water tower in Topawa.

Figure 27: Construction of the elevated water storage tank.

Well Upgrades

The TOUA and IHS determined that the most viable wells for the regional system were located just south of the community of Topawa. The well field consisted of three existing wells, two of which were operational. The remaining wells in South Komelic, Choulic, and Cold Fields were either low yielding, experiencing sanding problems, or exceeded the MCL for arsenic. These wells were all taken off-line as part of this project. Operating under a force account contract, the TOUA removed all of the existing well pumps, equipped all three wells with new pumps and well head assemblies, and replaced all of the existing underground piping with larger diameter PVC piping. The newly constructed Tohono O'odham Cultural Center Museum* was connected to the BRWSI system.

* funded by contributions

Figure 28: Upgraded well pumps and piping.

Existing Scattered Sites
Tohono O'odham Nation, Arizona

The TOUA, USDA RD, and the Tucson Area IHS have partnered together to create a program to provide modular bathrooms to serve traditional Indian homes without plumbing on the Tohono O'odham Indian Reservation. This reservation is located in a remote area of the Sonoran Desert in south central Arizona, encompassing an area roughly the size of the State of Connecticut with a population of only 22,000. The TOUA is constructing the modular bathrooms and providing contract support for the sanitation facilities construction, whereas RD and IHS are the primary funding agencies for this program. IHS is providing all the engineering design for the sanitation facilities.

Figure 29: Staging area with front of bathroom.

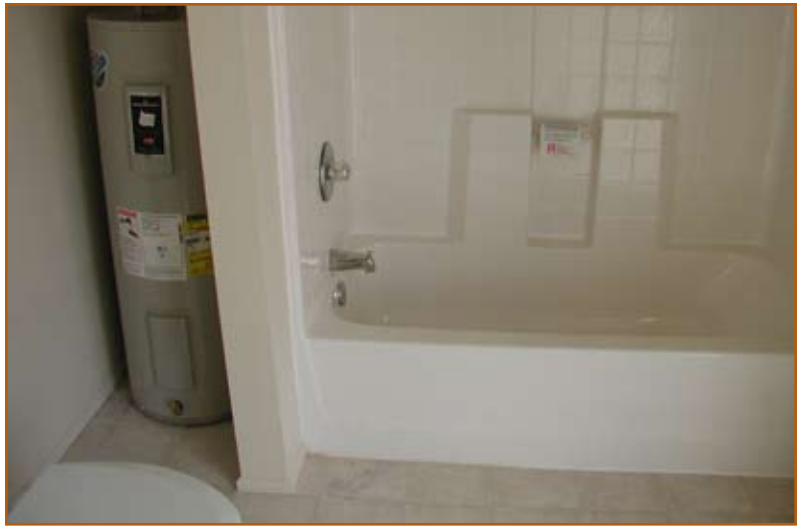


Figure 30: Modular bathroom interior.

IHS has identified over 450 homes on the reservation that currently have no indoor plumbing and utilize pit privies and outdoor makeshift showers. Many of these homes are of traditional construction and are fragile adobe structures that are not easily renovated to accommodate a bathroom addition. However, if no action was taken, construction of needed bathrooms on the Tohono O'odham Nation would remain stalled and families would continue to suffer because of a lack of piped indoor water and wastewater facilities.

Several alternatives were considered in determining how to provide service to these homes:

Construct Bathroom Additions (build a room addition attached to the home in which a bathroom can be installed). This alternative was not feasible because many traditional homes are constructed out of materials that would not support bathroom additions and the cost of constructing

Figure 31: Back of modular bathroom.

room additions is expensive); **Use Plumbing Walls** (consists of a wall in which bathroom plumbing can be attached). This wall requires that homeowners provide space within their home and the resources to wall off the area and complete the bathroom. This alternative was not feasible because construction of the homes would make attachment of the plumbing wall and the required stub-outs very difficult and homes are often a collection of single room structures that are already overcrowded and lack space for an indoor bathroom); **Construct Stand-alone Modular Bathroom Buildings** (use a pre-fabricated standardized building). These units were adaptable to different sites that could be plumbed with complete fixtures, and these buildings would then be moved to the home sites and connected to water and wastewater systems. The stand-alone alternative was chosen. To date, the Tucson Area IHS has funded over 16 projects to serve 243 of these homes using IHS funds and, in a few cases, EPA Clean Water Act funds. Because of funding source restrictions, none of the IHS/EPA project funds can be used to fund the bathroom structure itself, which leaves the homeowner responsible for all costs associated with a bathroom, excluding the plumbing.

The funding shortfall was resolved through a partnership with RD. The TOUA and IHS learned that RD could provide homeowners with individual grants totaling $5,000 (standard low income) or $7,500 (elderly) for home improvements on the Tohono O'odham Nation. Combining that funding with the plumbing money from IHS, the TOUA determined that they would be able to construct a modular bathroom for homeowners. Each bathroom is supplied with a toilet, shower/tub, vanity, heater, water heater, and indoor/outdoor lighting. The bathroom comes in either a standard model or a handicap model with specialized fixtures to be American with Disabilities Act (ADA) compliant.

Figure 32: Finished and installed modular bathroom.

Sanitation Facilities and Health

Protecting the health of and preventing disease among the AI/AN people are primary IHS objectives. The Congress declared in the Indian Health Care Improvement Act (P.L. 94-437, as amended), that "...it is in the interest of the United States 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." Citing this policy, the Congress reaffirmed the primary responsibility and authority of the IHS "...to provide the necessary sanitation facilities..." as authorized under P.L. 86-121.

Figure 33: Engineer Quentin Allen inspecting the construction of booster station, NM.

A Report to Congress by the Comptroller General ("Progress and Problems in Providing Health Services to Indians" 095970, by the Comptroller General, USA, March 11, 1974), noted that AI/AN families living in homes with satisfactory environmental conditions placed fewer demands on IHS's primary health care delivery system.

Figure 34: Installation of a pressurized community drainfield for the Martha Boardman community, WA.

IHS considers the provision of sanitation facilities to be a logical extension of its primary health care delivery efforts. The availability of essential sanitation facilities is critical to the prevention of waterborne and communicable disease episodes. Properly designed and operated facilities can reduce the incidence of disease by eliminating waterborne bacteria, viruses, and parasites that cause such illnesses as salmonellosis, typhoid fever, cholera, and giardiosis. In addition, many other communicable diseases, including hepatitis A, shigella, and impetigo, are associated

with the limited hand-washing and bathing practices often found in households lacking adequate water supplies. This is particularly true for families that do not have access to safe drinking water.

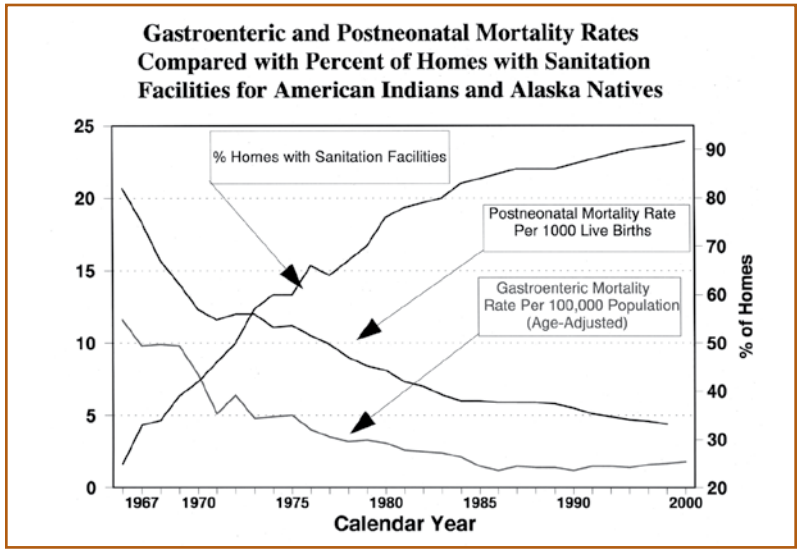


Figure 35: Graph of gastroenteric and postneonatal death rates versus the percent of Indian homes with potable water.

The availability of adequate sanitation facilities has value beyond disease intervention. Safe drinking water supplies and adequate waste disposal facilities are essential preconditions for most health promotion and disease prevention efforts. Consistently and optimally fluoridated drinking water, which can virtually eliminate tooth decay among children, is an example of this public health principle. Efforts by other public health specialists, such as nutritionists and alcoholism counselors, are enhanced if safe drinking water is readily available. Lack of indoor plumbing (sanitation facilities) is a significant risk factor for falls, which are a leading cause of injury-related deaths for elders. Home health care nursing services are much more effective when safe water and adequate wastewater disposal systems are in place.

Several diseases are readily transmitted by contaminated water supplies, and those of greatest concern are hepatitis A; typhoid, cholera, and paratyphoid fevers; and dysenteries. In 1955, more than 80 percent of AI/AN people were living in homes without essential sanitation facilities. The age-adjusted gastrointestinal disease death rate for AI/AN people was 15.4 per 100,000 population. This rate was 4.3 times higher than that for all other races in the United States. In 1997, by contrast, the age-adjusted gastrointestinal disease death rate had decreased significantly to 1.8 per 100,000. A major factor in this significant gastrointestinal disease rate reduction is the SFC Program's efforts to construct safe water supply and waste disposal facilities. The 1997 rate is still 40 percent higher than the rate for all races in the United States.

The SFC Program is a significant contributor to the improved health status of AI/AN people as clearly indicated by the decrease in the gastrointestinal disease death rate and concurrent increase in life expectancy.

Program Operations

The SFC Program is part of the IHS Office of Environmental Health and Engineering. The SFC Program's activities are supported by engineers, sanitarians, engineering technicians, clerical staff, and skilled construction workers.

There is an SFC Program in each of the 12 IHS Area Offices. The Program's Headquarters component, located in Rockville, Maryland, assists the Area Offices by establishing policies, providing guidance to ensure consistent and equitable program implementation nationwide, and collaborating with other Federal agencies.

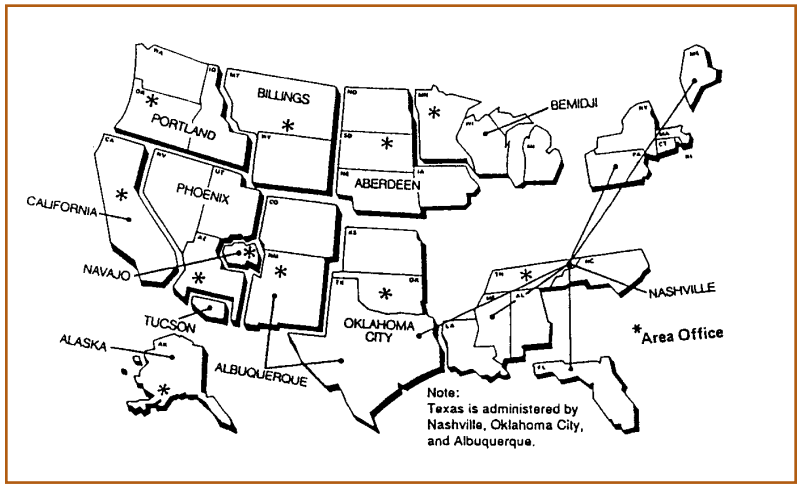


Figure 36: Location of IHS Area Offices.

The SFC Program works cooperatively with tribes and tribal organizations, tribal housing authorities, and with many governmental agencies, such as HUD, BIA, EPA, and USDA Rural Utility Service, to achieve its sanitation facilities construction objectives. An example of this cooperation is funds that are transferred from HUD to IHS for sanitation facilities construction in support of new and renovated HUD homes, typically made available to the SFC Program through tribal entities and Indian housing authorities. Agreements among the tribes, Indian housing authorities, IHS, and HUD enable the transfer of HUD funds to the SFC Program for construction of necessary water and sewer facilities. The Congress authorized IHS to accept the HUD contributions.

Figure 37: Engineer Adam Hughes at the Tuba City High School career day, AZ.

Similar agreements among the tribes, IHS, and the EPA Indian Set-Aside (ISA) Program enable EPA to contribute the ISA wastewater funds to the SFC Program. States do not have jurisdiction on trust lands and, except for Alaska, historically have provided relatively little support to Indian tribes and reservations for the construction of sanitation facilities. The State of Alaska, through its Village Safe Water Program, participates in many jointly funded IHS construction projects in Alaska Native communities.

The SFC Program's efforts to provide sanitation facilities for AI/AN homes and communities benefit 562 Federally recognized tribes and tribal organizations located in 38 States.

Sanitation facilities are provided, at the request of federally recognized tribes, bands, or groups, for eligible homes owned and occupied by AI/AN people. Provision of water, wastewater, and solid waste facilities for commercial and industrial purposes are not authorized for funding under P.L. 86-121.

Eligible sanitation facilities projects that are approved for implementation are classified under one of the following categories: 1) projects for essential sanitation facilities for new (non-HUD-funded) and like-new Indian housing (Housing Support Projects); 2) projects to serve existing homes and communities (Regular Projects); and 3) special/emergency projects.

Figure 38: Engineer Kurt Kesteloot surveying to ensure the drainfield line is level.

Figure 39: Pre-construction meeting with NECA and IHS personnel for the Tuba City sewer extension.

Housing Support Projects provide sanitation facilities for new homes and homes in like-new condition owned by eligible AI/AN families. These projects typically serve homes being constructed or rehabilitated by the BIA-HIP, tribes, individual homeowners, or other nonprofit organizations.

Figure 40: Aerial view of the newly constructed $30 million Brighton WTP owned and operated by the Seminole Tribe of Florida.

Regular Projects provide sanitation facilities for existing AI/AN homes and communities. The SFC Program has established the Sanitation Deficiency System (SDS) for identifying and prioritizing projects to serve homes and communities with unmet water, sewer, and solid waste needs. This system is updated annually, and the information and funding requirements are submitted each year to the Congress in accordance with the requirements of the Indian Health Care Improvement Act. A summary of the inventory of sanitation deficiencies is presented on the following pages.

Figure 41: Engineer Scott Helgeson inside the Brighton WTP.

Special/Emergency Projects provide sanitation facilities for special studies and emergency situations. Emergency projects typically involve community sanitation facilities that have undergone, or are expected to experience, sudden widespread failure that will directly affect the public health. Funding for special/emergency projects is very limited, and all projects must be approved by the Director, DSFC IHS Headquarters. The average project funding level is $10,000 to $50,000. The mean and modial project funding over the last five years is about $40,000 and $10,000, respectively.

In addition to providing direct services for the construction of sanitation facilities, resources permitting, the SFC Program provides technical assistance on many issues related to construction and operation and maintenance of sanitation facilities.

Technical assistance, such as reviews of engineering plans and specifications for sanitation facilities for new home construction, is routinely provided to tribes and Indian housing authorities. Technical reviews of feasibility studies and grant proposals are also provided to tribes by the SFC Program for a wide range of civil and sanitation facilities engineering projects related to Indian housing. The amount or degree of technical assistance provided depends on available resources.

Figure 42: Pair of 200 hp pumps at the Fox Ridge WTP.

Upon project completion, the facilities constructed under the SFC Program are owned and operated by the tribe, individual homeowner, or other responsible non-Federal entity. IHS provides technical assistance to the owners of the new sanitation facilities and provides training on proper operation and maintenance of the new facilities. Homeowners who receive individual sanitation facilities are instructed on the proper operation and maintenance of their newly installed wells and/or septic systems, and tribal operators are instructed on the correct operation and maintenance of community water and sewer facilities. The latter may include training in proper operation and maintenance of chlorination and fluoridation equipment; pumps and motor control systems for community water supply facilities; and proper operation and maintenance of sewage collection systems, lift stations, and wastewater treatment facilities.

The SFC Program also provides technical assistance to tribes in the development of tribal utility organizations for operation, maintenance, and management of community water and sewer facilities. The technical assistance may include development of rate structures to determine appropriate customer water and sewer fees.

As additional and more stringent environmental regulations regarding safe drinking water, sewage treatment and disposal, and solid waste disposal are issued, IHS will continue providing technical support and consultation on environmentally related public health issues to AI/AN tribes and individual homeowners.

In 2002, the Office of Management and Budget conducted an SFC Program review using the Program Assessment Rating Tool (PART). One recommendation was that the Program conduct an independent external evaluation. As a result, the Program contracted with Federal Occupational Health to conduct the evaluation; the initial report was completed in 2005; and the final Independent Evaluation Report with specific recommendations was published on July 15, 2006. One of those recommendations was that the SFC Program develop and implement a strategic plan. Beginning in 2005 and continuing through the present, the SFC Program began development of a strategic plan. The SFC Directors from all 12 IHS Areas met three times during 2005 to identify strategic directions for the Program and to define contradictions making moving in those directions difficult. As a result of this high-level planning, 10 vision elements were clearly stated. Implementation of those elements is shared between the SFC Directors, the mid-level managers, the operations and maintenance coordinators, and the data system managers.

The SFC Vision Elements

1. *Relationships with other Federal agencies and states are coordinated to benefit tribal programs.*
2. *Tribal self-determination decisions are supported and respected.*
3. *SFC programs are optimally and effectively managed.*
4. *Formal career development occurs for all SFC staff.*
5. *SFC staff is customer-service oriented to meet the needs of tribes and participants.*
6. *Tribal O&M is fully self-sustaining.*
7. *Technical engineering support is readily available to the SFC Program.*
8. *SFC construction-oriented procurement is readily available.*
9. *Formal project management is part of the SFC culture.*
10. *Technical and administrative data systems are accurate, updated, and readily available.*

Implementation workshops were conducted throughout 2006, and as a result, 18 vision element teams composed of 82 people from all IHS Areas, one tribe, and two EPA Regions are currently working on specific vision elements or sub-elements. Three of those teams are scheduled to complete identified milestones by March 2007, seven teams scheduled to complete by December 2007, and two teams scheduled to complete later than December 2007. We anticipate additional planning efforts to follow these initial teams.

This page left blank intentionally.

Sanitation Deficiencies

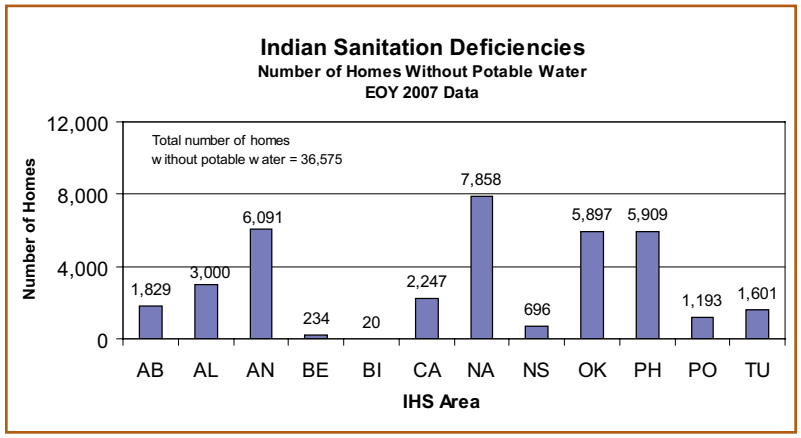


Figure 43: Number of Indian homes without potable water, by Area.

The Indian Health Care Improvement Act (IHCIA) requires IHS to have a funding plan to provide safe water supply and sewage and solid waste disposal facilities to existing AI/AN homes and communities, and to new and renovated homes. In accordance with those requirements, the SFC Program annually estimates the total need to provide safe and adequate sanitation facilities for AI/AN homes and communities.

Sanitation deficiencies are reported as proposed projects or project phases. The current inventory of sanitation deficiencies identified more than 3,200 sanitation facilities construction projects or project phases at an estimated cost of $2.37 billion. These projects represent all unmet needs eligible for IHS funding. However, some projects are prohibitively expensive to construct and/or operate and are considered to be economically infeasible. Currently, 2,333 of the identified projects are considered to be economically feasible with an estimated cost of $1.10 billion.

In an effort to reflect the relative impact on health of various water supply, sewage disposal, and solid waste deficiencies to be addressed, sanitation deficiency levels are determined for each project or project phase. The IHCIA defines the following deficiency levels:

Level I: The deficiency level describing an Indian tribe or community with a sanitation system that complies with all applicable water supply and pollution control laws, and in which the deficiencies relate to routine replacement, repair, or maintenance needs.

Level II: The deficiency level that describes an Indian tribe or community with a sanitation system that complies with all applicable water supply and pollution control laws, and in which the deficiencies relate to capital improvements that are necessary to improve the facilities in order to meet the needs of such tribe or community for domestic sanitation facilities.

Level III: The deficiency level that describes an Indian tribe or community with a sanitation system that has an inadequate or partial water supply and a sewage disposal facility that does not comply with applicable water supply and pollution control laws, or has no solid waste disposal.

Level IV: The deficiency level that describes an Indian tribe or community with a sanitation system which lacks either a safe water supply system or a sewage disposal system.

Level V: The deficiency level that describes an Indian tribe or community that lacks a safe water supply and a sewage disposal system.

The deficiency level assigned to a project is determined by the deficiency being resolved by the project. Projects are divided into phases, as appropriate, to provide logically independent and functional projects that can be funded in one year and that generally address one level of deficiency. Each proposed project or project phase will not necessarily bring the facilities for a community or tribe to level I deficiency or better. However, the combination of all projects reported for each community will bring all facilities to deficiency level I or better.

Prior to 2007, IHS stated that 7.5% of AI/AN homes were without potable (safe and reliable) water. Based on end of year 2007 data, it is estimated that approximately 11% of AI/AN homes are without a safe and reliable water supply. This increase in the number of AI/AN homes lacking safe water is due to population growth, the age and condition of the existing infrastructure, high numbers of new and like-new housing, and new environmental regulations including the arsenic and surface water treatment rules promulgated by EPA. The arsenic rule accounted for most of this increase because approximately 65 communities with nearly 13,000 homes were classified as deficiency level 4, because their water supply exceeded the new arsenic standard. In order to meet the IHS strategic goal of raising the percentage of AI/AN homes with safe water to 94% by 2015, a significant increase in sanitation project and staff resources is required.

Figure 44: Arsenic treatment plant serving the community of Lower Covered Wells, AZ.

These deficiencies represent an enormous challenge, especially because the resources to meet them are finite. Existing sanitation facilities require upgrading while efforts continue toward providing services to many yet unserved and mostly isolated homes.

Tables 3 through 8 and corresponding charts illustrate the type, geographic location, and associated costs of the sanitation deficiencies.

Table 3 Number of Homes at Each Deficiency Level by Area						
AREA	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	TOTAL
AB	1,160	5,743	13,669	1,825	345	22,742
AL	465	4,402	4,795	5,050	95	14,807
AN	5,438	2,350	6,339	1,010	5,769	20,906
BE	20,105	7,569	3,608	327	13	31,622
BI	1,573	5,772	6,597	255	3	14,200
CA	4,166	2,753	2,333	2,078	710	12,040
NA	10,087	5,760	32,741	1,173	7,104	56,865
NS	6,355	4,628	7,058	1,096	72	19,209
OK	64,587	2,808	22,792	6,086	1,209	97,482
PH	5,682	4,926	8,472	5,743	494	25,317
PO	1,011	6,051	5,285	1,742	1	14,090
TU	0	1,178	2,098	920	742	4,938
TOTAL	120,629	53,940	115,787	27,305	16,557	334,218

Table 4 Number of Homes Requiring Assistance by Type of Facility			
AREA	WATER	SEWER	SOLID WASTE
AB	16,234	12,159	16,918
AL	13,859	10,186	4,607
AN	12,387	11,985	7,988
BE	4,892	2,335	7,892
BI	9,781	6,673	7,915
CA	5,829	5,740	4,417
NA	25,241	14,990	36,866
NS	11,024	10,526	9,031
OK	14,330	5,172	20,993
PH	18,583	10,271	13,195
PO	6,425	5,565	10,063
TU	4,933	2,977	4,872
TOTAL	143,518	98,579	144,757

Table 5 Project Cost by Deficiency Level Feasible Projects						
AREA	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	TOTAL
AB	$0	$20,100,660	$62,681,362	$18,165,000	$4,350,960	$105,297,982
AL	$0	$46,280,909	$11,795,500	$5,634,800	$227,000	$63,938,209
AN	$0	$46,630,326	$146,568,907	$129,033,200	$2,534,417	$324,766,850
BE	$0	$13,283,591	$4,252,750	$1,017,383	$23,000	$18,576,724
BI	$0	$18,485,222	$12,613,000	$1,109,880	$50,400	$32,258,502
CA	$0	$9,799,320	$30,885,774	$17,865,519	$8,035,621	$66,586,234
NA	$0	$53,340,394	$19,081,306	$8,811,403	$128,886,250	$210,119,353
NS	$0	$24,457,288	$16,115,410	$6,242,754	$0	$46,815,452
OK	$0	$1,840,392	$31,743,694	$13,779,283	$1,693,000	$49,056,369
PH	$0	$52,308,233	$20,766,787	$20,137,734	$5,267,431	$98,480,185
PO	$0	$28,124,195	$17,730,200	$4,506,350	$0	$50,360,745
TU	$0	$9,722,195	$11,254,850	$5,938,850	$8,904,755	$35,820,650
TOTAL	$0	$324,372,725	$385,489,540	$232,242,156	$159,972,834	$1,102,077,255

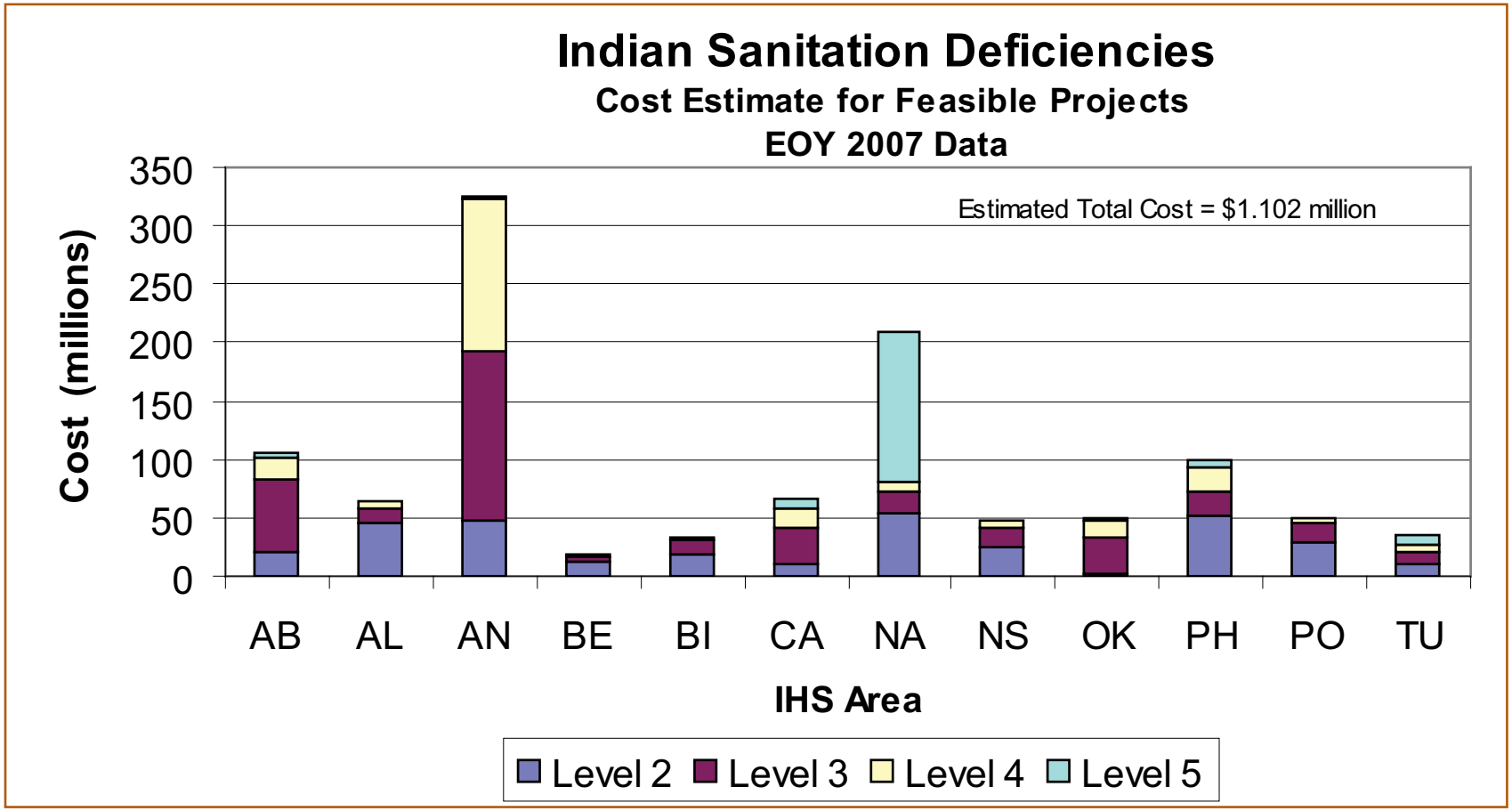

Indian Sanitation Deficiencies
Cost Estimate for Feasible Projects
EOY 2007 Data
Estimated Total Cost = $1.102 million
Cost (millions)
350
300
250
200
150
100
50
0
AB
AL
AN
BE
BI
CA
NA
NS
OK
PH
PO
TU
IHS Area
Level 2
Level 3
Level 4
Level 5

Table 6 Project Cost by Deficiency Level Total Database						
AREA	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	TOTAL
AB	$1,132,000	$35,770,135	$366,464,194	$34,719,000	$4,793,560	$442,878,889
AL	$3,268,000	$82,035,909	$21,293,103	$12,243,480	$227,000	$119,067,492
AN	$25,459,679	$99,513,863	$297,241,820	$297,002,271	$12,712,110	$731,929,743
BE	$3,269,175	$48,433,111	$22,592,010	$3,427,383	$23,000	$77,744,679
BI	$359,000	$18,992,222	$14,726,000	$1,109,880	$50,400	$35,237,502
CA	$75,000	$18,051,074	$38,926,424	$27,547,009	$8,035,621	$92,635,128
NA	$8,232,320	$233,306,811	$23,105,924	$13,852,903	$142,687,547	$421,185,505
NS	$0	$41,694,614	$43,420,410	$14,736,608	$0	$99,851,632
OK	$0	$4,905,392	$48,645,694	$20,502,706	$2,682,000	$76,735,792
PH	$3,346,000	$73,240,176	$25,067,787	$23,114,525	$12,446,480	$137,214,968
PO	$0	$35,996,693	$37,060,434	$5,976,950	$0	$79,034,077
TU	$0	$14,131,195	$20,815,050	$6,848,850	$17,314,755	$59,109,850
TOTAL	$45,141,174	$706,071,195	$959,358,850	$461,081,565	$200,972,473	$2,372,625,257

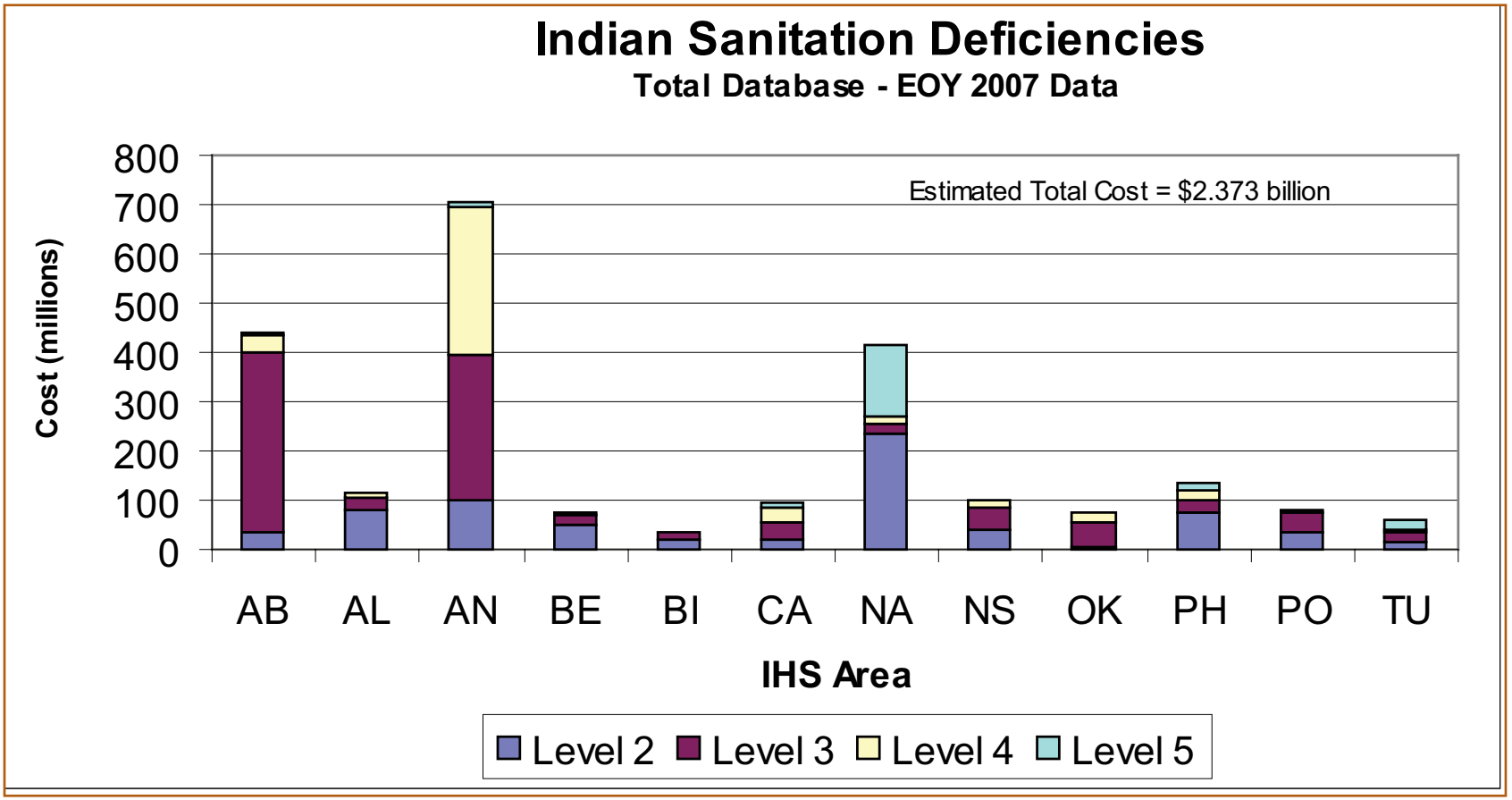

Indian Sanitation Deficiencies
Total Database - EOY 2007 Data
Estimated Total Cost = $2.373 billion
Cost (millions)
800
700
600
500
400
300
200
100
0
AB
AL
AN
BE
BI
CA
NA
NS
OK
PH
PO
TU
IHS Area
Level 2
Level 3
Level 4
Level 5

Table 7 Cost Estimates by Type of Needed Facility by IHS Area Feasible Projects					
AREA	WATER	SEWER	SOLID WASTE	O&M	TOTALS
AN	$74,350,306	$14,524,590	$15,404,336	$1,018,750	$105,297,982
BE	$35,237,900	$24,475,550	$4,224,759	$0	$63,938,209
BI	$148,278,500	$132,019,563	$44,418,787	$50,000	$324,766,850
CA	$11,170,560	$4,398,985	$3,007,179	$0	$18,576,724
NA	$15,983,353	$13,061,080	$3,214,069	$0	$32,258,502
NS	$21,138,606	$40,447,448	$4,936,180	$64,000	$66,586,234
OK	$133,526,473	$61,970,617	$14,619,263	$3,000	$210,119,353
PH	$29,055,285	$14,903,919	$2,835,948	$20,300	$46,815,452
PO	$38,126,580	$7,389,489	$3,540,300	$0	$49,056,369
TU	$63,422,657	$25,347,307	$9,489,193	$221,028	$98,480,185
AB	$26,073,305	$13,970,133	$10,292,307	$25,000	$50,360,745
AL	$25,339,025	$8,913,948	$1,403,575	$164,102	$35,820,650
TOTAL	$621,702,550	$361,422,629	$117,385,896	$1,566,180	$1,102,077,255

Current 10-Year Funding Plan to Address Indian Sanitation Deficiencies

Cost Estimates by Type of Facilities

EOY 2007 Data - Economically Feasible Projects

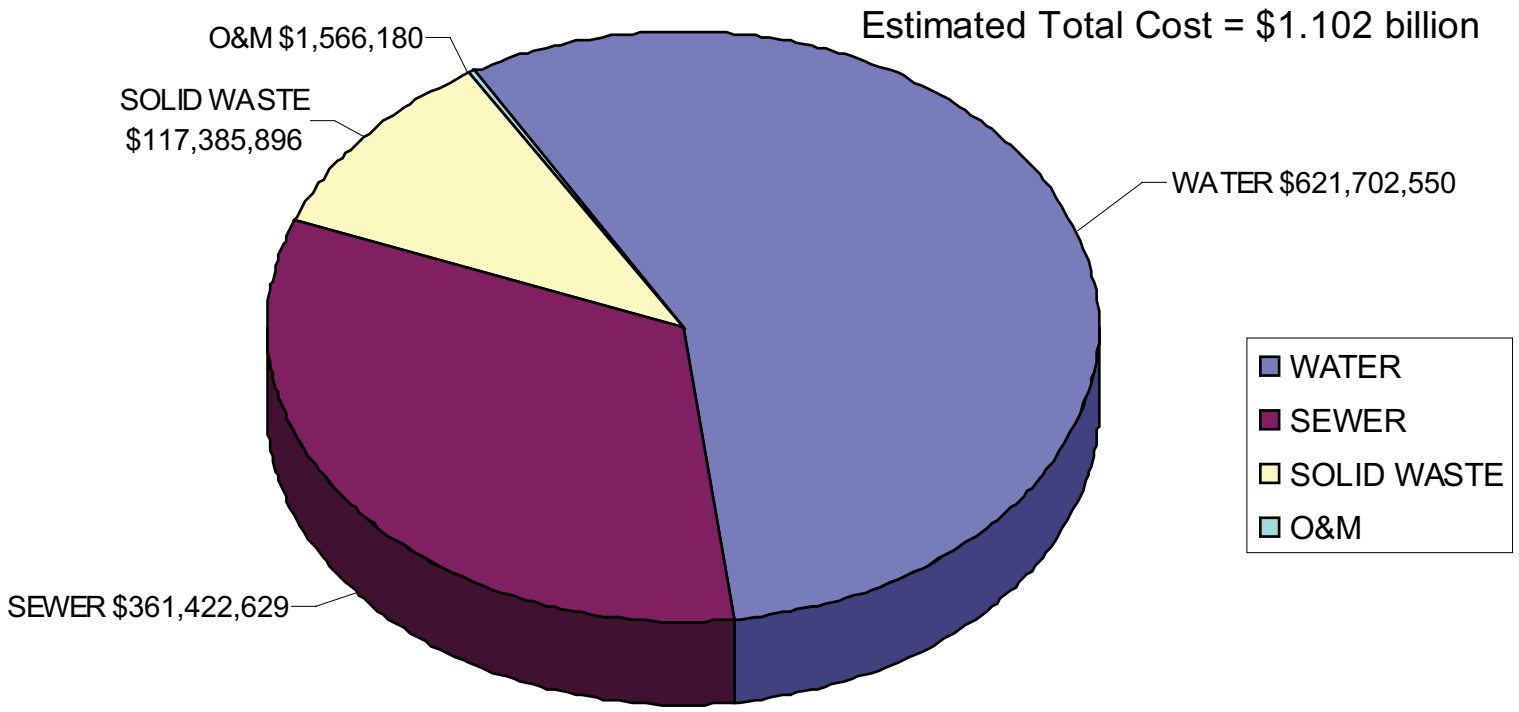
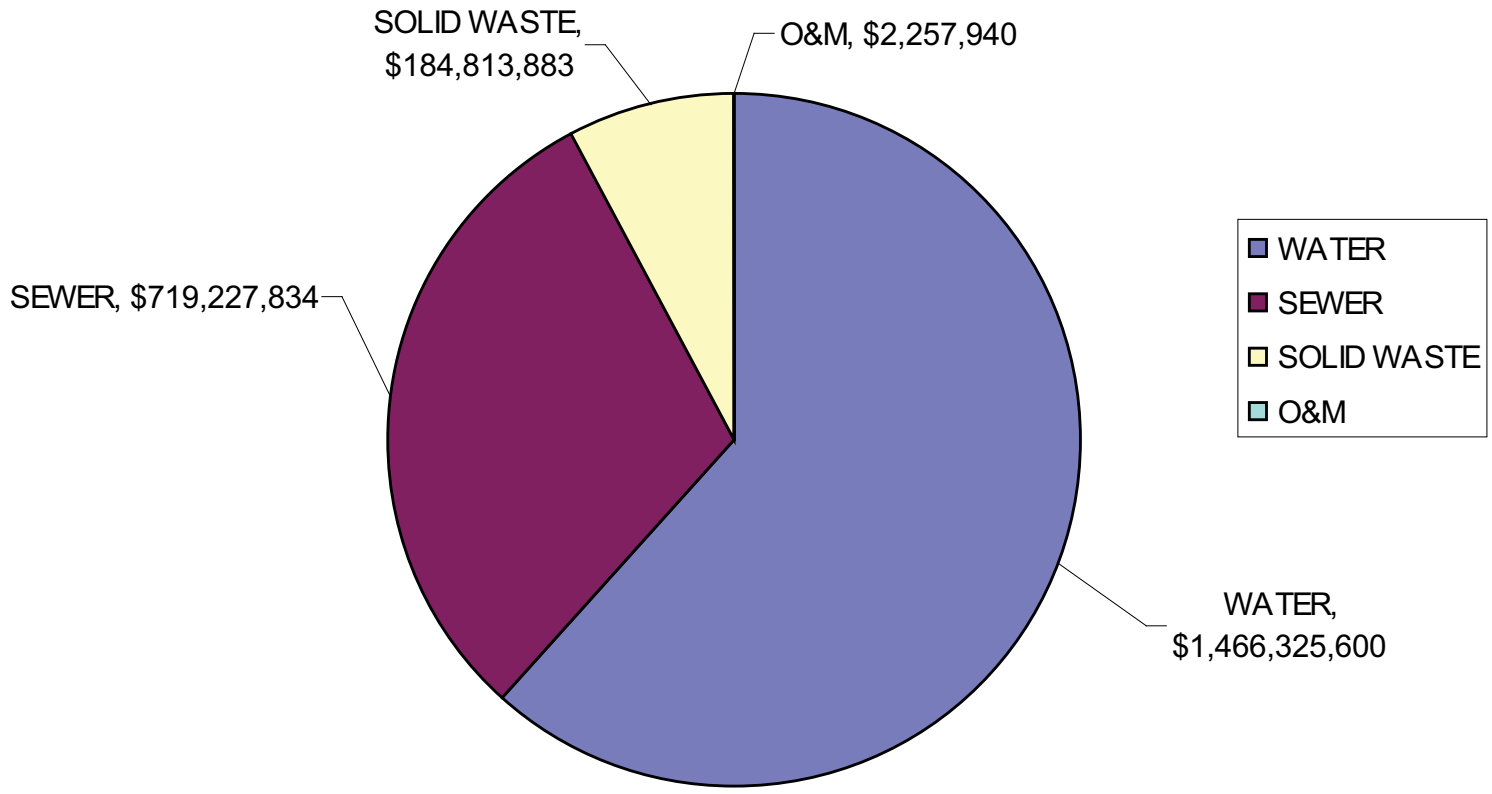


Table 8
Cost Estimates by Type of Needed Facility by IHS Area
Total Database

AREA	WATER	SEWER	SOLID WASTE	O&M	TOTALS
AB	$381,558,381	$40,487,422	$19,654,336	$1,178,750	$442,878,889
AL	$61,215,503	$52,295,230	$5,556,759	$0	$119,067,492
AN	$355,527,240	$281,960,038	$94,392,465	$50,000	$731,929,743
BE	$36,088,950	$37,726,850	$3,928,879	$0	$77,744,679
BI	$18,251,353	$13,672,080	$3,314,069	$0	$35,237,502
CA	$36,264,990	$47,537,049	$8,594,089	$239,000	$92,635,128
NA	$317,478,120	$85,585,122	$18,119,263	$3,000	$421,185,505
NS	$45,718,165	$49,407,719	$4,665,448	$60,300	$99,851,632
OK	$56,072,528	$17,122,964	$3,540,300	$0	$76,735,792
PH	$78,191,921	$48,942,826	$9,649,193	$431,028	$137,214,968
PO	$42,520,804	$26,166,966	$10,292,307	$54,000	$79,034,077
TU	$37,437,645	$18,323,568	$3,106,775	$241,862	$59,109,850
TOTAL	$1,466,325,600	$719,227,834	$184,813,883	$2,257,940	$2,372,625,257

Cost Estimates by Type of Facilities
EOY 2007 Data - Total Database



Estimated Total Cost = $2.373 billion

The Challenge Ahead

The ultimate goal of the SFC Program is to provide adequate water and sewer facilities for all existing Indian homes. However, despite current funding levels, there are numerous factors that will continue to create additional sanitation facility needs in the future. These factors include population growth and the corresponding additional need for homes. The number of Indian families is increasing faster than new homes are being constructed, making it especially difficult to meet critical sanitation needs in many Indian communities.

Another factor is the need to upgrade or replace existing sanitation facilities when their useful design life is reached; the IHS began providing water and sewer systems to AI/AN communities over 45 years ago. This factor becomes increasingly critical as existing sanitation facilities become less reliable, and the costs of operating and maintaining older sanitation facilities increase. Despite an IHS emphasis on designing systems that are simple and economical to operate and maintain, the reliability of most community water and sewer systems in Indian country needs to be improved. The aging national water and infrastructure needs are documented by EPA, the Government Accountability Office, and the American Water Works Association.

More stringent environmental standards and more difficult site conditions will challenge the SFC Program as it endeavors to provide needed sanitation facilities in years to come. Standards for public water supply systems, solid waste disposal facilities, and sewage treatment facilities are continually being modified by legislation and regulation.

The impact of these changes is generally most severe on small utility systems such as those serving AI/AN people. As a result of more stringent regulations, small systems will cost more to build and operate.

In the future, the technical and managerial skills of IHS and tribal staff to design, construct, and operate needed sanitation facilities in an environment with more fiscal and regulatory challenges will be tested. A true partnership among the tribes, the U.S. Congress, and IHS is needed if we are to meet these challenges successfully.

Figure 45: IHS engineer Steve Dykstra and NTUA water and wastewater foreman Junior Begay at the final inspection of the Shiprock booster station.

IHS Area SFC Program Directory

Aberdeen Area/DSFC
115 4th Ave., S.E.
Aberdeen, SD 57401
Ph. (605) 226-7451

Anchorage Area/DSFC
4141Ambassador Dr.
Anchorage, AK 99508-5928
Ph. (907) 729-3540

Albuquerque Area/DSFC
5300 Homestead Rd., N.E.
Albuquerque, NM 87110
Ph. (505) 248-4595

Bemidji Area/DSFC
522 Minnesota Ave. NW
Bemidji, MN 56601
Ph. (218) 444-0504

Billings Area/DSFC
2900 4th Ave. N
Billings, MT 59101
Ph. (406) 247-7096

California Area/DSFC
650 Capitol Mall, Ste. 7100
Sacramento, CA 95814
Ph. (916) 930-3945

Nashville Area/DSFC
711 Stewarts Ferry Pike
Nashville, TN 37214-2634
Ph. (615) 467-1586

Navajo Area/DSFC
P.O. Box 9020
Window Rock, AZ 86515
Ph. (928) 871-5851

Oklahoma City Area/DSFC
3625 NW 56th St., Five Corporate Plaza
Oklahoma City, OK 73112
Ph. (405) 951-3882

Phoenix Area/DSFC
Two Renaissance Sq., 40 North Central Ave. 600
Phoenix, AZ 85004
Ph. (602) 364-5068

Portland Area/DSFC
1220 SW 3rd Ave., Rm. 476
Portland, OR 97204-2892
Ph. (503) 326-2001

Tucson Area IHS
7900 South J Stock Rd.
Tucson, AZ 85746-2508
Ph. (520) 295-2580

DEPARTMENT OF
HEALTH AND HUMAN SERVICES

Public Health Service
Indian Health Service
801 Thompson Avenue, TMP 610
Rockville, MD 20852

Official Business
Penalty for Private Use $300

FIRST-CLASS MAIL
U.S. POSTAGE PAID
SUBURBAN, MD
PERMIT NO. 2180