The Sanitation Facilities Construction Program of the Indian Health Service

Public Law 86-121 Annual Report for 2003

This Annual Report for Fiscal Year 2003 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:

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The Sanitation Facilities Construction Program
Annual Report for 2003

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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, waste water treatment systems, and solid waste disposal facilities in culturally diverse and often times 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 the passage of 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 more than four decades 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 was accomplished by either tribes, tribal organizations or Indian-owned construction firms. As in previous years, a number of tribes continue to assume responsibility for their respective SFC programs, while the IHS, SFC Program managers continue to work with tribes and others to support the tribal Self-Governance/Self-Determination decision making process under the expanded authorities of Public Law 93-638, the Indian Self-Determination and Education Assistance Act. One goal of the SFC Program is to make available program information in a more 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, the Surgeon General is authorized to construct essential sanitation facilities for American Indian and Alaska Native homes and communities. Since 1959, over 260,000 homes have been provided sanitation facilities and this achievement has had a significant impact on the health of Native Americans. The gastroenteric and post-neonatal 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.

The authority vested in the Surgeon General by P.L. 86-121 was transferred to the Secretary, Health, Education, and Welfare (HEW), by Reorganization Plan No. 3 of 1966. The Secretary of HEW was re-designated Secretary of Health and Human Services by Section 509(b) of P.L. 96-88 in 1979. The authority was delegated to the Director, IHS, by the Reorganization Order of January 4, 1988 (52 FR 47053), which elevated the IHS to a Public Health Service (PHS) Agency.

The Sanitation Facilities Construction (SFC) Program is unusual among Federal programs because Indian Health Service (IHS) personnel work cooperatively, as close partners, with tribes in providing essential sanitation 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 American Indian and Alaska Native populations are primary IHS objectives. In the clinical environment, physicians, dentists, nurses, and other medical care providers work to restore the health of ill patients. However, preventing illness is clearly the most effective way to improve health status. Improving the environment in which people live and assisting them to interact positively with that environment will result 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 45 years, the SFC Program continues to provide assistance to the American Indian and Alaska Native people in eliminating sanitation facilities deficiencies in Indian homes and communities.

The IHS mission is to raise the health status of American Indian and Alaska Native people to the highest possible level. To carry out its mission, the IHS provides comprehensive primary and preventive health services. The SFC Program is the IHS' environmental engineering component. It provides technical and financial assistance to Indian tribes and Alaska Native villages (tribes) for cooperative development and continued operation of safe water, wastewater, and solid waste systems and related support facilities. In partnership with the tribes, the SFC Program:

Figure 1: Construction of a septic system, 1960's

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 American Indian and Alaska Native communities. During fiscal year (FY) 2003, tribes, tribal organizations or Indian-owned construction firms administered approximately $116 million in construction funds (approximately 86 percent of all SFC construction expenditures). Many tribes participated by contributing labor, materials, and administrative support to projects.

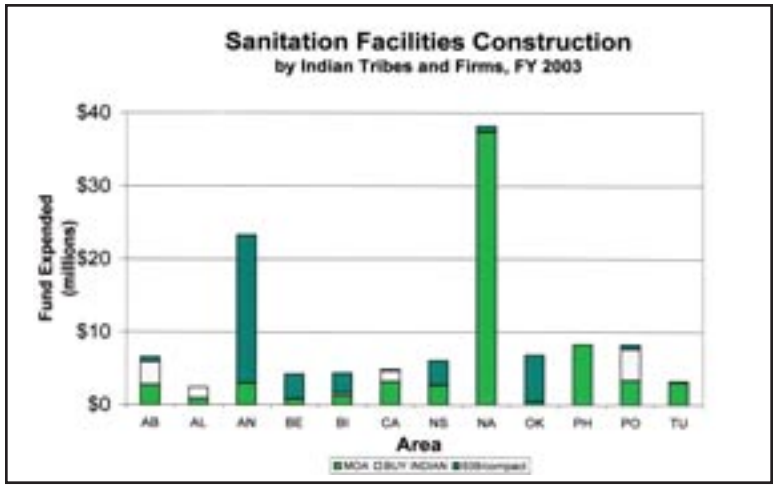


Figure 2: Funds expended by Indian and Alaska Native tribes and Indian-owned firms in FY 2003, by IHS Area.

Figure 3: Ribbon cutting ceremony for the improved Highway 47 with new water and sewer facilities through downtown Lac du Flambeau, Wisconsin..

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 to project completion. Operation and maintenance of these facilities by the American Indian and Alaska Native 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 assumed 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, 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: 24" boring and casing for a 10" PVC water main highway crossing, Mille Lacs Reservation, Minnesota.

TABLE 1

Tribes that Managed the SFC Program in FY 2003 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 2003, over $93.2 million was appropriated for the construction of sanitation facilities. In addition to those appropriated funds, the SFC Program received more than $1 million from the Department of Housing and Urban Development (HUD) and $43.9 million in contributions from other Federal agencies including the Environmental Protection Agency (EPA) and from non-Federal sources such as tribes and State agencies. With these contributions, the SFC Program’s construction budget for the fiscal year totaled more than $138 million.

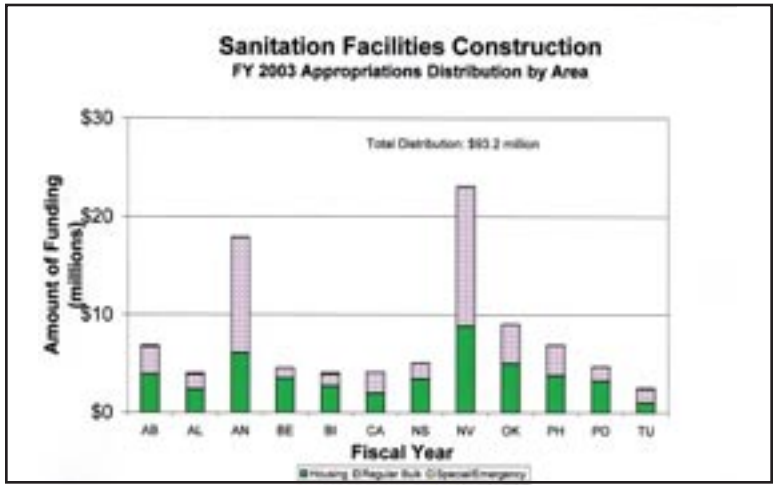


Figure 5: Distribution of SFC Project appropriations, by Area, for FY 2003.

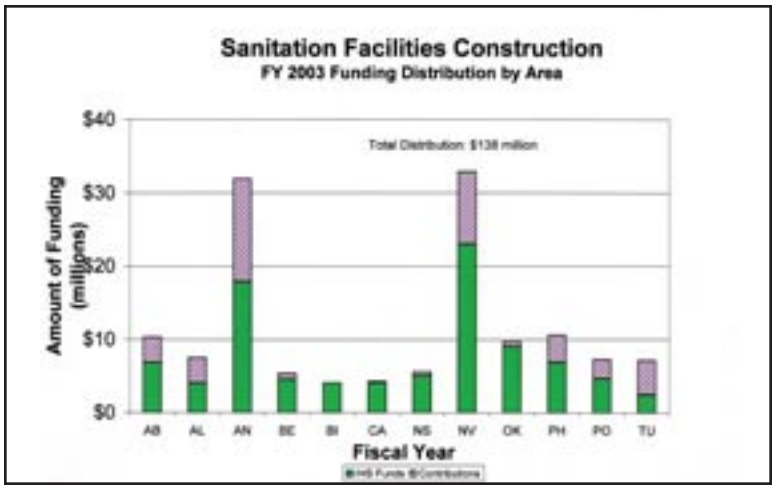


Figure 6: Total distribution of SFC Project funds in FY 2003, including all contributions and HUD funds.

Using the appropriated and contributed funds, the SFC Program initiated 483 projects to provide essential sanitation facilities to an estimated 3,771 new and like-new homes, 2,689 first service existing homes and 16,290 existing homes. Included among the new housing units receiving facilities were 422 HUD-sponsored units, 334 Bureau of Indian Affairs-Home Improvement Program (BIA-HIP) sponsored units, and 3,015 units constructed by tribes, individuals, and other entities. In FY 2003, the SFC Program provided sanitation facilities to a total of 22,750 homes. These statistics are summarized in Table 2 on the following page.

TABLE 2
IHS Sanitation Facilities Construction Program Statistics for FY 2003

SFC Program Budget:

IHS SFC Appropriation =	$	93,217,000
HUD Contributions (Housing + CDBG)=	$	1,608,796
Other Contributions =	$	43,903,225
Total Funding in FY 2003 =	$	138,729,021
Total IHS SFC Appropriations since 1959=	$	2 billion

SFC Projects:

Number of Projects Undertaken in 2003 =	483
Total Number of Projects Undertaken since 1959 =	11,577

Homes Provided Sanitation Facilities in FY 2003:

• Number of New and Like-New Homes Served	
HUD-sponsored Homes =	3,771
BIA-sponsored Homes =	3,015
Tribal and Other Homes =	334
Sub-Total	422
• Number of Existing Homes Served =	2,689
• Number of Previously Served Homes Provided Upgraded Sanitation Facilities =	16,290
Total Number of Homes Served in 2003 =	22,750

*CDBG–HUD Community Development Block Grant program

Homes Provided Sanitation Facilities since 1959:

• Number of New and Like-New Homes Served	
HUD-sponsored Homes =	61,384
BIA-sponsored Homes =	22,587
Tribal and Other Homes =	71,688
Sub-Total	155,659
• Number of Existing Homes =	105,008
Total Number of Homes Served in =	260,667

Sanitation Deficiency System (SDS) Information:

Total Estimated Cost of Homes Sanitation Deficiency =	$1.568 billion
Total Estimated Cost of Feasible Projects =	$859 million
Total Estimated Number of Projects/Phases Identified =	2,863
Number of Feasible Projects Identified =	2,212
Estimated Total Number of Existing Homes Without Potable Water =	38,637
Estimated Total Number of Homes That Lack Either a Safe Water Supply or Sewage Disposal System, or Both (Deficiency Levels 4&5)=	44,234

Figure 7: : Road bore as part of a 4 mile water main installation on the La Jolla Reservation, California.

Five 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. 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 American Indian and Alaska Native homes and communities.

Figure 8: Startup of the mechanical wastewater treatment plant at Sac and Fox, Iowa.

East Glacier Regional Water System
Blackfeet Reservation, Washington

This project provided water to the communities of East Glacier and Browning, Montana. Both communities are located on the Blackfeet Reservation. The East Glacier community borders the southeast corner of Glacier National Park. The Browning community is located eleven miles east of the park and is the reservation's population and business center. There is a history of water issues that have been a constant problem with both communities. East Glacier was providing community water that did not meet the Safe Drinking Water Act standards and was operating under an Boil Water Order.

Figure 9: Bulldozer pulls a cement truck uphill while second truck waits at the bottom of the hill.

The original East Glacier Regional Water System project, described in our 2001 report, was developed to solve the

Figure 10: Intake pump fittings and pipe being assembled which the connections torqued to 3,500 ft-lb.

East Glacier problem of providing untreated water from Midvale Creek. As the project developed, the hope of using Midvale Creek was ruled out as a long term reliable source and attention was switched to the Lower Two Medicine Reservoir, which is the lowest of a three lake chain on the Two Medicine River. The Two Medicine River originates in Glacier Park and flows east and south. The reservoir's storage was enhanced years ago by the BIA for irrigation needs and straddles the park and reservation boundary. As the idea of using Two Medicine as a source for East Glacier evolved, it was decided to expand the project to make it regional in nature and include the water needs for Browning. The final project included serving both East Glacier and Browning with a regional system with a common water treatment plant and separate transmission lines for each community. The project was divided into two phases; phase one constructed the infrastructure necessary to serve the East Glacier community and phase

two would be the infrastructure to serve the community of Browning. Total cost for both phases was estimated at $12,500,000.

At the time of the 2001 annual report, funding for the intake was available and the Blackfeet Tribe was in negotiation with several funding sources to secure money for the water treatment plant and transmission line to East Glacier. Even though not all the funding was in place it was decided to proceed with construction on the lake intake because of a favorable construction environment with low reservoir levels and the BIA's cooperative efforts to lower the reservoir for dam maintenance.

Funding sources for the full project include IHS, the State of Montana, EPA, HUD Community Development Block Grant (CDBG), and the Rural Development. To date construction has been completed on the lake intake which consist of 1,400 feet of 22-inch pipe installed using horizontal directional drilling, the intake pumping station consisting of four submersible pumps mounted in vertical cans on shore, 13,500 feet of 20 inch HDPE water line from the intake to the water plant site, 7,500 feet of 12 inch HDPE water line from the water plant site to the East Glacier community, and two water tanks. The water treatment plant will be a 3,000 gallon per minute microfiltration design using Zenon technology. The plant is scheduled to begin construction in the winter of 2003. The design for the Browning phase of the project is nearing completion. Some minor right-of-way issues remain. Construction of Phase II is scheduled for the summer of 2004.

Figure11: Bottom of intake assembly, which will be totally encased by concrete.

Figure 12: Intake site during the winter months.

Happy Camp Water System
Happy Camp Rancheria, California

The United States Department of Agriculture (USDA) Rural Development, the California Department of Health Services, Federal Emergency Management Agency (FEMA), and IHS provided funding to the Happy Camp Community Services District (HCCSD) for water system improvements. Approximately 200 tribal homes from the Karuk Tribe are connected to the HCCSD water system. The IHS provided engineering services and construction management for the project. The total cost of the project was $2,232,000. Water improvements include installation of an infiltration gallery in Elk Creek, new water treatment filters, a 1 million gallon storage tank and approximately 12,000 feet of water main replacement.

Figure 13: Initial cofferdam construction in Elk Creek.

This project was one of the most challenging projects ever constructed by the California IHS. The water improvement project took fours years to complete with over two years spent on obtaining environmental and regulatory clearances. Nine federal and state regulatory agencies were involved in the environmental clearance process. The National Marine Fisheries Services issued a biological opinion on the proposed action (infiltration gallery) as a result of a listed endangered species (Coho Salmon) and it's critical habitat being disturbed.

Figure 14: 1 million gallon water storage tank under construction.

The biological opinion included many construction requirements including a 20-foot wide section of stream channel to be left open for adult fish passage and a six-week window to perform construction. The biological opinion was issued in July 2001 and the infiltration gallery had to be constructed and completed by August 2001.

Figure 15: Contractor working on filter piping and controls in treatment building.

Construction did not take place as scheduled because the California State Health Department, a funding Agency, did not approve the construction contract award until after 2001. Eventually, the contract was approved and construction started with replacing the filters and water mains.

Figure 16: Filling the new 720 gallon-per-minute filter with filter media.

The infiltration gallery was completed in August-September 2003 and the water storage tank was completed in spring 2003.

Upper Lake Community Water System
Upper Lake Rancheria, California

The Upper Lake Rancheria is located in the California Coastal Mountain Range of Lake County approximately one mile northwest of State Highway 20 on Elk Mountain Road near the community of Upper Lake, California. At one time the Rancheria consisted of approximately 500 acres of land; 100 acres of agricultural land suitable for orchards and small grain crops, with the remainder being primarily housing sites, grazing land and hilly woodland. The termination process was then initiated and deeds were issued to the residents. Much of the agricultural land was sold to non-Indians and it is no longer considered to be a part of the Rancheria

Figure 17: Groundbreaking ceremony with tribal representatives and funding agencies.

The Dewell Ranch well serves as the water source for 9 homes on the Rancheria. Monitoring records of the water quality of the Dewell Ranch well indicate that the water quality has high concentrations of iron (1.7 mg/L) and manganese (0.98 mg/L). The recommended Secondary Drinking Water Standards for iron and manganese are 0.3 mg/L and 0.05 mg/L, respectively.

Figure 18: 8-inch PVC pipe installation with pipe embedment.

High concentrations of iron and manganese are aesthetically undesirable because they will cause discoloration in water and also stain clothes and plumbing fixtures. Iron and manganese also can promote the growth of iron bacteria which can cause taste and odor problems. The State of California regulates secondary constituents. Under Title 22 of the California Code of Regulations, the Maximum Contaminant Level (MCL) for iron and manganese are 0.3 mg/L and 0.05 mg/L, respectively.

Figure 19: Cement slurry mix poured over pipe embedment along Dewell extension.

In November 1999, the EPA Region 9 notified the Tribe that it was out of compliance with the Safe Drinking Water Act requirement for monitoring chemical contaminants in the public water supply for both the Hardisty and the Dewell Ranch Community Water Systems. The Lake County Tribal Health Consortium provided the Tribe with the necessary funds to comply with the EPA standards for chemical monitoring. The projected annual cost associated with monitoring both water systems in accordance to the Safe Drinking Water Act is $3,400.

Figure 20: 8" PVC water installation.

Under Project CA 01-L31, the IHS installed 3,130 feet of 8-inch water main with appurtenances to interconnect the Hardisty and Dewell community water systems. The water main was installed along Rancheria Road and Dewell Road Extension and provided seven additional water service connections to ineligible IHS homes along the proposed route. Construction began on June 19, 2003 and a final inspection was held on August 20, 2003.

By connecting the two community water systems, the tribe's operation and maintenance costs were reduced, saving the tribe an annual cost of approximately $23,000. The tribe no longer has responsibility for providing O&M to two independent public water systems and the homeowners on the Dewell Ranch noticed improved water quality.

Figure 21: Contractor installing water main in Hardisty community.

The completion of the Upper Lake Rancheria Water Improvements Project during FY03 is the first phase of a two phased water system improvements project. Phase 2 includes constructing a steel water storage tank adjacent to the Hardisty tank, existing pumphouse improvements, and the development of an additional water source. Phase 2 is completely funded by the EPA Safe Drinking Water Act Indian Set-Aside program and is expected to be completed in FY04 under an inter-agency agreement with the IHS.

Figure 22: Contractor tying into the existing Dewell community water main.

Figure 23: Contractor rolling asphalt at the intersection of Rancheria road and Dewell road extension.

Small Diameter Pressure Sewer System
Alabama-Coushatta Indian Reservation, Texas

The Alabama-Coushatta Indian Reservation is located approximately 70 miles northeast of Houston, Texas in the of the heart of the Big Thicket area of east Texas. Approximately 550 tribal members reside on the 4,600 acre reservation which consists of rolling hills, creeks, and pristine pine forest inhabited by an abundance of fish and wildlife.

Of the 192 homes located on the reservation, 42 had previously been served with community sewer.

Figure 24: Tribal crew installing individual grinder lift station.

The remaining 150 homes are served by individual on-site waste water treatment systems with subsurface discharge. Due to poor soil conditions and seasonal high water tables, many of these systems are failing or experience seasonal failures.

Project NS-01-980 was funded using IHS housing funds in the amount of $130,000 to provide community sewer service to seven (7) like-new homes that had septic system failures. The IHS engineering staff in the Lafayette, Louisiana Field Office engineered and provided construction management services for the project. The Tribe elected to enter into their first ever P.L. 93-638, subpart J contract with the Indian Health Service to complete the construction on the project.

Figure 25: Tribal crew pressure testing the small diameter pressure sewer main.

By using tribal employees for the construction, utilizing easy-to-install individual grinder pump stations, and small diameter pressure sewer (SDPS) mains, the original scope of the project was completed at a cost of $76,000. This represented a substantial savings over the estimated cost of hiring a contractor to construct a standard gravity sewer

system. Project-01-980 successfully laid the foundation for future increased scope projects by utilizing the SDPS technology, 638 construction method, and tribal construction capacity. The significant project savings will be used to fund future projects, currently in the design stage, to serve the remaining homes on the reservation with community sewer service.

Figure 26: IHS engineers consulting construction drawings during final inspection.

With great pride, the tribe hosted the final inspection for the project in May 2003. In attendance were a number of prominent tribal officials including the Principle Chief, Tribal Council Chairman, Tribal Administrator, Tribal Health Director, the entire force account construction crew from the utilities department, and several interested tribal members. Also attending was a congressional aide representing Jim Turner, U.S. Congressman from the Texas 2nd District.

Figure 27: Final inspection attendees.

The final inspection ended with a Texas style barbeque provided by the Tribe for all in attendance.

Figure 28: Example of surfacing sewage that has been eliminated by this project.

Sewage Collection and Disposal Facilities
Iowa Tribe of Oklahoma, Oklahoma

The Iowa Tribe of Oklahoma maintains its headquarters on 160 acres of tribal trust land in Lincoln County, Oklahoma, approximately 5 miles south of Perkins, Oklahoma. The tribal complex consists of nine buildings, including administration, multi-purpose, public safety, health and human services, and various tribal programs/offices. The complex is served by the Iowa Tribe's own private water and sewer systems.

Figure 29: Clearing and grubbing lagoon site by Shawnee OEH force account crew.

The Tribe recently expanded the complex, which now has a new wellness center, a daycare/headstart facility, and six elderly housing units. The new additions pushed the existing 1/4 acre, under-designed and aging sewer disposal lagoon beyond its capacity. The elderly homes, public safety building, and the daycare facility had no sewer service because they were at an elevation below and far from the existing lagoon.

Figure 30: Initial excavation and berm compaction of lagoon.

The elderly homes and the public safety building were connected to a small, temporary lagoon. The daycare, which was just beginning construction, would require a new sewer system. The complex needed a significantly larger sewage disposal lagoon and approximately one mile of new sewer collection main. All this needed to be completed in a timely manner so as not to delay occupancy of the new buildings.

The Tribe applied for and received a Community Development Block Grant from the Department of Housing and Urban Development for the design and construction of community sewage collection and disposal facilities. The Tribe then requested assistance from the Indian Health

Service in the design, project management, construction, and construction inspection of the propose wastewater facilities. In an engineering report provide by the Indian Health Service, five alternatives were presented to the Tribe that would meet the demands of the sewage generated by the existing buildings and new construction. The Tribe chose alternative two, which proposed a gravity sewage collection system consisting of 5,020 feet of 8-inch PVC plastic sewer main, 14 manholes, and a 2.4 acre total retention lagoon to replace the existing lagoons. The new system would eliminate the need for a lift station, reducing operation and maintenance costs, and open land south of the complex for future development.

Figure 31: Placing topsoil on north lagoon berm.

Figure 32: Construction of sewer main from junction manhole to daycare/elderly housing with insulated pipe.

The Tribe contributed $341,000 from the CDBG to the Indian Health Service to accomplish this goal. The IHS developed the plans and specifications. In spite of many obstacles, a notice to proceed with construction was finally issued on June 24, 2003.

Borings from subsurface exploration indicated that on-site natural clay could be used to construct the cell liner. The Shawnee office project engineer and staff provided the construction staking and the lagoon site was excavated with the natural clay and topsoil being stock-piled for use after the cell was constructed. Utilizing multiple crews, the 8" sewer main was constructed in conjunction with the lagoon earthwork. A majority of the sewer main was designed on minimum grade, requiring Indian Health Service inspectors to diligently check slope grades, inverts, and alignment.

Figure 33: Checking sewer main grade to accurately tie into existing sewer by old lagoon.

The service lines to the six elderly homes and public safety building were constructed by the Shawnee office force account crew, again providing significant savings to the project. Even though temperatures were in excess of 100 degrees Fahrenheit most days, construction was completed ahead of schedule and in time for the opening of the daycare facility.

Figure 34: Completed lagoon with grass and fencing.

The result is a sewage collection and disposal system that will provide for the Iowa Tribe and its people well into the future, an accomplishment that all parties involved can take pride in. Much thanks to the local Shawnee engineering and construction staff, Tribal staff and the contractors for the effort it took to bring this project to fruition.

Sanitation Facilities and Health

Protecting the health of and preventing disease among American Indian and Alaska Native populations are primary IHS objectives. In the Indian Health Care Improvement Act (P.L. 94-437, as amended), the Congress declared 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 35: Aerial photo of the recently constructed wastewater treatment facility at Hon Dah, Ft. Apache Indian Reservation, Arizona.

A Report to Congress by the Comptroller General, dated March 11, 1974, noted that American Indian and Alaska Native families living in homes with satisfactory environmental conditions placed fewer demands on IHS' primary health care delivery system; i.e., those with satisfactory environmental conditions in their homes required approximately one fourth the medical services as those with unsatisfactory environmental conditions.

Figure 36: Completed 906,000 gallon water reservoir on the Ute Mountain Reservation, Colorado.

The 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 breaking the chain of waterborne communicable disease episodes. Properly designed and operated facilities can reduce the incidence of disease by eliminating waterborne bacteria, viruses, and parasites which 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 haul water.

Figure 37: Graph of gastroenteric and postneonatal death rates versus the number of Indian homes with sanitation facilities.

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, 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 importance are infectious hepatitis; typhoid, cholera, and paratyphoid fevers; and dysenteries. In 1955, more than 80 percent of American Indians and Alaska Natives were living in homes without essential sanitation facilities. The age-adjusted gastrointestinal disease death rate for American Indians and Alaska Natives 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 1995, by contrast, the age-adjusted gastrointestinal disease death rate had decreased significantly to 1.7 per 100,000. A major factor in this significant gastrointestinal disease rate reduction is the SFC Program's efforts to construct water supply and waste disposal facilities. The 1995 rate is still 40 percent higher than the rate for all races in the U.S.

The SFC Program is a significant contributor to the improved health status of American Indians and Alaska Natives 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 interfacing with other Federal agencies.

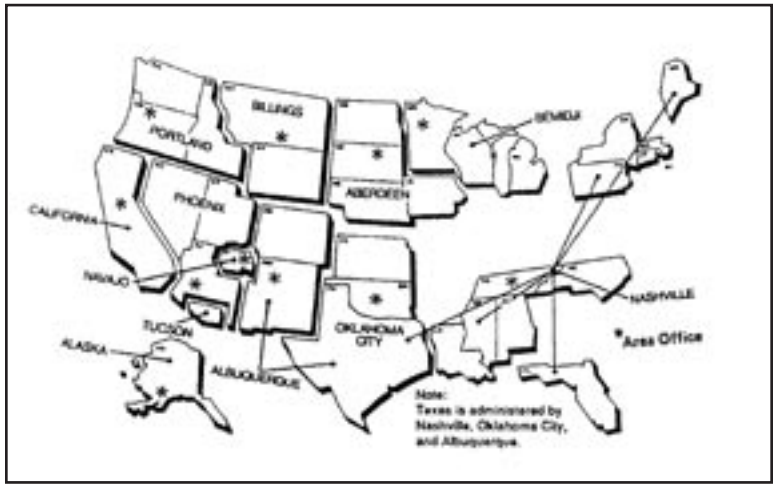


Figure 38: Location of indian Health Service Area Offices.

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 toward achieving its sanitation facilities construction objectives. An example are funds that are transferred by HUD to the 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. Congress authorized IHS to accept the HUD contributions.

Figure 39: Umiaks rest near the utilidor that shelters almost 3 miles of piping for water and wastewater, Alaska Village of Savoonga.

Similar agreements among the tribes, IHS, and the EPA Indian Set-Aside Grants (ISA) Program enable the EPA to contribute the ISA wastewater funds to the SFC Program. States do not have jurisdiction on trust lands and, except for Alaska, provide relatively little assistance 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 American Indian and Alaska Native homes and communities benefits more than 562 Federally recognized tribes and tribal organizations located in 35 States. Sanitation facilities are provided, at the request of tribes, bands, or groups, for homes owned and occupied by American Indians and Alaska Natives who are eligible for assistance. Provision of water, wastewater, and solid waste facilities for commercial and industrial purposes is not authorized under P.L. 86-121; therefore, such needs are not addressed by the SFC Program.

Figure 40: An Eljen in-drain leachfield system installed for a new homeowner in Taos Pueblo, New Mexico.

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

Figure 41: Water vapors rise around a Stebbins resident using the community watering point which was part of the new Stebbins washeteria, Alaska.

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

Regular Projects provide sanitation facilities for existing Indian homes and communities. The SFC Program has established a Sanitation Deficiency System (SDS) for identifying and prioritizing projects to serve homes

Figure 42: 300,000 gallon water sphere being assembled at the Sac and Fox settlement, Iowa.

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 Indian Health Care Improvement Act requirements. A summary of the inventory of sanitation deficiencies is presented in the following pages.

Special/Emergency Projects provide sanitation facilities for special studies and emergency situations. Emergency projects typically involve community sanitation facilities which have undergone, or are expected to experience, sudden wide-spread failure that will directly affect the public health. Funding for special/emergency projects is very limited and all projects must be approved by the SFC Program Headquarters Office. The average project funding level is $20,000 to $50,000.

In addition to providing direct services for the construction of sanitation facilities, 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 on-site 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 routinely 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 43: Rock trencher excavates a deep sewer main as part of a $10 million Hon Dah regional sewer project, Ft. Apache Reservation, Arizona.

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. The 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. This 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, the IHS will continue providing technical support and consultation on environmentally-related public health issues to American Indian and Alaska Native tribes and individual homeowners.

Figure 44: The Kwethluk crew installs helical anchors which will be the foundation for the above-ground utilidor, Alaska.

Sanitation Deficiencies

The Indian Health Care Improvement Act (IHCIA) requires the IHS to have a funding plan to provide safe water supply and sewage and solid waste disposal facilities to existing American Indian and Alaska Native 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 American Indian and Alaska Native homes and communities.

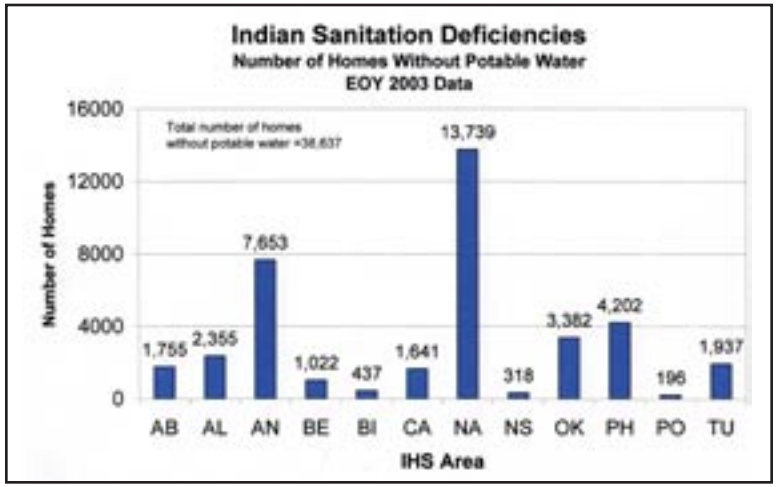


Figure 45: Number of Indian homes without potable water, by Area.

Sanitation deficiencies are reported as proposed projects or project phases. The current inventory of sanitation deficiencies identified more than 2,863 sanitation facilities construction projects or project phases at an estimated cost of $1.6 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, 2,212 of the identified projects are considered to be economically feasible with an estimated cost of $859 million.

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 deficiencies of existing facilities. Projects are divided into phases, as appropriate, to provide logically independent and functional projects that can be funded in one year and which 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 will bring all facilities to deficiency level I or better.

For several years IHS has stated that 7.5% of AI/AN homes were without potable (safe and reliable) water. Based on end of year 2003 data, it is estimated that approximately 12% 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 inflation, population growth, the age and condition of the existing infrastructure, high numbers of new and like new housing, and new environmental regulations including the new Arsenic and Surface Water Treatment rules promulgated by the Environmental Protection Agency. The new arsenic rule accounts for most of this increase because it has caused approximately 65 communities with nearly 13,000 homes to now be classified as deficiency level 4 for water as defined in IHCIA at 25 U.S.C. 1632. In order to meet the IHS strategic goal of raising the percent of AI/AN homes with safe water to 94% by 2010 a significantly larger increase in sanitation project and staff funding is required.

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

Figure 46: Chester Lapahie of the Farmington, New Mexico field office does test pumping at Ojo Encino on the Navajo Reservation, New Mexico.

Figure 47: Construction of a new headworks and grit removal system at the San Juan Pueblo, New Mexico.

In cooperation with the Office of Management and Budget (OMB), a Common Measure was developed with the Rural Utility Service (RUS), the Bureau of Reclamation (BOR), the Environmental Protection Agency (EPA), and the IHS to allow direct comparisons between rural water programs within the federal government. The Common Measures agreed upon were the number of connections and the population served per million dollars of total project cost. It was recognized that BOR and IHS are direct service programs to a specific population, and EPA and RUS are grant/loan programs that can leverage funding with both of these programs mostly providing strictly upgraded services. The data is reported as east and west, excluding Alaska. The IHS compared favorably in FY 2001 having provided 174 and 212 (east and west) services per million dollars compared with the BOR which provided 24 services per million dollars.

The Program Assessment Rating Tool (PART) is an OMB initiative performed on the SFC Program in 2002. The PART rates a program's purpose, design, strategic planning, program management and program results. The SFC Program scored 80%, which is a very acceptable score (second highest within the Department of Health and Human Services) and supports the proposed funding increase in 2005. A weakness of the SFC Program is that it has not had an independent Program review since 1974, and there has not been a recent benefit cost analysis on the value of sanitation facilities for AI/AN homes. The SFC Program is working with other parts of the Department of Health and Human Services on an independent evaluation of the Program.

Tables 3 thru 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	3,973	4,128	11,631	1,645	392	21,769
AL	1,026	5,048	6,353	2,515	19	14,961
AN	11,572	2,365	2,479	1,080	7,286	24,782
BE	11,858	6,060	2,160	1,186	18	21,282
BI	1,191	3,611	6,578	1,126	16	12,522
CA	59	3,312	6,423	2,703	48	12,545
NA	15,980	7,677	29,461	3,268	10,750	67,136
NS	2,398	5,356	5,739	756	52	14,301
OK	58,055	1,311	20,249	3,599	668	83,882
PH	5,712	6,039	11,104	3,506	811	27,172
PO	842	5,228	6,429	802	13	13,314
TU	0	1,192	2,237	868	1,107	5,404
TOTAL	112,666	51,327	110,843	23,054	21,180	319,070

Table 4
Number of Homes Requiring Assistance by Type of Facility

AREA	WATER	SEWER	SOLID WASTE	ELIGIBLE HOMES
AB	12,265	7,018	8,337	27,620
AL	13,552	10,300	2,413	26,265
AN	11,344	11,203	3,801	26,348
BE	7,446	3,324	1,806	12,576
BI	8,196	5,939	7,054	21,189
CA	11,181	8,790	8,922	28,893
NA	30,227	17,035	39,032	86,294
NS	9,512	11,147	7,985	28,644
OK	7,522	2,844	20,353	30,719
PH	17,377	10,734	6,851	34,962
PO	6,363	6,134	9,764	22,261
TU	5,397	3,033	4,693	13,123
TOTAL	140,382	97,501	121,011	358,894

Table 5
Project Cost by Deficiency Level
Feasible Projects

AREA	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	TOTAL
AB	$0	$27,490,000	$47,891,500	$15,372,000	$4,911,500	$95,665,000
AL	$0	$29,243,200	$16,135,800	$4,493,000	$0	$49,872,000
AN	$0	$31,950,600	$84,415,736	$116,191,329	$275,000	$232,832,665
BE	$0	$10,000,400	$5,486,500	$3,623,300	$0	$19,110,200
BI	$0	$16,694,900	$3,685,500	$1,259,500	$0	$21,639,900
CA	$0	$3,961,850	$14,466,100	$4,733,700	$92,000	$23,253,650
NA	$0	$28,208,070	$12,717,800	$12,110,100	$174,535,890	$227,571,860
NS	$0	$9,793,900	$11,833,500	$7,842,550	$0	$29,469,950
OK	$0	$1,679,200	$7,956,850	$17,395,300	$2,083,000	$29,114,350
PH	$0	$36,802,300	$14,269,300	$6,856,000	$11,913,800	$69,841,400
PO	$0	$16,383,500	$12,645,705	$2,212,900	$0	$31,242,105
TU	$0	$4,830,200	$9,113,500	$7,531,200	$8,151,500	$29,626,400
TOTAL	$0	$217,038,120	$240,617,791	$199,620,879	$201,962,690	$859,239,480

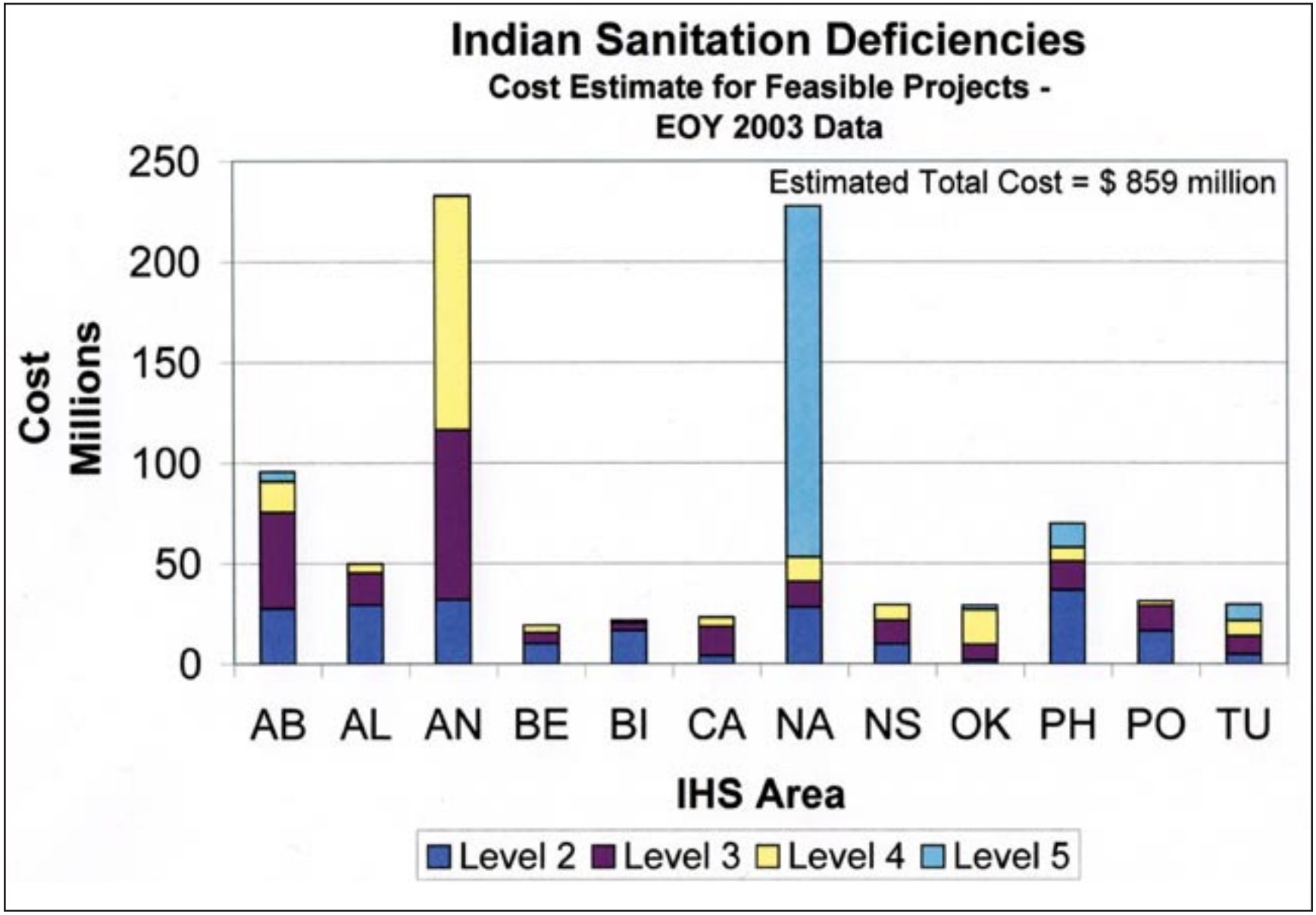

Indian Sanitation Deficiencies
Cost Estimate for Feasible Projects -
EOY 2003 Data
Estimated Total Cost = $ 859 million
Cost
Millions
250
200
150
100
50
0
AB
AL
AN
BE
BI
CA
NA
NS
OK
PH
PO
TU
IHS Area
Level 2
Level 3
Level 4
Level 5

Table 6
Project Cost by Deficiency Level
Total Database

AREA	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	TOTAL
AB	$2,454,500	$42,612,000	$66,140,500	$19,635,000	$5,202,500	$136,044,500
AL	$4,030,700	$65,680,200	$18,928,800	$8,910,400	$52,500	$97,602,600
AN	$18,892,600	$86,155,500	$195,891,605	$290,916,529	$2,978,300	$594,834,534
BE	$7,015,100	$18,254,200	$6,689,900	$4,213,300	$0	$36,172,500
BI	$149,000	$16,904,900	$3,685,500	$1,259,500	$0	$21,998,900
CA	$0	$4,910,450	$19,749,100	$8,028,400	$92,000	$32,779,950
NA	$2,511,700	$166,499,178	$14,109,800	$13,756,820	$180,878,411	$377,755,909
NS	$0	$14,160,600	$16,109,400	$9,342,550	$0	$39,612,550
OK	$0	$1,766,700	$8,538,850	$17,992,300	$2,083,000	$30,380,850
PH	$185,000	$52,401,700	$19,718,100	$9,745,000	$22,217,400	$104,267,200
PO	$0	$19,395,800	$26,475,505	$4,548,800	$0	$50,420,105
TU	$0	$7,062,200	$13,205,800	$13,248,200	$12,924,500	$46,440,700
TOTAL	$35,238,600	$495,803,428	$409,242,860	$401,596,799	$226,428,611	$1,568,310,298

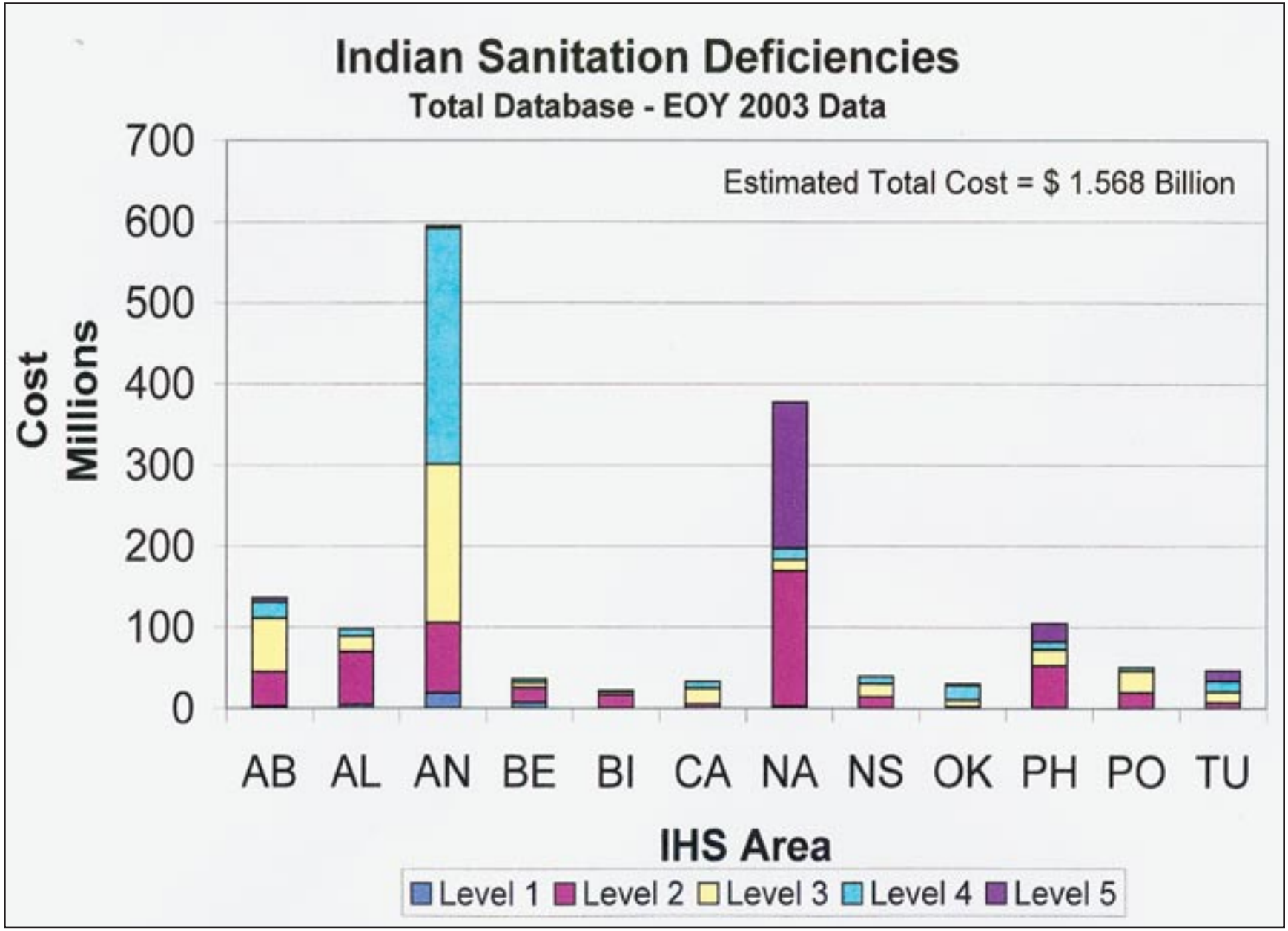

Indian Sanitation Deficiencies
Total Database - EOY 2003 Data
Estimated Total Cost = $ 1.568 Billion
Cost Millions
700
600
500
400
300
200
100
0
AB AL AN BE BI CA NA NS OK PH PO TU
IHS Area
Level 1 Level 2 Level 3 Level 4 Level 5

Table 7
Cost Estimates by Type of Needed Facility by IHS Area
Feasible Projects

AREA	WATER	SEWER	SOLID WASTE	O&M	TOTALS
AN	$71,799,500	$13,993,500	$8,670,000	$1,202,000	$95,665,000
BE	$33,657,100	$12,374,700	$3,746,000	$94,200	$49,872,000
BI	$121,594,329	$75,686,800	$35,551,536	$0	$232,832,665
CA	$12,085,120	$6,017,280	$1,007,800	$0	$19,110,200
NA	$12,182,700	$7,187,100	$2,270,100	$0	$21,639,900
NS	$10,700,400	$8,867,750	$3,643,500	$42,000	$23,253,650
OK	$150,571,895	$69,247,165	$7,752,800	$0	$227,571,860
PH	$10,299,200	$15,743,500	$3,307,600	$119,650	$29,469,950
PO	$19,286,550	$6,918,800	$2,909,000	$0	$29,114,350
TU	$39,664,200	$23,286,800	$6,705,400	$185,000	$69,841,400
AB	$17,297,150	$7,167,255	$6,764,100	$13,600	$31,242,105
AL	$17,948,900	$8,854,300	$2,634,200	$189,000	$29,626,400
TOTAL	$517,087,044	$255,344,950	$84,962,036	$1,845,450	$859,239,480

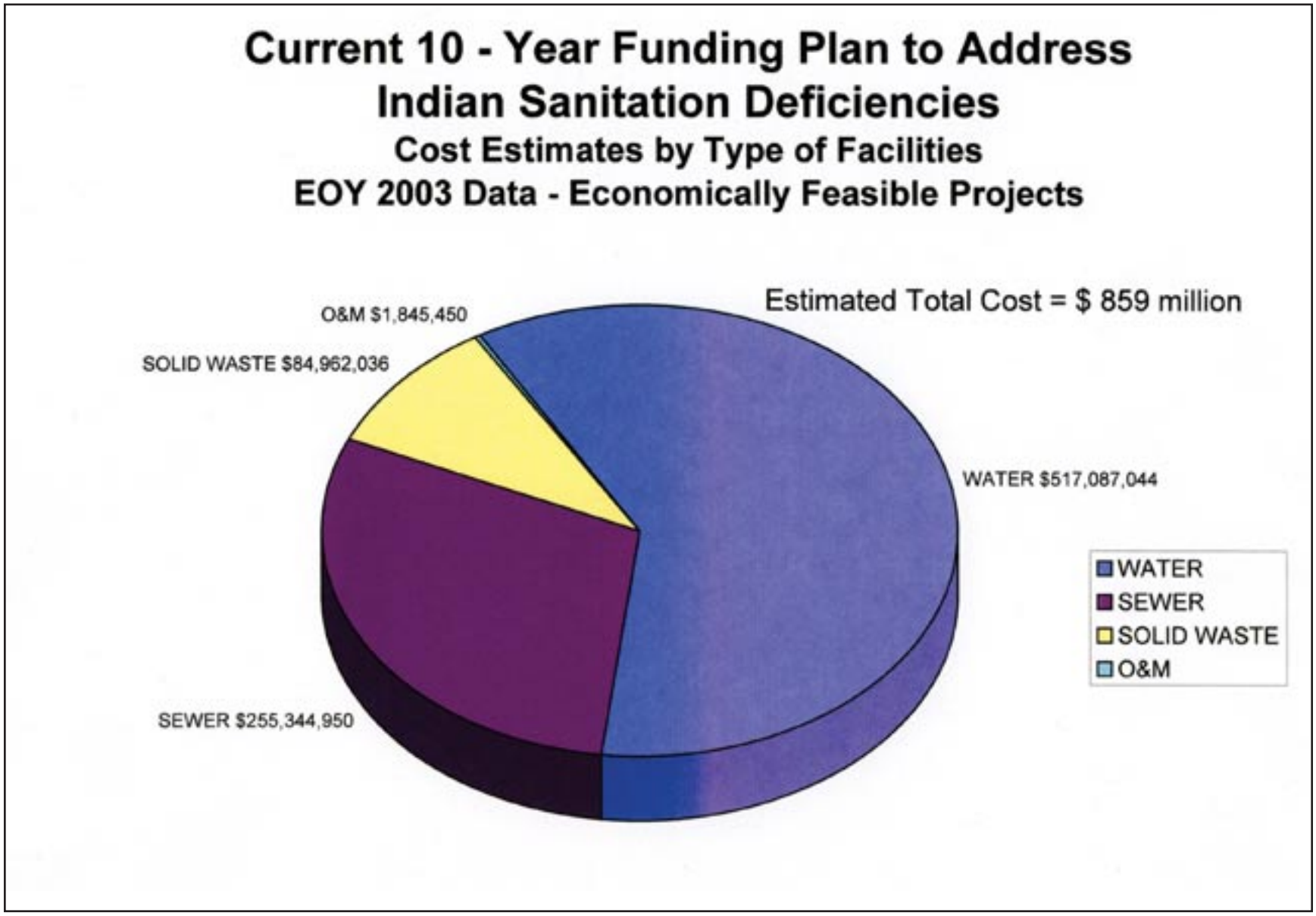
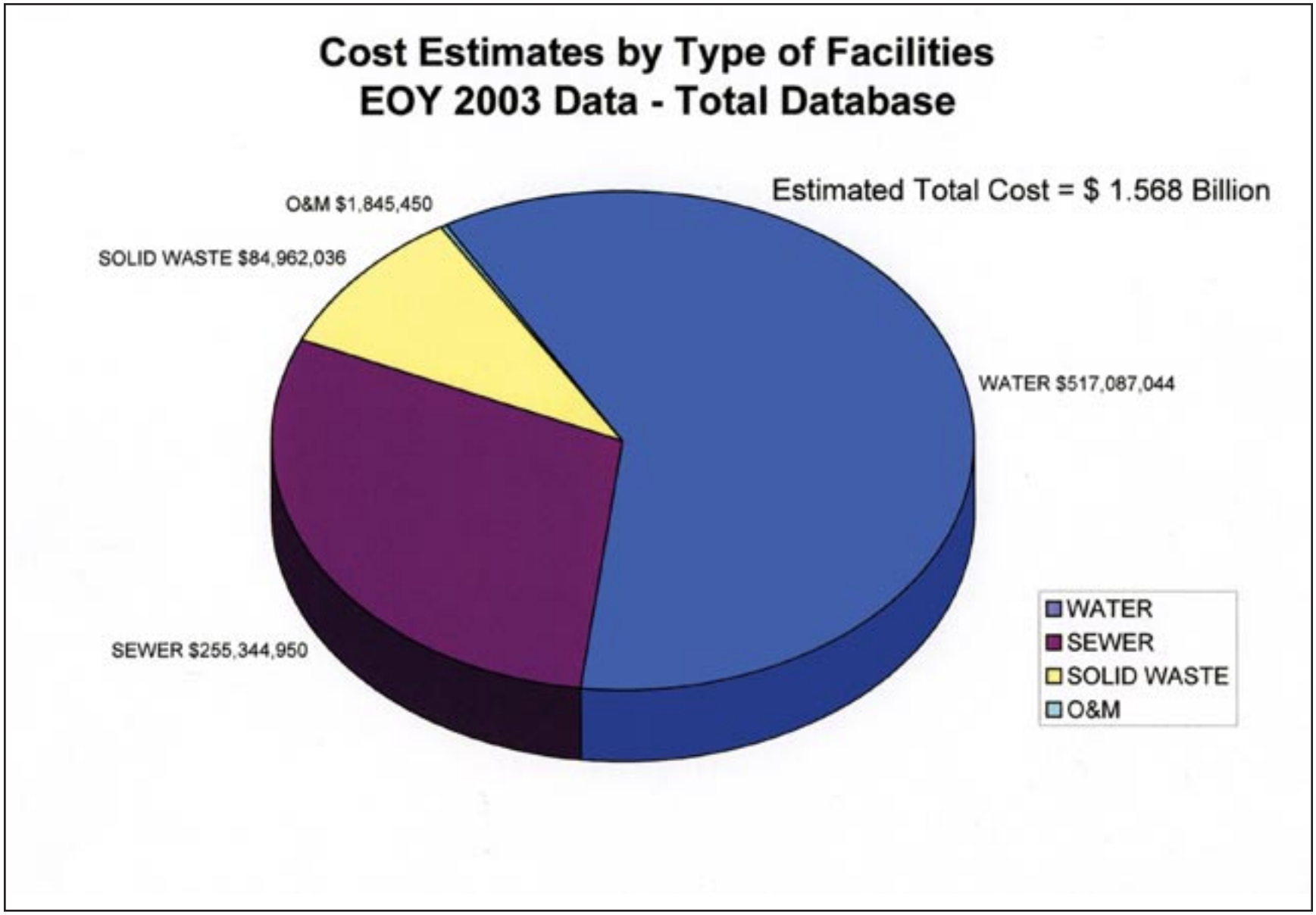

Current 10 - Year Funding Plan to Address
Indian Sanitation Deficiencies
Cost Estimates by Type of Facilities
EOY 2003 Data - Economically Feasible Projects
Estimated Total Cost = $ 859 million
O&M $1,845,450
SOLID WASTE $84,962,036
WATER $517,087,044
SEWER $255,344,950
WATER
SEWER
SOLID WASTE
O&M

Table 8 Cost Estimates by Type of Needed Facility by IHS Area Total Database					
AREA	WATER	SEWER	SOLID WASTE	O&M	TOTALS
AB	$104,534,500	$20,393,000	$9,915,000	$1,202,000	$136,044,500
AL	$53,971,500	$39,463,900	$4,073,000	$94,200	$97,602,600
AN	$285,570,927	$230,150,571	$79,113,036	$0	$594,834,534
BE	$18,486,520	$16,678,180	$1,007,800	$0	$36,172,500
BI	$12,331,700	$7,317,100	$2,350,100	$0	$21,998,900
CA	$13,804,400	$13,930,050	$4,998,500	$47,000	$32,779,950
NA	$287,085,243	$80,806,166	$9,864,500	$0	$377,755,909
NS	$12,771,400	$23,386,400	$3,335,100	$119,650	$39,612,550
OK	$20,479,050	$6,992,800	$2,909,000	$0	$30,380,850
PH	$50,657,100	$46,509,700	$6,705,400	$395,000	$104,267,200
PO	$33,680,250	$9,931,155	$6,791,100	$17,600	$50,420,105
TU	$29,352,800	$12,469,300	$4,040,200	$578,400	$46,440,700
TOTAL	$922,725,390	$508,028,322	$135,102,736	$2,453,850	$1,568,310,298


Cost Estimates by Type of Facilities
EOY 2003 Data - Total Database
Estimated Total Cost = $ 1.568 Billion
O&M $1,845,450
SOLID WASTE $84,962,036
WATER $517,087,044
SEWER $255,344,950
WATER
SEWER
SOLID WASTE
O&M

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 American Indian and Alaska Native communities over 40 years ago. This factor becomes increasingly critical as the reliability decreases and the cost 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 water and infrastructure needs are documented by the EPA, the General Accounting 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 American Indians and Alaska Natives. 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 Tribes, Congress and IHS is needed if we are to meet these challenges successfully.

Figure 48: The quality of Native life begins with quality water. Nina Myers(left) and Agnes Beans benefit from living in a community that has indoor plumbing.

IHS Area SFC Program Directory

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Ph. (605) 226-7451

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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
104 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
Suite 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
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Window Rock, AZ 86515
Ph. (928) 871-5851

Oklahoma City Area/DSFC
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Oklahoma City, OK 73112
Ph. (405) 951-3882

Phoenix Area/DSFC
Two Renaissance Square
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Phoenix, AZ 85004
Ph. (602) 364-5068

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

Tucson Area Indian Health Service
7900 South J Stock Road
Tucson, AZ 85746-2508
Ph. (520) 295-2580


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