Indian Health Service
Office of Public Health
Division of Facilities and Environmental Engineering
Health Care Facilities Engineering

Millennium Report
and
Accomplishments Since 1954

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We express our appreciation to Linda Bargmann for the months of research that made this report possible. The result is the first complete chronology of the IHS construction program from its inception in 1955 to the present. CAPT Paul Fardig also deserves recognition for his efforts as co-author.

HEALTH CARE FACILITIES ENGINEERING MILLENIUM REPORT

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MISSION

The mission of the Indian Health Service (IHS) health care facilities engineering program is to support delivery of health care and preventive services to American Indians and Alaska Natives and to safeguard interests in property.

Without functional health care facilities, the efficient and effective delivery of preventive and curative services is not possible. The specific goal of the program is to ensure the optimum availability of functional, well maintained health care facilities and staff housing. This goal is achieved by:

- supporting tribes when they choose to assume facilities-related responsibilities;
- maintaining existing health care and associated facilities in an optimal condition for delivery of services and to minimize facility life-cycle costs;
- planning, designing, and constructing improvements and expansions to existing facilities where they are not optimally functional; and
- planning, designing, and constructing new facilities when there is no existing facility or when an existing facility cannot effectively be improved.

HEALTH CARE FACILITIES ENGINEERING PROGRAM

The mission of the Health Care Facilities Engineering program is to support delivery of health care and preventive services to American Indians and Alaska Natives and to safeguard interests in property.

Facilities Portfolio

Hospitals	49
Health Centers	209
Health Stations & Clinics	285
Staff Quarters	2100
Hectares of land	440
Real Property Leases	257

Support of Tribes that Have Assumed Facilities Responsibilities

- Assist tribes with establishing preventive maintenance programs.
- Provide training opportunities for managers and maintenance staff.
- Provide a database for central tracking of facilities deficiencies, for local planning and for national budget justification purposes.
- Make standard templates available for planning and design activities.
- Upon tribal request, review plans and specifications for tribal construction and assists with construction management activities.
- Provide funds to help equip tribally constructed non-IHS funded replacement health facilities.

Maintain and Operate Existing Health Facilities

- Establish and conduct preventive maintenance programs.
- Assure facilities compliance with accreditation standards.
- Conduct periodic facility condition surveys.
- Record facilities deficiencies for local planning and national budget justification purposes.
- Plan and manage maintenance and repair projects.

Improve and Expand Existing Facilities

- Renovate existing facilities to better meet current needs.
- Improve and expand existing facilities to meet needs of staff already on-board.
- Justify and use non-IHS sources of funding for projects.
- Modify facilities to comply with federal energy, seismic, American Disabilities Act requirements and other mandates.
- Replace those small facilities which cannot be economically repaired using funds typically allocated for maintenance and repair (repair-by-replacement).

Construct New and Replacement Facilities

- Identify unmet health care and space needs throughout Indian country.
- Develop policies and protocols for prioritizing new construction projects.
- Develop and maintains a computerized comprehensive facilities planning system.
- Prepare justification and requirements documents for new space.
- Develop Congressional budget justifications
- Conduct value engineering reviews of planned facilities.
- Manage design and construction of new and replacement facilities.

The IHS Health Care Facilities Engineering Team

Promoting Excellence in Health Care Facilities Engineering

Back Row, L to R: James Biasco, Rick Barror, George Styer, Charlie Johnson, Mike Verschelden, Kevin Stover, Jim Ketter, Frank Kauahquo, Bill Axlund, Wes Bell, Darrell Laroche, Rick Weller.
Front Row, L to R: Tom Gallegos, Gerald Babigian, Marty LaRoche, Diane Stewart, Gilbert Harrison, Doug Ott, Gary McFarland, Roger Carmichael, Ken Harper, Kerry Gragg, José Cuzme, Paul Färdig.

Teamwork Foundation: Imagination, Communication, Innovation

Facilities Program Development Branch:
Back Row, L to R: Bill Lowe, Dennis Taddy, Adam Scully, Mark Thomas.
Front Row, L to R: Eleanor Matney, Kathy Patterson, Brenda Hall, Gina Christensen.

Health Care Facilities Engineering Branch: **Back Row, L to R:** William Smith, Linda Bargmann, Ray Cooke, Art Di Padova.
Front Row, L to R: José Cuzme, Paul Fardig.

(Left) Area Facilities Planners

Back Row, L to R: John Breuninger (Planning Manager, Oneida Nation of Wisconsin), George Styer, Sandy Coulter, Ranelle Harry.

Front Row, L to R: Ann Susan, Bonnie Boedeker, Leslie Racine, Elizabeth Fowler (Budget Program Analyst), Jenny Notah.

Not pictured: Georgia Pedro, Roselyn Tso, Juana Casillas.

Health Care Facility Construction Impact

As an Economic Engine:

Reduce unemployment

Increase community cash flow

Increase access to health care

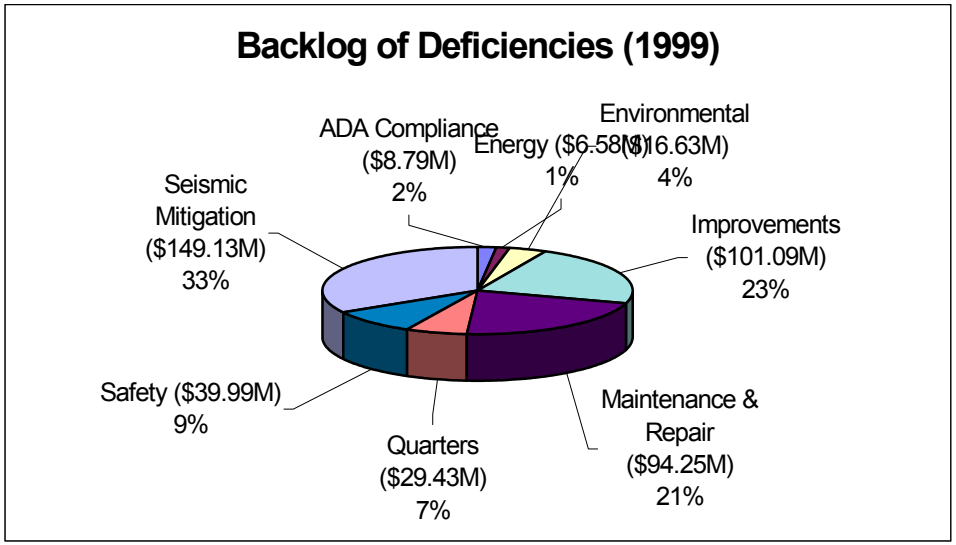
Replacement Facilities

Because many IHS hospitals and health centers are undersized and overcrowded, facilities constructed to replace them are, on average, more than three times larger than the old facility. However, the overcrowding in these old facilities is often the result of facility administrators adding staff into the facility to address a real need for services. For this reason, the number of staff required in the replacement facilities generally averages only about twice that in the old facility. Facility size and staffing are not the only things that increase when IHS replaces an existing facility. The list below summarizes some of the increases.

- Increase in Size of Replacement Facility: 235%
- Increase in Staff of Replacement Facility: 100%
- Increase in Outpatient Visits— Planned: 70%
- Increase in Primary Care Provider Visits—Planned: 50%
- Increase in Number of Programs: 40%

A number of factors drive this increase, including:

- The growth of the population being served since the existing facility was constructed;
- The age of IHS facilities which hinders the ability to expand and keep up with demands to provide new programs.



Maintenance and Improvement

In the 1980s, the IHS facilities program began development of a database that would maintain an inventory of facilities deficiencies by permitting electronic recording of inspection data. This data, which is summarized as of 1999 on the chart above, is the basis for recommendations for annual operating budgets. IHS is able to compare the funding available with the costs for correcting deficiencies. This permits IHS to manage these funds effectively.

The database contains a "facilities improvements" deficiency category because many older facilities need to be expanded or modernized to address the need for increased staff and changing medical practices. With these needed improvements included in the database, facilities managers are able to more efficiently plan how to address all deficiencies involving repair, expansion, or modernization of space.

The 1950's

The Indian Health Service is created in 1955 and given responsibility for provision of health care services to American Indians and Alaska Natives.

The IHS Hospital in Albuquerque, New Mexico, was constructed in 1934. It was one of many hospitals transferred from the BIA to the IHS in 1955.

From Bureau of Indian Affairs (BIA) to the Public Health Service (PHS)

Prior to 1955, health care services for American Indians and Alaska Natives were provided by the Bureau of Indian Affairs. Public Law 83-568, the Indian Health Transfer Act of 1954, assigned these responsibilities to the Department of Health, Education and Welfare (HEW), effective July 1, 1955. The Act specifically authorized the Secretary, HEW, to construct, equip repair, and improve health care and related facilities for Indians. HEW further delegated these responsibilities to the Public Health Service (PHS). To carry out these responsibilities, PHS established the Division of Indian Health in its Bureau of Medical Services. (This Division subsequently became the Indian Health Service, and since 1988 has been a separate PHS agency.) The PHS undertook careful studies of the health needs of the Indians and Alaska Natives. The first two of these studies focused on the most pressing needs — health facilities and community sanitation (water and sewer) facilities.

Morbidity and Hospitalization

Leading diseases and illnesses among the American Indian population in the 1950's included, dysentery, diarrhea and other gastroenteric illnesses, tuberculosis influenza, pneumonia, streptococcal sore throat, communicable childhood diseases (measles, chickenpox and mumps), otitis media, trachoma, and skin diseases.

Hospitals were necessary to provide space where health professionals could treat these diseases effectively. Some patients required isolation to prevent further spread of disease in the community. Others required hospitalization for successful recovery because of poor and crowded living conditions, unsafe water supplies, lack of sanitary facilities, and limited means of applying modern hygienic health practices at home.

The shortage and inadequacy of the hospitals inherited from the BIA also affected IHS's ability to handle referral services for birth defects, eye diseases, dental problems, and nutritional deficiencies. These conditions all contributed to a reservoir of complicated illnesses requiring intensive diagnosis, treatment, in-depth study, and rehabilitation. Activities such as these were best accomplished in modern, well equipped hospitals.

The Fort Defiance Hospital on the Navajo Reservation, Arizona, was transferred to the IHS from the BIA in 1955. It was constructed in 1938.

Hospitals were an essential part of health services delivery in the 1950's.

The 1950's

The First IHS-Built Health Care Facilities:

Health Centers	Year	Area
Kayenta, AZ	1958	NA
Tohatchi, NM	1958	NA
Chinle, AZ	1959	NA

New Construction— The First Years

In 1956, the Division of Indian Health received its first health facilities construction appropriation amounting to $2,690,000. This included $1,950,000 for new and replacement hospitals and $740,000 for outpatient care facilities. An additional $2,065,000 was appropriated for construction of staff quarters.

By FY 1959, Congress had appropriated a total of $11,452,600 to construct health care facilities to serve American Indians and Alaska Natives. Construction of 14 new or replacement health centers and health stations was completed in the 1950's. Thirteen of these facilities were located in remote, medically underserved areas of the Navajo and Aberdeen Areas. IHS also began work on a number of new or replacement hospitals.

Repair and Improvement

Most of the health care facilities transferred from the BIA were old, worn down, and in critical need of maintenance, repair, and improvement when received by the Indian Health Service. For example, in the Aberdeen Area, all of the newly acquired hospitals and most of the clinics had been constructed in the 1930's or earlier. Many hospitals had served previously as tuberculosis sanitariums and were not well suited to the needs to a comprehensive health

Yakima Clinic, Toppenish, Washington, pre-1940.

program, as envisioned by IHS. The Repair and Improvement appropriations from FY 1956 to FY 1959 totaled over $17 million. These funds were used to begin the task of correcting deficiencies at Indian health care facilities nationwide.

The 1950's

Transferred BIA Hospitals: Above - Pawnee Hospital, Pawnee, Oklahoma.
Below - Crownpoint Hospital, Crownpoint, New Mexico.

Community Facilities

To augment the provision of health care facilities available for Indians, Congress enacted The Community Facilities Act, Public Law (P.L.) 85-151 in August 1957. This act permitted joint participation of the Public Health Service and local communities by authorizing the Surgeon General of the United States to provide financial assistance for community hospitals that would provide service to American Indians or Alaskan Natives as well as non-Indians. This mechanism is sometimes more desirable and effective than direct Federal construction of facilities serving only Indians.

Although no hospitals were constructed under this Act during the 1950's, some were constructed later.

The First IHS-Built Health Care Facilities:

Health Stations	Year	Area
Cornfields (Ganado), AZ	1958	NA
Elko, NV	1958	PH
Allen, SD	1959	AB
Manderson, SD	1959	AB
Wanblee, SD	1959	AB
Cheyenne River, SD	1959	AB
Bullhead, SD	1959	AB
Pinon, AZ	1959	NA
White Cone, AZ	1959	NA
Pueblo Pintado, AZ	1959	NA
Round Rock, AZ	1959	NA

The 1960's

A surge of construction activity.

Hospitals	Year	Area
Eagle Butte, MT	1960	AB
Shiprock, NM	1960	NA
Kotzebue, AK	1961	AN
Gallup, NM	1961	NA
Keams Canyon, AZ	1961	PH
Sells, AZ	1961	TU
San Carlos, AZ	1963	PH
Barrow, AK	1964	AN
Ft. Yates, ND	1965	AB
Belcourt, ND	1967	AB
Lawton, OK	1967	OK
Mescalero, NM	1968	AQ

The Gallup Indian Medical Center, constructed in 1961, is one of three major Indian Health Service referral centers.

Construction Activities Surge

Addressing the critical shortage of health facilities on reservations became IHS's first priority for improving health care delivery during the 1960's. During this decade, many new health facilities were constructed where none previously existed.

Congressional appropriations during the 1960's enabled IHS to construct 12 hospitals, 17 health centers, and 35 health stations nationwide. Most of the small health stations, although constructed with Federal funds, are tribally operated.

For many Native Americans, this was the first time that health care had been available without having to travel long distances to urban health care facilities. The number of outpatient visits quickly escalated beyond the capacity for which these facilities were designed.

The 1960's

Above: The Lawton Indian Hospital, constructed in 1967.
Right: Keams Canyon Hospital, constructed in 1961.

Hospitals

Twelve new or replacement IHS hospitals became operational in the 1960's. Typical of these is the hospital in Sells, Arizona, serves the Tohono O'Odham Reservation, which is approximately the size of Connecticut. This hospital contains 34 beds and functions as a referral facility for the Santa Rosa and San Xavier Health Centers and other satellite locations within the Sells Service Unit. The hospital also contains a dental suite, reflecting the growing interest in comprehensive care and dental treatment.

Health Centers	Year	Area
Second Mesa (Hopi), AZ	1961	PH
Dulce, NM	1963	AQ
Rocky Boy's, MT	1963	BI
Peach Springs, AZ	1963	PH
McLaughlin, SD	1964	AB
Ft. Hall, ID	1964	PO
Anadarko, OK	1965	OK
Toppenish, WA	1965	PO
Laguna, NM	1966	AQ
Ft. Wingate, NM	1968	NA
Taholah, WA	1968	PO
Santa Rosa, AZ	1968	TU
Minni-Tohe, ND	1969	AB
Wanblee, SD	1969	AB
Lapwai, ID	1969	PO
Neah Bay, WA	1969	PO
Wellpinit, WA	1969	PO

The 1960's

Health Stations	Year	Area
Ponemah, MN	1961	BE
LaPlant, SD	1962	AB
Norris, SD	1962	AB
Wakpala, SD	1962	AB
Aneth, UT	1962	NA
Leupp, AZ	1962	NA
Lukachukai, AZ	1962	NA
Ft Thompson, SD	1963	AB
Jemez (San Ysidro), NM	1963	AQ
Santo Domingo, NM	1963	AQ
Heart Butte, MT	1963	BI
Pryor, MT	1963	BI
Dennehotso, AZ	1963	NA
Arapahoe, WY	1964	BI
Dennebito, AZ	1965	NA
Shonto, AZ	1965	NA
Toadlena, NM	1965	NA
Gila Crossing, AZ	1965	PH
CherryCreek, SD	1966	AB
Whitehorse, SD	1966	AB

Health Centers

Approximately one third of the 17 health centers constructed in the 1960's were in previously unserved areas of Washington and Idaho. Another third served remote, isolated areas of Arizona and New Mexico. The absence of accessible health care and lack of income to pay for medical treatment left the Native American population isolated from modern medicine. Examination and treatment could not be provided until medical facilities were constructed to serve the reservations.

Health Stations

Of the 35 health stations constructed in the 1960's, ten were in the Aberdeen Area (North and South Dakota) and seven were in the Navajo Area (Arizona, Utah, and New Mexico). Many of the smaller, remote health care facilities were open only 1 or 2 days a week and were staffed with physicians and nurses from hospitals located more than an hour's drive away.

Pribilof Island Authorized Health Care

In November 1966, P.L. 89-702, authorized the Secretary of Health, Education and Welfare to provide medical and dental care to the Alaska Natives of the Pribilof Islands, specifically St. Paul and St. George Islands. This authority included the right to purchase, lease, construct, operate and maintain health care facilities, supplies, and equipment. Because of the remote location of these islands, this law also authorized IHS to provide health care to federal employees, their dependents, and tourists on these islands.

The Alaska Native Medical Center immediately after the 1964 earthquake. Note the extremely close proximity of the cliff to the hospital. In 1997 the facility was replaced by a new medical center at a safer location. (Pictured on page 30).

The Good Friday Earthquake – Anchorage Native Medical Center

During the Good Friday earthquake of 1964, the Alaska Native Medical Center in Anchorage, Alaska, which had been completed in 1953, incurred considerable seismic damage. A large portion of the site to one side of the hospital dropped off leaving the facility on the edge of a precipice. After the earthquake, nearly $2,000,000 was appropriated for site stabilization of this facility.

Health Stations, continued…

Health Stations	Year	Area
Gambell, AK	1966	AN
Hooper Bay, AK	1966	AN
Wolf Point, MT	1966	BI
Kaibeto, AZ	1967	NA
Lower Grease-wood, AZ	1967	NA
Cannonball, ND	1968	AB
Lower Brule, SD	1968	AB
Mandaree, ND	1968	AB
Twin Butte, ND	1968	AB
Alakanuk, AK	1968	AN
Red Lake, AZ	1968	NA
Rough Rock, AZ	1968	NA
Big Cypress, FL	1968	NS
Queets, WA	1968	PO
Selawik (Minto), AK	1969	AN

The 1970's

By the 1970s, hospitals constructed in the 1930s were functionally inadequate to provide quality health care services.

Replacing Aging Hospitals

Renovation of older facilities is difficult and in many cases financially prohibitive. By the 1970's, facilities transferred from the BIA were functionally inadequate to provide necessary services and accommodate the increased workloads. Planning for replacement of these older hospitals became a major initiative.

IHS completed nine new hospitals in the 1970's. Of these, six were built on reservations serving Southwestern Tribes where the shortage was most critical.

The IHS Phoenix Indian Medical Center, in Phoenix, Arizona was constructed in 1970.

Energy Conservation

In 1973, the Federal government issued a comprehensive energy conservation policy. The IHS began reporting quarterly on energy consumption at IHS facilities in compliance with the Energy Policy and Conservation Act of 1975. In July 1977, President Carter ordered a 20 percent reduction in energy usage by all existing Federal facilities by 1985.

Design of the replacement IHS hospital in Cherokee, NC, was underway during this time. The design incorporated solar panels to increase energy efficiency. This facility, which replaced one constructed in the 1930's, opened for operation in 1981.

Biomedical Engineering

In 1977, the IHS Biomedical Engineering Program was established. Biomedical engineering technicians serviced medical equipment in all IHS health care facilities. The rapid evolution of medical instrumentation had to be monitored to comply with accreditation standards of the Joint Commission on Accreditation of Hospitals (JCAH, now JCAHO).

Hospitals	Year	Area
Phoenix Indian Medical Center, AZ	1970	PH
Tuba City, AZ	1973	NA
Zuni, NM	1976	AQ
Choctaw, MS	1976	NS
Owyhee, NV	1976	PH
Claremore, OK	1977	OK
Acoma-Laguna-Canoncito, NM	1978	AQ
Santa Fe, NM	1978	AQ
Whiteriver, AZ	1979	PH

The 1970's

Health Centers	Year	Area
Wanblee, SD	1970	AB
Four Bears (New Town), ND	1970	AB
Sanostee, NM	1971	NA
Teec Nos Pos, AZ	1971	NA
Supai, AZ	1971	PH
Neah Bay, WA	1971	PO
Ft. Totten, ND	1972	AB
Albuquerque, NM	1972	AQ
Many Farms, AZ	1972	NA
Arapahoe, WY	1974	BI
Riverside, CA	1976	PH
Puyallup, WA	1976	PO
Menominee, WI	1977	BE
Lame Deer, MT	1977	BI
Poplar, MT	1978	BI
Haskell (Lawrence), KS	1979	OK
Lummi, WA	1979	PO
Chemawa, OR	1979	PO

Arapahoe, Wyoming Health Center, constructed in 1974.

Health Centers

Eighteen IHS health centers were constructed during the 1970's.

The most remote of these was built in Supai, Arizona in 1971. This facility is located at the bottom of the Grand Canyon and serves the Havasupai Tribe. This is the one of the smallest Indian Nations in America totaling about 600 people.

Construction materials for the Havasupai Health Center had to be delivered to the site by helicopter. The health center also provides emergency medical treatment to tourists and climbers visiting the Grand Canyon.

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The 1970's

Left: Mooney Falls on the Havasupai Reservation

Below: Mail being delivered on horseback.

The U.S. Post Office transports mail to the Havasupai village using "The Mule Train Mail." Donkeys and horses carry mail daily up and down the canyon walls. Some residents who shop at the top of the canyon mail their merchandise down to themselves because it's the easiest and cheapest way to get it delivered

The 1980's

Health care trends shift from acute care and treatment to preventive care.

Above: The IHS Hospital in Chinle, AZ, under construction, showing the hogan design entrance.
Right: The interior courtyard and waiting area of the Chinle IHS Hospital.
Special stone work creates an environment that is appealing to the patients and family members who use this facility.

New Trends in Health Care

During the 1980's, emphasis in the IHS shifted from primarily treating communicable diseases to preventing them. IHS facilities were designed to accommodate the specialized staff and modern equipment necessary to offer these preventive services. The change in space planning criteria was evident in the replacement facilities that were constructed during the 1980's.

The First Native Healing Room

Another change reflected in health care facilities built during the 1980's was the IHS recognition of the value of native healing practices. The IHS Hospital in Chinle, Arizona, completed in 1982, was the first IHS facility designed to incorporate native healing practices. Tribal medicine-men were consulted to ensure appropriately planned and designed space. One specification that required special design criteria was the Native Healing Room, a place where healers and patients could touch the earth.

The 1980's

Youth Regional Treatment Centers

The Anti-Drug Abuse Act of 1988, P.L. 99-570, authorized the IHS to construct a Youth Regional Treatment Center (YRTC) in each IHS Area for treatment of alcohol and substance abuse. The Albuquerque, Nashville, Navajo and Oklahoma Areas renovated existing treatment centers. Other YRTCs were planned and designed in the Phoenix, Portland, Aberdeen and Alaska Areas. All these centers were operational by the mid-1990's. The Bemidji, Billings, and Tucson Areas elected not to participate. Two facilities are being planned for the California Area.

Modernization and Repair – Jobs Bill

In FY 1983, $3.9 million was appropriated through the Jobs Bill, P.L. 98-8, for modernization and repair of the health care facilities in Anchorage, Barrow, and Mt. Edgecumbe, Alaska.

Hospitals

The IHS constructed 11 hospitals in the 1980's, 5 of which replaced older BIA hospitals. The replacement facilities are listed below with the year of original construction.

Browning, Montana (1937);

Cherokee, North Carolina (1936);

Crownpoint, New Mexico (1939);

Bethel, Alaska (1954); and

Rosebud, South Dakota (1915).

IHS health care facilities are designed to accommodate the changing needs of new health care programs.

The 1980's

Hospitals	Year	Area
Bethel, AK	1980	AN
Ada, OK	1980	OK
Cherokee, NC	1981	NS
Red Lake, MN	1981	BE
Chinle, AZ	1982	NA
Tahlequah, OK	1983	OK
Browning, MT	1985	BI
Kanakanak, AK	1987	AN
Crownpoint, NM	1987	NA
Sacaton, AZ	1988	PH
Rosebud, SD	1989	AB

The replacement hospital in Bethel, Alaska, the Yukon-Kuskokwim Delta Regional Hospital, serves southwestern Alaska, a service area of approximately 195,000 square kilometers containing about 60 villages. The hospital was designed to make use of components that were pre-built in a factory and shipped by barge for later assembly at the construction site. The single-story hospital is supported by steel piles embedded in permafrost. The distinctive porthole windows and the yellow curved wall panel elements give the building its common nick-name of the "Yellow Submarine."

The Yukon Kuskokwim Delta Regional Hospital in Bethel, Alaska, (above) received an architectural award for its design.

The IHS Hospital in Cherokee, North Carolina (below), was designed with solar panels in the roof to increase energy efficiency.

Health Centers

Five new and three replacement health centers were constructed from 1980 to 1989. Many of the health centers constructed in the 1960s were experiencing severe overcrowding and were in need of expansion or replacement to meet the requirements of the increase in workload. Replacement health centers were built at Ft. Duchesne,

The 1980's

protocol of requesting funds for necessary staff housing in conjunction with the request for facility construction funds. During the 1980's, IHS constructed 285 units of staff quarters nationwide.

Utah; Anadarko, Oklahoma and Ft. Thompson, South Dakota. The Anadarko, Oklahoma, health center was originally constructed by IHS appropriation in 1965.

Personnel Quarters constructed for staff in Kanakanak, Alaska. Each building contains four or five housing units. Each unit is two stories with a rear patio exit.

Quarters

As new health care facilities increased in size and scope, the number of staff required increased. There was a critical shortage of housing in rural areas that made recruitment and retention of professional staff difficult. To address this need, the IHS established a new

Health Centers	Year	Area
Cibicue, AZ	1980	PH
Lodge Grass, MT	1982	BI
Ft. Duchesne, UT	1983	PH
Inscription House, AZ	1983	NA
Anadarko, OK	1983	OK
Huerfano, NM	1984	NA
Tsaile, AZ	1984	NA
Ft. Thompson, SD	1988	AB

The 1990's

An era of great diversity.

New program initiatives and funding authorities are approved by the Congress.

YRTCs	Year	Area
Fairbanks, AK	1993	AN
Mt. Edgecumbe AK	1994	AN
Sacaton, AZ	1994	PH
Healing Lodge of the Seven Nations (Spokane), WA	1966	PO
Chief Gall (Wakpala), SD	1996	AB

New Funding Authorities

During the 1990's, the Congress authorized many new program initiatives and provided funding for a variety of other programs for construction of health care facilities. Among the new authorizations are the Joint Venture Construction Program, and the Small Ambulatory Grants Renovation and Construction Program. Congress also authorized IHS to spend Medicare and Medicaid collections for construction to meet accreditation requirements. In addition, since 1994, the Congress had provided funding for renovation and construction of modular dental units.

Youth Regional Treatment Center, Healing Lodge of the Seven Nations, Spokane Washington.

Youth Regional Treatment Centers (YRTCs)

Between 1993 and 1996, IHS completed construction of five YRTCs located in: Fairbanks, Alaska; Mt. Edgecumbe, Alaska; Sacaton, Arizona; Spokane, Washington and Wakpala (Chief Gall), South Dakota. Planning is underway for two YRTCs in the California Area and a satellite to the YRTC at Sacaton, Arizona.

The new "Healing Lodge of the Seven Nations" in Spokane is the largest constructed to date, housing a 40-bed program. The YRTCs at Sacaton and Wakpala house 24-bed programs while the YRTCs at Mt. Edgecumbe and Fairbanks house 16-beds each.

The first Joint Venture Demonstration Projects.
Above: The Confederated Tribes of the Warm Springs Reservation of Oregon completed their health center in Warm Springs, OR in 1993 (above).
Below: Members of the Choctaw Nation meet with IHS Headquarters and Area staff to plan their joint venture.

Prior to this authorization, the Congress directed IHS to develop a similar program as a demonstration. In FY 1992 and 1993, $2.55 million were appropriated for this effort. Two joint venture projects (Poteau, Oklahoma and Warm Springs, Oregon) were completed through this cooperative effort.

Many Tribes have expressed interest in participating with IHS in the Joint Venture program.

Joint Venture Demonstration Projects

In a 1994 amendment to The Indian Health Care Improvement Act (P.L. 94-437) Congress directed the IHS to develop "a joint venture program." Under this program, IHS contributes funding toward the cost of equipping and operating facilities and the participating tribe acquires the space and provides it to IHS for 20 years under a no-cost lease.

Joint Venture	Year	Area
Warm Springs, OR	1993	PO
Poteau, OK	1994	OK

The 1990's

Self-governance

Tribes take control of many aspects of health care and health facilities.

Dental Modular	Year	Area
Kingston, WA	1995	PO
Jeddito, AZ	1998	PH
Winslow/ Holbrook, AZ	1998	NV
Lower Brule, SD	1998	AB
LaPush, WA	1997	PO
Heart Butte, MT	1998	BI
San Carlos, AZ	1999	PH
LaConner, WA	1997	PO
Sisseton, SD	1998	AB
Pryor, MT	1999	BI

Modular Dental Units

The FY 1994, Congress included $1 million in the IHS Facilities appropriation to replace dental facilities that needed more and/or better space. The following year, Congress authorized IHS to use these funds to construct new or replacement modular dental facilities. Each year funding is appropriated, new locations are placed on the priority list for dental facilities. From 1994 to 1999, ten modular dental units were constructed nationwide.

Medicare/Medicaid Collections Projects

The FY 1993 Appropriations Act authorized IHS to use Medicare/Medicaid collections for construction activities to correct accreditation deficiencies. The first four locations to benefit from this new authority were Ft. Berthold, North Dakota; Phoenix, Arizona; Sells, Arizona; and Chemawa, Oregon.

Village Built Clinics in the Alaska Area

The extreme remoteness of many parts of Alaska prevents IHS from providing new facilities in every community. In recognition of this situation, IHS received special legislation authorizing "Village Built Clinics." The village clinics utilize whatever buildings the community makes available. Clinics are staffed by local residents trained as community health aides by IHS or through the native-owned Regional Health Corporations. Back-up medical

Ribbon-cutting ceremony. The Noorvik, AK village-built clinic (above) was completed in November 1999.

support is provided through voice radio links and digital telemedicine connections with the Alaska Native Medical Center in Anchorage and regional hospitals.

There have been as many as 170 active village clinics in some years.

Tribally Owned and Operated Facilities

Before the 1980's, most facilities supported by IHS funding were owned and operated by IHS. The trend now is toward tribal ownership and operation of health care facilities. Today, Tribes own and/or operate hundreds of health care facilities serving Indian people. Although some of these facilities were built by the IHS, many were obtained by the tribes through mechanisms other than the IHS construction appropriation. Tribes currently operate 12 hospitals and 385 other health facilities through contracts or compacts with the IHS as authorized by The Indian Self-Determination and Education Assistance Act, P.L. 93-638.

The Crow/Northern Cheyenne Comprehensive Health Care Facility was completed in 1995, replacing the original facility built in 1937.

Hospitals

All five hospitals constructed in the 1990's were replacements. These new facilities offer a multitude of health care capabilities not available in the old hospitals. For example, the recently completed Anchorage Native Medical Center, which serves as a referral center for the native population throughout Alaska, replaced an outmoded, 45-year-old hospital located in a high hazard earthquake zone. The new facility is designed to meet the specific needs of a population with a greater need for ambulatory care. Specialty outpatient clinics include: Pediatrics, Family Medicine, Eye-Nose-Throat, Audiology, Ophthalmology and Optometry.

Hospitals	Year	Area
Pine Ridge, SD	1993	AB
Kotzebue, AK	1995	AN
CrowAgency, MT	1995	BI
Shiprock, AZ	1995	NA
Anchorage, AK	1997	AN

Health Centers	Year	Area
Kyle, SD	1990	AB
Wolf Point, MT	1990	BI
Ft. Hall, ID	1990	PO
Sallisaw, OK	1992	OK
Toppenish, WA	1992	PO
Wagner, SD	1993	AB
Taos, NM	1993	AQ
Puyallup, WA	1993	PO
Tohatchi, NM	1995	NA
Stilwell, OK	1995	OK
Hays, MT	1997	BI
White Earth, MN	1998	BE
Harlem, MT	1998	BI
Lame Deer, MT	1999	BI

The 1990's

ARCHITECTURAL AWARDS

1994

Taos-Picuris Health Center, Taos, NM

Awarded the "1994 Best Building Award", New Mexico Building Branch, Associated General Contractors.

1995

Crow Agency MT

The American Institute of Architects "Health Facilities: 1995 Review" featured the Crow-Northern Cheyenne Comprehensive Health Care Facility in their annual publication issued in December 1995. Crow Agency is one of the 12 health facilities in the nation completed since 1992 to be featured in this annual review.

Takopid WA

The Masonry Institute of Washington selected the IHS Takopid Health Center in Tacoma, Washington, to receive their 1995 Masonry Design Award for excellence in the design & use of masonry.

Health Centers

Fourteen health centers were constructed in the 1990's. All were replacement facilities except the Redbird Smith Health Center in Sallisaw, OK. This new health center was planned to be a satellite to the W. W. Hastings Hospital in Tahlequah, OK. The town of Sallisaw has a small general hospital with no ambulatory care services. The closest alternative hospital for this area is in Ft. Smith, Arkansas, 40 kilometers away. The closest health center, located over 50 kilometers away in Stilwell, Oklahoma, was open only two days a week and had a staff of only 11 people. It was not considered an alternate source of care for the Sallisaw population. source of care for the Sallisaw population.

The Stilwell Health Center was replaced in 1995 as a satellite facility to the W. W. Hastings Hospital.

Photographs: **(Top)** Anchorage Native Medical Center, 1997. **(Bottom)** Sallisaw, OK Health Center, 1992.

In Montana, the health center in Lame Deer, was destroyed by fire in May 1996. Congress appropriated emergency funds to design the replacement facility in 1996, and IHS requested funding for construction in FY 1997. The replacement was completed and operational in 1999.

In the early 1990's, IHS began an environmental audit program to evaluate potential hazards at IHS and tribal facilities. Environmental hazards were found and corrected at Bethel, Alaska; Winslow and Sacaton, Arizona; Rosebud and Pine Ridge, South Dakota; Taos, Tohatchi and Shiprock, New Mexico; Red Lake, Minnesota; Crow Agency, Montana; and Owyhee, Nevada.

Environmental Assessments and Remediation

Appropriations for previous construction projects did not include funds to demolish and clean up the old buildings they replaced. Clean-up of these old facilities often required environmental remediation (asbestos abatement/removal, removal of underground fuel storage tanks and, hazardous materials, etc.). Remediation needed to be completed before the buildings could be transferred to the tribe or demolished.

Takopid Health Center, Puyallup, Washington

ARCHITECTURAL AWARDS

1995 continued...

Kotzebue AK
Selected as "Project of the Year" (1995) by the Alaska Chapter of the Project Management Institute.

Tohatchi, NM
Awarded the "1995 Excellence in Concrete Award", from the American Concrete Institute, New Mexico Chapter.

Shiprock NM
This facility received 2 awards:
(1) The Associated Builders & Contractors Inc., "Excellence in Construction Award"
(2) the Dallas Chapter, Associated General Contractors "Outstanding Construction Award 95, Category E".
(3) and was also featured in "Architectural Record" magazine.

Vision for the Future

The Next Millennium

We will face tougher questions and meet difficult challenges

Health care facilities that have been properly designed provide efficient space in which to provide services. Those facilities administrators who have continued to expand and modify their space to accommodate additions to and modifications of the program of services have been somewhat able to keep up with modern medical requirements. However, older facilities, even these modified and modernized facilities, often tend to be inefficient and haphazard in their arrangement of space. This inefficiency translates into crowded waiting rooms, confusing way finding, low productivity rates by providers, and, hence, client dissatisfaction. The inadequacy of poorly designed, older space is illustrated by the fact that when IHS builds a replacement facility, it experiences a 60% increase in patient visits over the older facility.

During the 1990's, IHS witnessed a shift of responsibility for facility operation from the Federal government to tribes. At the beginning of the decade most facilities were operated by IHS; however by 2000, nearly 40% of the facilities maintenance and improvement program was managed by tribes or tribal organizations. Construction of health care facilities has seen a similar shift of responsibility. Because this shift will continue in the years to come, the IHS must have a facilities engineering program that is capable of adjusting to change.

In the new millennium the IHS health care facilities program will continue to be the foundation of a comprehensive health care delivery system. In order to maintain this program and build on it, we will need to be able to deliver adequate and efficient health care delivery using resources available. We will need to work with all facilities administrators to ensure that maintenance and repair continue and that modernization and expansion enhance the ability of the facility to meet the needs of patients and staff. In order to do this, we will need to be open to suggestions, receptive to change, and responsive to tribal and IHS facility administrators. We will need to identify the unmet need for expansion, modernization, and replacement of our facilities. We will need to seek benchmarks for facilities maintenance so that we have tools to assess our maintenance activities. We will need to develop a plan for obtaining and allocating resources sufficient to meet our maintenance needs. And we will need to assist tribes in developing business plans to secure funding whereby they can enhance their facilities infrastructure.

Vision for the Future

In order to accomplish these tasks and meet needs identified in the future, the facilities engineering program must:

- Integrate modern technology into the administration and management of the program;
- Maintain the facilities inventory;
- Review operation and maintenance funding annually to assess adequacy;
- Perform annual facilities condition assessments;
- Advocate for funding to meet the backlog of need for new construction, maintenance, repair, and operation; and
- Keep the IHS, tribes, tribal organizations, and urban programs informed regarding unmet need, funding shortfalls, allocation decisions, etc.

The ultimate purpose of the IHS construction program is to help make health services available through safe and adequate facilities, thus improving health. The challenge we face is not only to build the best physical facilities possible, but also to target those situations where our limited resources would have the most beneficial health effect to all American Indians and Alaskan Natives. Maximizing health will require prioritizing how facilities resources are used based on the amount of health improvement that could be achieved with them.

The first IHS health care facilities scheduled for completion in the 21st Century are:

Location	Estimated Completion Date
Hopi (Polacca), AZ Health Center	May 2000
Parker, AZ Health Center	October 2001
Pinon, AZ Health Center	June 2003
Ft. Defiance, AZ Comprehensive Medical Center	Sept. 2003
Winnebago, NE Hospital	June 2004
Red Mesa, AZ Health Center	June 2005

APPENDIX

Budget Processes

Links Between Health Services and Facilities Appropriations

Whenever program expansion funds are received in the Services Appropriation, there is a direct impact on the health facilities program, specifically:

I. Need for expanded space to house the expanded program.

II. Need for staffing funds for facilities personnel to maintain the expanded space.

III. Need for maintenance and project funds to maintain the expanded space.

IV. Need for funds to provide and replace equipment for the expanded space.

I. Need for expanded space to house the expanded program.

A. Expanded space: Based on average cost of services and space per user, a one-time capital cost of at least 1.5 times the annual services increase is needed to provide the necessary space. If this cost is annualized over 30 years at a 5% discount rate, it is equivalent to 9.8% annually of the services increase. Alternatively, the first year's services increase can be dedicated to facilities expansion (similar to LNF funds) and the balance annualized at 3.3%.

For every new staff person, 20 to 40 square meters of space are needed (including circulation, utilities, storage, services support, etc.). At $1500 to 3000 per square meter, this translates to $30,000 to $120,000 worth of building needed per person.

B. New Construction Management: Based on expanded space above, construction management services are needed. Current standards utilize 1.0 FTE per every $5 million in new construction activity. Construction management includes functionality and specification reviews of designs by contracted A/E firms, contracting services, construction inspection, and related activities.

II. Need for staffing funds for facilities personnel to maintain the expanded space.

Facilities staffing funds. Based on current funding levels, facilities staffing (FSA) is 2.8% of the Services Appropriation. Therefore, an amount of 2.8% of a services increase is needed to maintain current staffing levels. ($54 million FSA / $1,950 Services Appropriation).

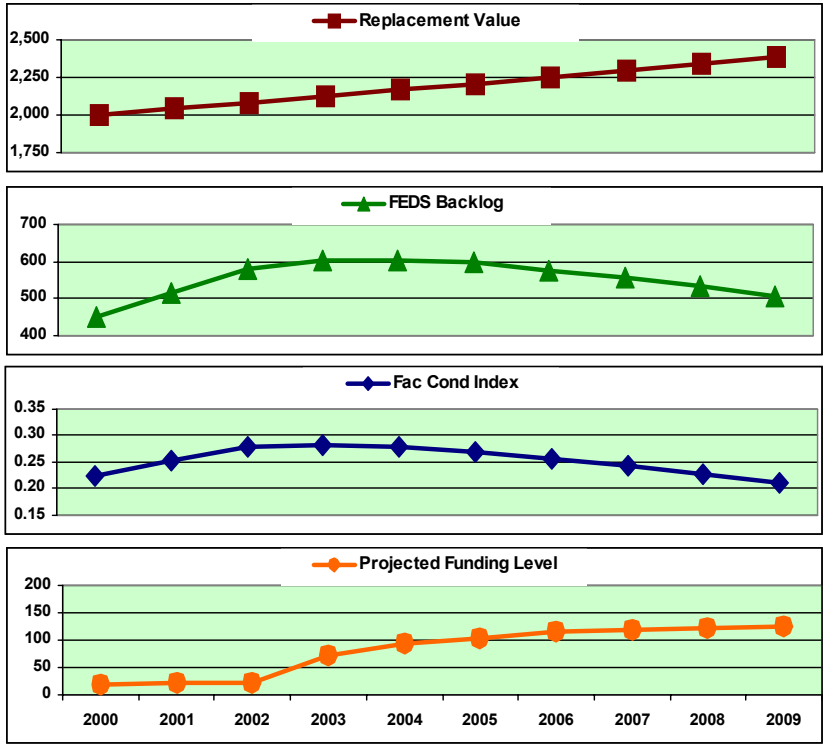
III. Need for maintenance and project funds to maintain the expanded space.

Based on the recommendation of the National Academy of Sciences, approximately 4% of a facility's replacement cost is needed for maintenance activities. Since a facility's construction cost is 1.5 times the annual program expansion amount, maintenance funds of 6.0% of the Services increase are needed.

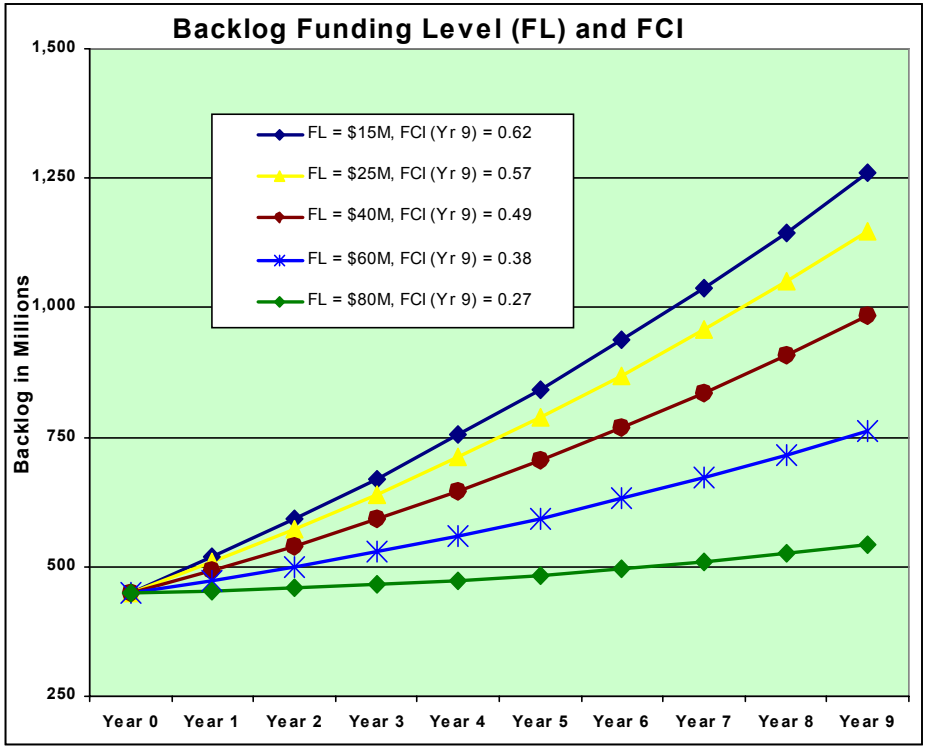
IV. Need for funds to provide and replace equipment for the expanded space.

Based on equipment requirements of 17% of a building's construction cost and the average life of medical equipment of 6 years, 2.8% of a facility's replacement cost is needed for equipment purchase and replacement. Since a facility's construction cost is 1.5 times the annual program expansion amount, equipment funds of 4.2% of the Services increase are needed.

FACILITY CONDITION INDEX AND FUNDING NEEDS



This chart illustrates that in order to maintain the current FEDS backlog (BEMAR), the IHS needs an additional $50 million ($76 million total M&I) in FY 2003; and incremental increases up to $110 ($137 million total M&I) million by FY 2009 (considering 3% inflation, 2% increase in funding thereon, 2% deterioration of the plant, and 2% growth in space). Then it may reach an equilibrium in FY 2010. Otherwise, there will be a rapid deterioration of conditions, where the facilities will be unfriendly and dilapidated. Users may not continue using IHS health care facilities which will result in diminished M&M collections.



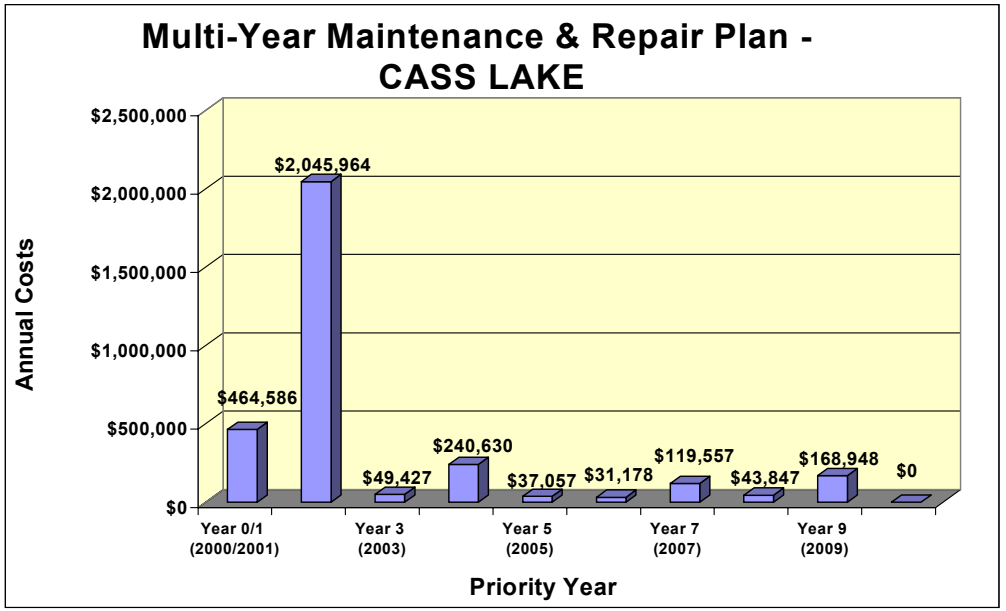
Interpretation of the Facilities Condition Index (FCI) plays an important role in guiding effective policy-making and focusing facility leaders and decision-makers on the need to reduce their accumulated backlog (deferred maintenance). This chart illustrates FCI at different IHS funding levels. Private sector definition:

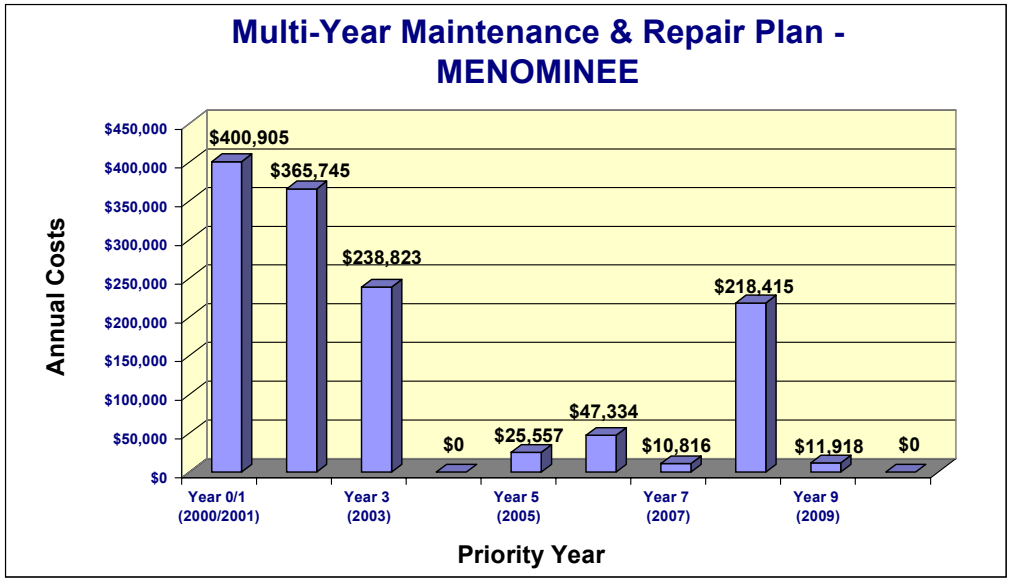
FCI	Condition Rating
5%	Good
5% - 10%	Fair
> 10%	Poor

The bar graphs shown on this page illustrate the annual optimum funding needs at the mentioned facilities for the next ten years. These graphs were developed after a detailed analysis of the Facilities Conditions Assessment.

These and other graphs should be developed on a facility by facility basis. This should be part of an ongoing flow of information to the Board of Directors and management to fully understand the implications of funding decisions.

Chart Source: AME, Inc., Facilities Conditions Assessment for the Bemidji Area





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Division of Facilities and Environmental Engineering
Health Care Facilities Engineering

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