Tribal Access Workgroup Report
Strategies for Improving Technical Assistance Delivery in American Indian and Alaska Native Communities

Tribal Technical Assistance Workgroup

Prepared by a workgroup charged by the
Federal Infrastructure Task Force on Tribal Access to
Safe Drinking Water and Basic Sanitation

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I. Background

In 2007 a group of federal agencies assembled an Infrastructure Task Force (ITF) comprised of tribal representatives and representatives from several federal agencies with the ability, responsibility and authority to provide drinking water and wastewater infrastructure services in American Indian and Alaska Native Communities. Five federal partners (the Departments of Agriculture, Health and Human Services, Housing and Urban Development, and Interior and the Environmental Protection Agency) signed two Memoranda of Understanding (MOU) to achieve commitments on access to sanitation facilities made by the United States in 2000 under the United Nations Millennium Development Goals. The US goals are to improve access to safe drinking water and basic sanitation in American Indian and Alaska Native Communities, specifically to reduce the number of tribal homes lacking access by 50% by 2015.

From March 2007 to January 2008 a subgroup charged by the Infrastructure Task Force scoped, identified, ranked, prioritized and categorized barriers to access to sanitation facilities. They provided almost 60 recommendations to improve access in American Indian and Alaska Native Communities. One specific recommendation was:

> "The agencies should formally coordinate the provision of technical assistance service to ensure adequate geographic and topical coverage are provided."

In August 2008 the ITF chartered a workgroup to develop a strategy to coordinate the delivery of technical assistance services to improve the operation and management of tribal water and wastewater facilities. The workgroup was also tasked to obtain buy-in from all partner agencies and initiate implementation strategy for coordinating technical service delivery. This document, published in 2010, provides the final report of that workgroup.

Technical assistance services are delivered throughout American Indian and Alaska Native Communities by a wide variety of individuals and organizations, both governmental and non-governmental. The term "technical assistance" (TA) throughout this document refers to a broad range of technical, managerial and financial topics provided to tribal water and wastewater utility organizations and governing bodies. A detailed description of some typical TA activities is provided in Appendix A.

There is a mix of TA organizations that provide services and the services provided by a specific organization may vary from region to region. Examples of organizations that provided and/or fund TA services are the Inter Tribal Council of Arizona, United South and Eastern Tribes, state rural water associations and the Native American Water Association, the Department of Agriculture Rural Development (USDA), the Environmental Protection Agency (EPA), the Indian Health Service, and the Rural Community Assistance Partnership (RCAP) organizations.

Informal ad hoc coordination of TA service delivery is practiced in some locations and formal coordination is practiced in others, although the practices are not uniform throughout American Indian and Alaska Native Communities. A recurrent feature of TA service delivery has been that most services are not coordinated which often leads to

confusion, conflict, or inefficient use of limited resources. This is most evident in cases where more than one provider provides identical TA services for the same clients or when a tribe or operator gets conflicting information from different service providers.

II. Technical Assistance Financial Resources and Providers

The organizations providing financial resources to TA providers throughout American Indian and Alaska Native Communities typically have a national scope. The majority of financial support for TA service delivery is provided through federal programs run through the Environmental Protection Agency, the US Department of Agriculture -Rural Development and the Indian Health Service. The State of Alaska is also a significant contributor through the Remote Maintenance Worker and Rural Utility Business Advisor programs.

Table 1 illustrates the major sources and recipients of federal funding for TA services. This listing may not be comprehensive. The primary objective of identifying the source of funding for TA providers is to ensure a requirement is in place to encourage funding recipients to formally coordinate their activities in American Indian and Alaska Native Communities. The workgroup recommends funding agencies should commit to incorporate the requirement to coordinate TA services in future funding agreements before the end of each FY for funding beginning in the next FY.

Table 1: Federal Funding Sources and Technical Assistance Providers for Water and Wastewater Utilities

TA Fund Sources	**Funding Agencies**
Tribal Training Support	IHS
Environmental Health Support Account	IHS
Technical Assistance and Training (TAT) Grants*	USDA
Tribal Public Water System Supervision (PWSS) Grants	EPA
Environmental Programs and Management Grants (Under SDWA Sec. 1442)*	EPA

TA Providers	
Indian Health Service – Tribal Utility Consultants	IHS & EPA
USDA Rural Development State Staff	USDA
National Rural Water Association (NRWA)	EPA & USDA
Rural Community Assistance Program (RCAP)	EPA & USDA
Technical Assistance Centers (TAC)	EPA
Environmental Finance Center (EFC)	EPA
Water Systems Council (WSC)	EPA

TA Providers	
University of West Virginia (UWV) / National Environmental Service Center (NESC)	USDA & EPA
National Tribal Environmental Council (NTEC)	USDA
Rural Utility Business Advisor (RUBA) Program	State of Alaska
Remote Maintenance Worker Program	State of Alaska

Notes: * Funding not tribal specific.

Other federal and state programs (not included in Table 1) may also provide funding for TA providers on a regional or ad hoc basis. Note that some funding organizations also directly provide services. Additional sources of funds may be available to non-governmental organizations providing services to tribal clients that are not included here. Examples of these funding streams are membership dues or funds derived from fee for service delivery models. It is important to note that some funding recipients provide services to both tribal and non-tribal clients.

III. Goals and Objectives of Coordinating Technical Assistance Services

Throughout American Indian and Alaska Native Communities a variety of governmental and non-governmental organizations provide TA services. The mix of organizations varies regionally as do the specific services provided, even within an organization. Some TA services, are easer to deliver or can be delivered at lower cost compared to others. Practically, this results in some services being delivered by most or all provider organizations and some delivered by few or no organizations. Due to these realities it is important for TA service providers to communicate with other providers in their service area to describe their program goals and resources.

The available skill sets of individual providers or the amount of funding an organization receives drives decisions about which TA services are delivered. The primary objectives for coordinating services are to:

- Maximize the positive outcomes of TA services to help the Tribes and Villages address their individual problems and challenges,
- Maximize the use of financial resources available to provide TA throughout American Indian and Alaska Native Communities,
- Minimize duplicated services,
- Minimize conflicts in schedule, location and content of services provided by various organizations,
- Provide consistent support regardless of the provider of the TA,

- Ensure tribal water and wastewater TA needs are identified and communicated throughout the tribal TA community,
- Ensure that needs and requirements of all tribes and villages are adequately addressed by at least one TA provider,
- Provide a venue for providers to introduce new tools available to improve delivery of TA services,
- Provide TA funding agencies an opportunity to communicate specific needs and upcoming funding opportunities,

Additional intangible benefits will also likely derive from active and formal coordination. Principal among these are generally improved communications in the operator and provider communities and broader interaction between assistance providers and operators.

VI. Recommendations

The TA workgroup recognize that the TA provider community is comprised of governmental and non-governmental entities with various mission objectives, statutory authorities, funding streams, and operating philosophies. The following recommendations are intended to facilitate communication among and the coordination of the services delivered by the TA providers in American Indian and Alaska Native Communities. The workgroup recognizes that there are current agreements between federal agencies and TA provider organizations in place and these recommendations are not intended to modify these agreements or direct the TA provider activities under these agreements.

The TA workgroup recommends:

1. Each TA provider organization to commit itself to effective and sustained coordination of their respective TA service delivery with other providers in their geographic operation area.
2. Each TA provider to commit itself to attending coordination meetings scheduled in cooperation with other providers in their geographic operation area.
3. Each TA provider accept that local conditions will dictate the frequency of coordination meetings and the specific format of those meetings, virtual or physical, and that these functional details will be determined in cooperation with other providers in the geographical area in which they operate.
4. The Indian Health Service to designate an individual(s) to facilitate the coordination process on a regional basis.
5. Each TA provider organization recognize the main objective of the coordination meetings is to make TA providers working in American Indian and Alaska Native Communities aware of the activities of others with the intent to avoid duplication and conflicts of service delivery, and better utilize the strengths of each TA provider.

6. The federal departments, agencies, and programs that fund TA providers will work to include, as a condition of funding, a requirement that fund recipients are required to formally coordinate TA service delivery in American Indian and Alaska Native Communities utilizing the process described in this report.
7. Each TA provider organization and practitioner will continue to evaluate the needs of their respective clients and determine how to best serve those needs in accordance with their specific mission objectives, statutory authority, funding streams, and operating philosophy.
8. A web based tool should be developed and maintained which allows service providers and recipients to easily identify their respective TA partners.
9. TA service to tribes will not be rationed through this effort. Tribes and tribal staff continue to maintain a range of TA options and TA service providers from whom to receive specific services.

These recommendations are not intended to constrain, control or direct the programmatic function of any TA provider or the provider community, nor are the meetings intended to be a forum for needs assessment by any of the partner organizations.

V. Technical Assistance Coordination Meetings - Structure and Format

Coordination requires buy-in from the partner agencies and organizations active in TA delivery, a meeting structure, and an engaged meeting facilitator who ensures formal coordination occurs. Funding agencies may be included in these meetings. The workgroup's recommendation for a meeting format and frequency are summarized as follows:

- Participants will be aggregated based on the Indian Health Service Area geography to form Interagency Coordination of Technical Assistance (ICTA) Teams,
- The IHS Tribal O&M Coordinators will facilitate the team meetings,
- The meetings will be held semi-annually in the 2nd and 4th quarter each year.
- Meetings may be virtual or physical as determined by each Team.
- Field reports on the meetings will be compiled by the IHS Headquarters and reported annually to the Infrastructure Task Force. The reports will include the meeting location, meeting date, names of attending organizations and number of people in attendance.

Coordination Meeting Facilitator

The logistics and reporting of the coordination meetings will be most successful when assigned to a single person within one of the participating agencies. The workgroup recommends the Indian Health Service Tribal Operational & Maintenance Coordinators be responsible for the leadership of the Interagency Coordination of Technical Assistance (ICTA) Teams, at least for the initial round of coordination meetings. After the first meeting, the participants may choose a different facilitator or select a new person and agency to do the facilitation for each meeting.

Pending acceptance of the workgroup recommendations, the Indian Health Service will provide to the Infrastructure Task Force names of individual(s) for each IHS Area or District to facilitate the coordination process. After IHS provides the team lead names, USDA Rural Development and Environmental Protection Agency will provide the names of their respective coordination contacts. The EPA Headquarters will facilitate the identification of the Rural Community Assistance Partners and State Rural Water contact names.

The ICTA team leads will be responsible for confirming and identifying additional team members within their geographic area. They will encourage those organizations to be part of the formal coordination process, schedule and conduct the coordination meetings. Local conditions will dictate the frequency of coordination meetings and the specific format of those meetings, either virtual or physical, or a combination of these. At a minimum, the workgroup recommends two meetings be held per year in each of the designated areas.

Ensuring consistent coordination by the ICTA teams over a long period will require that engaged individuals at each partner organization are identified with up to date accessible contact information. Maintenance of the contact information is unlikely to be sustainable if this task is left to the coordination meeting facilitator.

The workgroup recommends that a web based tool be developed and maintained which allows service providers and recipients to easily identify their respective TA partners. Using this tool, each TA provider will be responsible for maintaining their own contact and role information. If an active partner does not update information in a timely manner the coordination meeting facilitator can provide oversight as necessary and report back to Indian Health Service Headquarters regarding the lack of coordination of a particular partner.

The Indian Health Service Headquarters will annually report the summery statistics of the ICTA coordination meetings to the Infrastructure Task Force. The ICTA team leader responsibilities will be written by IHS into the position descriptions/billets of the identified staff.

Coordination Meeting Structure

If statewide or regional meetings are already being conducted for other purposes, it may be possible to include coordinating tribal TA delivery as an added function at those meetings. These existing meetings may be quarterly or monthly although coordinating TA can likely be effective on a semi-annual basis in the 2nd and 4th quarter. Examples of such existing meetings are the Infrastructure for Nevada Communities and Washington Infrastructure Assistance Coordination Council. The facilitator will be responsible for determining if other regional venues exist in their geographic area prior to scheduling a meeting specifically for coordinating tribal TA.

To be effective, the meetings must be focused and agenda-driven. It will be the responsibility of the coordination meeting facilitator to ensure this occurs. Each organization and TA provider will determine their representative at the meetings. Tribal representatives and liaisons are welcome to attend but will generally not be invited. Meeting minutes will be made available to funding agencies and TA providers outside of the state or regional meeting if requested.

The time and expenses to attend the coordination meetings will be borne by the respective participating organizations and should be planned for accordingly in grant requests and program budgets. Virtual meetings provide a viable option and may be easier to schedule and could blunt the expense of a live meeting.

Table 2 presents a proposed geographic location and minimum participant organizations required to ensure effective coordination of TA services. The drawback to this model is that some partner organizations may have to participate in multiple meetings. The benefit of this model is that a single person is responsible to facilitate the coordination within a specific area.

Table 2: Geographical Areas for Tribal Technical Assistance Meetings

IHS	EPA Region	USDA	RCAP	State Rural Water Associations
Aberdeen	7, 8	North Dakota, South Dakota, Iowa, and Nebraska	Midwest	North Dakota, South Dakota, Iowa, and Nebraska
Alaska	10	Alaska	Western	Alaska
Albuquerque	6	New Mexico, Colorado, and Texas	Western	New Mexico, Colorado, and Texas
Bemidji	5	Indiana, Minnesota, Michigan, and Wisconsin	Great Lakes	Indiana, Minnesota, Michigan, and Wisconsin
Billings	8	Montana and	Midwest	Montana and

Table 2: Geographical Areas for Tribal Technical Assistance Meetings

IHS	EPA Region	USDA	RCAP	State Rural Water Associations
		Wyoming		Wyoming
California	9	California and Hawaii	Western	California and Hawaii
Nashville	1,2,4,6	Eastern United States and Texas	Southern	Eastern United States and Texas
Navajo	9	Arizona, New Mexico, and Utah	Western	Arizona, New Mexico, and Utah
Oklahoma	6, 7	Oklahoma, Kansas, and Texas	Southern	Oklahoma, Kansas, and Texas
Phoenix	9	Arizona, California, Nevada, and Utah	Western	Arizona, California, Nevada, and Utah
Portland	10	Idaho, Oregon, and Washington	Western	Idaho, Oregon, and Washington
Tucson	9	Arizona	Western	Arizona

Coordination Meeting Content

The following describes the process that the ICTA Teams will follow to conduct the coordination meetings. Since numerous participants will be involved the process will provide a structure to insure all interested parties will have the opportunity to participate.

Meeting Coordination Process:

- A meeting date will be established by the facilitator and communicated to the partner organizations via e-mail.

Agenda Process:

- No later than 10 days prior to the meeting, the facilitator sends an e-mail to team members requesting agenda items with first reminder of meeting date and time. The facilitator also sets up conference call.

- No later than 5 days prior to the meeting, the facilitator sends out agenda with minutes of the last meeting with a request that all team members review prior to the meeting and be prepared to accept or amend,

- One day prior to the meeting, an e-mail is sent to team members by the facilitator reminding them of the meeting. Include the call in number and pass code.

Meeting Protocol:

- Call to order:
  - The facilitator calls the meeting to order and reviews the past meeting minutes, requests acceptance or revisions to past minutes, reviews the current agenda, and requests any revisions. The agenda will contain information on each item, and the team member presenting the item. Action items on the agenda will be noted to indicate a motion for acceptance or rejection of the team is required.

- Old Business:
  - Past meeting materials, tabled discussion items from past meetings, and action items noted for discussion and motions will be discussed.

- New Business:
  - New topics and/or items introduced by team members, with action items noted for discussion and motions will be introduced.

- Round Table Reports:
  - Reports given by each member regarding current TA and training being provided since the last meeting by their organization which they represent. These include national, regional or state entities:

    1. Review of tribal utilities provided TA
    2. Overview of TA services provided/ to be provided
    3. Overview of TA provider available resources (e.g. Review the number of people in the organization and staff skill set related to providing TA.)
    4. Announcement of upcoming trainings or training publication releases
    5. Review and confirmation that TA service provider has updated information in the web contact manager.

- Agenda Wrap Up:
  - The group identifies other entities not represented on the team with whom one of the members has contact, the facilitator notes the next scheduled meeting date, and calls for agenda items to be included on the next meeting agenda.
  - If the group wants to alternate the role of facilitator or recorder, those roles will be assigned at the conclusion of the meeting for the next meeting.
  - The facilitator adjourns the meeting of the group.

- Meeting notes will be provided by the team leader within 2 weeks after the meeting summarizing the attendance, discussion points and action items. Meeting notes will be distributed to all participants.

Appendix A: Technical Assistance Activities

The term "technical assistance" in this document includes a broad range of technical, managerial and financial topics provided to an organization or individual. To provide effective technical assistance, the service provider must clearly understand the structure and function of the recipient organization or individuals receiving the assistance and must consider the structural, operational, planning, financial, and personnel components of the organization.

The general activities of technical assistance used include:

- Operational Assistance
- Managerial Capacity Development
- Comprehensive Sanitation Facilities Surveys
- Asset Management
- Education and Training
- Project Support

Assistance in any activity areas should be provided with the intent of capacity building at the tribal staff level. These categories are not meant to represent independent "silos" but rather a way of organizing activities to provide tribes with the most efficient and effective service. For the benefit of the customer all activities should be considered interrelated.

To provide effective technical assistance in any of these areas, the following elements should be considered by the provider.

- Identify and understand the structure and function of the organization or individual to whom technical assistance is provided.
- Distinguish between symptoms and direct causes of deficiencies within the organization or system and develop a technical assistance approach accordingly.
- Identify resources that can be leveraged to enhance technical assistance delivery.
- Identify and coordinate other technical assistance providers from whom a tribe or operator are likely to receive technical assistance.
- Identify specific topics of technical assistance desired or needed in conjunction with a tribe or operator.
- Schedule or deliver technical assistance consistent with identified tribal or operator needs.

OPERATIONAL ASSISTANCE

Operational assistance describes what many service providers typically consider "technical assistance". This involves the hands-on, on-site activities as well as the

planning that accompanies these activities. It is critical that the technical assistance provider distinguish between symptoms and direct causes of deficiencies within the organization or system. Generally, technical assistance to help tribes or tribal staff deal with the symptoms while leaving the underlying causes unaddressed does not provide long term relief from deficiencies.

The following is a generalized list of operational assistance activities. It is not intended to be exhaustive.

- Operational and managerial troubleshooting.
- Daily operations and operational planning.
- Identifying hazards and vulnerabilities as well as safety, emergency response, and contingency planning.
- Managing human and material resources associated with operations and maintenance.
- Preventive maintenance planning.
- Master and capital improvements planning.
- Assisting with regulatory compliance, records management, and sampling planning.

ADMINISTRATIVE CAPACITY DEVELOPMENT

Administrative capacity development describes assistance provided to tribes and tribal organizations specifically to help develop the managerial, financial, and regulatory framework necessary for a fully functional and self-sustaining utility. Generally this involves ordinance development, budget development and financial management.

The following elements may be required to foster the development of a utility's organizational capacity.

- Sample ordinances from other tribal utility organizations as concept documents to serve as the basis for developing local ordinances.
- Ordinances tailored to local conditions and present to operators, managers, and tribal officials, as appropriate.
- Accurate annual manpower requirements based on assets inventory and unit task requirements.
- Annually reviewed and adjusted manpower estimates based on expenditure of time and resources from previous year(s).
- A schedule to develop a budget established in collaboration with utility operators and managers.

- A presentation of workload requirements to tribal councils, operating board, and other oversight or financial bodies, as appropriate.
- Identification of the extent of liaison services desired between the operations staff and tribal financial managers in collaboration with utility operators and managers.

Utility ordinances provide the rules and conditions for operating a utility organization. The principal advantage of well developed ordinances endorsed or approved by a tribal government is to minimize politics in the day to day operation of sanitation facilities. Ordinances may prescribe the following appropriate to local conditions:

- Service area,
- An organizational description of the operating entity,
- Description of the services to be furnished,
- Application process for service,
- Responsibilities of both utility organization and customers,
- Standard specifications and details for new facilities connected to tribal systems,
- Specific hardware requirements including meters,
- Grievance procedures for both utility organization and customers,
- Rate structure and billing procedures,
- Disconnection and reconnection procedures,
- Access, easement, right-of-way, and permits requirements,
- Waivers and suspensions, and
- Civil penalties for non-compliance.

Budget development requires accurate understanding of the costs and revenues associated with operating and maintaining sanitation facilities. Although typically not the responsibility of the operating staff, developing a budget that accurately recognizes the true personnel and material costs of operating the sanitation facilities is fundamental to self-sustaining operations. An accurate inventory of assets and manpower requirements of the system components is essential prior to completing a budget.

Financial management is the control of resources that flow through the utility after a budget is in place. Expertise in accounting is essential to financial management.

COMPREHENSIVE SANITATION FACILITIES SURVEYS

By statute, public water supplies are required to have a sanitary survey every 3 or 5 years depending on the nature of the system. Sanitary surveys for water systems are an on-site

review by a trained surveyor that evaluates how a system is maintained and operated. The surveyor reviews the sources, treatment, distribution system, finished water storage, pumps, pump facilities, and controls, monitoring, reporting, and data verification, system management and operation, and operator compliance with primacy agency requirements to ensure that the system compliance with drinking water regulations. The sanitary survey will identify any significant deficiencies to better ensure that safe drinking water is distributed to the public. There is no statutory requirement for inspection of wastewater or solid waste facilities.

The primary goal of sanitation facilities surveys is to ensure that facilities and the services/products provided to tribal members are in proper working order and environmentally safe. Data and knowledge is obtained to ensure that:

- Sanitation facilities planning/scoping, design, and construction services are enhanced,
- Sanitation facilities needs/deficiencies are clearly defined,
- Composite drawings of existing water, wastewater and solid waste facilities can be created and utilized for planning, zoning, design, and operational activities,
- Water, wastewater, and solid waste facilities can be inventoried for spare parts and for a determination of assets value and future replacement needs,
- Tribal technical and organizational assistance needs can be identified and addressed, and
- There exist central repositories for composite record drawings, sanitation facilities inventories, engineering reports, designs, population data, etc.

ASSET MANAGEMENT

The term “asset management” in this document includes a broad range of services intended to help utility managers, operators, and others know and understand the physical infrastructure of a sanitation system. It includes a comprehensive system drawings, assets inventory, and geographic information system (GIS). These tools allow for effective and efficient system evaluations and long term development planning.

The primary goal of composite utility drawings is to create a single location/product that represents all sanitation facilities installed in a given community. This helps improve the effectiveness/efficiency of future systems analysis, assets inventory, preventive maintenance planning, community planning, and sanitation facilities design. As sanitation facilities are expanded, the composite utility drawing and any associated analyses (ex. hydraulic analysis) can be upgraded as well. This effort serves to ensure that system knowledge is not lost through staff transfers or turnover.

At a minimum, the composite drawings should be scalable, georeferenced, and include basic infrastructure details including local numbering, naming, identification, and

addressing, installation dates, sizes, and materials of construction. Geographic details including house addresses, and homeowner, street, and road names should be included where appropriate.

The assets inventory should include, at a minimum, an identifying number, description, brand make and model, expected life, installed cost and a comment on condition. Installed cost can be estimated from replacement cost in current dollars. The assets inventory provides both current and replacement value and the basis for preventive maintenance and manpower planning.

A GIS combines composite utility drawings with attribute tables that can include infrastructure and geographical data. Population and homeowner data, original design calculations and notes, original plan sets, photographs, etc. can also be included in the GIS to form a historical record of sanitation facilities.

EPA has developed an asset management tool for small drinking water and wastewater utilities. Check Up System for Small Systems (CUPSS) (www.epa.gov/cupss/) provides a simple, comprehensive approach to help utilizes record there assets, schedule required tasks, understand your financial situation and tailor an asset management plan for a utility.

EDUCATION AND TRAINING

Education and training should be relevant and appropriate to the participants. The training needs of tribal staff will differ widely depending on the role in utility operations the staff person fills, the complexity of the system to be operated and maintained, and the person's prior training and experience. Training may be specific to the person's job or be part of a broader field of knowledge as required to pass certification exams. Ideally, all training offered to operators and managers will have an optimal combination of hands-on and lecture type training to engage adult learners, provide skills to use on the job immediately, and also develop broader professional knowledge.

Certification ensures that an operator has adequate education, training, and practical experience to be entrusted with the operation and maintenance of the tribal sanitation infrastructure. A variety of certifications are available to utility operators. In cases where tribes or tribal operators do not wish to certify through state agencies, certification is possible through a variety of tribal umbrella groups including the Environmental Protection Agency. In the event uncertified operators are employed by tribes, training must be identified or developed that provides the basic knowledge those operators will need to pass certification exams. Once certified, operators will need to maintain their certifications through continuing education.

PROJECT SUPPORT

Facilities planning that considers both capital and O&M costs and long term operability is critical to extending the serviceability of sanitation facilities. Projects must be

sustainable. From the tribal perspective, consideration of future operation and maintenance costs outweighs capital cost considerations. It is critical that personnel, equipment, operational, and training costs associated with proposed facilities are fully identified and prior to construction completion the tribe is provided comprehensive and user friendly O&M manuals, operational aids and start-up training to tribes.

For all capital projects, the following elements may be provided.

- Long-term capital improvements planning, including conceptual planning,
- Project scoping and soliciting funds including the IHS SDS process,
- Drafting and review of project documents,
- Design and construction plan and specifications review,
- Delivering operation and maintenance manuals, and
- Startup training.

Tribal participation should be fostered when selecting infrastructure options. Systems should be selected that the Tribes have the ability to operate and be sustainable for the future. The operating authority should be encouraged to establish rate structures or alternative funding sources to accommodate future O&M and replacement costs of sanitation facilities.

Appendix B: Indian Health Service Area Map