GIS/GPS Technology Training and Equipment Available

Transportation and planning are greatly enhanced and simplified through the use of GIS/GPS technologies. The use of GIS and GPS can quickly produce relatively accurate maps for proposed or current projects, or for renovation and maintenance purposes. Although GPS has been on the market for some time, current technologies have greatly opened the field, making it more widely applicable to a variety of uses. Where large equipment was previously required, developments featuring more compact, readily available equipment have brought GPS into the mainstream, spreading the technology out to more users.

Jim Horton demonstrates GPS technology at TTAP's recent Shakopee PMS Workshop

Transportation Applications

"It is easier and faster than using other methods," says Jim Horton, structural engineer-turned-GIS/GPS-Coordinator for the Menominee Tribe, "and that's the real beauty of it!" According to Horton, although GIS/GPS is not as accurate as conventional survey methods, it is useful for producing quick, easy reference maps. Survey-grade maps can also be produced through GPS technologies, but must be confirmed by way of more conventional methods. "GPS makes your job fast and easy. It can be used for road maintenance, pavement

Oneida Nation Experiments With Shredded, Recycled Plastic in Pavement

The Oneida tribe is experimenting with putting recycled shredded plastic in road-paving asphalt, a new technique from France that is supposed to make road surfaces last longer.

During August, it used the substance on several roads on the reservation. The substance, known as Starflex, is manufactured by Alloyed Blend Polymers-France, which says it is more flexible than normal asphalt and will better resist cracking and rutting.

Tribal Managers say that, if it is indeed that durable, the tribe may want to start a plastic bag recycling plant on the Oneida reservation so that AB Polymers can make Starflex in Wisconsin.

"We'd be quite committed if, after one year, Starflex proves to be a product that lives up to our expectations," said Sherry King, a project manager in the tribe's economic development office.

Continued on page 6
Tribal Self-Governance
Demonstration Project Report

Source: National Indian Policy Center

Tribal governments and consortia have now entered into 54 compacts with the BIA covering 190 tribes. A study of 22 self-governance tribes operating under compacts for more than one year in May, 1994, has now been completed in draft form and distributed by the Interior Department.

The report, Study of the Tribal Self-Governance Demonstration Project, as required by P.L. 100-472, is a big document - 131 pages with several hundred pages of appendices.

To request a copy, call the Self-Governance Office at (202) 219-0240.

National Indian Policy Center, George Washington University, 2021 K Street NW, Suite 211, Washington, DC 20006

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<th>Pathways</th>
<th>Sept - Oct, 1995</th>
<th>TTAP Regional Tribes</th>
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<td><strong>Pathways</strong></td>
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<td>Pathways is published quarterly by the Tribal Technical Assistance Program in Michigan's Transportation Technology Transfer Center at Michigan Technological University. The Tribal Technical Assistance Program is part of a nationwide effort financed by the Federal Highway Administration and supported by the Bureau of Indian Affairs. It intends to relate the latest technology and information on tribal roads and bridges, tourism and recreation, and related economic development to tribal transportation and planning personnel. TTAP's regional tribes are in the BIA agency's Minneapolis and Eastern Areas. Contact the TTAP office for a free Pathways subscription or to obtain permission to reprint any articles. Articles and suggestions may be submitted to the TTAP staff at the following address:</td>
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<tr>
<td>Director</td>
<td>Bernard D. Alkire, Ph.D.</td>
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<td>Program Manager</td>
<td>R. Evan Fulton, Ph.D.</td>
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<td>Alice Pouttu Karsama</td>
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<td>Tribal Technical Assistance Program</td>
<td>Transportation Technology Transfer Center Michigan Technological University 1400 Townsend Drive Houghton, MI 49931-1295 Phone (906) 487-3184 Fax (906) 487-3409 Email refulton @ mtu.edu aakarsam @ mtu.edu</td>
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<td><strong>TTAP logo/concept</strong> by Sally R. Brunk, Lac du Flambeau Band of Lake Superior Chippewa</td>
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<td>1281 copies mailed this edition</td>
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<td>Sponsored by the Federal Highway Administration Published in cooperation with the Bureau of Indian Affairs</td>
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<td>Transportation Technology Transfer Center</td>
<td>The Transportation Technology Transfer Center includes the Tribal Technical Assistance Program and the Local Technical Assistance Program, both under the direction of Dr. Bernard Alkire. The TTAP and the LTAP provide basic transportation technology transfer, and maintain videotape and publications libraries to augment that purpose. The primary emphasis of the TTTC is to provide a two-way exchange of information on transportation-related topics. Michigan Technological University is an equal opportunity educational institution/liquor opportunity employer. Pathways is printed on recycled paper (15% post-consumer waste, 50% total) with soy-based ink.</td>
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Sandia Pueblo/Forest Service - 10th Circuit Court Decision -

A settlement was reached October 3rd between the Sandia Pueblo and the Forest Service in which the Forest Service agrees to not engage in “further undertakings” in the Cibola Forest until completing an evaluation consistent with the National Historic Preservation Act (NHPA). This follows the important Tenth Circuit decision last March whereby the Forest Service was required by the NHPA to consider “cultural properties” in its roads planning and other activities and failed to make reasonable efforts to do so. If you would like a copy of the Court’s decision with extracts from the NHPA, contact the National Indian Policy Center at (202) 973-7667; Fax (202) 973-7686.
Marjorie Myers, Director of Planning for the Narragansett Indian Tribe in Charlestown, Rhode Island recently attended a local EPA session on general conformity with the Clean Air Act, and shared with us her dilemma regarding how conformity requirements impact on transportation and planning. According to Myers, when Tribes must conform to Clean Air Act requirements, they are faced with a tough question: How do Tribes self-regulate to meet EPA Clean Air requirements while still promoting or sustaining economic development?

From Myers’ perspective, most tribes in a given EPA region must stay within stringent conformity levels for that area, even though little or no air pollution may be generated from their own tribal lands. If pollution levels are already high in an area, the tolerance margin is that much smaller (perhaps even nonexistent), and the resulting conformity requirements might then have a dampering effect on economic development possibilities (pun intended.) As Ms. Myers puts it, “How do you have development from a zero baseline?”

Myers would like to see some illumination of and clarification on this issue. She wonders, specifically, how the Clean Air Act, state implementation programs, ISTEA and Tribes are to fit together in developing guidelines or rules that accommodate self regulation and development, while allowing for compliance. Her tribe likes to stay aware of environmental events and currently has representatives on the Tribal Advisory Board presently working with EPA personnel to generate rules which accommodate Clean Air Act requirements; but the question still remains, and appears to be a concern common to many tribes.

An internet query on the topic brought an interesting suggestion from Ted Burton of Halcyon. In the general commercial world, there is the concept of buying pollution rights of high emission plants which are installing new technology to reduce their emission volumes. These are traded on the open market as a commodity, but cannot be used in any way that would increase pollution past compliance levels for any given area. Mr. Burton poses a hypothetical scenario in which a nonprofit arm of a Tribe (one that qualifies under Section 170(c) of the Internal Revenue Code to receive deductible charitable donations) might accept donated emission rights from some industry (which could write off the donation as a tax deduction.) The nonprofit arm might then transfer those rights to the Tribe, itself. Who would know, better than the EPA, which companies might be contemplating such a transformation?

According to Mr. David LaRoche, Tribal Coordinator for the EPA’s Office of Air & Radiation, the above scenario could be a viable concept as long as it stayed within existing proposal guidelines for compliance with EPA standards. In his capacity as Tribal Coordinator, Mr. LaRoche is currently working on a proposal which will codify these kinds of mechanisms for handling pollution credits, among other things. He is also currently working on getting a final rule out on Section 301.d of the Clean Air Act (1990). According to Mr. LaRoche, the EPA delegates programs to tribes which can meet eligibility requirements. Those requirements were published in a proposal dated August 25, 1994 (Fed ref # 59.fr 43956) which was mailed out to tribes all over the country. That proposal also lists programs under which tribes can be delineated as equivalent to states. (Contact the TTAP to obtain a copy of this EPA Proposed Rule from the Federal Register entitled “Indian Tribes: Air Quality Planning and Management.”)

The Forest County Potawatomi Tribe (located in Wisconsin) has been going through the process of Class I area redesignation; reclassifying air quality standards to Class I status, the most stringent (with the cleanest air quality standards.) According to Christine Hansen, Environmental Specialist for the Forest County Potawatomi Community, this allows for a buffer zone around the reservation, and regulates huge emission sources such as power plants. The Forest County Potawatomi are currently coordinating with EPA regional personnel in working through the current designation changes. They had previously received EPA assistance in locating a landfill, with conflicting land use, and in solving problems regarding a tribal wastewater facility on tribal lands which would discharge onto state lands. To resolve the conflicts and dilemmas inherent to these development plans, the Forest County Potawatomi worked closely with both state and EPA personnel. Christine Hansen found that EPA Regional Representatives, John Colletti and Claudia Johnson-Schultz were most helpful in this process and, as a result, the wastewater facility was successfully completed and is currently in operation.

The TTAP wishes to thank Ms. Myers for her thought-provoking inquiry. If you have information, comments, experiences, or suggestions on this or other relevant topics, please contact the TTAP office by phone, fax or mail. Your contributions are valuable and appreciated.

The Environmental Protection Agency maintains a special American Indian Environmental Office to assist tribes with strategic planning, workplan development, budget documentation, implementation issues, and general advice, training and/or referral.

Those with questions or problems on environmental issues are free to contact Tom Wall or Terry Williams, Director, U.S. EPA, American Indian Environmental Office, Mailstop 4104, Washington, D.C. 20460; telephone (202) 260-7938;

Regarding nationwide rule-making for tribes, contact David LaRoche, Tribal Coordinator, EPA Office of Air and Radiation: (202) 260-7652.

LaRoche recommends, as most helpful for tribes, the EPA Headquarters for Stationary Sources of emissions: Sara Terry (919) 541-7576.
ITA to Hold Annual Meeting

"Tribal Voices on Reservation Transportation Planning & Administration of the Indian Reservation Roads Program"

The Intertribal Transportation Association (ITA) has announced its Annual Meeting:

"Tribal Voices on Reservation Transportation Planning & Administration of the Indian Reservation Roads Program."

The Annual Meeting will take place November 29 - December 1, 1995 at the Imperial Palace, Las Vegas, NV.

Invited Speakers for the event include:
- U.S. Senator Pete V. Domenici, NM
- Navajo Nation President Alben Hale
- Chairman Harry Early of the All Indian Pueblo Council
- Federico Pena, U.S. Secretary of Transportation
- Tony Kane, Executive Director, Federal Highway Program Admin.
- Francis B. Francois, Executive Director of AASHTO
- U.S. Senator Daniel K. Inouye, HI
- Wendell Chino, President of the Mescalero Apache Tribe
- Commissioner Gary Kimble of Administration for Native Americans

The Annual Meeting will also provide a panel discussion comprised of FHWA and BIA representatives:
- Thomas O. Edick, FHWA Highway Program Administrator
- Dee Spann, FHWA Statewide Planning Division; and
- Steve Wilkie, Acting Chief, BIA Division of Transportation

A Tribal Leaders' Open Forum will be held to discuss transportation or related topics of interest, such as:
- Reauthorization of ISTEA
- BIA-IRR Program Reorganization
- 2% Planning Contracts
- Transit
- Aviation
- Tourism and Recreational Travel
- Transportation of Hazardous Waste
- Tribal Sovereignty & Transportation

The ITA will hold nominations and election of Executive Committee Members and provide the opportunity to develop ITA's goals and objectives for 1996.

The deadline for reduced-fee registration is NOVEMBER 13, 1995. Participants can use their 2% Planning moneys to attend ITA's Annual Meeting. If your Tribe does not currently have a 2% contract, please contact your BIA Agency Superintendent.

For more information about the ITA, or to register and obtain an agenda for the ITA's Annual Meeting on November 29, 1995, please contact:
Elsie RedBird, Regional Coordinator
Telephone (505) 248-1465.

To arrange special rate lodging for attending the ITA's Annual Meeting, call the Imperial Palace at 1-800-634-6441 and ask for Ms. Blue.

LODGING RESERVATIONS MUST BE MADE BY NOVEMBER 13, 1995.

Technical Assistance Grants: Avoiding the Traps and Pitfalls

Technical assistance grants can be invaluable devices for accessing skills and experience needed to resolve specific issues. But like most endeavors, they come with snares and traps. Avoiding these pitfalls is often a product of proper planning. Any preparation for a technical assistance grant application should result in two basic but not-quite-obvious pieces of information: (1) Know what you want, (2) Know what your funder wants.

Know what you want
Take a few minutes to have your governing committee answer some basic questions before applying for the grant.

What do you need?
Do you need $40,000 for a land-use planner/consultant, or could you get the same results by using your zoning commission and a surveyor? Do you need to completely reorganize your fund-raising function? Or would a few workshops to train and develop the skills of your board be more productive?

Why do you need it?
Did you need the expert before you knew about the grant opportunity? TA grants can be intriguing, like a shiny new gadget. Organizations can easily be drawn to the uniqueness and prestige of the grant rather than by the need for the project. In these cases, the project receives little support once the grant is awarded.

How long do you need the help?
A technical assistance grant is not a good way to pay an employee's salary - even for only one year. By the same token, these awards are not venture capital grants - they do not offer seed money. Generally these grants provide short-term, one-shot guidance to help your organization resolve a few immediate issues.

What measurable outcomes are expected?
Once the expert assists your organiza-
Technical Assistance Grants, continued

...tion, what will you have gained? What piece of information or advice will you have learned? Technical assistance can be only as good as the parameters you provide. Be clear and specific in your vision of your organization and the issues you face.

Know what your funder wants
Technical assistance funding is a means to an end for your funder. Aside from fulfilling the mission statement, funders are most often trying to address a very specific issue by awarding TA grants.

What does the funder’s mission statement say?
When reading the funder’s mission statement, look for corporate values and meanings as well as key catch phrases.

Who gets technical assistance grants?
Answering this question is critical to understanding what the funder expects to accomplish with TA money. After scrutinizing the awards list, you may realize that organizations receiving TA funds are generally healthier administratively or financially than yours; you may discover agencies receiving funds are experiencing far worse scenarios than your organization has encountered. Whatever the tie that binds, there is a thread of similarity that runs through all grant recipients. Discovering this thread will tell you the funder’s implied hopes.

Does the TA program have a separate set of guidelines?
Many times funders will publish guidelines unique to the TA program. Eligibility guidelines may be different than other programs offered by the funder; criteria for reporting may vary from the funder’s general modus operandi. In some instances, a funder will choose a separate and unique application process. Guidelines will not only tell you how to apply for the grant and operate the program, but also what the funder hopes to achieve.

Simple questions do not always provide easy answers or clear directions. Answering the questions listed above, however, will guide you away from the distractions of a stalled TA program and increase your chances of success in both the grant application process and the TA consultancy.

Source: Carl Richardson, Grants for Cities and Towns, Oct 1, '95, pp 2, 7; Northeast Publishing Group, Marine Industrial Park, PO 1659, Boston, MA 02205-1659. Phone: 800-229-2084.*

Grants Hotline Update

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<td>Grants to Tribal Organizations</td>
<td>Depends on size of organization</td>
<td>Dec 5, 1995</td>
<td>M. Yvonne Jackson (202) 619-2713</td>
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<td>for Supportive and Nutritional Services for Older</td>
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<tr>
<td>Indians /CFDA No. 93.655</td>
<td>Up to $1 million per year</td>
<td>March 15 and Aug 15</td>
<td>Michelle Harvey (202) 628-8200</td>
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<td>Environmental Programs</td>
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<tr>
<td>National Environmental Education and Training</td>
<td>Up to $1 million per year</td>
<td>Dec 1, 1995</td>
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<td>National Fish and Wildlife Foundation</td>
<td>Apr. 15, Aug 15, and Dec 15</td>
<td>(202) 857-0166</td>
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<td>Museums and Libraries</td>
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<td>Projects in Museums and Historical Organizations</td>
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<td>(202) 606-8284</td>
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<td>Rural Water and Waste Disposal Grants/CFDA No 10.760</td>
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Source: *Grants for Cities and Towns, Oct 1, '95, p2
Native American Map Exhibition Tours Nation

Historical/Cultural Context:

Another America is the first exhibition to focus exclusively on maps made by or derived from Native Americans. The exhibit features high quality photographic reproductions of Native American maps ranging from the earliest extant example, made by the Indian Miguel in 1602, to the recently published Inuit Place Names Map Series from the Nunavik region of Canada.

Throughout the exhibit, maps are presented as both unique pictures of geography and as windows on the history, cultures, and technologies of the native people of North America. As graphic items from oral cultures, they offer a rare glimpse into the way space was organized and experienced by Native Americans. Maps from the Indians of the Southeast, the Great Lakes, the Plains, and the Canadian Arctic are featured in the exhibition. The exhibit includes illustrated text captions that provide contemporary geographic references, information on the history of the map, and additional examples of Native American maps and graphic art to place the exhibit in a larger historical and cultural context.

Exhibit Themes:

These maps are important documents for both Native American and traditional North American history. The exhibit uses several themes to explore and interpret the maps. "The Native American Landscape" examines how the oral history and traditions of Native Americans are reflected in the form and content of the maps. "Maps from the Colonial Era" provides examples of maps that reflect the Native American response to the European exploration of the Arctic. "The Remapping of America" examines the American Indian's contribution to the western mapping of the continent. "Maps from the Great Plains" provides examples of maps made by Plains Indians demonstrating their unique graphic systems and their experience of western expansion. "Contemporary Native American Maps" uses maps as a metaphor for the reemergence of Native American culture as a strong and significant presence in modern society.

For more information on the exhibit or to inquire about rentals contact: Mark Warhus, 4071 N. Stowell Avenue, Milwaukee, WI 53211. Ph: (414) 963-0821.

Source: H-West Coeditor Catherine Lavender <frontera@ucons.Colorado, EDU>

Another America
Map Exhibit Schedule

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<tr>
<th>Mid-Oct. to Mid-Nov., 1995</th>
<th>Tennessee State Museum, Nashville, TN</th>
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<td>Jan 15 to Feb. 28, 1996</td>
<td>Institute of American Indian Arts, Santa Fe, NM</td>
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<tr>
<td>Mar 1 through 30, 1996</td>
<td>San Juan College, Farmington, NM</td>
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<tr>
<td>Apr. 7 through June 7, 1996</td>
<td>Anasazi Heritage Center, Dolores, CO</td>
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<tr>
<td>Sept. 3 to Oct. 7, 1996</td>
<td>Ohio Historical Society, Columbus, OH</td>
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Source: H-West Coeditor Catherine Lavender <frontera@ucons.Colorado, EDU>

Recycled Plastics in Oneida Pavement, continued from page 1

The recycling plant would use low-density plastics that usually go straight to the landfill.

"The great thing about Starflex is that it uses thin plastic like in shopping bags and produce bags," said Oneida project manager Kim Anton. "There are no end users that have a product for (recycled low-density plastic). Starflex will give us a use for that king of plastic.

The uncommon bond between road construction and environmentalism made the product attractive to the Oneidas when they went looking for economic development projects, King said.

"We were interested in businesses that would help improve the environment," King said. "A consultant presented to us a number of European businesses that were finding it difficult to enter U.S. markets, and (AB Polymers) seemed to be something that would fill our need and create jobs.

Oneida managers are unsure how many jobs the recycling plant would create, but the tribe and AB Polymers are both enthused.

"We have an understanding with the Oneidas, and are definitely interested in manufacturing Starflex in Wisconsin," said Patrick Barbara, an AB Polymers vice president at the company's Beverly Hills, California office.

For the test paving, AB Polymers shipped sample Starflex from Europe, and the Oneidas cooperated with the state and Outagamie County to lay the asphalt.

"It laid well, and looks very good, but we have to find out how it will last," said Mike Marston, the Outagamie County highway commissioner. "It'll be four or five years before we can really tell if this is a good product.

"The great thing about Starflex is that it uses thin plastic like in shopping bags and produce bags," said Oneida project manager Kin Anton.

Source: News From Indian Country, late Sept., 1995, p 4
Sept - Oct, 1995

Pathways

GPS Training/Equipment, continued from page 1

management, and public transportation applications.” Milwaukee, for example, uses the technology for transportation planning, and has gone on to “using GPS real-time processing” on all city buses, enabling the locality of any bus to be pinpointed at any given moment. Receivers on the buses send signals to a satellite, which then bounce back to indicate location. The Menominee Tribe uses “post-processed” information, as opposed to real time. With post-processing, users collect points, do corrections, and then locate.

The Menominee Tribe regularly uses GIS/GPS in two basic functional areas:

1) public works (infrastructure, construction, residential lands, and map making) and

2) forestry (forested land management). The tribe did $13 million in construction last year, and is currently looking at another $10 million. Projects range anywhere from water and sewer projects, to buildings, to roads. Jim Horton is engaged in the public works areas. Having initially earned his degree in structural engineering, he has since gone on to develop a growing interest in GIS/GPS technologies.

“Many tribes are now experiencing the same or similar problems as do counties or municipalities; first getting information and then sharing that information with others,” says Horton, adding, “I want to share information.”

Equipment Available on Loan

Jim Horton wants tribal communities to be aware that GPS equipment is available through the BIA’s Geographic Data Service Center in Lakewood, Colorado. Available on a loan basis, it can be borrowed for up to 90 days for project use. Equipment can be requested through each BIA Regional Coordinator. The GDSC’s helpline (303-231-5120) can provide all needed information, and also refers callers to their closest regional coordinator.

GPS in Future TTAP Workshops

Wishing to share information, Jim Horton has agreed to act as a GIS/GPS speaker for future TTAP workshops as they become scheduled by other tribes. He will be assisted in this effort by resident engineer, Kim Menominee, whose area specialties are in roads/transportation and agriculture.

At left: TTAP Director, Dr. Bernie Alkire, tries out GPS equipment at recent PMS Workshop. Below: A typical GPS Receiver, as demonstrated by Jim Horton.

At a recent TTAP Pavement Management Systems Workshop hosted by the Shakopee Mdewakanton Sioux, Horton presented an overview of how GPS is used in planning and as a tool for physical roadway site inspections, pinpointing and classifying various road segments according to their identifiable stages of deterioration.

At that same workshop, the BIA’s Minneapolis Area GIS/GPS Coordinator, Carl Hardzinski, introduced the Geographic Data Service Center in Colorado. He explained the center’s history and mission, presented an overview of available services, and demonstrated remote accessing procedures. Hardzinski will likewise be available to speak at future TTAP workshops.

To schedule a Pavement Management Systems Workshop (which includes GPS as a component) for your own community, please contact the TTAP. A large volume of training materials is also available by request, at no cost.

GDSC Helpline: (303) 231-5120

Eastern Area GIS/GPS Coordinator:
Dena Picken: (703) 235-4351

Minneapolis Area GIS/GPS Coordinator:
Carl Hardzinski: (612) 373-1144
What's New at the TTAP?

New Staff on Board

Christine Quaderer, from Lac Courte Oreilles Band of Lake Superior Chippewa, was hired in September as an Undergraduate Assistant for the Tribal Technical Assistance Program.

Christie is a student at Michigan Technological University, majoring in surveying, and lives here in Houghton with her 2 1/2 year old son, Keenan.

Along these lines, Christie will soon be undertaking a special project at the White Earth Reservation in Minnesota.

She welcomes inquiries about her areas of interest as well as her functions here at the TTAP.

We welcome Christie to the TTAP staff.

Training Publications Available by Request

- Pavement Management Systems Workshop Binder
- The Global Positioning System "Charting the Future"
- Differential GPS Explained
- GPS - A Guide to the Next Utility
- Assessing Transportation Needs on Indian Reservations
- Transportation Guide for Indian Tribal Governments
- Intermodal Technical Assistance for Transportation Planners & Policymakers

Call the TTAP to request these materials at (906) 487-3475.