

## Traveling the Information Superhighway Expressway for EDC Data and Visibility

Imagine a gridlocked, 8-lane expressway leading into Los Angeles or out of New York City. Instead of bumper-to-bumper cars, trucks, vans, and buses, the highway is congested with traffic in the form of information.

Welcome to the Information Superhighway, or Internet - a massive, dynamic, mindboggling, spaghetti of networks transversing the globe. The Internet represents a large collection of networks connecting people and information worldwide. Because of the complexity and dynamics of the Internet, it's appropriate to examine it as well as the World Wide Web (W3) and MOSAIC. EDC is no stranger to networking. As a charter member of MIDnet, EDC's involvement in networking occurred

early on thanks to the involvement of former CSB Chief **R.J. Thompson**. Because of its early participation and interest in data transmission and reception, EDC networking continues to expand just like its bandwidth. For instance, while most businesses are connected to one network on the Internet, EDC is connected to five.

### On-and-Off Ramps

EROS has a variety of on-ramps to 5 different highways on the Internet. EDC access routes to the Information Superhighway include the following networks via a T-1 hookup -- an

*Continued on page 2*

## Employees Tour Building Addition Despite February Freeze

More than 160 employees braved teeth-chattering windchills and frigid February temperatures to witness first-hand the progress on the Center's 65,000 square foot building addition February 6-8. The \$8.75-million project, which started with a groundbreaking ceremony May 31, 1994, is scheduled to be finished in January 1996. EDC's building addition will house equipment and people to handle Landsat 7 data and support land data as a part of NASA's Earth Observing System (EOS) Program.

Employees received an opportunity to tour the construction site by signing up for one of several morning and afternoon three-part tours led by USGS staff. First, tourists were provided a brief orientation on the history of the addition and its future use by **Ron Beck**, Information Officer with

the Center's Program, Budget, and Administration (PBA) Office. Following the orientation session, tour members were ushered to the lower level of the Center by **Terry Pfannenstein**, Center Services Manager, to view progress on the Center's basement renovation pro-

*Continued on page 9*



**Denny Hood** (far left) explains construction methodology to employees on one of several group tours of the building addition hosted by PBA staff in February.



## UP FRONT

At our last all-hands meeting, we discussed the turmoil occurring in

the Federal Government following the November elections. The Clinton Administration and the Congress received a clear message from voters to reduce the size and cost of the Federal Government. The evening news reports often tell of plans to "downsize" or eliminate one Federal program or another. It's unlikely that the U.S. Geological Survey (USGS) will be eliminated, but the very value and direction of the USGS is being reviewed at Congressional hearings. The USGS Director, Gordie Eaton, testified at hearings in the House of Representatives, and reported that we must plan for a "declining-sum" budget in 1996 and for several years to come.

With that in mind, it is imperative we focus on what we do well and how we can best serve our customers. In his January Benchmark Notes, Gordie wrote, "All of us need to do our best to ensure that our efforts are understood, used, and valued, both by our colleagues and by the taxpayers who provide our funding."

We are responding. A number of immediate actions are underway. Display materials, briefing packages, fact sheets and answers to questions coming out of the Congressional hearings have been prepared through the efforts of staff in nearly every section of the Center. Careful scrutiny has continued on how to best allocate the talents of the current staff.

The demands placed on the Center and on each of you to carry out our mission remain heavy and, as you know, we continue to have successes--or what the Director calls "slam dunks." The work on the SAST project, the expanding interest in the Multi-Resolution Land

Characterization initiative, and the recent announcement on our role as an archive and distribution center for previously classified satellite data represent major milestones of which we can all be proud.

Additionally, we are not alone in the on-going political debate. All three members of the South Dakota Congressional delegation have written to Secretary of the Interior Babbitt, expressing their support for the USGS and the Center and pledging their collective willingness to help where possible.

I will keep you informed as the budget battles unfold and look forward to your assistance in facing the challenges in the months ahead.

Donald T. Lauer

### Information Superhighway Continued from page 1

information pipe which can carry data, voice, and video at 1.54 Megabits per second in and out of the building:

- **National Science Foundation Network (NSFnet)** [Public network started by this Government, non-profit agency several years ago known for supporting research & higher education - evolving down to K-12. EDC belongs to 7-state, regional, NSF network called MIDnet],
- **NASA Science Internet (NSI)** [communicates with NASA research sites and academia],
- **USGS GEOnet** (A privatization of USGS interconnectivity which is evolving to DOI.net. EDC multiplexes video teleconferencing data on the network to accompany computer-to-computer data.),

- **EOS Data Information System** (EOS version 0 is a prototype network to connect all of NASA's DAACs. This is not as rapid as the T-1 information pipe but will surpass the T-1 in speed in the future.)
- **Multidimensional Application & Gigabit Internetwork Consortium (MAGIC)** (1622 million bit/sec) network -- a very fast and unique network involving real-time imagery visualization via telecommunications technology. This network is larger than T-1.)

Historically, networks such as the ones mentioned above connected at a variety of world locations. Two locations where many networks interconnect are FIX East and FIX West -- FIX standing for Federal Information Exchange. New sites for interconnection networks are being established and are known as Network Access Points. All of these networks do primarily the same job

-- carry traffic to their constituents.

One of EDC's networking staff is **Stu Doescher**, Computer Service Branch. Stu became heavily involved in this area 4 years ago when he transferred from the Science and Applications Branch to the CSB. So far his satisfaction is two-fold. "Trying to provide the services we (EDC staff) need and just hoping to stay ahead of the growth is fun and rewarding as long as you can continue to do it."

In addition to Doescher, **Terry Bobbie** is a major player in networking activities at the EDC. He works with VESCO as well as our system engineering and maintenance group to insure the proper plan and integration is followed for our Local Area Network (LAN). From a Wide Area Network (WAN) perspective, Bobbie works with VESCO to make sure telecommunications circuits are

installed properly, terminated to the proper equipment, and serves as a point of contact to networking hierarchies. EDC's Wide Area Network (WAN) provides our staff with a mechanism to use tools within the global network. Meanwhile, the Center's Local Area Network (LAN) serves two purposes. "There is a production arm that operates with our LAN along with an administrative arm," explains Bobbie. "They intersect and use various wide area networks. The best of both worlds can be had because there are different networks available. Our users at EDC make use of WAN through our LAN. The true sign of a good networking environment is when the user doesn't know what she is using. All the user knows is that she got to the other end in the most efficient and rapid means possible."

### The NSF in Transition

Since its mission of establishing an information Superhighway is complete, the NSF is getting out of the business to let commercial businesses take over. Under the NSF, one public-supported NSF backbone, or VBNS interconnects the nation and the world. The VBNS (Very High-Speed Backbone) is a lightning-quick support system that interconnects supercomputer sites. Currently, the EDC is connected to Lincoln, Nebraska via a T-1 hookup called MIDnet. A T-1 connection transports 40 pages of text featuring 80 characters per line and 60 lines per sheet each second. Sites around South Dakota connect with EDC to access the NSF network. The State of South Dakota also is developing its own network through its connection with the EDC.

The Internet is changing so rapidly that soon normal users will access it through a complex system of network service providers (NSP). Network Service Providers - companies such as MCI, Sprint, AT&T, and Global Internet provide internetworking communications capabilities. The NSPs will interconnect with 4 Network Access Points, or NAPS. The NAPS will be

located in Palo Alto, CA, Chicago, IL, Washington, NY, and Washington, D.C.

So by April of 1995, if EDC users need to hook up with a supercomputer site across the nation, the process will follow the following scenario: If EROS is hooked up to the network service provider, EDC hooks up with Chicago to the VBNS and then on to a supercomputer site. Router/arbitrators will monitor traffic, in the form of information, on the Internet Superhighway.

"From an EDC perspective," explains Doescher, "all EROS seeks is good conductivity with anyone worldwide." Now that's not too much to ask, is it? With the networks the EDC currently has access to - NSF, NSI, and GeoNet/DOINET - it's not too much to ask. It's life in the fast lane of a superhighway.

### Superhighway Traffic

As with busy interstate highway systems, many types of vehicles cruise the main arteries of the Internet. There are large semi-tractor trailers, sports cars, taxis, and bicycles. File Transfer Protocols (FTP) are the large file transfer vehicles that can be compared to semis. These vehicles allow the exchange of large amounts of data between sites. A good utility family vehicle on the Internet is E-mail. In addition to FTP and E-mail, three vehicles on the Internet that provide information services EDC primarily works with are the World Wide Web (W3), Gopher (developed at the Univ. of Minn.), and Z39.50 (a text-based service called WAIS [pronounced "ways"]).

### Obstacles

There are several roadblocks that affect vehicles such as FTP, W3, Gopher, Z39.50, and E-mail on the information Superhighway. Common barriers are NAPs or FIX East or FIX West, which may cause vehicle traffic to build up and become congested. Another

problem is the number of addresses on the Internet -- places along the highway vehicles can stop. Because of the tremendous increase in Internet use, networks are worried about running out of numbering space for addresses.

In addition to Internet roadblocks, several obstacles challenge EDC network users. "Trying to upgrade our existing wiring infrastructure (10 megabit to 100 megabit) in such a way to accommodate emerging technologies that will provide greater bandwidth to the desktop, workstation, or microcomputer platform is a major challenge." Bobbie added, "Just as important is users in this building (DDPS, S&AB, etc.) demand much greater bandwidth than ever before. A final challenge is people are joining the Internet as fast as they can get signed up. That will put more demand on the WAN as a whole and get into an entire new area of telecommunications that we're just getting some level of expertise."

Networking and communication technologies are always written in sand because of rapid change. "You have to maintain an extreme level of flexibility and take advantage of opportunities that come along."

### Cost

While hardware costs associated with the Information Superhighway can be expensive, the cost per minute of use is inexpensive. EDC pays a monthly fee to MIDnet for unlimited use. MIDnet then pays the telephone company that provides the service. Expenditures for wire are low compared with labor and advanced circuitry. For example, all WANs require devices called "routers." Routers fluctuate in price from \$7,000-\$50,000. In addition to routers, WANs and LANs require special equipment that allows you to connect with that equipment and use the data and bandwidth.

### The Information Service Protocols

World Wide Web, Gopher, and Z39.50 are information service

protocols EDC began using in January of 1993. That's when EDC users first explored Gopher - a text-based, menu-driven system. The W3 is a hyper-text vehicle that imbeds areas, sections, or pictures within documents pointing to other documents at EDC or half-way around the world. For example, maps or graphics may contain "hot-spots" that users can point-and-click on with a mouse - providing users with another graphic or layout of textual information. Use of the W3 started growing dramatically in March of 1993 because it became much easier for users to use. It's a vehicle EDC users recognized early as a favorite.

### W3

The World Wide Web (W3) merges the techniques of networked information and hypertext to make an easy, but powerful, global information system. Developers established the W3 at CERN, the European Laboratory for Particle Physics in Geneva, Switzerland, in 1989 to allow High Energy Physics communities worldwide to share and disperse information. It spread to other disciplines and currently is the most advanced information

system on the Internet. According to **Mike Neiers**, Information Systems Development, "Web is an appropriate term because there is no hierarchy. There's no single starting point. Everybody starts where they are and makes links. When they find something they like, they build their own links to it."

For example, if you have a business conference in the Washington, D.C. area you can access the world wide web to get a map of the D.C. region - showing tourist spots in blue icons. Point and click and you can find out admission charges, hours of operation, upcoming events, and other useful tourist information.

For most of the last year Neiers was instrumental in setting up EDC's own server on the W3 to talk with MOSAIC. "Stu (Doescher) really got us looking at setting up an EDC server on W3 after he attended a MIDnet conference the summer of '93. After a closer look we saw that this does a lot of the stuff that we want to do in GLIS someday and haven't gotten to yet. We originally set this up in September of 1993 on one of our systems for people inside the building as an introduction to the network and how it works. We

discovered that once we started putting information out there (on the network), the number of outsider users outpaced inside user, four or five to one." According to Neiers, once EDC discovered the outside interest in EDC data on the internet, the Center's Information Systems Management group were involved. "Sue (Delaney) did a really good job of putting together information describing the Data Center and some of its projects, so that it's a much nicer introduction about what the EDC does."

After ISM spruced up the hypertext data describing EDC programs and activities, Neiers and company looked at putting the National Digital Cartographic Data Base (NDCDB) data on the Internet -- EDC's first data set of significant size. "Since these data (1 degree DEM, 1:100,000 DLG, 1:2,000,000 DLG) were on our mass storage system," explained Neiers, "it was fairly straight forward to make it available to people by making a MOSAIC interface so they could get what they want. It's worked very well and is neat because we're actually serving real, live data -- not just snap shot pictures of how it would look and if you want the actual data, here it is, you can come get it. I remember the day we put the 100K DLGs on the network, we hadn't advertised anywhere and I don't think it had been placed in the Mosaic Page (list of new topics for users), an hour later somebody was retrieving these data. In the past, users had to use the File Transfer Protocol (FTP) interface to get things on the network. There were only a core set of people who knew, and wanted to know how to use that. With MOSAIC, it's all point and click and it's all nice, pretty pictures that look cool."

It's significant that the EDC made data available on the Internet. More impressive is how easy Mosaic makes it for users to browse and retrieve it. "With our connection to the NSFnet several years ago, I almost felt like we were cheating," said Neiers. "We were constantly getting other data from the network from other places. I thought it was



*A graphic representation of one network available on the Information Superhighway, or Internet. To represent the entire Internet, add 25-30 networks such as this to what you see here!*

time we put something on the network for other people to get from us."

## MOSAIC

Once Internet use took hold, the information Superhighway started to grow into a monstrosity that became difficult to navigate and even more difficult for users to find what data they wanted. MOSAIC is an umbrella-like software application tool developed by the National Center for Supercomputing Applications at the University of Illinois. It operates on a UNIX box under X-windows, a pc under windows, and on MACs. MOSAIC allows users to access the W3, Gopher, and other networked information systems. In terms of the Superhighway analogy, MOSAIC represents a dispatcher that controls how jobs get completed. The MOSAIC doesn't actually run the Superhighway, it merely serves as a graphical monitoring post to help users keep abreast of the massive amount of data on the Internet.

**Sue Delaney**, IMS, develops and maintains all of the hyper-text documents on EDC programs and activities available for users on the W3. According to Delaney, data makes its way on the EDC home page within MOSAIC by meeting the following criteria. "EDC showcases programs, activities, and products related to our facility as well as the National Mapping Division," explained Delaney. "We add items such as these to our home page following standards set by EDC External Relations staff members **David Terrell** and **Ron Beck** (who review all outgoing information about the EDC) and the USGS. I make sure we don't overload the system with too many images that may accompany text. Too many graphics on a page takes too much time for users to load the data."

MOSAIC provides the EDC with a flexible, user-friendly vehicle on the Internet to provide worldwide access to EDC data. In short, this vehicle represents a tremendous opportunity to tell the world about the programs, activities, and data of

the EDC. In addition to this extremely important external use, the EDC uses MOSAIC internally to accomplish its mission. EDC staff use mosaic to acquire data from around the world to complete their own research projects. For instance if a scientist in our International Program needs information about research work in Africa or Madagascar, she enters MOSAIC to catch a wave of available data.

## Surfing

If you've never traveled the information Superhighway, the easiest way to get started is to go surfing. Before you venture down to Lewis and Clark Lake next summer, further explanation is in order. According to Stu Doescher, navigating MOSAIC is like catching a wave because, "Sometimes when you're surfing you're not sure where you're going...until you get there." Entering MOSAIC presents all types of visual pointers that lead users in directions beyond imagination. Users simply click a long list of information categories to head-off in another direction of the information Superhighway. For example, if you need budget information, or a satellite weather map, in most cases you'll find so many related topics, you won't have the time or energy to read all of them.

All EDC staff can "surf" or travel the information superhighway, depending on the functions of their job. While EDC staff can access the Internet to acquire information to help them perform their work, the more important issue for EDC is using MOSAIC as a vehicle to provide the rest of the world information about the EDC and its programs, activities, and data.

## The Future of Networking

Networking is growing and changing so rapidly that Bobbie believes it will take an entirely different shape by the year 2005. "It just won't be used for computer-to-computer communications. Today you can buy the components to turn your pc into a multi-

environment workstation that will allow you to open a window with a TV signal, have another window open with two-way video conferencing, and have another window open to perform your daily tasks. So, we're going to see a whole new work environment brought to the desktop."

In summary, the Internet, is an information Superhighway composed of a variety of networks EDC needs to perform its mission and disperse its data. A variety of vehicles travel this Superhighway carrying information of all kinds worldwide. MOSAIC is an exciting monitoring tool EDC users find beneficial to dispatch tasks on the Superhighway. The Internet, or information Superhighway is much like a complex, concrete conglomeration of transportation networks stretching worldwide. It can be crowded. It can be hectic. It can be scary -- not because of accidents, drive-by shootings, or fatalities. It's scary because its changing so fast it could be in danger of collapsing under its own weight. The Internet is changing lanes faster than a driver about to take an incorrect exit. MOSAIC is partly responsible for the phenomenal growth of the Internet. ☺

# The National Digital Cartographic Data Base - Sales Data Base (NDCDB-SDB)

by Karla Sprenger

The National Digital Cartographic Data Base (NDCDB) is a collection of the digital cartographic/geographic data files produced by the U.S. Geological Survey (USGS) as part of the National Mapping Program (NMP). The NDCDB contains elevation data, planimetric data, and landuse and landcover data in various map scales. The digital data are useful for producing cartographic products such as plotting base maps and for various kinds of spatial analysis. A major use of these digital map/geographic data is to combine them with other geographically referenced data, enabling scientists to conduct automated analyses in support of various decision making processes.

In May 1993, a cooperative effort began among the Mapping Application Center (MAC) in Reston, VA, the EROS Data Center, and the Earth Science Information Center (ESIC) offices. This cooperative effort documented the requirements to integrate the NDCDB data into two existing NMP systems--the Distributed Ordering, Researching, Reporting, and Accounting Network (DORRAN) and the Global Land Information System (GLIS). The cooperating organizations completed the documentation in July 1993. Discussions continued throughout the next few months. Management within the NMP decided to create a copy of the master data base titled, "sales," which would reside at EROS and be used to generate products for the general public. The master data base in Reston would continue to provide copies of data for Mapping Center production as well as provide updated metadata (data about data) to the sales data base.

One of the new features of the NDCDB-Sales Data Base is the abili-

ty to verify the existence of NDCDB-SDB products automatically when they are ordered. Previously, verification took place either using query techniques on the System 2000 or Model 204 data bases located on the Amdahl computer in Reston, or by manually paging through lists of available map names.

An equally important task is adding the Sales data sets to the GLIS. The GLIS will provide the ESICs, as well as the general public, with the capability to query inventories and flag items they want to order. The flagged items then are forwarded automatically to DORRAN to create a skeletal order. This process eliminates errors caused by rekeying the map names into DORRAN. Two data sets are scheduled for completion in late Spring 1995.

The NDCDB-SDB was the first DORRAN inventory created using

the Oracle software. Subsequently, EDC will adjust the GLIS software to retrieve NDCDB-SDB metadata from the Oracle inventories versus the Informix style of inventories GLIS now uses.

In addition to the standard products, a by-product of storing the "sales" data on EDC's mass storage system is the capability of allowing users to retrieve the data on their own through the anonymous File Transfer Protocol (FTP) or the World Wide Web (WWW). As of August 8, 1994 the EDC was able to distribute NDCDB-SDB products by FTP at a cost. The availability of NDCDB data through FTP has been very well received by the general public. Recently a new CD-readable (CD-R) disk product also was made available to customers.

Other data sets expected to be received in the "sales" data base in FY 95 are the 1:24,000-scale DLG and the 1:100,000-scale DLG all other layers (Boundaries, Public Lands Survey System, and Hypsography.)

*Continued on page 12*



Individuals recognized for their contribution to the implementation of a Sales Data Base for digital cartographic data using the DORRAN system with a distribution capability using the World Wide Web include: (standing l. to r.) **Chris Haugen, Dana Larsen, Donna Scholz, Susan Delaney, Gwen Moritz, Pat Johnson, Danielle Ehlen, Kevin Lowell, and Tim Smith.** (seated l. to r.) **Steve Johnson, Karla Sprenger, Mike Neiers, and Diane Krell.**

## Employee News

### USGS

Congratulations to **Rita Tornow, Sue Jensen, William Acevedo, and Donnal Scholz!** All of these people received Superior Service Awards from the USGS.

Congratulations to **June Thormodsgard** who received a USGS Meritorious Service Award.

**David Terrell** - David joined the EDC's PBA office January 23 after transferring from the PL&R office at USGS headquarters. David brings 23 years of writing and editing experience to the Center and serves as External Relations Manager. David's experience includes 14 years in the working press as a political writer and columnist and 3 years as a U.S. Senate speechwriter. Before joining the EDC, Terrell served as Deputy Chief of Publications, NMD. He holds a B.A. degree in Philosophy (1974) from Hendrix College, Conway, Arkansas. Originally from the wilds of Arkansas, Terrell enjoys woodworking, hunting, fishing, and photography in his off-duty hours.

**Gary Dinkel** - Gary comes to the PBA Office to serve as EDC's Facilities Engineer. Gary is responsible for the management, operation, and maintenance of existing buildings, facilities, grounds, and vehicles at the Center. In addition, Gary is responsible for providing safety, environmental, and physical protection services. Since 1990 Dinkel served as a Management Specialist in the Space and Facilities Branch, Central Region, of the USGS's Administration Division, Denver, CO. Dinkel's experience includes jobs with the General Services Administration as an Electrician (1976-1983) and as a Facilities Project Planner and Estimator (1983-1990). Gary's post secondary education includes the University of Colorado-Denver, and Metro State College, Denver, CO. Dinkel was

born and raised in the Western Kansas farming community of Grainfield.

**Jim Verdin** - The USGS National Mapping Program selected Jim to participate in the NMD Graduate School Training Program.

Congratulations to Procurement staff members **Dan Wray, Jean Happel, Shar Van Beek, Viola Ross, and Doug Spelhaug** who received "On-the-Spot" Awards in February for exemplary efficiency in processing orders. This team processed over 900 requisitions in the first quarter. Thanks to their hard work, orders often are processed within one week.

### HSTX

**James Lacasse** - Jim, a Senior Satellite Data Systems Engineer, started at the EDC March 6 in Integration and Technology Assessment. Lacasse comes to EDC from Newport News Ship Building in Newport News, VA. Prior to that, Jim worked at NASA-Langley for 2.5 years.

As a military brat, Lacasse lived in several locations as a child, including England, but settled in New Hampshire for high school and college. Jim earned Bachelor and Masters degrees in Mechanical Engineering and specialized in Computational Techniques at the University of New Hampshire and Old Dominion University, Norfolk, VA.

**Dennis Hetrick** - Dennis joins Data Management after serving as a full-time temporary capacity for 1 year to support programming with the FEWS project within the International Program.

**Tom Mittan** - Tom began work with Integration and Technology Assessment January 16.

**Vicki Neuheisel** - Vicki joins the Center as a computer operator with CSB. She comes to the EDC after working 10 years at Midland National Life in Sioux Falls. Neuheisel holds Associate Degrees in Business Administration (1985)

and Computer Information Services (1994) from National College. Raised in Watertown, SD, Vicki moved to Sioux Falls in 1982.

**James Hagedorn** - The Data Services Branch hired James to serve as a Customer Services Specialist. Hagedorn holds a B.S. in Geography from South Dakota State University with minors in Computer Science and Economics. Originally from Flandreau, SD, Hagedorn lives in Brookings.

**Paulette Wahl** - Paulette comes to the EDC to work as a Programmer on the GLIS project. Originally from Sheboygan, WI, Wahl holds a B.S. in Computer Science (1992) and a minor in mathematics from Bethel College, St. Paul, MN.

**Mike Oimoen** - a life-long resident of Madison, WI, served as a HSTX winter intern in the Science Department. Mike worked part-time with Dave Meyer on feature extraction with an emphasis on cloud and snow detection. Mike also helped Jim Vogelmann develop digital reference data from aerial photos to evaluate results from different classification procedures as part of the Regional MRLC. Mike is pursuing a M.S. in Civil Engineering at the University of Wisconsin.

**John Prouty** - John comes to the EDC Science Department from the Twin Cities area. He brings extensive programming experience from his work with Centrak, Gage Marketing Group, and Cenex/Land O' Lakes Ag Services. Originally from Hayti, SD, John earned two B.S. degrees (1987) from Mankato State University in Computer Science and Business Administration.

**Layth Grangaard** - Layth rejoins the EDC as a programmer working with the International Projects section to develop "Mission Information Systems." Grangaard earned a B.S. in Computer Science from the University of Sioux Falls (formerly Sioux Falls College). He worked at the EDC from 1990-1993 as a government student hire. From 1993-1995 he worked for Hughes

Image Systems in Sioux Falls. Layth was born and raised in Sioux Falls.

**Bruce Worstell** – originally from Vincennes, IN, worked as a HSTX winter intern in the Science Department with Norman Bliss. Bruce helped develop a soils and terrain digital data base (SOTER) and characterized landforms using digital elevation models for the states of Illinois and Indiana. Bruce is working on his M.S. in Agronomy at Purdue University.

**Mary “Molly” Freier** – Molly works at EDC under the Visiting Scientist Program in electronic publishing with an emphasis on MOSAIC, platform-free templates. Molly is an Associate Professor of Liberal Arts at Dakota State University, where she teaches courses in computer graphics, composition, and literature.

**Bhaskar Ramachandran** – Bhaskar joins the Science Department on a 1-year assignment in support of the UNEP/GRID office. He holds B.S. (1980) and M.S. (1982) in Geography and Master of Philosophy (1986) degrees from the University of Delhi, Delhi, India. Bhaskar previously taught Geography at the University of Delhi before earning a M.S. in GIS from the University of Edinburgh in Scotland, UK.

**VESCO**

**Todd Weibenga** – VESCO hired Todd as a swing shift mechanic to maintain EDC vehicles, equipment, and the building. Todd holds an Automotive Technician degree from Southeast Area Vocational Technical Institute. Originally from Tyndall, SD, Weibenga worked previously for Sencore Electronics, Kmart, and

School Bus, Inc. before joining the EDC.

**Tom Morrison** – Tom joins EDC as a custodian. Originally from Sioux Falls, Morrison enjoys reading, music, and motorcycles in his spare time.

**Jenna Schwartz** – VESCO hired Jenna to provide additional secretarial support. A Freshman in high school, Jenna receives her education in the home and is working with VESCO one day each week through a workstudy program. In her spare time Jenna enjoys riding and showing her Arabian horse, Red; ice-skating, and teaching figure skating lessons among other activities. Schwartz lives in Brandon. ☺

## HSTX Holds Third Annual Meeting 17 Receive Peer Awards

Over 325 Hughes STX employees, and USGS and community guests met to review another year of major challenges and accomplishments at the Third Annual Meeting of the EROS Data Center (EDC) Project, January 25, 1995, at the Howard Johnson Convention Center, Sioux Falls, SD.

**Tom Loveland**, Remote Sensing Scientist with EDC's Science and Applications Branch, served as the invited guest speaker for the afternoon program. The Director of the USGS selected Loveland as the 1994 Mendenhall Seminar Lecturer for his cultivation of world renowned research involving landscape characterization using remotely sensed

data from space. During his presentation, Loveland praised HSTX employees for their continued cooperation and expertise -- qualities that make research such as his so successful. "One of the big challenges to survival is having a workforce that supports you and gets the job done," said Loveland. "The quality of the workforce at the EROS Data Center is unmatched. Whether it's supporting the Allied effort in Desert Storm, contributing to drought and famine relief in Africa, or dealing with global warming, each of us plays a substantial role in



1995 HSTX Peer Award Winners: (Seated l. to r.) **Bev Hunstad, Ramona Stansell, Ron Smith, Tammy Rockvam, Laurie Huewe.** (Standing l. to r.) **Dan Traut, Morgan Sarges, Aljean Klaassen, Jeff Burkman, Terry Sohl, John Hutchinson, Dave Zokaites, Kelly Kimball, Andrew Nadeau, Barb Larson, Russ Hanken.**

addressing very serious national and international problems. I think we could take great pride in that we do make a difference every day we come to work."

After Loveland's 20-minute slide presentation, EDC Chief Don Lauer awarded three Group Achievement Awards to recognize outstanding team efforts that supported significant EDC activities during 1994. The Second Annual EROS Data Center Group Achievement Awards were presented to staff who successfully supported the following activities:

- the Scientific Assessment and Strategy Team (support for a 17-member interagency team that convened at the EDC from January to March of 1994 to create a data base to study flooding on the Upper Mississippi and Missouri River Basins),
- the National Digital Cartographic Data Base - Sales Data Base (a sales data base for digital map data using the World Wide Web),
- and the TMACS Landsat Archive Data Recovery and Conversion Project (involving the conversion of 350,000 Landsat scenes from 12,500 high-density tapes to less than 400 digital cassette tapes).

For the third year, the most anticipated portion of the meeting centered on the 1995 Peer Awards. As in the past, these awards honored individuals who demonstrated teamwork and unselfish dedication. Seventeen recipients were nominated by their peers and selected by a committee of nonsupervisory employees. Peer Award winners received a stylish plaque and cash stipend. Peer Award winners for 1995 include:

**Jeffery W. Burkman** - for computer operations leadership,

**Russell E. Hanken** - for equipment modifications to meet OSHA standards,

**Laura L. Huewe** - for expertise in support of XID and Infobase systems,

**Beverly L. Hunstad** - for going above-and-beyond the call of duty with a positive attitude,

**John A. Hutchinson** - for insight and research in linking Macintosh and other computer platforms,

**Dale A. Johnson** - for proving to be a knowledgeable spokesperson for the DORRAN system,

**Kelly E. Kimball** - for mediating difficulties involving the DLG-E production system,

**Aljean L. Klaassen** - for creative support of the Global Land 1-Kilometer AVHRR Project,

**Barbara E. Larson** - for effective and efficient support of the TMACS Project,

**C. Andrew Nadeau** - for dedication and leadership on the Famine Early Warning System Project,

**Tamara J. Rockvam** - for significant programming contributions to the tie-point time reduction accomplishment,

**Morgan G. Sarges** - for professionalism toward problems associated with the MRLC data base,

**Ronald A. Smith** - for commitment in support of the Famine Early Warning System Project,

**Terry L. Sohl** - for diligence on the North American Landscape Characterization Project,

**Ramona B. Stansell** - for resourcefulness and dedication to increase Photo Lab production rates,

**Daniel W. Traut** - for resourceful time-saving techniques developed for the Photo Lab,

**David M. Zokaites** - for dedication in obtaining the best Soft-Copy Quality Control system for the EDC.

After **Darla Larsen** and the Peer Awards Committee announced the 1995 Peer Award Recipients, the meeting adjourned and employees and guests sampled appetizers and refreshments. ☺

## Tours

*Continued from page 1*

ject, which is scheduled to be completed in late spring. The basement renovation project is designed to add much needed climate-controlled data archive space within the EDC. Currently, the Center leases storage space in Sioux Falls to meet its growing archival space requirements. After viewing the basement renovation area, tour groups zipped-up, donned hard hats, and headed out into single-digit temperatures to see what's making all the noise, relocating people to different work areas, and generating dirty work for custodial crews -- the building addition.

**Dennis Hood**, PBA Center Operations Manager, guided tour groups in and around the building addition pausing at several points to describe techniques and triumphs of Gil Haugan Construction, the primary contractor for the project. Amid orange sparks of cutting metal support beams and clanking of hammers, tour groups meandered around planks of lumber, piles of aggregate rock, stacks of insulation, and construction crew members dressed in tan insulated covered overalls.

Seventy-five minutes after leaving the former lobby area of the existing building, the tours ended back where they began. Employees returned to their normal tasks with a better feel for how the new building addition is progressing, which was better than the feel in their extremities because of the February freeze. The employee tours went so well that family tours are planned for Saturday, April 15. ☺



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# Fire Sprinkler System Douses Customer Services and Floods Mahogany Row

3:22 p.m., Thursday, January 26 – **Marla Boese** works at her desk on Customer Services account reports when suddenly it begins to rain black sludge. That's what happens when the Data Center's Fire Sprinkler System ruptures. While no one was injured, mountains of paperwork absorbed more water -- if you can call it that -- than a thirsty camel.

"First it (the water) came in the light fixture in the center of the room," said Boese. "I just happened to look over and see something like a shadow coming down." As it filled the light fixture, Boese ran over to turn off the lights. By that time the water was gushing from the ceiling vent in the middle of the room. "It happened so fast we had to get out of there because it was flooding immediately."

The black sprinkler water resembled what you might come up with if you

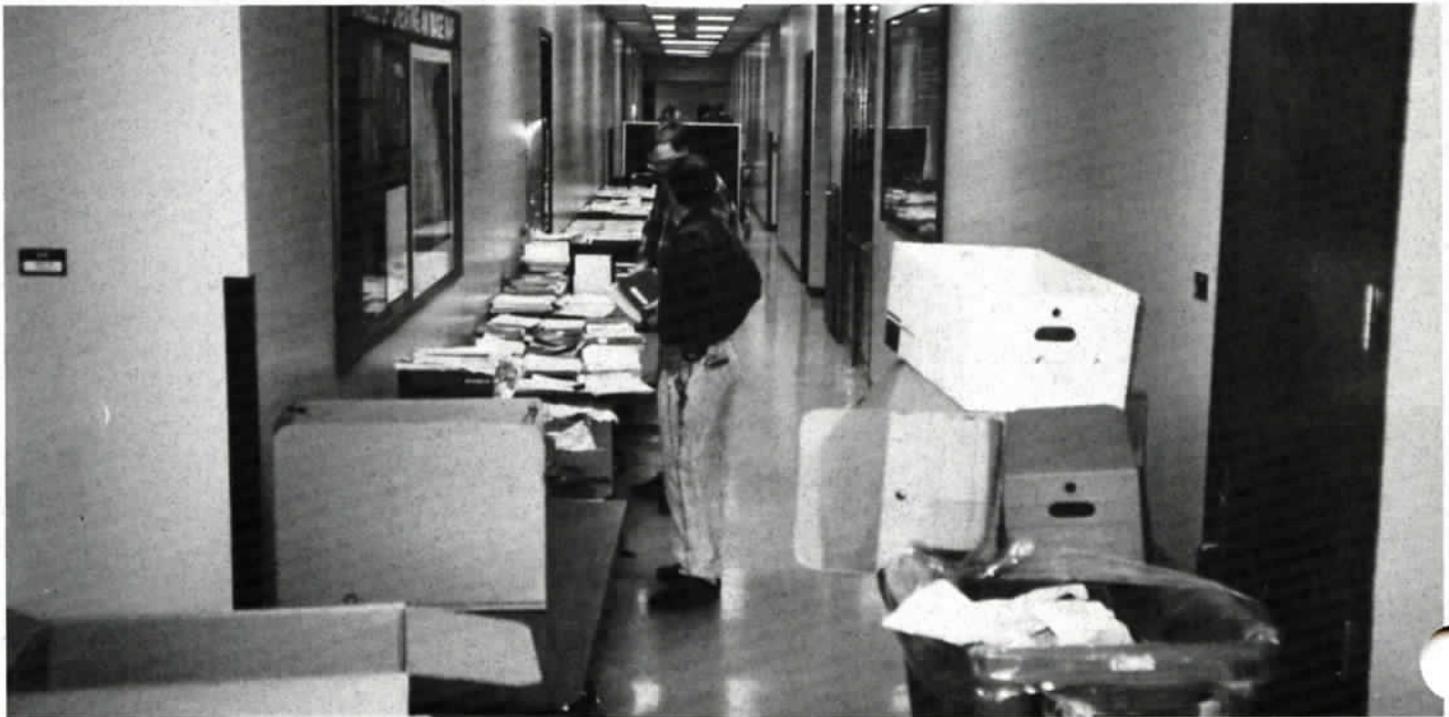
mix charcoal with stagnant river water. Before Boese escaped her work area the black sprinkler water covered her back and spotted the back of her legs. The ooze infiltrated desk drawers and knocked 5 pcs out of commission. "One printer with our account statements had just printed. The water was tunnelling directly in it," recalled Boese. Amazingly, all of the equipment will survive.

The morning after the sprinkler mishap, the hallway between the Photo Lab and Digital Data Production was lined with tables topped by wet papers laid out to dry.

According to VESCO Facility Engineer **Robin Hermanson**, the accident occurred when water in a line of the fire sprinkler system froze, thawed, and ruptured. "A cast iron tee was subjected to

freezing temperatures as a result of construction," explained Hermanson. "When the ice thawed it split the tee in the sprinkler system. Because people acted prudently and quickly, electrical hazards were mitigated and water damage was kept to a minimum."

The total amount of damage due to the sprinkler mishap totaled under \$242. While an accident of this nature is never good news, the Data Center is fortunate that VESCO workers caught the problem immediately. The water flowed so quickly that it wasn't long before it flooded the rest of User Services (formerly the Main Conference Rooms) and meandered through the Office of the Chief. Quick response by VESCO kept the water from flowing past the corridor connecting Mahogany Row (the hallway outside the Office of the Chief) with the Copy Room. Imagine the mess and damage if the sprinkler system pipe ruptured during the night. Even the quick response of two security guards wouldn't be able to stem the tide of the black ooze from the computer floor or the basement archive. ☹



EDC staff sort through volumes of paper "halled" to safety following the fire sprinkler mishap in January.

## Jobs Are Us

Where do you work? What do you do? It's amazing how often these questions pop up during conversations between new acquaintances. No doubt about it, our lives revolve around our jobs. In addition to income, jobs give us self-worth and a sense of belonging to a group.

Erik Osvog is among a group of people with learning difficulties. Adults with learning difficulties are just like you and me. They want to work. They want to feel good about themselves. And most important, they want to be accepted for their abilities — not disabilities.



*Erik Osvog*

Before reading how Hughes STX and the U.S. Geological Survey are working to become greater involved

in the Sioux Falls community and offer people with Erik's abilities opportunity for independence, meet Erik Osvog.

Erik Osvog is a curly, sandy-haired 22-year-old with a helpful smile and diligent work ethic. He loves animals — especially reptiles and amphibians. Erik appreciates reptilian creatures so much that he owns one — a Cuban tree frog he calls E.T. One would have to be enamored with amphibians in order to feed a dozen crickets to a Cuban tree frog every week! Through the wire-rimmed glasses of Osvog, people without jobs could be something like amphibians without water. Life goes on, but it's difficult to make your own splash. Unlike some young adults today, Erik has definite goals and a career compass. His short-term goal is to become an amateur forest ranger. Someday, he would like to be a conservationist who "protects forests from fire."

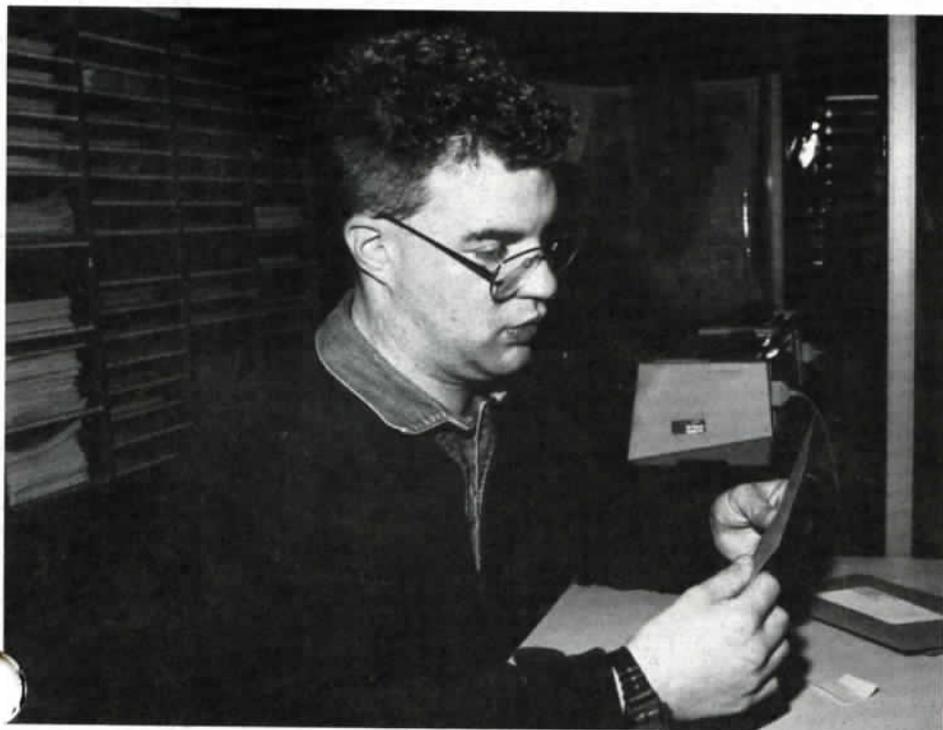
In addition to becoming a protector of forests, another fire burns within Erik. He plans to protect some of his favorite animals by building a wildlife habitat in his backyard.

Osvog's conservation plan aims to support several species of birds, amphibians, and vegetation. "I'm going to have a snapping turtle, softshell turtles, Screech and Great Horned Owls, a couple of ducks, fish, ruffed grouse, bats, and trees," explained Osvog. "My Mom told me that if you put plants and bushes with fruit on them, the birds will come live in them."

Just as wildlife need the proper environment to mature, so do humans. That's why Hughes STX and the U.S. Geological Survey are working together to offer Erik Osvog and others an opportunity to become self-sufficient.

According to Tom Earley, HSTX Personnel Officer, representatives from the Sioux Falls School District and the South Dakota Department of Human Services approached HSTX and USGS officials at the Data Center about establishing a job experience site for Erik. Included in the inquiry was the understanding that if Erik wasn't successful at performing carefully selected tasks, the employment could end. "USGS and Hughes STX officials were eager to participate in the Individual Education Training program, so we identified some tasks in the Data Management map storage area and Customer Services section for Erik to perform," said Earley. "While Erik is doing well, we realize his development is a long-term process. But eventually, there could be a job here (at EDC) where he could be employed full-time."

Erik started working 12 hours a week in EDC's map storage area last summer after lengthy research by his family. According to Erik's mother, Cindy, it wasn't easy trying to match Erik's intense interests with an employer. "We spent months researching and following leads to match Erik's unusual and intense interest in science, animals, and animal habitats with a business with the right attitude," said Cindy Osvog. "We wanted to find a business with the right kinds of people and willingness to help us develop work tasks for Erik."



*Erik Osvog helps the EDC's Customer Services Section by assembling information packets and performing other necessary tasks.*

After inventorying and filing maps for 6 months, Erik shifted to the Customer Services section, where he assembles information packets, sorts paper for recycling, labels envelopes, shreds paper, and performs other necessary jobs. "I like being with people," says Erik. "The warehouse (home of EDC's map storage area) was lonely." Osvog is performing so well in his new environment that his responsibilities and hours may be expanded. "There is talk of possible mail delivery, document copying, and other tasks requiring few steps," says Becky Smith, Osvog's job coach. A job coach is available to Erik to help him identify tasks and provide training and supervision.

Erik has found a niche in Customer Services because of the people he works with and the area provides a good match for his skills. While Osvog just wants to help out, he prefers shredding paper more than any other task. "It's fun," Erik says with a grin. "It makes me feel relaxed and in control."

A sense of control. A feeling of independence. That's what all people need to grow personally and professionally. People with learning difficulties are no exception. Erik's ability to be productive and desire to live a full life hinges on the opportunity to receive training in interpersonal communication and job skills. These skills only are available at actual employment sites. Hughes STX and the U.S. Geological Survey realize that the ability levels of people are as different as the many species of reptiles or amphibians that exist. ☺

### NDCDB-SDB Continued from page 6

The original NDCDB-SDB development project, led by **Karla Sprenger**, was a team effort involving several other EDC employees. For example, **Pat Johnson** and **Steve Johnson** worked on the project on behalf of Customer Services. **Danielle Ehlen** and **Dana Larsen** represented Data Management. **Mike Neiers** played an instrumental role to get the Sales data loaded on the EPOCH mass storage system. **Jeff Powell** and **Kevin Lowell** aided the project by ensuring that the sales data could automatically regenerate on a product distribution system (PDS). **Chris Haugen's** software development skills provided adjustments to the DORRAN order entry screens, order-editing capability, and interfaces required to communicate with the Oracle inventories. Finally, **Sue Delaney** developed user interfaces (i.e., home pages, readme files, and linkages) required to access the data on the WWW.

The teamwork and talent of the EDC staff involved in establishing the NDCDB Sales Data Base at EROS and making it available over the Internet was recognized last Fall by the project's nomination for Vice-President Gore's Heroes of Reinvention 1994 Silver Hammer Award. Recognition at this level points out the value of creative solutions made possible by bringing together teams of professionals from across the Center to meet the needs of our customers. ☺

## Future Changes for EROSDATA

In the past, the EROSDATA has been published quarterly for EDC employees. Beginning with the Summer 1995 issue, the EROSDATA will take a new look because of new electronic publishing responsibilities added to PBA staff. As a result, future issues of EROSDATA will continue to be published quarterly, but will be shorter in length and produced totally inhouse.

As in the past, the success of future issues of EROSDATA depend on your input. EROSDATA coordinators welcome your comments and ideas for future issues.

A reminder: Opinions expressed in EROSDATA represent those of its contributors and editors. Unless specifically noted to the contrary, these opinions do not represent official policies of the USGS/EROS Data Center or the U.S. Geological Survey. Any use of trade names or trademarks in this publication is for descriptive purposes only and does not constitute endorsement by the U.S. Government.

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