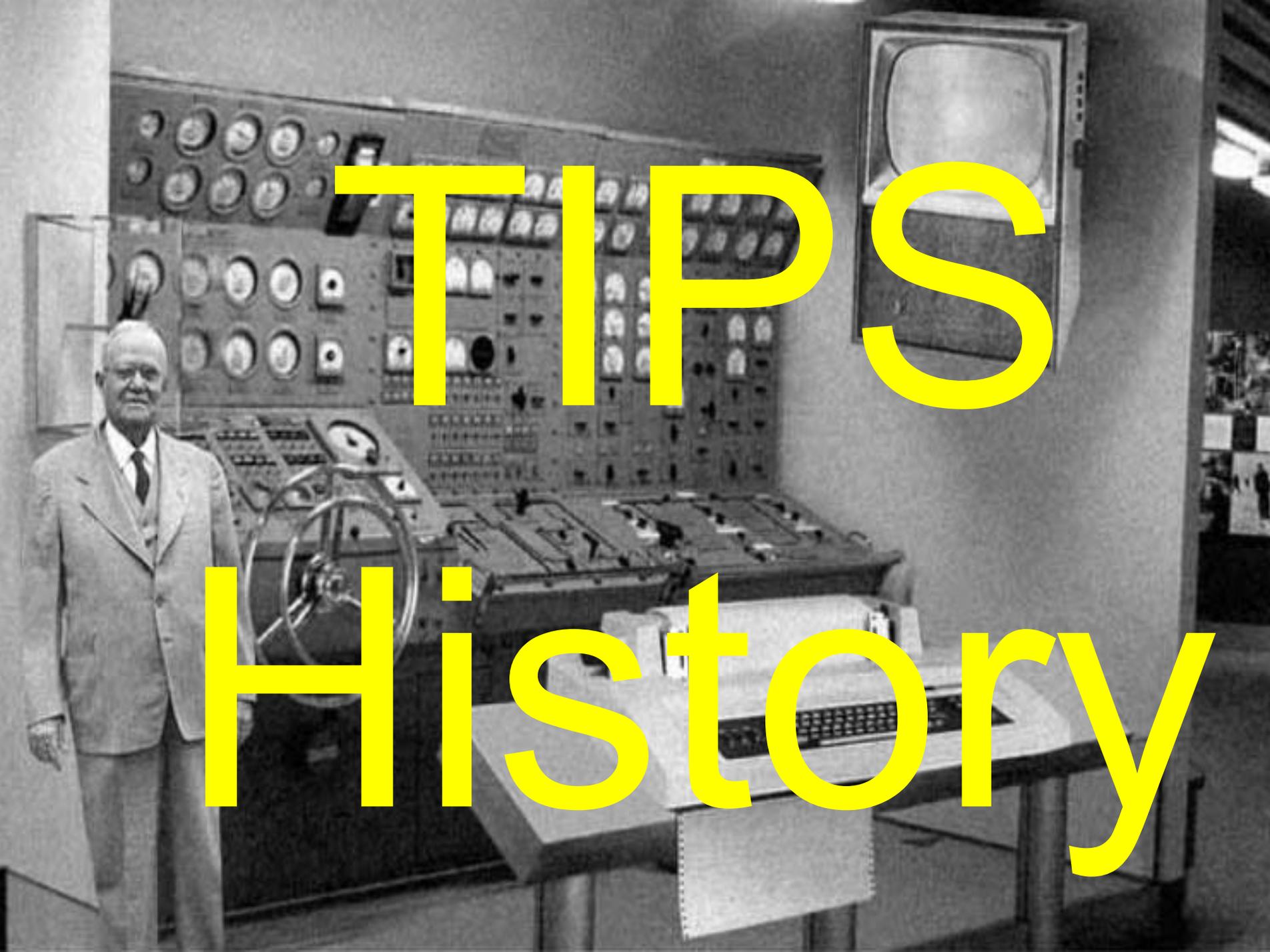


TIPS Unplugged

Featuring

Lou Hamm

Old TIPS Guy



TIPS

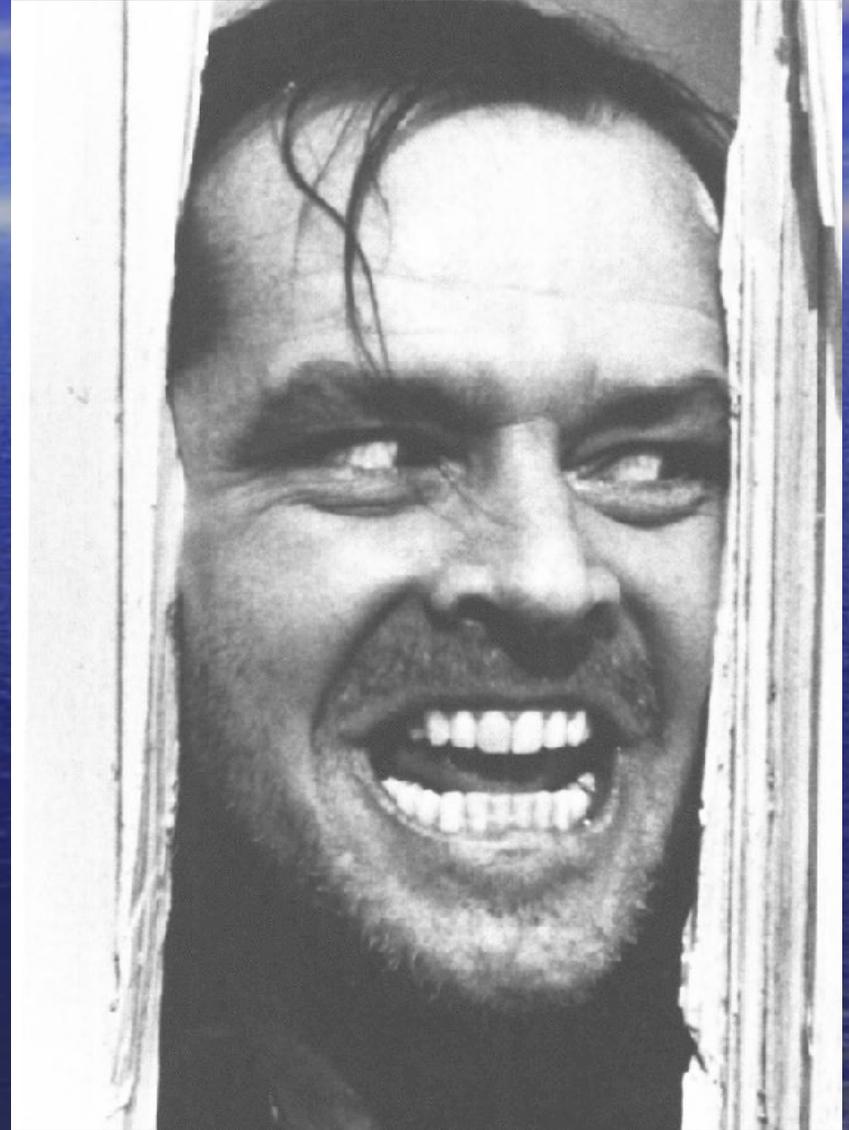
History

Leased Equipment

- Boeing Mainframe
- Digitizer
- Plotter
- Line Printer
- Software

Software

- Interactive Surface Model (ISM)
- SedCADD
- AutoCAD
- BLAST
- SB-Slope
- Modflow
- HC-Gram





Original TIPS Equipment

- 386 Computer
 - 20 MB Hard Drive
 - 16 MB Memory
 - Math Co-Processor
- Digitizer 44 x 60, Backlit, Power Tilt
- Plotter, E-Size
- Line Printer
- Telephone Data Line

LATEST Software

- Geologic Surface Model (GSM - Formerly ISM)
- SedCADD
- AutoCAD
- BLAST
- SB-Slope
- Modflow
- HC-Gram

The Early Years

Team Assembly Begins

- TIPS Team
 - Scientists and Engineers
- Representing the West, and Appalachia
- Headquarters Support
 - Assistant Directorate in Washington, DC

Progression

- Generation 2: 1986-1991—Prime 9955 Minicomputer
- Generation 3: 1991-1993—SGI IRIS 4D/380 Super Minicomputer
- Generation 4: 1993-1999—SGI Workstation
- Generation 5: 1999-Present—Windows Platform

**Software
Hardware**

Technical

Innovation

Training



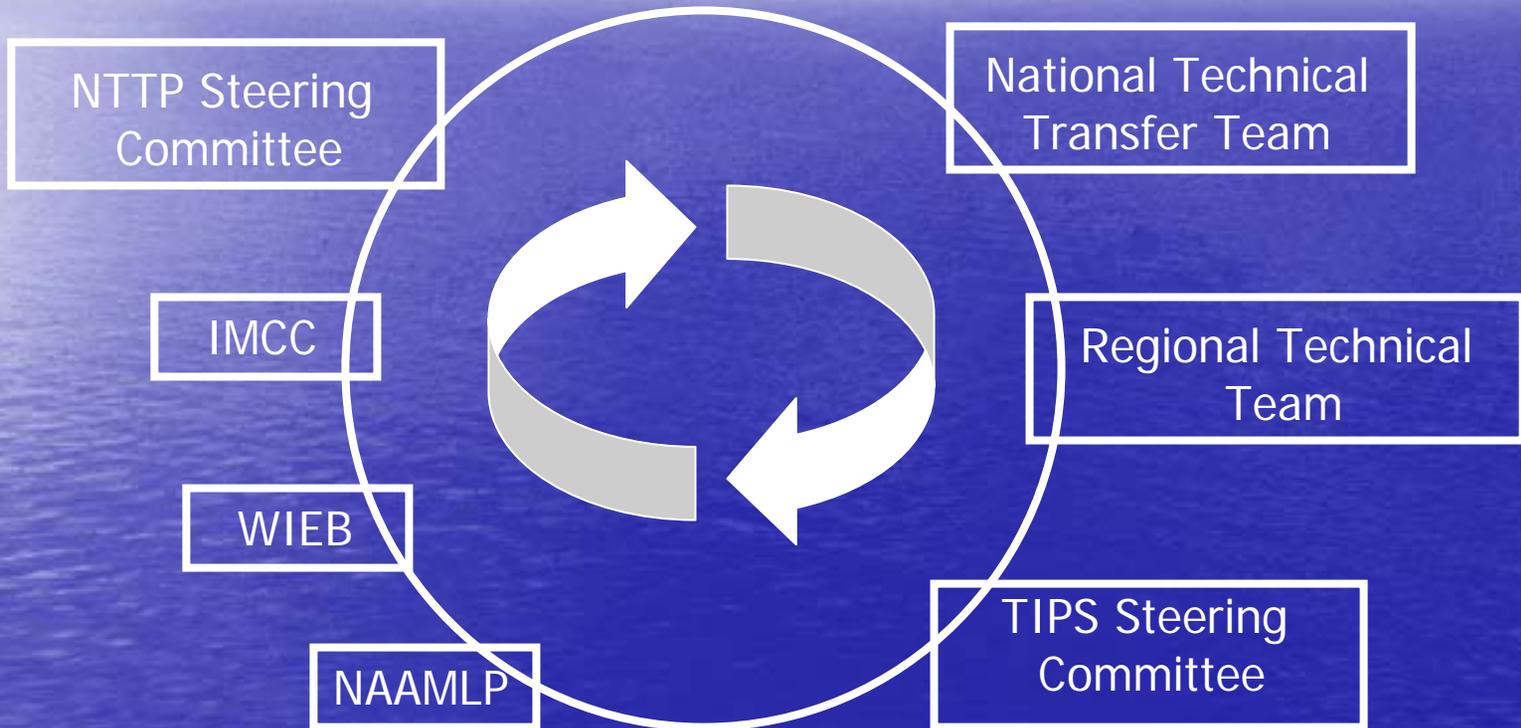
**Applied
Sciences**

Professional

**Technical
Assistance**

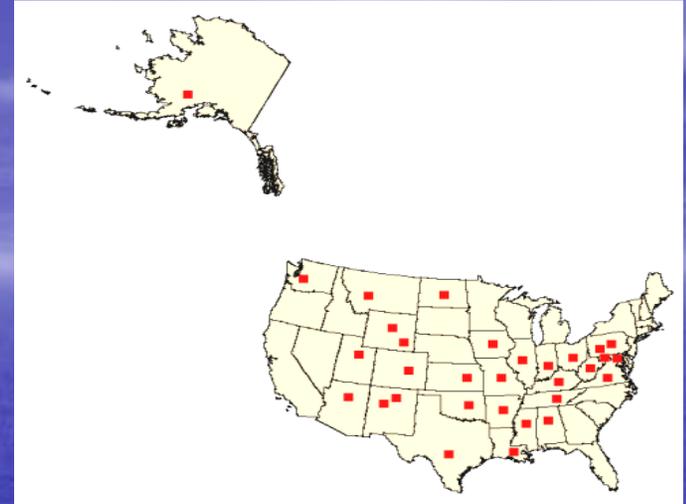
Services

Technical Transfer Partners



Customers

- 23 States
- 3 Tribes
- 13 OSM Field/Regional Offices
- 96 Offices
- Desktops w/TIPS software--700



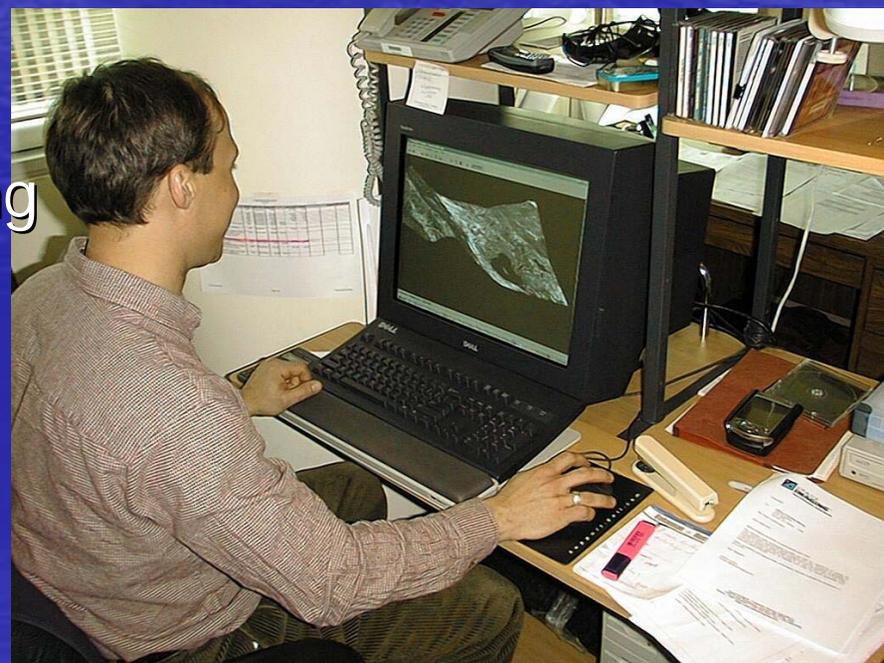
- Training

- Training Manager
- 13 Course Managers
- 45 instructors
- Learning Management System
- Administrative Support



Technical Assistance

- Technical Assistance Examples:
 - ARCC Mountain Top EIS
 - PA Anthracite mine area
 - CO Crested Butte-AML Peanut Mine
 - UT Lila Canyon
 - UT vegetation vigor
 - OSM Western GIS
 - AFO-GIS and Remote Sensing
 - KFO-GIS
 - CFO-GIS



TIPS Software Cost Savings

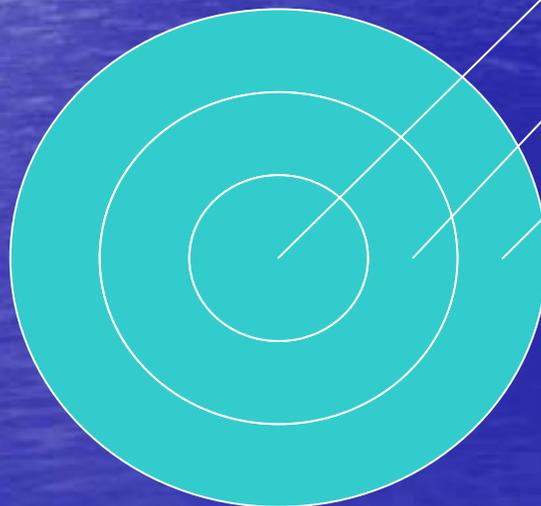
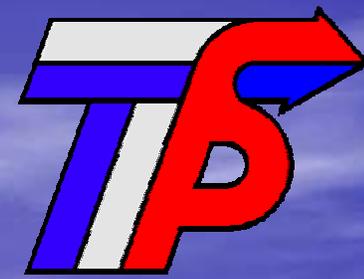
- Capital Software Investment (one-time)
 - Customer Cost: \$13.2 million
 - TIPS Cost: \$1.0 million
 - Savings: \$12.2 million
- Annual Maintenance Costs
 - Customer Cost: \$1.7 million
 - TIPS Cost: \$238,000
 - Savings: \$1.5 million

Perspective

- OSM – 600 Employees
- TIPS – 11 Full Time Employees

DOI-IT Activities

- DOI Enterprise agreements:
 - Dell/IBM
 - Microsoft OS and Office
 - ESRI software
- Enterprise Network Service with new telecom coming soon
- Email messaging for DOI
- WEB centralization
- E-authentication-Smart Cards to be issued
- Wireless prohibited
- Security is #1: Command Center



Right Things
Right People
Right Places

What does OSM "get" out of it?

The success of TIPS helps OSM fulfill its mission to ensure that coal mines are operated in a manner that protects citizens and the environment during mining and assures that the land is restored to beneficial use following mining, and mitigate the effects of past mining by aggressively pursuing reclamation of abandoned coal mine lands.

What do the States and Tribes get out of it?

TIPS provides direct technical assistance to address specific mining and reclamation problems, maintaining automated systems and databases used by others in making decisions under SMCRA, and transferring technical capability to states, tribes and OSM staff through training, consultations, forums, and conferences to help them develop the skills needed for solving problems on their own.

What do citizens get out of it?

The TIPS tools — software and hardware — help ensure that the very best and most reliable technology is brought-to-bear on environmental and safety concerns that directly impact them.

TIPS FITTING



Hyper-Spectral Imagery

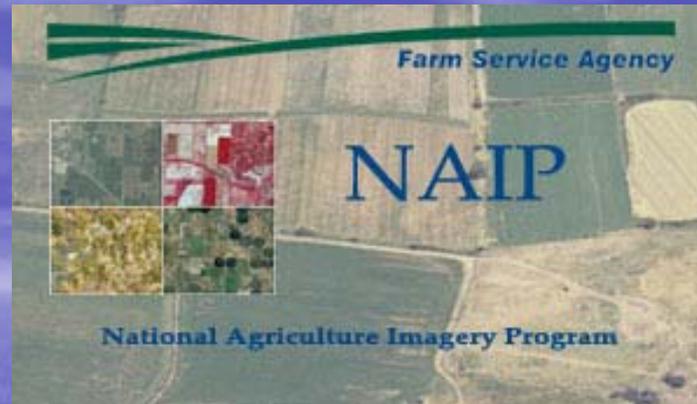
From
SPECTIR
Reno, NV

- Acidic Soils
- Vegetation success
- Final bond release



NAIP

**Potential Partnership for OSM, States,
And Tribes**



NAIP imagery can be acquired under two sets of specifications:

A one meter ground sample distance (GSD) with a horizontal accuracy that matches within three meters of a reference ortho image.

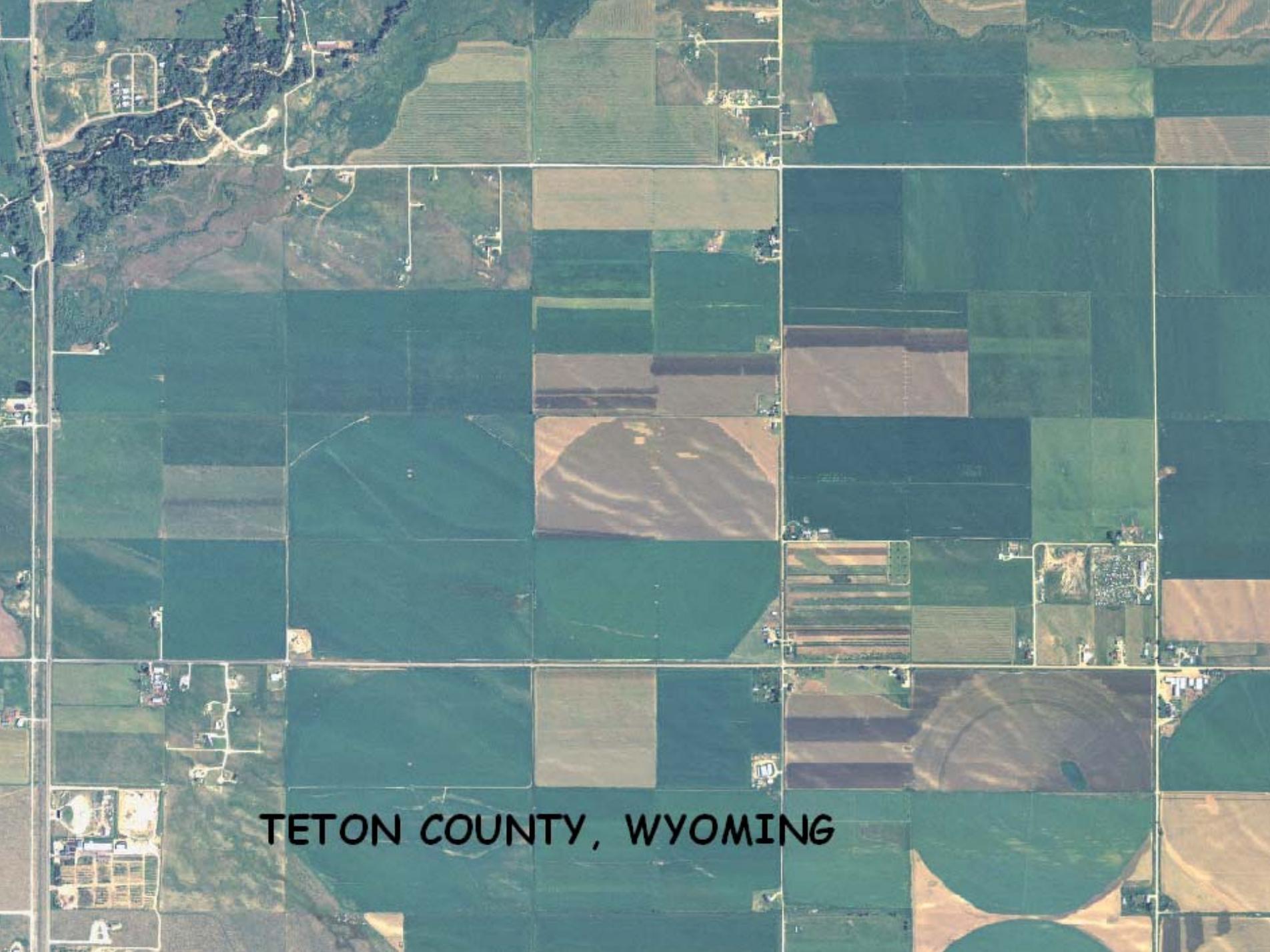
A two meter GSD image that matches within 10 meters of reference ortho imagery.



ASHLAND COUNTY, WISCONSIN



NORFOLK COUNTY, MASSACHUSETTS



TETON COUNTY, WYOMING

- Airborne FLIR

- USDA Flying a Forward Looking Infrared camera on a helicopter.
- GIS Scale infrared overview of coal-seam fires.
- Partnership with USDA to defer their equipment costs.



Geospatial Team

- Provide broad geospatial capability for States, Tribes and OSM to use GIS, remote sensing and mobile computing technologies.
- Possible solutions to be used include ESRI's "Arc Internet Map Server", and ESRI's "Arc Spatial Data Engine".
- These technologies will help institutionalize geospatial information so that it becomes part of permitting and the I&E processes.



- More Mobile Computing Equipment!
 - TIPS has recently rolled-out 6 new Fujitsu Tablets with GPS capabilities and 6 new Trimble GeoXTs to State and Tribal offices. This will plant the seeds to help mobile computing technology become mainstream.
 - More to come as budget allows.



- Large Watershed software—TIPS is actively seeking a software application that will help RAs better evaluate impacts of large watersheds.

- Routine use of imaging data to help calculate volumes for permitting and bond calculations.

- Underground mine and void mapping—continue to focus on potential solutions.

- Continue to investigate new technologies based on customer feed back and requests. Latest example—TIPS acquired two Thermal Cameras (FLIR Systems' ThermaCAM E2 Field) that are now available for checkout in both the west and the east. They are being used by both AML and permitting staff.



- TIPS will continue to provide improved high-end software and hardware along with training.

Acknowledgements



Bill
(Bulldog)
Winters

Karen (You want to change
WHAT?!!) Pierson





LaVonne (LaVonne)
Zibrida

Billie
(Mike)
Clark





And all conference attendees

Thanks!