

GPS and Mobile Computing Implementation in ND

Bruce Johnson, ND PSC
Reclamation Division

Mobile Computing- What is it?

- ◆ Being able to use a computing device even when being mobile and therefore changing location. Portability is one aspect of mobile computing.



Mobile Computing – Why?

- ◆ Seen as integral part of implementing a GIS – based system to manage information.
- ◆ More precise positioning and field collection of data, better documentation.

Priority to have 1 tablet PC per staff member

- ◆ Doesn't work to share a PC among staff.
- ◆ Staff is more apt to use the tablet if they have complete access and control of it.
- ◆ Each staff member can configure the PC to their preferences.

HP/Compaq tc 1100



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HP Tablet PC with Garmin GPS



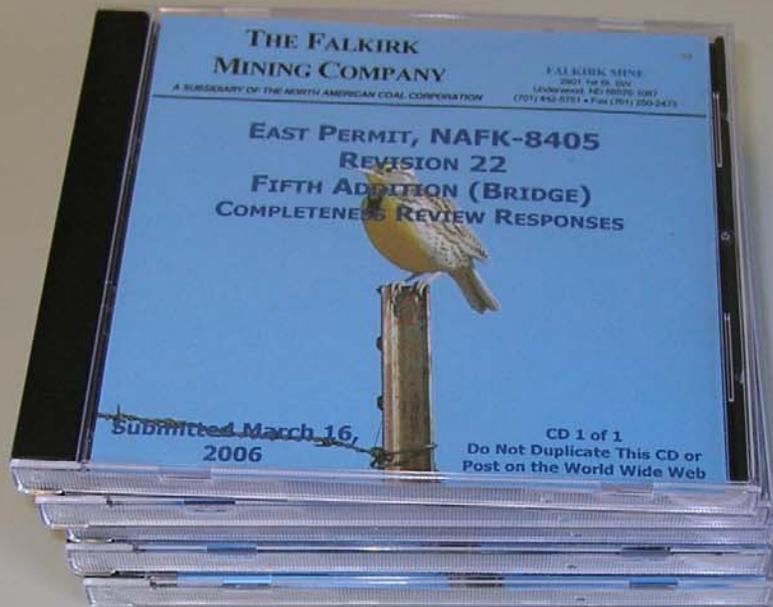


Why did we pick the HP tc 1100?

- ◆ PSC had prior experience with this model
- ◆ Had a good price/feature ratio
- ◆ Removable keyboard
- ◆ Small size
- ◆ Available with Bluetooth and 802.11 a/b/g

Specifications of HP tc 1100

- ◆ Pentium M 1.10 GHz
- ◆ 1GB of Ram
- ◆ 75 GB Harddisk
- ◆ Nvidia GForce 420 Go 32M
- ◆ 1024 X 768 Video Resolution



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GPS Receivers

- ◆ Teletype 1951 - 12 Channel WAAS Enabled. Difficult to pair, not rugged
- ◆ Teletype 2151- 16 Channel. Easy to pair, not rugged.
- ◆ Garmin GPS 10 – 12 Channel WAAS Enabled. Easy to pair, rugged. Can be submerged to 1 meter for 30 minutes, magnetic mount.

Software

- ◆ ArcPad 6.0.3 – Worked well, but couldn't use .tif images or MrSid Generation 3 files.
- ◆ ArcPad 7 – Allows the use of .tif files and MrSid MG3 files.

Issues with ArcPad

- ◆ *Get Data for ArcPad* wizard has 50 million cell limit – too small for most mines in ND.
- ◆ Maps must be input separately.
- ◆ Images larger than 50 Mb affect performance – poor panning and zooming.
- ◆ Tends to crash.

Issues with HP tc 1100

- ◆ Bluetooth was initially un-reliable.
- ◆ Battery life is short – Approximately 2 hrs.
- ◆ Screen visibility is poor on bright days.

How did it work?

- ◆ Tablets with Garmin receiver worked well.
- ◆ Video performance is good when using MrSid images around 20 Mb in size.
- ◆ Somewhat bulky to handle tablet and GPS receiver on foot.
- ◆ Works great in vehicle.

Wish List for Mobile Computing

- ◆ Screen that can be easily seen on bright days.
- ◆ Longer Battery Life.
- ◆ More CPU/Video capability for large images.
- ◆ Trimble *GPSCorrect* for differential correction of points.
- ◆ ESRI *ArcPad Application Builder*
- ◆ *Data Dictionary Converter*

