

NEVADA DOT'S MULTI-DIVISIONAL EFFORT TO CREATE A MATERIAL SITES LAYER



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Project Goals

- ▣ Tap legacy data before data technology becomes obsolete and unrecoverable.
- ▣ Capture institutional knowledge before it walks out the door.
- ▣ Take non-spatial databases and make ONE spatial.
- ▣ Train staff, get data into a maintenance mode.
- ▣ Make data available to other end users and the IRWIN RoW management system
- ▣ Getting people to change the way *they had always done things* to something that benefited everyone

The Information Challenge

Create a spatially enabled dataset for material sites combining:

- data retrieved from an old mainframe database for Federal Lands and converted into a compatible format for inclusion in GIS
- multiple 'working copies' of Excel spreadsheets
- multiple BLM shapefile representations of what they think we are exploiting for sites
- a changing Public Land Survey System (PLSS) database
- a partially digitized polygons in Geomedia Access format

The Staffing Challenge

- ▣ Involve the appropriate personnel from Right of Way, Environmental, Materials, and Archeology *(yes, IT was not involved)*
- ▣ Take away user 'working copies' and get them in one multi-user database
- ▣ Get users to collaborate and decide what really needs to be in the multi-user database and who will edit what tables and who the geometry
- ▣ Train and engage them in GIS editing
- ▣ Create appropriate workflows for maintenance in a multi-editable Oracle/SDE environment

Pit Statistics

- ▣ There are 2145 applications of all types
- ▣ A pit can be made of one or many applications, there were 1591 single and 544 multiple application pits
- ▣ There are currently 1272 active pits although not all have been exploited

Timeline

- ▣ This project took over 2.5 years to complete to the point it was handed over to RoW for maintenance.
- ▣ 18 months were spent gathering and massaging data, compiling polygons, creating and populating first pass standard attributes.
- ▣ 12 months were spent on QC of both the descriptions, geometry, and attributes by various work groups. Within this period the final set of attributes and tables were developed by the team
- ▣ This was not a full time effort, maybe 1/4 time.
- ▣ Final version of data provided to BLM after QC

Complicating factor

- ▣ During this process NDOT had a policy change due to problems “coloring outside the lines” exploiting material sites. BLM was upset and NDOT faced potential large fines.
- ▣ It became policy to survey and monument pit corners before any new exploitation. This necessitated the creation of a workflow to adjust polygon - PLSS corners, to polygon - survey corners to increase accuracy. This is done as required for active pits.
- ▣ All new pits are based off surveys and PLSS

Users and Access

- ▣ Besides the divisions involved in the project this data is used by our Survey section , Design and Maintenance Divisions and District personnel
- ▣ Currently the data is accessed via desktop ArcGIS for data user/maintainers or via layer files in ArcGIS Explorer for other end users
- ▣ We hope to create a web application in the ArcGIS server environment to replace Explorer in the next 12 months for end users

Future Plans

- ▣ Link this dataset to boring logs and geo-technical samples (in planning phase). Field crews already trained in GPS procedures for data capture. Develop ArcPad application to replace current data dictionary based on final GDB design.
- ▣ Train geo-technical staff in GIS to maintain new dataset and keep it linked to material pits.
- ▣ When developed, create a website available to contractors to show availability of materials so they can better know haul distances to jobs or other information that might help with projects

Lessons Learned

- ▣ Make sure to capture institutional knowledge
- ▣ Training is important to project success
- ▣ Somebody has to lead. Sometimes forcibly 😊
- ▣ Quality control is necessary and ALL workgroups have to be responsible for their part of the process
- ▣ Make sure you have a *clearly defined* data owner
- ▣ Things change. Be flexible!

IRWIN Project Update

For those of you wondering about our RoW project:

- ▣ Delayed for 6 months by ARRA projects
- ▣ Staff Trained, Alfa testing finished, final Beta in progress
- ▣ Permits online April 4, Billboards April 18, and Project, Property and Acquisitions Management May 23
- ▣ Project enters maintenance in June
- ▣ While project is late it is not over budget

IRWIN Work in progress

- ▣ The creation of a RoW parcel layer combining workflows in CAD and GIS. This has been delayed for 7 months due to staff training and the migration of NDOT's CAD from Microstation 7 to 8i.
- ▣ The RoW layer will include not only RoW along roadways but also facility property.
- ▣ This will be linked to Asset management data
- ▣ This data will be useful to many end users.

Questions?

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