

North Dakota AML Using iPads With GIS In The Field

Many people realize the advantages of having a device as portable as the iPad and appreciate the power that it wields. Obviously it has potential. But is it rugged enough for use in the field? What options exist for GIS? North Dakota's Abandoned Mine Lands (AML) Division has addressed these questions and based on the needs of the division, has issued staff iPads for use in the field.

AML is using a ruggedized case which seals the iPad protecting it from environmental elements and offers a high level of impact protection. Visibility is improved by setting the screen brightness high. Temperature is a potential issue as the device can overheat and shut down if the device exceeds 95 degrees.

AML is currently using iPads on a drilling and grouting project near Beulah, ND. Holes were drilled along the road and ditch the previous year and their locations recorded with GPS. The drill holes had been capped off, buried just below the surface and markers placed beside them with pink top stake chasers. These cased drill holes with voids were now being filled with grout in an attempt to stabilize this extensively undermined area. The iPad displays the map of these locations and gets within proximity of missing markers. Progress is tracked through data collection as voids are filled with grout.



AML using GIS on the iPad in the field.



Screen shot of GIS Pro on the iPad.

The AML construction inspector is also inventorying area sink holes using the iPad. Location points are recorded. Data is collected including photos. This will become a resource for AML in assessment of danger levels of these sink holes.

AML met with a realtor recently regarding property with possible undermining. The iPad had the most recent underground workings of the Knife River mine loaded enabling zoom and pan of the area. The discussion was far more detailed than it would have been with only a paper map.

The iPad works well for many AML needs. The close of the construction season will provide valuable feedback from AML's construction inspector as to the successes and failings of iPad use in the field.

The iPad itself ranges from \$629 to \$829. GIS Pro is the GIS option that AML is currently using. It has a \$299.99 cost per user. If subscribing to the cloud is not a viable option (security or cost concerns), then GIS Pro is a nice alternative. It provides open source base maps, caching and offline capability. Data is stored locally through a simple import (shapefiles, KML/KMZ).

AML iPads also have the free ArcGIS app installed. It integrates nicely with ArcGIS Online (ESRI's cloud) and offers easy access to a collaboration of maps. AML participated in the beta of ArcGIS Online, but currently does not have a paid subscription. A 30-day free trial subscription is available (5 users). The subscription costs start at \$2,500/year (5 users). Expect the ArcGIS app for iPad to improve greatly over the next year adding offline functionality and full editing capability.

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