Utah Department of Transportation (UDOT)
UPLAN

Background

UDOT's UPLAN, developed in 2009, is a collaborative, web-based tool that supports decision-making, mapping, information analysis, and planning and project development. The tool serves as a "one-stop shop" for UDOT staff, partner agencies, and the public to upload, manage, and share a wide variety of geospatial data. The latest version of UPLAN, implemented in 2012, uses an ESRI ArcGIS Online, cloud-based platform. UPLAN is available at http://uplan.maps.arcgis.com/home/.

Benefits and Evaluation

To date, UDOT staff members have not had substantial conversations about developing formal performance measures to evaluate UPLAN. UDOT believes it is still too early in the tool's development process to do so. However, UDOT has informally collected a significant amount of anecdotal evidence, along with some quantitative evidence, to assess the tool's effectiveness. Overall, UDOT believes that use of UPLAN has led to a number of benefits for the agency and its partners:

- **Improved data accessibility, quality, and information sharing**. UPLAN allows users to spatially enable information that might have previously existed only in spreadsheet or tabular format. Users can also view multiple datasets on customized maps in UPLAN. These functionalities improve communication within UDOT and among UDOT and regional and State agencies. As a "one-stop shop," UPLAN makes accessing data more convenient for users. Finally, UPLAN allows users to more easily update information than previously possible and to better identify and resolve data quality issues.

- **Strengthened collaboration and partnerships**. Using UPLAN, users can collaborate more effectively than before, as the tool provides access to information via a common geospatial format. Working with the American Association of State Highway and Transportation Officials (AASHTO), UDOT staff formed a Technology Implementation Group (TIG) to assist 12 States in developing cloud-based tools similar to UPLAN. This has led to new partnerships between UDOT and the other TIG States.

  Furthermore, in the past, there was no easy way for UDOT and utility companies to share information about projects until construction began. This sometimes led to misunderstandings between UDOT and the companies. Using UPLAN, utility companies can now view data for transportation projects in the planning stages to identify potential effects on utility resources. Conflicts can be resolved earlier in project development, saving time and costs. In addition, UPLAN has helped UDOT develop a better relationship with the Utah Department of Wildlife Resources (DWR). Using the tool, UDOT can share more detailed project information than previously possible with DWR, allowing for more robust DWR feedback and facilitating more informed discussions between agencies.

- **Streamlined project development and delivery**. UDOT believes that UPLAN is "changing the dialogue around project delivery." In general, the tool supports streamlining in making information more easily accessible and allowing for more robust analyses. Users can more quickly generate reports and maps to examine how a proposed or planned transportation project might impact natural resources. UDOT also developed a Planning and Environmental Linkages (PEL) tool for use with UPLAN, which assists with developing categorical exclusions (CE) and related analyses (utility companies have started to use the PEL tool to support their own alignment work).

  Prior to the development of UPLAN, planners spent many hours completing a single CE to submit to the FHWA Division Office. Using the PEL tool in concert with UPLAN, planners can create and submit a CE within several minutes. This report now costs approximately $1,000 to create versus roughly $50,000 without PEL and UPLAN. Additionally, planners can assess project alternatives

and impacts within 30 minutes or less. In the past, this analysis would require searching for relevant data from a variety of sources, which could take days or weeks.

- **Focused use of resources**. The initial version of UPLAN was developed using customized code; maintaining the code and the tool's data required a significant amount of time and level of effort from UDOT staff. When UPLAN transitioned to a cloud-based platform, responsibility for data maintenance also transitioned to individual data owners. Individuals can now upload information when and from where they choose. Eliminating the need for UDOT staff to collect data and perform updates has led to time- and cost-savings. UDOT staff can now focus their time on more strategic tasks such as maximizing the tool's functionality.

  UPLAN has also supported more focused use of resources through improved investment decision-making. For example, information in the Utah Statewide Transportation Improvement Program (STIP) was previously stored in a hard-copy format, making it difficult for UDOT staff to quickly assess information on funding priorities. UPLAN has made STIP data more broadly accessible and easier to update, helping staff make more informed investment decisions.

  Prior to adopting a cloud-based platform for the tool, staff working on UPLAN spent approximately 80 percent of their time on data management and maintenance. Now, staff spend a few hours per week (about 20 percent of their time) on these tasks.

Resources:
- UPlan - http://uplan.maps.arcgis.com/home/
- February 2012 GIS in Transportation webcast - www.gis.fhwa.dot.gov/webcast13_uplan.asp
- UPlan Summary (by the UDOT Planning Network) - http://onlinepubs.trb.org/onlinepubs/conferences/2012/MakingProgress/casestudyutah.pdf
- 2012 ESRI International User Conference: UPlan Demo - http://tig.transportation.org/Documents/UPlan/Esri_UC12_UDOTv2_bg480p-QuickTime_H264.mov
- AASHTO TIG - http://tig.transportation.org/Pages/UPlan.aspx