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GIS SPECIAL

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## 20 Most Promising GIS Solution Providers 2016

Today the role of geographical information systems (GIS) is no longer restricted to the sharing location information between stakeholders. It enables elaborate scanning mechanisms and physical overlay of maps on top of each other to generate reports. With the ubiquity of internet, the access to data for interpretation and planning of resources is aiding companies to arrive at decisions based on analysis of asset, climatic conditions, and natural resources.

The visible and easy-to-use geospatial technology such as Google Maps, alongside location based services on smartphones and tablets, and mapping solutions to record conditions of physical assets are greatly contributing to increase of GIS technology market. The need for predictive analytics tools, visualization, high-definition imagery is driving solution providers to design and create solutions with functionalities that extend beyond conventional mapping systems.

The focus of GIS has expanded from descriptive inventories to entirely new applications involving prescriptive analysis. In this transition, map analysis has become more quantitative and this wealth of new processing capabilities provides an opportunity to address complex spatial issues in entirely new ways.

As a prelude to CIO Review's 20 Most Promising GIS Solution Providers 2016, our selection panel comprising of CTOs, CIOs, analysts, and the editorial board evaluated the capabilities of several vendors who support core business processes and are at the forefront of tackling challenges in the GIS Technologies arena.

To help organizations find the best-of-breed GIS solutions that suit their business needs, CIOReview presents the 20 most promising GIS Solution Providers 2016 for exhibiting vast knowledge and in-depth expertise in this domain.



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**Company:**  
CivilGeo

**Description:**  
Develops advanced engineering and environmental modeling software for civil engineers worldwide

**Key Person:**  
Chris Maeder  
Engineering Director

**Website:**  
[civilgeo.com](http://civilgeo.com)

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# CivilGEO

## Automating Mapping with GeoHECRAS

The variety and abundance of solutions in the current GIS landscape makes it difficult for civil engineering companies to choose an appropriate software package to fulfill their requirements. “CIOs are generally locked into one or two vendors providing GIS platforms,” begins Chris Maeder, Engineering Director at CivilGEO. The GIS platforms available in the market today are generalized and require training for the employees to operate seamlessly. Modeling geographic terrains with the help of a general GIS platform involves an immense amount of manual work to complete civil engineering tasks. On the other hand, many powerful but costly platforms demand add-ons and extensions, post deployment. For automating the tedious workflow cost-effectively, CivilGEO, an engineering and environmental modeling tool developer, provides GeoHECRAS, a GIS platform that eliminates manual work by automating the collection of data from disparate sources like GIS, CAD, and survey data.

“**A civil engineer can run the analysis of the HEC-RAS model and present the end result in the GIS environment**”

With the collected information, GeoHECRAS uses Building Information Modeling (BIM) to efficiently construct Army Corps HEC-RAS models. “From a CIOs perspective, there is no requirement for any kind of training before using the platform, unlike other products,” says Maeder. “GeoHECRAS takes the data and travels from the inception of an idea to a production ready model for a civil engineer.”

GeoHECRAS incorporates automated GIS mapping functions that merge data from Google, Bing, and FEMA flood maps. The solution empowers the user to develop terrain models and compute water surface profiles for steady and unsteady flow models. An engineer can define bridges, culvert roadway crossings, FEMA floodplain encroachments, inline reservoir structures and other features in the HEC-RAS model. “A civil engineer can run the analysis of the HEC-RAS model and present the end result in the GIS environment,” says Maeder. Additionally, the platform

enables the user to modify corrections made in the visualized environment with the undo and redo feature.

GeoHECRAS features polygons or orthophoto-based image processing that allows users to view the geographic environment in 3D. The image processing capability enables the software to re-project data if it is in a different coordinate system.

“If the data is not geo-referenced or not in a proper projection, the software has tools that re-project it in correct projection or align it accordingly,” says Maeder. The seamless switching between 2D and 3D viewing perspectives helps the engineer clearly identify modeling issues and make changes accordingly.

Daniel Ahn, Engineering Team Lead at Stantec, grew frustrated with the inefficient generation of flood reports using traditional tools and looked for a solution to improve work efficiencies. With GeoHECRAS, he immediately noticed an improvement in the processing speed of the HEC-RAS model. “The semi-automated method in computing the FEMA floodway has really reduced the time required to complete a floodway analysis,” says Ahn. The solution minimized the time consumed in performing post-processing, especially in floodway analysis, by 50 percent.

For staying ahead of the curve, CivilGEO works regularly with the customer to determine their needs. The company has also established satellite offices in several locations and is planning to expand geographically. CivilGEO is trying to develop software that incorporates some of the uncertainties associated with climate change and complex infrastructure. “With our innovative approach, the client will be able to address climate change in the computer simulation easily and rapidly. For designing infrastructures, clients can incorporate multiple sources of information to include in the simulation environment and hence, come up with a cost-effective design,” concludes Maeder. **CR**



Chris Maeder