

GeoSpatial Advisor™

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Calendar of Events: September

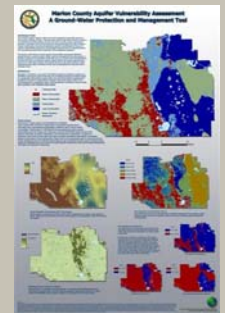
Sep. 12 - Leon County Aquifer Vulnerability Assessment (LAVA) Information Seminar, Tallahassee Room of City Hall

Sep. 25 - Leon County Aquifer Vulnerability Assessment (LAVA) Technical Training Seminar, Tallahassee Room of City Hall

Sep. 25 - Presentation on Leon County Aquifer Vulnerability Assessment (LAVA) to City of Tallahassee Energy and Environment Target Issues Committee

Marion County Aquifer Vulnerability Assessment: Marion County, Florida

In March, AGI delivered the final report and map for the **Marion County Aquifer Vulnerability Assessment**, or MCAVA. The model was an evaluation of the Floridan Aquifer System vulnerability potential to activities occurring at land surface. The model was based on water quality data combined with models of soil conductivity, thickness of aquifer confinement, and estimated or "effective" karst features of the area.



The project was undertaken primarily to guide Marion County's Clean Water Program of the Department of Transportation in enhancing ground-water protection measures. The model is also intended to supplement the county's planning group in guiding land use changes and to augment applications for land development. Some data developed for the project is being used to help prioritize areas of protection located in contributory zones of the county's springs, like Rainbow Springs.

To take advantage of the most recent data available for the project, a new model of estimated or "effective karst" was developed based on the county's LIDAR-derived digital elevation model. More modern techniques previously for estimating karst from digital elevation, and which have not been used in other similar projects, were tested and used with success in the MCAVA project. (Look for details of these karst-estimating methods in forthcoming issues of the *GeoSpatial Advisor*.) In addition, two new models of aquifer confinement were generated in a GIS for the MCAVA project. These new datasets were based on Florida Geological Survey well data and a geophysical log database that St. Johns River Water Management District is currently assembling.

If you would like to know more about the project, you can access the full project report and map at <http://adgeo.net/mcava.php>. You may also contact Alex Wood at AGI, or Gail Mowry of Marion County (gail.mowry@marioncountyfl.org.)

Aquifer Vulnerability Models: Scale of Use

Use of highly detailed input data and LIDAR-derived digital elevation models returns very resolute aquifer vulnerability maps, in projects like

Your input and feedback is very important to us: as always, if you would like to write an article or letter to be included in the *GeoSpatial Advisor*, email your piece to Alex Wood at awood@adgeo.net for consideration.

(AGI reserves the right to excerpt, condense and/or grammatically edit your document to fit our newsletter format.)

Category of Links

Check out AGI's updated map gallery:
<http://adgeo.net/mapgallery.php>

Seven Hills Regional Users Group of GIS 2007 Conference is coming up in November:
<http://www.shrug-gis.info/workshop07/>

Contact Us

Website:

<http://www.adgeo.net>

email:

awood@adgeo.net

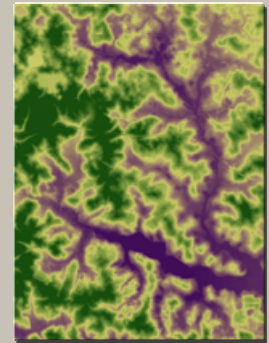
2441 Monticello Drive
Suite 600
Tallahassee, FL 32303
850/580-4GIS



MCAVA. Resolute features of these datasets are reflections of real data used as input; however, final maps of aquifer vulnerability projects should not be applied to very large scales such as to compare adjacent small parcels. We are aware, though, of the need for these maps to be applied to regulation and decision-making at the parcel scale.

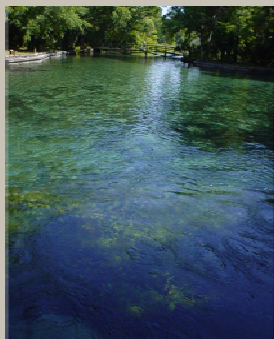
Aquifer vulnerability model output is essentially as accurate as the most detailed input layer, and as inaccurate as the least detailed layer. Wells used to define aquifer confinement for example can represent an area on the order of a few square miles; on the other hand, polygons representing soils data can represent an area as small as a couple thousand square feet. Widespread use of GIS enables end users of these models to zoom to many different scales, so it is difficult to recommend an exact scale as one would with a static, paper map.

In past projects, we have recommended that local scale projects be used for implementation on the order of greater than 0.75 mi², or an area of approximately 480 acres or greater. In other words, when applying model results to compare vulnerability zones, application of model results using a view window of approximately 4,500-ft x 4,500-ft is recommended.



Every raster cell of an aquifer vulnerability assessment has significance per the model input. Bearing in mind that aquifer vulnerability assessments are predictive models, no assumptions are made that all input layers are accurate, precise or complete at a single-raster cell scale. Ultimately, accuracy of the maps does not allow for evaluation of aquifer vulnerability at a specific parcel or site location. It is the responsibility of the end users of aquifer vulnerability assessments to determine specific and appropriate applications of these maps. In no instance should use of an aquifer vulnerability assessment substitute for a detailed, site-specific hydrogeological analysis.

Technical Advisory Committees



Each of our aquifer vulnerability projects is supported by a technical advisory committee. These committee members are composed of professionals in the environmental, planning, resource management, and geology fields. They are invited, based on their expertise, to provide feedback and review on important project stages and documents and agree to take time from their already full work schedules to participate in these projects.

These professionals' participation greatly strengthens the utility, defensibility and exposure of the model results. Without them, the projects would not be as useful as they are, and we at AGI would like to express our deep gratitude for their continued participation. Thank you for your time and feedback, we look forward to continuing to have your guidance on existing and future projects!

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