

The following was presented at DMT'11  
(May 22-25, 2011).

The contents are provisional and will be  
superseded by a paper in the  
DMT'11 Proceedings.

See also earlier Proceedings (1997-2010)  
<http://ngmdb.usgs.gov/info/dmt/>

# LAYING THE FOUNDATION FOR A DYNAMIC GEOLOGIC MAP OF VIRGINIA



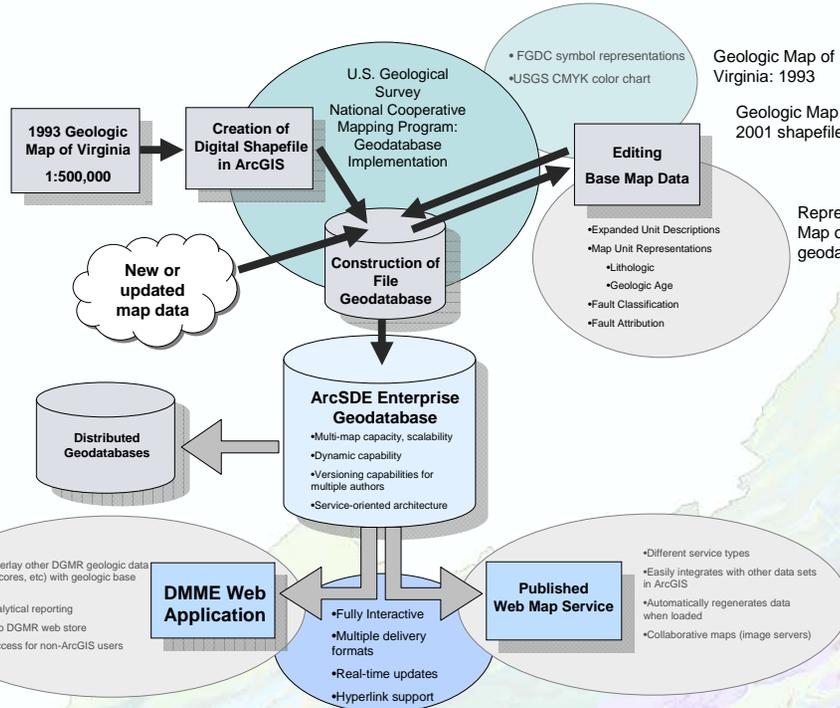
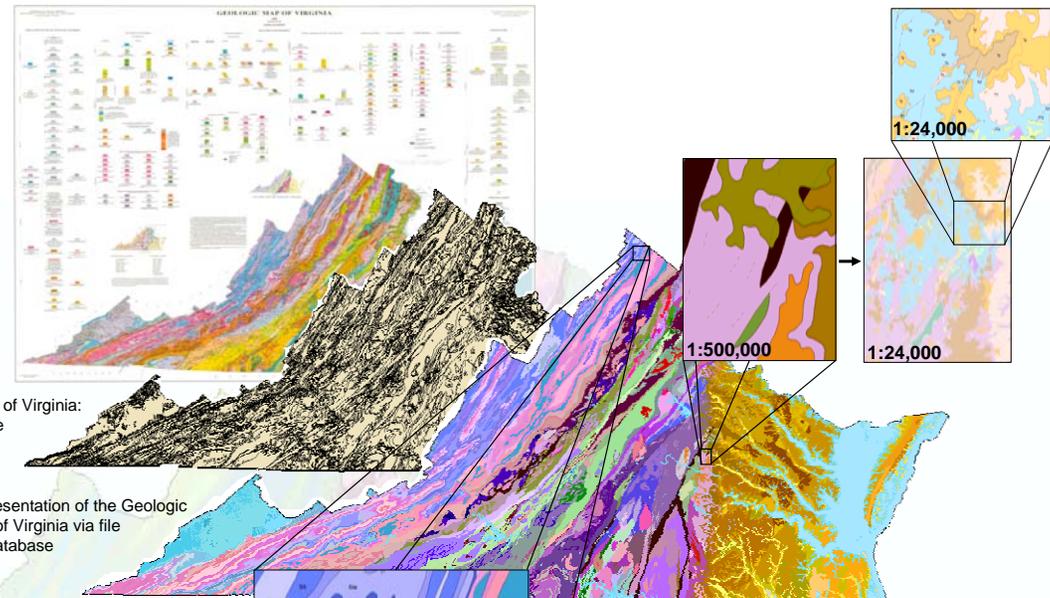
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The Virginia Division of Geology and Mineral Resources (DGMR) is taking several approaches to expand access to accurate and up-to-date geologic maps of Virginia. In 1996, DGMR began converting existing geologic maps to digital format in order to accommodate increased demands for digital data. This effort has been supported by the STATEMAP program since 2003. In 2009, DGMR began migrating geologic maps of multiple scales and generations to a multi-map enterprise ArcSDE geodatabase. This includes transferring the 1993 Geologic Map of Virginia from shapefile format to a geodatabase format based on the U.S.G.S National Cooperative Mapping Program's data model. This geodatabase design includes both feature-level metadata and symbology. The integration of digital mapping, at a variety of scales within our state geologic map, will allow customers to find the most accurate and current digital geologic data for a given area.

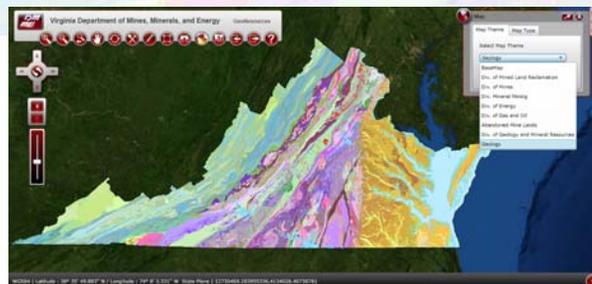
DGMR will also begin providing access to georeferenced images of published geologic maps in a web map service utilizing ESRI's ArcGIS Image Server. This allows ready access to all published mapping and gives users the opportunity to compare different geologic interpretations reflected on geologic maps from different eras of mapping.

By enabling the geodatabase design model to interact with our online store and map download site, DGMR will be able to distribute geologic maps and information in a variety of standard and flexible formats. Access to these data products will be made available through the Department of Mines, Minerals and Energy's web map application, spatial data download site and published web map services.



Above: Flow chart displays process for building DGMR's dynamic geologic map.

Right: DMME's web application with "geology" layer activated.



Above: Evolution of the 1993 Geologic Map of Virginia from hard copy to fully interactive web map service. The map service will have a scalability function that will allow users to view map data at all available scales. Users will find a hypertext link to map products in DGMR's web store available in the attribute table of both services.

**Acknowledgments** David B. Spears, Matthew J. Heller, Chelsea Feeney, and David R. Soller.

**References** Campbell, Elizabeth V. M., 2008, Evolution of Virginia's Geologic Maps: Virginia Division of Geology and Mineral Resources, Open-File Report 08-03.

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Rader, E.K., McDowell, R.C., Gathright, T. M., and Orndorff, R.C., 2001, Geologic map of the Virginia portion of the Winchester 30 x 60 minutes quadrangle, Virginia Division of Mineral Resources Publication 161.

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The Department of Mines, Minerals and Energy's information technology staff is working to publish both the Web Application and the Virginia Geologic Web Map Service. These services are currently only available internally for review and editing. DGMR hopes to allow public access within the next few months.