Abstract: Upper Susquehanna – Lackawanna River Watershed (USL) Web Mapping Testbed Pilot Project

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In the Spring of 2000, The US Army Engineer Research and Development Center initiated, sponsored, and participated in a pilot project to implement interoperable, web-based mapping and planning prototypes created by multiple vendors. The project, centered on but not limited to the Upper Susquehanna - Lackawanna River Watershed (USL) in Pennsylvania, remains on-line and accessible today supporting flood control and environmental restoration projects.

Framework

These prototypes discover, display, and disseminate geospatial information based on interoperable OpenGIS Consortium (OGC) web mapping technologies that have broad acceptance among geospatial vendors. The project tested advanced concepts, such as user profiles, for delivering geospatial information related to local and regional environmental concerns via the web. Data residing in a variety of formats and projection/datum combinations on servers worldwide is accessed, re-projected on the fly, and presented via an Internet browser through tools developed by multiple vendors using open, interoperable OGC protocols. Network efficiency, robustness considerations, and integration of non-map services were tested and interoperable web-based geo-processing services, such as dynamically generated stream level graphs were generated. Finally, the project included the capability to encode spatio-temporal objects in XML using the Geography Markup Language and supported development of new draft OGC interface specifications for on-line services.

Regional Coordination, Visualization, and Interoperable Web Mapping

The project demonstrated how locally independent environmental concerns may be regionally coordinated through the web. Mapping presents interactions among different systems in the watershed graphically. Web mapping adds the power of the Internet and the Web browser to the visual information distribution process, allowing communities to distribute their map views on-line. Interoperable web mapping increases the capability to visualize system interactions in that it dynamically integrates multiple on-line sources into one map image or a series of map images and visually communicates regional interactions. This technology assists regional environmental coordination.