

CREATING A COMPREHENSIVE REGIONAL MAP – PHASE II

Problem:

In May 2002 the report **CREATING A SINGLE MAP**, which was financed by the Hewlett Foundation, was released. Public response to the published report has been extremely positive. Improvements are needed and recommendations include development of web-based delivery of products, more detailed data for some areas and inclusion of some geographic areas that were not included in the original report. These three components are extremely important to regional water planners and their efforts in addressing the water needs of the Paso del Norte region.

Purpose

The purpose of this phase is to add additional data identified in the first report and in the public review process, and to make the map report available from a website. This project will aid in the continued development and creation of a regional geographic information system (GIS) to support regional water planning in the Paso del Norte. In addition to the improvement in resolution of the framework or basemap data components, which are: geodetic control, orthoimagery, elevation, transportation, hydrography, governmental units, and cadastral information, this project will gather additional information such as high-resolution (1:24K) soil maps and surface geology maps (1:100K). The initial project combined the framework data sets at a low resolution, in order to complete a seamless map for New Mexico, Texas, and Chihuahua. However, regional water planners require higher resolution data for some areas of the Paso del Norte, in particular, the hydrography (surface water system) layer, the transportation (roads) layer, the soil layer, and surface geology. Moreover, the regional water planners requested that the geographic extent be extended to above Elephant Butte Reservoir.

Updating datasets created in the initial project will be beneficial in various ways. First, widespread use of the map, at a greater resolution, in the water management, analysis, and action communities would remind participants in Las Cruces, El Paso and Ciudad Juárez of the *regional* character of water in Paso del Norte, rather than the more common partial perspectives derived from county, municipal, state, or national maps. In this sense the map would help create a mental infrastructure promoting greater contemplation of regional solutions - a major goal of the Water Task Force within the overall region-building context.

Second, the process of creating a comprehensive regional map will itself stimulate and encourage continued cross-border cooperation within the framework of the Paso del Norte Water Task Force. We have designed this as a partnership between U.S. and Mexico specialists interested in water issues. Each is participating now in the Water Task Force support group, and the map and databases will clearly be labeled as a *regional*, cooperative product, available for widespread distribution. The creation of this map will almost certainly provide opportunities for additional technology transfer and increased learning about each other's systems.

Third, Water Task Force, government, NGO, and other participants interested in better regional water planning will utilize the more comprehensive map. To further expand the use and accessibility of the comprehensive map databases, a web-based display and delivery system will

be constructed. The web-based system will utilize ESRI products, ArcIMS[®] (Arc Internet Map Server) and ArcGIS[®], to display the various map layers and data sites.

Approach

This project would involve the continued cooperation of GIS professionals at two of the major universities in the region. These professionals have available to them a number of resources and talents including critical components of data, hardware, software, and support staff. Cooperation between the two universities will allow for the gathering of required data and natural resource information for the purpose of creating a regional GIS system. Ideally the system will consist of a number of spatially complete and accurate databases that represent the basic geography of the Paso del Norte region.

Project team members will work closely with regional planners to identify and incorporate other useful information. As the combined products are developed, they will be shared broadly, with each of the participating units making them available on their websites. The websites will also display the data as well as deliver the data in a common GIS format. The final GIS databases will be displayed in an interactive web page system that will be hosted on the New Mexico Water Resources Research Institute and the Centro de Información Geográfica web servers.