

Meeting Summary
PdN Watershed Council -
11/30/01 Coordinated Database Committee Meeting

Attendees:

1) John Kennedy talked about a current project he is involved in which is being funded by a \$75,000 grant from the Hewlett Foundation to develop a GIS database for the Paso del Norte Region, including Cd. Juarez. The project started last January and is a cooperative project which includes UTEP, NMSU, and Cd. Juarez. The GIS database currently includes several GIS layers showing the hydrology (streams, arroyos, rivers) of the entire region, as well as other layers showing the transportation system and also surface relief. Included in the hydrology layer are the USGS river gauging stations and well monitoring sites. John presented three printed maps as examples of these layers.

2) John Kennedy mentioned that the above project includes a salinity database which includes water flow and water quality information in much of the region. This database can be used by the Database Committee as a starting database/GIS layer. The Committee agreed that this was an excellent idea. Additional data can be added to this database as it becomes available. He added that in his opinion the biggest roadblock to getting the irrigation districts and other agencies who might contribute data to the Coordinated Database is getting someone to work with these agencies and assist them in assembling and formatting their databases in such a manner that it can be queried by the Coordinated Database website. He believes that Mr. Aldouri can hire a grad student to provide this assistance as part of the Coordinated Database project.

3) It was agreed that the most suitable location for the Coordinated Database server would be at PACES' facilities. Mr. Raed Aldouri agreed to have PACES house set up the server and do most of the project work. He also agreed to draft a proposal for the Coordinated Database project, and included a cost estimate for the project, including the purchase of a server and the software required to set up the initial website. It was agreed that the Coordinated GIS database should start as a simple demonstration project with basic hydrography and transportation layers, and using the salinity database previously mentioned, but also including gauging station data that is readily available. Once the website is operational and working properly, additional gauging stations and associated databases can be added, including links to existing web SCADA sites.

Following is an outline put together by Jose Granillo of some of the technical and funding issues discussed during the meeting:

Discussion Issues

Need website to provide historical data for regional gauging stations

Regional Effort – Have a server that houses water quality data from stream, canal, drains, laterals, waste ways, and arroyos flowing into the Rio Grande.

Current map data available:

1:2400 data on watershed linear of the El Paso Del Norte Region ---> NMSU/UTEP

1:100000 ---> UTEP

The data sources to fit the point data sources in both scales are accurate to the National Mapping Standards.

Supporting Data to be online

- 1:250000 DEM (Image format 10 mg)
- General Transportation ArcINFO coverage (5 mg)
- Well Locations point shapefile (1 mg)
- Gauging Stations point shapefile (2 mg)
- Hydrography line ArcINFO coverage (10 mg)

There are two different gauging stations

- 1) USGS
- 2) Proprietary gauging stations set up by local, state, and federal entities

Funding

- 1) Server (~ \$10,000.00)
- 2) ArcIMS License (\$0.00)
- 3) Maintenance (\$1,200.00 UTEP Graduate Student)

Scope of Work

- 1) Prototype in ArcGIS
 - a) Map Layers (line, point, polygon, raster)
 - b) Attributes (TDS, xyz coords, names, etc.)
 - c) Clearing house for databases
 - d) Tools and Buttons
 - e) Graphs / Charts
 - f) Web Links
 - g) Functionality
- 2) Server
 - a) Data Structure
 - b) Cost
- 3) Implement Prototype to ArcIMS
 - a) Translating ArcGIS -> ArcIMS
 - b) Functionality
 - c) Maintenance
- 4) Student Teams to GPS all gaging station locations

Meeting Summary
PdN Watershed Council -
2/19 Coordinated Database Committee meeting summary

1) Raed submitted cost estimate for 1st year of the Project. Cost is \$103,410 plus 46% OH charge, for a total of \$165,179. This costs includes \$15,000 for hardware. A recommendation was made to obtain letters of support from Federal and State agencies that will likely be willing to contribute data to the website and to present these letters to EPWU along with the Proposal. Costs for subsequent years are estimated at about \$35,000, mainly for paying a part-time webmaster that will maintain server and website, and perform quality control activities, and generally serve as the contact person and manager for the website. Ed Fierro will forward the cost estimate to John Burkstaller for his review.

2) Srini recommended, based on his experience with the COE, that the website use the database replication (i.e. data warehouse) method instead of transparent portal (i.e. querying of remote databases via internet) method. This method has several advantages: the replication process can be automated using FTP protocol; it is technically simpler to implement and maintain than the portal method, since it basically involves periodically copying of remote databases at the remote sites and reformatting of the data as required; it is more reliable, since it is less susceptible to internet service interruptions since data is last copy of data is available on project server at all times; it may be more acceptable to irrigation districts, since the database they want to share can be isolated and no querying or other access to their computer network is required. The main disadvantages are required storage of large amounts of data locally (higher storage requirements), and periodic transmittal of entire databases over the internet - this may require fast connections to remote servers. Committee agreed that database replication may be the better option.

3) Phasing of the Project - Project will be split into 3 phases. Phase I will include purchasing and setting up the server and software and setting up the website with a GIS map layer showing USGS gauging stations tied to the USGS salinity database, which will be replicated on the server. Phase I will also include obtaining an inventory of existing water flow and water quality databases available from regional water agencies and water planning entities, and drafting a standard MOU document to be used to obtain written commitment from entities who agree to share their data. Phase II will entail sending an expert paid by the Project to entities willing to share their data to set up the data sharing process and connections. It's possible that the Project will offer to pay the hardware/software costs incurred by the entities for participation in the Project. Phase III will include attempts to include the District's data, and to implement the real-time monitoring aspects of the Project.

4) Some politically sensitive section of the Proposal will be deleted, and clarifications will also be done based on Chris Brown's comments. Raed was also requested to prepare

a detailed work breakdown structure showing the specific tasks to be performed under each phase, as well as a simple project schedule showing each task's start and finish times.

5) Issues raised above will be discussed at the next Watershed Council meeting on 2/21.