**GEO-TEX SPATIAL SOLUTIONS**

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TO: Ms. Cinde Thomas-Jimenez, Education Coordinator

 Guadalupe-Blanco River Authority (GBRA)

FROM: Geo-Tex Spatial Solutions

DATE: April 8, 2009

SUBJECT: Guadalupe River Watershed Web Mapping Project – Progress Report

Dear Ms. Thomas-Jimenez:

This letter is to inform you of the progress that has been made on the Guadalupe River Watershed Web Mapping Project that you requested from our team. As per our original proposal for the project, we have begun work to create maps which will allow users to view, access, and download data regarding the watersheds located within the GBRA’s 10-country statutory district.

Since your acceptance of our proposal, our team has gathered and considered many data sources in order to obtain the most optimal data for the project. We are confident that the project is on-time and on-schedule to be completed by the delivery date of Monday, May 11, 2009. We look forward to presenting you with our final results at that time.

Sincerely,

Geo-Tex Spatial Solutions

**GUADALUPE RIVER WATERSHED WEB MAPPING PROJECT**

April 8, 2009

**INTRODUCTION**

**PROJECT DESCRIPTION**

The purpose of this report is to relate to you our progress on the Guadalupe River Watershed Web Mapping Project that we are currently in the process of creating for the GBRA.

**Purpose:** The overall purpose of this project is to create web-accessible public interest maps to be included on the GBRA’s web site. In order to produce the final product, it has been necessary to undertake a three-stage process, which includes: 1) data collection 2) assembly of collected data using GIS software (Arc-GIS), and 3) conversion of those maps into a web-GIS program – in this case Manifold- which will allow the maps to have a user-driven interface via the internet.

**Scope:** The scope of this project focuses on the 10 watersheds which feed into the Guadalupe River, and the counties with in whose boundaries the watersheds are located.

**PROGRESS OVERVIEW**

For the purposes of this progress report, work on this project can be broken down into the following time periods: 1) Work Completed, 2) Current Work, and 3) Future Work.

**Work Completed:** As of this date, we have completed 1) the Data Collection portion of the project, 2) the GIS Data Assembly Portion of the project, and 3) Revisions to the Timeline and Budget for the project.

1. Data Collection: As indicated in our proposal, the project data includes 1) data received directly from GBRA, 2) data retrieved from outside sources, and 3) data which was created by our team. The following table shows the origin of each of the three types of data used in the project:

|  |
| --- |
| **GBRA WATERSHED MAPPING PROJECT - DATA TYPE / SOURCE** |
| **GBRA Data:** | GIS Watershed Data from GBRA’s 2007 Basin Highlights Report (CD) |
|  **Outside Data:** | GIS Data from USGS, TX Parks & Wildlife, Edwards Aquifer Authority, National Atlas, Federal Emergency Management Agency (FEMA) |
|  **Created Data:** | Raw data (ex: latitude & longitude coordinates) which had to be assigned spatial qualities/attributes in order to be usable in a GIS. |

All of the data was subjected to an extensive review process before it was determined suitable for use. This includes instances when we located “similar” data (ex: boat ramp data) from multiple sources. During this review process, all data was closely examined by our team in order to determine the best documented and most accurate data for the project.

1. GIS Data Assembly: As noted in our original proposal, the Data Assembly portion was scheduled to be concluded by March 11, 2009 and has two parts: 1) importing the data into GIS software (Arc-GIS ver. 9.3), and 2) creating the metadata for the project. Metadata is the internal documentation which provides support for the data and is governed by geospatial standards.

As of this writing, all data – with its appropriate metadata - has been assembled into Arc-GIS ver. 9.3, which will then allow us to then import the newly created maps into the web-GIS program Manifold.

1. Revisions to Project Budget and Timeline: Following the presentation of our Proposal on Monday, March 1, 2009, it was agreed that the original Budget for the project was too low. As requested, we have created a revised the Budget for the project:

|  |
| --- |
| **WATERSHED MAPPING PROJECT BUDGET (REVISED)** |
| **DATA COLLECTION** |  |  |  |
|  Consultants | Total Hours  | (10 Hrs/Week x 5 Weeks x 2 Consultants) | 100 Hrs @ |  |  |
|  | Rate of Pay |  | $15.00/Hr |  |  |
|  | Total Consultant Pay | $1,500 |  |
|  |  |  |  |  |  |
|  Assistant  | Total Hours | (14 Hrs / Week x 5 Weeks x 1 Asst. Mgr.) | 70 Hrs @ |  |  |
|  Manager | Rate of Pay |  |  $40.00/Hr |  |  |
|  | Total Asst Mgr. Pay | $2,800 |  |
|  |  |  |  |  |  |
|  Project  | Total Hours | (14 Hrs/Week x 5 Weeks x 1 Proj. Mgr.) | 70 Hrs@ |  |  |
|  Manager | Rate of Pay |  |  $50.00/Hr |  |  |
|  |  |  | $3,500 |  |
|  |  | **DATA COLLECTION TOTAL:** |  | **$7,800** |
|  |  |  |  |  |  |
| **DATA ASSEMBLY & WEB-GIS(MANIFOLD) ASSEMBLY** |  |  |  |
|  Consultants | Total Hours  | (14 Hrs/Week x 7 Weeks x 2 Consultants) | 196 Hrs@ |  |  |
|  | Rate of Pay |  |  $40.00/Hr |  |  |
|  | Total Consultant Pay | $7,840 |  |
|  |  |  |  |  |  |
|  Assistant | Total Hours | (14 Hrs / Week x 7 Weeks x 1 Asst. Mgr.) | 98 Hrs@  |  |  |
|  Manager | Rate of Pay |  |  $40.00/Hr |  |  |
|  | Total Asst Mgr. Pay | $3,920 |  |
|  |  |  |  |  |  |
|  Project | Total Hours | (14 Hrs/Week x 7 Weeks x 1 Project Mgr.) | 98 Hrs@ |  |  |
|  Manager | Rate of Pay |  |  $50.00/Hr |  |  |
|  |  |  | $4,900 |  |
|  |  | **DATA / WEB GIS ASSEMBLY TOTAL:** |  | **$16,660** |
|  |  |  |  |  |  |
| **EQUIPMENT COSTS** | N/A (Provided by Texas State) | N/A | $0 |  |
|  |  |  |  |  |  |
| **DATA** |  | Purchased Data  | $0.00 | $0 |  |
|  |  |  |  |  |  |
| **EXPENSES** |  | None | $0.00 | $0 |  |
|  |  |  |  |  |  |
|  | **PROJECT TOTAL:** | **$25,460** |
|  |  |  |  |  |  |

It was it was also necessary to revise the project Timeline as a result of unforeseen delays during the Data Collection process. The revised Timeline below reflects these changes and shows the current and correct dates for the project.



**Work In-Progress**: We are currently working on 1) the Data Assembly (Arc-GIS) portion of the project, and 2) the Web Assembly (Manifold) Portion of the project. Work with these two software programs will be nearly synonymous as we move forward and into the final stages of the project.

1. Data Assembly (Arc-GIS): Currently we are utilizing Arc-GIS to create the final map features, which will then be imported into the Web GIS software (Manifold).

1. Web Assembly (Manifold): We are currently in the early stages of pulling the maps over to see how they perform. Over the next few weeks, we will be working almost exclusively with Manifold to locate bugs, optimize user performance, and increase page downloading times. This will include testing from various remote computers in order to achieve real-time reactions to the software and maps.

**Future Work:** Future work for the project includes 1) Finalizing the Arc-GIS Maps, 2) Finalizing the Web-GIS (Manifold) Maps, 3) Documenting the Remaining Data, 4) Creating and Publishing a Web Site, and 5) Preparing the Final Deliverables.

1. Finalizing Arc-GIS Maps: As Arc-GIS maps form the foundation of the Web-GIS (Manifold) maps, it is expected that we will encounter ‘glitches’ as we move these maps over into the Manifold software. If this occurs, it will become necessary to revisit our original Arc-GIS maps in order to optimize the interface between the two programs.
2. Finalizing Web-GIS (Manifold Maps): Preparing the final web-GIS maps is expected to take up the bulk of the remaining time for the project. During this time, it will be necessary to ‘move’ between the two programs (Arc-GIS and Manifold) as we try to optimize the performance and usability of the final Manifold maps. These adjustments will continue until we are satisfied with the results and consider the maps ready for publication on the web site.
3. Documenting Remaining Data: Once all project data is complete and finalized, all data utilized in the project will have to have its documentation (metadata) updated. This will occur as a part of finalizing the Arc-GIS maps (#1 above).
4. Creating a Web Site: As per our proposal, we will create a web site which will allow users to access the Manifold maps, GIS data created for this project, as well as static maps created for the site.
5. Preparing Final Deliverables: Finally, we will prepare and deliver a detailed Final Report, which will include a CD containing all Data, Metadata, Reports and Presentations developed. You will receive these deliverables at the time of our Final Presentation on Monday, May 11, 2009

**CHANGES TO PROPOSED PROCEDURE / METHODOLOGY**

The “Proposed Procedure and Methodology” section of our original proposal outlined the specific layers that were requested to be included in the final maps. Overall, we are pleased with the data that has been located and is being used for the project. However, it should be noted that we did run into a couple of “situations” locating what we consider to be “accurate” geospatial data regarding the Paddling Trails Data and Flood Plain Data. In the case of the paddling trails, we were able to verify accurate latitude and longitude data, from which we were able to develop and create our own layers for inclusion in the Arc-GIS software. However, after examining multiple sources for the floodplain data and comparing it to multiple Guadalupe River maps, we have serious reservations as to the appropriateness for the use of the floodplain data in the project. As this data can be easily removed, we will still include the data with our final deliverables, but will make our recommendations regarding the use of that particular data layer with our final report.

**CONCLUSION**

Overall, we are very pleased with the progress made on the project thus far. We have encountered only minimal problems with locating, analyzing and assembling the data, and are confident that the data we have selected for use is the best available. We look forward to presenting you with our final report and deliverables on Monday, May 11, 2009.

**PARTICIPATION**

Each member the Geo-Tex team plays an important role in the construction of the project as a whole. In order to streamline development of the project parts, a “partnership process” was developed which gave specific responsibilities to each team member. This team member is considered to be the ‘author’ of that project part, with each part then reviewed by all members before being included in the project. Project Manager Jennifer Zingery is responsible overseeing the project, revising the timeline and budget, and preparing the progress report. Assistant Manager Abel Avilez is responsible for helping coordinate the team, overseeing the development of the metadata for the project, and creating the PowerPoint report. GIS Consultant Katie Kunz is responsible for overseeing the creation of the Web Site and provides assistance creating the metadata for the project. GIS Consultant Aya Udagawa is responsible for creating the Arc-GIS maps, which she has begun importing into the web-GIS program Manifold.