

An ArcIMS based interactive map for SeaWorld San Antonio

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Abstract:

Newer technologies allow for organizations to broaden their horizons and be conservation friendly in unthought-of ways. I have used an aerial photograph to create a realistic map of a popular adventure park, SeaWorld San Antonio. Combining the data in ArcMap and displaying it with ArcIMS on the internet, or intranet. For an organization, this availability could benefit attendance levels in areas that are low in guest attendance and allow guests to view attractions, or programs, not well known, for a higher profit.

Keywords: SeaWorld San Antonio, ArcIMS, Park Map

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1. Introduction:

Every day at SeaWorld San Antonio, the guest count is anywhere from two hundred people on a rainy day, to up to forty thousand people. For every family, a map is needed. That could be up to thirty thousand pieces of paper a day. For a conservation friendly organization, that's a lot of paper to be wasting. I say wasting because, in the park itself, there are no recycle canisters. Therefore, every park map, tray of fish for the animals, or even receipts, thrown into the trash. To help fix this I have come up with a solution, an interactive map that guests could use instead of a paper map. This interactive map would be displayed on computers throughout the park, and also on the internet, so guests could research online, where they would like to go within the park before even entering the gates. To create this interactive map, I have used ArcMap, ArcCatalog and ArcIMS. With ArcMap and ArcCatalog, I created a personal geodatabase encompassing a raster image, and a polygon feature class. I then digitized the feature class from the raster image. I took the time to create websites for each class of building, and created hyperlinks within ArcMap, to link to the websites created. With this .mxd file, I started ArcIMS services, Administrator, and Designer. After the site was set up and displaying on the browser, I started customizing the site to better suit the organization. I will go into more detail about how I have accomplished this, the errors that occurred, and the future possibilities that I did not have the availability to complete.

2. Data Used:

To complete an interactive map of SeaWorld San Antonio I have downloaded an image file from the City of San Antonio's Interactive Remote Sensing Website through the Image Server and downloaded a six inch ECW (Enhanced Compressed Wavelet) image tile of Culebra Hill in 2005, which is the most current data available on the site. The image information is as follows:

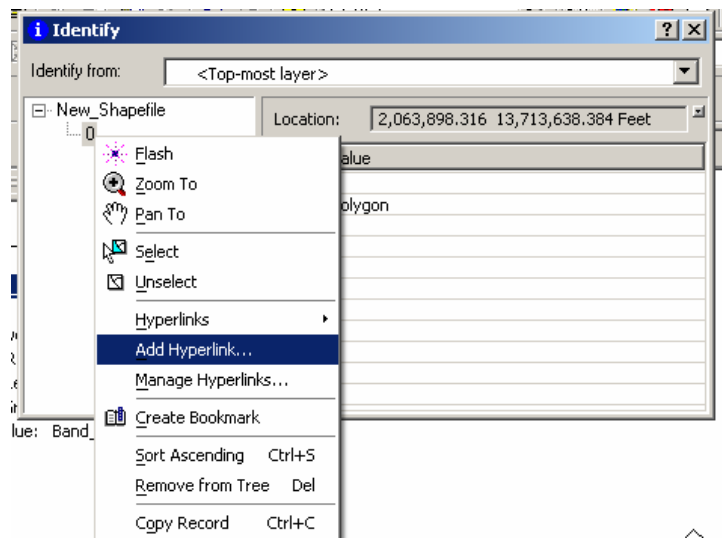
- Projection: L2TXSCF83
- Datum: NAD83
- Units: FEET
- Cell size X: 0.5
- Cell size Y: 0.5
- Width: 521640
- Height: 492480
- Bands: 3
- ECW URL:
 - ecwp://imageserver.sanantonio.gov/COSAImagery/2005/BexarCounty.ecw

3. Methods:

ArcMap:

Combining the data using ArcMap took a series of steps which I will explain. I first opened ArcMap and chose to create a new map, and opened the ECW file. Since the file contains all of the Culebra Hills area, the raster needed to be clipped to the surrounding area for SeaWorld San Antonio. I chose to clip the file by right-clicking the files data layer and exporting the data into an Image format with the extent in the current data frame and the spatial reference in the original raster dataset and chose not to load the freshly exported data into the map. I then opened ArcCatalog and located the folder with the exported raster. By right-clicking on the folder, and choosing New/Personal Geodatabase, I created a personal geodatabase for the data. I renamed the geodatabase and right-clicked the exported image and clicked export data to geodatabase. To create the feature class I right-clicked the personal geodatabase, chose New/Feature Class (single) and specified a polygon shape. I then removed the old image file, and loaded the two new geodatabase files to ArcMap. To create the polygons for the buildings, I zoomed into the area of choice, and opened the editor toolbar. Clicking on the editor drop down list, I chose “start editing.” I made sure the task was to create new feature class, and the target was the new feature class. I then started digitizing the buildings of

choice (the most commonly visited). When finished I then clicked on the editor drop down list and chose stop editing, and save edits. After creating the polygons of the buildings I started creating webpage's of the buildings based on what type of attraction it was: Animal Attractions, Restaurants, Gift Shops, etc. On completion of the webpage's I created hyperlinks with ArcMap on the feature class polygons. To do this I used the identify button, clicked a polygon and made sure the layer was the feature class. Then I right-clicked on the ID of the chosen polygon and clicked add hyperlink, and inputted the URL into the field. I did this for all the polygons in the feature class.



ArcIMS:

After completing the .mxd file I started the ArcIMS startup. First, I opened ArcIMS Services and started the services for Apache Tomcat, Apache 2, ArcIMS Application Server 9.2.0, ArcIMS Monitor 9.2.0, and ArcIMS Tasker 9.2.0. Then I opened ArcIMS Administrator and browsed for the .mxd file and changed the virtual server to ImageServerArcMap1, and named the service. After I started a service, I opened ArcIMS Designer and created a website for the service, accepting all the defaults. I then started customizing the website. I changed a few things such as:

- the copyright information:

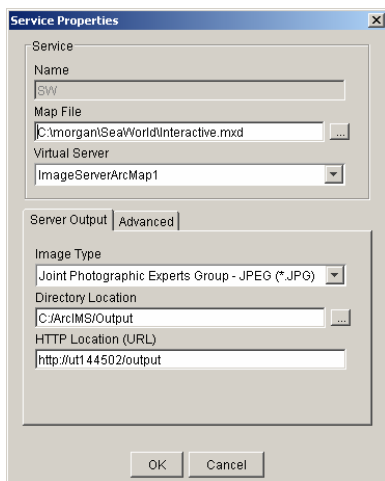
```
// Copyright blurb
var drawCopyright = true;
var CopyrightFont = "";
var CopyrightStyle = "Regular";
var CopyrightSize = "8";
var CopyrightCoords = "3 3";
var CopyrightColor = "0,0,0";
var CopyrightBackground = "True";
var CopyrightBGColor = "255,255,255";
var CopyrightGlow = "False";
var CopyrightGlowColor = "255,255,255";
var CopyrightShadow = "False";
var CopyrightShadowColor = "32,32,32";
var CurrentYear = new Date().getFullYear();
var CopyrightText = "Map generated by M. Dean UTSA EES 6543 Spring 2007";
```

- toolbars that were needed (example):

```
var usePan=true;
var usePanNorth=false;
var usePanWest=false;
var usePanEast=false;
var usePanSouth=false
```

- hyperlinks (example):

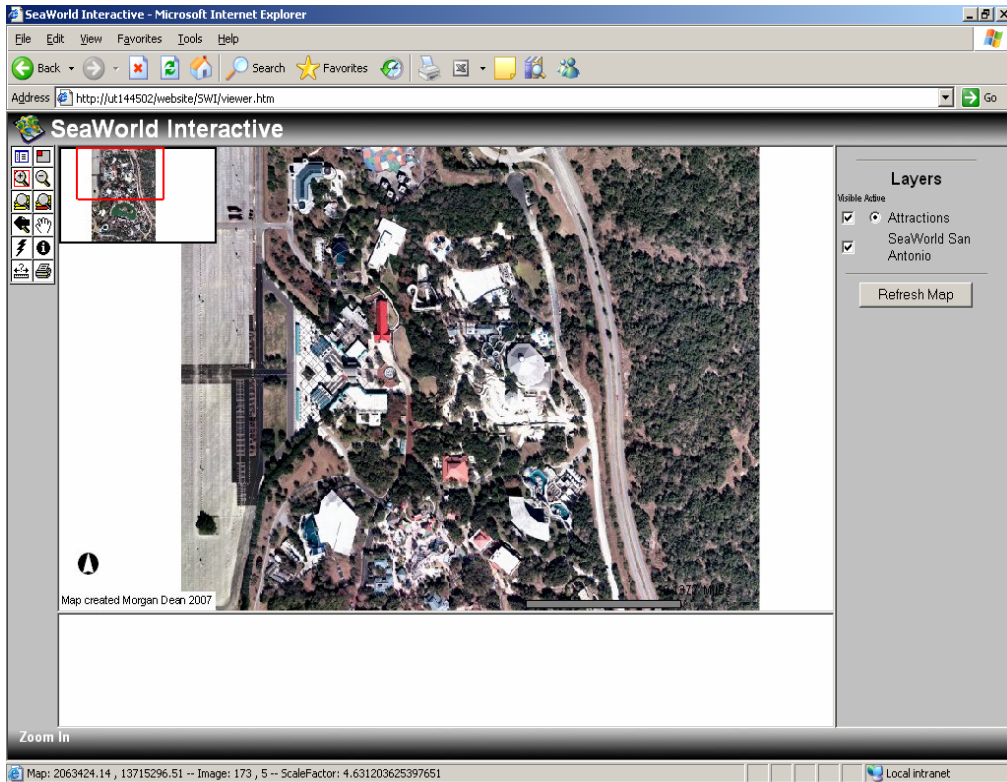
```
hyperLinkLayers[0] = "Museums";
hyperLinkFields[0] = "WEBSITE";
hyperLinkLayers[1] = "Art Galleries";
hyperLinkFields[1] = "WEBSITE";
```



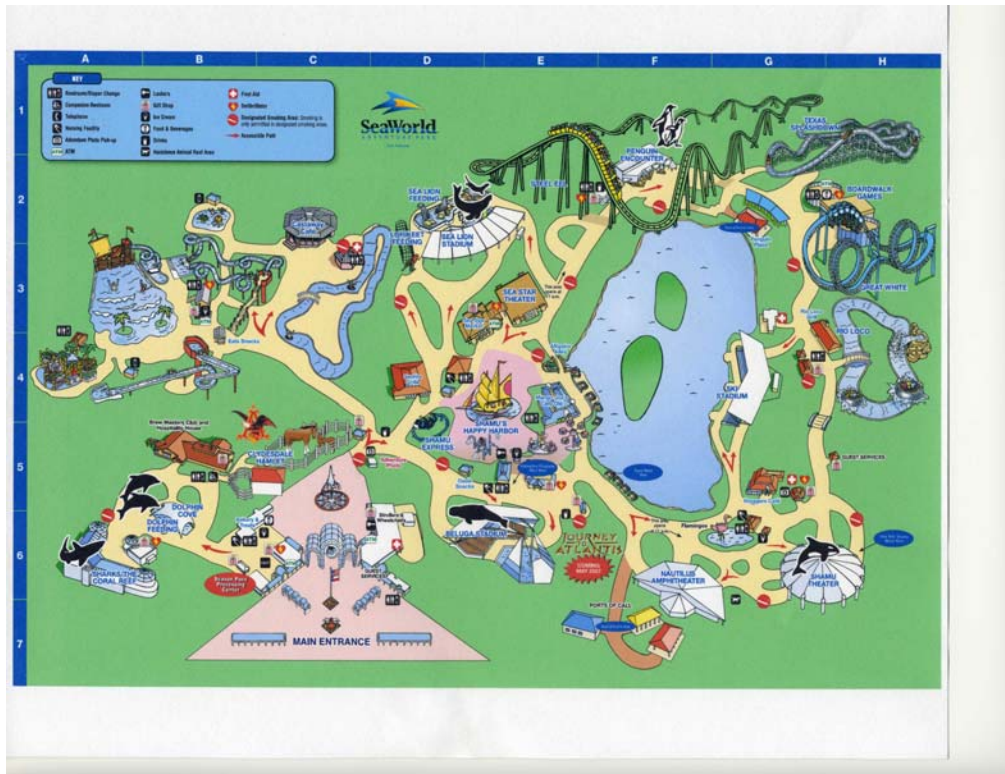
ArcIMS Administrator

4. Results:

The results are an interactive website that guests can use to find information, locations, and programs. The organization can customize the websites and hyperlinks to more efficiently work for their needs. They could also use this tool to link to restaurant menus, animal interaction programs, tours, and camps. The profit potential from this map is outstanding. The results from ArcIMS:

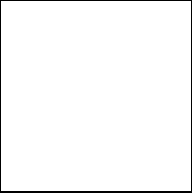


From:



5. Discussion:

During this project I had some problems with certain tools and methods. The main problem I encountered was with clipping using Data Management Tools/Raster/Clip, and Analysis Tools/Extract/Clip. The data with these tools came out black instead of the intended result. Neither of these tools would correctly work for me, which is why I chose export data. That was the only main problem I encountered with ArcMap. The other problems I encountered were with ArcIMS during customization. I had problems with the hyperlink script that you change in order for the links to display.



6. Acknowledgements:

I would like to thank SeaWorld San Antonio for allowing me to use pictures, as well as their name within this document and project. I would also like to thank the City of San Antonio's Interactive Remote Sensing Website for the images used.

7. References:

The City of San Antonio's Interactive Remote Sensing Website

<http://imageserver.sanantonio.gov/?res=1280&ver=true>