City of Elizabeth City GIS Web Application Development Team

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Abstract- GIS Web Application Development Team Geographic Information System (GIS) is a collection of computer hardware, software, and geographic data for capturing, managing, analyzing and displaying all forms of geographically referenced information. Recently, the City of Elizabeth City established its own GIS Division. This division is responsible for managing the City's geospatial data sources and providing that data content citywide. The GIS Services of the City is currently in Phase I of a multi-year utility asset-mapping program. This endeavor encompasses the entirety of the City's limits and includes all of the water, sewer, and stormwater utilities. The goal of the City is to use the completed asset mapping data to conduct studies that will improve the existing utility infrastructure to meet future growth of the City.

The project examined the efficiency and methodology of the Elizabeth City Geographical Information Systems Services and its ability to disseminate its geographical data to various City departments. The students planned, developed and implemented a solution allowed the electronic access of the geospatial data. The goal of this study was to develop a web-based application that would allow designated users to access the Geographical Information Systems data within the Public Works intranet and later provide this data to the public via the internet.

The software used to complete this project included Microsoft Web developer 2005 Express, Visual Basic and Microsoft Sequel Express 2005 to create the basis of the Web application. The GIS Web Application Development Team was able to modernize the ability of the GIS Services to deploy its geospatial data in a method that proves efficient, consistent and highly available to its users. This project will coincide with the City's utility asset mapping program and will serve as the basis for additional web development.

I. Introduction

A. Overview

This study examined the efficiency and methodology of the Elizabeth City Geographical Information Systems Services and its capability to distribute its geographical data to diverse City departments.

B. The Objective of the Project

The objective of the GIS Web Application Development Team was to create, populate and deploy a web-based application that provides a strong foundation for future GIS web development.

This allows for the modernization of the capabilities of the Elizabeth City GIS Services to provide its geospatial data content to various City departments and the public.

C. The Area of the study

The area of study was United States of America North Eastern North Carolina, Elizabeth City, North Carolina 27909. The study is consolidated to GIS services within the department of Public Works.

D. Significance of the Study

The significance of the study is that currently the GIS Services has limited resources and time that can be devoted to interactions amongst City personnel and the public. Due to the rapid growth of Elizabeth City, the demand for GIS services geospatial data is increasing. GIS services must modernize it's capabilities in providing its data both timely and efficiently.

E. Type of impact the findings have on the Elizabeth City GIS Services

The major impact for end result of this study will allow GIS services to decrease the number of daily interactions while still providing quality, efficiency and the available of this geospatial data to the masses.

II. Methodology

Step1: The team examined the current practices of GIS services.

Step 2: The team examined the analog and digital filing system of GIS services.

Step 3: Based on the findings of the filing system a SQL database was constructed and implemented.

Step 4: The design and phase I implementation of the beta website.

Step 5: Quality control of the beta website.
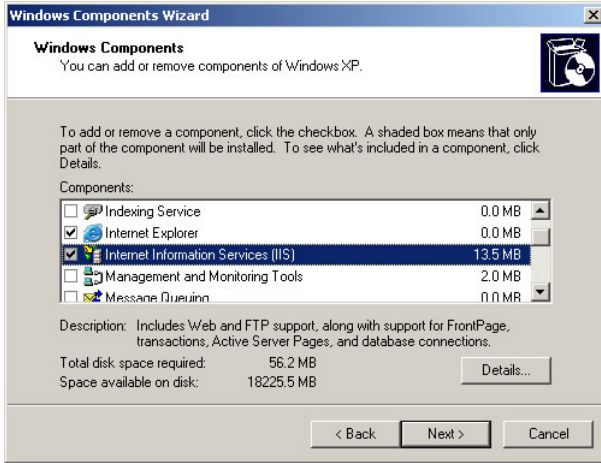
Step 6: Phase II implementation of the website.

(IIS)

(VBA)

(SQL)

A. Software

- Microsoft Internet Information Service (IIS)

- Microsoft Visual Web Developer 2005 Express Edition

- Microsoft Visual Basic for Application (VBA)

- Microsoft Sequel Query Language (SQL) 2005 Express Edition
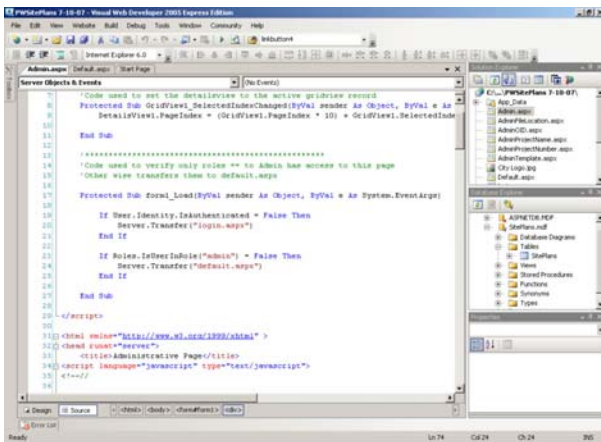
B. Hardware

- Windows Based Server
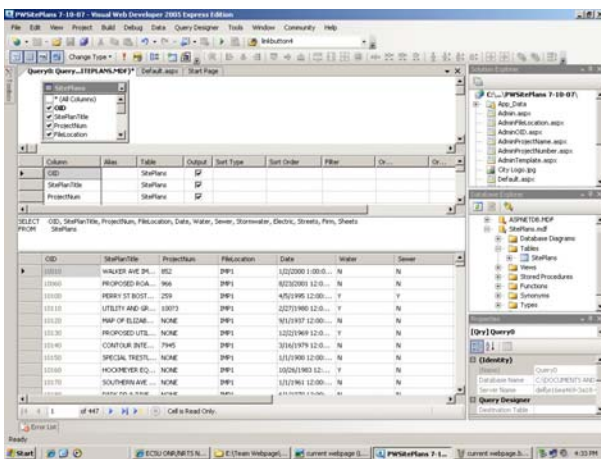-
  GIS Filing Systems

III. Results

The 2007 Web Application Development Team results included the streamlining of the interaction process of city employees and GIS services, significantly increased the efficiency of GIS services in providing its data to the masses and greatly enhanced the overall presentation of its GIS data.
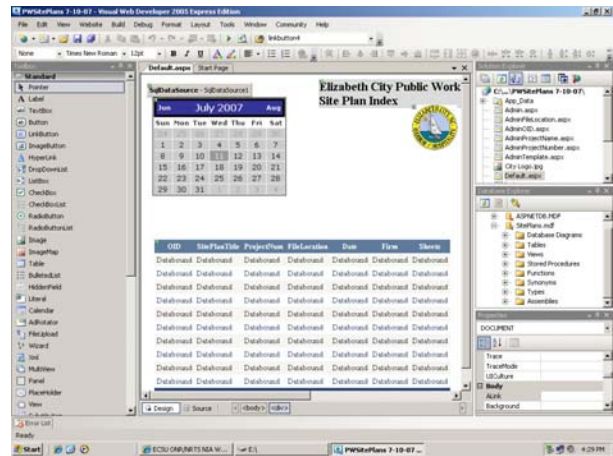

Finished GIS Data Base

IV. Conclusion

The project examined the efficiency and methodology of the Elizabeth City Geographical Information Systems Services and its ability to disseminate its geographical data to various City departments. The students planned, developed and implemented a solution allowed the electronic access of the geospatial data. This study developed a web-based application that allows designated users to access the Geographical Information Systems data within the Public Works intranet. This data will later be provided to the public via the internet.

V. Future Works

Further development of the GIS website will include:

1. Hardened website security
2. Increased website content
3. Transition from the intranet to the internet

VI. References

[1] SQL Server 2005,
http://msdn.microsoft.com/vstudio/express/sql/