

AUDIT SUMMARY

OFFICE OF THE CITY AUDITOR

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CORPORATE GEOGRAPHIC INFORMATION SYSTEMS: *A Review of Status and Accomplishments*

Report #307, August 2004

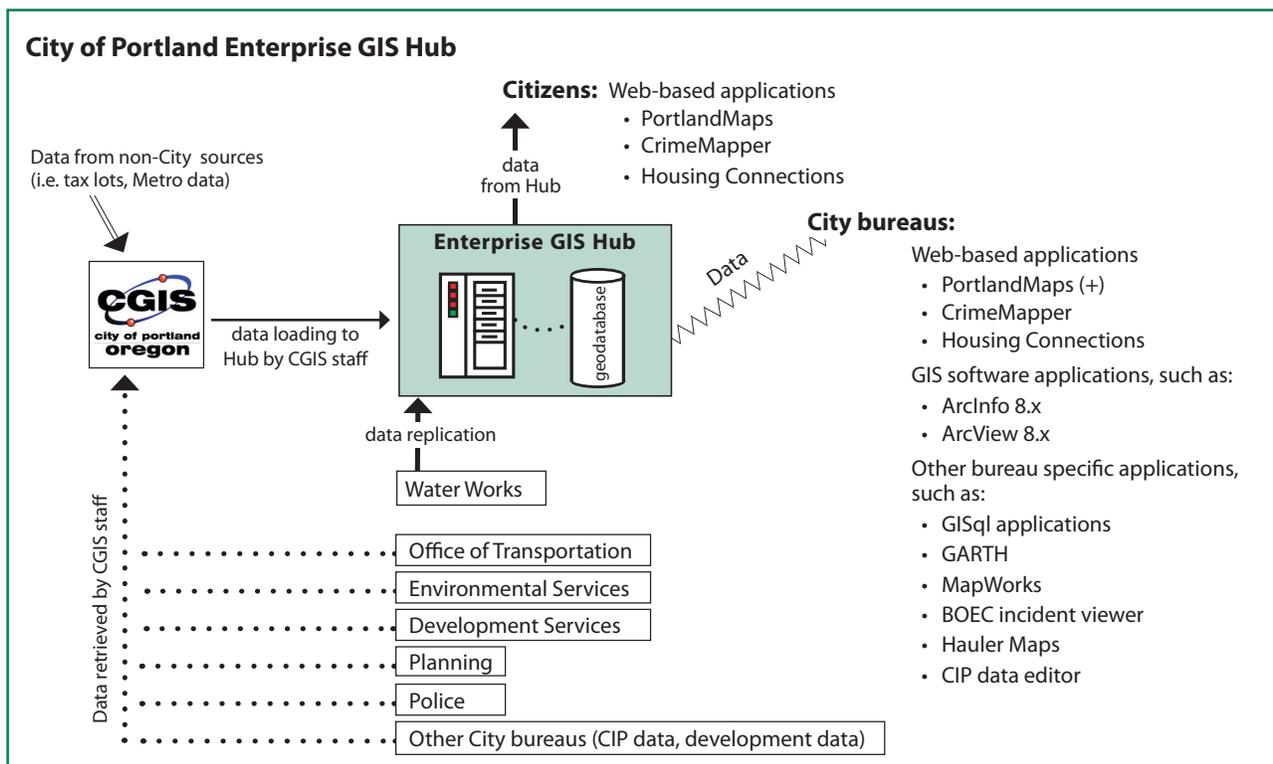
This audit provides information on the City's **Corporate Geographic Information Systems (CGIS)**, administered within the Bureau of Technology Services (BTS) of the Office of Management and Finance. The CGIS program for the City of Portland maintains a centralized system for City-wide distribution of, and access to, geographic data. As shown in the diagram below, the Enterprise GIS Hub is a mechanism which provides data to web based and GIS software applications.

The CGIS program evolved in the early 1990's as City managers recognized a need for centralized sharing and updating of frequently used geographic data such as the

City's tax lots and street network. A centralized GIS program was developed to share data and coordinate GIS efforts among City bureaus.

The objectives of our audit were to:

- provide a picture of spending and resources since the program's inception.
- describe the accomplishments of the GIS program and a status of its objectives.
- provide an overview of GIS operations in the bureaus that have primarily funded CGIS.
- analyze how CGIS communicates and reports on its accomplishments.



AUDIT RESULTS

The CGIS program has accomplished most of its original objectives including a centralized GIS distribution mechanism, and increased access for City bureaus. A cost-effective City-wide site license also provides City staff with GIS analysis tools.

The CGIS program has expanded access to geographic data in ways not envisioned in original plans. Citizens have access to data through the web-based applications PortlandMaps, CrimeMapper and Housing Connections. CGIS also developed special applications which provide data for bureau-specific purposes, such as the display of emergency incidents as they enter the Bureau of Emergency Communications' dispatch system, and the quick retrieval of zoning information for the Bureau of Development Services.

Despite these accomplishments, some important elements of the Enterprise GIS Hub are not yet completed. These include developing software applications for the Office of Transportation and Bureau of Environmental Services which will allow them to utilize the Hub for the up-keep of critical data sets. Additionally, improvements are needed to ensure Hub reliability and data currency, and to maximize Hub use by all City bureaus. Finally, improved communications between the Office of Management and Finance, Corporate GIS and the bureaus is needed in financial reporting, project prioritization, and program direction.

Over the seven years ending fiscal year 2002-2003, the CGIS program spent \$14.1 million. A funding shortfall is forecast for fiscal years 2004-2005 through 2006-2007. The primary factor for the shortfall is higher operating costs than originally planned for this period. The Office of Management and Finance plans to use reserves to support the CGIS program through these years.

CGIS program goals and accomplishments	Accomplished / in use by bureaus	Partially complete	Incomplete
Goal: Central data access and data currency			
Create a central mechanism for GIS data storage and sharing (i.e. the Enterprise GIS Hub).	✓		
Provide access to City staff from any personal computer.	✓		
Participate in and leverage existing GIS investments in region.	✓		
Provide access to the most current data layers needed by every bureau (i.e. taxlots, streets, aerial photography).	✓		
Ensure that bureaus can rely on the Hub as the most current source of GIS data.		✓	
Create an EGIS Hub that allows GIS staff to use their own GIS platforms and databases (e.g. MapInfo, Intergraph, ArcInfo).			<i>this objective abandoned Fall 1998</i>
Goal: Improved processes to maintain GIS data			
Create & implement standardized system which enables bureaus to easily transfer GIS data updates to the Hub.	✓		
Create & implement standardized maintenance environments for the cadastre and street network.		✓	
Create & implement standardized data maintenance environment for sewer lines and corresponding data.		✓	
Create & implement standardized data maintenance environment for maintaining and creating addresses.			✓
Goal: Partnership with Enterprise bureaus			
Water, BES & Transportation, the main beneficiaries, will substantially fund the program through interagencies.	✓		
Bureaus will maintain and be responsible for the accuracy of their own data.	✓		
Bureaus will share their data, unless confidential, illegal or inappropriate to do so.		✓	
Additional accomplishments outside of goals			
Citizen access to corporate GIS data and selected City specific data through web applications (i.e. PortlandMaps).	✓		
Specialized web applications for specialized citizen queries (i.e. CrimeMapper, Housing Connections).	✓		
Specialized applications for Bureau specific queries (i.e. Camen 2, Development Services and Licenses GISql xml).	✓		

RECOMMENDATIONS

We believe that there are opportunities to improve the performance and coordination of CGIS and bureau GIS efforts. Specifically, we recommend:

1. Improve communications with bureau stakeholders and other users of GIS information.
2. Develop an updated CGIS Business Plan.
3. Develop CGIS performance measures.
4. Prepare and issue annual financial information on program spending and resources.
5. Enhance the reliability and the use of the GIS Hub.

In addition to strengthening the content and reliability of the central Hub, all bureaus with GIS applications should:

6. Cooperate with CGIS to achieve a centrally shared data repository.

RESPONSES TO THE AUDIT

The Bureau of Technology Services agrees with the audit recommendations and is committed to implementing them. The Bureau indicated that its actions will take two forms: specific improvements to how Corporate GIS works with and reports to its stakeholders, and overall Bureau improvements concerning infrastructure, security and Service Level Agreement with bureaus.

The bureaus which provide the majority of funding for the program also agree with the recommendations. In particular, the Bureaus of Development Services, Environmental Services and Water Works, and the Office of Transportation called for more discussion about future program costs and funding options, and clearer project priorities and implementation timelines.

Overall, all bureaus are committed to a City-wide GIS that achieves all the benefits GIS technology provides.

The complete response letters from the Bureaus of Technology Services, Development Services, Environmental Services and Water Works, and the Office of Transportation are included in the full report. For a copy of the full report, contact the Audit Services Division (see below).

For the **complete** *Corporate Geographic Information Systems: A Review of Status and Accomplishments* report (#307, issued August 2004):

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