



SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2023.** Please include this submission form with the electronic entry. If you do not receive an email confirming receipt of your entry within 3 days of submission, please contact [Gage Harter](#).

PROGRAM INFORMATION


County: Roanoke
Program Title: GIS Activity Dashboards
Program Category: Information Technology

CONTACT INFORMATION

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SIGNATURE OF COUNTY ADMINISTRATOR OR DEPUTY/ASSISTANT COUNTY ADMINISTRATOR

Name: Richard Caywood
Title: County Administrator
Signature: Richard Caywood

 Digitally signed by Richard Caywood
DN: cn=Richard Caywood, o=Roanoke County, ou=County Administration,
email=rcaywood@roanokecountyva.gov, c=US
Date: 2023.07.05 10:56:07 -04'00'

Roanoke County, Virginia
GIS Activity Dashboards

EXECUTIVE SUMMARY

Roanoke County, Virginia has a robust GIS and is one of the most utilized web resources. The goal is to provide easily generated and accessible information on the usage of key GIS resources. Through automation, staff time is not tied up trying to manually access and output through spreadsheets and individual maps. These Dashboards convey key information by presenting location- based analytic and interactive data visualizations on a single screen. The Dashboards help to make decisions, visualize trends and monitor status on a quarterly basis. They provide only the key data they need to a critical component of our infrastructure. The information is available anytime, through any device and is easily modified by staff if enhancements are needed in the future.

Roanoke County, Virginia
GIS Activity Dashboards

BRIEF OVERVIEW

Roanoke County, Virginia has a robust GIS and is one of the most utilized web resources. Two key components of our GIS are use of our ArcGIS Enterprise deployment and the number of Property Reports generated from our publicly available GIS Apps. Our ArcGIS Enterprise is the backbone of all our GIS apps and is a tool for internal County staff to query, analyze and map GIS data. To provide management with easy to understand usage information, dashboards were created to show key Enterprise activities. Also, dashboards were created to display counts and locations for Property Report requests. The Dashboards help to make decisions, visualize trends and monitor status on a quarterly basis. They provide only the key data they need to a critical component of our infrastructure. The information is available anytime, through any device and is easily modified if enhancements are needed in the future.

Roanoke County, Virginia
GIS Activity Dashboards

PROBLEM OR CHALLENGE

As GIS is a key part of the County's IT infrastructure, easy access to information for County GIS usage was needed by management, as it had not always been readily available. The first issue was how to acquire information on users, content and uptime on our ArcGIS Enterprise deployment. Secondly, we needed to count the number of reports by date, as well as have the ability to map locations. After developing a method to acquire the information, an easily understood visual display would be required to show Administration web usage information.

AWARD CRITERIA

Dashboards provide an effective way to pull together data and display in a visually pleasing manner. They save time, reducing efforts of chasing and reformatting data. The GIS Activity Dashboards provide a central location to read quarterly data displaying the use of key GIS assets. Staff can easily read bar charts, pie charts and maps. Management can easily see any trends in use of GIS resources and where users are interested in parcel property information. The data collection, analytics and programming are all hidden from the users, providing only key information to make decisions, visualize trends and monitor status on a quarterly basis.

The GIS Activity Dashboards maximize ArcGIS capabilities through python scripts, ArcGIS Python API, ArcGIS Monitor, and Esri's Dashboard capabilities. They deliver information to management and GIS staff at any time, from any location.

SOLUTION

GIS Services staff maintain various data to create the foundation of GIS in the County of Roanoke. Esri's ArcGIS Enterprise platform technology is key to sharing data and information with County staff and the public through web applications and an open data portal. GIS Services was able to leverage Esri's ArcGIS for Enterprise to provide timely and accurate use data for Enterprise deployment and the generation of Parcel Property Reports through various web applications. GIS Services developed python scripts and Dashboards within the ArcGIS Enterprise environment to provide this needed information.

Utilizing Python and Esri's Python API, a script was developed to gather user and content usage information for our Enterprise deployment. A script is run quarterly to query the needed information and populate a database. This database is used to display the results in a Dashboard, showing yearly and quarterly statistics for: Total users, Active users, New users, Total content, Modified content, New content, and Percent uptime. Property Report information is obtained from the PDF reports that are generated. Each report name contains the Parcel Identification (Parcel ID) used in a Python script which reads the Parcel ID and stores it in a file. The Parcel ID is used to geocode the Property Report to a Tax Parcel and create a point for each report. These points are then used to create a heat map to show locations, and queries are performed to obtain the number of quarterly and annual reports. The results are Dashboard bar graphs, pie charts and maps showing ArcGIS Enterprise and Property Report usage.

FINANCES AND STAFFING

The total one-time project cost for the GIS Activity Dashboards was \$8,820 which was used to design, develop, configure, and support this project. The largest project cost in developing the application is personnel time, not including the County's investment in the overall GIS Enterprise infrastructure. A total of 245 personnel hours was used to complete this project. The hours were used to design, develop, configure, and maintain the enterprise GIS resources that are the foundation of the GIS Activity Dashboards.

As part of the County's overall GIS Enterprise infrastructure, the Esri Small Government Enterprise License Agreement is \$50,000. The license provides unlimited access to ArcGIS for Enterprise software along with technical support from Esri.

SUPPLEMENTAL MATERIALS

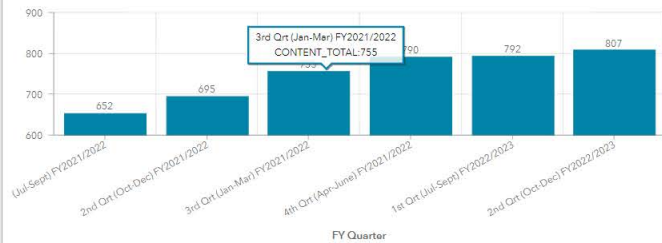
See the attached

Select Portal Statistics by FY Quarter

Use Dropdown Menu to Select

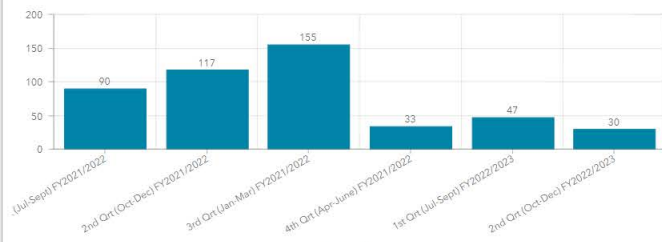
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Total Content by FY Quarter



Last update: a few seconds ago

Modified Content by FY Quarter



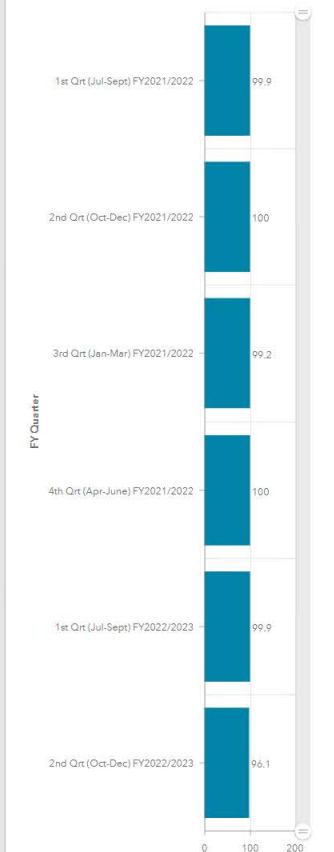
Last update: a few seconds ago

New Content by FY Quarter



Last update: a few seconds ago

Percent Uptime by FY Quarter



Last update: a few seconds ago

Total Users by FY Quarter



Last update: a few seconds ago

Actual Users by FY Quarter

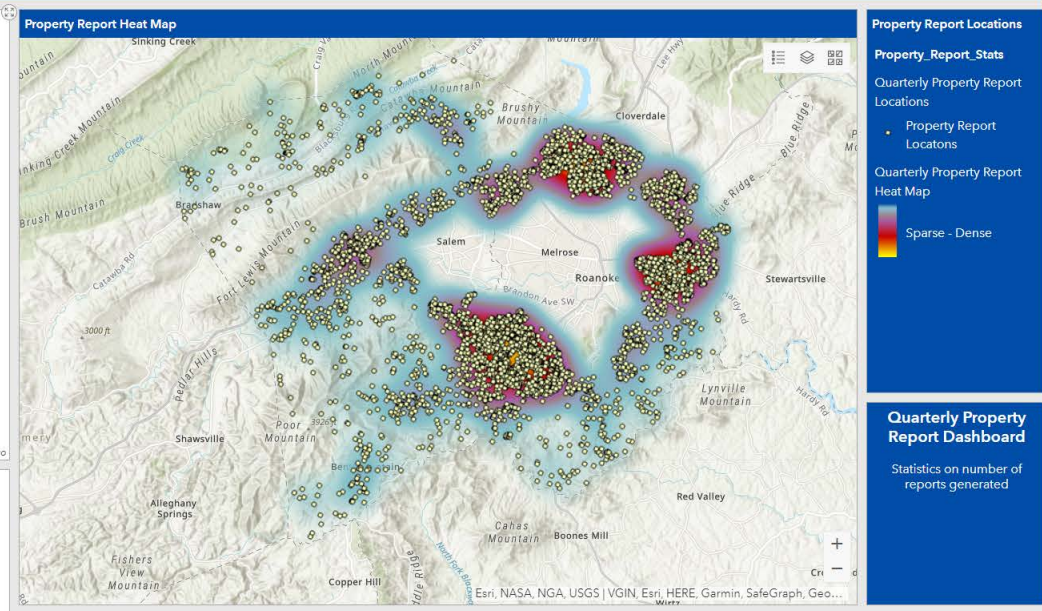


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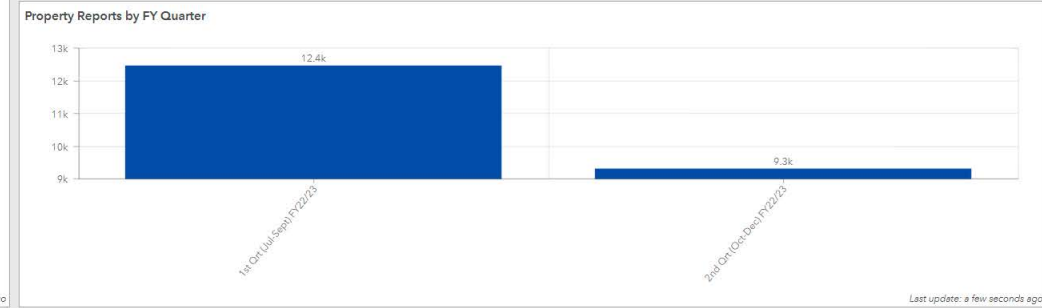
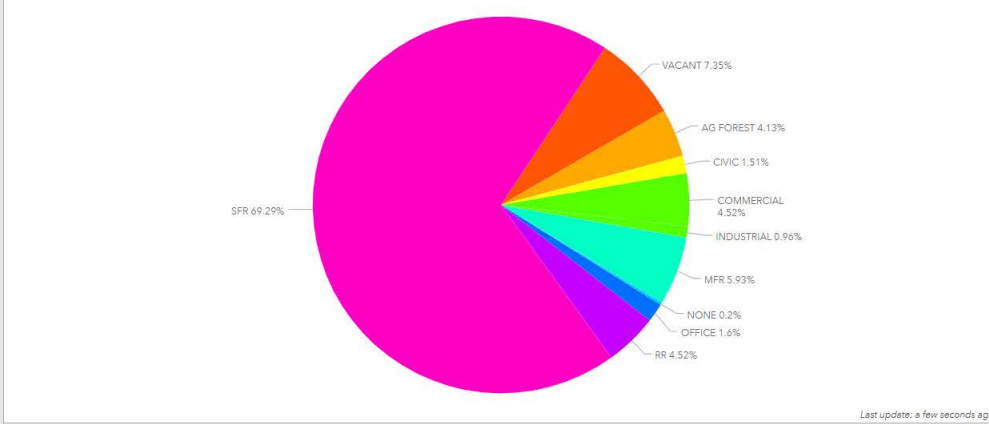
New Users by FY Quarter



Last update: a few seconds ago



Property Reports by Existing Land Use



Select Portal Statistics by FY
Select FY from Drop-down Menu

None

