



## SUBMISSION FORM

All submission forms must include the following information. Separate submission forms must be turned in for each eligible program. **Deadline: July 1, 2024.** 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](#).

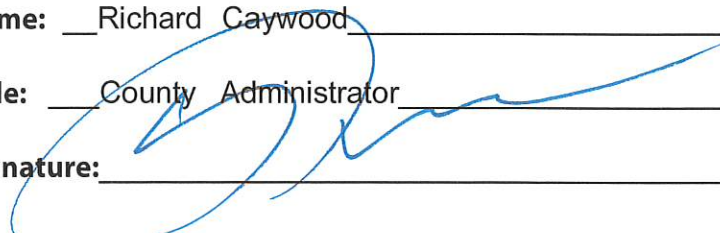
### PROGRAM INFORMATION

County: ROANOKE  
Program Title: TRASH DAY SEARCH WEB APPLICATION  
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: 

**EXECUTIVE SUMMARY:**

Roanoke County, Virginia's creative **Trash Day Lookup Application** is an effective web solution that displays the trash pickup days, bulk & brush pickup days, the closest recycling location, and General Services Department contact information for each parcel in the County of Roanoke. This application allows citizens to discover all their trash services in one location by searching by address, owner name, or Parcel ID. This application, and process, were created using the Esri ArcGIS for Enterprise platform and ArcGIS JavaScript 4.12 API. The customized web form, local proprietary information from the Enterprise GIS Database and integration of calendar events were accomplished using JavaScript and HTML. The dates displayed for collection services are pulled directly from the Roanoke County website calendar at <https://www.roanokecountyva.gov/calendar.aspx?CID=77> and validated against the current year's holiday schedule.

The standalone web application can be found at <https://gisweb.roanokecountyva.gov/trashdaysearch.html> and is a very simple and intuitive method to show where and when Trash Day Service is provided to the citizens. The web application can easily be a model that other local governments may learn from and make their own. The web application is refreshed daily and is integrated into other web pages such as <https://roanokecountyva.gov/113/Trash-Collection>. The Trash Day Lookup Application has also been integrated into the chatbot feature found on the Roanoke County website.

## **THE PROBLEM OR NEED FOR THE PROGRAM**

Previously, easily accessible trash collection information was not consolidated into one web service application for residents. Fulfilling public or staff requests to help residents determine their trash and bulk collection schedule or recycling facilities near them required coordination of staff in various departments and several separate web pages.

Trash Collection in Roanoke County is accomplished by districts and routes, with different routes collected Monday through Thursday each week. These collection days were outlined in a series of alphabetical street name web pages maintained by General Services department staff members. Finding a street named “Morning Dove Road” required a citizen to navigate to the street name pages, select the page for “M” and then scroll down the list of alphabetical street names until reaching “Morning Dove Road” to find that trash collection occurs every Monday. Changes to collection days in the event of a holiday (e.g. Memorial Day) were communicated by an annual postcard mailed to 45,000+ households, social media postings, and the County’s website.

Curbside collection of bulk & brush items occurs for every address, every other week (either “A week” or “B week”) and is also subject to change in the event of weekday holidays. Staff previously created a website calendar to promote the “A week” and “B week” schedules, but making the connection between the web pages of street names and the calendar became difficult for users to navigate. While technically useful, this past approach to finding trash, bulk & brush, and nearby recycling centers was inconvenient for staff and too complicated for residents to use efficiently.

Roanoke County's General Services Department sought a simple and effective way to consolidate trash collection schedules, Roanoke County's website Calendar, and Enterprise GIS into a single, easy-to-use application that allows residents to quickly find information using the most common search methods. A key project objective was to make all solid waste data accessible quickly, across a variety of platforms and technologies, including today's current mobile devices.

### **DESCRIPTION OF THE PROGRAM**

Roanoke County Information Technology's GIS Services staff maintains trash pickup zones, bulk & brush pickup zones, recycling sites, parcel outlines, voting precincts, polling places, address data, street centerlines, and zoning data to create the foundation of GIS services within the County of Roanoke. This approach ensures data consistency across the County's various departments and an array of specialty applications. GIS Services was able to leverage ArcGIS for Server technologies to integrate this GIS foundation with data from both legacy in-house systems and third-party commercial services to provide a one-stop-shop for all Roanoke County solid waste information.

The Trash Day Lookup Application offers an easy-to-use view of solid waste information that consolidates various data sources from the County's Enterprise GIS database, General Services' Solid Waste Division, and the County's website Calendar. Using Microsoft SQL Server, ArcGIS platform, and Python, GIS Services integrated the solid waste data into its GIS platform, providing detailed descriptions, trash pickup information, bulk & brush pickup information, and detailed recycling center information in an intuitive and easy-to-use web application.

Trash Day Lookup information discovery is made simple by using a custom auto-complete search engine that allows discovery based on the most used labels, including street address, owner name, or tax parcel ID number.

Trash Day Lookup Application offers the same functionality when accessed on a desktop PC, mobile phone, or tablet device. Designed as a mobile application from the ground up, the Trash Day Lookup Application offers comprehensive trash collection information in the palm of a user's hand. In addition, location-based services allow professionals, citizens, and staff this same information on trash and bulk & brush information as they travel through neighborhoods.

Now the county's citizens and staff members use the Trash Day Lookup Application to quickly access current website calendar schedules for trash collections and bulk & brush information, with no more deciphering if addresses are on the "A week" or "B week" schedule for bulk & brush pickup.

After entering an address, owner name, or parcel ID into the search bar, the next five calendar trash pickup dates are provided along with the next five calendar dates for bulk & brush collection for that parcel. The application also uses additional programming to retrieve holiday information from a website calendar to adjust the calendar dates in the event of weekday holidays. The application also accommodates 2- or 3-day holidays, such as Thanksgiving and Christmas, and adjusts the pickup dates accordingly.

The overall goal of developing the Trash Day Lookup Application was to minimize the administrative overhead of delivering staff and public requests for Solid Waste information while maximizing access to public data delivery in the most convenient and accessible formats

for staff and the public alike. The Trash Day Lookup Application enables citizens, staff, and commercial stakeholders' access to comprehensive and accurate trash pickup, bulk & brush collection, and nearby recycling center locations they need on any device, at any time, from any location.

The total one-time project cost for the Trash Day Lookup Application is \$7,000 which was used to design, develop, and support this project. The largest project cost in developing Trash Day Lookup Application is personnel time, not including the County's investment in the overall GIS Enterprise infrastructure. The hours were used to design, develop, and maintain the enterprise GIS resources that are the foundation of the Trash Day Lookup Application, bringing the total personnel cost to \$7,000.

As part of the County's overall GIS Enterprise infrastructure, the Esri Small Government Enterprise License Agreement is \$55,000. The ELA provides unlimited access to ArcGIS software along with timely and professional assistance from Esri. Other software licenses such as MS SQL Server and SAP Crystal Reports with a total cost of \$5,000 are essential in implementing this program, but these costs are associated with the GIS Enterprise infrastructure.

To streamline requests for trash pickup day and bulk & brush pickup day information and nearby recycling sites from both staff and citizens, Roanoke County Information Technology's GIS staff created a solution for staff and citizens access to this information using any desktop and or mobile devices.

Now staff and citizens can use the Trash Day Lookup Application to quickly access data such as trash pickup day and bulk & brush pickup day information and nearby recycling sites by

address, owner name or tax Parcel ID. The application also integrates the County's website calendar and Solid Waste contact information in one, easy-to-use application. General Services' Solid Waste division currently uses the new application to validate citizen requests in seconds versus the several minutes per phone call that previously consumed hours of staff time and coordination.

Giving citizens access to easy-to-understand trash pickup day information, bulk & brush collection, and nearby recycling center information and related contact information has reduced citizen calls for information, while overall customer satisfaction has increased. Citizen and staff adoption of the new Trash Day Lookup Application is the strongest indicator of the app's ongoing success. Since the application's launch on August 1, 2023, the Trash Day Lookup Application has served 40,634 pageviews. With the innovative Trash Day Lookup Application, Roanoke County has achieved its goal of offering staff and citizens a new level of access to the trash pickup day information, bulk & brush collection, and nearby recycling sites information they need on any device, at any time, and anywhere it is needed.

Roanoke County's Trash Day Lookup Application helps to reduce the bottleneck inherent in many government processes by making public data easily accessible through a simple, easy-to-understand solution that is compatible across multiple platforms and today's latest mobile devices. Trash Day Lookup Application bridges the gap between County held trash pickup day information, bulk & brush collection information, and nearby recycling center information. This approach helps increase government transparency and enables both citizens and staff quick access to data that can improve and streamline service delivery to citizens. Implementing the

Trash Day Lookup Application has also effectively reduced administrative overhead and staff time by increasing the efficiency of how information is served to Roanoke County's citizens.

The Trash Day Lookup Application also creates synergies between GIS technologies and data, in-house systems used by GIS Services, General Services' Solid Waste division and other County departments into a common and easy-to-use platform for both citizens and staff.

#### **VIEW THE TRASH DAY LOOKUP APPLICATION**

Enter the address **423 McGeorge Dr** to view results in the Trash Day Lookup Application.

**Trash Day Lookup Application:**

<https://gisweb.roanokecountyva.gov/trashdaysearch.html>

**Trash Day Lookup Embedded Application on our website:**

<https://roanokecountyva.gov/113/Trash-Collection>