

# 2022 SCAC Awards Program

This application is for:

J. Mitchell Graham Memorial Award

**Project Title**

Implementation of a Collection Center Decal System

**County/Counties**

Beaufort

**Staff Contact**

Cindy Carter

**Job Title**

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**Please provide a summary of your entry (no more than 100 words) to be used in a handout for the awards competition and included in press releases/publications. You may either type the summary in the text box or upload it as an attachment below.**

Implementation of a Collection Center Decal System to Reduce External Waste

**Presentations may include more than one speaker; however, each speaker should be aware that the 10-minute time limit is strictly enforced. Please list the name, title, and e-mail address of each speaker:**

Name	Title	Email
Angelica Marcinoski	Business Manager	amarcinkoski@bcgov.net

**To submit these attachments online, please upload Microsoft Word or PDF documents below.**



J. Mitchell Graham Award Nomination- Decal...



Supplemental Materials - Graphs, Tips Card, ...

**Please check boxes for attachments you will submit as part of your application**

A concise Project Description to explain the purpose and significance of the entry (up to eight pages). Please follow the prescribed naming convention for your Project Description file.

Any additional materials needed to support your application (up to five pages).

# Implementation of a Collection Center Decal System to Reduce External Waste

J. MITCHELL GRAHAM AWARD NOMINATION

BEAUFORT COUNTY, SOUTH CAROLINA SOLID WASTE & RECYCLING

## Implementation of a Collection Center Decal System to Reduce External Waste

**ABSTRACT OF THE PROGRAM:** Beaufort County, SC has no landfill of its own and depends on the County Collection Centers and curbside haulers to move waste to the nearest landfill (in the adjacent county). In 2019, the County retained a consultant to evaluate all Collection Centers on how to better serve the growing population. The resulting report offered several recommendations including implementing a decal system to enter any County Collection Center. In conjunction with the County's GIS Office and Assessor's Office, the Solid Waste and Recycling Department fully implemented this decal system in the fall of 2021. The Decal System's purpose is to reduce operational costs, traffic, and environmental concerns caused by the misuse of the centers by businesses, contractors, and out-of-county residents. After being partially implemented for 11 months and fully implemented for 3 months, the decal system has eliminated significant misuse and has saved the County thousands of dollars.

**THE PROBLEM OR NEED FOR THE PROGRAM:** Beaufort County, located in the Lowcountry of South Carolina, is a rapidly growing area. With no landfill of its own, the County depends on its Collection Centers and contracted haulers to move the waste out of County to the nearest landfills in Jasper County. As population and tourism continue to rise, so does the cost for collection and disposal.

In 2018, Beaufort County had 11 Collection Centers that served 61,555 households. Despite approximately 80% of the County having curbside for their homes, the centers were pressed to keep up with the demand leading to contamination of containers and recyclables, heavy traffic, and environmental concerns. The County attempted to implement countywide curbside collection. Several proposals were received, but in the end, the Solid Waste and Recycling Board voted not to proceed.

In 2019, the County retained a consultant to evaluate all Collection Centers and recommend changes to better serve the community. The resulting study and report proposed several changes: 1) require vehicle decal for Collection Center Use; 2) Limit Materials Accepted; 3) Reduce the Number of Collection Centers; 4) Reduce Hours of Remaining Centers; 5) Increase Enforcement and 6) Encourage Curbside Collection.

**DESCRIPTION OF THE PROGRAM:** The purpose of the Decal System is to reduce operational costs, traffic, and environmental concerns caused by the misuse of the centers by commercial businesses, contractors, and out-of-county residents. The following guidelines were established for the decal system.

- The decal is free to residential property owners.
- Each decal is tied to the AIN of the parcel of land (not to a vehicle or mobile home)
- This property must have a dwelling unit on it.
- Limit of three visits a week per property address.
- Only Beaufort County residential property owners can receive decals.
- Commercial properties, vacant properties, contractors, and out-of-county residents are not issued decals and are not allowed to use the Collection Centers.
- Renters of residential properties cannot get a decal. They have to obtain a copy of the decal from the property owner.
- Two of the larger Collection Centers have recycling areas open to anyone. No decal is required for these areas and there is a separate exit lane.

In the spring of 2020, the Solid Waste and Recycling staff took the consultant report to the Public Facility Committee and County Council to seek approval of implementing a decal system as well as making some operational changes to the Collection Centers. A Solid Waste and Recycling Business Manager, whose primary project was to be the decal system, was also hired. Once approved, staff reached out to the County's GIS Office to start the discussion on what it would take to develop a system in-house that could register and manage the issuing of the decals. The system would be comprised of a main registration form for the public, the Data Manager system and a mobile app for scanning.

The SWR Decal Scanner Mobile App was built with simplicity in mind. It had to be user-friendly, simple to operate, and be cost-effective. GIS and IT Staff used decommissioned iPhone 6's from our County Equipment instead of buying dedicated handheld scanners. This allowed staff to build a mobile app to interface with the registration and decal management system. The app was built using the Ionic Platform which is based on HTML and AngularJS programming languages. It allows us to publish updates to the app over the air and when the device is synced, new updates are automatically downloaded and installed. Its sole function is to scan decals and display the number of times that decal has been scanned since the start of the week. Residents are allowed 3 visits per week.

The user interface is very simple. The home screen is a large "Scan Decal" button that activates the rear-facing camera to scan the decal. When a decal is scanned, the app performs several checks to verify if the decal is first valid and then checks the number of times it has been scanned. The app then displays a green "Valid" or a red "Not Valid" popup, along with the number of visits for the week. Again, to cut down on cost, we did not activate the mobile phone data features and relied on Wi-Fi connections to sync the data. The devices are synced with the server throughout the day at facilities with internet connections or once a day by the Supervisors at our remote locations.

In May 2020, Solid Waste staff and GIS staff started meeting with staff from the Assessor's Office to gather a comprehensive list of all physical residential addresses in the County. This list along with the County's GIS system would tie together to create the online registration form and data manager system. Registration data is collected through the [beaufortcountysc.gov](http://beaufortcountysc.gov) website and ties in with the GIS System using a parcel Address layer specifically set up to display only valid residential parcels. This allows staff to collect only registration data for addresses that are valid for Beaufort County and gives us access to other field information such as Owner Name, PIN, AIN, and mailing address to use as verification for the user registering. The registration data is stored in a database and an email is generated to both the user and admin personnel, notifying them of a new registration. The registration system was developed using HTML, JavaScript, Angular and PHP code and is hosted on AWS (Amazon Web Services) Windows servers.

Some of the issues faced with an open public registration system included receiving duplicate registrations, invalid email addresses, invalid owner information or incomplete addresses for multi-family parcels such as townhomes or parcels with multiple dwellings. To ensure staff had a valid email address, a simple email verification process using a 4 digit pin was created. Before a user could even register a property, they would have to complete this process. An email was sent from the registration form and contained a random 4 digit pin. The user would then enter this pin number onto the registration form and, if valid, would move on to the next step locking the email address field.

Once the user is verified they would be able to search for their property info using their name, address, mailing address, or AIN (Alternate Identification Number). The property search bar is linked to our GIS County Wide Tax Data layer and returns a list of candidates for the search criteria. The user would then

click on the correct property and the information would be auto-populated into the form. Duplicate registrations were tricky and staff wanted to limit the number of requests received for a parcel. With the initial flood of requests, we would have people trying to get decals for husband and wife for example, or residents trying to re-register if they had not been approved initially. To combat this, we added a number of checks to compare existing registrations and a warning or information page is displayed to make sure the user knows an existing application exists using the same name or email. If it's a new owner, there is a checkbox to allow them to proceed with submitting the form.

A paper registration form would also be needed for residents who did not have a way to fill it out online or who just preferred a paper copy. Staff created a postcard-size form that asked for the same information that was asked online. Residents could then return the card to the Convenience Center for collection. Staff would then manually enter each card.

A management system would be needed to keep track of all applications. Over the next several months, the GIS Office created a Decal Data Manager. The "backend" Data Management system is a web-based application that handles the registration data, approval process and decal management. Registration data is displayed to the system admin and verified by comparing the information provided with the current county wide tax data. Each parcel has a unique AIN in the tax system. This allows staff to check each registration to see if the property was already registered, registered by a previous owner. Duplicate or previous registrations are displayed in a list at the bottom of the page for easy access.

One of the most difficult issues was handling duplicate registrations and multi-family parcels. Once a parcel is registered, any subsequent registrations are flagged as duplicate for verification. Duplicate registrations of a single-family parcel are verified by matching the owner info from the County Wide Tax data with the registration data. In cases where this could not be done, each registration was verified by phone, if possible. Duplicate registrations could also happen when a new owner registers a property with an existing registration. In this case, the new owner is verified through closing documents from the user or through the Assessor's office. Within the County's tax system and GIS data, there may be parcels that have multiple dwellings such as townhomes, family compounds or heirs properties that have a single Property ID. These properties would have to be handled on a case by case basis in order to determine who lives on parcel. Only the owner of the parcel is allowed to register and any other dwellings would be issued a secondary number attached to the primary AIN.

Once a new registration is verified, the status is changed to approved and it is flagged in the system for processing to assign a new decal. If there are any previous registrations for that parcel, they must be deactivated or the system will flag the approval and not allow a decal to be assigned until this condition is corrected.

Decals are assigned sequentially in the system in batch. Staff found this was easier than scanning individual decals during the approval process and proved to have less room for error. The Admin can work on verifying registrations throughout the day and all approved registrations are sent to the processing page. On the processing page, any registration with previous approved registrations and any registrations that have possible bad mailing address in the data are flagged for verification. All duplicates must be deactivated before decals can be assigned. Staff also created a series of conditional checks for street addresses shorter than nine characters, did not start with a number or PO Boxes with no number, etc. This was just a way to alert the Admin that these addresses were suspect and need verification before processing.

Once all flagged items are cleared, the Admin can then process the registrations, and decal numbers are automatically assigned. This also triggers a script to send out emails to the registered users with a link to their digital decal and other information on the decal process. The digital decal link is secured using an encrypted or hashed URL parameter. The user can download the digital decal to their phone and display this to the attendant at the convenience centers if they choose not to use the car decal, or if they have multiple vehicles.

Once decal numbers are assigned and processed, the registrations are moved to an export list with Name, Address, and Decal Number. Registrations do not have to be exported immediately and multiple processes can occur during the day or week to add to the list before they are exported. Once the Admin exports the list it is saved to an excel file, flagged in the system as printed, and removed from the export list. The excel file is then used to create a mail merge and labels are printed. The decal number is displayed in the corner of the label as a reference to be sure it matches the decal being stuffed in the envelope.

The Data Management system also displays stats on decal scans such as an Over Limit Report or Scan Stats by Facility. Admin can also go to a decal and view individual scans by date and facility. We have also created a tracking feature that will allow us to track specific decals if we think they are being abused or used by commercial contractors. With this system, staff would be able to update information, approve or deny applications, and track usage. Staff is also able to resend digital copies of decals, make notes on the application that can be seen internally and be able to see who had made any changes to the application. An admin registration link was created so staff could register homes manually if needed. This link worked with the Data Manager so staff could see which applications were entered by staff and which were entered by residents.

A 3x3 sticker displaying a County-designed barcode was chosen as the best technology for the scanning app. Staff discussed with printers several different designs, materials, and colors. Since there was only one sticker for each decal number, a digital decal was created so that residents could have more than one copy of their decal. This decal is the same number as the physical sticker and could be downloaded to the resident's phone or printed off if someone wanted to keep a copy in their car.

In the fall of 2020, staff reached out to the County's Public Information Office to start planning the press for the decal system. Staff did several interviews with local media outlets. Press releases started going out about the upcoming decal program and registration. Staff started ordering supplies for mailing out decals. A "Tips" card was created to go out with every decal. Instructions for how to apply the decal to the vehicle were also created.

On October 19, 2020, the decal registration form went live. Within the first 24 hours, 1,645 applications had been entered. Paper applications were also being handed out at the centers. The paper applications asked for the same information as the online form and could be turned back in at any Collection Center. Within the first month, 12,573 applications had been entered with 11,796 of those applications being approved. Staff couldn't approve applications quickly enough, so the GIS Office developed an automatic approval process that only approved applications if 100% of the information matched County data. Those that didn't match were sent to pending for staff to individually reach out to.

By December, hundreds of cards were turned in. Solid Waste staff was completely overwhelmed and reached out to other departments for help. Because of COVID, the County's Parks and Recreation Centers were still not open to the public. Their staff assisted for a couple of months with entering paper

applications. With so many applications coming in, just as many decals had to be mailed out. Thousands of envelopes had to be addressed and stuffed before going over to the County's Record Management Office for postage and delivery to the USPS. During this time, GIS staff and Solid Waste staff met to train on the scanners. Fulltime attendants received classroom training while the other attendants received on-the-job training on using the scanners.

On January 2, 2021, attendants started scanning decals at all centers. During the first week of scanning, 19,368 decals were scanned. If the resident didn't have a decal, they were not turned away but provided a paper application to fill out and turn back in. Because of the influx of applications still being received, a help section was developed for the County website of frequently asked questions. This allowed residents to check on the status of their application and they were able to visit a separate site and search for their application. The GIS staff added a Notes Section to the Data Manager to better communicate with other staff that may be entering information. By the end of the month, 34,936 decals had been issued.

By mid-February, decal applications started to slow up with only 5,000 more decals issued. A statistic page was added to the Data Manager so staff could start tracking scans per Collection Center per day as well as decals that had been scanned more than 3 times. In March, the Solid Waste and Recycling Department started sending out press releases to prepare residents for the April 1<sup>st</sup> full implementation meaning residents had to have a decal to enter the Collection Centers. By the middle of March, 42,980 decals had been issued. Solid Waste staff worked with the County Channel to film a commercial about the updated April 1<sup>st</sup> live date.

On April 1, 2021, the decal program temporarily went live. However, it was soon realized that not enough of the population had their decal so all centers went back to allowing residents to enter without a decal. During the next few months, staff worked to clear up applications in the system that had been pending in the system in an effort to get decals out to more people. These applications had not been approved because they were heirs' properties with non-matching information, commercial properties, vacant properties, or renters. In May, staff met with the County's Legal Office to determine guidelines for vacant properties, campers, etc. where it was decided that there had to be a livable dwelling unit on the property in order to be issued a decal. In June, attendants met for classroom training on the scanners.

By July 2021, many of the previous issues had been adjusted. Neither applications nor help requests were coming in as often as before. County Council decided that it was time to try to go live again. However, this time, residents would be given a three months' notice of what was going to happen. The temporary system would consist of green, yellow, and red decals corresponding to the three months leading up to November 1. August temporary decals would be green, September yellow and October red. Each temporary decal would be attached to an application. Once the resident filled out the application, their temporary decal was scanned and they were allowed entry into the center. This temporary number would be good for one month. All applications would be gathered and brought back to the office staff to enter and call residents if there were any issues. Press releases on the upcoming full implementation date were sent out. A broadcast PSA on a local radio station was done in hopes of reaching rural areas.

On November 1, 2021, the decal system went live and continues to be implemented to this day. Any resident without a decal is not allowed entry into the Collection Centers. They are provided with contact



information to the online application and to a phone number to get help. Currently, 58,103 applications have been entered into the Data Manager. Of those applications, 53,308 are approved and active.

THE COST OF THE PROGRAM: Below is the cost of the decal program over 18 months. It is important to note that this program was created in-house. Operating costs may be higher if duplicated.

**Printing**

Numbered decal stickers	\$ 8,737.62
Postcards	\$ 2,036.55
Envelopes	\$ 2,856.90
Labels	\$ 1,079.28
TIP cards	\$3,821.19
Decal application directional strips	\$ 1,840.17
Temporary decal postcards (green/yellow/red)	\$ 924.21

**Advertising**

Praise FM	\$ 600.00
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**Supplies**

Tents	\$ 1,027.00
Sandwich Signs	\$ 1,109.09
Speed bumps (8)	\$ 1,618.96
Phone batteries, cases, screen protectors	\$ 1,925.78
Hot Spots (recurring costs per month) x 3	\$ 39.99

**Postage**

FY21 start up	\$24,024.11
FY22	<u>\$ 2,976.84</u>

**Total Operating Cost** \$54,617.69

THE RESULTS/SUCCESS OF THE PROGRAM: Since the decal system went live, staff has seen many changes to traffic, residents moving to curbside, disposal costs and hauling costs. Traffic for all centers decreased. For 2020, the total traffic count was 1,975,674. At the end of 2021 the total traffic count was 1,284,522. This count is 691,152 lower than 2020. Staff also saw an increase in the number of residents in the County using a curbside hauler. This number jumped from 59,195 residents in October 2020 to 75,811 residents in October 2021. Residential disposal costs also dropped from \$3,683,234 in 2020 to \$3,459,902 in 2021. And lastly, hauling costs saw the biggest savings dropping from \$1,885,144 in 2020 to \$1,373,573 in 2021. Between the disposal and hauling costs, the savings total up to be \$734,903 for just the first year. Keep in mind, the decal program was only partial implemented for most of the year, going live in November 1, 2021.

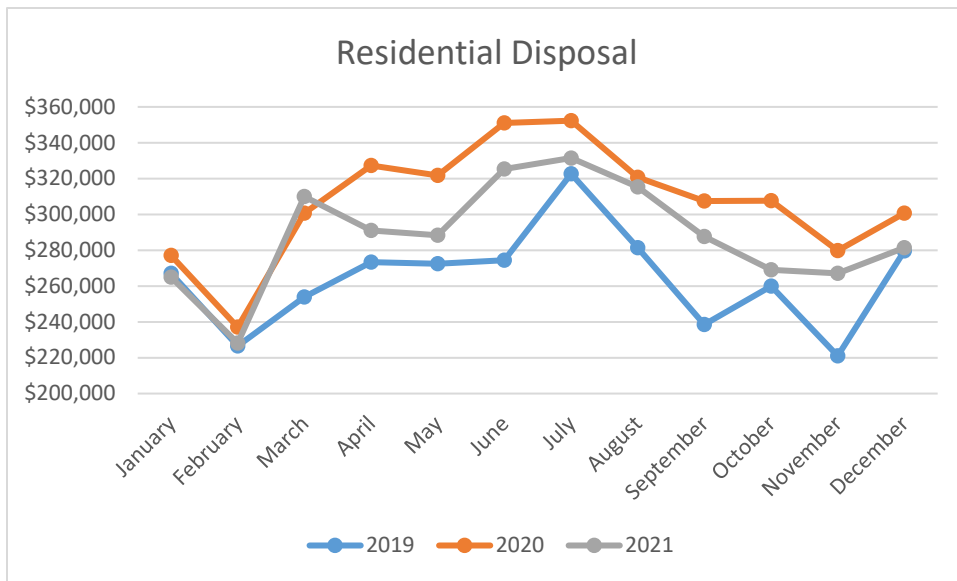
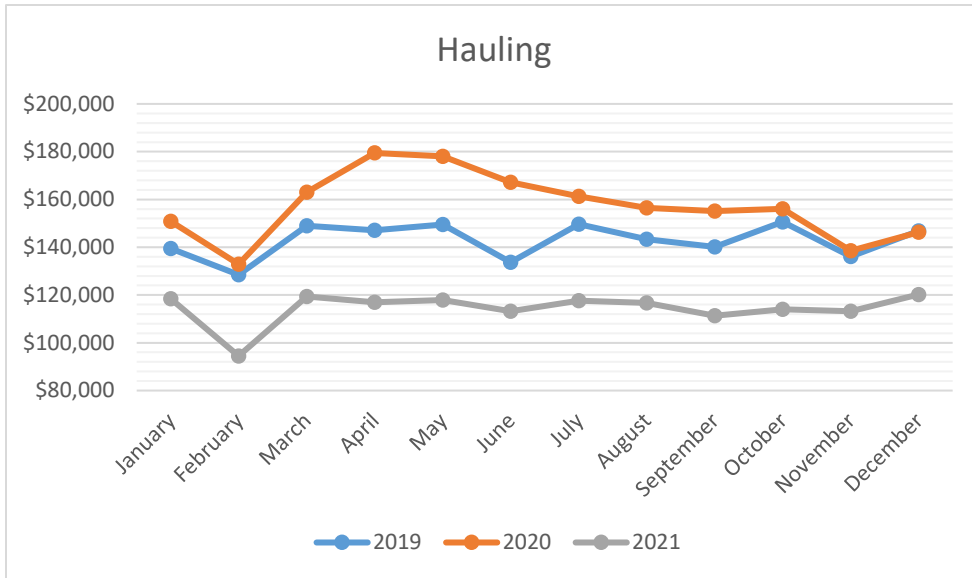
The Decal Data Manager has also been instrumental in gathering data to see how the program is working and what improvements staff can make. Staff can pull weekly data to see any decal that is scanned over the 3 visits a week limit. For any person over the limit, staff reaches out to each person via email and/or phone and reminds them of the 3 visits a week limit. If they continue to go over the allowed visits, their information is sent over to our Enforcement Officer.

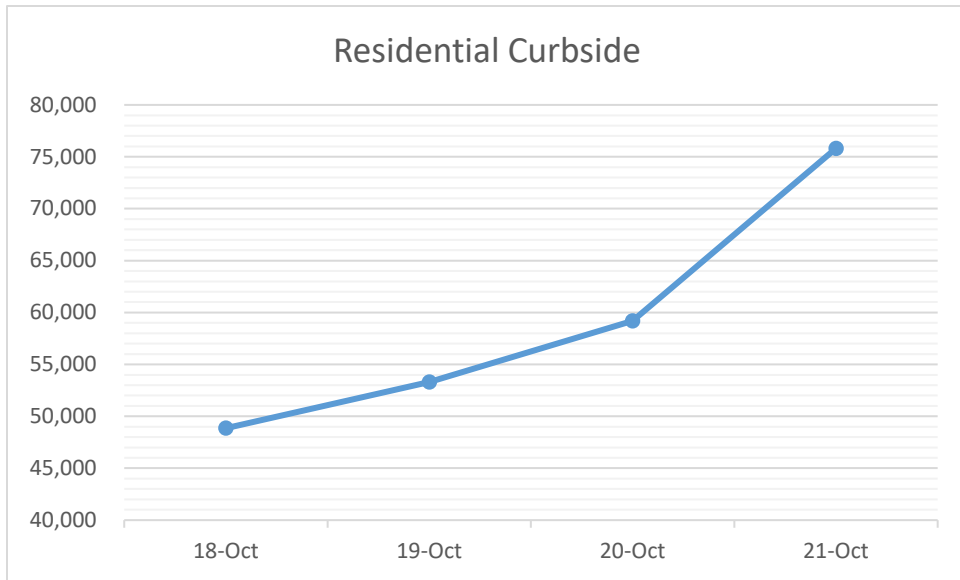
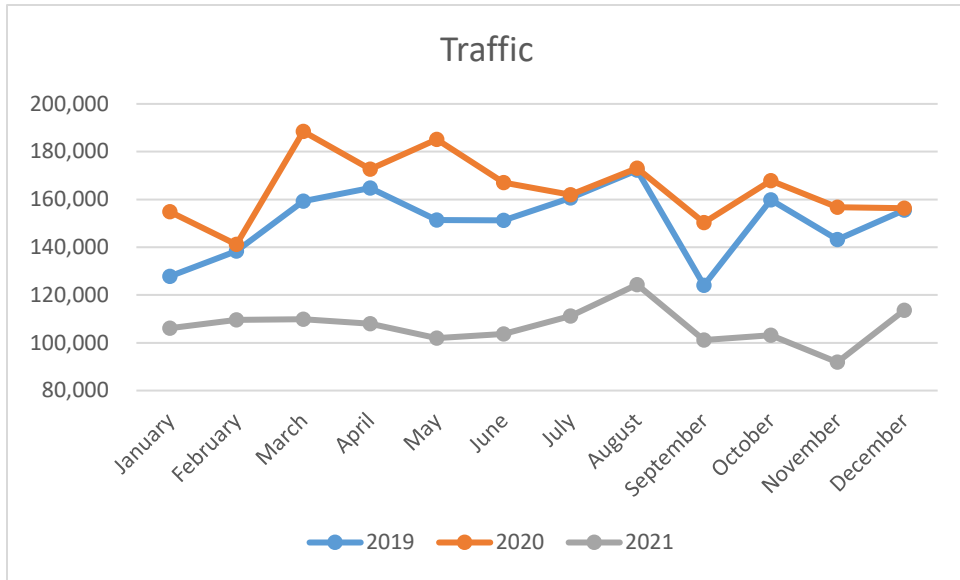
Also with the Data Manager, staff can see not only how many scans are being performed at each Collection Center, but staff can tie each scan to a physical address and the time the resident entered the Center. This is especially helpful if staff needs to reach out to a resident about an issue with their decal on any given day. Recently staff has started collecting data on decals that have been deactivated, but continue to be used. One of the reasons a decal gets deactivated is because a home changed ownership. An email is sent out at time of deactivation and it is up to the resident to respond and provide the needed information for reactivation. If a deactivated decal is scanned, staff contacts the resident to see if they purchased a new home within the County and need their decal information updated. If this is not the case, the person is reminded they are not allowed to use the decal and continued use of it will result in their information being sent over to our Enforcement Officer.

Another reason that a decal would be deactivated is because it was mistakenly assigned to a commercial property. Early on in development, mobile home AINs were included in the initial data used to create the online registration database. During the automatic approval phase, these were not caught since all information would have matched. By the time staff realized this error, many decals had already been issued. Staff spent lots of time going back and fixing these back in the spring of 2021. If the mobile home was on a residential parcel and the owner's name matched the decals remained active. If the parcel came back as a commercial mobile home park, the decal was deactivated. Staff reached out to anyone in this situation and informed them their landlord was responsible for this service. Since then, staff continues to see these decals continue to be used. In November 2021, the Enforcement Officer started visiting with each commercial mobile home park in the County to discuss and verify the services they should be providing for their residents.

CONCLUSION: The decal system was implemented as a way to reduce the operations costs, traffic, and environmental concerns caused by the misuse of the centers. As seen in this Results section of this nomination, the decal system has done just that. It is evident that the County Collection Centers were being abused by contractors, out-of-county and out-of-state visitors. Operations of the Collection Centers have seen a drastic reduction in container pulls since the system was introduced. The cost savings listed above are not the only savings being seen. Staff can see other costs, such as reduced tonnage of waste tires, as a result of the decal system.

Staff continues to work with heirs' properties, renters and commercial properties to direct them to the proper channel. Looking toward the future, staff know physical stickers have a lifespan of 3 years. For now, if a decal is lost, misplaced or tears, staff encourages the use of the digital decal and even offers to print off paper copies. Solid Waste staff is already working on new ideas for decal replacements. Overall the program took approximately 6 months to develop and a little over a year to fully implement. Staff is continually making updates to the program to better serve the needs of County residents. For a more detailed look at Hauling and Disposal Costs, Traffic Counts, and Residential Curbside, please see the attached Supplemental Materials.





# 10 Convenience Center Tips



**Please be patient and kind to the attendants.**

Stay positive and respectful as they work to assist you.

**Have your decal ready for scanning.**

This makes the process quicker for you and the attendant.

**No decal? No entrance.**

Be prepared to exit the convenience center as directed by the attendant.

**No commercial waste allowed.**

Convenience Centers are for residential waste only.

**Secure and cover your load.**

Help keep our roads litter-free!

**Load size and weekly limits.**

A load is considered no more than 28 inches high and is the size of one pick-up truck bed or one 5'x 8' trailer.

Limit three (3) visits per week per property owner address.

Limit four (4) tires per visit.

**No box trucks.**

Resident? Commercial? We can't tell.

**No loitering, scavenging or leaving items on the ramp.**

Place all items in the appropriate waste bin.

**No smoking.**

Smoking is prohibited on all Beaufort County properties.

**No shoes? No shirt? No service.**

For your own safety, please wear the appropriate attire.

For more information visit our website at [www.beaufortcountysc.gov/recycle](http://www.beaufortcountysc.gov/recycle) or call the Solid Waste and Recycling Office at 843-255-2930.

## Beaufort County Convenience Centers

### Hours of Operation

[www.beaufortcountysc.gov/recycle](http://www.beaufortcountysc.gov/recycle)

Convenience Centers are trash and recycling drop-off stations open **ONLY** to Beaufort County residents.

### New Operation Hours for All Locations

7:30 a.m. – 6:00 p.m.

Open: Monday - Tuesday - Thursday - Friday - Saturday - Sunday

**Bluffton - Hilton Head - Shanklin - St. Helena**



Open: Monday - Thursday - Saturday  
**Big Estate - Coffin Point - Lobeco**

Open: Sunday - Tuesday - Friday  
**Cuffy - Sheldon**

**All Centers Closed Wednesday and County Holidays**

## Holiday Closures

New Year's Day  
Martin Luther King Jr. Day  
Easter Sunday  
Memorial Day

Independence Day  
Labor Day  
Veteran's Day  
Thanksgiving Day  
Christmas Eve \*Closes at 1:00PM\*  
Christmas Day

## NO Open Dumping in Beaufort County

Litter enforcement will be actively responding to open dumping.

## Construction & Demolition Debris

Please take large loads of C&D, Bulky Items and/or Yard Waste to Oakwood Landfill

726 Strobhart Way Ridgeland, SC 29936  
843-547-6003 Closed: Saturday and Sunday

\*Charges may apply to commercial waste. No charge to residents.\*

**Beaufort County  
Solid Waste & Recycling**



BC00000000

COUNTY COUNCIL OF BEAUFORT COUNTY  
ADMINISTRATION BUILDING  
BEAUFORT COUNTY GOVERNMENT ROBERT SMALLS COMPLEX  
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April 28, 2022

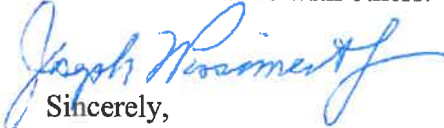
South Carolina Association of Counties  
PO Box 8207  
Columbia, SC 29202

ATTN: J. Mitchell Graham Award

To Whom It May Concern:

It is my pleasure to support the Beaufort County Solid Waste & Recycling application for the 2022 J. Mitchell Graham Award of the South Carolina Association of Counties. The Implementation of a Collection Center Decal System has been extremely effective in reducing operational costs, traffic, and environmental concerns caused by the misuse of the centers by businesses, contractors, and out-of-county residents. This initiative has also helped the County to better enforce County Ordinance 62. We are proud of all County Departments that worked so hard to implement the decal system.

Thank you for your time and consideration. We look forward to the presentations and are excited to share this initiative with others.

  
Sincerely,

Joseph F. Passiment, Chairman  
Beaufort County Council