

# **Recycling in State of Ohio Office Buildings**



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**OSCAR'S ENEMIES**

**Jessica Friesland**

**Meghan Homsher**

**Lori Klopp**

**Valeria Wooten**

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## **EXECUTIVE SUMMARY**

Recycling has become part of daily life for many Americans over the last forty years. Oscar's Enemies is a team of environmentally aware people with a variety of experiences trying to recycle at our places of employment. We discussed the different challenges faced at each of our offices and researched if recycling could be expanded and improved at state buildings.

We discovered that recycling facilities at buildings operated by the Ohio Department of Administrative Services (DAS) and other building vary greatly. Among DAS managed buildings, the availability of recycling is dependent on the individual building manager's discretion and motivation. Recycling, in general, is considered expensive and unclean by DAS building managers. Recycling is more prevalent at buildings not owned and operated by DAS; Those managers have not experienced cost or cleanliness challenges.

Our original hypothesis included the idea that recycling could be a revenue stream for the state. We learned cardboard is currently recycled with a rebate to the state. General waste produced by offices, cans and bottles, is not of a quantity to generate revenue. Although not a large revenue stream, recycling is helpful in keeping waste haulage and disposal costs lower or consistent.

Recycling may not have a large fiscal impact on the state budget, however it is still worthwhile. Increased recycling produces the environmental benefit of reducing landfill waste and increases employee satisfaction. Governor Kasich has expressed a desire to make "Ohio cool like Austin"; Austin is known for environmental awareness and recycling at our state offices will increase Ohio's cool factor.

At a high-level, Oscar's Enemies recommends adoption of a statewide policy to encourage recycling. We acknowledge that a statewide policy is a challenging recommendation to put in place. Therefore, we also considered actions that could be taken at the agency or building level. Increased communication and recycling education at all buildings with current recycling facilities is recommended. At buildings where recycling is not available, we recommend tenants repeatedly contact management and request recycling services.

The implementation of our recommendations can encourage simple recycling practices that will decrease landfill waste, improve employee satisfaction, and decrease state waste removal costs.

## **INTRODUCTION**

In 1976, Congress passed the Resource Conservation and Recovery Act to increase recycling and conservation as waste became a recognized problem. It is suggested that the famous slogan "reduce, reuse, recycle" was born at this time.<sup>i</sup> Of the three famous actions, recycling is what individuals encounter on a regular basis in the workplace. Local governments (e.g., City of Columbus) may facilitate recycling with trash pick-up, and by providing recycling receptacles on the street; even Ohio Stadium facilitates recycling at football games. Our capstone team sees a need for increased recycling among state agencies. Those who haven't fully embraced the program could begin by recycling items like single serving plastic drink bottles and paper.

Benefits of recycling include, but are not limited to: reducing the amount of waste that is sent to landfills and incinerators; conservation of natural resources such as timber, water and minerals; increasing economic security by tapping a domestic source of materials; preventing pollution by reducing the need to collect new raw materials; saving energy; supporting American

manufacturing and conserving valuable resources; and helping create jobs in the recycling and manufacturing industries in the United States.<sup>ii</sup>

There is not a standard, state-wide process for recycling across state agencies and facilities. We found that there are a variety of recycling processes currently used by state agencies. In some cases, these recycling processes meet the needs of state agencies and in others the process could be enhanced. Our initial hypothesis was that a single recycling process should be standardized across the state with agency chief financial officers overseeing the program as a revenue generating or cost reduction matter.

## **Background**

### *What is recycling?*

In 2001, the United States supported the creation of a national Recycling Economic Information (REI) Project and report. The report, and later updates, is a study compiled with the National Recycling Coalition demonstrating the economic value of recycling to the economy. According to the REI report, recycling is the recovery of materials, such as paper, glass, plastic, metals, construction and demolition (C&D) material and organics from the waste stream (e.g., municipal solid waste), along with the transformation of materials, to make new products and reduce the amount of virgin raw materials needed to meet consumer demands.<sup>iii</sup> Overall, recycling is an alternative to “conventional” waste disposal into landfills. The 2016 REI report identifies five distinct steps in the recycling process: (1) material collection; (2) separation, cleaning and/or other processing (e.g., baling plastic bottles); (3) transformation of recyclable materials into marketable products; (4) distribution, storage and service delivery (e.g., distribution of food to and from food banks); and (5) transportation between each stage.<sup>iv</sup> For this analysis, recycling activities are generally limited to material collection.

### *What materials are recyclable?*

Almost every material can be broken down into simple properties and recycled, according to Jeremy O'Brien of the Solid Waste Association of North America.<sup>v</sup> The types of materials that can be recycled depends on location and supply chain. It is not possible for an end-user to recycle a product if there is no processor to take the material.<sup>vi</sup> A significant factor in the cost of recycling is the price of the original product. Some materials can be easily recycled while others cannot because the cost of recycled material is higher than the price of new material.<sup>vii</sup> For practical purposes, this study is limited to the products that can most often be recycled in residential and commercial environments; primarily paper, cardboard, plastic, and aluminum.

## **Research Strategies**

To learn about the overarching policies and practices contributing to the State of Ohio's recycling practices we researched state policies and reviewed state contracts. On a micro level, questions were posed to facility managers and others to learn about recycling at various state facilities, both state-owned and leased. We also contacted the state of Missouri and Lockheed Martin located in New Jersey. Additionally, published research and case studies were used to find suggested best practices and improvements.

## **FINDINGS**

### **Policy**

Policies are a tool to provide guidance and direction which then requires allocation of resources to implement. Policy can also be defined as making decisions that reflect values and allocation of resources based on those values.<sup>viii</sup> In Ohio, the Department of Administrative Services

(DAS) develops and promulgates State Administrative Policies to provide management direction and guide the use of resources on behalf of the public trust<sup>ix</sup>. The state of Ohio does not have a State Administrative Policy to encourage recycling by state agencies. Ohio agencies are not required to have recycling policies, but nothing prevents an agency from developing a recycling policy or implementing a recycling program in the absence of a policy.

In the past, the Ohio Department of Natural Resources (ODNR) Division of Recycling & Litter Prevention (DRLP) was responsible for statewide waste reduction, recycling, recycled-content product procurement and litter prevention programs. Because of this responsibility, ODNR aimed for high standards in its own operations to serve as a role model for government, businesses and citizens of Ohio. ODNR established a goal to reduce and/or recycle 50 percent of its waste by the beginning of calendar year 2007.<sup>x</sup> It is indeterminable if ODNR achieved this goal.<sup>xi</sup> House Bill 487 of the 129<sup>th</sup> General Assembly transferred DRLP's functions and responsibilities to the Ohio Environmental Protection Agency (EPA).<sup>xii</sup>

In accordance with Ohio Revised Code section 125.14(c), proceeds from the sale of recyclable goods and materials are deposited into the Recycled Materials Fund unless the EPA director grants an exemption from the requirement. In fiscal year 2018, the Recycled Materials Fund (4D50) earned \$76,701 in the sale of scrap and salvage materials account. The EPA director is to administer the fund for the benefit of recycling programs in state agencies. Ohio EPA's competitive recycling and litter prevention grants provide opportunities for communities, local governments, businesses and non-profit organizations to establish and implement recycling, recycling market development, litter prevention and scrap tire recycling programs.<sup>xiii</sup> The EPA Director is responsible for establishing and implementing statewide source reduction, recycling, recycling market development, and litter prevention programs.

The Recycling and Litter Prevention Fund may be used to make grants for the following programs: (1) assessment of waste generation within the state and implementation of source reduction practices; (2) implementation of recycling and recycling market development activities and projects; (3) litter prevention assistance to enforce anti-litter laws, educate the public, and stimulate collection and containment of litter; and (4) research and development regarding source reduction, recycling, and litter prevention.<sup>xiv</sup>

## State Contracts

While the state does not have a policy explicitly requiring recycling, the state does encourage recycling through procurement and issuance of state contracts. Three state vendors with a significant, or potentially significant, impact on recycling are: Elytus, Greene, and Royal Paper Stock.

### *Elytus*

In 2013, DAS sought to manage the state's several hundred waste contracts through a single effort that included solid waste hauling and recycling needs of all state agencies across widespread locations.<sup>xv</sup> Moving forward required setting aside the previous consolidated waste program and avoiding brokers who charged up to 50 percent of any savings. The consolidated waste program was set aside because large haulers and landfill owners were incentivized to put more waste in the landfill. The state issued a request for proposal under an open contract which is an opportunity open to all vendors, or a negotiated schedule, and vendors awarded do not have to be State of Ohio certified Encouraging Diversity, Growth, and Equity (EDGE) or Minority Business Enterprise (MBE) vendors.<sup>xvi</sup>

In 2015, the state implemented Elytus, an Ohio-based company serving as a Managed Services Agent (MSA). Ohio's current contract with Elytus was effective June 12, 2014, and ends December 31, 2018.<sup>xvii</sup> Elytus offers a web-based solution with a relational database that facilitates participation of local and smaller companies, increases service reliability, improves environmental decisions, and examines all invoices. Elytus produced a 26 percent savings relative to previous expenses for the same services<sup>xviii</sup>. Elytus also provides tools for measuring the state government's waste and recycling footprint. According to Randall Howard, DAS Assistant Director in 2015, Elytus enabled state agencies to benchmark each agency's volume generation, diversion percentages and overall cost savings.

*"These tools enable state agencies to increase recycling and reduce landfill volume while becoming more efficient by driving extraneous costs out of the waste program."*

*R.Howard*

Elytus is a mandatory state-term contract, meaning it is awarded to a single contractor for specific items. These contracts are awarded under the premise that state agencies purchase supplies and services from a chosen provider. The mandatory contract is intended to cover both waste and recycling for all agencies. State agencies pay a seven percent fee in addition to invoice prices. In fiscal year 2018, state payments to Elytus were \$5,083,077.<sup>xix</sup> The bulk of these expenditures were made by the Ohio Department of Rehabilitation and Corrections (ODRC) for institutional operations (\$1,299,451) and the Department of Transportation for highway maintenance (\$1,224,629). Ohio's Interactive Budget reports Elytus transactions by DAS building management of \$117,904 in fiscal year 2018.

ODRC is allowed an exemption on the recycling component as recycling revenue is part of the department's conservation budget. ODRC recently completed a waste container efficiency audit based on Elytus collection and tonnage data, the audit identified over \$153,000 in projected annual savings.<sup>xx</sup> The waste container efficiency audit included a review of materials disposed, number of waste containers, and pick up schedules.

### *Royal Paper Stock*

Royal Paper Stock works with state agencies to gather and manage recyclables. Brokers and sales representatives analyze scrap production to discover ways for businesses to save money, reduce trash and increase recycling. After analyzing existing resources, such as dock size and staff, Royal Paper Stock recommends the most cost-effective and resource-effective processing method, from hauling scrap away to installing a baler on site. Royal Paper Stock provides the services and containers to prepare scrap for pickup, train staff if needed and the opportunity to buy or lease necessary equipment. Pickup schedules are designed for the convenience of the customer and to maximize profit and cost-effectiveness. Royal Paper Stock picks up paper and cardboard for many state agencies. Royal Paper Stock also gathers other recyclables at no cost.

### *Greene, Inc.*

Paper shredding, and therefore recycling, is done through a general distribution contract (GDC).<sup>xxi</sup> The state's contract with the Secure Document Destruction Enterprise at Greene, Inc. requires that all documents be recycled after destruction. Greene, Inc. touts state of the art equipment used for highly secure plant-based operation that shreds at width of 5/16" which meets federal guidelines. This fine shredding provides material which is then 100 percent recycled via hydro pulping, pursuant to requirements in the state contract. The vendor is required to have on file a written agreement with the recycling company that all paper will be recycled and converted to new paper product within the United States.<sup>xxii</sup> As part of the state

contract, Greene, Inc. provides containers for paper collection. Container options include: 64-gallon carts that hold 180-200 pounds of paper with wheels and a paper slot or an Executive Console which is a locked wooden cabinet with a paper slot that holds 80-100 pounds of paper.<sup>xxiii</sup> When documents arrive at the Greene, Inc. facility they are unloaded with a supervisor in attendance. All documents are shredded within twenty-four hours. Documents are shredded into 5/16ths inch strips which are then compressed into 1,200 bales before pulping. The pulping is done at a facility in Middletown, Ohio and no items leave the state for pulping.<sup>xxiv</sup> After pulping, the product is filtered and finished for reuse.

## **Recycling at State Agencies and Facilities**

Facilities housing state of Ohio employees and operations vary greatly based on the needs and objectives of the agency. In general, state employees are in buildings that are operated by DAS or in buildings operated by non-state entities to which state agencies pay rent.

Our team is comprised of persons from different state agencies housed in different buildings with varied recycling and waste management practices. The team researched recycling at the Lazarus Building and at our respective work sites.

### *Lazarus Building*

In 2005, the Lazarus department store in downtown Columbus closed. The building was restored as a mixed-use office space for tenants including the Ohio EPA and the Ohio Departments of Medicaid and Insurance. The Lazarus renovation has been highly touted as “green”. The Lazarus project is the first renovation project in central Ohio to achieve the LEED Gold rating certified by the U.S. Green Building Council. A LEED Gold rating means that the Lazarus renovation project achieved a high level of environmental sustainability in site development, water savings, energy efficiency, materials, and indoor environmental quality. A “living” roof reduces summer heat buildup and slows water runoff. Low-flow plumbing fixtures, waterless urinals, and energy-efficient systems all reduce utility costs.<sup>xxv</sup> The Lazarus building proudly operates with green practices.

A tour of the EPA offices in the Lazarus building revealed how recycling can be implemented to encourage participation and minimize waste disposal costs. Each tenant of the Lazarus building establishes their own recycling program; the management company, NAI Ohio Equities, does not dictate participation but works with tenants to achieve success. According to Mr. Robert Turrin, senior property manager at NAI Ohio Equities overseeing the Lazarus Building, recycling is easiest if the whole building participates. The management company meets with key individuals on the building committee to discuss how the building wants to recycle. In the past, different recyclers were used at the Lazarus Building and it resulted in an inefficient use of loading dock space. Mr. Turrin stated the building manager needs an active role in any recycling program, as they are paying for waste removal and are responsible for reducing overall operating costs.

Each tenant has a recycling coordinator. The recycling coordinators are responsible for communicating with employees and providing signage for recycle bins within the agency. Tenants and members of the building committee all have varied signage which is easily understood.

In general, Lazarus Building employees have recycling boxes at their desks which they then place into larger bins weekly. Janitorial staff move the larger bins and take the recyclables to the loading dock. Breakrooms and common areas are also equipped with recycling containers. Shared recycling containers are either for paper or mixed aluminum and plastic. Glass is not accepted. Janitorial staff empty these shared containers on a daily, or as needed, basis.



Recycling does add a small amount of time for waste disposal. The availability of recycling containers does allow for the removal of trash cans (e.g., Ohio EPA has tried to eliminate small trash cans). The reduction of trash containers makes up for the inclusion of recycling containers in the janitorial services. From the loading dock, Royal Paper Stock picks up materials and replaces the loading bins. Janitorial staff then return the larger recycle bins to each floor.

Mr. Turrin revealed that approximately 120 pounds of waste are recycled each year. The recycling program at the Lazarus Building is considered a success. Marie Bennett, Executive Secretary at OEPA, expressed pleasant surprise at how little material is landfill waste. Recommendations from Mr. Turrin and EPA staff include keeping the recycling program simple and having a champion in each division. Recycling champions can help get the communication out to colleagues and identify issues and concerns. Recycling communication at the Lazarus Building has focused on staying simple; for example, when non-recyclable materials are found, the effort has been to focus on the one or two most frequently spotted non-recyclables. As an example, extra communication would focus on not throwing Styrofoam cups in the recycle container instead of listing out all the materials that are recyclable.

Lazarus Building managers are interested in recycling as a method of reducing, or inhibiting, the cost of waste removal. Continued, or increased, participation in recycling helps keep common area maintenance charges stable. Tenants may not all be aware that the waste removal, maintenance, and rental contracts are routinely renewed. Renewal of such contracts can be utilized in negotiating lower rents.

#### *The Ohio Bureau of Worker's Compensation (BWC)*

BWC occupies eighteen of thirty-three floors of the William Green Building in Columbus. Other tenants include Ohio Department of Youth Services (ODYS), Ohio Facilities Construction Commission, and the Industrial Commission. BWC rents space in the building and rental costs are inclusive of custodial and other building management.

The William Green Building is managed by Jones Lang LaSalle (JLL). In 2012, JLL announced public sustainability targets. The firm met the initial targets and announced a new sustainability leadership ambition in June 2018. With a thirty-year horizon, the firm has committed to setting a Science based target by 2019 and has introduced goals across clients, workplaces, people and communities.<sup>xxvi</sup> Jeff Pitt, contract property manager with JLL, stated that the sustainability efforts are offered to all JLL properties, currently around 4.6 billion square feet around the world. JLL contract property managers must work within the confines of building ownership, management agreements, and budgets as supplied; these factors limit the sustainability efforts at each building.<sup>xxvii</sup>

As with other state agencies, shredded paper is taken and recycled by Greene, Inc. Royal Paper Stock recycles cardboard and non-shredded paper.<sup>xxviii</sup> The recycling by Royal Paper Stock does not generate a profit for the agency. Cardboard is recycled but is not a significant revenue source.<sup>xxix</sup> There are recycling bins for aluminum cans and plastic bottles on every floor of the William Green Building, most floors have at least two bins for both.

According to Jeff Pitt, Contract Property Manager for Jones Lang Lasalle, BWC pays approximately \$15,000 annually to Greene, Inc. The contract with Greene is a Mandatory Use Contract, so the amount varies per month.

#### *Department of Taxation - Northland*

The majority of the Department of Taxation (ODT) employees, over 900, are housed at 4485 Northland Ridge Boulevard in a spaced owned by Taurus CD159. The Northland building was



renovated and fitted to host many departments that had been performed in scattered sites around the city. The Northland building is now, the processing center for the income and nearly all other state taxes; home for ODT's information technology services; and the primary call center for individual and business taxpayer services.<sup>xxx</sup> The Northland building is also home to the department's tax processing areas, which deals with large quantities of paper. The building owners subcontract with Newmark Knight Frank for maintenance and upkeep.

The Department of Taxation has policies and practices in place to protect confidential taxpayer information. The Department is also subject to federal Internal Revenue Service (IRS) standards for records management. Like other state agencies, Taxation utilizes Greene, Inc. for shredding services.

The Department of Taxation uses both 95-gallon containers and larger 500-gallon containers for paper to be recycled. Taxation employees fill containers with classified waste, (i.e. papers containing taxpayer information). Classified waste is removed twice a week, or upon request, by Greene Inc.'s Document Control to be shredded and recycled. Additionally, the Department of Taxation manages a great deal of paper and cardboard disposal. In calendar year 2017, 109 gaylords of paper and cardboard were disposed of, along with 21 skids of paper.

The Department of Taxation facilities division provides separate bins for paper and drink containers. Throughout the building there are bins for depositing aluminum or plastic drink containers. The drink recycling containers were obtained through a partnership with ODNR when the building opened. Some bins are labeled for plastic only, while others are marked as plastic and cans. There are fifteen containers that are emptied daily by janitorial staff. The department has not experienced any cleanliness problems from bottle recycling. The janitorial staff places the products in larger bins at the loading docks. Recyclables from these containers are picked up on a weekly basis by Royal. ODNR helped Taxation form a relationship with Royal for removal of recyclables. Royal does not charge Taxation for removing the recyclables, and non-paper products are not moved in a large enough quantity to generate a refund.

### DAS Owned/Operated Buildings

DAS charges tenants an annual rental rate per square foot. The annual rental rate is the total building operating cost plus the amortized amount of capital improvements divided by square feet. The rate is estimated at the start of each fiscal year using projected expenditures. If actual expenditures come in different than projected, the difference is taken in the subsequent year. Rental rates must "break even" and not over-collect or under-collect. DAS proposes each facility's annual rental rate to OBM and the assigned OBM analyst then reviews and approves the rates. When OBM does not approve the proposed rate, the rent changed is set by OBM. The rental rates, as seen in Table 1, may vary greatly by building.

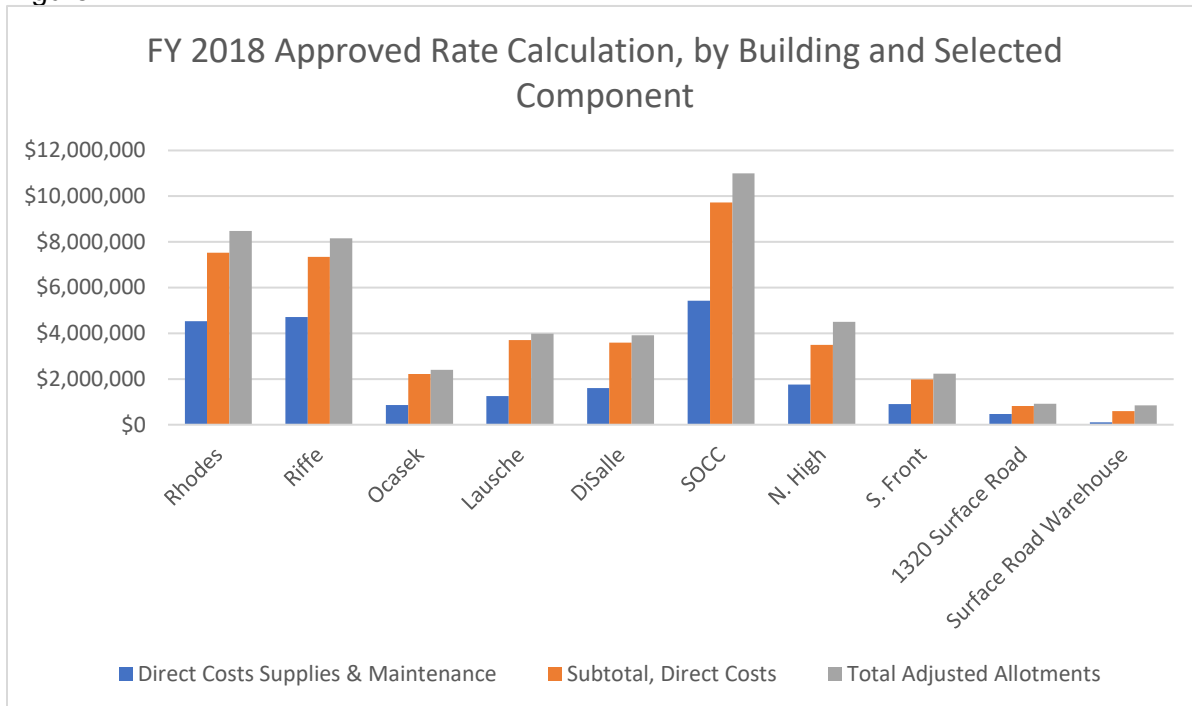
Table 1. Fiscal Year 2016 Non-payroll Service Charges by Building

Building	FY 2016 Actual Non-Payroll Service Charges per square foot <sup>xxxi</sup>
Rhodes – Columbus	\$11.65
Riffe – Columbus	\$14.54
Lausche – Cleveland	\$10.76
Ocasek – Akron	\$15.81
DiSalle – Toledo	\$12.65
N. High – Chestnut	\$9.89

Surface Road – Office	\$10.33
Surface Road – Warehouse	\$9.95

DAS charges can be broken down into direct and indirect costs. Indirect costs include: payroll, personal services, supplies and maintenance, equipment, goods for resale, judgements and transfers, and unallotted expenses. It is assumed that waste disposal and recycling is a portion of supplies and maintenance. Excluding the Surface Road warehouse, supplies and maintenance range from 34 percent (Lausche Building) to 64 percent (Riffe Building) of direct costs.

Figure 1.



The DAS Office of Properties and Facilities provides property management services to office buildings managed by DAS including building management, contract and inventory management, maintenance, security and janitorial services.<sup>xxxii</sup> Included in non-payroll service charges are the DAS General Service Division's (GSD) costs to operate buildings on a daily basis (i.e., power, janitors, security, maintenance staff and contracts, and building management employees).<sup>xxxiii</sup> Our research found that recycling varies greatly among DAS operated buildings. One regional facilities manager was unaware of any program available and is "pretty sure if you wanted to do one within your own agency you could."<sup>xxxiv</sup> The facility manager takes cans and bottles home to recycle. Other buildings provide a central collection spot for bottles and cans on various floors.

### *The Riffe Building*

The Riffe Center is a state-owned building housing approximately 2,000 state employees. The Riffe Center contains 1.1 million square feet of space among 32 stories. Portions of the building are not traditional office space. Non-traditional office space are areas such as: The Conference and Training Center which occupies over 12,700 square feet on the 31<sup>st</sup> floor housing meeting

room space for groups of 15 to 100 people, the Ohio Arts Council's Riffe Gallery, housed on the 1<sup>st</sup> floor, and the Capitol Theatre. The Riffe building manager did not respond to repeated interview requests. High level data was provided by Shelby Banton, DAS Office of Property and Facilities Support Services Manager.

According to DAS there is a recycling program available for paper, cardboard, plastic, and aluminum. Paper and cardboard recycling is available and picked up by Royal Paper Stock. Some state employees in the Riffe building are not even aware recycling is available. Non-confidential paper is unnecessarily added to shred bins by some employees interested in recycling. There is not a program in place to educate building employees about waste disposal.

ARC Janitorial, a state janitorial contractor, bags the plastic and aluminum products. Royal Paper Stock picks up plastic and aluminum recyclables as a courtesy. Plastic and aluminum are not gathered from all floors occupied by state employees. It is not clear to employees where in the building plastic and aluminum can be recycled.

### *North High Street Complex*

The Ohio Department of Aging is one of the state tenants housed at the North High Street Complex (NHC) located at the corner of North High Street and East Chestnut Street in Columbus, Ohio. Aging, like other state agencies, is serviced by Greene, Inc. and shredded paper is recycled. Aging pays Greene, Inc. \$30 per month to shred up to 300 pounds. There is a charge \$0.10 per pound for amounts over the 300 pounds.<sup>xxxv</sup> Employees interested in recycling paper often place non-confidential documents in the shred bin for recycling purposes. According to DAS, Royal Paper Stock makes weekly pickups of paper and cardboard at the building. Tenant employees do not all have knowledge and access to the Royal Paper Stock recycling bins.

Recently the Ohio Department of Aging and Department of Health have combined human resource functions. The leadership of the combined human resources group acknowledges that employees frequently ask for recycling opportunities and are very interested in providing access. Steps are currently being taken to expand recycling services for employees.

### *Rhodes Tower*

Rhodes Tower is another of one of the state-owned buildings operated and maintained by the Department of Administrative Service's Office of Properties and Facilities. Taxation employees make up a very small percentage of the buildings 4,000 occupants.<sup>xxxvi</sup> Royal Paper Stock does collect or recycle some materials from Rhodes Tower. Cardboard is collected from occupants and compacted at the loading docks. Each floor has a giant blue bin for paper that is emptied and recycled regularly. Paper in the blue bins do not contain confidential data and is not shredded.<sup>xxxvii</sup> Papers containing confidential data are recycled, via secure shred bins, under the contract with Greene, Inc.

DAS contracts with CBRE for facilities services. Some tenants in Rhodes Tower have a central recycle bin for aluminum and plastic drink containers. The recycle bins are simple cardboard boxes with a plastic bag liner. The boxes were not specifically designed for recycling but are positioned underneath a clear and easy to read sign. These recycling containers are for aluminum and plastic drink bottles. Recycling containers are located on floors when requested by tenants. The recycling container on the Department of Taxation's 22<sup>nd</sup> floor is located in a shared kitchenette. There is no regular or formal recycling communication. New employees are exposed to the recycling container when shown the kitchenette by fellow employees. A single CBRE employee is responsible for emptying these containers. Emptying of the recycling container is done regularly and if necessary, upon request. There are no problems with the

container being over capacity. Recycling on the 22<sup>nd</sup> floor has not contributed to any cleanliness problems. The availability of the recycling container discourages employees from storing materials in their offices for extended period before taking them home to recycle.

The basement level of Rhodes Tower contains a cafeteria with distinct plastic bottle shaped recycle containers. These containers are convenient for anyone dining in the cafeteria. The cafeteria containers are regularly emptied by ARC employees.

Rhodes Tower building management does not actively encourage recycling. One reason recycling is discouraged is bugs. A building staffer shared that a recent problem was identified where an employee was gathering recycling under their desk and an infestation began. There was no mention of bug problems in the official recycling containers with a regular disposal schedule.

## **BEST PRACTICES**

Recycling practices in other State offices and employers were reviewed. Our focus was on recycling programs that were based in locations encouraging the practice. Additionally, the scope was limited to office-based recycling.

### **Missouri**

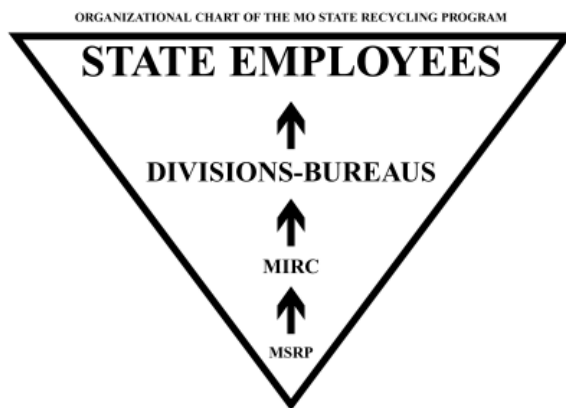
In 1989, the Missouri inter-departmental committee adopted a policy for Recycling and Waste Reduction. Each department and state agency were directed to develop and implement a policy for recycling and waste reduction. Each department and state agency shall, to the maximum extent practical, separate plastics, paper, metals and other recyclable items. The purpose of the policy is to coordinate the efforts of the executive branch departments for the implementation of a total recycling system to include collection, market development and environmentally conscious procurement. This policy contains a broad spectrum of program elements which will be implemented subject to the development of specific implementation strategy at each state facility. A broad array of options was developed to maximize the practicality of setting up recycling programs in as many state facilities as economically feasible.

*"It shall be the policy of the executive branch departments to implement recycling and waste reduction to the maximum extent practicable considering the amount of recyclables generated in each facility, the local market for recyclable materials, and facilities considerations including storage space and fire and safety regulations. The state shall also maximize the procurement of goods, needed by state government, that are made from virgin materials. The state shall also encourage the development of industries in Missouri that recover materials for the purpose of manufacturing other usable products."*

The Missouri recycling collection implementation plan contains eight essential elements to ensure effective implementation of the state recycling policy. Elements may be adjusted to the conditions to suit each individual state facility. The eight essential elements are:

1. Program Coordinator; each state agency shall designate a Solid Waste Management Coordinator. Each departmental coordinator shall designate monitors in each of its office locations, ensure coordination of the program and the training of employees as to the procedures of the recycling program. The optimal number of program monitors shall be one monitor for each 25-50 employees at a state office location.
2. Separation of Paper; waste paper generated at an employee's desk will be separated by that employee. Special containers will be provided convenient to the employee's desk. When the container of recyclable materials is filled, the container will be emptied for ultimate removal of the recyclable materials to the storage area of the facility.

3. Concentration of Paper; it is necessary to have a flexible implementation plan for the concentration of paper and other recyclables. Central bins will be provided in high paper generation areas. The preferred method of concentration of paper shall be the employees bring their recyclables from their special recycling containers to a central bin located in the general work area. Acceptable alternatives to this method may also be - (a) janitors pick up the recyclables on a scheduled basis at the individual employee's desk, and (b) janitors alternate the collection of recyclables and trash pick-up at the employee's desk.
4. Removal to Storage Area; removal to the storage area for transportation of recyclables from the facility will be for each state facility that is part of the recycling program. Acceptable removal methods include removal - (a) by Missouri Correctional Enterprises (MCE) to the central storage area (b) by contracted janitorial services, agency custodial crews, mail clerks and stores personnel or by other organization which has been contracted for such removal.
5. Storage and Pickup; a secure storage area shall be designated for the concentration of separated recyclables for pickup from each state facility. Storage conditions shall meet all local, state or federal requirements for fire and safety codes.
6. Confidential Materials; departmental coordinators develop procedures for the destruction of confidential materials in a manner such that those materials be recycled.
7. Separation and Collection - Other Recyclables; waste audits are to be conducted and as part of the waste audit, the coordinator shall determine what recyclables, other than waste paper, are in the waste stream of the specified facility and make a recommendation to the recycling coordinator, Division of Purchasing and Materials Management, as to the feasibility of collecting them for the purposes of recycling, Such items considered include corrugated boxes, plastics, aluminum, waste oil and solvents.
8. The Missouri State Recycling Program (MSRP) is staffed by a single full-time employee. The state recycling coordinator does most of the planning and administration of recycling and waste reduction. MSRP stresses that success of the program is largely reliant on individual employee's awareness and willingness to participate in recycling activities. To stress this, point the MSRP organizational chart places the greatest import on employees.



xxxviii

Rob Didriksen of the Missouri State Recycling Program provided keys to the state's recycling viability. Proceeds generated from the sale of Missouri scrap material are eligible (not required) for deposit into the State Recycling Fund. In fiscal year 2017, \$186,865 was generated for the state recycling fund.<sup>xxxix</sup> This fund is dedicated to recycling-related expenses within state government. Ohio currently has similar legislation in place.

Cooperation and partnerships are key to the program's success. When a majority of state agencies utilize the same recycling contract or service the state is able to negotiate better

terms. This works much better than each agency trying to manage its own contract or service. State Recycling worked with an agency to develop an “offsite document destruction” contract that not only saves the agency money on document destruction, but also generates revenue for deposit into the recycling fund.<sup>xi</sup>

### **New Jersey, Lockheed Martin**

Lockheed Martin Maritime Systems and Sensors of Moorestown, NJ, has two recycling programs in place. One program handles waste generated by a construction project and the second is office focused. Paper, commingled bottles and cans, and corrugated cardboard are separated and recycled in the office focused program. In 2011, Lockheed Martin reported recycling cost savings of \$1,784 from comingled bottles and cans alone.<sup>xii</sup> While not an overwhelming dollar amount, the Lockheed Martin program demonstrates that even small recycling programs can be beneficial.

### **CHALLENGES**

Our capstone group discovered that comparing practices at various state agencies and facilities is a very challenging research task. We were advised to interview the building managers at DAS sites to learn about recycling efforts. The building managers, in general, advised that recycling was not widespread or encouraged because it was expensive. However, no building managers were able to cite numbers or data to support the expense concern. We found that Royal Paper Stock picked up bottles and cans free of charge. Recycling containers do not need to be costly; the Rhodes Tower 22<sup>nd</sup> floor is a good example of a cardboard container that works very well.

Building managers also cited cleanliness as a reason to avoid recycling. The experience at the Lazarus Building and the Northland Building has been that recycling does not cause any cleanliness or infestation problems. It can be assumed that providing a comparatively easy location for employees to deposit bottles and cans are cleaner than requiring employees carry such home, which may not happen immediately. Additionally, organized recycle bins tend to be lined or made of plastic to avoid leakage problems – this may not be the case with an individual employee recycling desk side.

Human behavior is a challenge to recycling. What is recommended is a voluntary practice, and there is no suggestion that recycling be mandatory by all employees. There are challenges to contamination in single-stream recycling when products are co-mingled. Single stream recycling of products other than paper is not recommended. Overall, successful office recycling programs are focused on a mixed-stream of aluminum and plastic. The limited scope of such programs increases the chances of success as these are familiar products and programs.

### **CONCLUSION**

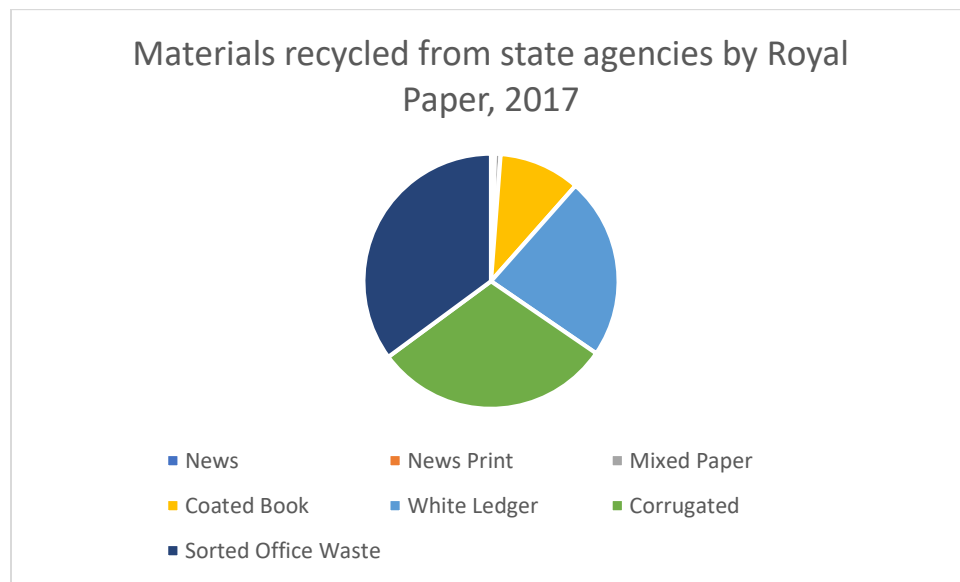
#### **Recommendations**

##### *Should there be recycling at State Agencies?*

Our research found that implementing a state-wide recycling policy will not create a new, substantial revenue stream. In the absence of increased revenue, should state agencies put forth effort to allow or encourage recycling? Yes, for multiple reasons state agencies should allow employees to continue recycling and facilitate the process. Recycling provides minimal revenue, decreased costs, decreased pollutants, increased employee satisfaction, and makes Ohio “cool”.

Royal Paper Stock provided some information on recyclables collected from state agencies.<sup>xiii</sup> In 2017, 509,887 pounds of material from six state agencies was diverted from the solid waste

stream. Approximately 35 percent of this material was sorted office waste. Corrugated cardboard was about 30 percent of the recycled material. The remainder of the material was a variety of paper products. The recycling of these products generated \$22,036 for the state, according to a representative from Royal Paper Stock.<sup>xliii</sup> In general, Royal Paper Stock does not provide a refund on cans and plastic. Refunds on cans and plastic are provided in cases where there is a significant volume of material. Certain agencies, such as the Department of Transportation and Department of Natural Resources, do generate recyclables in a sufficient quantity to generate a rebate.



Recycling provides leverage for negotiating lower rental costs because there's less waste contributing to disposal costs. The recycling efforts of Missouri state agencies diverted 6,395 tons of waste from landfills in Fiscal Year 2017. If this amount of material had been sent to landfills it is estimated that the State of Missouri would have paid at least \$295,513 in tipping fees.<sup>xliiv</sup> Savings are likely greater, as tipping fees do not include the waste hauler's labor and transportation costs.

Recycling helps keep pollutants from the atmosphere. Royal Paper Stock shreds nearly 17 tons of paper, which in addition to trees and waters saves 85 cubic yards of landfill space, 69,413 kilowatt hours of energy, and 1,016 pounds of pollutants.<sup>xliv</sup> On occasion, recycling and environmental concern is framed as a partisan issue. Increasing recycling availability is likely to benefit all employees and should not be considered divisive. A study published in the Journal of Environmental Psychology found that participants who doubted the scientific consensus on climate change were likely to report engaging in pro-environmental behaviors.<sup>xlvi</sup>

The availability of recycling can help retain and recruit employees. A study published in Interdisciplinary Environmental Review found employees are more likely to be satisfied with their jobs if they work for a company that is perceived to be environmentally friendly.<sup>xlvii</sup> Research suggests that investment in environmental performance and related communications can have significance in a company's ability to recruit, motivate and retain the best talent.<sup>xlviii</sup> Many current state employees, and most future state employees belong to the xennial or millennial generations. Individuals born after 1977 have been exposed to the concept and social good of recycling their entire lives. Gov. Kasich has expressed a desire to make Ohio "cool", by increasing workplace recycling, like Austin and the research triangle in North Carolina. Austin is working on an ambitious goal of keeping 90 percent of discarded materials out of the



landfill.<sup>xlix</sup> Encouraging state employees to recycle at work is a small step to being “cool” like Austin while increasing employee retention and recruitment.

## Next Steps

The adoption of a statewide policy to encourage recycling is recommended. Such a policy, similar to that of Missouri, could help guide decision makers at state agencies. A top down push for recycling could help building managers and others allocate time and energy to implementing recycling programs and making facilities accessible.

Employees at DAS operated buildings should speak to building management if they would like recycling containers available. In general, building managers are not supportive of increasing the recycling of plastic or aluminum containers. Employees may have success if multiple tenants contact building management and discuss Royal Paper Stock’s current pick up of recyclables.

Increased communication at the Department of Taxation’s Northland location could help encourage recycling. The building currently uses some containers which are marked as “bottles and cans” or just “cans.” Many long-time residents of the building use the “cans” bins for both bottles and cans as all the recycling bins are comingled for pick up. It is recommended that the “cans” bins include a simple laminated label clarifying that both bottles and cans are acceptable.

Additionally, the Department of Taxation’s Northland location includes many new permanent and seasonal employees each year. It may encourage further waste reduction if the recycle bins are pointed out to all new employees. The Department currently has an intranet site, TAXI, which could be used to remind employees about waste management. A recycling themed intranet article could be very helpful in the early spring as the bulk of seasonal employees join the Department at that time.

At the North High Street Complex, the combined human resources divisions of the Department of Aging and the Department of Health are seeking information about providing recycling access to employees. It is recommended that recycling services be provided. This effort will reduce waste and improve employee satisfaction. It may be helpful for the facilities manager to speak with colleagues from the Rhodes Building where a simple recycling program is currently in place.

At the Riffe Center, there is currently paper, cardboard, and some can and bottle recycling available. It is recommended that the current location of containers be reviewed with a goal of increasing access and visibility. As is, tenant employees who are very interested in recycling are not aware of what services are available and therefore implementation of a recycling awareness program is recommended to increase utilization of current services.

State agencies are encouraged to utilize Elytus tools to conduct waste management audits and establish a baseline for use in measuring future waste reduction.

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