

Columbia, Missouri's Recycling Program: Existing Challenges Amplified by COVID-19

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Summary

On July 8, 2020, city officials in Columbia, Missouri, made a unanimous decision to suspend the city's curbside recycling program for the 124,519 residents of Columbia. Curbside recycling was suspended due to staffing shortages, the COVID-19 pandemic, and ongoing workforce shortages in Commercial Driver's License (CDL) operators who are responsible for safely driving commercial-size trucks that haul refuse and recyclables. As of December 1, 2021, a modified schedule is still in place for collecting recyclables every other week to address the staffing shortage and resume the curbside recycling program.

This brief will examine policy considerations to address the staffing shortage within the Solid Waste Utility Department by developing strategies to reduce the transmission of the COVID-19 virus during collection services. The brief will also address common workplace injuries sustained by Solid Waste Utility employees and provide viable solutions to assist the City of Columbia with developing effective recruiting and employee retention strategies.



Background

In March 2020, as the global COVID-19 pandemic took hold of the U.S., the refuse and recycling regimen in the city of Columbia was impacted significantly. Beginning in May, several employees and temporary personnel working in Columbia's Solid Waste Utility Department contracted the COVID-19 virus.¹ The spread of the virus escalated staffing shortages and rendered the city unable to collect residential refuse and recyclables. After the infected sanitation workers recovered, the Solid Waste Utility Department resumed full residential trash and recycling collection on Monday, June 8, 2020.² However, by the end of June, the staffing shortage remained, making it difficult for the city to collect both refuse and recyclables. Consequently, crews collected only 40% of all curbside recyclable materials.³ The department placed a cap on the number of recyclables they would collect to direct more focus toward refuse collection.⁴

Staffing issues within the Solid Waste Utility Department persisted into July 2020 and forced the City of Columbia to suspend curbside recycling until further notice.⁵ The primary factor that led to this suspension was the city's difficulty recruiting and retaining Commercial Driver's License (CDL) operators.⁶ With no option for curbside recycling, the city encouraged residents to drop off their recyclables at one of the eleven recycling drop-off locations around Columbia. Although the eleven recycling sites were spread throughout the city, they did not have the capacity to meet the demand of Columbia's residents and the bins were routinely over-filled.⁷

The predominate challenges that impact the Columbia Solid Waste Utility Department include workplace injuries and staffing shortages. The COVID-19 pandemic exacerbated these issues. Residents and the Columbia City Council debated abandoning current manual form of trash collection and adopting an automated roll cart system to reduce employee injuries. To assess residents' attitudes toward implementing the roll carts, the city released a public survey in 2011.⁹

Results indicated that 50.5% of respondents favored roll carts while 49.5% were opposed to roll carts.¹⁰ Residents not in favor expressed concerns that senior citizens could have difficulty maneuvering the roll carts.¹¹ The Disability Commission also expressed concern regarding the capacity of individuals with disabilities to move the roll carts to the curb, especially during winter weather.¹² On Tuesday, March 15, 2016, the City of Columbia passed Proposition 1, giving residents the opportunity to prohibit the transition to an automated trash collection system for a minimum of six months.^{13, 14} Although Proposition 1 passed with more than 53.8% of vote, Columbia residents continue to advocate for the city to adopt an automated refuse and recyclable collection program.

Before the recent workforce shortages and the COVID-19 pandemic, the City of Columbia Solid Waste Utility Department had sufficient employees to administer two separate departments—one focused on refuse collection and the other on recyclables.¹⁵ To address the staffing shortage and prevalence of common workplace injuries, the Solid Waste Utility Department adopted a new policy on February 1, 2021. This policy states that only refuse that was placed in city-issued bags with a special logo on the front would be collected. Residents received trash vouchers, which could be exchanged for city-approved trash bags. The rationale for this change was to reduce the volume of bulky trash items that are left for pick-up and, in turn, to reduce workplace injuries for refuse and recyclable collectors.¹⁶ Columbia citizens can receive 104 trash bags per year, at no-cost, and purchase additional five-bag-count rolls for \$10 (\$2 per bag).¹⁷ Since implementing city-approved trash bags, the City of Columbia has collected 25% less waste in 2021 than it did in 2020, and residential curbside recycling has increased by 19%.¹⁸ This increase in curbside recycling is an indication that there is a demand for residential recycling in the City of Columbia.

Background continued

Workforce Demand

According to the Solid Waste Association of North America’s (SWANA) Applied Research Foundation, Commercial Driver’s License (CDL) driver shortage in the waste management industry is the result of an increased demand for trucking services due to industry growth, low participation of women in the industry, occupational danger, and an aging workforce.¹⁹ Columbia is not the only city experiencing staffing shortages in solid waste collection. Solid waste utility departments across the nation are experiencing a severe shortage in CDL staff.²⁰ According to the U.S. Bureau of Labor Statistics, refuse and recycling employment is predicted to increase by 8% from 2018 to 2028.²¹ The staffing shortage in the waste management industry will likely increase due to the labor market tightening.²²

Women in the Workforce

By 2028, the state of Missouri’s demand for refuse and recyclable collectors is predicted to increase by 16.01%.²³ According to the U.S. Department of Labor, of the 7.6 million women in the workforce, only 1,200 women work in the waste and recycling industry, which is just 1% of the 116,000 sanitation workers in the United States.²⁴ As a result, this data suggests that there is potential to address the CDL driver shortage by increasing female participation in the industry.²⁵ If the City of Columbia transitioned to an automated trash collection system, female workers may be more open to work in non-sanitation-related jobs as the risks of injury or illness would be minimized.

Injuries

Trash collection requires substantial manual labor and risks that are not necessary conditions of the job in other occupations.

Risks for trash collectors include injuries, illness, and possibly death in vehicle-related accidents. Such risks may prevent women and other groups from joining this workforce. Injuries can decrease retention rates and reduce the number of employees that are available to work.²⁶ Solid waste employees are at risk of being exposed to various biological and chemical materials that potentially cause damage to their bones, skin, lungs, and lead to digestive complications.²⁷ Waste management employees hoist over six tons (13,000 lbs.) on average daily. Recurring physical labor such as lifting heavy materials combined with an aging workforce places staff members at risk of getting injured.²⁸ The most common injuries suffered by employees in the City of Columbia’s Solid Waste Utility Department include cuts, punctures, falls, and sprains. Table 1 depicts the total amount of compensation claims for the following categories of employees in 2019.²⁹

Table 1. Compensation Claims for the City of Columbia’s Sanitation Job Categories in 2019.

Compensation Claims for the City of Columbia’s Sanitation Job Categories in 2019

Category	Amount in Compensation Claims
Solid Waste Admin *	\$95,589
Solid Waste Commercial	\$58,581.96
Solid Waste Residential	\$297,805.15
Solid Waste Recycling	\$34,890.26
Solid Waste Commercial Recycling	\$311,070.43
Solid Waste Landfill	\$415.00
Solid Waste University	\$27,118.07
Solid Waste Recycling Dropoff	\$241.15
Solid Waste Material Recovery	\$2,260.89

* Admin who endured injuries while covering for workers in the field.

Workplace injuries tend to be more serious for older employees.³⁰ The percentage of U.S. workers 55 and older is increasing due to a combination of demographics, the labor market, and economic forces. By anticipating the challenges that come with physical and cognitive changes of age, the industry can prevent injuries endured by an aging workforce.³¹

The COVID-19 pandemic and limitations on commercial activities impacted the mobility and manufacturing efforts of businesses nationally. These changes then significantly affected waste management and recycling because they reduced the number of recyclables collected nationwide.³² Stay-at-home orders across the nation increased the public demand for plastic packaging used for food and grocery delivery.³³ Maximizing recycling options during a pandemic could prove beneficial because recycled material collected through curbside recycling can be reused by generating the essential supplies that are in high public demand such as toilet paper, sanitizing wipes, packaging for various products, boxes for shipping, and paper towels.³⁴ The figure below shows that the number of recyclables collected in the City of Columbia decreased due to the stay-at-home order that was implemented in March 2020.

“According to the U.S. Bureau of Labor Statistics, refuse and recycling employment is predicted to increase by 8% from 2018 to 2028.”

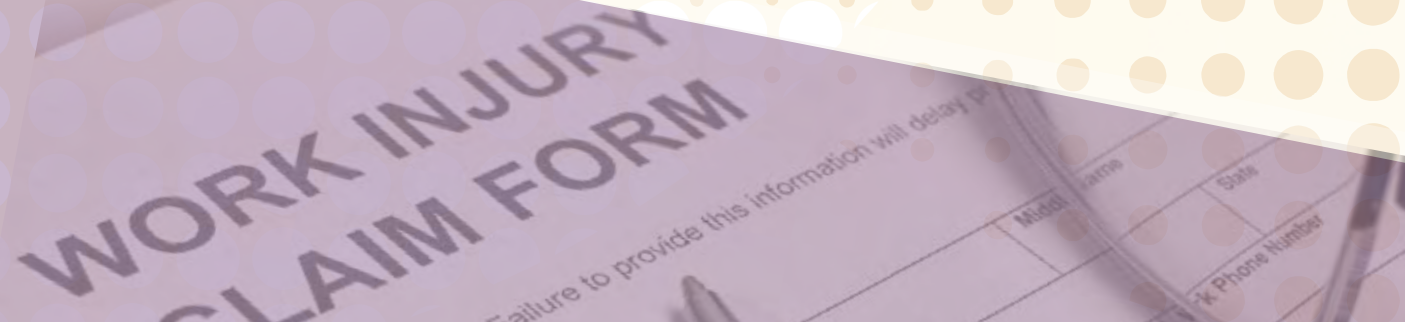


Figure 1. Columbia Missouri Curbside Recycling Tonnage by Month

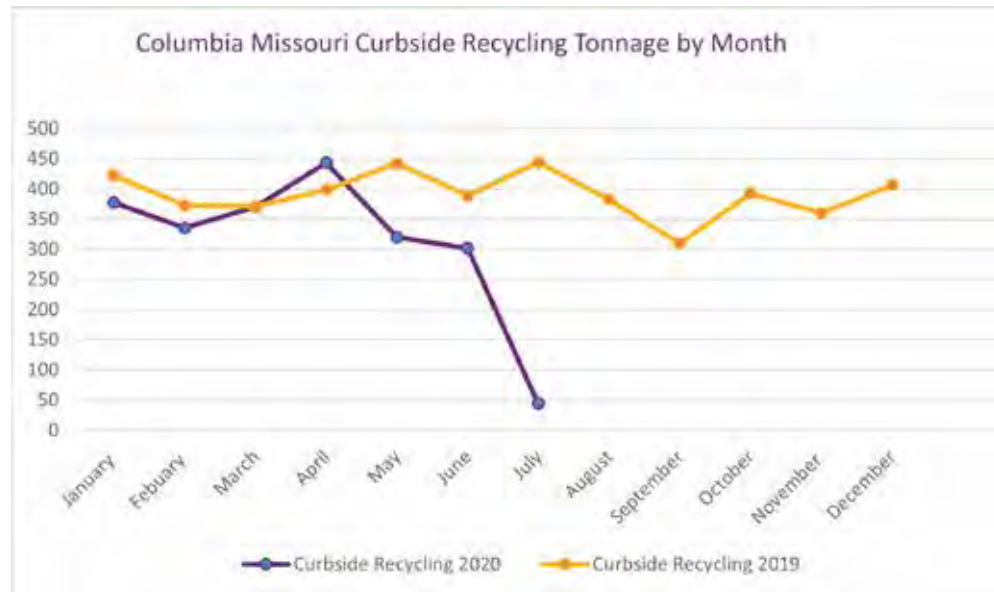


Figure 1 represents the total tonnage of recyclables collected through curbside recycling each month for the years 2019 and 2020. According to Figure 1, rates of recyclables collected through curbside pickup were higher in 2019 than in 2020 due to the events leading up to the suspension of curbside recycling in March 2020. In 2019, 4,689 tons of curbside recyclable material was collected; in 2020, the tonnage decreased to 2,193 tons. In April of 2020, curbside recycling began to plummet due to employees contracting the COVID-19 virus.

In May, the recyclables collected through curbside pickup began to decrease even more due to the city temporarily suspending the program. Although the program was resurrected in June, the amount collected continued to decrease because crews were instructed to only collect 40% of curbside recyclables.³⁵ Eventually, curbside recycling was suspended indefinitely in July for the rest of the year. As a result, Figure 1 illustrates how the events leading up to the indefinite suspension caused a massive decrease in the total amount of recyclables collected throughout the year 2020.

Figure 2. Columbia Missouri Drop-off Recycling Tonnage by Month

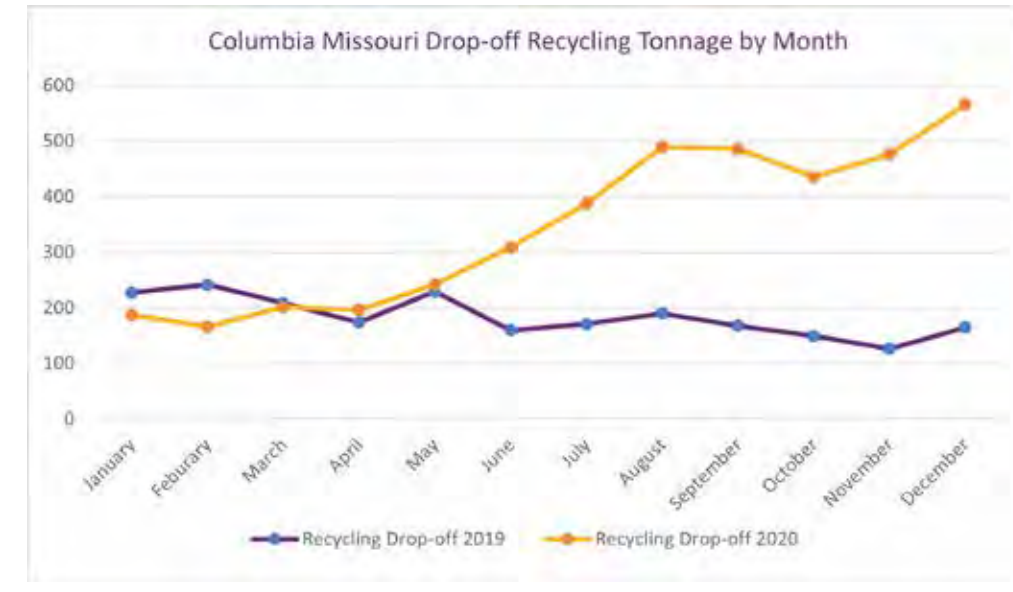


Figure 2 illustrates the difference between the amount of recyclables collected during 2019 and 2020 at the 11 drop-off sites throughout the City of Columbia. The amount of recyclables collected at the drop-off centers in 2020 exceeded the amount collected in 2019. Because the trajectory of recyclables collected started increasing from June to December, it is possible that this occurred due to the city temporarily suspending curbside recycling.

After curbside recycling was suspended in July, the amount of recyclables collected from drop-off centers began to soar. Based on Figure 2, even though curbside recycling was suspended, the recycling demand in the city remained high. This was illustrated by the overflow of recycling bins at drop off locations across the city. The staffing shortage within the Solid Waste Utility Department made it difficult for the city to keep up with the recycling demand.³⁶

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In April of 2020, curbside recycling began to plummet due to employees contracting the COVID-19 virus.
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Figure 3. Total Columbia Missouri Recycling Tonnage per Year

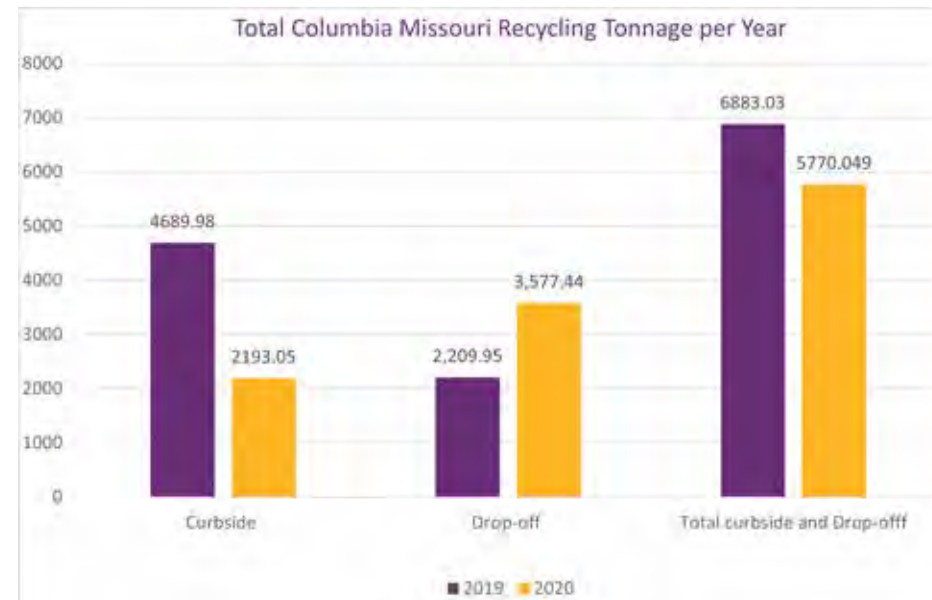


Figure 3 provides data for the overall tonnage collected through curbside and drop off recycling for the years of 2019 and 2020. Although curbside recycling was suspended in the City of Columbia for a short period of time, it is evident that there is still a high demand for recycling from residents in the city. Specifically, there was an increase of 1,367.49 tons collected from drop off recycling centers between 2019 and 2020. Despite the increased usage of drop-off centers in the City of Columbia, the total amount of recycling collected from curbside and drop-off centers decreased. In 2019, the total amount collected equaled 6,883 tons; in 2020, the amount collected was 5,770, representing a decrease of 1,112 tons.

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Despite the increased usage of drop-off centers in the City of Columbia, the total amount of recycling collected from curbside and drop-off centers decreased.

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Policy Recommendations

To Reduce Workplace Injuries

- Switch to an automated waste and recycling collection system in conjunction with the institution of roll carts to reduce physical strain that waste management employees endure when hoisting trash into the vehicle and limiting their contact with waste to avoid risks, injury, and illness.
- It is important to prepare for an aging workforce as the median age is rising in the refuse and recycling industry. As a result, the Solid Waste Utility Department should incorporate modern technology into refuse and recyclable collection to reduce injuries from excessive physical labor.
- Adopt automated recycling and refuse trucks that contain mechanical arms so waste management employees do not have to withstand extreme temperature environments common to Missouri and thus giving them a more comfortable work environment.³⁷

To Recruit and Retain a Skilled Workforce

Recruitment

- Develop new recruiting strategies that focus on increasing women's participation in the waste management industry, which can assist with the ongoing staffing shortages.
- Emphasize the inherent advantages of the waste management industry through a perspective of a CDL operator. Unlike most jobs that require a CDL, operators in the waste management industry have regular hours, no time away from home, and there is an ongoing need for refuse and recyclable collectors.
- Develop unconventional recruiting and educational strategies to attract the interest of younger generations.

Retention

- Create a new City ordinance under Sec. 19-103 - Professional Dues and Licensing Fees - that focus solely on employees within the Solid Waste Utility Department. If the city is paying for the employees to receive a Commercial Driver's License (CDL), the city should require employees to stay in the solid waste department for at least a year. If the employee resigns from the Solid Waste Utility department within a year after he or she received said training, the amount should be deducted from the employee's last paycheck.
- The Solid Waste Utility Department in Columbia should create new practices and waste management procedures that can assist with reducing employees' exposure to injuries and illnesses.

To Respond to Public Health Emergencies

- The City of Columbia should develop disaster management strategies that take into account the risks that employees in the Solid Waste Utility Department may endure. These strategies should contain quick response steps, and recommendations that focus on handling hazardous debris.³⁸
- Develop a strategic training program that will explain the risks of the position and give employees the knowledge to handle risky biomedical waste generated by medical facilities.
- Ensure that health care facilities are properly disposing of waste to reduce the spread of illnesses.³⁹
- Refuse/recyclable collection systems should incorporate a technology-based collection solution such as implementing roll carts as a means of waste collection to safely handle the intricacies of waste management.

Conclusion

In conclusion, the information provided in this brief shall serve as a guide in favor of the city transitioning to an automated trash collection system to mitigate the risks associated with the transmission of COVID-19, address staffing shortages, as well as reduce risks for trash collection workers. As a result, developing strategies that focus on employee retention, adopting automative recycling practices, creating safety protocols in the face of the pandemic, reducing high employee turnover rates, and focusing on recruitment is important to meet citizens' demand for recycling in Columbia.

The global COVID-19 pandemic had an impact on communities throughout the nation and the world. In the Solid Waste Utility Department in the City of Columbia, the impact was staffing shortages that led to a dramatic decrease in curbside recycling, and an unmanageable increase in drop-off recycling. The long-term suspension of curbside recycling during 2020 decreased the total amount of recyclables collected throughout the City of Columbia. Although the city was able to resume the curbside recycling regimen, the recommendations above may reduce workplace injuries and create a more comfortable working environment for employees, which can increase employee retention rates. Since the demand for sanitation workers is expected to increase in the near future, these recommendations can assist the City of Columbia with developing strategies to ensure the preservation of the curbside recycling regimen during future unforeseen adversities.



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