



Routeware

SMARTCITY™

CUSTOMER STORY

Concord, North Carolina

Overview

Facing rising costs and declining service, the City of Concord, NC, took a bold step to improve waste and recycling collection for its residents. In 2019, the City decided to bring operations in-house, ending a long-standing reliance on private contractors. Robin Barham, Solid Waste Director, and Greg Holt, Deputy Director, led this initiative. In addition to procuring new equipment and additional staff, the City required a technology solution to create routes, train drivers, and manage day-to-day service issues. In 2023, the City selected Routeware SmartCity to implement its in-house operations, deploying the Driver App and Geotab devices across its 15-vehicle fleet for garbage and recycling.

**\$320k**saved annually from
fleet optimization and
reducing go backs**1hr**Reduced average route
time by 60 minutes**200k**pounds of CO₂ avoided

Route Efficiency

In 2019, Concord developed new routes for bringing operations in-house. However, these routes quickly became outdated due to the City's rapid growth. As a result, operators were often faced with 10-hour days. To address these issues, the City partnered with Routeware SmartCity to optimize all its routes. Using Routeware SmartCity's high-density routing capabilities, Routeware's routing specialists focused on optimizing Concord's routes based on time rather than stops.

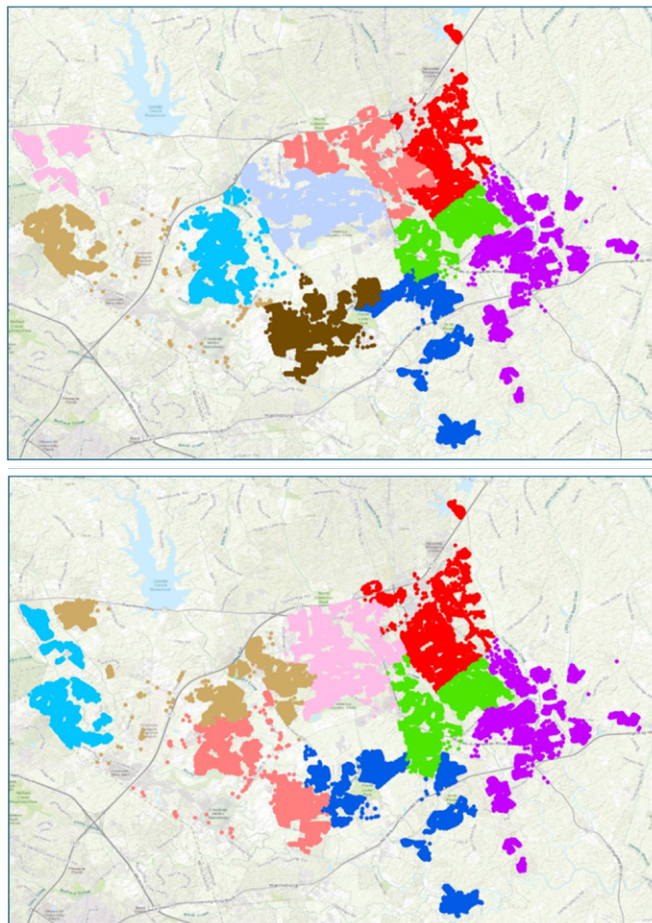


Figure 1
Top: Old City Routes / Bottom: Optimized City Routes

The results showed the City could operate more efficiently by moving from a five-day to a four-day schedule. The solid waste department implemented these route changes, leveraging a deep understanding of the Concord community and driver needs to ensure success.

The resulting routes synchronized drivers' schedules, reduced overtime, and increased route efficiency. Routeware SmartCity reduced Concord's average route time by an hour saving the City an estimated \$49,500 per year.

Customer Satisfaction

Using Routeware SmartCity, Concord prioritizes high-quality, transparent, personalized service. With location alerts, drivers automatically receive a pop-up notification on the Driver App as they approach an address, notifying them of important instructions associated with that customer. The City utilizes this feature to ensure equitable service for all residents, including the 260 citizens who receive backdoor collection.

The City also utilizes Routeware SmartCity to note issues at the curb, with drivers documenting "not out," "extra," "overflowing," "excessive contamination,"

and “blocked” bins using their devices. This information is used to let residents know why their garbage or recycling was not collected and protects drivers from unnecessary go-backs. By logging issues and reducing unnecessary go-back trips, the City has saved an estimated \$270,652 since deployment.

According to Director Robin Barham, “In our first month of service, we had a better record among our customers than our contractor had in each of the previous six months.” In a 2024 survey, the solid waste department received a 95% satisfaction and neutral rate, ranking second only to the fire department. The satisfaction rate sits 30% higher than the national average and is up 5% from 2019.

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Director

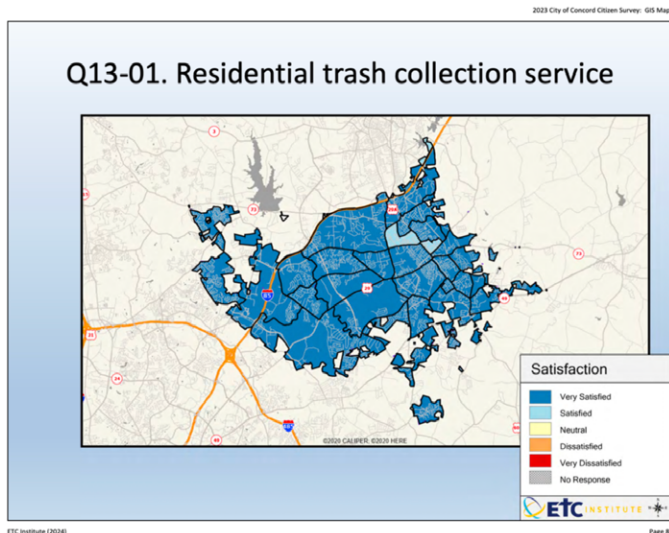


FIGURE 2
Results of Survey by Geographic Region

 **3000**
tons of waste diverted

 **15%**
increase in recyclables sent to the MRF

 **11k**
metric tons of CO₂ avoided

Vehicle Fuel and Maintenance

Managers use Routeware SmartCity to accurately monitor and control in-house equipment costs. By dispatching more efficient routes, managers can now reduce fuel consumption and save money. These savings are evident from the digital fuel tickets logged daily by drivers.

Concord also significantly reduces vehicle maintenance costs through a proactive approach to vehicle care. Drivers use Routeware SmartCity's digital vehicle inspection tool, and managers monitor fault code data from Geotab's telematics devices, to ensure optimal vehicle health. This valuable data allows the sanitation department to quickly identify potential problems and submit work orders to the Fleet Services team, saving time and money. By dispatching more efficient routes and monitoring vehicle health, the City has already avoided over 200,000 pounds of CO2 and saved approximately \$74,000.

Driver Adoption

Concord's solid waste department set high expectations for drivers during the transition to in-house operations, and leadership emphasized the importance of using the Driver App throughout training. Drivers now log into routes daily and expertly use mobile tools such as issue logging, weight ticket logging, and digital vehicle inspections. In the first month of use, drivers logged an impressive 31,430 issues at the curb and 475 weight tickets.

Contamination Reduction

Drivers record instances of contamination at the curb using the Driver App to capture



photos of contaminants in the bin. To hold residents accountable, the City removes carts from repeat offenders. Residents then need to watch a video that shows the consequences of contamination at the Material Recovery Facility (MRF) in order to get their carts back. To ensure residents view the entire clip, users are unable to skip ahead and must enter a unique code at the end. This two-pronged approach—education and enforcement—leads to more informed and responsible citizens.

The approach has also led to major improvements in Concord's recycling program. In the last year, the City has increased recyclables sent to MRF by 15% in weight. In total, Concord has diverted 3,000 tons of waste from landfills. Consequently, the City has achieved a reduction of 11,000 metric tons (MT) of CO2 emissions, which is equivalent to the environmental impact of removing 2,618 passenger vehicles from the road.

Conclusion

Concord's partnership with Routeware exemplifies a successful transition to in-house waste management services. Through meticulous planning, investment in technology solutions like Routeware SmartCity and Geotab, and a focus on efficiency and training, Concord achieved improved service delivery alongside significant cost savings.

This success story serves as a valuable blueprint for other municipalities considering similar transitions, showing the possibilities of a data-driven and collaborative approach.

Learn more about how Routeware can help your city maximize resources, optimize routes, and be more proactive:

routeware.com/rubicon-smartcity