

CUSTOMER STORY

From Waste to Snow: How Kansas City, MO, is Improving Operations Across Multiple Fleets



Kansas City's Winter Challenge

The City of Kansas City, MO, is no stranger to the cold and its changeable winters continue to keep the city on high alert. In 2024, for the AFC playoff game between the Kansas City Chiefs and Miami Dolphins, fans suffered frostbite in minus -4 degrees °F weather, marking the fourth coldest NFL game in history. More recently, 2025 broke a record low temperature that had stood since 1935. This frigid -7 °F day was preceded by 11 inches of snow on January 5th.

However, Public Works Departments care little for records, as, no matter the severity of the weather, their teams head out into the cold to ensure that road conditions are as safe as possible for their residents. As many cities struggle to modernize their operations and rely on paper maps and radios, Kansas City leaders saw an opportunity to innovate with technology.



300
Snow Vehicles



4
Major Snow Events



1
APWA Snow Award

They were eager to find digital solutions to help their teams work more efficiently and effectively with their existing fleet while improving transparency and resident satisfaction.

Starting with Solid Waste

Customer service and streamlining operations are goals that permeate the entire Kansas City Public Works department. “In Kansas City we are constantly striving to improve public services—and with them, quality of life for our residents,” said Michael Shaw, Director of Public Works for the City of Kansas City, Missouri.

In 2019, the City entered into a partnership with RUBICONSmartCity (since acquired by Routeware) to implement the software suite in the City’s fleet of 80 sanitation vehicles to optimize solid waste services with the goal of significantly improving the resident satisfaction. In addition to driver-loved features like issue logging and turn-by-turn navigation, the City also utilized SmartCity’s back-office features to digitize their entire operation and optimize routes with built-in route sequencing tools.

By April 2021, the partnership delivered over two million dollars in cost savings while increasing citizen satisfaction by 17 percent. In conjunction with this, the city was awarded the Smart 50 Award by Smart Cities Connect for being one of the most transformative examples of innovative global smart cities projects.

How Technology Supports Snow Operations

After optimizing waste collection, the City turned its attention to snow operations.

However, clearing roads of snow and ice presents unique challenges to public works teams. Some considerations include:

- **Forced flexibility:** snow events can be highly unpredictable, putting pressure on teams to change routes, work overtime, and manage an influx of 311 calls
- **Routing:** unlike other municipal fleets, plows need to pass roads multiple times before they are considered “clear”
- **Unseen obstacles:** metal plates, speedbumps and other hazards lurk below the snow, potentially damaging the plow
- **Storms:** clearing roads of snow and ice is a critical service and essential to emergency management. Storms are no excuse not to plow or not to make it into the office to manage operations.

The City saw an opportunity to implement digital solutions to address these challenges and the SmartCity team was ready to meet their needs with a range of features:

- **Digital systems** empower office staff and drivers to work more efficiently and with more agility, even if operations need to be managed remotely

- **Turn-by-turn directions** and alerts reduce training time for drivers and help drivers return to route after salt pick up or refuel
- **Routing software** provides the most efficient way to plow roads with multiple passes and create scenarios for different storm events
- **Two-way messaging** between plows and office improves communication; public facing portal provides real-time updates to citizens, reducing 311 call management time
- **Camera feeds** provide actionable insights on road conditions back to Streets or Public Works teams; photos support drivers in resident disputes
- **Map visualizations** help drivers pick up where others left off, improving shift changes and efficiency



Expanding to Snow Operations

The City of Kansas City has remained one of SmartCity's longest standing and most collaborative partners. Their program has been developed jointly with the SmartCity tech team and with valuable feedback and enhancements from other partner cities. So, it was only natural for the City to be one of the first pilots for SmartCity's newly released snow removal product suite.

Throughout more than four major snow events that occurred during the 2021-2022 snow season, every driver in each of the City's 300 snow removal vehicles used a tablet equipped with the SmartCity snow removal software. This valuable tool visualized their entire route, including street prioritization, and enabled the City to be more agile with driver training, shift changes, weather changes, and route updates.

"Having partnered with Rubicon for three years prior to the 2021-2022 snow season, we were confident that we would experience similar positive results, and we were not wrong," said Michael Shaw. "Efficient snow removal positively impacts public safety and keeps our great city moving in the winter months. We believe this is an investment that will accomplish both of those goals in the coming years."

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Rewarded with APWA Snow Award

The partnership was rewarded again in 2023 when Kansas City won the prestigious APWA Excellence in Snow and Ice Control Award for their commitment to providing safe and efficient travel for the public during winter months while minimizing environmental impacts. Director Shaw was interviewed on the weather channel during a snow event in 2022.

“When they have challenges, [drivers] can actually take photographs and tell us where these challenges are out there,” said Michael Shaw in an interview with the Weather Channel. Whether it is road damage or slick spots, the City team is now empowered to “send the proper teams to go and address that.”

Building on this momentum, the City has continued to advance in their mission to improve service for their residents. One SmartCity teammate described their success: “This prestigious award from the American Public Works Association confirms what many already know: Kansas City’s public works operation is fast becoming a model for cities across the country.”

Conclusion

The SmartCity software suite is now fully integrated into Routeware’s robust portfolio of municipal solutions; and Kansas City’s partnership with SmartCity continues to evolve and uncover new technology opportunities to improve fleet operations. The City’s commitment to innovation has brought significant improvements in efficiency and communication while furthering the core goals of improving public services for residents while streamlining operations for city teams. This case study serves as a model for municipalities seeking to modernize their snow removal operations and enhance winter preparedness.



To learn more about how Routeware can help your city maximize resources, boost resident satisfaction, and become more proactive, visit: routeware.com/routeware-smartcity/