Route Optimization Implementation Guide for the Public Works Industry

Best Practices for Effective Deployment and Long-Term Value
About this guide

Implementing a route optimization solution in public works operations—from residential waste collection to street sweeping to winter maintenance—is a process that requires training, coordination, and management to maximize your investment.

To achieve success, it is important to manage expectations from the start.

This e-book provides information to assist you in achieving a successful implementation—and maximizing your investment in the long run.
SET YOUR GOALS:
Define success and ROI

How will you measure your success? Before starting your project, identify your key performance indicators and how they will be used to determine the value of your route optimization projects.

- **Reduction** in number of vehicles
- **Increase** in services per hour
- **Elimination** of overtime hours
- **Increase** in asset utilization
- **Reduction** in total travel distances
- **Improvements** to customer satisfaction
BUILD A SOLID TEAM: Assemble the players

To ensure a successful implementation, understand all of the key participants across various departments.

Specifically, identify the following participants:

Operations Management: Who will provide leadership for the route optimization project? Public works directors, managers, and supervisors will be valuable resources.

Data Analysts: Who will provide and refine your current address information and routing data?

Geographic Information System (GIS) Specialists: Who are the GIS experts in your organization who will provide valuable GIS data related to the project?

IT Staff: Who will manage hardware purchases, security issues, and software installation?

End Users: Who will use your route optimization software on a regular basis?

Drivers: Who will assist with field testing of your optimized routes?
TIME FRAME AND EXPECTATIONS:

Define the deliverables

Establish a project schedule.
What is your target date for full implementation? Begin by establishing a project schedule, complete with milestones to achieve along the way. Be sure to allot enough time between milestones.

Implement multiple route optimization projects.
Plan on establishing a phased rollout. Prioritize based on which projects you anticipate will provide the greatest ROI. Start with one project, such as residential waste collection. Complete one project, then proceed to the next initiative.
INTEGRATION:
Make your systems work together seamlessly

Early in the process, arrange meetings between your IT department and all related vendors—those providing route optimization technology and other third-party groups—to discuss requirements.

At this point, everyone should exchange information about:

**System Requirements:**
- What is the IT infrastructure that you will need to use the technology?
- Does the route optimization solution provide options for on-premises and cloud deployment?

**Data requirements:**
- What are the data requirements for route optimization?
- What are the data relationships between the routing solution and other technology?
- Where will your routing data be stored, and in what format?
DATA:

Quality is key

Once you have established data requirements, you must begin collecting the highest-quality data. It is important to thoroughly assess the accuracy and completeness of your data as soon as possible.

Focusing on a data quality program will help you achieve success and maximize returns on your technology investment.

Work with your route optimization technology provider to evaluate the data to ensure it meets the required criteria.
DATA: Understand what is required

Here are some tips on providing quality data:

**Understand your specific data needs.** The best way to start is to request a data model of required and optional information from your vendor. This improves information sharing between systems.

**Address (geocoding) data.** Assess feedback from your vendor on a geocoding test. This will tell you how easily and accurately your customer base will be pinned on the maps. Things to consider:

- Do you have accurate address information for the locations you service?
- Do you have verifiable XY data to back up the address data?

**Current route information.** Do you know the existing service day, route, and sequence? Is the digital data accurate and up to date? Knowing how you work today will be an important part of benchmarking and updating your routes.

**Street data.** Be sure that the data you will be using to route over the street network allows for accurate route projections. Total travel time and turn-by-turn directions cannot be calculated properly without key information such as:

- Travel speeds by street classes
- Turn restrictions and delays
- Connected intersections
- Overpasses
- One-way travel
SCHEDULING:

Allot adequate training time

Plan to schedule multiple workshop sessions to accommodate your team's schedules.

When scheduling:

• Allow time (two to three weeks) between each workshop to absorb, review, and practice.

• Schedule training sessions according to the priority of your projects.

• Allow six to eight hours of uninterrupted time each day for each training session.

• During training, ensure that your team will have access to your own data, to work through the specific requirements that exist for your routing projects.
KICKOFF MEETING: Get started on the right foot

With key players gathered, coordinate and lead a team meeting to cover goals, milestones, and related dates. Agree on the ideal schedule for completion and establish training schedules.

BASIC TRAINING: Foundation for success
To achieve the best results from your route optimization project, your vendor should offer a variety of training options to meet your budget and timing needs, including on-site, off-site, one-on-one, and online sessions.

Basic training topics should include:
- Data preparation and data validation
- Benchmarking of current operations
- General usage, including map navigation and reporting
- Route planning, including modeling and analysis of multiple scenarios

ADVANCED TRAINING: Becoming the experts
Once you have mastered the basics, it's time to gain advanced expertise in your route optimization solution.

Advanced training can include:
- Mixed fleet/resource management
- Street sweeping
- Winter maintenance
- Commercial collection
- Automating and improving routing processes
- Advanced reporting
TECHNICAL SUPPORT:
Make sure you have the help you need when you need it

Having access to the best support is critical to your success. Prior to implementation, it is important to understand all of the support options that your vendor will be providing.

Ways in which your vendor can provide assistance include:

• Phone and email support
• Web-based, remote sessions for technical support, consulting, training, process/procedure, and route planning guidance
• Secure, online file uploads
CONTINUING EDUCATION:
Keep learning and evolving

The most successful route optimization initiatives are the ones that continue to evolve over time, refining data collection and continuously modeling routes as you gather more insight into specific needs and challenges.

Does your vendor offer these options?

• Webinars
• Online training videos
• Advanced training courses for additional projects
• Online user community to exchange information with peers
CUSTOMIZED TRAINING:
Learn the skills required for success

No two public works departments are alike, and you can’t expect success with a cookie-cutter routing solution.

You should require that your vendor provide customized training courses to:

• Supplement needed skill sets
• Configure the solution to meet more specific needs
• Train new employees
• Leverage your proprietary data
PROFESSIONAL SERVICES:
Get the support needed to ramp up quickly

Using professional services offered by your technology provider can help you model new routing scenarios and get the optimized routes into production much more quickly.

It can be helpful to engage your vendor’s professional services offerings to gain consultation about best practices for implementation and success. Consider enlisting an on-site coach to assist your teams in understanding and using the route optimization solution.

If skill sets or time constraints are a challenge, you can enlist your vendor to perform all the route modeling and reporting work using the data you provide.
SUMMARY:

Implementation is a team effort

Orchestrating a successful implementation of your new route optimization solution requires a combination of careful planning around the time required for data gathering and rollout, as well as the involvement of all key participants from the outset of the project.

Before you begin implementation, be sure to understand the capabilities and support your vendor can provide. Once you have buy-in from all stakeholders, be prepared to provide adequate training, both initially and on an ongoing basis.

Finally, don’t underestimate the value of your vendor’s professional services offerings, which can help to both speed up and simplify the implementation process.

We hope this e-book has provided you with valuable information that you can use to ensure maximum return on investment and successful results from your route optimization solution.
About RouteSmart

Since the early 1980s, RouteSmart Technologies has worked with municipal public works agencies around the globe to reduce operating costs and improve service. Clients rely on RouteSmart for ArcGIS® for its comprehensive suite of route optimization tools. RouteSmart balances workloads and maximizes service order sequencing for high-density residential and commercial point-to-point route operations. Municipal agencies also rely on RouteSmart for street sweeping and winter maintenance planning.

Hundreds of municipalities and private organizations worldwide work with RouteSmart software to consolidate routes, reduce mileage, eliminate overtime, improve safety, and reduce costs to improve the bottom line.

For more information, visit routesmart.com or contact Jessica Cearfoss at 800.977.7284 ext. 3100.