

eBook

# Route Optimization Explained

What it is, and why your  
business needs it



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# Why is route optimization important?

**Putting a commercial vehicle and driver on the road is expensive. Smart fleet owners know that it is important to run them as efficiently as possible by maximizing utilization and minimizing miles.**

**One of the most effective ways to achieve this is route optimization.**

This ebook will introduce you to the concept and theory of route optimization, as well as the benefits you can expect to see by deploying it within your fleet.

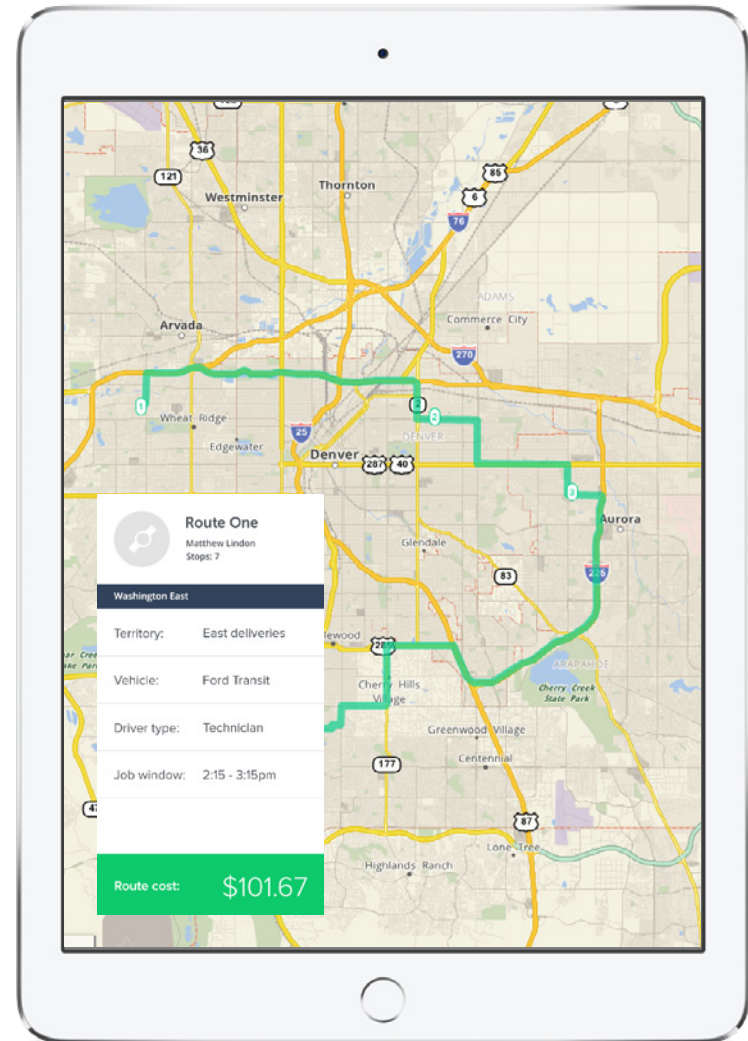
## **What is route optimization?**

In commercial applications, distribution companies with large and small fleets may incorporate route planning software into their fleet management systems to optimize route efficiency and boost profits.

**The goal is to do more work with fewer resources and in fewer miles.**

An ideal route planning solution for companies that move or deliver goods and services will often include GPS tracking capabilities and advanced reporting features. This enables dispatchers to prevent unplanned stops, reduce mileage and plan more fuel-efficient routes.

Such software solutions are offered as a SaaS model, allowing them to be hosted offsite, and updated on the fly without client-side downloads or undue burdens on your business to stay up to date.



# Things to think about

## Some facts to keep in mind when thinking about route optimization:



### Route planning is tough.

As the number of stops increases the number of possible routes goes up exponentially. For example, 5 stops for 1 vehicle has 120 possible routes. Adding more vehicles makes routing that much more complicated.



### Software programs are better at route optimization.

As you can see, manually routing your fleet even on a small scale would be an immense and exhausting task. This work is best left to the advanced algorithms in routing software.



### Eliminating unnecessary miles has huge payback.

The fewer miles your fleet drives to complete the jobs, the more money you keep in your pocket – it's that simple.

Number of vehicles	Number of stops per vehicle	Number of route possibilities
1	5	120
1	10	3,628,800
5	10	37,267,043,023,296,000



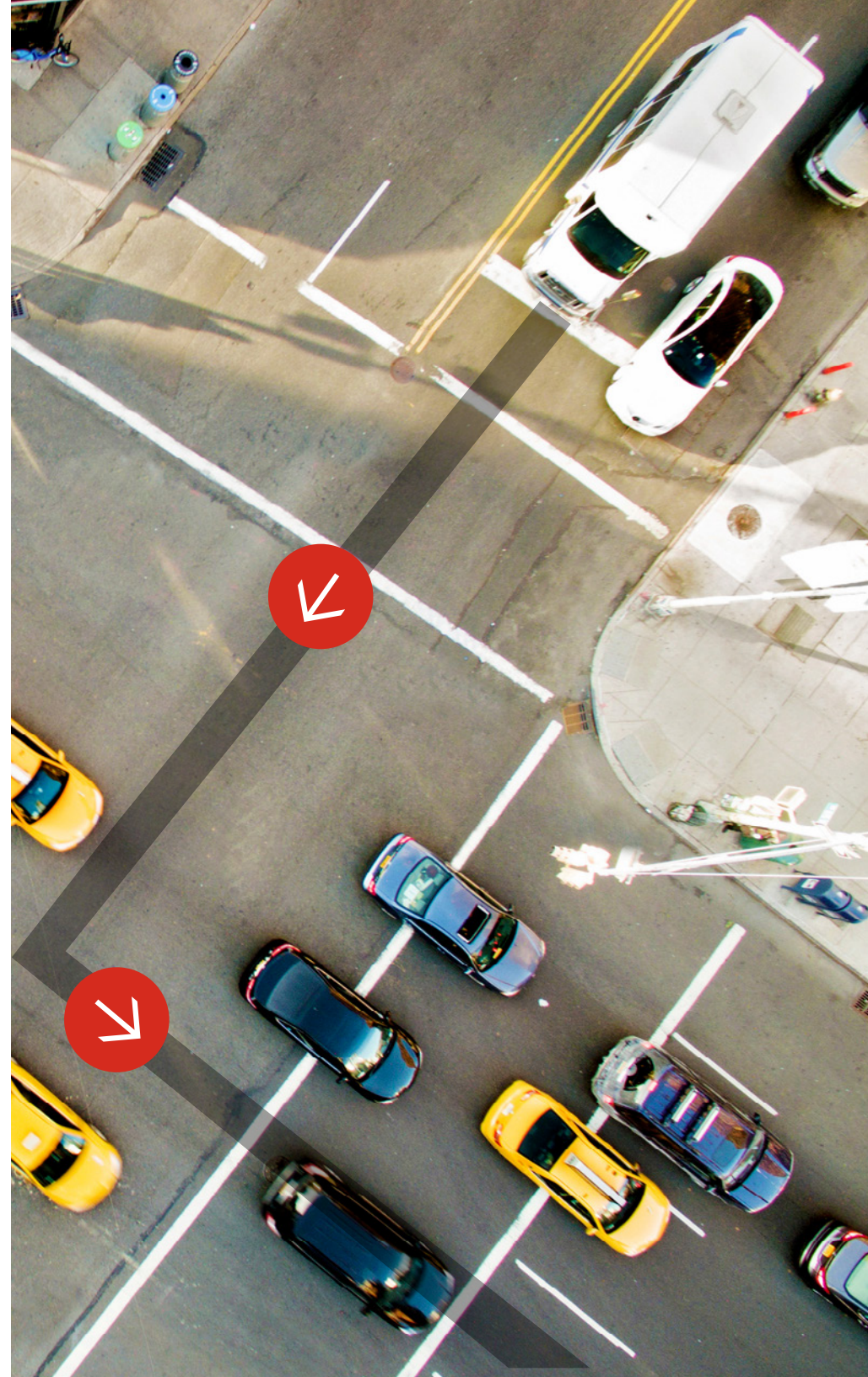
# Why is route optimization important?

**A route optimization solution incorporates the tools companies require to plan, analyze, create and deliver the most profitable route strategy for today's mobile workforces.**

Optimization technologies allow companies with fleets of all sizes to effectively address a variety of issues they would otherwise face alone when trying to develop routing and distribution plans.

## **Route optimization can offer these helpful options:**

- Create routes based on driver and vehicle availability and calendar constraints – weeks or even months in advance
- Easily incorporate delivery frequency and time windows into your plans
- Test “what-if” scenarios to see different route and resource options before you commit resources
- Comply with customer requests and SLAs



# Choosing the right route optimization solution

**When researching a route optimization solution for your company, it's important to keep in mind that a continuous and consistent optimization engine will deliver the most profitable route strategy.**

## **The five must-dos of a strategic route optimization system:**

1. The system must support “what if” modeling using production data without altering current plans or operations.
2. The system must be flexible. Changing variables should be easy and the system should allow for multiple scenarios and changes. Customer data should be simple to enter.
3. The system must allow for rapid updates.
4. The system must integrate with all other company systems, including order and warehouse management, GPS, purchase order and federally-mandated ELD systems.
5. The system must be fast – complex modeling solutions should take no more than a few minutes to solve. The entire process of importing late orders for assignment to existing routes must take only a few minutes.



# Continuous improvement

**Strategic route planning requires continuous optimization for maximum results.**

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Solutions with plan vs. actual reports will highlight variations to the plan, such as route deviation. This allows fleet managers to fine-tune their planning over time. Near real-time alerts can also notify users of immediate problems with a plan, allowing any disruptions to be handled proactively.

**Consider the value of being able to send customers service messages when you know a time window may be missed.**

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**“Excellent firms don’t believe in excellence – only in constant improvement and constant change.”**

# Why route optimization is better for business

## The potential benefits:

- Lower transportation costs
- Fewer vehicles to do same amount of work
- Reduced working capital invested in inventory
- Better utilization of drivers and crews
- More responsive customer service and better “on-time” percentages
- More flexibility to accommodate drivers and crew preferences for shifts and routes
- Better compliance with HOS driver logs, regulations and work rules
- Higher utilization of facilities and vehicles

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