

E-BOOK

Automated Route Optimization with FarEye

Reduce costs and emissions. Enhance customer experiences.

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The Route Problem



One delivery van. Ten packages. Ten delivery addresses.

In this basic scenario requiring ten stops, the total number of possible delivery routes equates to more than three million. With 100 stops, the number of possible routes is greater than there are atoms in the entire universe. Add in various constraints such as delivery windows, traffic, weather, vehicle capacity, labor laws and road closures, and we have a head-scratching number of variables to plan and optimize for.

Manually planning routes this large is inefficient. Planning routes with outdated software is too.

Route optimization is an important aspect of last-mile logistics, and many logistics providers and retailers that manage their own fleets are investing in technology solutions to optimize their routing and improve their operations.

To gain competitive advantages in the last mile, organizations must reduce delivery costs and enhance customer experiences. With optimized routing engines, both can be achieved.

Last-mile Routing at a Glance



Asset Utilization

- 10% - the amount of time the average fleet vehicle spends of its time actually driving²
- 10 miles - the average distance a vehicle travels per delivery³
- 15 minutes - the average time per stop for a delivery vehicle³

Logistics Providers Identify Bottlenecks⁴

- Top 3 factors that inhibit delivery speed, according to last-mile logistics companies:
 - Routing (60%)
 - Address location (57%)
 - Driver productivity (46%)
- 41% of logistics companies claim routing contributes to high cost per delivery

Need for EV routing⁴

- 80% of last-mile logistics companies plan to use EVs in future

Need for Carriers to Reduce Costs⁴

- 59% - the proportion of retailers who have outsourced delivery networks in the past 5 years as new delivery models and companies are available to retailers. Need for carriers to reduce costs and enhance services to gain a competitive advantage.

Fuel Consumption¹

- 15% - the reduction in fuel consumption route optimization software can help achieve

Logistics Performance Improving⁴

- 44% of logistics companies cite average delivery times of same-day or next-day today
 - 78% expect same-day next-day in 2027
- 63% of logistics companies cite all or almost all deliveries are made on-time today
 - 83% expect all or almost all to be on-time by 2027



CHAPTER 3

Inefficiency: Routing Today



Logistics providers and retailers that operate their own fleets today oftentimes have difficulty planning delivery routes and optimizing their operations for efficiency. This comes at a cost. Below we explore some of the difficulties logistics networks face as a result of poorly planned routing, and some of the business impacts these inefficiencies create:

Inefficient Operations

For many companies, it is difficult to identify the most efficient routes for their drivers to take. This can result in longer travel times, increased fuel costs, increased vehicle wear and tear, and reduced overall efficiency.

Inaccurate Address Location

Many high-growth markets in geographies such as Asia, Africa, the Middle East and Latin America do not have standardized address systems, making finding delivery addresses a challenge.

Poor Vehicle Utilization

Many companies are not maximizing the use of their vehicles and their capacity when routing for delivery, which can result in higher costs and reduced efficiency.

High Labor Costs

Without route optimization software, companies spend more time manually assigning routes and managing driver schedules. This can result in increased labor costs and reduced productivity.

Difficulty Responding to Unexpected Events

When routing with manual or outdated software, it can be difficult to respond quickly to unexpected events, such as traffic congestion or road closures. This can result in delayed deliveries and dissatisfied customers.

Inability to Scale

For companies that are either at scale or looking to scale, routing for millions of orders can be a difficult task, even for those already using route optimization software. Further, large fluctuations in order demand can be difficult to predict and account for, creating further inefficiencies.

High Carbon Footprints

As the world adopts sustainability initiatives, governmental regulations and consumer concerns are pushing logistics providers and retailers to reduce carbon footprints across their operations. Inefficient delivery routing is a key contributor to excess carbon emissions.



Business Impact

- High cost per delivery
- Low stops per route hour
- High carbon emissions
- High delivery failure rate
- Long delivery times
- Inaccurate delivery ETAs
- Poor driver and asset utilization
- Poor customer delivery experience

How Logistics Providers Are Improving Last-mile Delivery

From complex delivery networks to unpredictable traffic conditions, finding the optimal routes can be a challenging task. However, automated route optimization software holds the potential to revolutionize the way companies navigate their logistics operations, enabling them to streamline routes, save time and resources, and ultimately gain a competitive edge in the industry. With the power of technology at their fingertips, logistics companies can confidently tackle routing complexities, transforming them into opportunities for growth and success.



Regional Focus: The Middle East

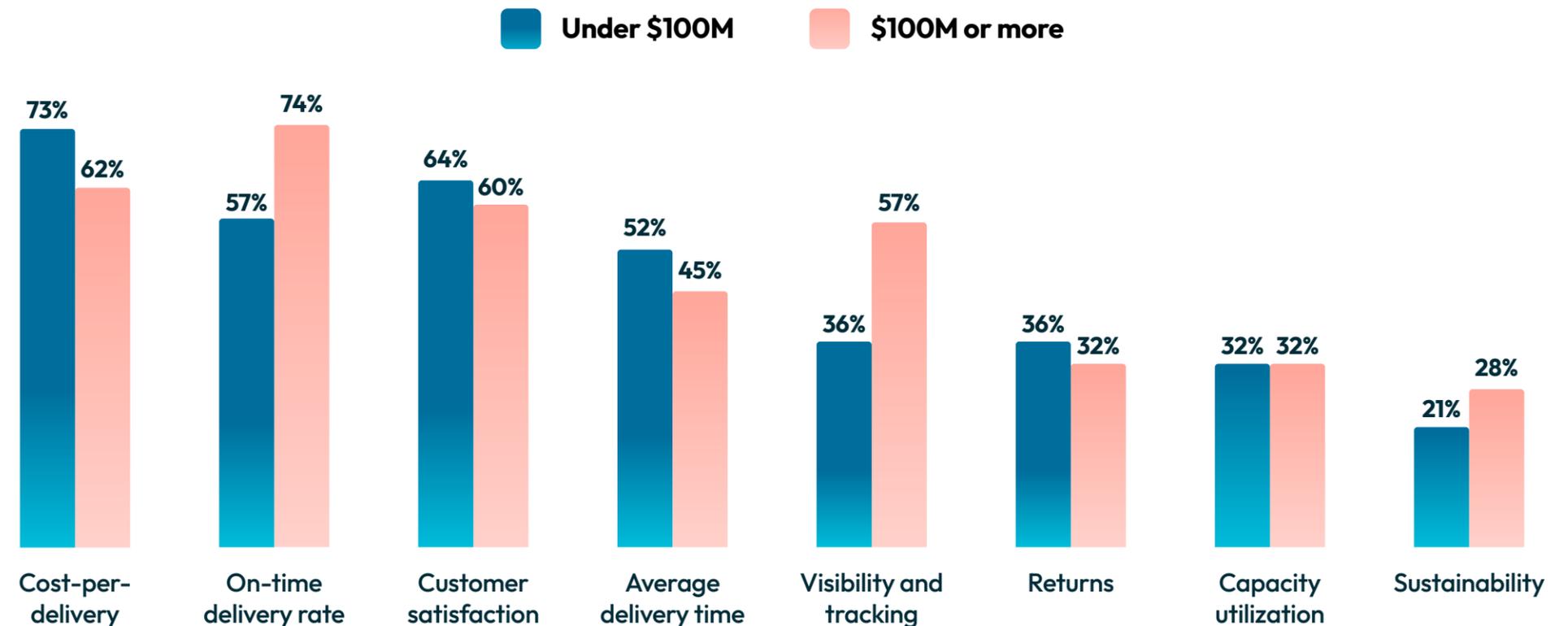
In certain regions of the world, formal rules for written addresses may not exist. Locating, delivering to and verifying such addresses can be difficult for logistics providers unfamiliar with the area. Logistics providers delivering to many countries in the Middle East are no stranger to this problem. Such address location issues can lead to failed and late deliveries, which can drive up fuel costs and reduce productivity. It is estimated that incorrect addresses could affect more than \$7.42 billion of e-commerce revenue in the Middle East.

Last-mile delivery KPIs most focused on improving, among logistics providers by revenues

As logistics companies scale, priorities change.

For larger operations, on-time delivery and tracking become greater focuses, while increased scale improves cost-per-delivery.

With size comes complexity.





CHAPTER 4

FarEye Automated Route Optimization



FarEye Route: How it works

With FarEye, you can optimize dispatch processes and significantly reduce the time spent in manual dispatch operations. Plan routes and allocate orders effectively by factoring in constraints like vehicle capacity, traffic conditions, serviceable areas and hours, specific driver needs, and driver familiarity with the area. FarEye's geosmart technology converts non-standard addresses into smart codes and enables drivers to figure out delivery locations faster. Leverage AI-driven processes to make sure your drivers spend more time delivering and less time in administration, sorting or driving.

Customized Routing Solutions, All on One Platform

AI/ML Routing Engine

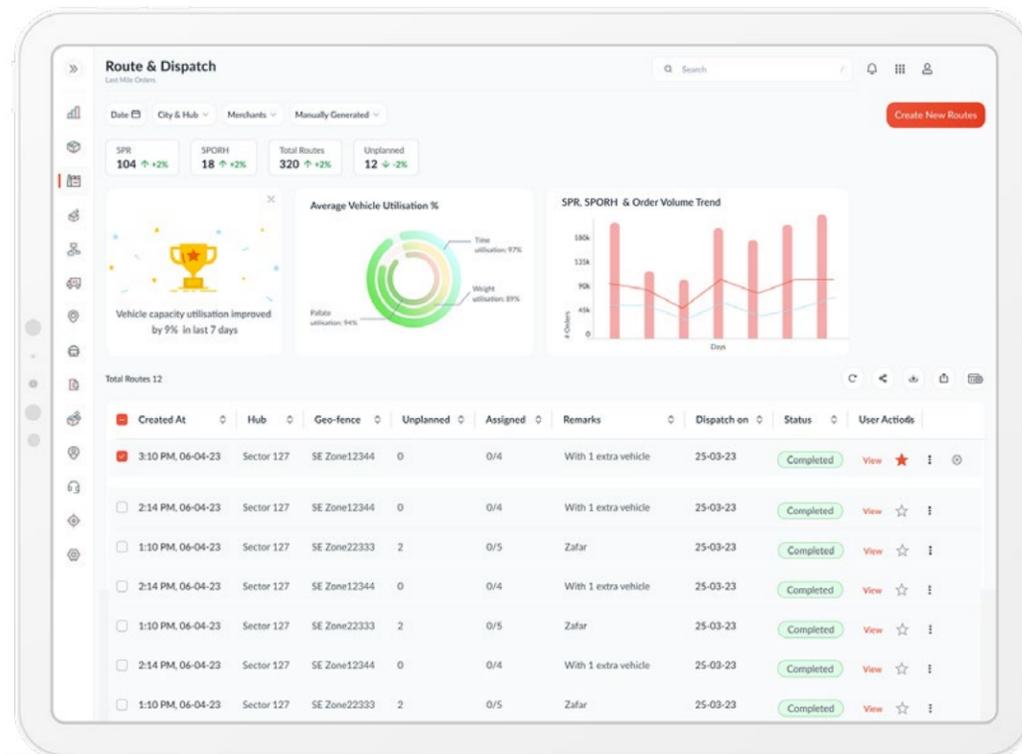
Leverage artificial intelligence and machine learning to automate routing and continuously optimize results based on historical driver and traffic data.

Dynamic Slot Management

Provide accurate, dynamic delivery slots to end users before the shipment reaches the delivery branch accounting for all routing constraints.

Smart Geocode

Ensure correct delivery addresses using a predictive AI/ML engine and historical data to assign latitude and longitude coordinates to improve delivery success and reduce cost. For regions where address location is inherently difficult - Asia, Africa, Latin America and the Middle East - smart geocode can dramatically improve delivery and route efficiency.



Loop Optimization

Run large sets of routing within minutes. Route thousands of shipments in minutes and predict the load of vehicles before delivery is initiated.

Smart Suggest

Work efficiently even before routing is executed by altering the vehicle count, increasing or reducing working time and suggesting different vehicle types to maximize productivity and utilization.

Delivery Scheduling

Effectively manage vehicle and driver capacities to meet on-time delivery SLAs, while reducing fuel and delivery costs by reducing miles traveled. Give customers more options and more accurate delivery windows before purchase.

Hybrid Routing

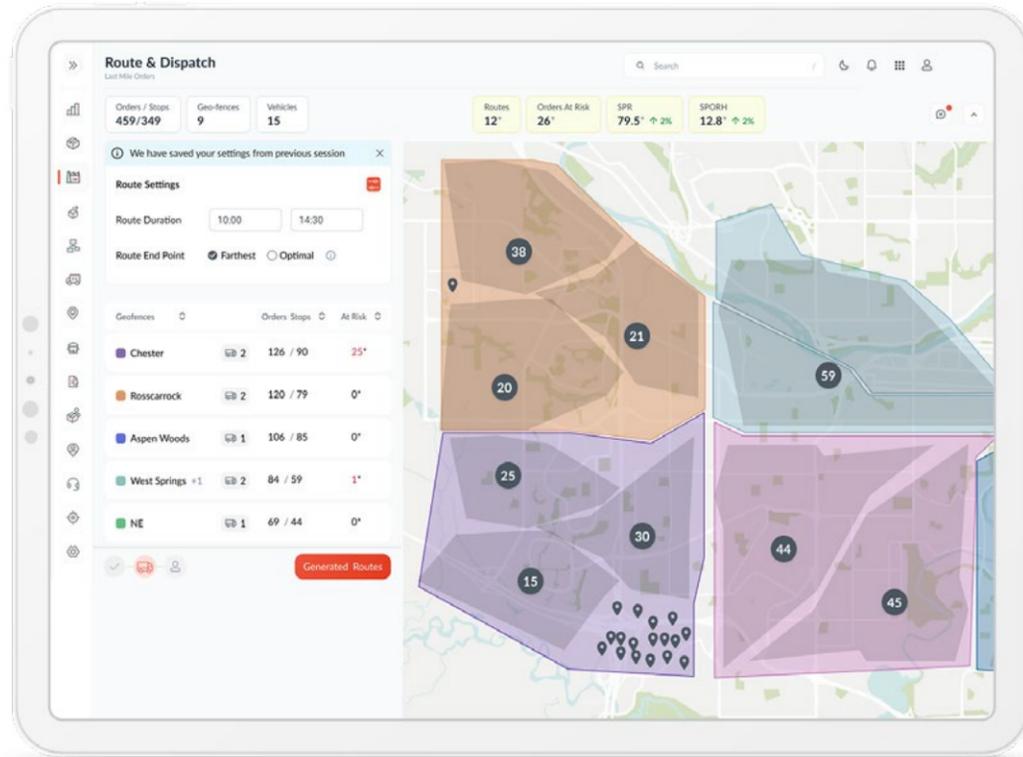
Automatically assign ad hoc tasks in real-time to drivers in the field based their location, pending deliveries, vehicle capacity and other constraints.

Green-Fleet Routing

Introduce and integrate sustainable vehicles into your fleet, such as electric vehicles (EVs) and bicycles, which require specialized routing to account for charging stations, range and alternative routes.

Specialized Fleet Routing

Route orders based on skills (special tools, capabilities) or commodities (controlled substance, refrigerated).



Cost Calculation

Measure the cost of various delivery routes and optimize for best performance.

Business Process Management (BPM) Engine

Adjust routes and operations based on outcomes with a world-class business process management (BPM) engine. Accurately predict and stop disruptions before they occur.

Capacity Utilization

Optimize vehicle loadouts based on package weight, volume and destination. Assign cut-off limitations for packages, mileage and delivery cost.

Analyze Operations

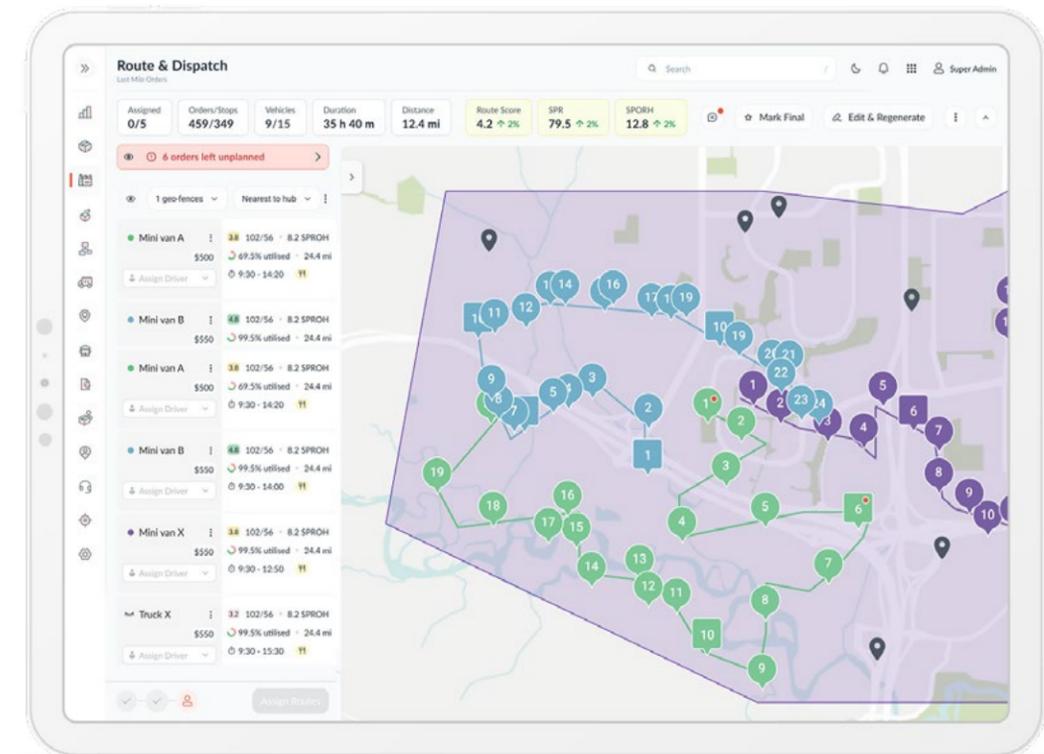
Instantly analyze route performance by reviewing metrics such as delivery stops per hour/route, on-time performance, actual vs planned distance/time, dispatch time per hub and more.

Multiple Routing Types

Manage all types of routing such as static, dynamic, hyperlocal, multi-day, pick and delivery, and many more - all on one platform. Move orders from one route to another in multi-day routing.

Motivate your Gig Fleet

Communicate efficient routes and commissions to your gig fleet to motivate their operations and maximize productivity.





CHAPTER 5

The Business Impact

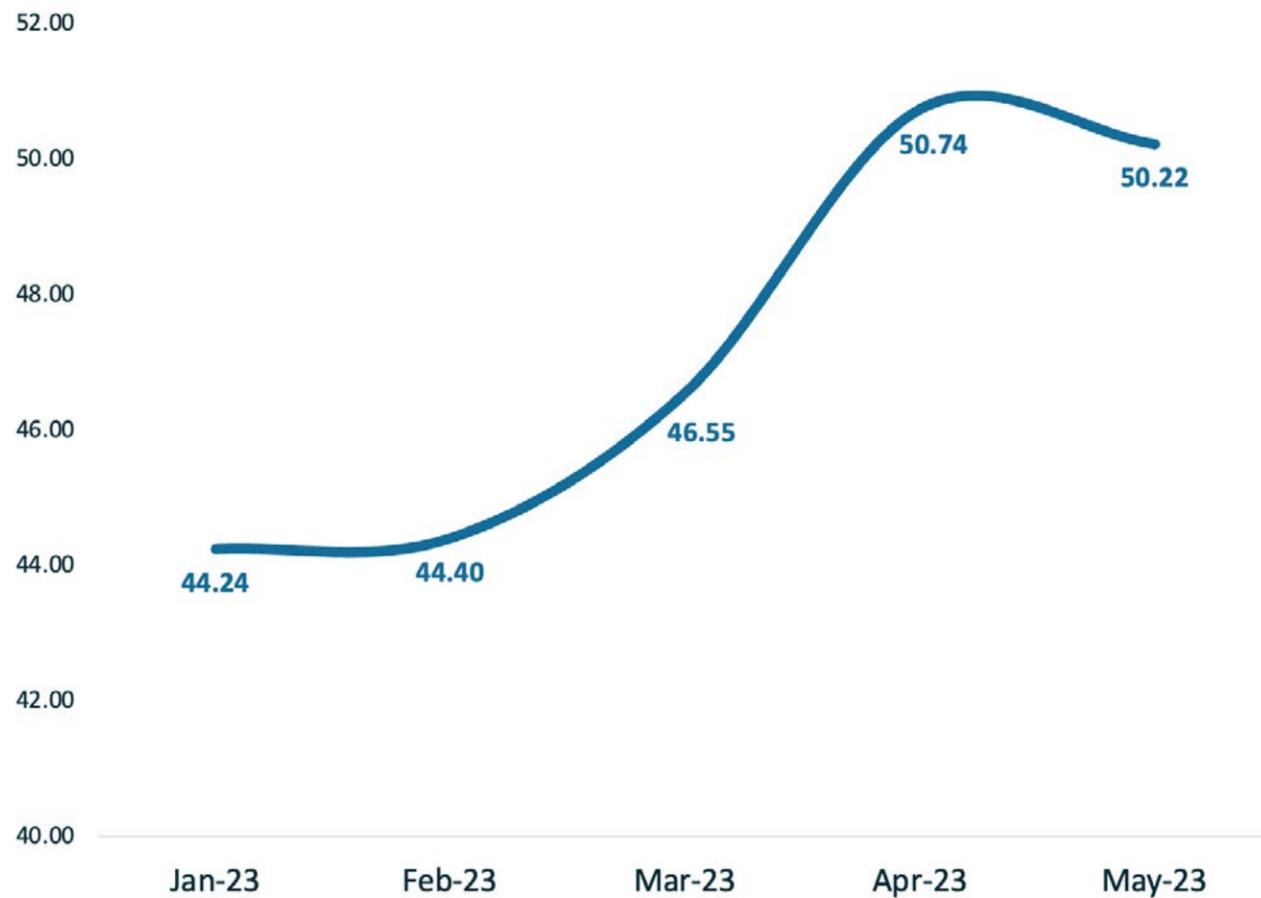


With FarEye Route, last-mile logistics providers can improve various routing metrics across their operations. These then lead to greater business impacts such as reduced costs per delivery, increased customer satisfaction and reduced carbon emissions.

Here are few examples from actual FarEye customers that highlight how FarEye's routing engine is improving route efficiency:

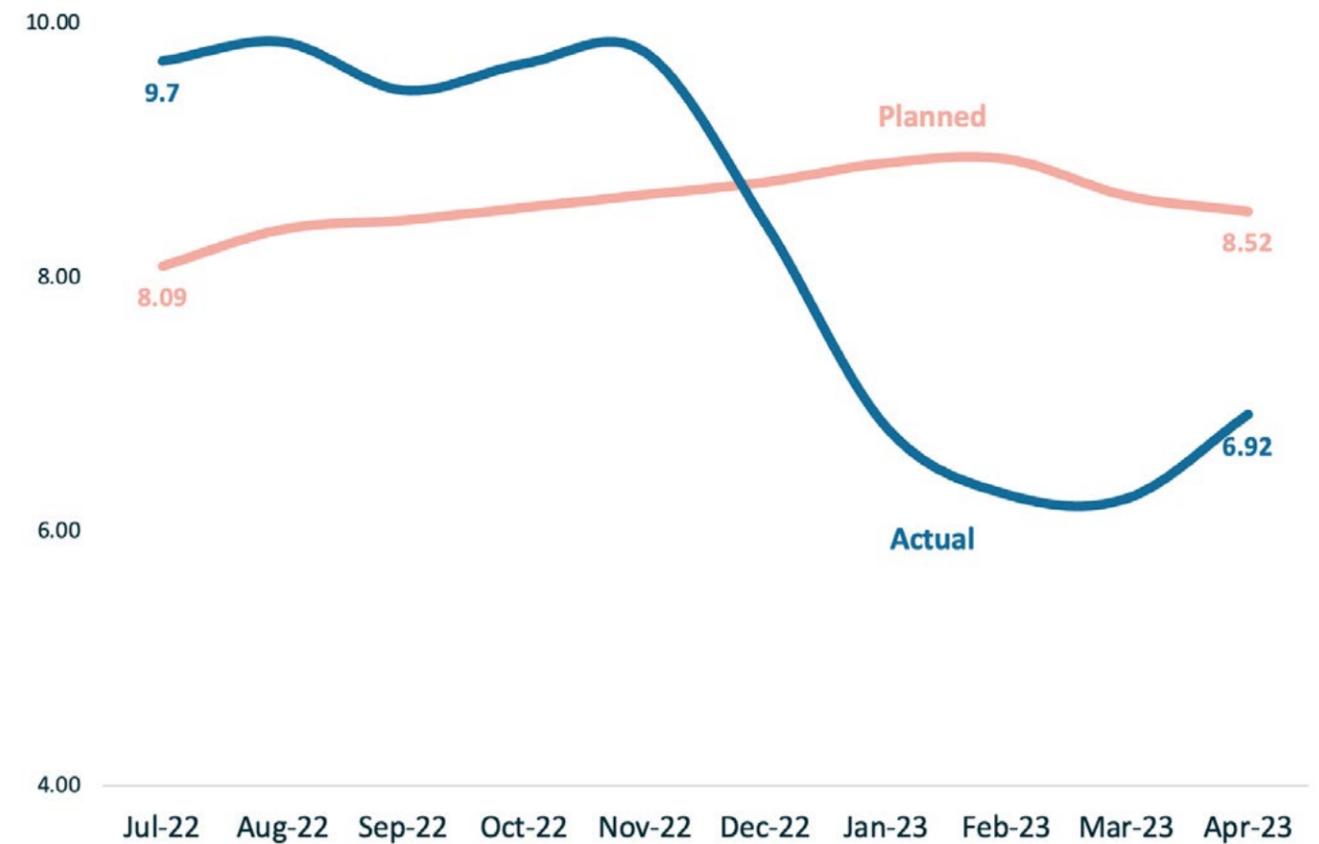
Stops per Route

Companies that can maximize stops per route can maximize asset and driver utilization, which translates to reduced costs and increased abilities to scale.



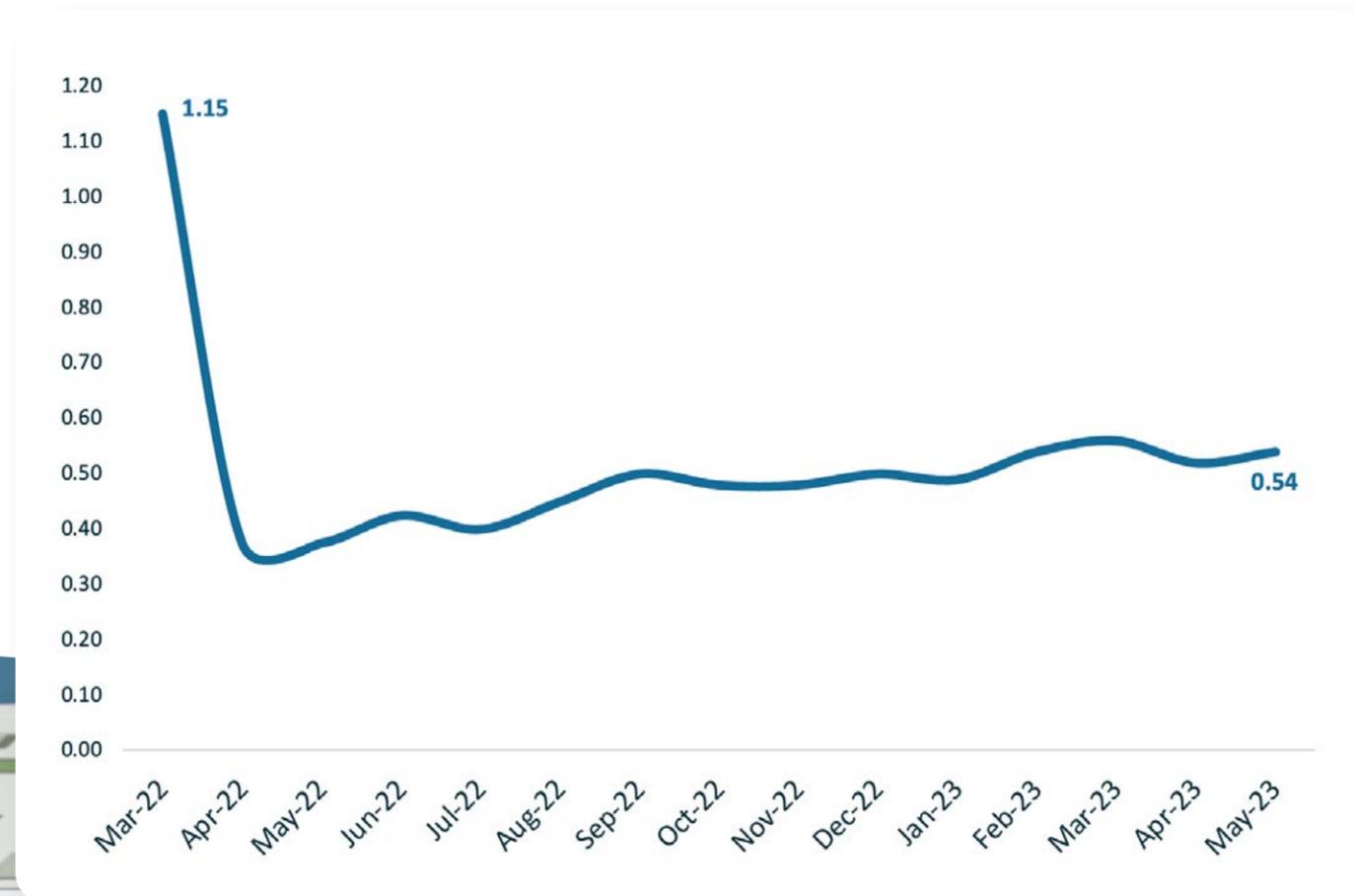
Average Transit Time (Hours) per Route, Planned vs. Actual

With loop optimization powered by FarEye's routing engine, companies can easily find and select the most efficient routes, leading to significantly reduced transit times



Ready to Dispatch Time (mins)

Routing thousands of deliveries can take a long time. But with FarEye's automated routing engine, companies can significantly reduce the amount of time it takes to route orders and have them ready for dispatch.



Ultimately, improved routing and logistics performance has a direct impact on cost per delivery and customer satisfaction. With increased productivity, reduced time to deliver and increased first attempt deliveries, last-mile logistics can be made more efficient - giving companies competitive advantages and increased customer loyalty.

Business impact - Customers Using FarEye Route

Hear from leading organizations that have partnered with FarEye to reduce costs and enhance experiences with automated route optimization:

Industry	Business Impact
Packaged food company	<ul style="list-style-type: none"> • 25% reduction in labor hours • 40% increase in driver and dispatcher productivity
Logistics carrier	<ul style="list-style-type: none"> • 22% point increase in first attempt delivery success rate • 14% increase in stops per route
Retailer	<ul style="list-style-type: none"> • 24% increase in on-time deliveries • 2-hour ETA forecasting, down from 4-7 business days
Online grocer	<ul style="list-style-type: none"> • 30% reduction in labor hours • 5% increase in capacity utilization
Wholesale distributor	<ul style="list-style-type: none"> • 9% sales growth due to new SLAs

“What led us to look for a product like FarEye was for us to be efficient at last-mile delivery. We needed routing software that would intelligently take a list of addresses and develop the most optimal driving route. By driving the most optimal routes, we are decreasing our carbon footprint with fewer emissions. And we’re using less fuel.”

AI Contreras. Customer Innovation Manager. Gordon Food Services





CHAPTER 6

Sustainability and Route Optimization



With increased stops per hour, reduced idle times and the ability to route green-fleet vehicles, delivery networks with optimized routes can reduce fuel consumption and carbon emissions. Not only is this beneficial for both the bottom line and the planet, it can boost customer loyalty, improve investor relations and help companies meet government environmental compliance regulations.

Solutions:

Optimized Routes

Efficient routing that minimizes idle time, fuel consumption and redelivery, all of which contribute to reduced carbon emissions.

Sustainable Scheduling and Delivery Options

Optimize scheduling and give customers the option to select sustainable delivery windows that prioritize green fleets and efficient allocation.

Green-Fleet Routing

Introduce and integrate sustainable vehicles into your fleet, such as electric vehicles (EVs) and bicycles, which require specialized routing to account for charging stations, battery range, alternative routes and even temperature - which can affect battery life.

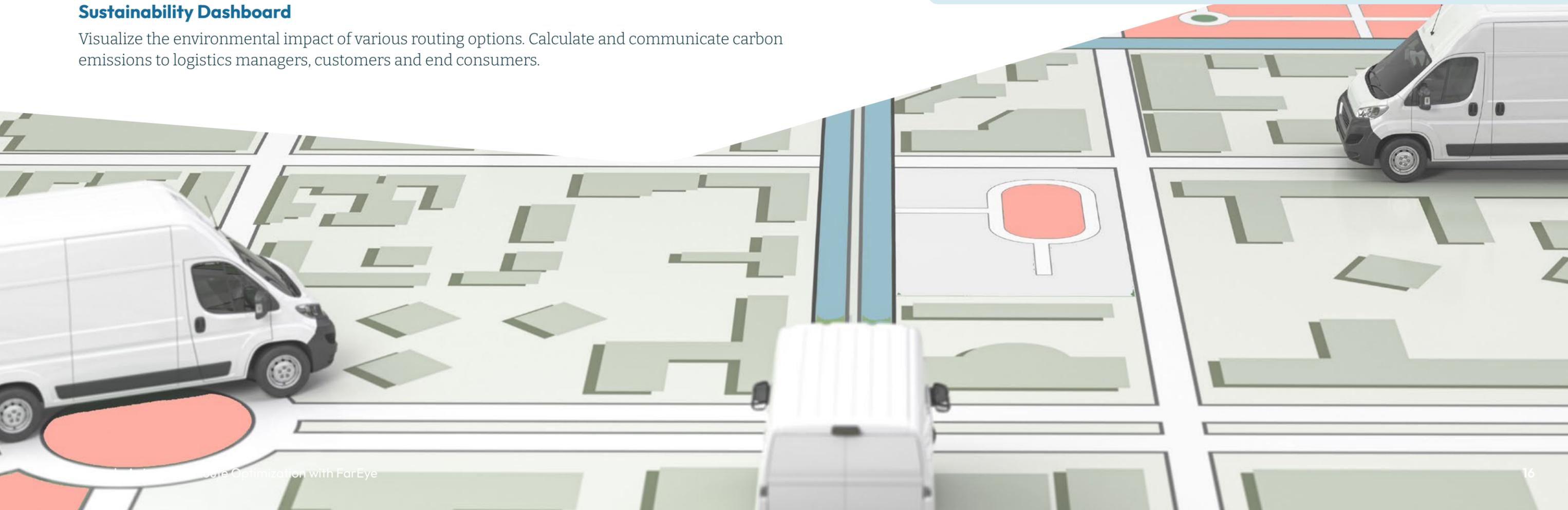
Sustainability Dashboard

Visualize the environmental impact of various routing options. Calculate and communicate carbon emissions to logistics managers, customers and end consumers.



Impact

- **Reduced fuel consumption and carbon emissions**
- **Compliance with sustainability goals and governmental regulations**
- **Improved customer satisfaction and brand loyalty**



About FarEye



FarEye's Delivery Management platform turns deliveries into a competitive advantage. Retail, e-commerce and third-party logistics companies use FarEye's unique combination of orchestration, real-time visibility, and branded customer experiences to simplify complex last-mile delivery logistics. The FarEye platform allows businesses to increase consumer loyalty and satisfaction, reduce costs and improve operational efficiencies. FarEye has 150+ customers across 30 countries and five offices globally. FarEye, First Choice for Last Mile.

FarEye received a fourth consecutive mention in The Gartner Market Guide For Vehicle Routing, Scheduling and Last-Mile Technologies. Speak with us to learn how Route can help resolve your route optimization challenges.

First Choice for Last Mile.

Learn more at fareye.com