

Solutions for more efficient and environmentally-friendly last-mile delivery

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FTC2050 project initiatives for the next-day and economy parcel sector

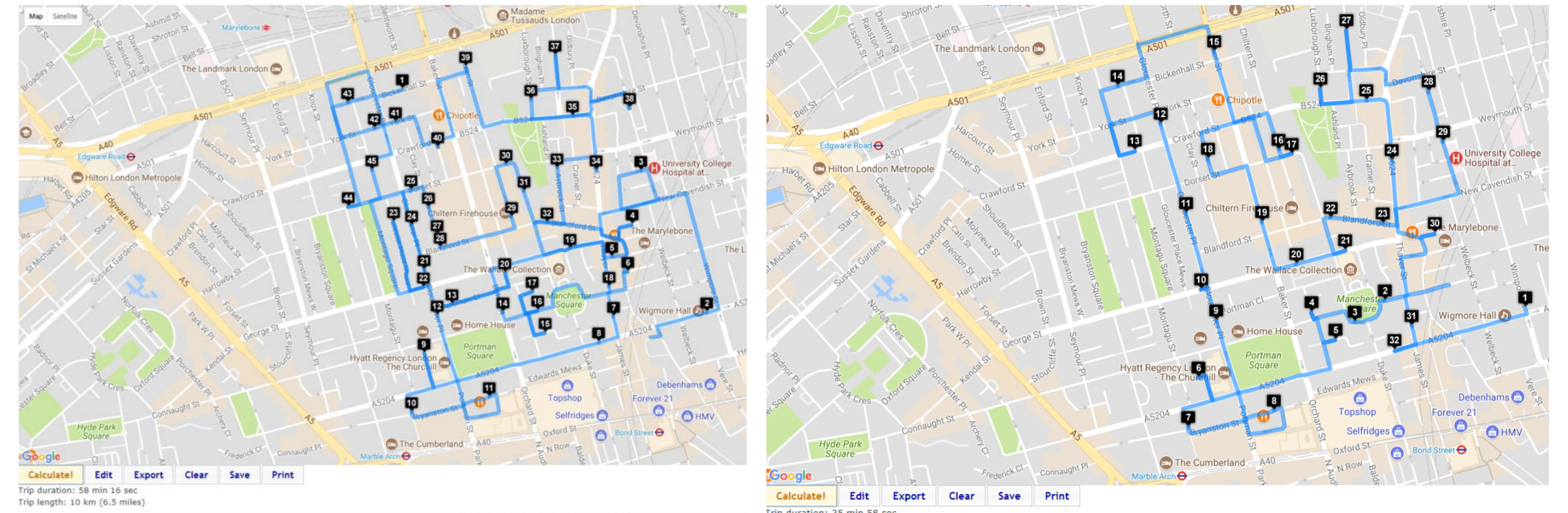
Initiatives identified in the FTC2050 project as having potential merit for next-day and economy parcel sector operations in central London:

- Computer-based tools to assist vehicle parking and driver walking strategies
- Other technological aids to improve the efficiency of novice drivers
- Use of on-foot porters or cycle couriers for final delivery
- Micro-consolidation centres or mobile depots to reduce stem mileage and counteract logistics sprawl
- Land-use planning policies to support city logistics facilities
- Relaxing the proportion of timed guaranteed deliveries and collections
- Carrier collaboration in sharing parcel delivery work
- The intervention of a 'Freight Traffic Controller' who determines work allocation between carriers across a given geographical area
- Delivery retiming
- Vehicle fleet/type choice
- Pricing delivery services to reflect internal and external costs (challenging the notion of 'free delivery')
- In-house logistics/concierge services for large multi-tenanted buildings
- Collaborative procurement by receivers to reduce the number of suppliers and carriers visiting the building or local area
- Increased on-site storage facilities at receivers' businesses to reduce the frequency of deliveries
- Determining the most appropriate location for personal B2C deliveries: workplace, home, collection point, locker bank

Clustering and routing (driving & walking) Actual vehicle round v optimised round

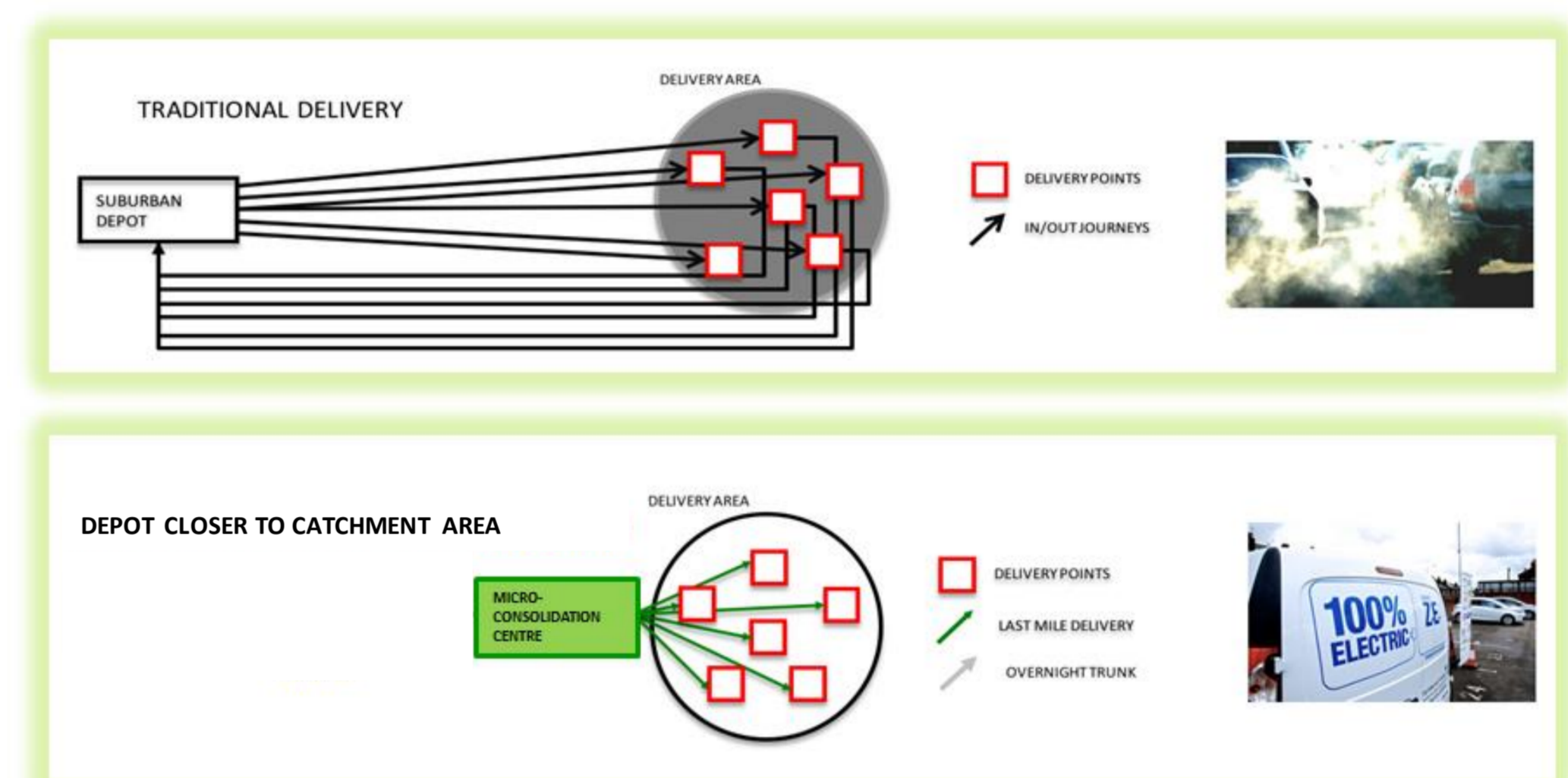
Observed sequence of visits on the round (46 vehicle stops)

Optimised round using the 33 suggested clusters



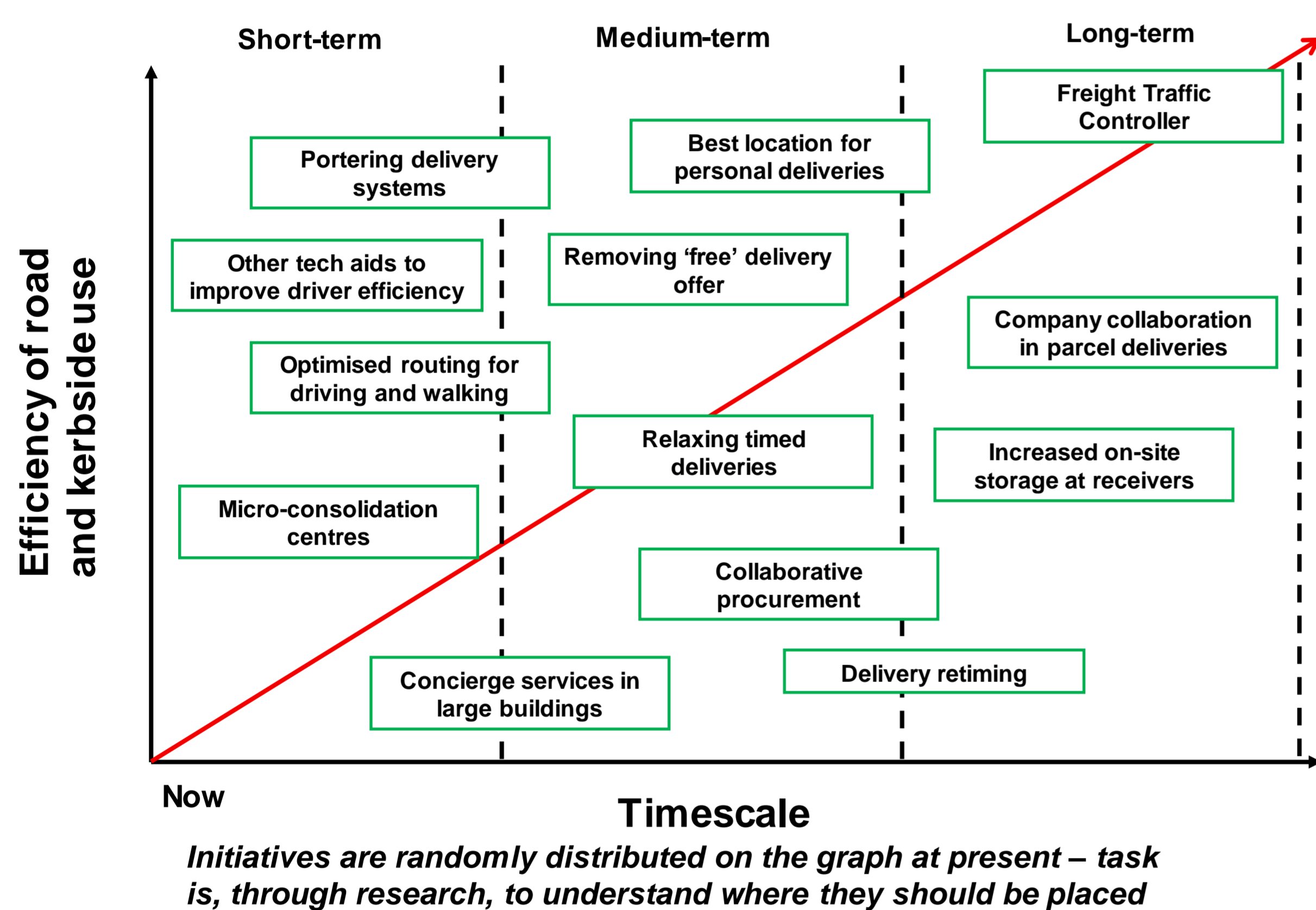
Results suggest substantial savings in total time taken (25%), driving distance (50%) and fuel use (driving time falls but walking/parking time increases)

Use of a last-mile consolidation hub or mobile depot in central London



Results indicate 50% reduction in driving distance, 15% reduction in driving time with related fuel savings and greenhouse gas emission savings – plus scope to use electric vehicles.

FTC2050 initiatives considered for next-day urban parcel delivery



Company collaboration: merging delivery rounds in central London

Before: 10 vehicle rounds despatched from 3 different operations/depots
 After: 7 vehicle rounds despatched from one depot

Results indicate:

- 14% reduction in vehicle km
- 20% reduction in driving time
- Assumes no change in vehicle types used so, with vehicle change, could be greater



FTC2050 project initiatives for the same-day parcel sector

Initiatives identified in the FTC2050 project as having potential merit for same-day parcel sector operations in central London:

- Consolidating parcel collections by grouping them together and serving them with a single vehicle that then makes all these deliveries, thereby moving several customers' orders at the same time
- Merging together same-day sectors currently operated separately by carriers (e.g. parcels and medical items)
- Green delivery pricing: strategies that promote less transport intensive services that still provide customers with same-day, albeit less rapid, deliveries
- Adopting more environmentally-sensitive transport vehicles (e.g. electric cargo cycles rather than diesel vans and cars)

Portering trial v Business-as-Usual next-day deliveries

Metric	Per consignee		
	Pre-trial by driver	Portering trial	% diff.
Parking time at kerbside (min:sec)	03:55	01:21	-65%
Driving time (min:sec)	01:50	01:23	-24%
Total vehicle/ driver deployment time (min:sec)	05:44	02:44	-52%
Portering time (min:sec)	00:00	04:09	-
Total labour time (min:sec)	05:44	06:53	+20%
Vehicle distance travelled (m)	335	233	-30%

Note: In other FTC2050 analysis of the portering trial, the scheme is cost neutral or cheaper than current delivery operations depending on the experience of the current driver

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Academic project partners:



Industrial project partners:



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