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MaaS – A Win for the Individual and a Win for the City?

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CHOICE OF TWO FUTURES

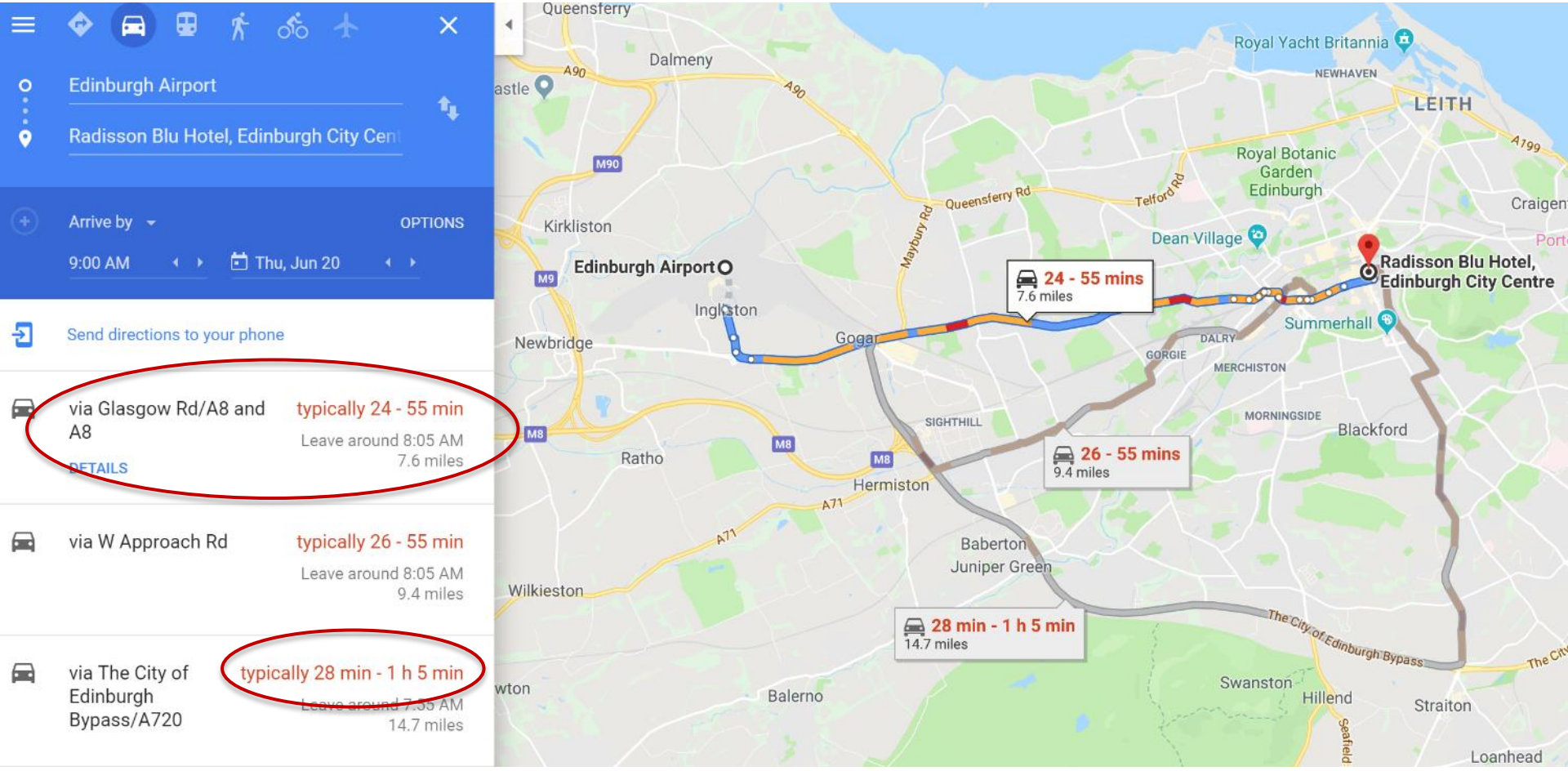
A win for the individual?

So how did you get here today?

- Car?
- Public Transport?
- Taxi?
- Walk
- Cycle!?!

- How did you plan it?

- How much contingency did you add?



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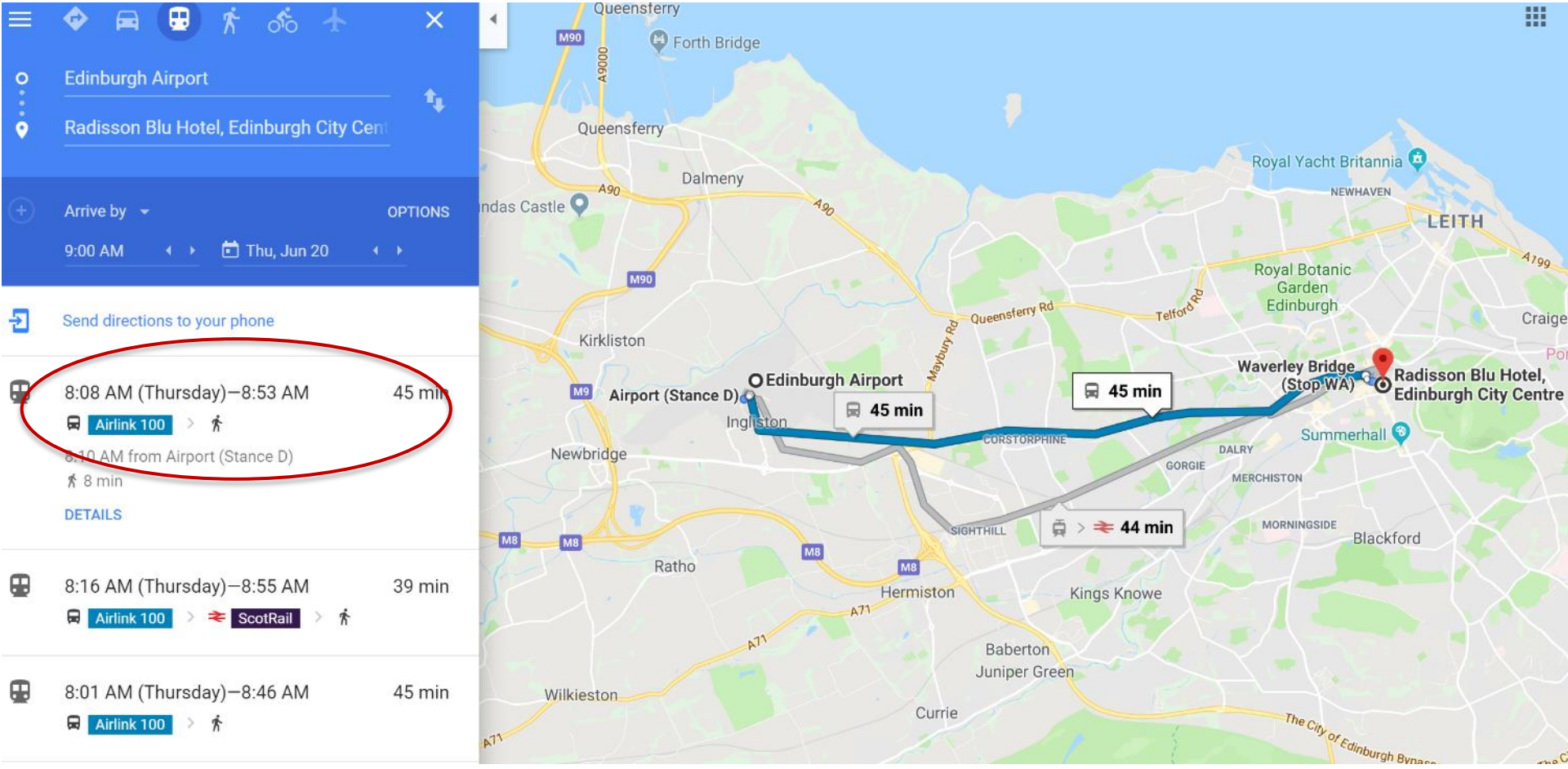

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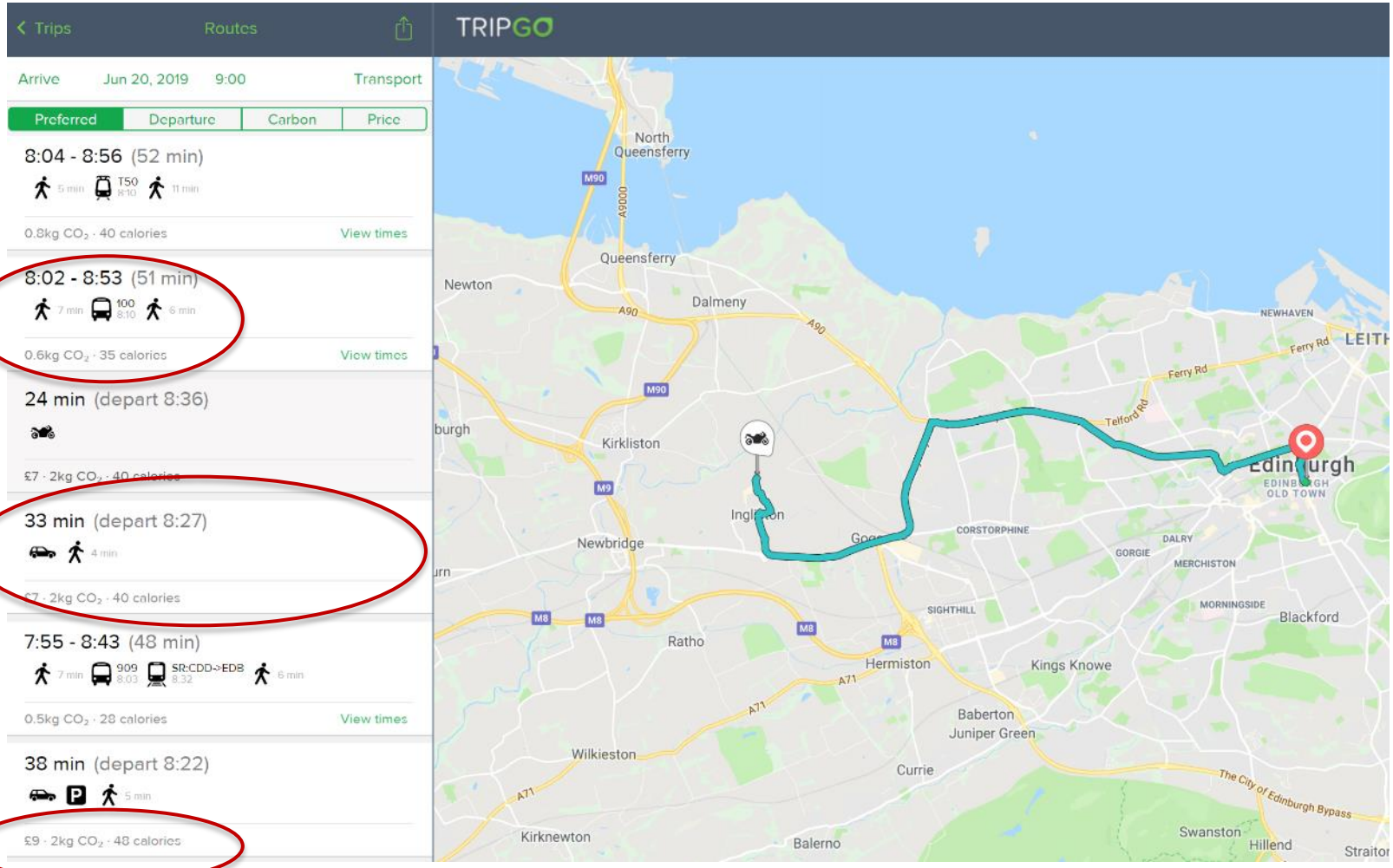

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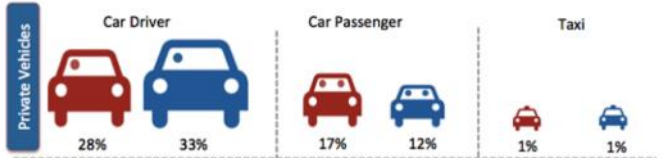

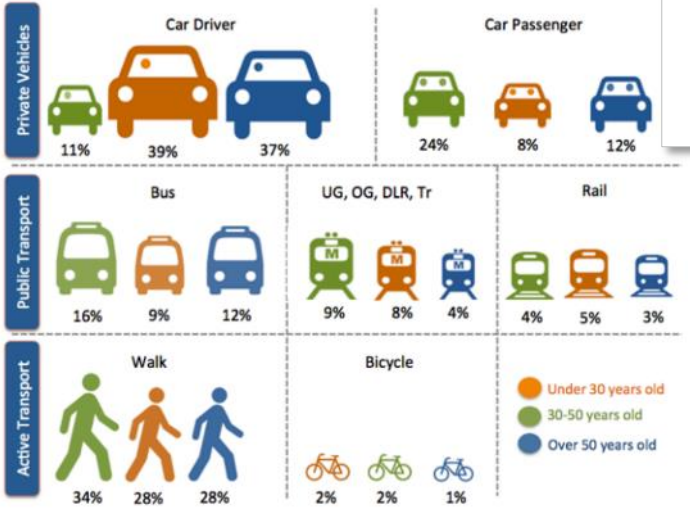

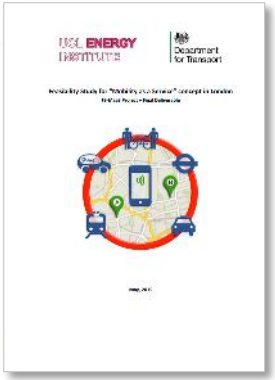

https://www.ucl.ac.uk/bartlett/energy/sites/bartlett/files/maas.pdf

How do we move?

- UCL Study for the development of MaaS models for TfL
- App that monitors your location and mode of transport to determine the metrics for your journey
- Provided the mobility metrics for the sample audience
- Provided mobility metrics for the individual user at the end of each week

What price for the convenience?

- Financial Cost
  - *Parking*
  - *Fuel*
  - *Insurance*
  - *Tolls*
  - *Car Loan/Lease*
  - *Vehicle Excise Duty*
  - *Wear and tear*
- Environmental Impact
- Average Speed
- Safety

THERE'S AN APP FOR THAT!

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Journey Planning

The State of Play Today

- Good for single mode planning
- Improving for multi-mode planning
- Cost routing limited
- Incident re-planning limited

Industry Trends

- Convergence

Journey Planning

The Ideal World Tomorrow

- One App
- Multi-mode journey planning
- Single click payment
- Timely incident notification
- (Helpful) re-planning
- Automatic refunds

MAAS BENEFITS – FOR THE PUBLIC

- Increase access to opportunities
- Simple intuitive user experience
- Reduced journey times
- Increased productivity
- Reduce car reliance
- Increase equity
- Improved quality of life

A win for the city?

Road Congestion

- Demand for physical space,
- Lower average speeds:
  - *Longer trip times,*
  - *Greater unpredictability,*
  - *Periods of no movement.*
- Time,
- Fuel,
- Health,
- Amenity

https://foe.scot/get-involved/traffic-jams-in-the-city-road-rush-hour/

Why does it happen?

- Cities with relatively static amounts of space for vehicles,
- Cities with growing populations – housing being built further and further away from the CBD,
- Public transport taking too long to catch up with new housing leaving the car as the only transport alternative
- City centres remaining the place for well paid job opportunities,
- Unchecked access to road networks – no “throttling” of vehicle access,
- A traffic light based system that has to stop half the cars moving half of the time,
- People just assuming that they can travel!

Why don’t we all use public transport?

- Some people love their cars – the personal space,
- For some public transport just doesn’t work – it isn’t accessible or takes too long,
- For some it doesn’t feel like a safe option,
- If not well maintained it can become unreliable due to failures,
- If not looked after, it can be an “unpleasant space” to be in,
- It too (Buses) can suffer from the same congestion.

Incident Management
State of Play Today

Initial Tactical Response

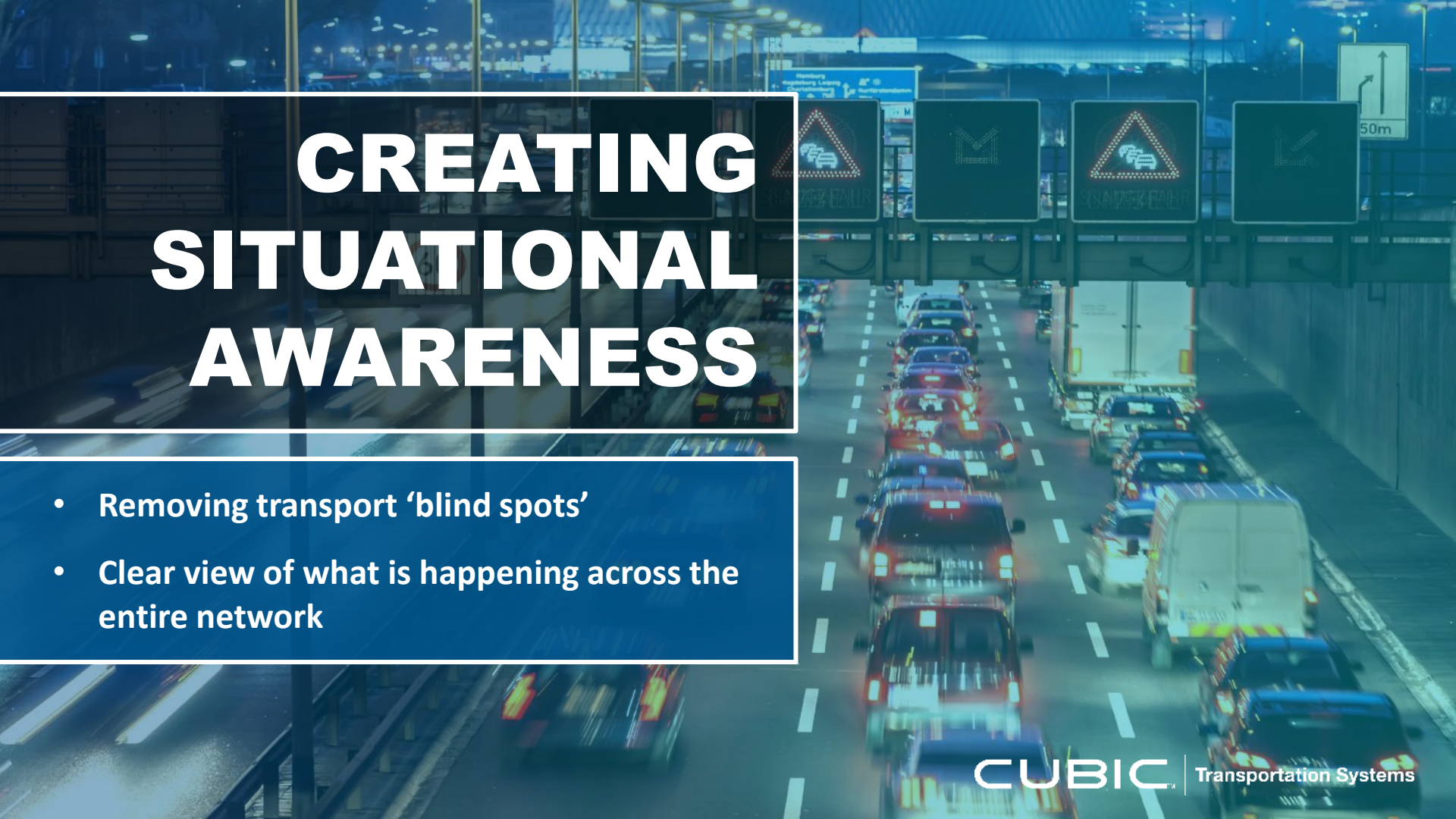
- Keep people safe
- Deal with incident
- Get traffic and transit moving

Incident Management Issues

- Single mode – limited coordination
- Notifications; limited ability to action
- Limited prediction capability
- Limited data on preferred re-routing options

CREATING SITUATIONAL AWARENESS

- Removing transport ‘blind spots’
- Clear view of what is happening across the entire network



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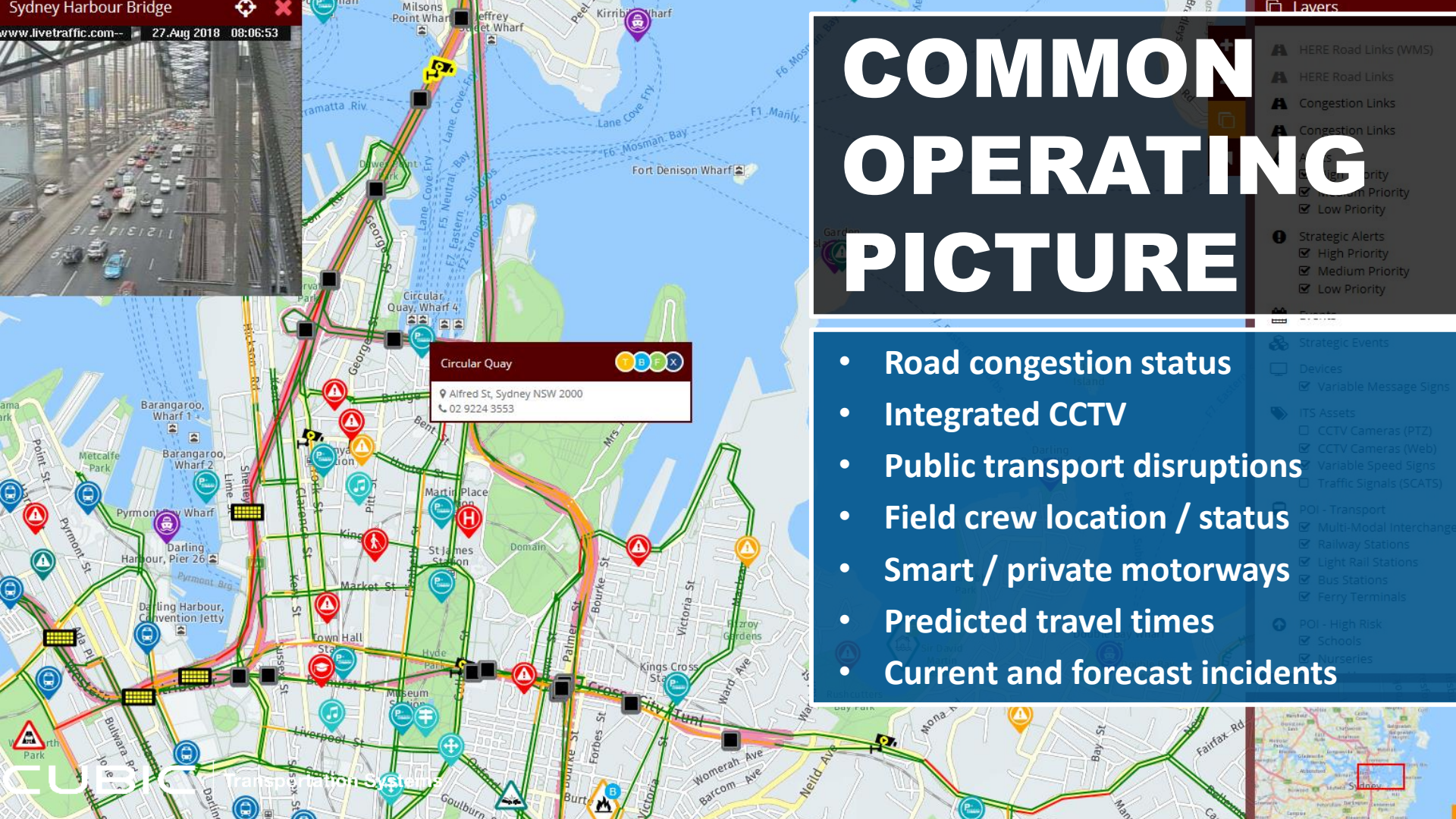

COMMON OPERATING PICTURE

- Road congestion status
- Integrated CCTV
- Public transport disruptions
- Field crew location / status
- Smart / private motorways
- Predicted travel times
- Current and forecast incidents

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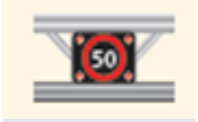
Integrated Multi-modal Transportation & Incident Management



Third-Party Systems & Equipment

Users

Operations

Management

Analysts

Traveler Information

Transport Integration Hub

Open Data Exchange

Situational Awareness

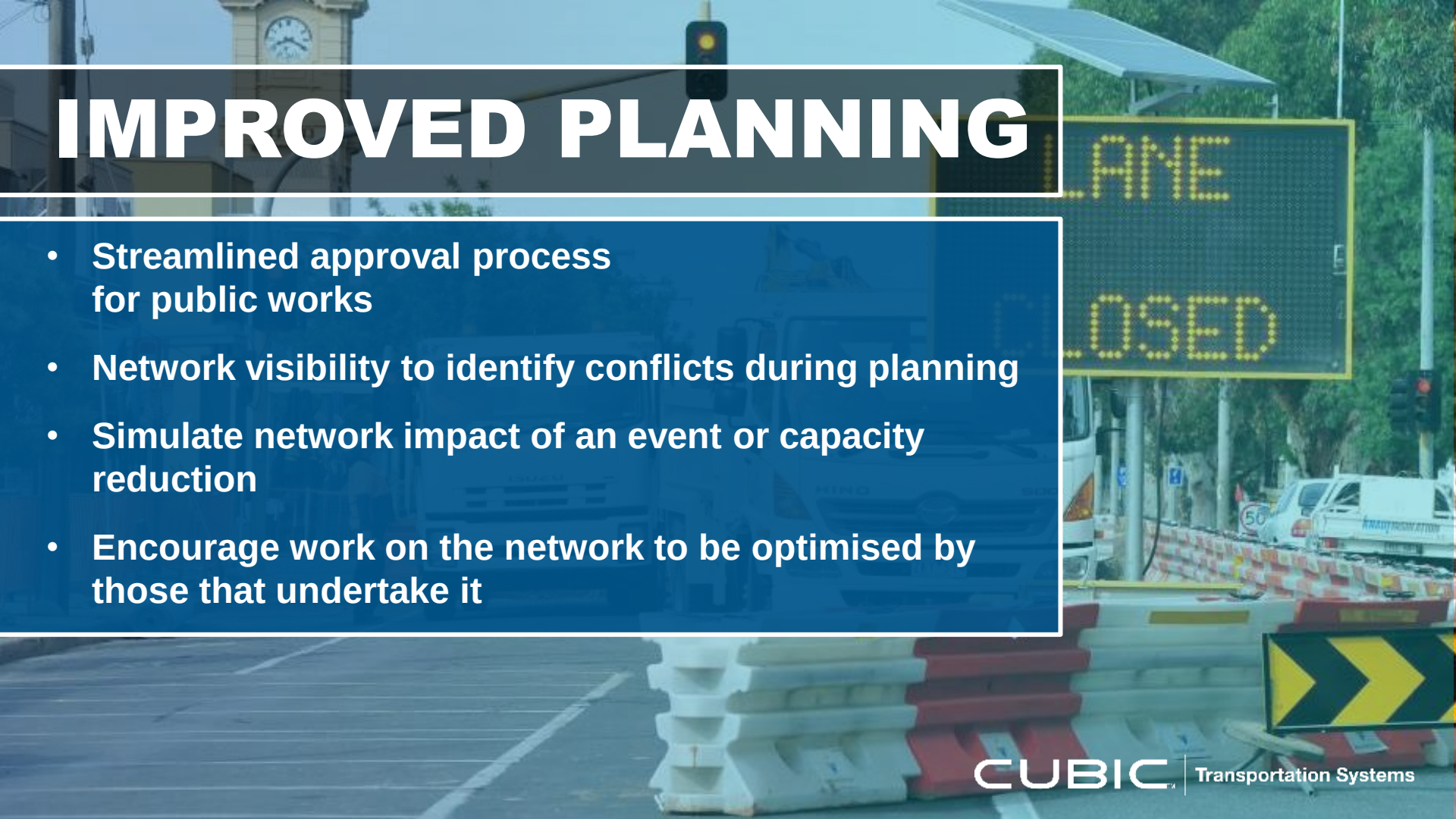
Structured Decision Support & Simulation

Fare Collection

Stakeholder Systems

IMPROVED PLANNING

- Streamlined approval process for public works
- Network visibility to identify conflicts during planning
- Simulate network impact of an event or capacity reduction
- Encourage work on the network to be optimised by those that undertake it



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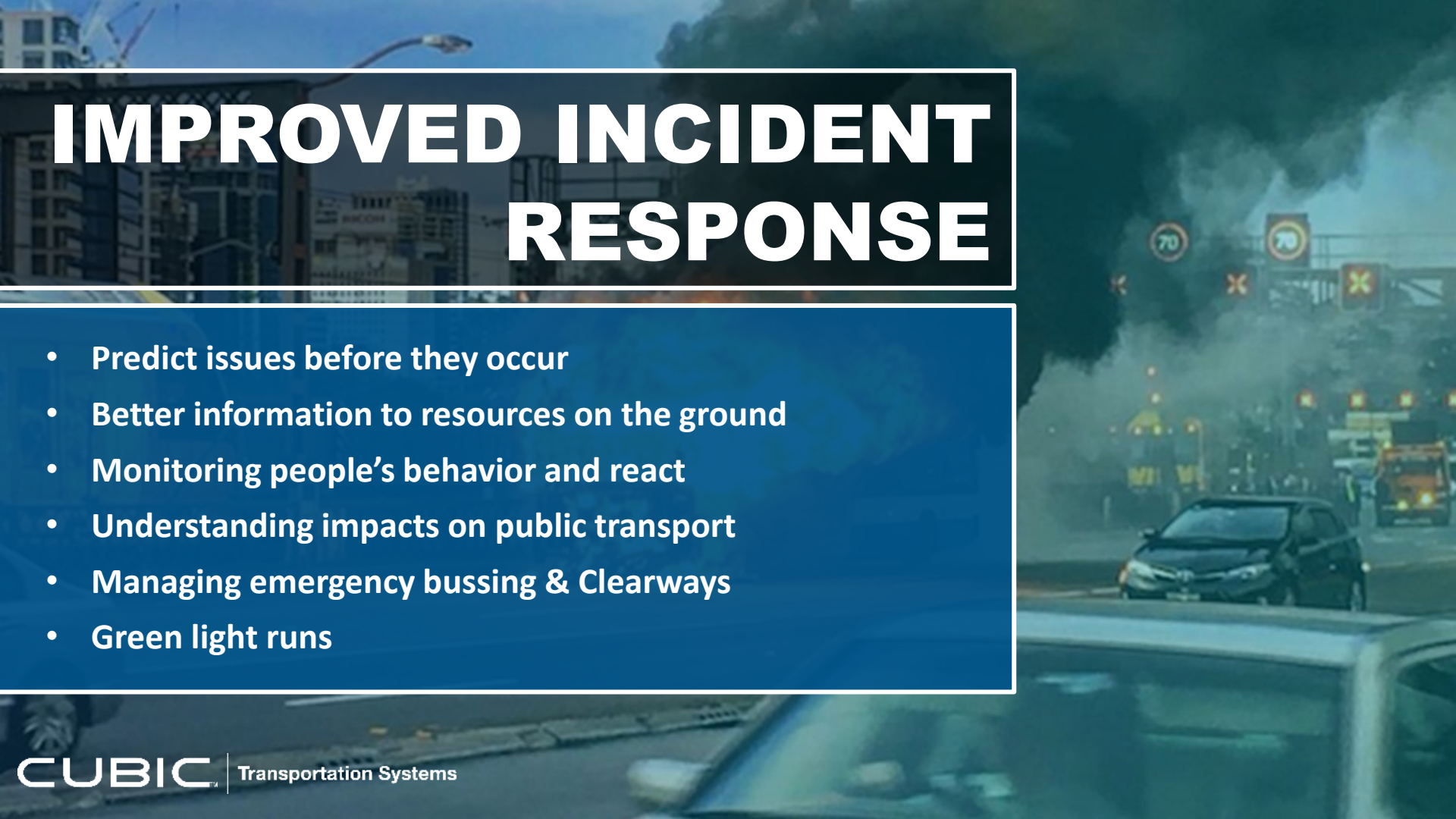
IMPROVED INCIDENT RESPONSE

- Predict issues before they occur
- Better information to resources on the ground
- Monitoring people's behavior and react
- Understanding impacts on public transport
- Managing emergency bussing & Clearways
- Green light runs



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PREDICT 30 minutes into the future

- Monitor network in real-time
- Predicted travel times on key corridors
- Identify potential incidents
- Scenario evaluation of incident responses
- Enable the most effective mitigation actions
- Impact analysis for road occupancies and major events

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KEEPING TRAVELLERS INFORMED

- Enhanced information to the public
- SIRI-SX, Live Traffic, IVR, Social Media
- Create rule based workflows to automate message publication
- Publish multimodal incident information in a single message

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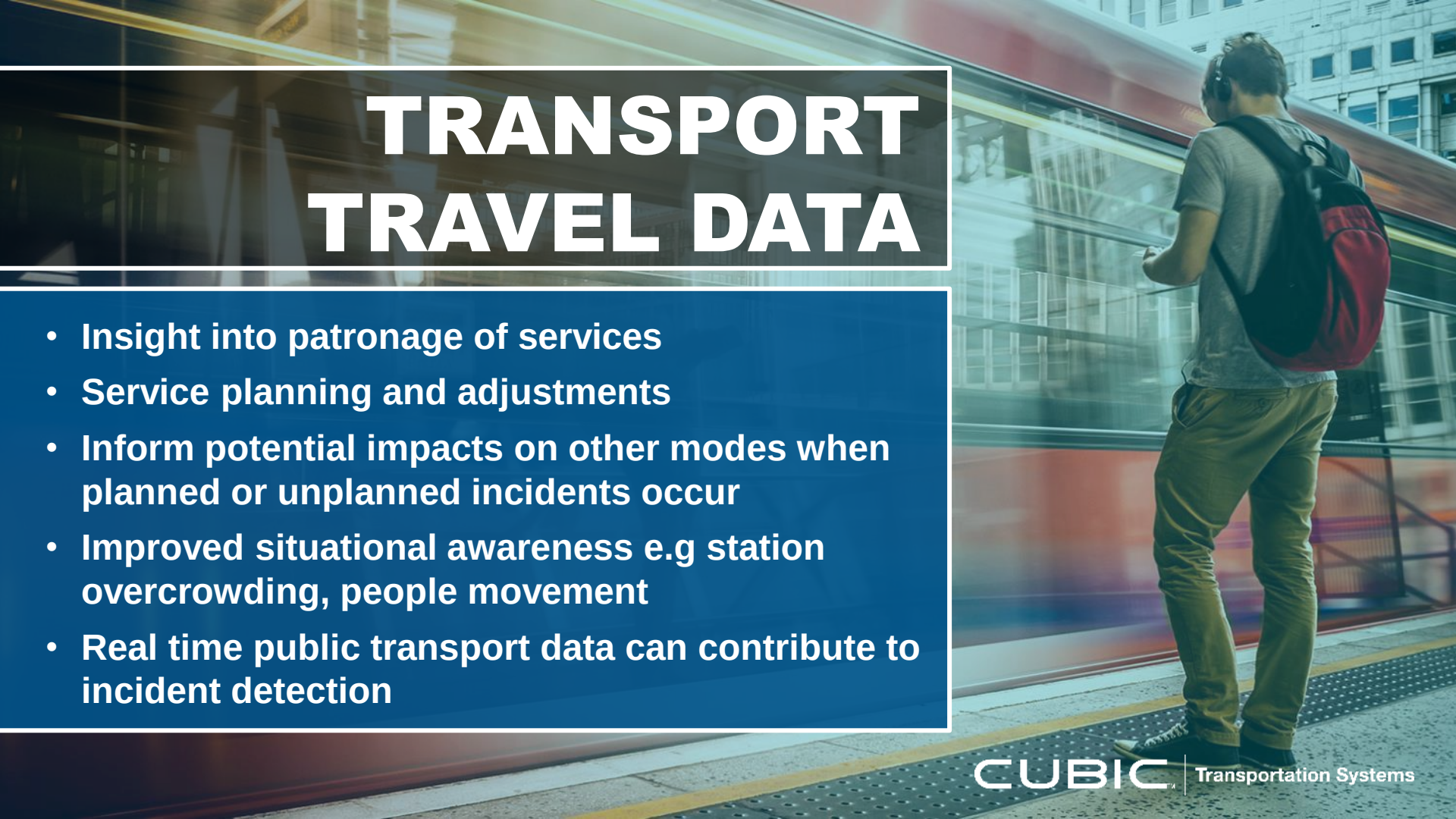
TRANSPORT TRAVEL DATA

- Insight into patronage of services
- Service planning and adjustments
- Inform potential impacts on other modes when planned or unplanned incidents occur
- Improved situational awareness e.g station overcrowding, people movement
- Real time public transport data can contribute to incident detection



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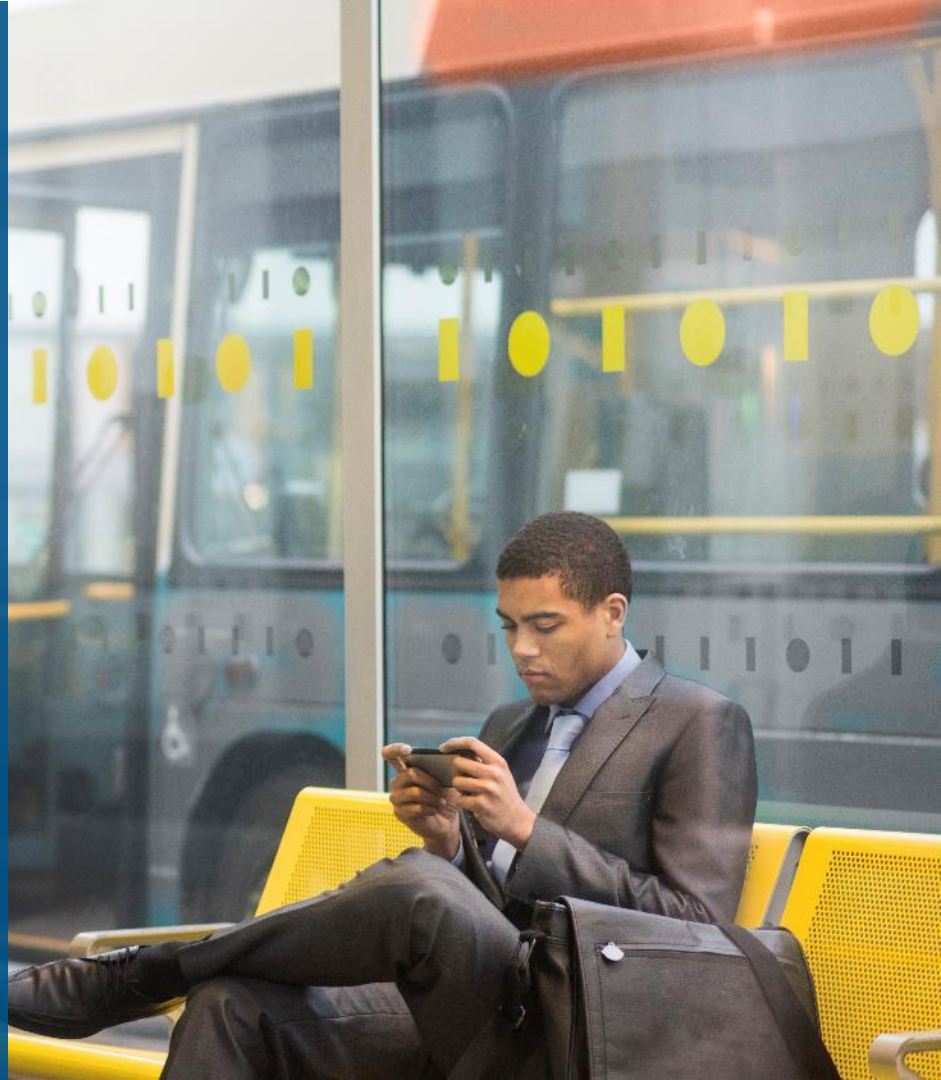
Incident Management

The Ideal World

Multi-modal, coordinated, and predictive

Characteristics

- Understand services affected
- Understand impact on other services
- Generate travel options
- Keep people informed
- Data for targeted re-routing
- Refund delays



MAAS BENEFITS – FOR CITIES

- Reduce vehicles miles per person
- Leverage infrastructure
- Support urban real estate development
- Augment/change public transport services
- Increase public transport ridership

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THANK YOU

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