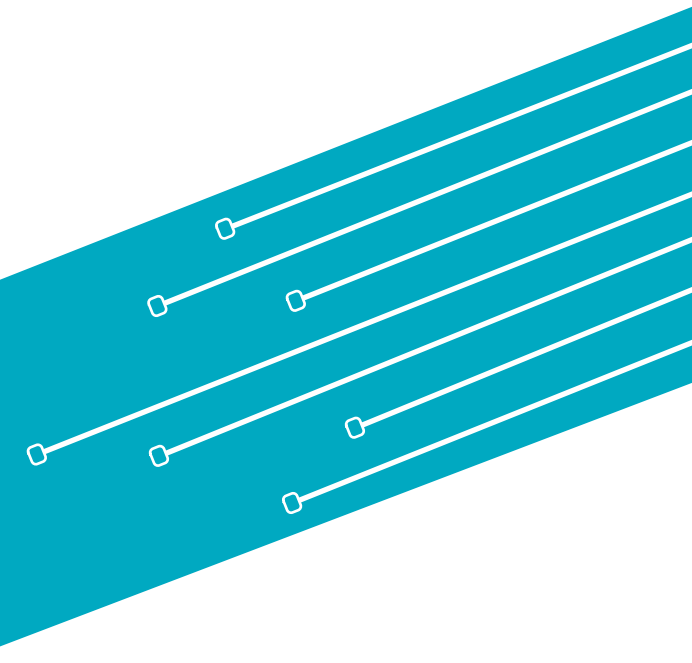


From Heavy Weight to Light Weight: Time to start punching upwards

KEOLIS
NOTTINGHAM

Chris Wright
Managing Director, Nottingham Trams
11 July 2023



Punching: People who are punching above their weight are generally going out with someone of superior quality in either the face/body department. Most famous example would be Catherine Zeta-Jones and Michael Douglas (Urban Dictionary; 2023)



My Journey

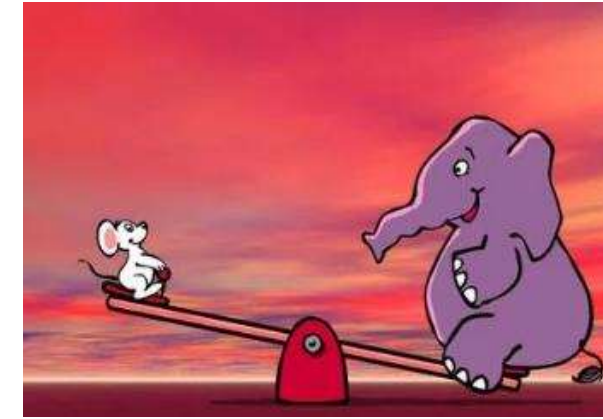


Light Rail vs Heavy Rail - What are the

differences?



Line of sight driving



Weight



Speed



Open System

What advantages does this give?



Lower cost to construct



Lower cost to operate



Increased frequency. Shorter headways



Ability to share space. Customer gets closer to where they want to go

So what's not to like?



Journey
Time

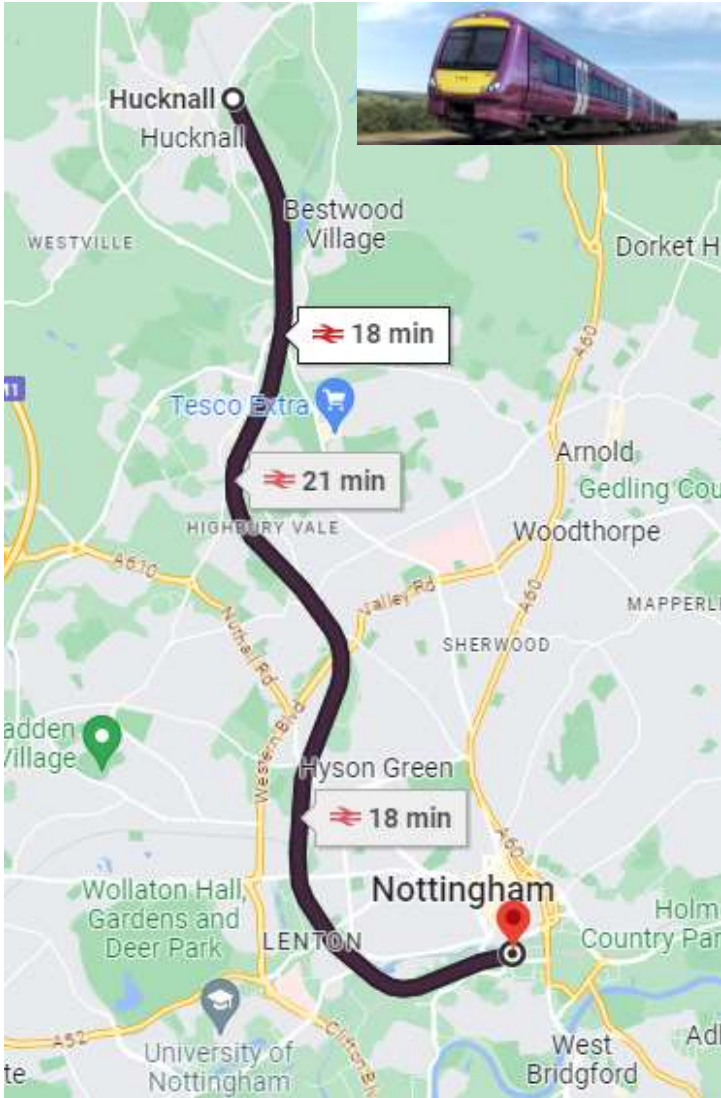
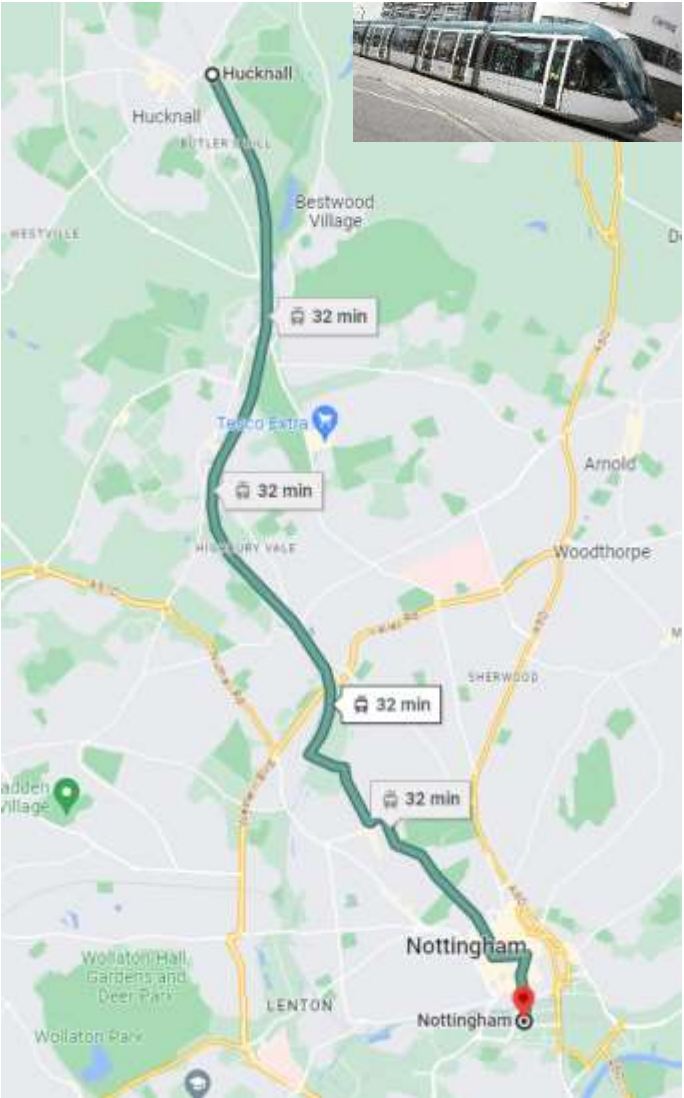


Energy
Delivery



Heavy Rail
Compatibility

Tram v Train – Journey Time



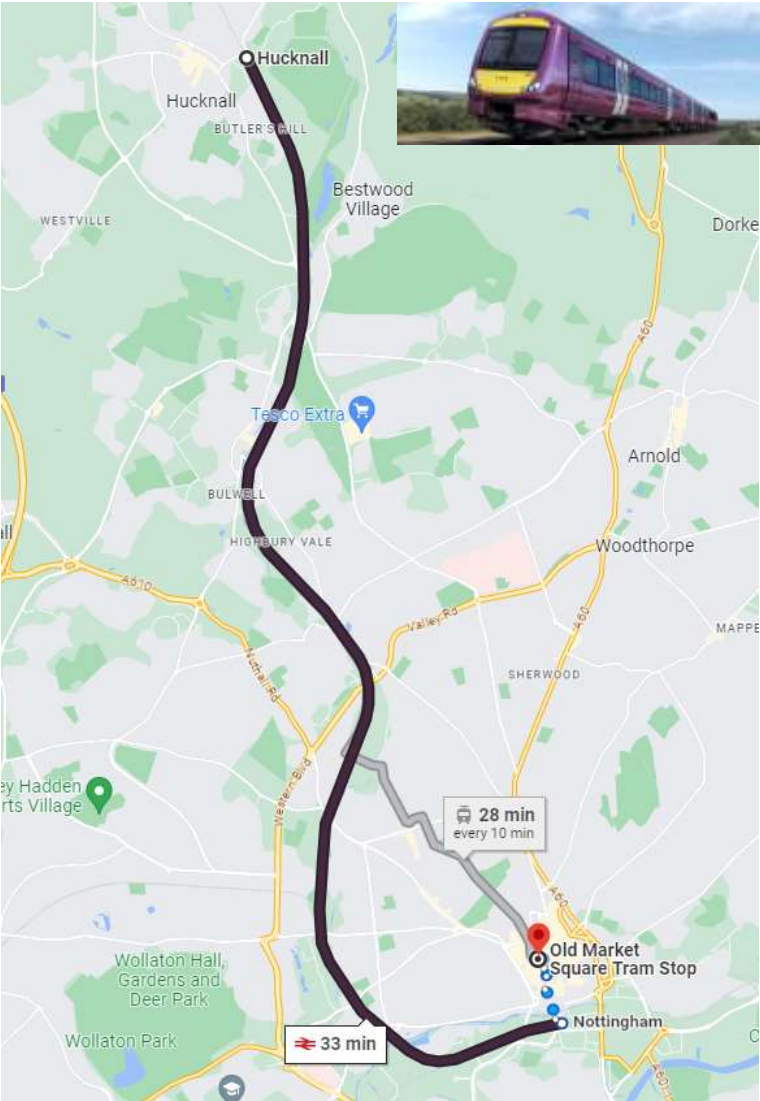
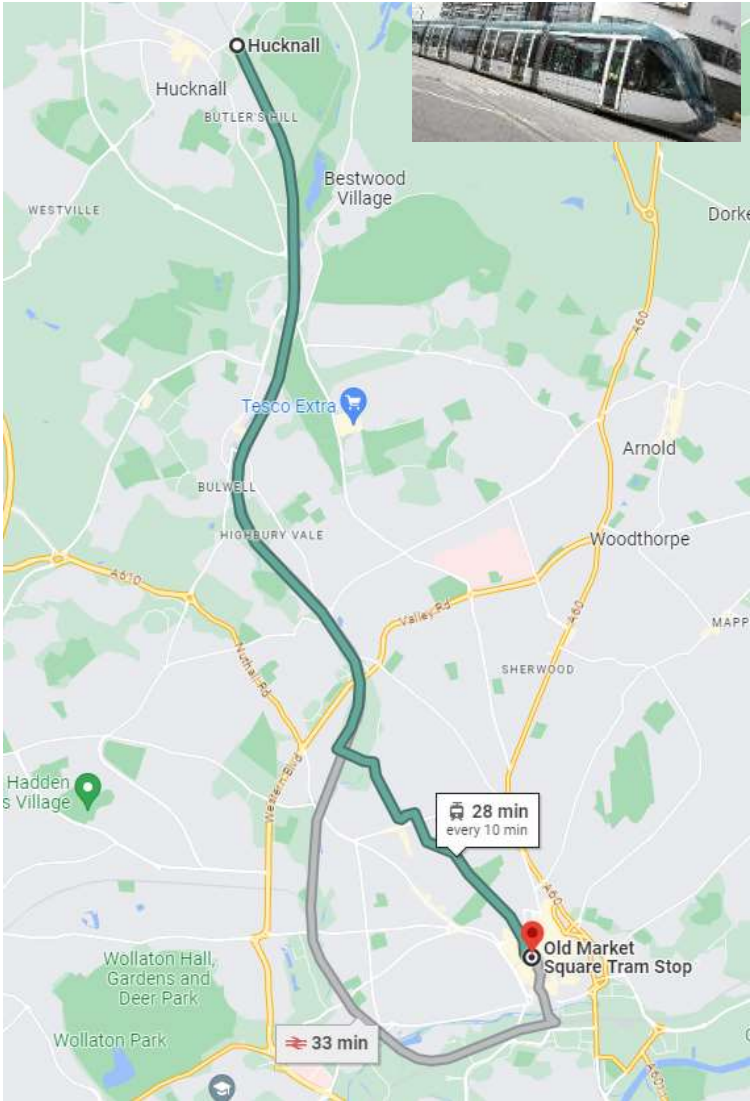
**Hucknall to Bulwell - Tram
8 minutes**

Hucknall	•	•	•	•	•	0604	0700
Bulwell	•	•	•	•	•	0612	0708

**Hucknall to Bulwell - Train
10 minutes**

Hucknall	d	06 31	07 32
Bulwell	d	06 41	07 42

Tram v Train – Journey Time



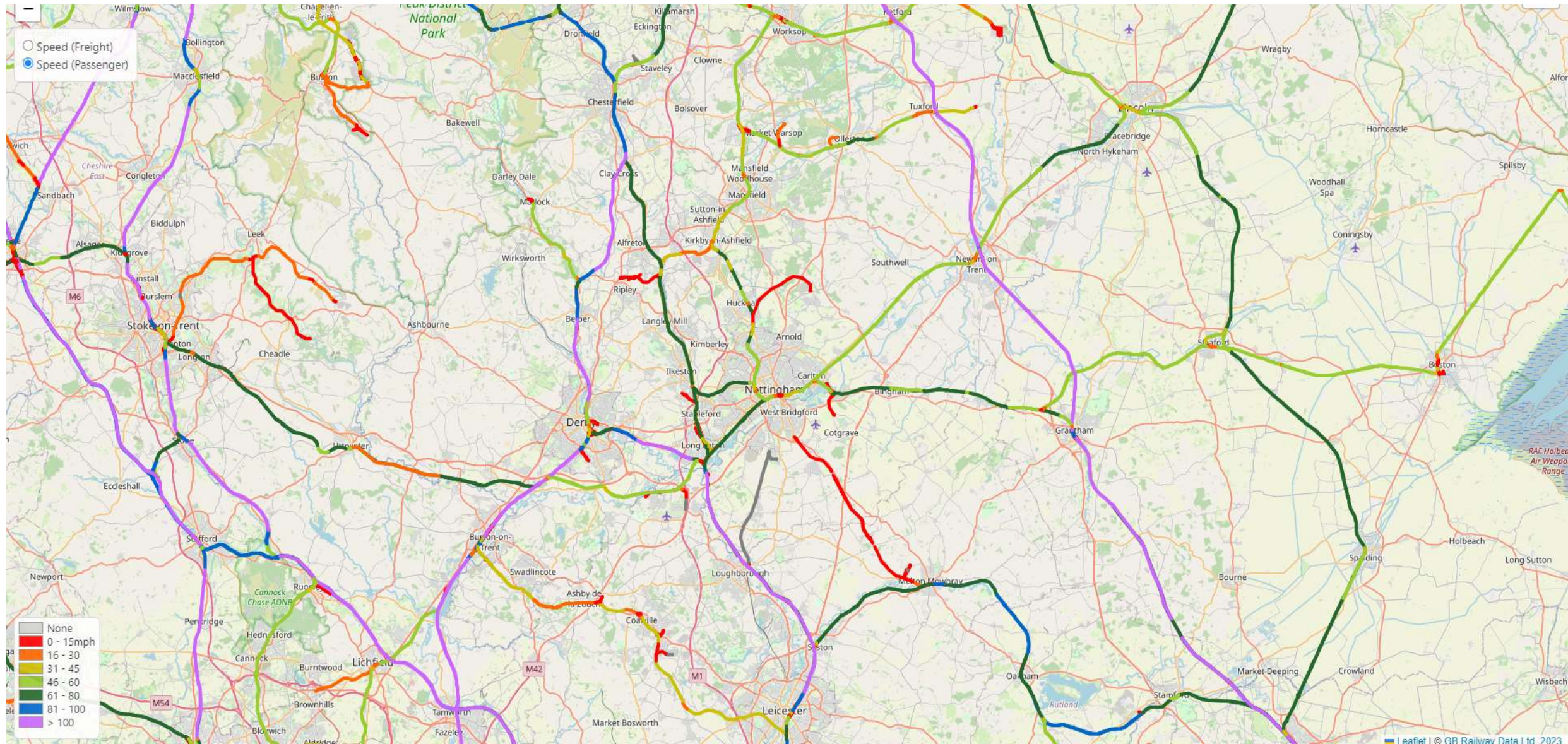
**Hucknall to Old Market Square by Tram
28 minutes**

**Hucknall to Old Market Square
by Train/walking
33 minutes**

Energy Delivery



Shared Space



What about Safety?



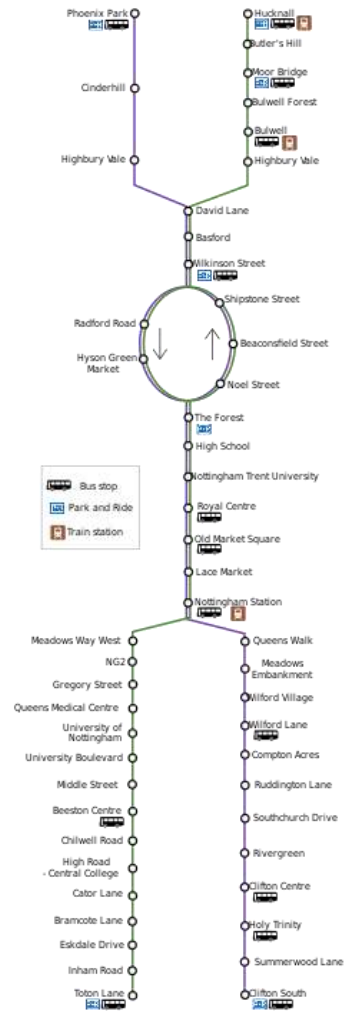
Consequences



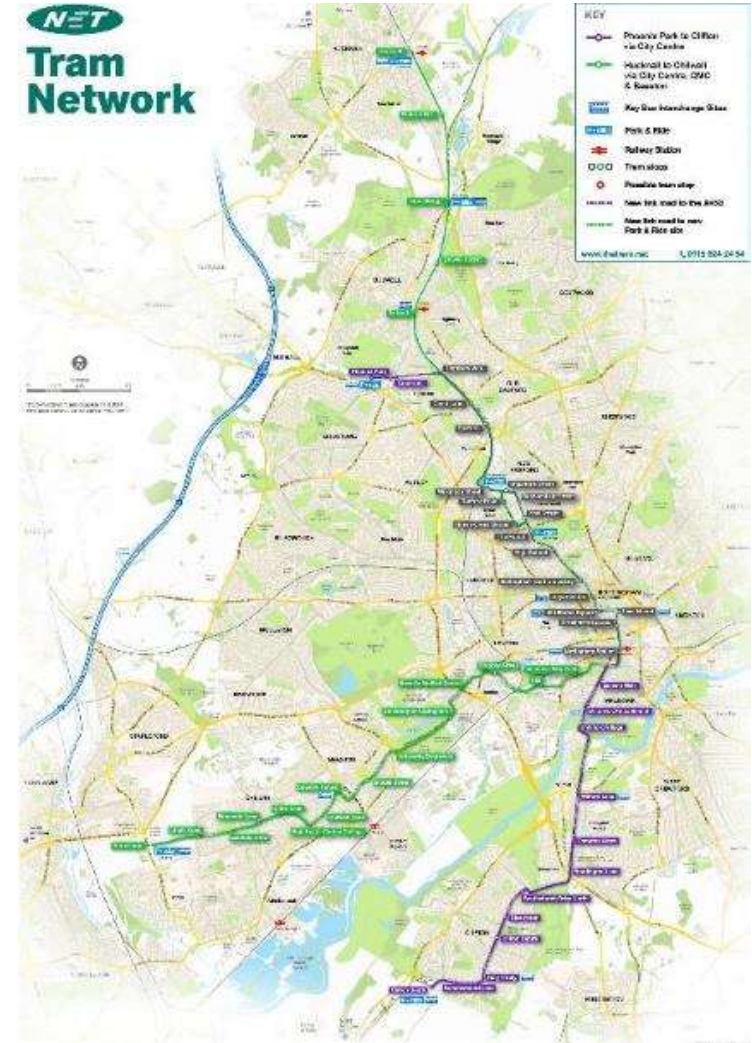
The driver is fundamental to our control measures

- Human Factors must be at the center of our Safety thinking
- We must embrace technology that makes line of sight driving safer, looking to the Automotive industry for our inspiration, such as:
 - Continuous Speed Monitoring
 - Obstacle Detection
 - Traffic Sign Recognition

What about Safety?

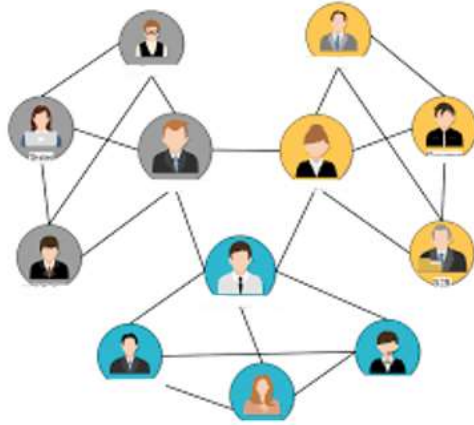


Are we thinking about this...



...or this?

Thoughts about governance?



Structure



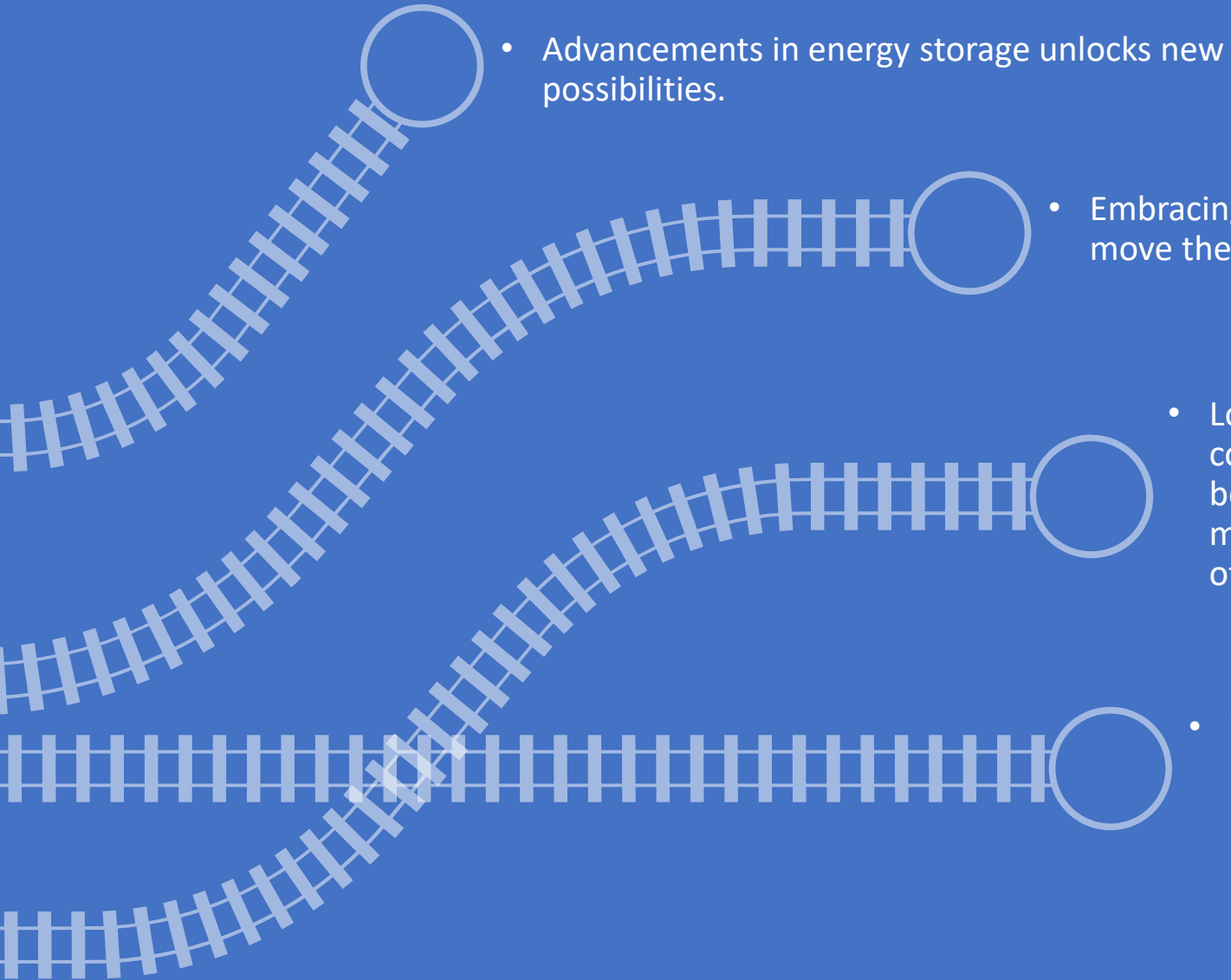
Collaboration



Variances



Compatibility



- Advancements in energy storage unlocks new possibilities.

- Embracing new technology can move the safety dial.

- Lower capital and operational costs mean Light Rail should be a serious consideration in many new and existing parts of the network.

- Working together we must educate the wider industry to highlight these advantages.



Who's really punching?



Thank you

KEOLIS
NOTTINGHAM



