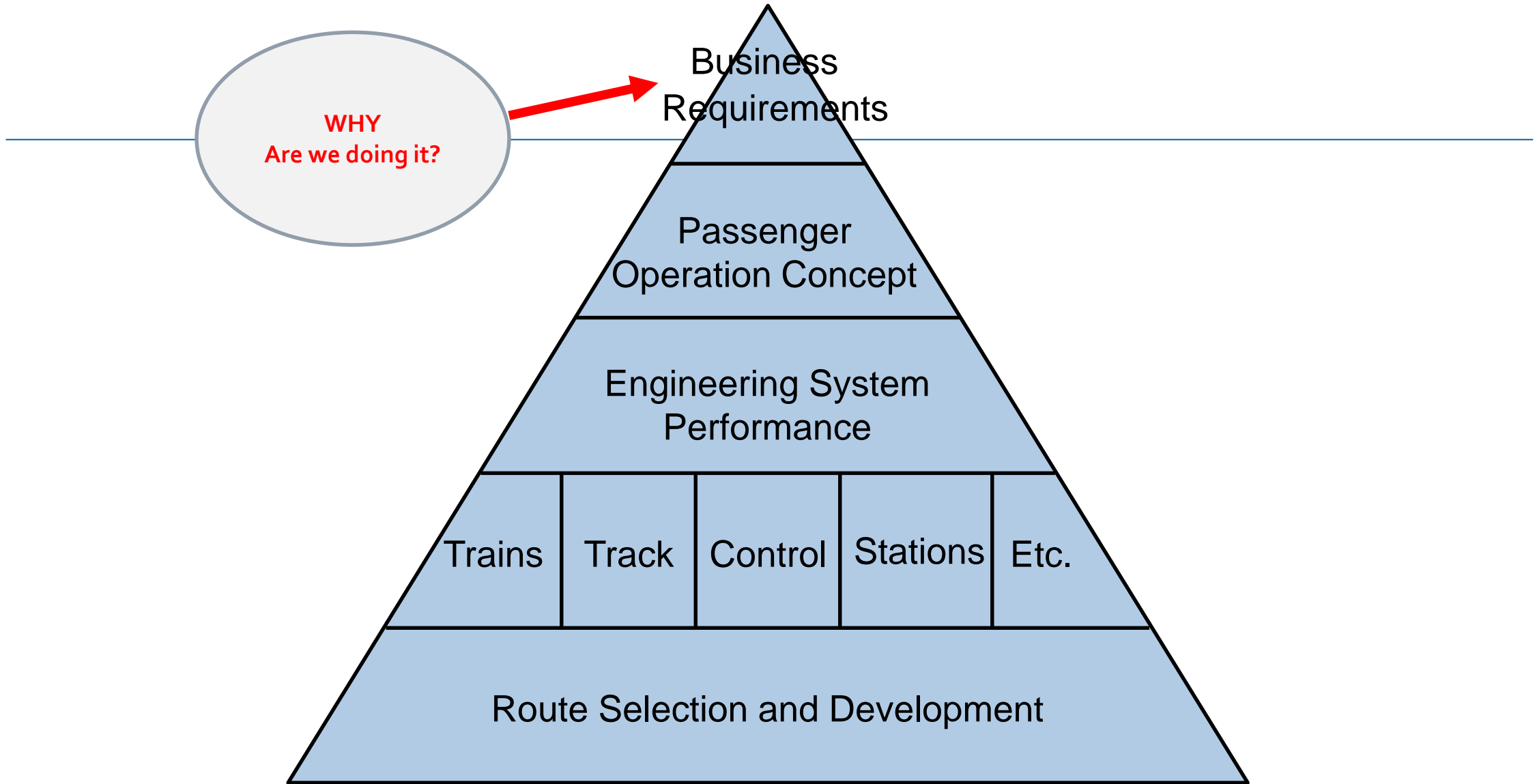




# Some Principles and Design of HS<sub>2</sub>

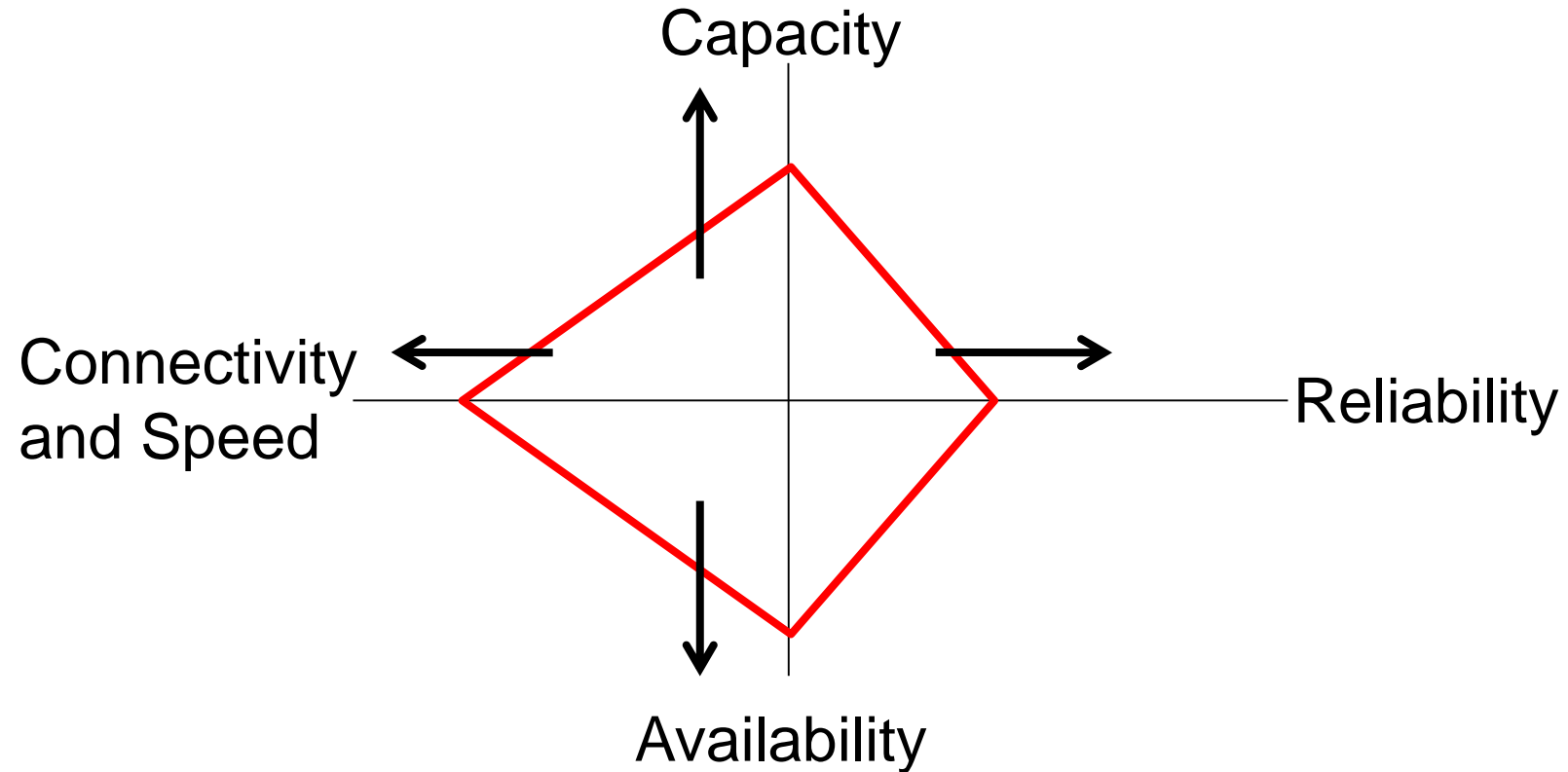
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Prof Andrew McNaughton FREng



# Maximising capacity and connectivity, minimising journey time – with reliable operation

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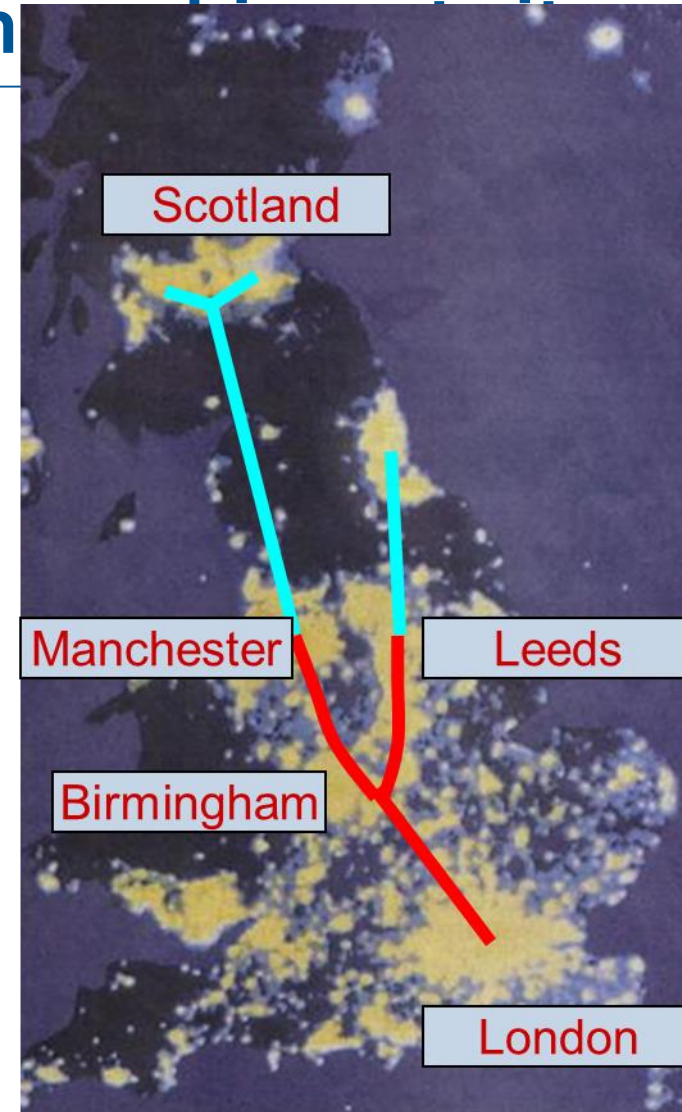
# HS2 initial network connects 8 of the 11 English regions

- Journey times are before and **after** HS2 (in hours-minutes)
- Based on operation at up to 360km/h
- London to
  - Birmingham 1-24 to **0-49**
  - Manchester 2-08 to **1-08**
  - Leeds 2-12 to **1-22**
- Birmingham to
  - Manchester 1-34 to **0-41**
  - Leeds 2-05 to **0-49**

Note

Red is HS2 new HS line

Blue is through services on existing lines



# Standard HSR technology and international technical standards

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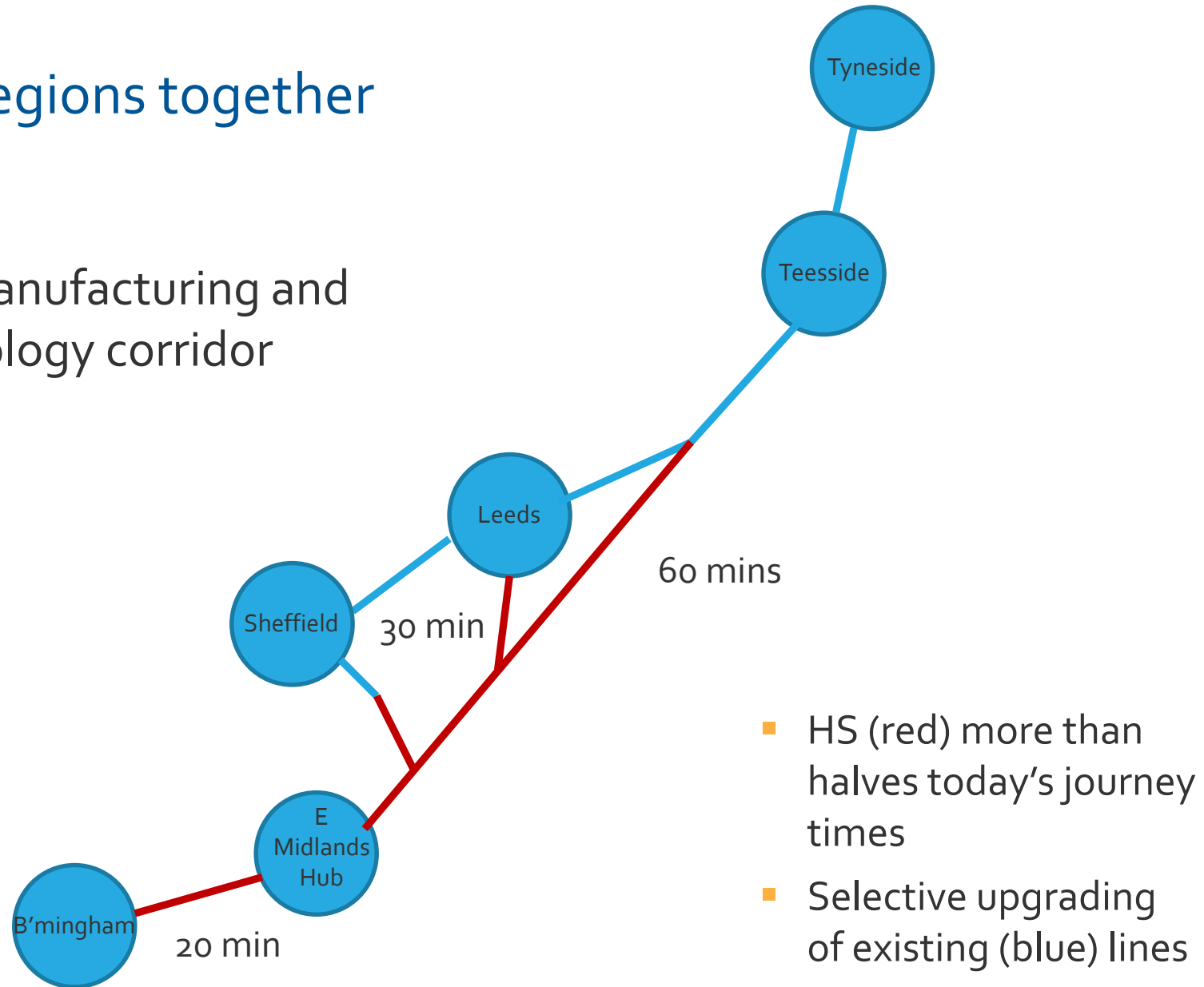
# What is HS2 capable of technically?

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- **Capacity**
  - A two track HS2 line is capable of carrying more people than two 3-lane motorways
  - Or the equivalent of a jumbo jet a minute
- **Reliability**
  - Under ½ minute delay per train on HS2 infrastructure
- **Speed**
  - Up to 360km/h where justified
- **Connectivity**
  - Stations in the best locations to generate growth

# Connecting city regions together

- The manufacturing and technology corridor



# Station location is very important

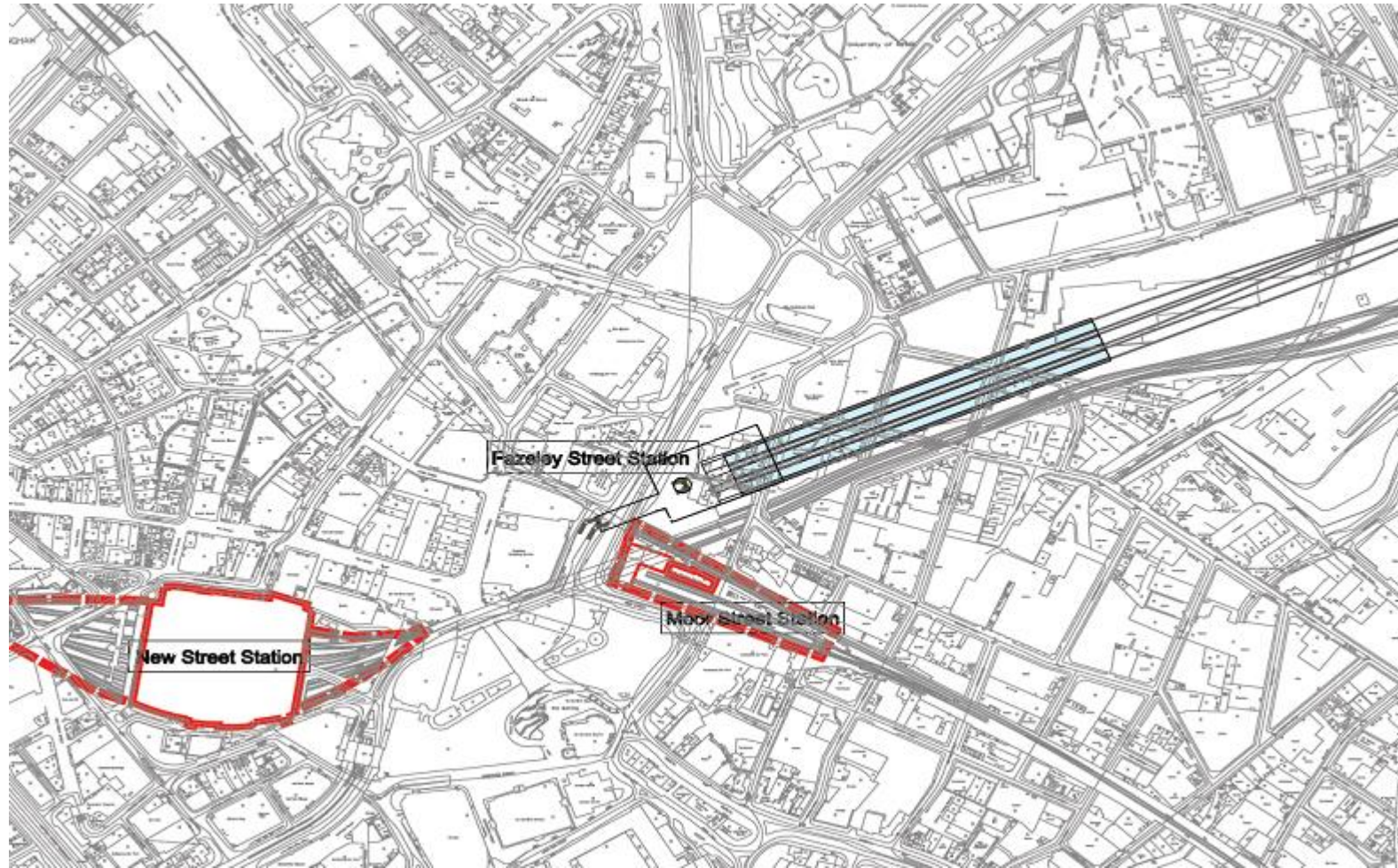
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# New Central Birmingham Station

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# Central Birmingham

- HS2 is at the centre of a masterplan
- Potential for:
  - 36,000 jobs
  - 5m sq ft of employment space
  - 4,000 new homes
  - £1.4bn of economic benefit

