



What Trams Can do for Cities

An explanation of light rail, its benefits, and why towns and cities worldwide are adopting it.

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Operation and safety of tramways in interaction with public space

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And a sandgrown'un who worked on the Blue Buses



There are Tramways All Over Europe

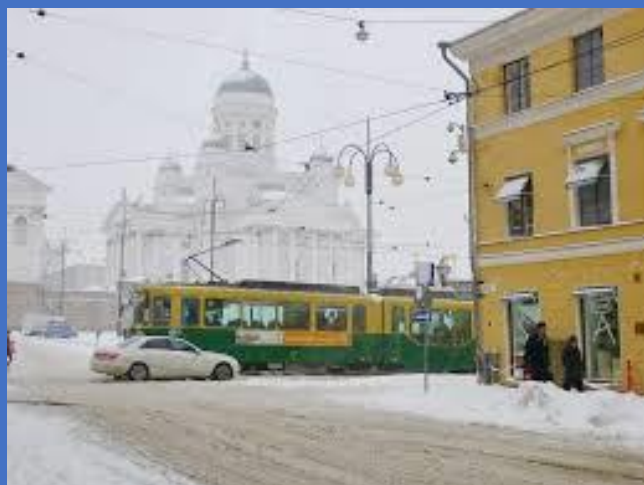


Prague

(Bath Trams website)



Lisbon
(Wikipedia)



Helsinki

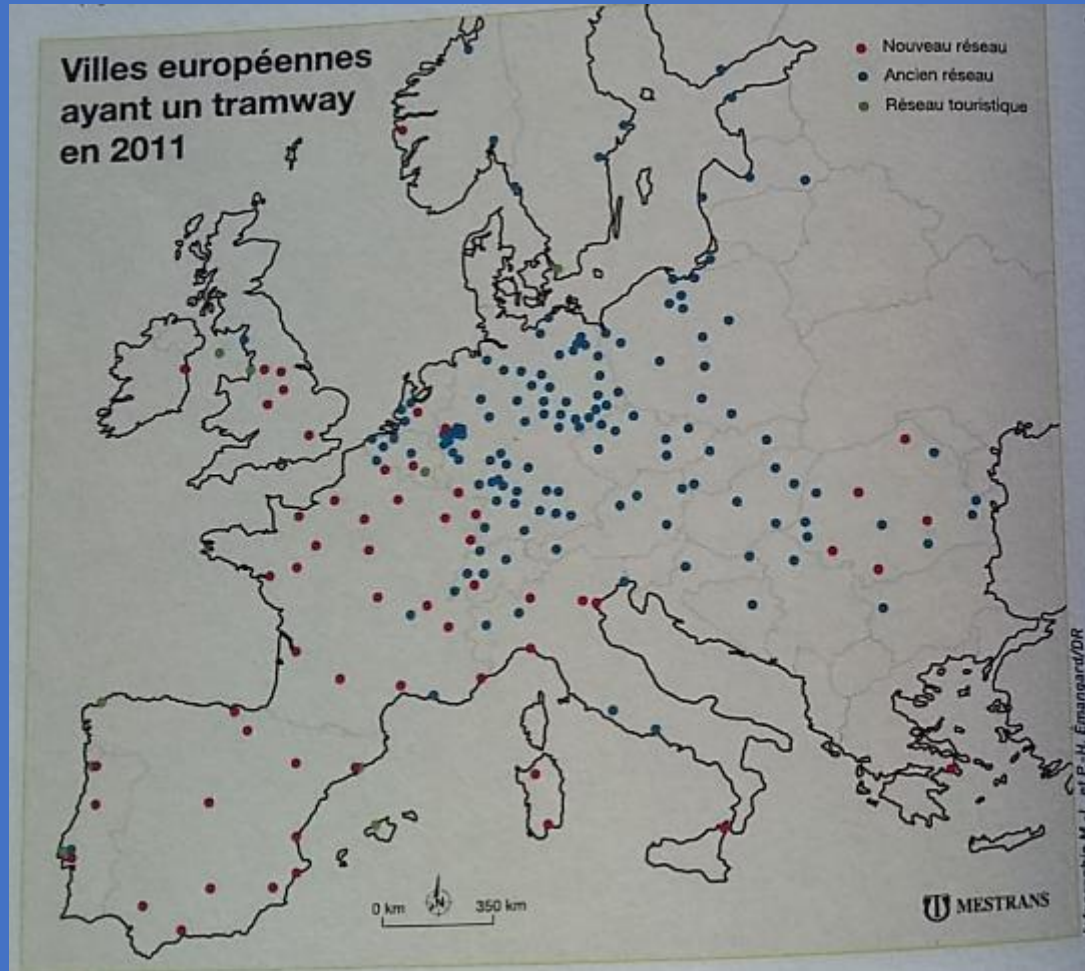
(Wikipedia)



Seville

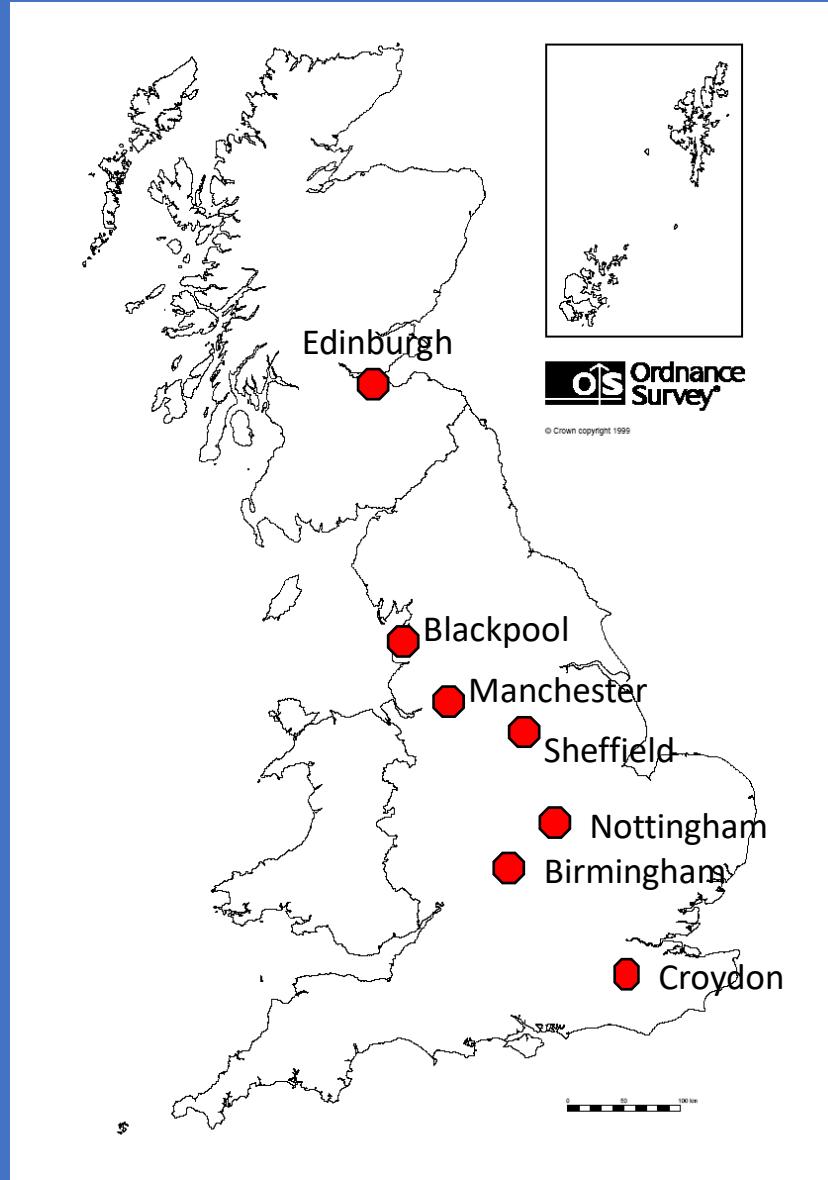
(D Walmsley)

There are Tramways All Over Europe



- 58 in Germany
 - where they always had them
- 34 in France
 - where they closed all the old ones
- 11 in Spain
 - where they are catching up

Tramway Systems in Great Britain



Source: COST Action TU1103 report

Tramway Systems in Great Britain



Manchester 1992



Sheffield 1994



West Midlands 1999



Croydon 2000



Nottingham 2004



Edinburgh 2014

(D Walmsley)

Tramway Systems in Great Britain



Blackpool 2012

(D Walmsley)

List of British Cities by Population

Cities with light rail **highlighted**, trams in **purple**, failed schemes in **yellow**

- | | | | |
|-----|-----------------------------|--------------|--|
| 1. | Gtr London 9,787 | 13. | Leicester 509 |
| 2. | Gtr Manchester 2,553 | 14. | Edinburgh 482 |
| 3. | West Midlands 2,441 | 15. | Brighton & Hove 474 |
| 4. | West Yorkshire 1,778 | 16. | Bournemouth 466 |
| 5. | Gtr Glasgow 1,209 | 17. | Cardiff 447 |
| 6. | Liverpool 864 | 18. | Teesside 377 |
| 7. | South Hampshire 856 | 19. | Stoke-on-Trent 373 |
| 8. | Tyneside 775 | 20. | Coventry 359 |
| 9. | Nottingham 730 | =====
25. | Preston 313 |
| 10. | Sheffield 685 | 34. | Blackpool 239 |
| 11. | Bristol 617 | | <i>incl. Lytham St Annes, Poulton & Thornton Cleveleys</i> |
| 12. | Belfast 596 | | |

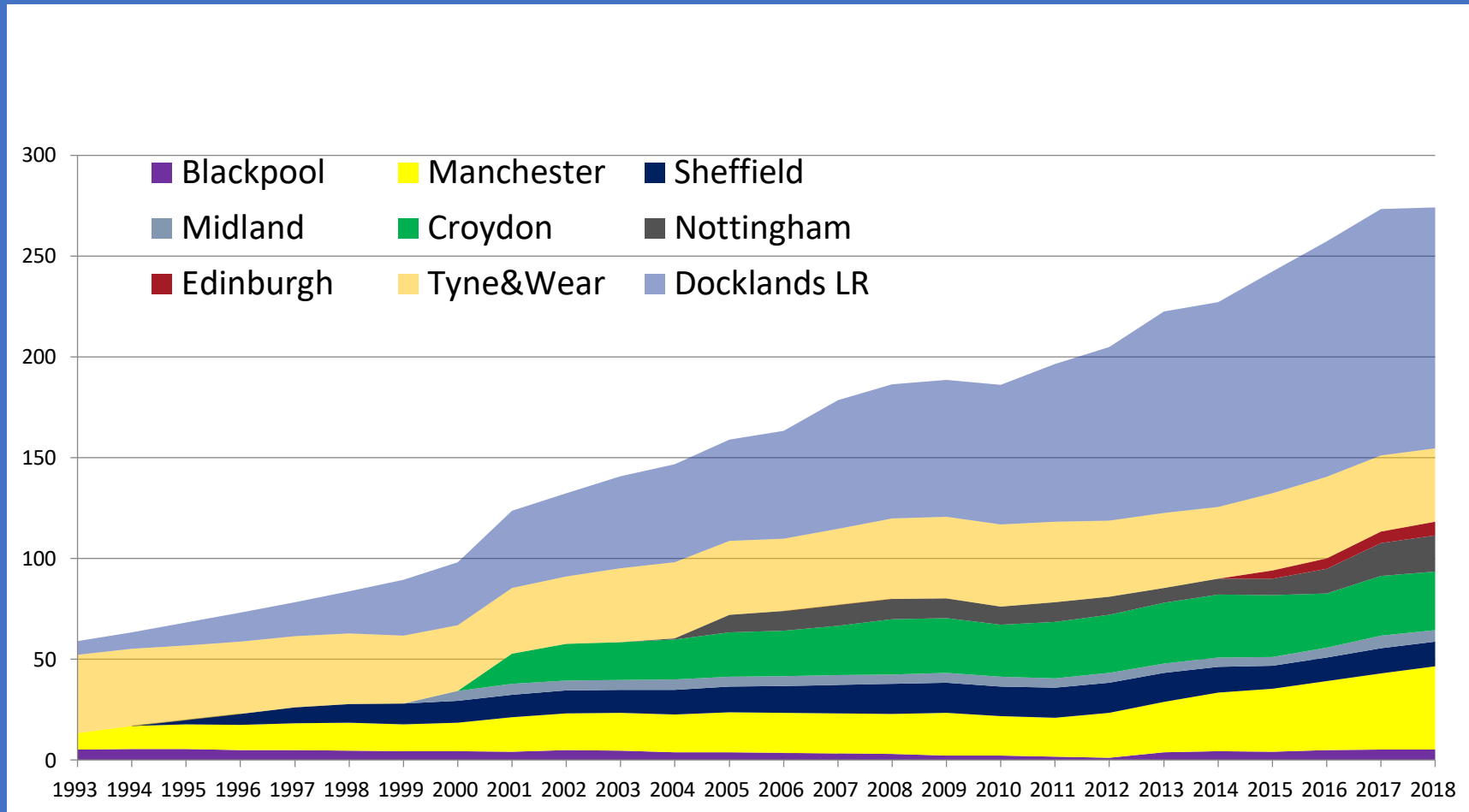
Source: ONS 2011 Census

What are the Advantages of Trams?

- Trams carry lots of people
- Trams get people out of cars
- Accessibility for people with disabilities
- No pollution at point of use
- Trams are as safe as buses and safer than cars
- Trams have positive economic impacts
 - Access to jobs and investment
 - Increase land and property values
 - Promote urban development
 - Improve city image

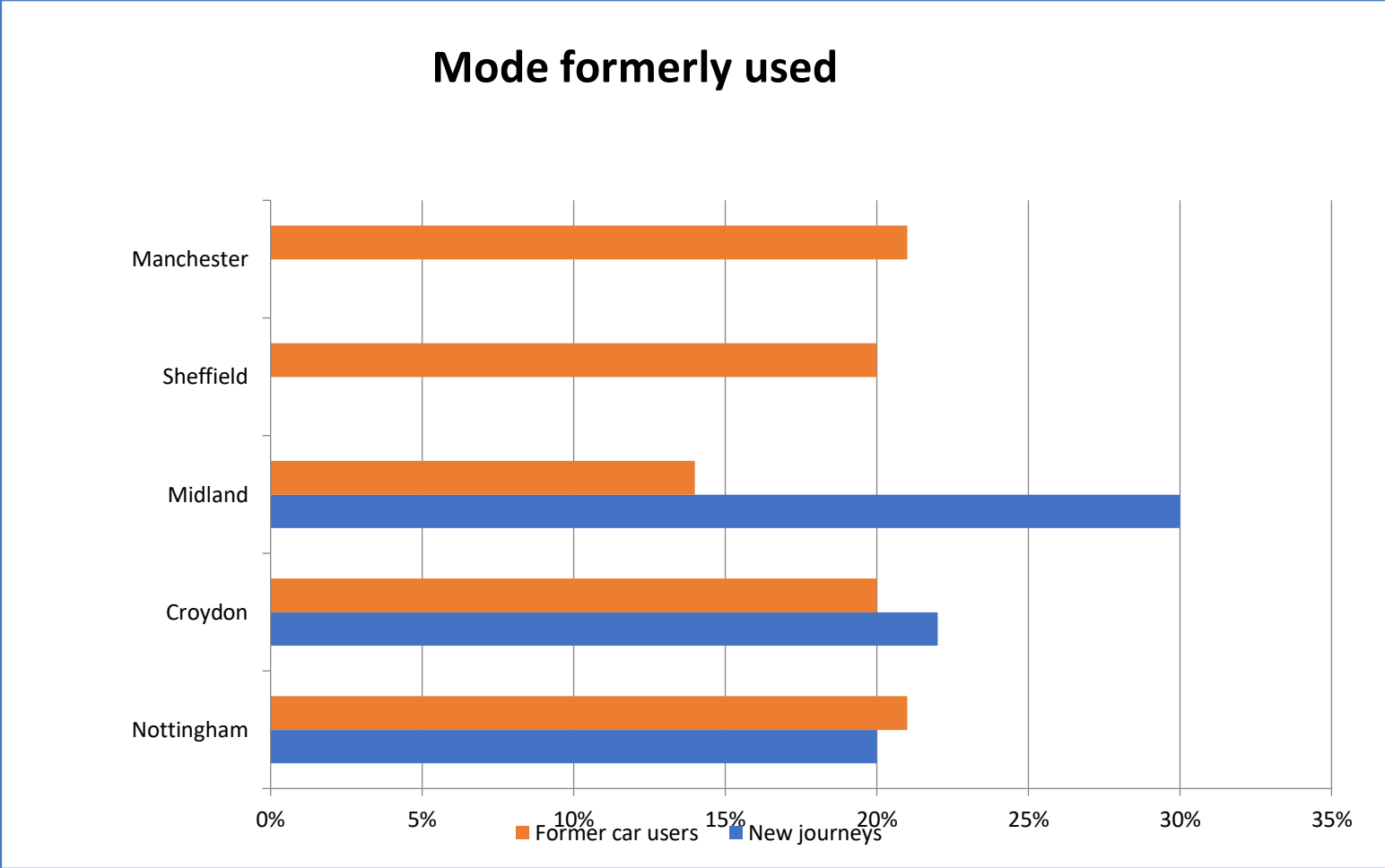
Trams Carry Lots of People

275 m on all LR, 120 m on trams



Source: Department for Transport

Trams Get People Out of Cars



Source: PTEG – “What light rail can do for cities”

Trams are Accessible

- Trams are accessible for people with disabilities or reduced mobility
 - From January 2020, *all* trams must conform to RVAR (unless exempt)
- Accessible trams are easier for:
 - People with pushchairs or small children
 - People with luggage
 - People with shopping bags
 - **In fact, for everyone**

Accessible Trams

Level boarding, contrasting doors and floor



Photos: D Walmsley Nov 2018

Accessible Trams

Wheelchair space



Photo: D Walmsley Nov 2018.

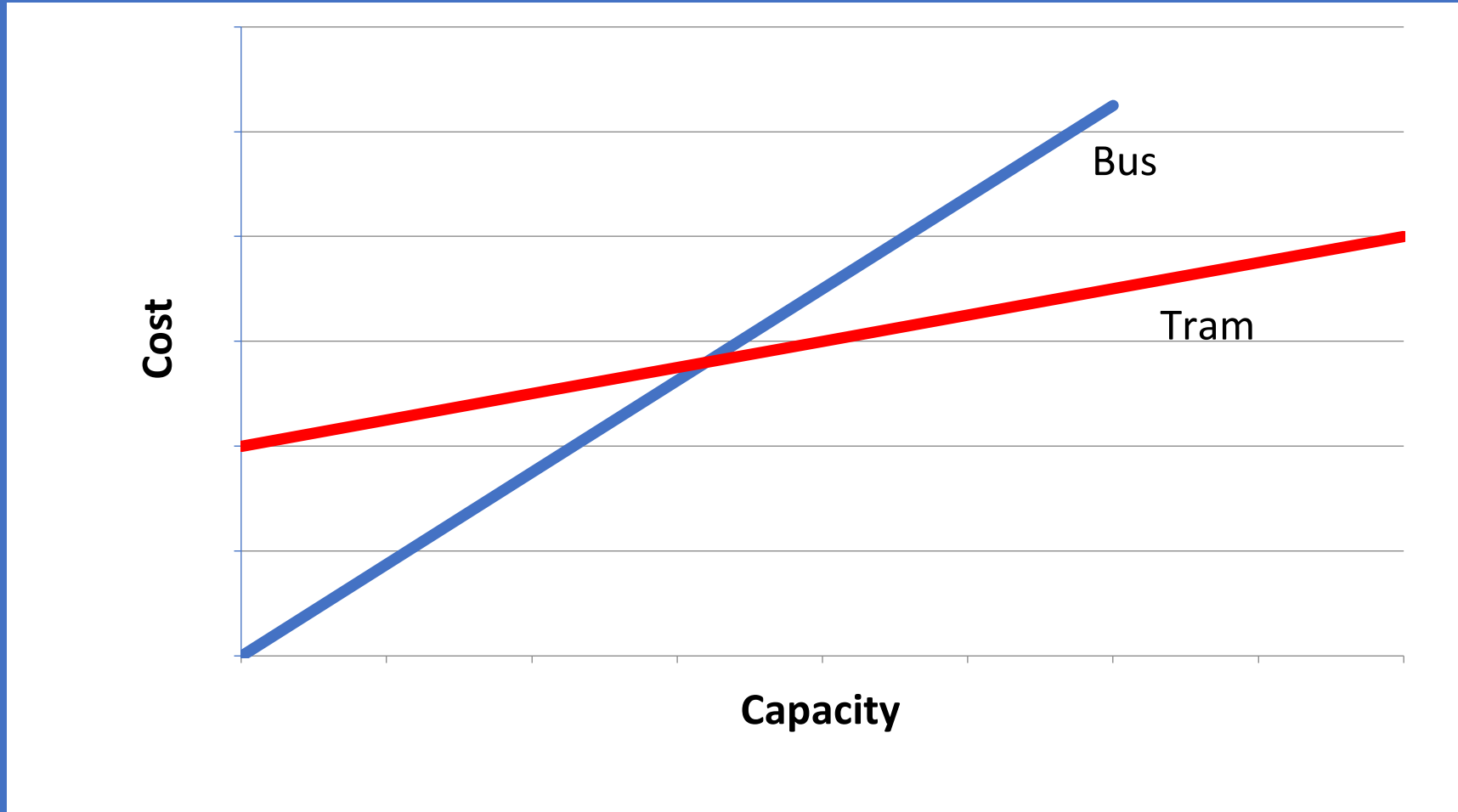
Trams are Good for the Environment

- Trams are electrically powered, so no exhaust emissions of particulates, smoke or NOx
- Trams have steel wheels, so no particulates from tyre or road wear (Oslo effect)
- Trams can use renewable electricity, so reducing CO₂ emission
- Trams can also use battery, super-capacitor or hydrogen power

Aren't trams expensive?

Substantial fixed costs but cheaper at higher flows

One driver serves up to 200 passengers



Tram Safety



*Alan Bradley hit by
a Blackpool tram
Photo: Wikipedia*



*Weatherfield tram
crash
Photo: Wikipedia*



*Croydon 9 Nov 2016
Photo: Rail Accident
Investigation Branch*

For the record, trams are safe!

- Croydon Nov 2016 – first tram passenger deaths in UK in the modern tramway era
- The industry is working very hard with RAIB and ORR to ensure, as far as possible, it cannot happen again
- A new safety body for the light rail industry – Light Rail Safety and Standards Board
- **Trams are – still – at least as safe as buses, and safer than cars**

Economic Impacts of Light Rail Systems

Improves access to jobs

- Increases accessibility and widens catchment area
 - DLR: Canary Wharf
 - London Tramlink: New Addington, central Croydon, Beckenham, Wimbledon
 - Manchester: Manchester CBD, Salford Quays
 - Tyne and Wear Metro: Newcastle CBD
 - Midland Metro: increased commuter areas
 - Plus examples in Copenhagen and Minneapolis

Source: UKTram – “Investigation into the economic impacts on cities of investment in light rail systems”

Economic Impacts of Light Rail Systems

Promotes urban development

- Stimulates inward investment
 - Improves the attraction of locations for investment
- Unlocks hard-to-reach sites for development
 - Light rail can unlock poorly-connected docks or former industrial sites for development
- Triggers fresh growth
 - Absence of a modern transport system can be a serious restraint on growth - Light rail gives increased capacity, better efficiency and improved accessibility

Source: UKTram – “Investigation into the economic impacts on cities of investment in light rail systems”

Economic impacts of light rail systems

Urban development examples

- London
 - London Docklands: Canary Wharf, Isle of Dogs,
 - Stratford, Nine Elms, Wapping, Lea-mouth
- Manchester
 - Salford Quays, MediaCity, Lowry centre
 - Trafford Park
 - City centre
- Sheffield – Lower Don Valley
- Edinburgh – Gyle
- Nottingham – NG2
- Dublin – The Point

Source: UKTram – “Investigation into the economic impacts on cities of investment in light rail systems”

Economic Impacts of Light Rail Systems

Increases land and property values

- Examples:
 - Evidence of increased values in Newcastle
 - Increased land values in Isle of Dogs
 - Increased house prices in east London (due to Crossrail), Croydon and Manchester
 - Developer contributions in Docklands and Salford Quays
 - *Effects might take several years to develop*

Source: UKTram – “Investigation into the economic impacts on cities of investment in light rail systems”

Economic Impacts of Light Rail Systems

Improves City Image

- Light rail improves city image and quality, leading to investment, employment and tourists:
 - Blackpool's two icons: the Tower and the trams
 - Manchester: "buzzy and exciting," Metrolink is "an icon"
 - Manchester and Sheffield trams appear on TV
 - Tramlink makes Croydon a place with drive
 - Midland Metro seen as clean and stylish
 - DLR has a positive effect

Source: UKTram – "Investigation into the economic impacts on cities of investment in light rail systems"

Economic Impacts of Light Rail Systems

Urban Development Examples



Salford – MediaCity. Photo: Briangeorge1945



Edinburgh – Gyle
Photo: Emoscopes



Stratford, East London
Photo: Wikipedia



Dublin – The Point.
Photo: D Walmsley

What trams can do for cities

David Walmsley

Thank you

- **Further reading:**
- Walmsley D A and Perrett K E, 1992 : *The effects of rapid transit on public transport and urban development*. TRL State of the Art Review SAOR 6 (HMSO)
- Urban Transport Group (formerly PTEG), 2005: *What light rail can do for cities*
<http://www.urbantransportgroup.org/resources/tram>
- PTEG/ All Party Parliamentary Light Rail Group, 2010. *Light rail and the City Regions Inquiry: Final report*
<https://www.applrquk.co.uk/media/files/lr%20applrq%20pteq%20light%20rail%20report%20final%2015%20feb%202010.pdf>
- Knowles, R and Fiona Ferbrache, 2014: *Economic impacts on cities of investment in light rail systems* (UKTram) <https://uktram.com/documents/#generalguidancenotes>
- COST Action TU1103 , 2015. Final Report: *Operation and safety of tramways in interaction with public space. Analysis and outcomes* www.cerema.fr/fr/activites/ville-strategies-urbaines/espaces-publics-voies-urbaines/transports-collectifs-voie/activite-internationale/tu1103-cost-action#