Is Light Rail worth Paying For?

European Transport Conference, 11th – 13th September, 2000

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and

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Potential Systems - late 1980s

Realised systems by 2000 shown in blue

- Aberdeen
- Belfast
- Birmingham
- Bradford
- Bristol
- Cardiff
- Chester
- Cleveland
- Croydon
- Dartford
- Doncaster
- Dundee
- Edinburgh
- Glasgow
- Gloucester
- Hull
- Leeds
- Leicester
- Liverpool
- Manchester
- Medway Towns
- Nottingham
- Portsmouth
- Sheffield
- Sunderland
- Swansea
- Washington

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Tyne & Wear Metro – no street running

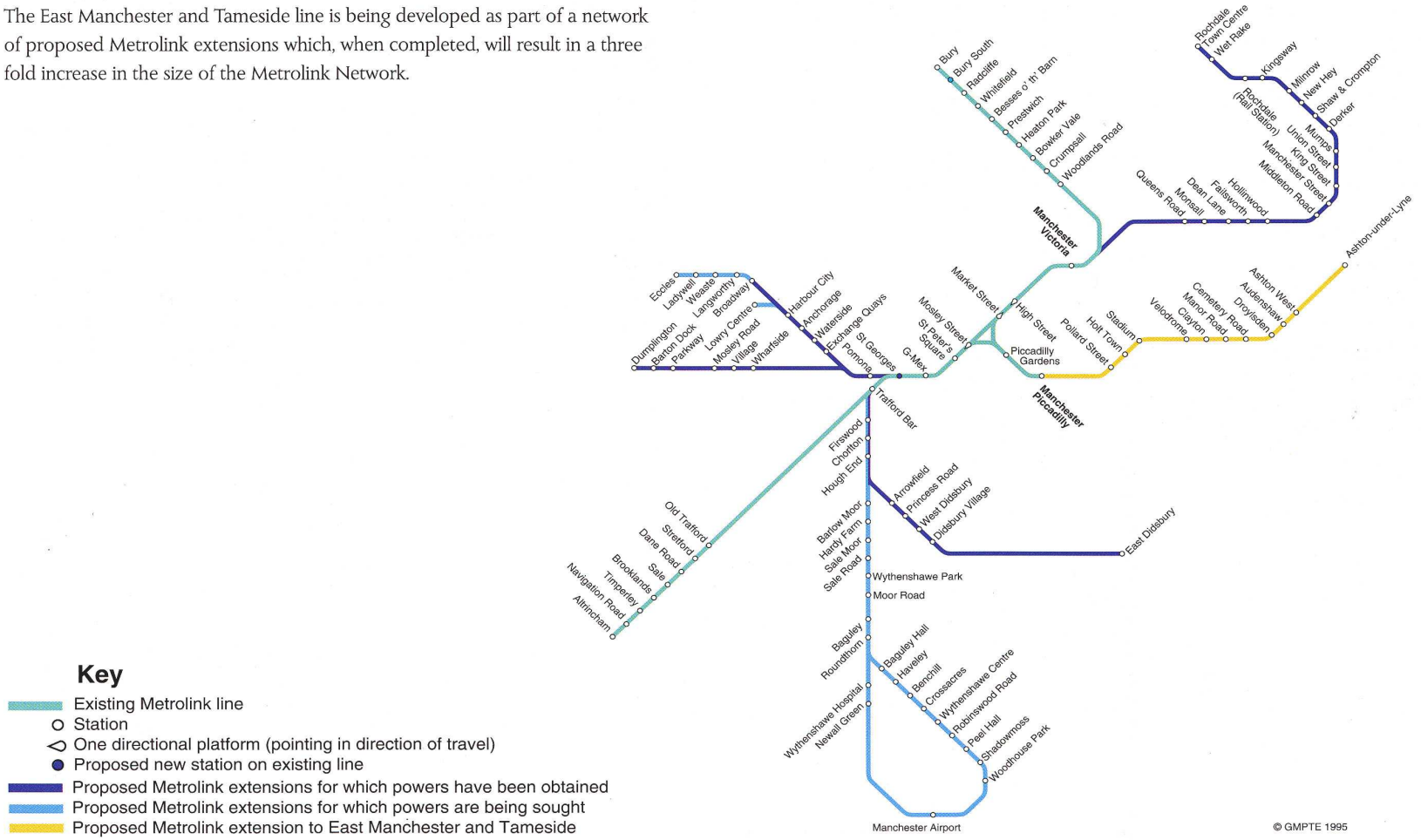
Key Characteristics of the Tyne & Wear System

- Former suburban rail operation
- Central area penetration (underground)
- Cross-Tyne linkage
- Fully segregated
- Integrated transport systems

Manchester Metrolink

Metrolink 2000

The East Manchester and Tameside line is being developed as part of a network of proposed Metrolink extensions which, when completed, will result in a three fold increase in the size of the Metrolink Network.



Manchester Metrolink - Initial System Objectives

- **Overcome deficiencies of local rail**
- **Improve accessibility of**
  - Manchester
  - Altrincham
  - Bury
- **Improve reliability of rail**
- **Improve attractiveness to passengers**
- **Improve financial performance**

Manchester Metrolink Impacts

- **Higher passenger carryings**
  - 7.6 million ➔ 12.7 million
  - off-peak and Saturdays
  - within Central Manchester
- **Transfers from other modes**
  - bus 3.2 million
  - car 1.3 million
- **Revenues better than forecast**
- **Parking availability and costs**
  - a key factor

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Midland Metro - Centro Objectives

- Modern high capacity public transport throughout the region
- Reliable, punctual, comfortable and accessible
- Coordination of public transport planning with other policy issues
- Balanced approach

Midland Metro - Impacts

- **Transfers from other modes**
  - bus 42%
  - train 19%
  - car 13%
- **Low level of use for business travel**
  - absence of park and ride
  - remoteness of some stations
  - availability of parking

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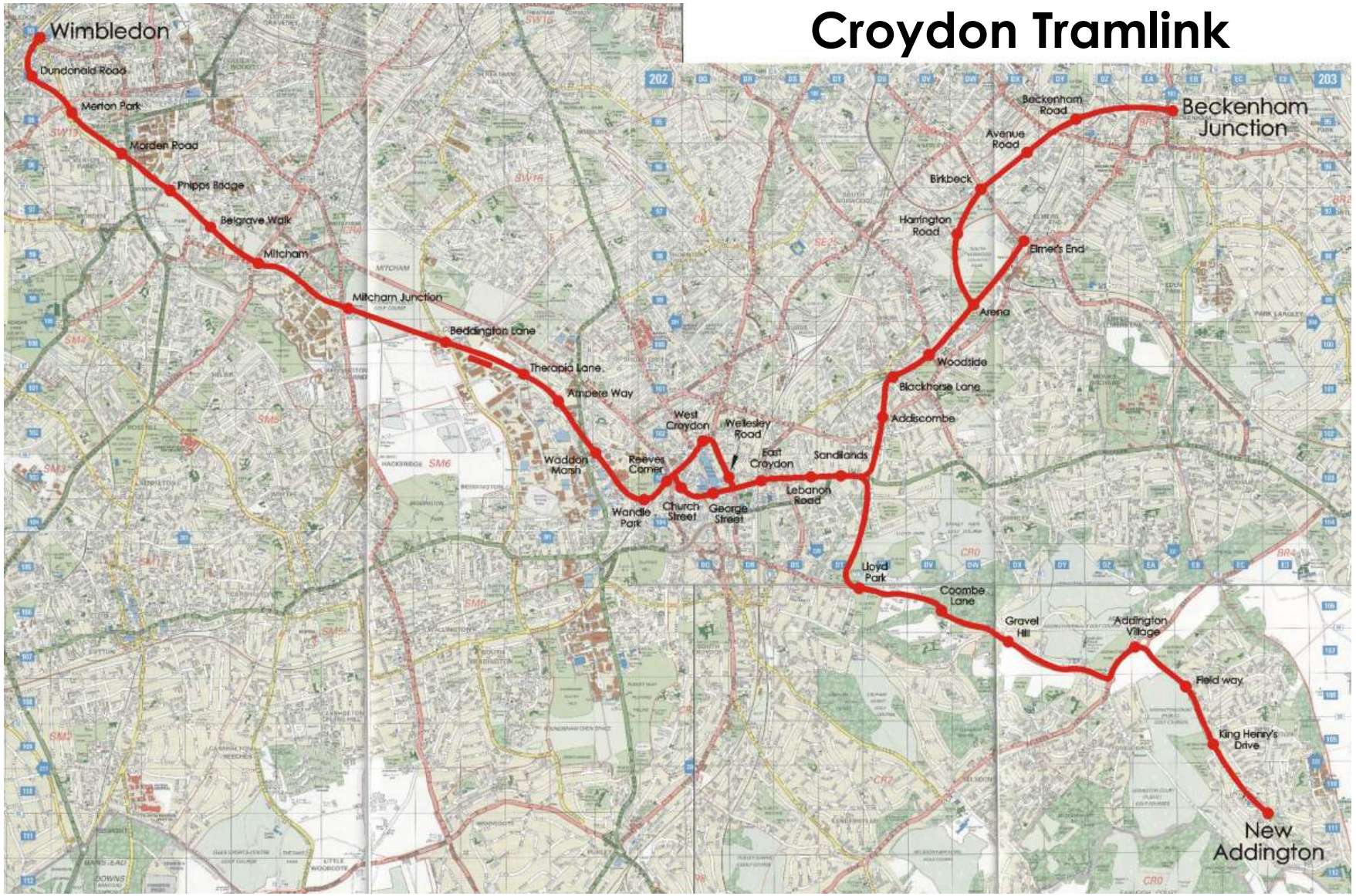
Croydon Tramlink



Croydon Tramlink Objectives

- **Improve accessibility to Central Croydon**
- **Reduce net cost of public transport**
- **Reduce noise and air pollution**
- **Support development of Croydon**
  - retail
  - commercial

Selected Characteristics of UK LRT Systems

	Tyne and Wear	Manchester Metrolink – Initial System	Sheffield	Midland Metro	Croydon Tramlink
Year of Opening	1981	1992	1994	1999	2000
System Cost (£m)	180	150	240	145	200
Existing Rail Demand	On most of the network	On most of the network	None	Between Birmingham & Wolverhampton	Between Wimbledon and Croydon
Existing Bus Demand	Services remodelled	Services reduced		Services remodelled	Services remodelled
Rail Service Frequency	Enhanced	Greatly Enhanced		30 minutes increased to 6 minutes	45 minutes increased to 10 minutes
Central Area Penetration	Greatly improved	Greatly improved	Enhanced	Unchanged	Greatly improved
Traffic Reduction		Mixed evidence			Not yet measured

Potential Transport and Land Use Objectives

Transport or LRT System Objectives	Land Use and Other Objectives
1. Increase proportion of motorised trips made by public transport, and the total number of public transport trips	1. Open up areas when there is a latent demand for redevelopment but poor accessibility
2. Reduce congestion and accidents	2. Reinforce and/or revitalise the role of the city centre by improving its accessibility
3. Increase public transport capacity on routes with demand higher than can be readily provided by bus	3. Improve accessibility to jobs from residential locations, and to the workforce from places of employment
4. Reduce operating costs in corridors with high demand	4. Create an enhanced "city image" to attract investors and visitors
5. Increase journey speeds and reliability	5. Create certainty to attract development
6. Remove pollution at point of delivery	6. Social inclusion – "access for all" to jobs and leisure
7. Transform existing but poorly performing heavy rail system	7. Knitting together disparate centre
8. Improve other quality attributes (eg comfort and conspicuousness)	

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Copenhagen 1968

Photo: Tim Pharoah

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Bonn 1987

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Cologne: On street tram 1987

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Placing trams underground reduces their legibility, and may introduce more traffic into the street

Photo: Tim Pharoah

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Cologne - tram underground 1993

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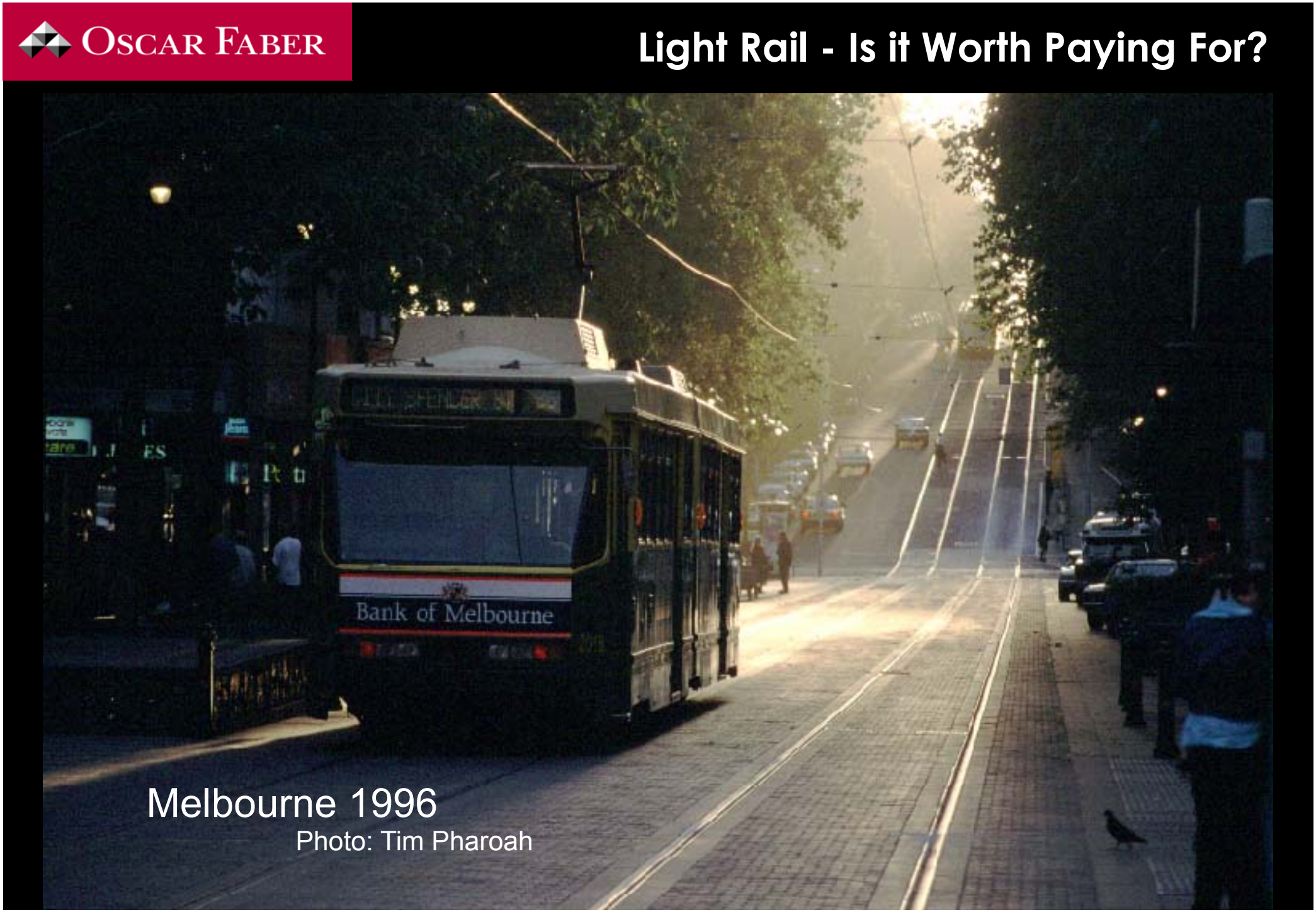

Melbourne 1996

Photo: Tim Pharoah

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Zürich “tram plaza”

Photo: Tim Pharoah

Integration with Land Use

- **Meeting an identified social purpose**
- **Serving new urban development**
- **Stitching together disparate centres**
- **Providing Certainty and Stability**
- **Interface with other modes**
  - Park and Ride
  - Bike and Ride

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Den Haag central station tram interchange

Photo: Tim Pharoah

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Wateringse Veld – urban extension near Den Haag

Trams operated early in the construction period to serve early residents and construction workers

Photo: Tim Pharaoh

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Bobigny, northern Paris
Tram serves high density development
Photo: Tim Pharoah

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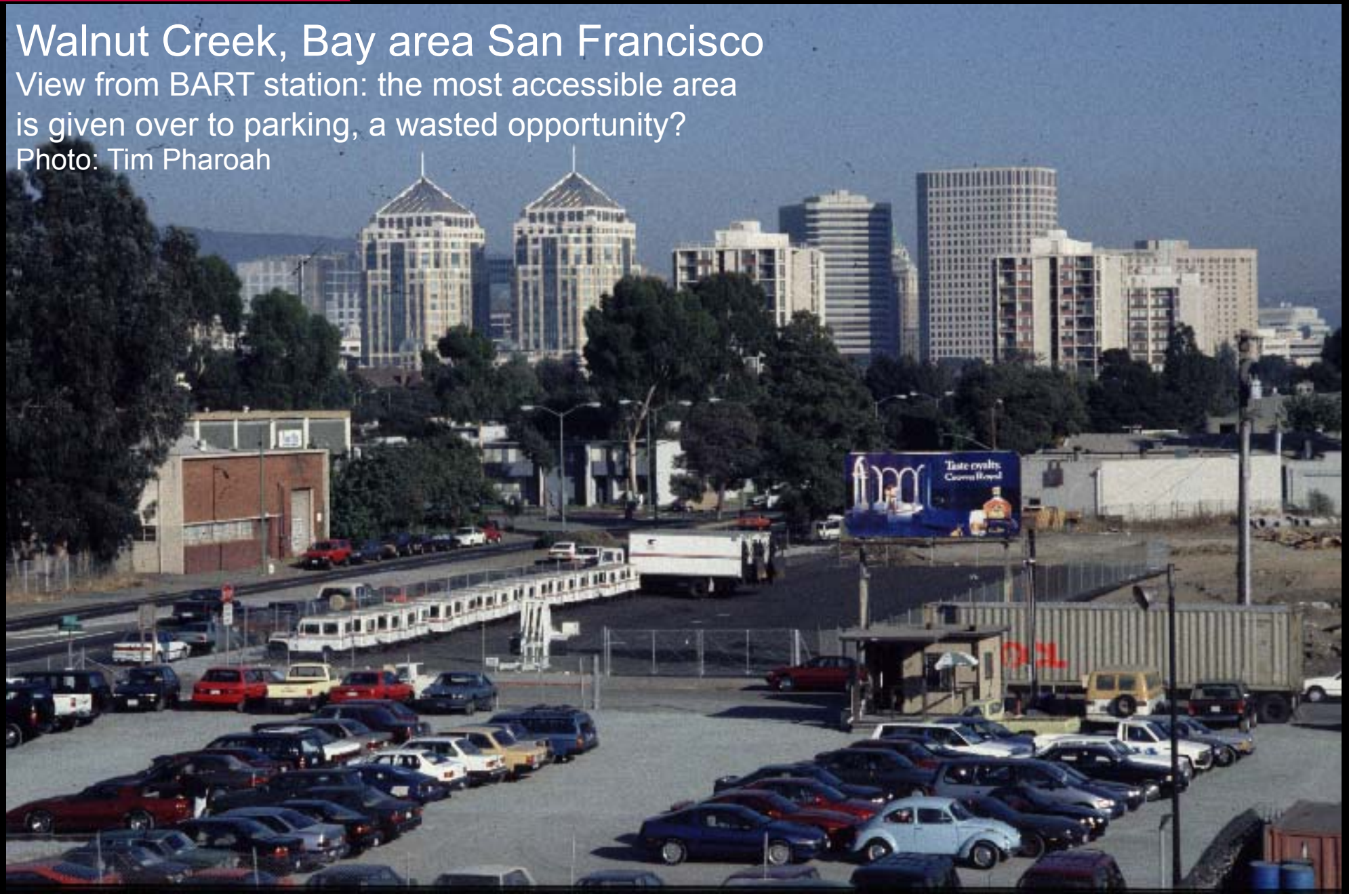

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Karlsruhe, Germany

Park and Ride doesn't have to take up a lot of space…
if it is done by bike

Photo: Tim Pharoah

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Karlsruhe Tram Train
In the city centre

Photo: Tim Pharoah

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Karlsruhe Tram Train
In a village centre
Photo: Tim Pharoah

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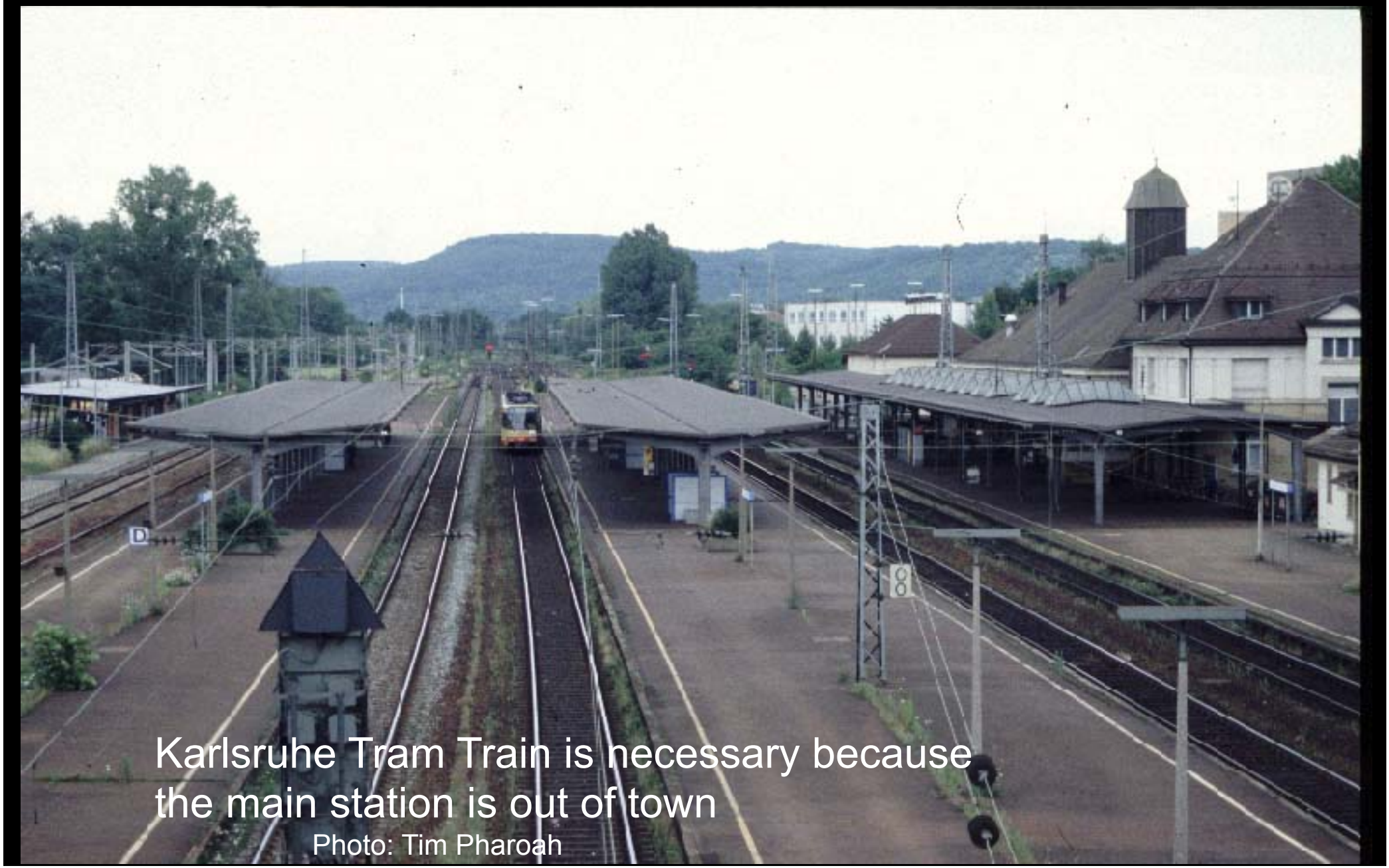

Karlsruhe Tram Train is necessary because the main station is out of town

Photo: Tim Pharoah

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Strasbourg: smart trams and iconic infrastructure
Photo: Tim Pharoah

Conclusions

- **More explicit objectives needed**
  - Social inclusion
  - Urban regeneration
  - Better environmental conditions
- **LAs plan LRT and land use together**
  - fulfil potential demand
  - better outcomes
- **Government require wider appraisal**
  - Set LRT funding in wider context
  - NATA gives framework

Is Light Rail worth Paying For?

- If transport costs/benefits only - probably NO
- If wider objectives included - YES