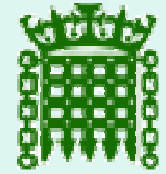


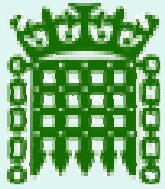
*All Party Parliamentary
Light Rail Group*



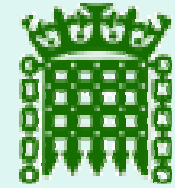
Widening the potential
benefits of light rail to
combat congestion

Tony Young

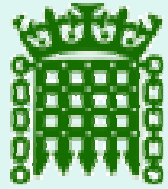
Independent Light Rail Consultant



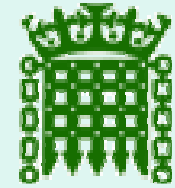
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- mode options available 1980s
- mode options available 2000s
- scope for new public transport systems
- tram – train opportunities
- ultra light rail opportunities
- barriers to progress
- actions needed

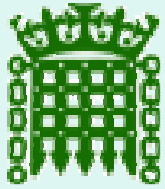


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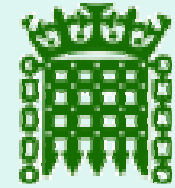


Mode options available 1980s

- bus
- guided bus
- light rail (street running)
- light rail (in tunnel)
- metro (underground)
- heavy rail (suburban rail)



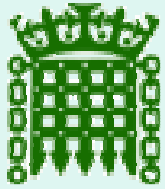
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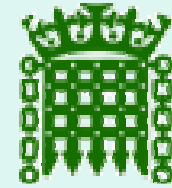
Metrolink Phase 1 (Altrincham and Bury)

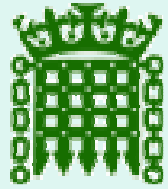


- Heavy rail - £3m p.a. subsidy
- Light rail - £3m p.a. profit

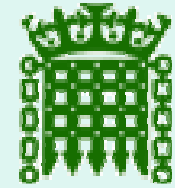


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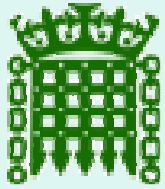


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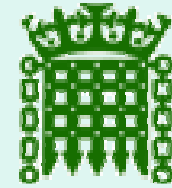


Mode options available 2000s

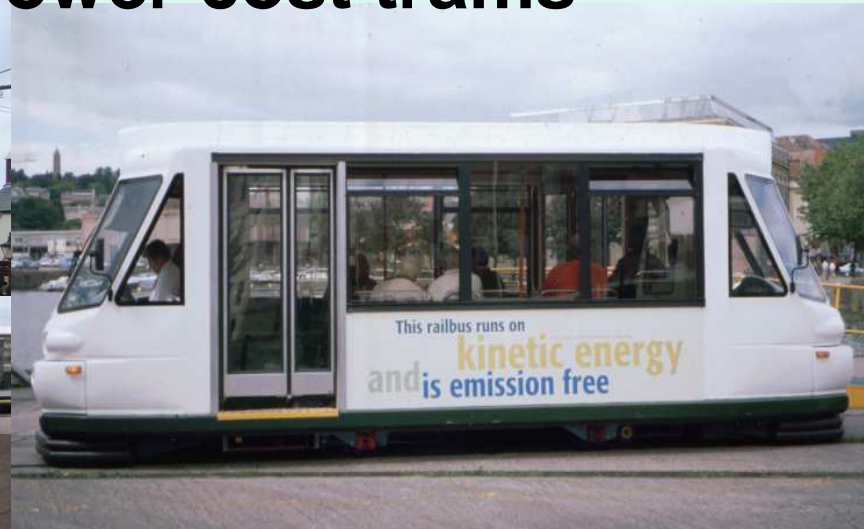
- **ultra light rail**
- bus
- guided bus
- light rail (street running)
- light rail (in tunnel)
- **tram-train**
- metro (underground)
- heavy rail (suburban rail)

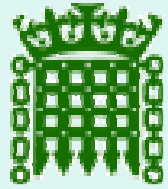


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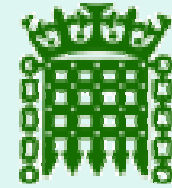


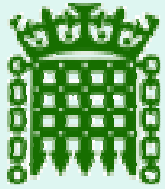
Ultra light rail, and lower cost trams



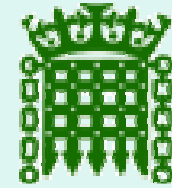


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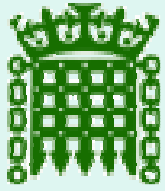


Low cost trams – Portland, Oregon

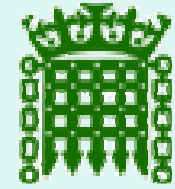
- Rail, electrical and street work \$35.1m
- Maintenance facility \$4.0m
- Streetcars (5 cars + spare parts) \$11.3m
- Utility works \$3.8m
- Miscellaneous \$0.4m
- TOTAL \$54.6m

£7.9m per route kilometre



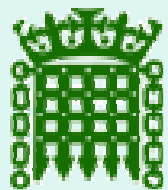


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Tram-trains





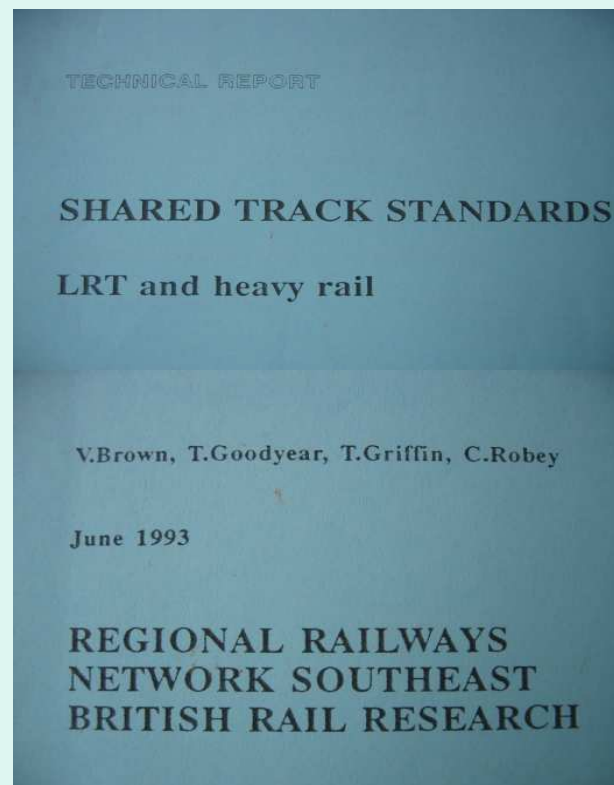
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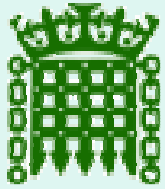
Tram-train research



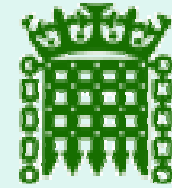
Karlsruhe 1986

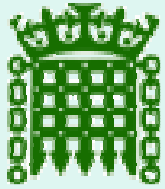


BR Derby 1993

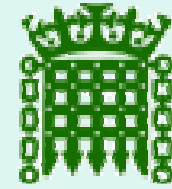


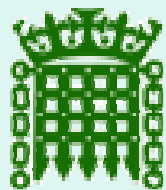
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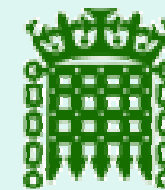


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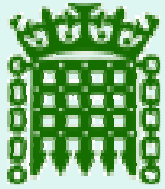


Scope for new public transport systems (1)

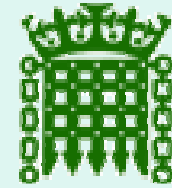
Aberdeen
Barking
Bedford
Belfast
Birkenhead
Birmingham
Blackpool
Bournemouth
Bradford
Brighton
Bristol
Cambridge
Cardiff
Chatham
Chelmsford
Chester
Cleveland
Corby
Coventry
Crawley
Croydon
Dartford

Docklands
Doncaster
Dundee
East Lancashire
Edinburgh
Exeter
Gateshead
Glasgow
Gloucester
Guildford
Kettering
Kingston upon Hull
Kingston upon Thames
Lancaster
Leeds
Leicester
Liverpool
London
Luton
Maidstone
Manchester
Middlesborough

Milton Keynes
Newcastle upon Tyne
Norwich
Nottingham
Oxford
Plymouth
Portsmouth
Preston
Reading
Runcorn
Sheffield
Southampton
Southend
Stoke on Trent
Sunderland
Swansea
Swindon
Plymouth
Walsall
Watford
West Midlands
Wimbledon



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Scope for new public transport systems (2)

Aberdeen

Barking

Bedford

Belfast

(Birkenhead)

Birmingham

Blackpool

Bournemouth

Bradford

Brighton

Bristol

Cambridge (u/c)

Cardiff

Chatham

Chelmsford

Chester

Cleveland

Corby

Coventry

Crawley

Croydon

Dartford

Docklands

Doncaster

Dundee

East Lancashire

Edinburgh (u/c)

Exeter

Gateshead

Glasgow

Gloucester

Guildford

Kettering

Kingston upon Hull

Kingston upon Thames

Lancaster

Leeds

Leicester

Liverpool

London

Luton

Maidstone

Manchester

Middlesborough

Milton Keynes

Newcastle upon Tyne

Norwich

Nottingham

Oxford

Plymouth

Portsmouth

Preston

Reading

Runcorn

Sheffield

Southampton

Southend

Stoke on Trent

Sunderland

Swansea

Swindon

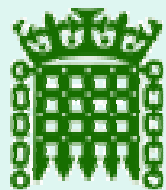
Plymouth

Walsall

Watford

West Midlands

Wimbledon



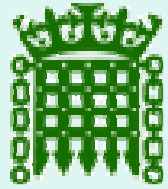
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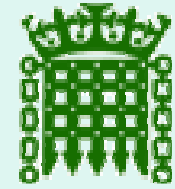
Tram – train opportunities

- London outer suburbs
- West Midlands
- Greater Manchester
- South Yorkshire
- West Yorkshire
- Teeside (Middlesbrough-Darlington)
- Tyne and Wear/South East Northumberland
- Greater Glasgow



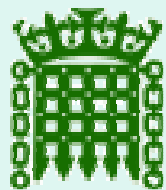


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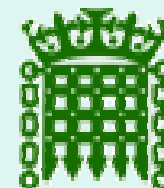


Tram train variants

- “Train-tram” – lower cost railways
(no street running)
- Tram-train – railways extended on street
- Tram-train – tram routes extended onto railways

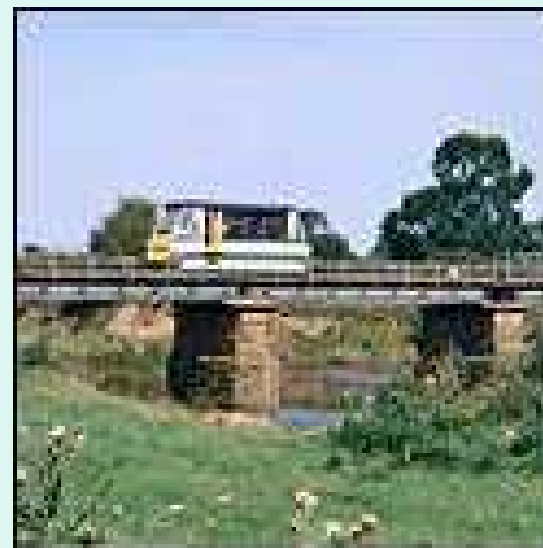


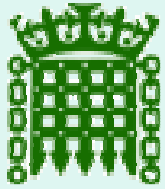
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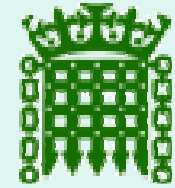
Ultra light rail opportunities

- smaller towns and cities
e.g. Stourbridge
- rural branch lines
e.g. Wensleydale railway
- park and ride links
e.g. Bristol





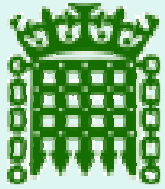
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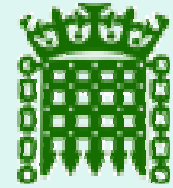
Barriers to progress

(and see Transport Committee Report March 2005)

- TWA too slow and expensive for small schemes
- evaluation: congestion relief counts as *disbenefit*
- fragmented responsibilities
- ROGS may stifle progress



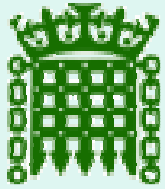
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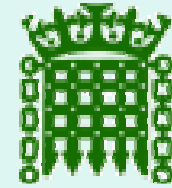
Actions needed

- streamline TWA procedures for small schemes
- ROGS – keep responsibilities with HMRI
- change justification rules to count reduced traffic as benefit
- DfT Rail to encourage tram-train and other innovative schemes

HC Transport Committee report 2005: much still to be done!



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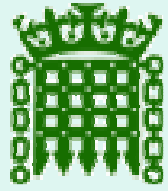
‘Towards a Sustainable Transport System’

- DfT October 2007

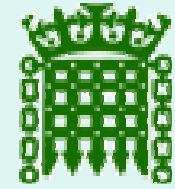
Government goals:

- maximise competitiveness and productivity
- address climate change, cut CO₂
- improve public safety, security and health
- improve quality of life
- promote greater equality of opportunity

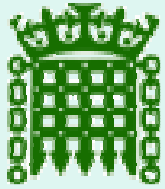
– *Light Rail and Tram-Train can help meet goals*



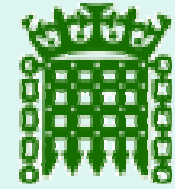
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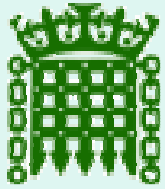


Discussion

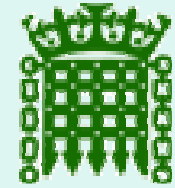


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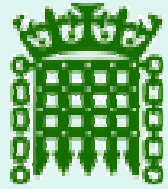


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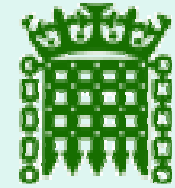


Why trams?

- run on railway lines
 - run on streets (grooved rail)
 - run on segregated tracks within highway
 - run through pedestrian areas
 - run in tunnels
 - run on private right of way (parks, open space)
 - run on tram only streets
-
- *the only public transport mode that can do all that!*

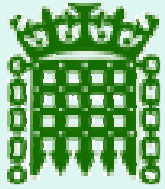


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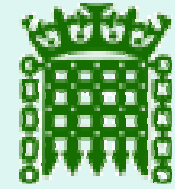


Why trams?

- environmentally sustainable
 - low noise and emissions
 - can be inserted through existing development
 - supports and strengthens new development and regeneration
 - attracts car users to public transport
 - helps reduce car dependency and congestion
- *the only public transport mode that can do all that!*



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The light rail and tramway range

- heritage tramway
 - ultra light rail
 - street tramway
 - light rail
 - light metro
 - tram-train
- *all use steel wheel on steel rail*
(can use rubber tyres but not as effective)