

A Presentation of the case for and applications of

A low cost, clean, sustainable mode





Sponsored by Tramways & Urban Tramways Magazine

for Cheshire, Warrington & Merseyside

21st January 2010 Macclesfield Town Hall

By Jim Harkins FCILT Managing Director Light Rail (UK) Ltd

The case and applications in the Cheshire, Warrington & Merseyside



What is a TramTrain ?

A mode that has been around from the late 19th Century.



Trams using heavy rail infrastructure



The case and applications in the Cheshire, Warrington & Merseyside



Key Benefits of the technology

- An almost new concept in the UK
- Most of the technical problems have now been solved
- Operating costs are lower, line of sight etc.,
- Environmental benefits
- High Modal switch
- Carbon Credits
- Increased retail footfalls 35% +
- New connectivity



3





The case and applications in the Cheshire, Warrington & Merseyside

Key Benefits of the technology

- Cost effective use of existing underused heavy rail assets with overall reduction of the maintenance cost base
- New street running infrastructure providing seamless access to the heart of the urban areas
- Capacity relief at congested heavy rail stations Manchester Hub in particular
- Provision of frequent, reliable and inter-urban links



Shire & Warring Strice W arring C W arring C

The case and applications in the Cheshire, Warrington & Merseyside

Are there any modern examples in the United Kingdom?



The case and applications in the Cheshire, Warrington & Merseyside

The first application, second generation

Conversion of former heavy rail alignments

Track Sharing

- No street running -

A comparatively low cost option





The case and applications in the Cheshire, Warrington & Merseyside



Conversion of former heavy rail alignments + street running









The case and application in the Cheshire, Warrington & Merseyside



8

The UK has TramTrain! so what is all the fuss about?

We need the next generation of street running TramTrains





The case and application in the Cheshire, Warrington & Merseyside

Why do we need it now? **Climate Change** Congestion Peak Oil Pollution **Health Benefits** City Centre Access





The case and application in the Cheshire, Warrington & Merseyside

Climate Change



Trams tick all these green boxes

Clean at the point of use Can use green electricity Will be able to use local power generation Reduces carbon footprint High modal switch 28% -32% Lasts for generations



The case and application in the Cheshire, Warrington & Merseyside

Congestion

Trams tick all these green boxes



Clean at the point of use Can use green electricity Will be able to use local power generation Reduces carbon footprint Lasting social legacy for generations

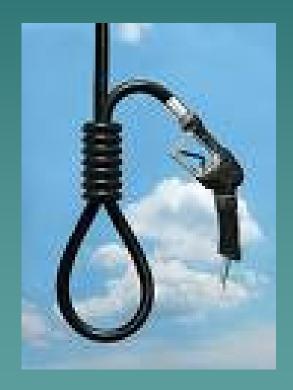




The case and application in the Cheshire, Warrington & Merseyside



Pollution



Trams tick all these green boxes

No tail-pipe emissions

Eliminates death on the pavement

Significant modal switch 28% - 31% DfT

Increases the ambience of the city street



Shife & Warring Source Warring Souring Souring Source Warring Source Warring Source Warring Sour

The case and application in the Cheshire, Warrington & Merseyside

Health Costs



To burn is to pollute Is this where it all ends?

- British Thoracic Society report 1998
- 153,000 respiratory illness deaths, mainly young & old
- Govt figures show between 25% 40% are deaths cause by "Tail Pipe emissions"

(38,250 – 61,100 deaths)

Trams prevent "Deaths on the Pavement"



The case and application in the Cheshire, Warrington & Merseyside





What is Peak Oil?

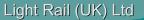
When world oil production reaches its maximum level.

What is Midpoint depletion?

Roughly half the oil ever to be produced - the decline is now !

World demand – BRIC countries will need 60% + of all known world reserves. Decline has started, Full impact around 2020







The case and application in the Cheshire, Warrington & Merseyside

What Technology is there readily available and off the shelf ?





The case and application in the Cheshire, Warrington & Merseyside









Schwerin

Normandy





The case and application in the Cheshire, Warrington & Merseyside

Diesel Generator/Electric





Blue TramTrain KasselDiesel TramTrain KasselFor less than10km new track a new Traffic system of 122km was created!NVV.

Light Rail (UK) Ltd

se & War



The case and application in the Cheshire, Warrington & Merseyside



Electric/Electric



Dual Voltage 25kv & 750v Karlsruhe



The case and application in the Cheshire, Warrington & Merseyside

What kind of track sharing is there?

Electric/Steam/Diesel/Freight

Nordhausen – East Germany

A solution to regeneration – who needs new roads?



Shire & Wa.









The case and application in the Cheshire, Warrington & Merseyside

Electric/Battery/Accumulator





Nice,

Bordeaux

Light Rail (UK) Ltd

chire & Wa,



The case and application in the Cheshire, Warrington & Merseyside

Stored Energy.





Stourbridge England

Light Rail (UK) Ltd

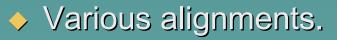
hire & Wa,

The case and application in the Cheshire, Warrington & Merseyside



Potential TramTrains Routes - NW

- *Altrincham Chester
- *Marple Manchester East Lancs Haydock
- *Haydock Warrington Irlam Cornbrook
- Daresbury Laboratories Runcorn Busway
- Runcorn Mersey Gateway Widnes Burtonwood St Helens
- Daresbury Frodsham Halton Curve Chester





The case and application in the Cheshire, Warrington & Merseyside

Quick wins

Altrincham - Chester



- Re signaling @ Altrincham
- Low engineering costs
- Vehicles almost fit already!
- Fit under floor generators
- Use surplus T68 & M5000
- Park & Ride @ Stations
- Additional PR M6 Highways Agency
- Capacity during peak times
- Two way retail footfall increase
- Reduction of traffic



The case and application in the Cheshire, Warrington & Merseyside

Fonomic Allian

Quick wins

*Marple – Manchester - Haydock M6 P+R



- Low engineering costs
- Street Running Stockport City
- ♦ Avoids Manchester Rail Hub
- Use proposed guided Leigh busway
- Funding in place from guided bus
- ♦ Cross City route
- Capacity during peak times
- ♦ Two way retail footfall increase
- Reduction of traffic
- Freight Tram distribution





The case and application in the Cheshire, Warrington & Merseyside



Low cost wins

- *Haydock M6 P+R
- Newton Le **Willows**
- Warrington M6 J21 P + R, – Irlam
- Cornbrook
- Manchester City

- Use proposed guided Leigh busway
- Funding in place from guided bus
- Potential expansion Warrington J21 M6 P+R via Newton le Willows Rail Site
- J21 M6 P+R via Irlam & Cornbrook
- Capacity during peak times
- Two way retail footfall increase
- ♦ Reduction of traffic
- Freight Tram distribution



Shire & Warring Source Warring Souring Souring Source Warring Source Warring Source Warring Sour

The case and application in the Cheshire, Warrington & Merseyside

Low cost wins

Daresbury Campus Group



- Sustainable energy, South facing buildings
- Invite photo voltaic supplier (Wrexham)
- Establish internal TramTrain
- Link Cheshire line to Moore & Warrington Bank Quay
- Link Cheshire line to Frodsham to Chester
- Build a low cost interchange station at the Halton Curve to Liverpool
- Link to Converted Busway Runcorn





The case and application in the Cheshire, Warrington & Merseyside



Halton

Low Cost Wins

Runcorn Busway & Mersey Gateway

• Already designed for Light Rail

- Access to workforce locally
- Easy link onto Mersey Gateway
- Gateway designed to take retrofit Light Rail
- TramTrain links to Liverpool
- Pathway exists from Widnes to St Helens
- Via Burtonwood /Omega development
- High quality development not dependant on roads





The case and application in the Cheshire, Warrington & Merseyside

Warrington Tram (Incremental)

- I. P + R M6 Junct 21 Birchwood M62 Junct II (Tip Site)
- 2. P + R M62 Junct I I Newton-le-Willows Haydock P + R
- 3. P + R M6 Junct 21 North Bank Ship Canal Alignment Bank Quay
- 4. Newton-le-Willows (Distribution Centre) Burtonwood (Omega)
- 5. Burtonwood (Omega) M62 Junct 8 West Warrington (Via Gemini and other various route options) – Bank Quay
- 6. Bank Quay Golden Gates Bus Stn Winwick Rd P + R M62 Junct 9 – Burtonwood (Omega)
- 7. Bank Quay Fiddler's Ferry Halton LR
- 8. P + R Preston Brook Daresbury Bank Quay
- 9. Various Route Combinations of above





The case and application in the Cheshire, Warrington & Merseyside



They are looking at the future – Are you?

Pay Now or Pay Later !





The case and application in the Cheshire, Warrington & Merseyside

Thank You for Listening

Any Questions?

The case and application in the Cheshire, Warrington & Merseyside



The case and application in the Cheshire, Warrington & Merseyside



The case and application in the Cheshire, Warrington & Merseyside

