Air pollutions ? – The Tram solutions

for clean air

In

Warrington

A

Short presentation

by

Jim Harkins FCILT MTPS

Light Rail UK Group,

Secretariat, All Party Parliamentary Light Rail Group & Technical Advisor.

www.lightrailuk.co.uk

Urban Transport Corridor Pollution

AIR QUALITY EXPERT GROUP

Non-Exhaust Emissions (NEE) from Road Traffic

"The Oslo Effect"

Prepared for:

Department for Environment, Food and Rural Affairs;

Scottish Government; Welsh Government;

Department of the Environment in Northern Ireland

July 2019

Urban Transport Corridor Pollution

There are two main Transport Corridor Pollutants (UTC).

Tailpipe Emissions, GHG issue almost solved

But at the increasing expense of

Road, Tyre & Brake Dust (NEE)
(Often Known as the "Oslo Effect)

Electric vehicles are 24% heavier and create 37% more pollution!

Urban Transport Corridor Pollution

Non-Exhaust Emissions (NEE)

3 x Main important questions must be asked!

- ✓ Where does the road surface go as it wears out?
- ✓ Where does the tyre tread go as it wears down?
- ✓ Where does the brake and clutch go as they wear out?

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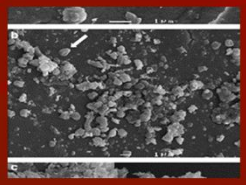

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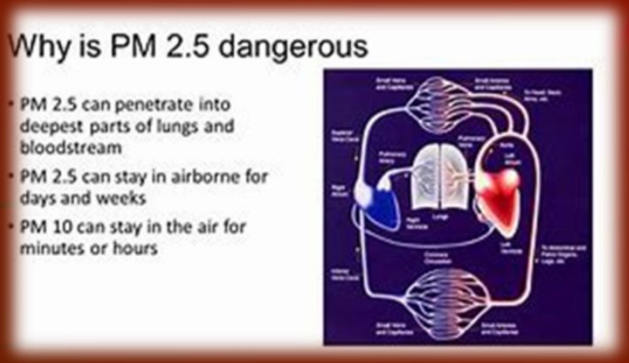
<u>A busy road with 25,000 vehicles travelling on it each day will generate around nine kilograms of tyre dust alone per kilometre.</u>

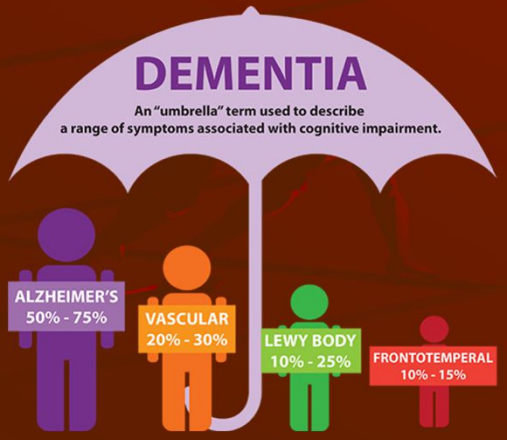
Urban Transport Corridor Pollution



Non-Exhaust Emissions (NEE)

153,000 respiratory deaths, mainly young & old *British Thoracic Report*

Figures show between 25% - 40% of deaths due to "Tail Pipe emissions" (38,250 – 61,100 deaths) UK Government



$PM_{2.5}$ is associated with an increased risk of dementia in this pollution setting.

Trams will help prevent Death on the Pavement "Oslo Effect"

To burn carbon and road grind is to pollute.
Question: Is this where it will all end?

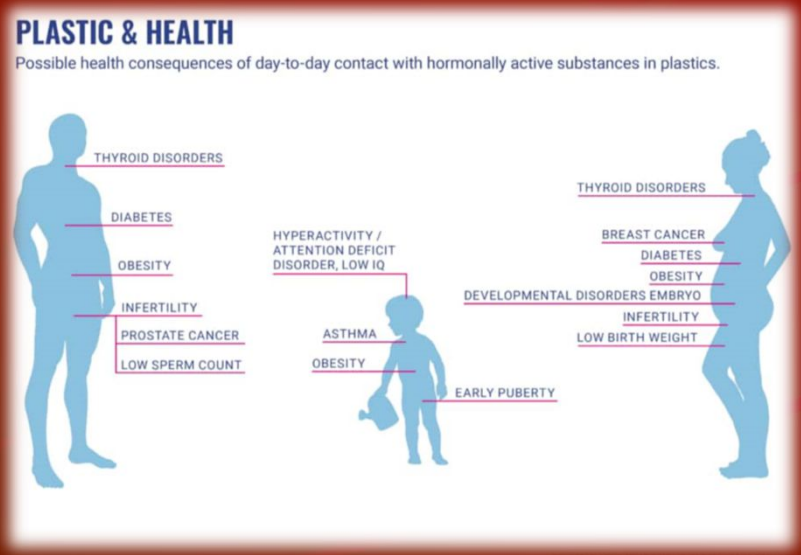
Why Trams ? No pollution at the point of Use!

Don’t forget the Micro Plastics caused!

Scientists have warned we are creating a “plastic planet”. Some 420 million tons of plastics were produced in 2015, up from just over two million tons in 1950.

Over a 65-year period roughly six billion tons ended up either in landfill or in the natural environment, 20% from rubber wheeled road traffic,

SCIENCE ADVANCES, 19 Jul 2017, Vol 3, Issue 7, DOI: 10.1126/sciadv.1700782



Why Trams ?

light rail and tram use in England increased by 109.9% from the year ending March 2021, up to 171.5 million passenger journeys

Why Trams ?

The Tram Network:-

Be fully accessible to all residents and visitors including those with reduced mobility to all Tram and shared Bus stops, Public Transport Pathways (PTP)

Be mindful that we have an ageing population and the network will be fully accessible, easy to understand and use

Successfully supply the last/first mile door to door connectivity to planned Rail upgrades

*Metrolink carried 45.5M passengers pre Covid with 120 trams
Modal switch from rubber wheeled vehicles @ 28% +

A Penny wise, Pound foolish Public Transport Policy

Zebra Buses

One off purchase, little residual value
Working Life 10 – 12 years
Creates heavier "Oslo Effect"
Low modal switch circa 9%
Expensive to operate
Health costs missing from Environmental Statement
How much death and illness will occur in Warrington?
Interim solution only
Will fail Euro 7 Legislation/WHO Standards

Lasts multi generational 140 Years +
Sheffield trams 30 years +
High environmental benefits
No pollution at the point of use
Increases house values
Track share with Network Rail
Significant soft benefits

Where can Trams go ? (T57)

The T57 Hydrogen Tram Project:

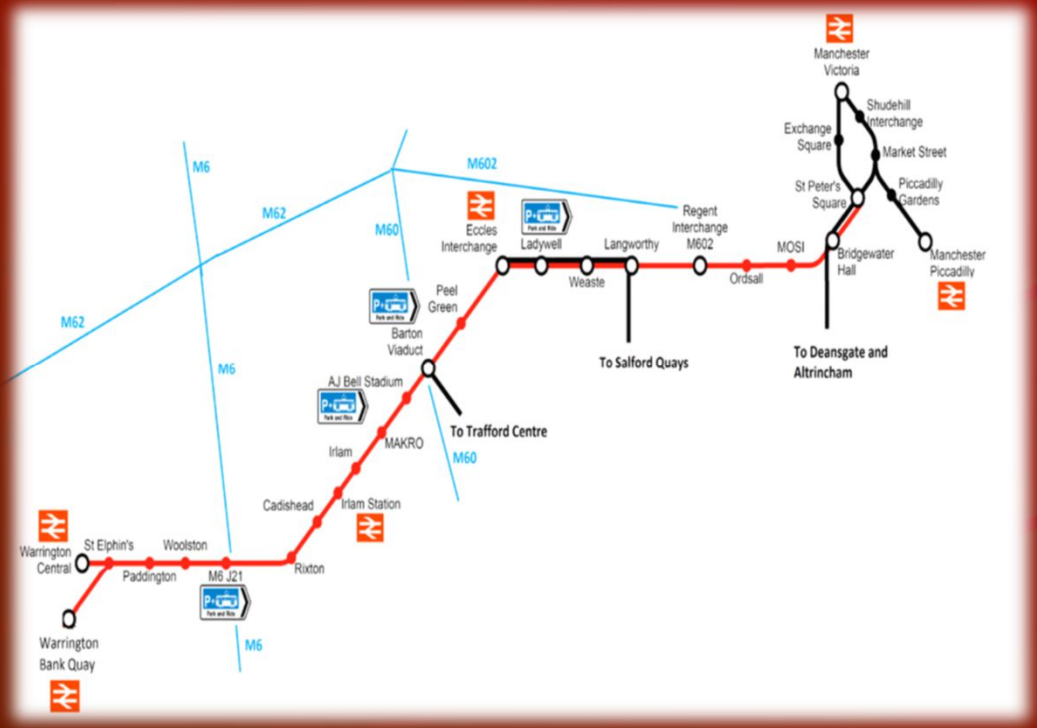
Improve non car access and connectivity to the main East – West transport poverty corridors

Provide a greater service frequency i.e. 4-8 trams per hour,

Support the proposed Northern Powerhouse Cheshire Line's 5 Million Additional Passengers

Relieve pressure on the "heavy rail corridors" thus providing significant savings

Provide a third low cost flexible "Rail" corridor initiative between Liverpool and Manchester and a low cost affordable & sustainable airport link.



Where can Trams go ?

A Tram Network will provide access to :-

Employment including industrial and logistics sites

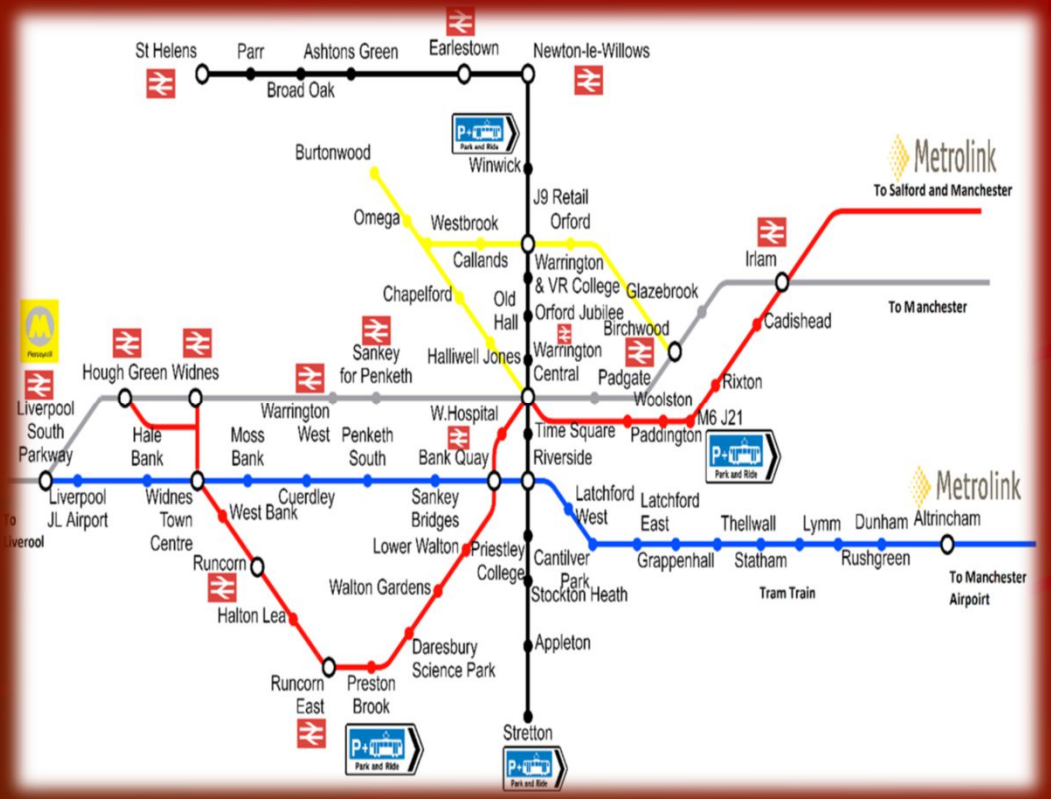
New housing developments including denser housing without parking spaces.

Provision of cleaner air around schools and hospitals

Sports & leisure including several stadia

Heritage and tourism.

A " Rochdale Pattern" of transit behaviour, "Hop on, Hop Off" supporting the 15 minute neighbourhood concept.



Hydrogen VLR Tram Urban A57 Transport Corridor Solution

What can it do for Environment, Growth & Regeneration?

Small tram systems (Very Light Rail) does increase the amount of development in an area and makes the linear development much more effective.

We have identified areas that the Hydrogen VLR Tram will open up and access land

Areas along the line of route lend themselves to high density housing, offering a mix of commercial and residential uses.

Gives developers the chance to build efficiently with fewer parking s paces needed.

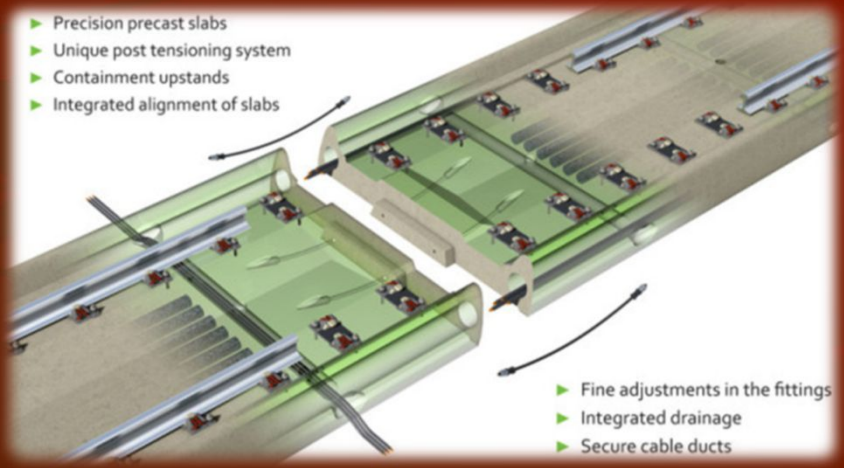
The Hydrogen Tram T57 Project will enable connectivity to be shared by everyone and not just those near the railway station

Coast Futura Light Rail Demo on the Santa Cruz Branch - YouTube

Hydrogen Tram Urban Transport Corridor Solution

Track - keep it simple and quick

PCAT (Pre Cast Advanced Track)



Most utilities left in situ

T Hydrogen Tram Urban Transport Corridor Solution

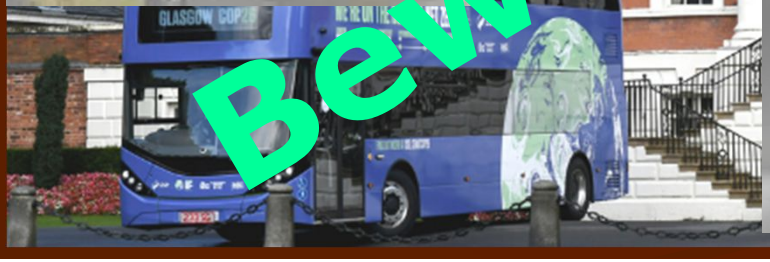
For the current price of the Warrington Western Link Road

at (2018) estimate of £212 Million, this could have bought approximately, (excluding the indirect health and social costs)

*21.2km of tram in Warrington

*(From <£10 Million per Track Kilometre Inc. depot etc., UKTram)

Urban Tram Transport Corridor Feeder Solution



Beware Greenwash!!!

Hydrogen VLR Tram Urban Transport Corridor Solution

Funding ?

Hydrogen Economy Draft Action Plan
DfT Rail, Climate Change + Community Infrastructure Levy,
Tax Incremental Financing
Grant from UK Government via
Transport Development Fund
Developer Contributions (Section 75)
City Region Funds
Regional Growth Fund CA, LEPs
Funding for Sustainable Transport (UK Govt)
Workplace Parking Levy, Green Investment Bank
Pollution Charge, PM Town Fund

A range of Private Investors and Pension Funds

This not an exhaustive list and will change
as schemes are introduced, ended, replaced etc.,

Our Outline proposals often meet with this response

Sadly, many Leaders of Warrington Borough Council, Labour Councilors are too busy!
(Often, they are fighting transport pollution with a NEE based solution by promoting
a TramBus type which will kill many Citizens, young and old
and this short termism is recorded for posterity on this site, instead of being Statesmen with concern for those who follow!.

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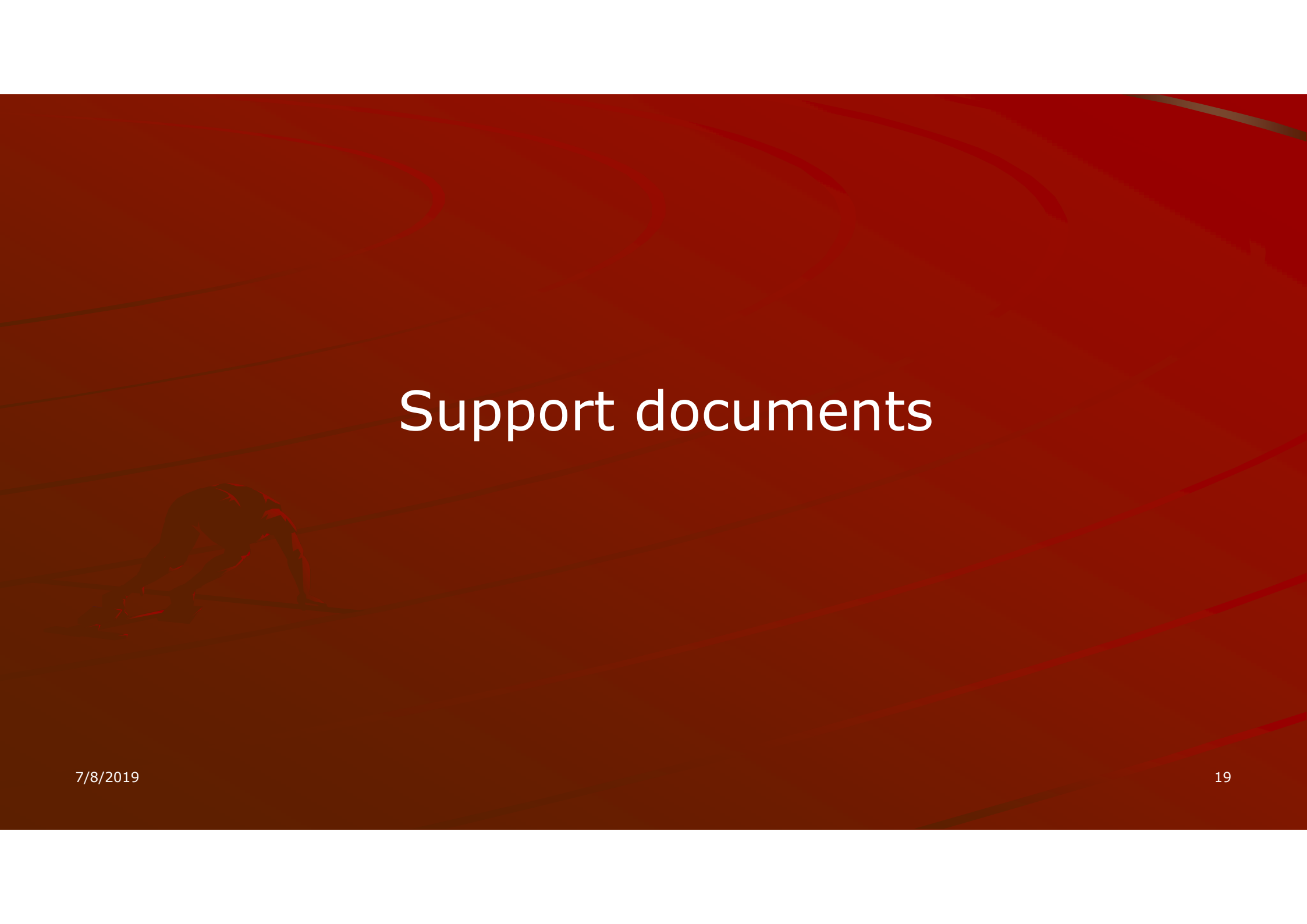
Thank You for Listening

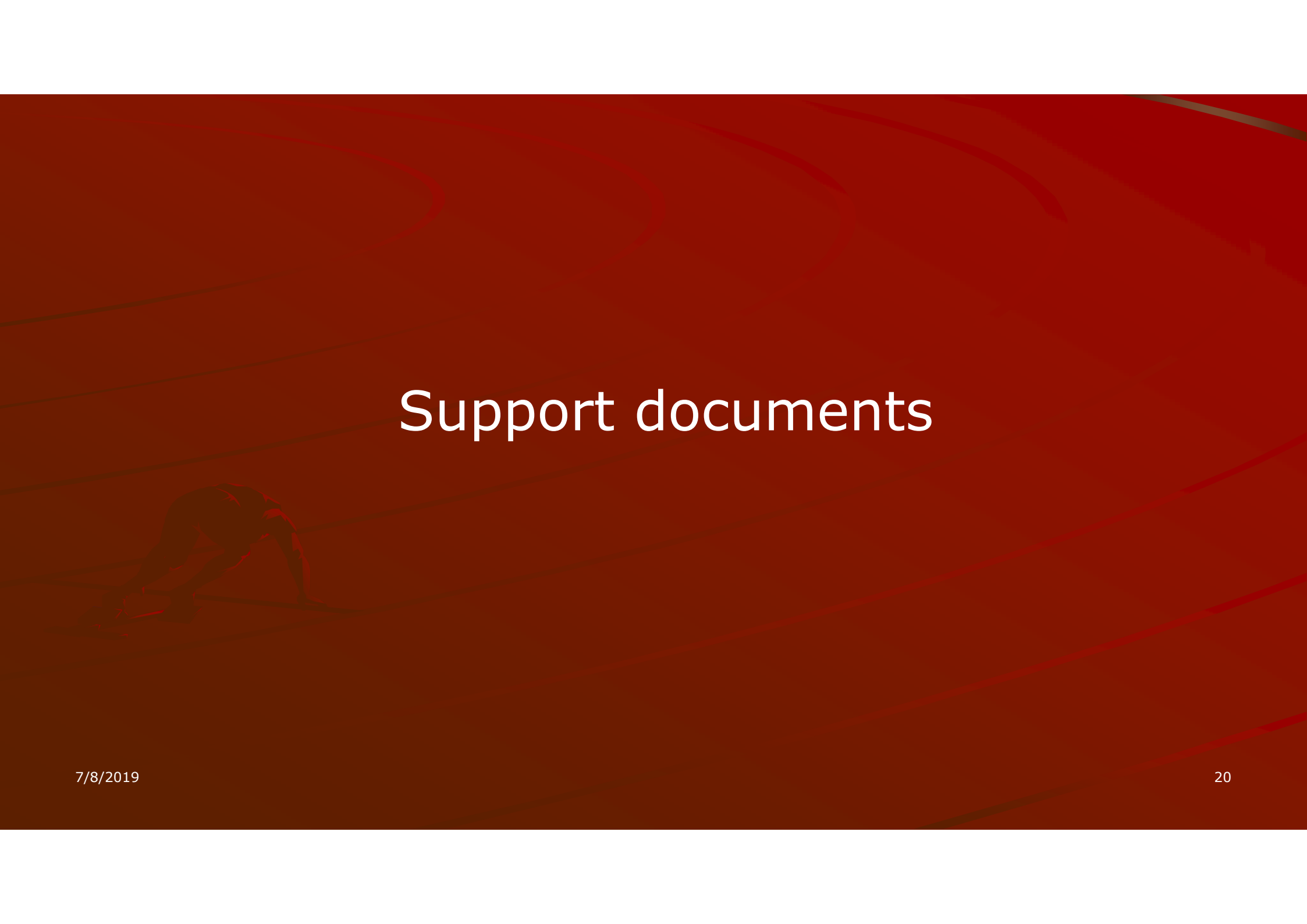
Any Questions ?

www.lightrailuk.co.uk.co.uk

Support documents



Support documents



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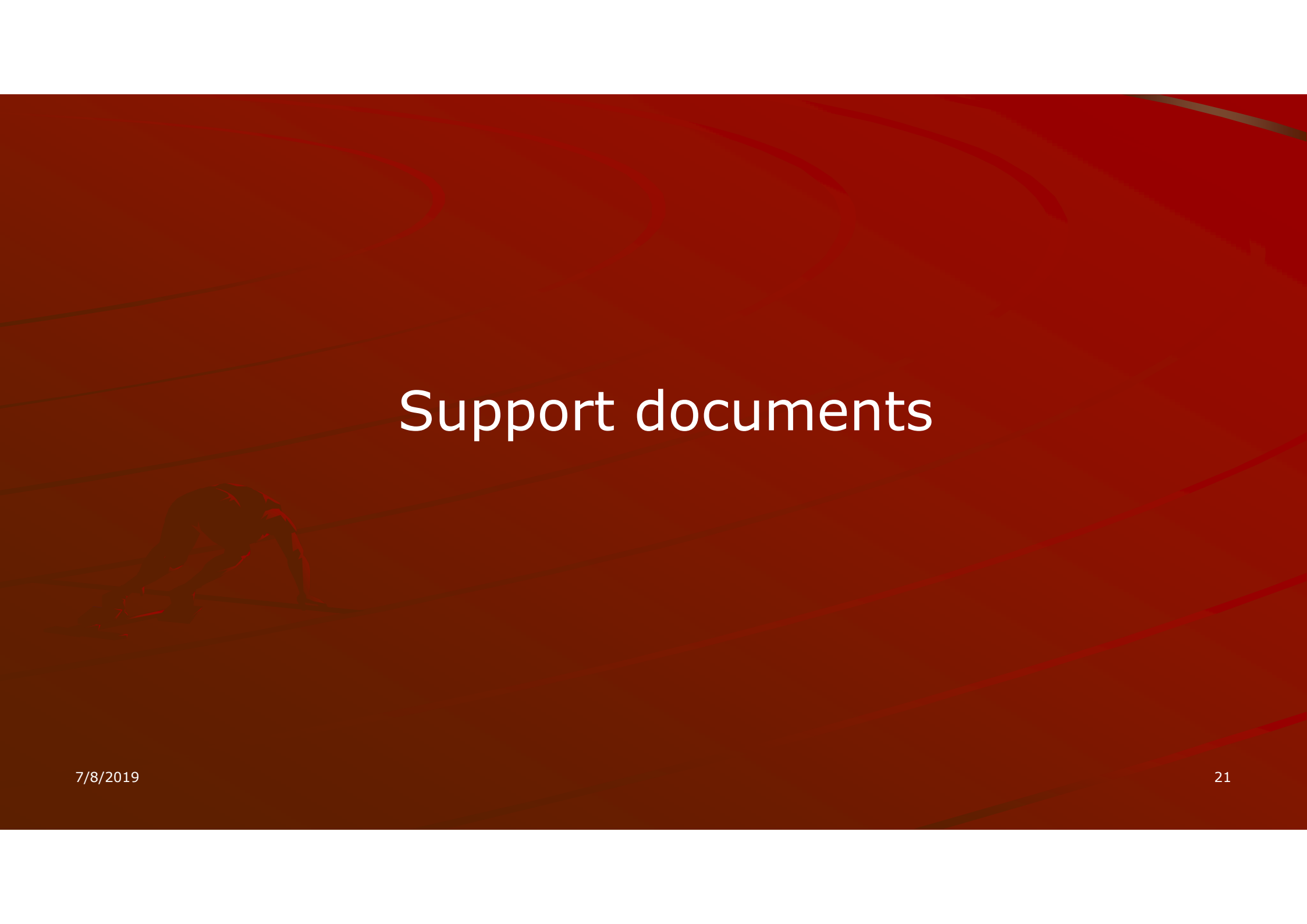

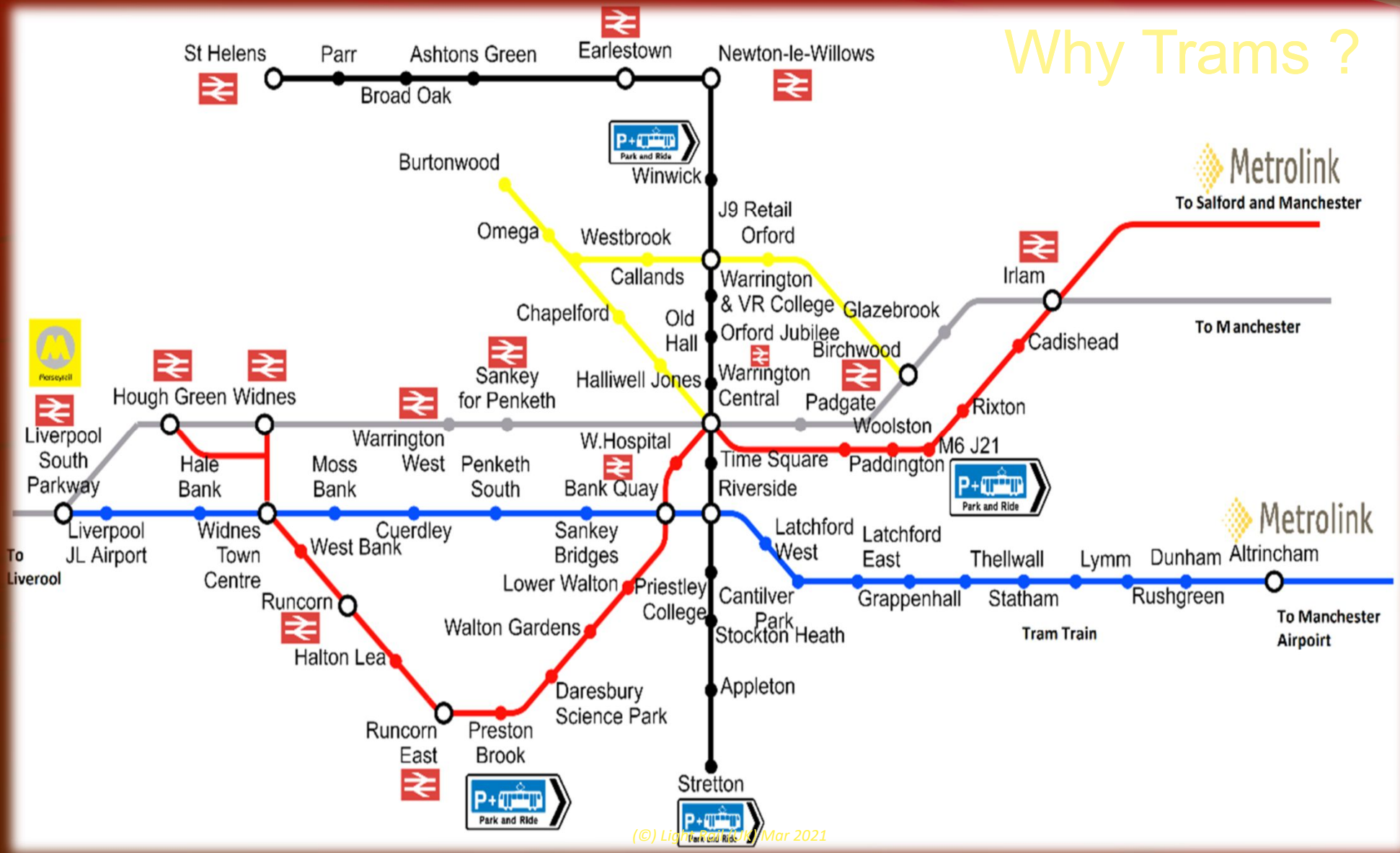
Why Trams ?
St Helens
Parr
Ashtons Green
Earlestown
Newton-le-Willows
Broad Oak
Park and Ride
Winwick
Burtonwood
Metrolink
To Salford and Manchester
J9 Retail
Orford
Omega
Westbrook
Callands
Warrington
& VR College
Irlam
Glazebrook
Chapelford
Old
Hall
Orford Jubilee
Birchwood
To Manchester
Cadishead
Sankey
for Penketh
Halliwell Jones
Warrington
Central
Padgate
Hough Green
Widnes
Rixton
Liverpool
South
Parkway
Warrington
West
W.Hospital
Woolston
M6 J21
Hale
Bank
Moss
Bank
Penketh
South
Bank Quay
Time Square
Paddington
Riverside
Park and Ride
Metrolink
Liverpool
JL Airport
Widnes
Town
Centre
West Bank
Cuerdley
Sankey
Bridges
Latchford
West
Latchford
East
Thellwall
Lymm
Dunham
Altrincham
To
Liverool
Runcorn
Lower Walton
Priestley
College
Cantilver
Park
Grappenhall
Statham
Rushgreen
Tram Train
To Manchester
Airpoirt
Halton Lea
Walton Gardens
Stockton Heath
Daresbury
Science Park
Appleton
Runcorn
East
Preston
Brook
Stretton
Park and Ride
Park and Ride
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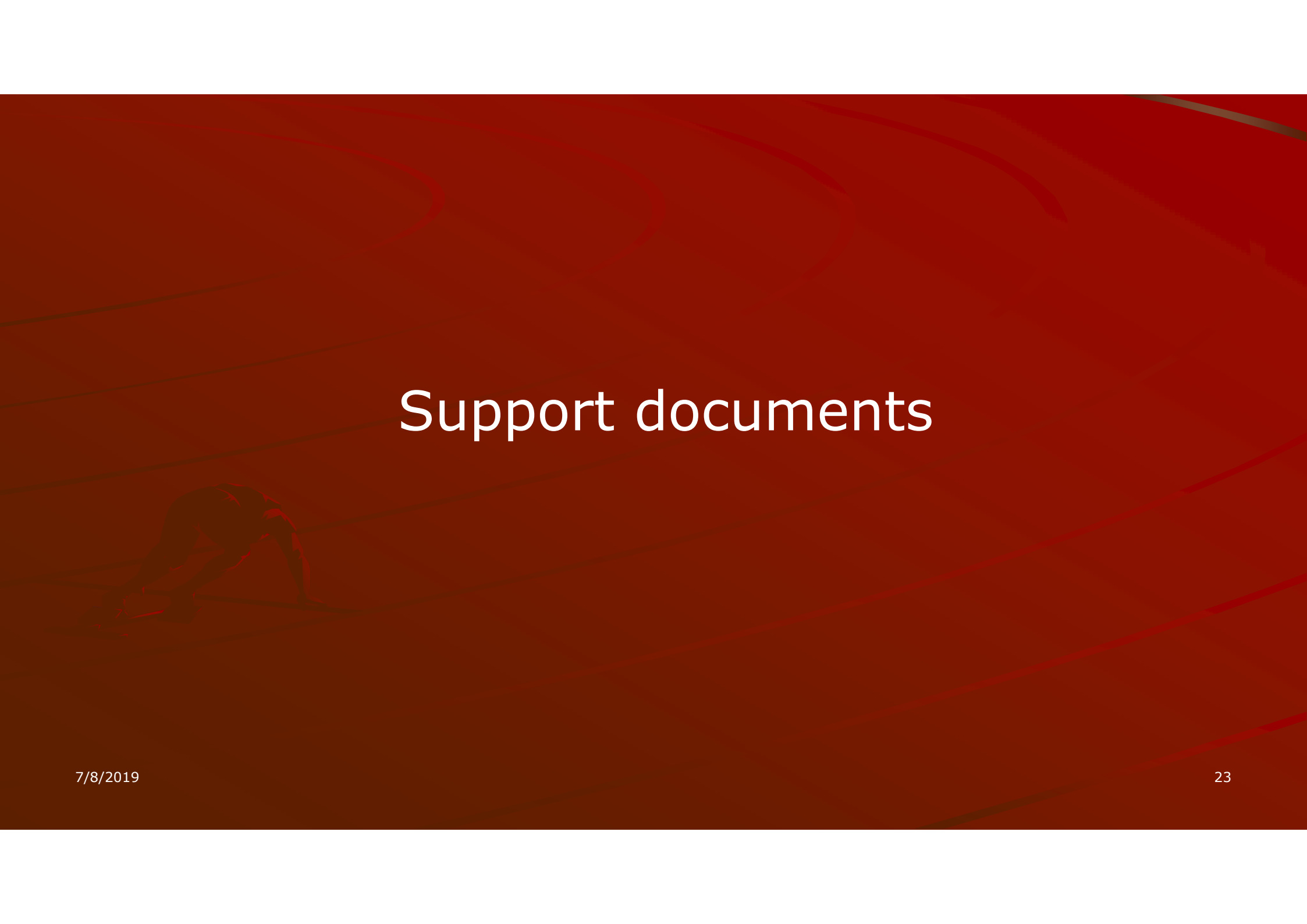
Support documents



Why Trams?

mg PM_{10} / km		Tyre	Brake
Cars	Urban	8.7	11.7
	Rural	6.8	5.5
	Motorway	5.8	1.4
LGVs	Urban	13.8	18.2
	Rural	10.7	8.6
	Motorway	9.2	2.1
Rigid HGVs	Urban	20.7	51.0
	Rural	17.4	27.1
	Motorway	14.0	8.4
Artic HGVs	Urban	47.1	51.0
	Rural	38.2	27.1
	Motorway	31.5	8.4
Buses	Urban	21.2	53.6
	Rural	17.4	27.1
	Motorway	14.0	8.4
Motorcycles	Urban	3.7	5.8
	Rural	2.9	2.8
	Motorway	2.5	0.7

+

mg PM_{10} / km	Road abrasion
Cars	7.5
LGVs	7.5
HGVs	38.0
Buses	38.0
Motorcycles	3.0

+

Vehicle Aggregate types	Total urban PM10/Kms
Cars (urban)	27.9
Trucks	127.1
Buses	112.8
M/cycle	12.5

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There are no minimum safe amounts

T Hydrogen Tram Urban Transport Corridor Solution

ULR Vehicles

3rd Generation ULR Vehicles ***are not*** like the big light rail cars used in Manchester, Croydon Edinburgh or Sheffield

They would be smaller units suitable for their role of circulating passengers amongst the three town locations without dominating the city


Portland

They would stop every 75 metres or use existing 'bus stops to give short walking distances and they operate safely in pedestrian areas and in mixed traffic.

T Hydrogen Tram Urban Transport Corridor Solution

Purpose & Requirements

Stop Road Traffic "Rat Running" (Signage)

A re allocation of road space, Green Wave traffic lights at junctions

Re routing and integrating of some bus services

Multiple P + R at termini and line of route

Hydrogen Cars,

Urban Transport Corridor Pollution

Non-Exhaust Emissions (NEE)

An urban car produces 8.7 mg of PM10 per km from tyres and 11.7 mg of PM from **Brakes,** total 20.4mg per km (approx.)

20.4mg x 10000 cars produces 2.04 tonnes per km (approx.)

An LGV produces 47.1 mg of PM10 per km from **Tyres** and 51.0 mg of PM from **Brakes** total 98.1mg (approx.)

98.1mg x 10000 LGV produces 9.10 tonnes per km (approx.)

All this PM material contributes to the air suspension swirl

There are no minimum safe amounts

Urban Transport Corridor Pollution

Non-Exhaust Emissions (NEE)

A PCV produces 21.2mg of PM10 per km from tyres and 51.0 mg of PM from **Brakes,** total 72.2mg (approx.)

72.2mg x 10000 PCV produces 7.22 tonnes per km (approx.)

These figures do not include road surface wear and are estimated at between + 30% especially where there are pot holes (grinding effect)

All this material contributes to the air suspension swirl

<u>There are no minimum safe amounts</u>

T Hydrogen Tram Urban Transport Corridor Solution

Get Good Advisors – challenge them, stick with them!

Start public consultation early

Get a well-kent local Public Face for the project

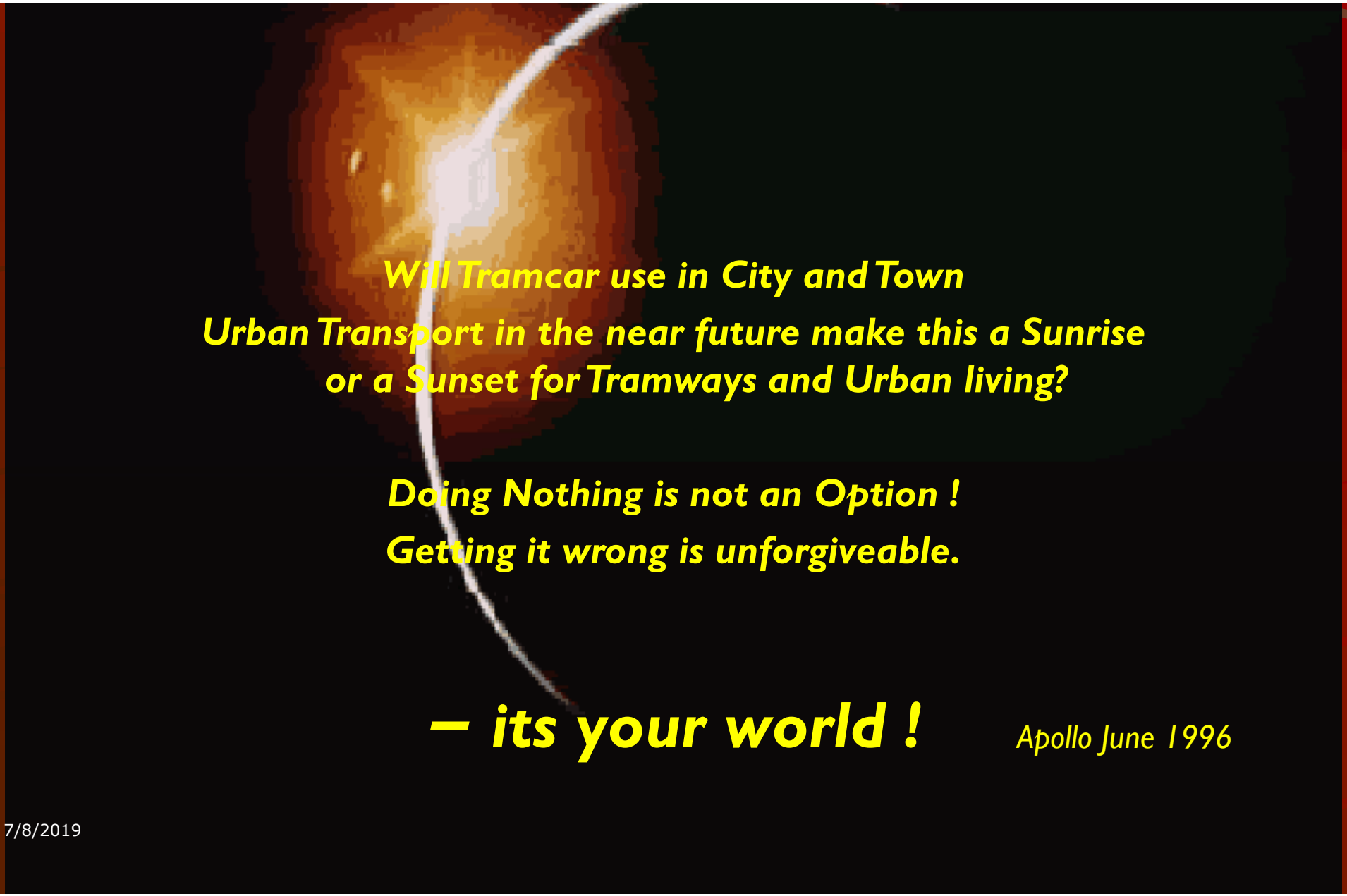
Be willing to revise the route to support developments

Get the bus, rail and highway authorities on side

T Hydrogen Tram, Think of it as a 'Starter Line'

Inexpensive does not have to mean cheap-and-nasty

Think of the added "X" factor for subsequent "UK City of Culture" type bids



Will Tramcar use in City and Town

Urban Transport in the near future make this a Sunrise or a Sunset for Tramways and Urban living?

Doing Nothing is not an Option !

Getting it wrong is unforgiveable.

– its your world !

Apollo June 1996

Light Rail(UK).

(A not for profit company)

An association of :-

Light Rail Consultants, Transport Engineers
Politicians, Academics
Environmentalists
And Others

.

Commercial specialists in low cost,
affordable & sustainable tramways

www.applrguk.co.uk

E-mail Jimh@jimmyharkins.com
Auchenshuggle Junction, Beechmore, Moore,
Warrington, Cheshire,
United Kingdom
01925 740060 or 07721378223