The Dorchester Tram

The possible answer to air pollution, connectivity, congestion, regeneration etc.,

A low cost VLR tram solution

A short presentation to the Dorchester Transport Action Group

Light Rail (UK).

by

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Chairman, Campaign Group,

TramForward,

Light Rail Transit Association.

Secretariat & Technical Advisor

All Party Parliamentary Light Rail Group

Why Trams ?

Environmental Air Quality improvements.

A growing and more productive town and inter urban economy.

Economic development and regeneration.

Modal switch & traffic reduction, current lines are failing significantly

Integrated transport across Dorchester and District

Better value for the "Public Purse"

Why Trams ?

Low-cost track –BWB 2015

Bringing more
measurable benefits to rail passengers;

Achieving wider economic and social objectives of regeneration, employment, inclusion, and accessibility in the communities served by tram rails;

Tram stop and linear growth rather than station only growth

Ensuring that all steel on steel rail contributes to a sustainable development across the common transport corridors

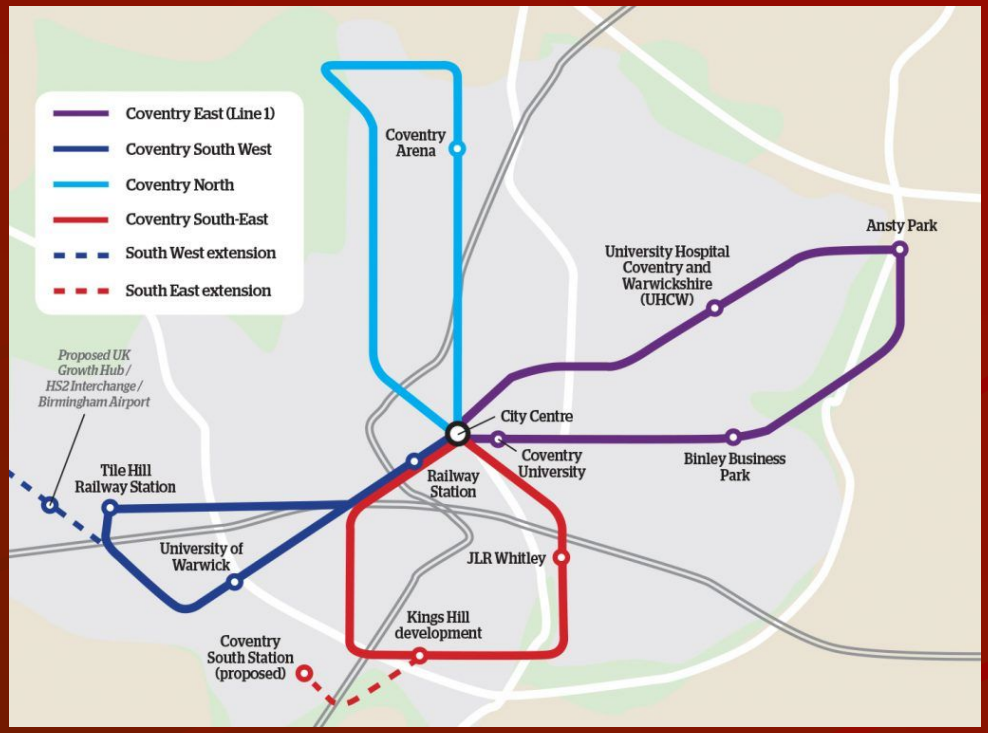
Why Trams ?

The Tram Network will :-

Improve non car access and connectivity to the two main East – West "heavy rail" corridors

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

Provide a fix low cost flexible connector corridor initiative between Yeovil, Wareham and Weymouth



Coventry ULR Shuttle map

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

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 Network Rail

Why Trams ?

The 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 to schools and hospitals

Sports & leisure including several stadia

Heritage and tourism.

A " Rochdale Pattern" of transit behaviour, "Hop on, Hop Off"

Urban Transport Corridor Pollution

AIR QUALITY EXPERT GROUP

Non-Exhaust Emissions (NEE) from Road Traffic

Prepared for:

Department for Environment, Food and Rural Affairs;

Scottish Government; Welsh Government;

Department of the Environment in Northern Ireland

July 2019

Trams where?


A37
Wrackleford
Bradford Peverell
River Frome
Heart of Wessex Line
Charminster
North Street
River Cerne
Westleaze
B3143
Grey's Wood
Cuckoo Lane
The Plain
Higher Bockhampton
Ice Hill
Duddle Heath
Thorncombe Woods
Syer's Lane
Hollow Hill
Kingston Maurward College
Stinsford
Lower Bockhampton
B3147
B3150
Dorchester Bypass
The Great Field
The Grove
London Road
Fordington
Dorchester
Poundbury
Bridport Road
B3144
Damers Road
Keen Way
B3143
A35
Middle Farm Way
Dorchester West
Dorchester South
The Thomas Hardye School
South Western Main Line
A352
Frome Hill
West Stafford
West Stafford Bypass
Martinstown
A354
North Plantation
Conygar Hill

Urban Transport Corridor Pollution

Non-Exhaust Emissions (NEE)

Each time a tyre rotates, it loses a layer of rubber about a billionth of a metre thick.

This works out to about four million million, million carbon atoms lost with each rotation.

A busy road with 25,000 vehicles travelling

on it each day will generate

around nine kilograms of tyre dust alone per kilometre.

#ps Don't forget the

micro-plastics and Euro 7 Vehicle specifications, approx 2025

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

=

There are no minimum safe amounts

Urban Transport Corridor Pollution

Non-Exhaust Emissions (NEE)

Health Costs

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

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

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

Dorchester Transport Connector

Benefit of Trams

Tram & TramTrain ticks all the boxes

No tail pipe emissions
Reduces the immediate pollution

Reduces death on the pavement, No "Oslo Effect"

Year on year savings to health costs

Release funding for other health projects etc.,

Increases the ambience of the city streets

Improves liveability of the immediate & surrounding area

Attracts plus footfalls

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Non-Exhaust Emissions (NEE)

Because of the high dust detritus with animal transport,
many first generation tramways had a nocturnal "Water Tram".
This washed away the suspension material created into the sewers
Part of a Public Health Program

There are no minimum safe amounts!

Dorchester Transport Connector

What can it do for Growth & Regeneration?

Small tram systems does increase the amount of development in an area and makes the linear development much more effective.

We have identified areas that the DTAG Project which could be opened up and land accessed

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 spaces needed.

The DTAG Project will enable “Network Rail” connectivity to be shared by everyone and not just those near the railway station

Dorchester Transport Connector

Why a Hydrogen Tramcar?

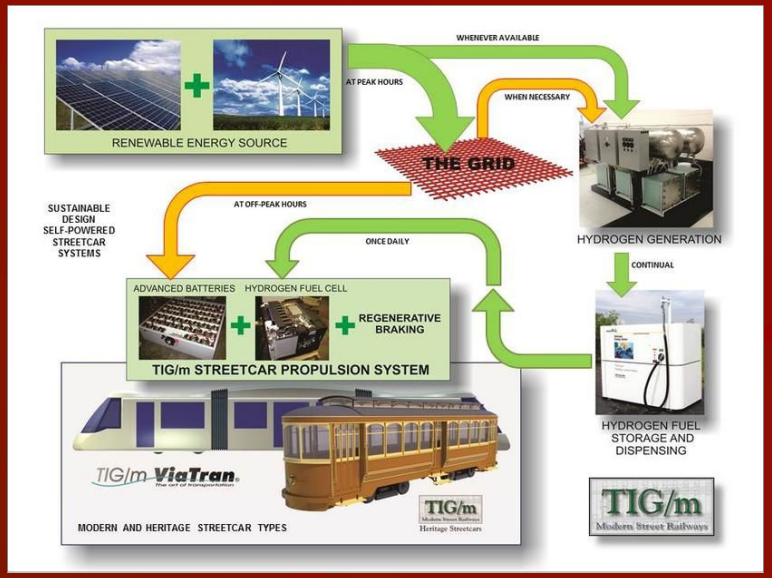
On-site hydrogen generation.
Hydrogen compression and storage.

Supplies local in Dorset

Hydrogen fuel dispensing, trams & trucks

On-board fuel cell generators that charge the batteries while the streetcar is in passenger service.

Energy required for up to a full 20hr. service day is carried on-board each vehicle



Dorchester Transport Connector Solution

https://www.tig-m.com/videos.html

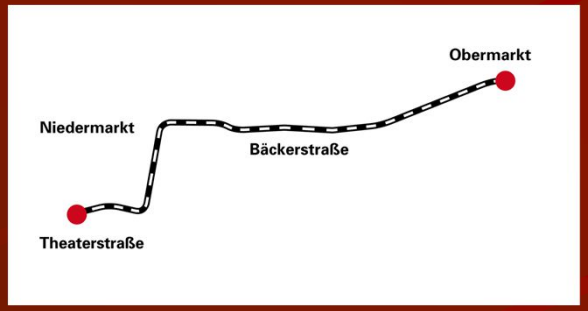
Dorchester Transport Connector Solution

Tourist Trams - VLR

Victor Harbour S.A
180,000 passengers per year
taking 50 passengers at a time

IOM
62,000 passengers used the service
during the 2014 season.

Dobelner
Nr Chemnitz Germany
Opened 2007
Carries 500 pax per day



Dorchester Transport Connector Solution

Trams - VLR

Taunton Car 139012
(Tram version available)
Diesel & Flywheel
Into service Stourbridge 2023

St Petersburgh Hydrogen Tram
In service 2021

Doha CNG/Hydrogen
Distributor
In service now

Dessau Bombardier OHLE
Available 2025

Preston Trampower City Class OHLE
Into service 2025

Pilzen Skoda 03T4 OHLE
Available 2025

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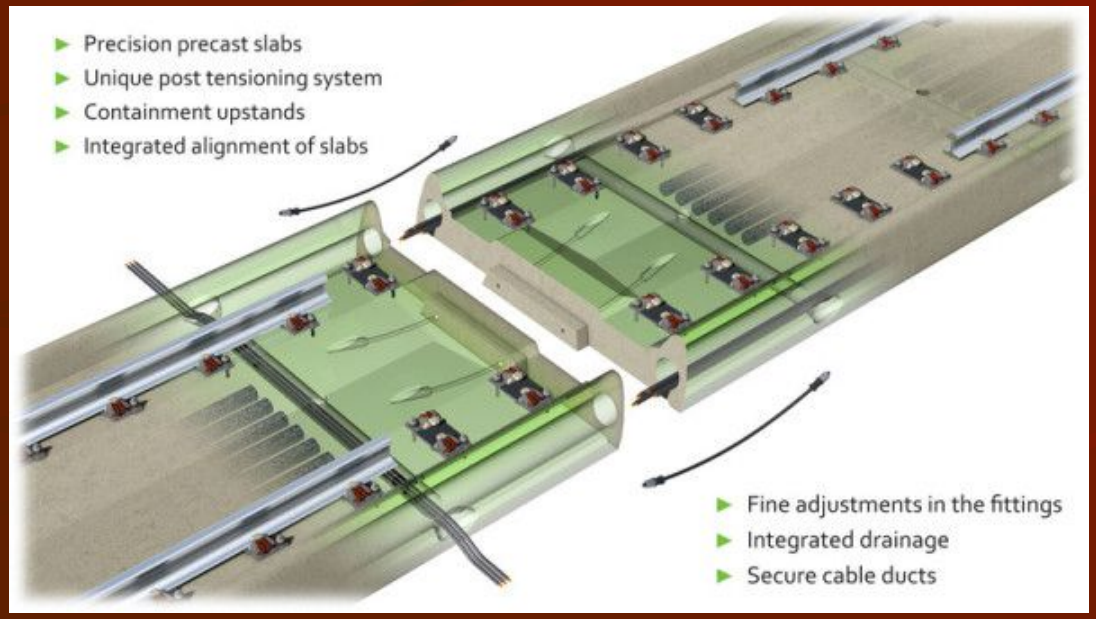
Track - keep it simple and quick

PCAT (Pre Cast Advanced Track)



Most utilities left in situ

Dorchester Transport Connector

Requirements

A Statesman rather than a Politician

A Cross Party willingness to achieve goals

Cooperate to improve Air Quality in

Dorchester and District

Improve town regeneration and connectivity between Yeovil, Wareham and Weymouth

Thomas Hardy

Dorchester Transport Connector

Next Step

A Pre Feasibility study (circa £10000.00+)

The above can be used as a specification document

Quotes from Tram Vehicle Manufactures, Track Suppliers

Well known personality to Champion project?

Thank You for Listening

Any Questions ?

Support documents

Support documents

Videos (applrguk.co.uk)

Hydrogen videos 1, 3, 4.

Support documents

ULTRALIGHT / VERY LIGHT RAIL

A Sustainable Public Transport Campaigning Game-Changer?

An emerging LRTA Tramforward campaigning initiative

Professor Mike Gibson MSc BA DipTP MRTPI

Chair of Lightweight Community Transport Ltd
A registered Community Benefit Society

Chair of Hove Station Neighbourhood Forum
A statutory neighbourhood planning organisation

LRTA Established 1937

TramForward

www.lrta.org

WHY TRAMS?

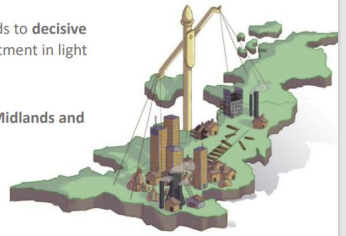
ULR-VLR Changing the Terms of the Transport Policy Debate?

Potentially decisive **50% reduction in the cost** of installing and operating tramways

The catalyst for going beyond warm ministerial words to **decisive re-allocation of funding** from road building to investment in light rail

Levelling up in regional terms – **more trams in the Midlands and the North** to go beyond warm words

Now is the time for joined up advocacy and campaigning



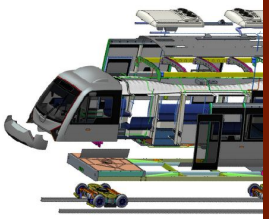
WHAT IS ULR-VLR?

Overview: Characteristics

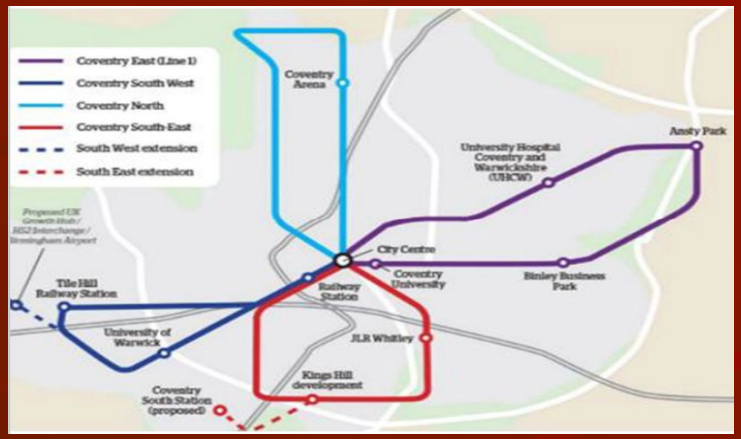
Affordable:
Lightweight (12-20 tonnes); shallow track (300mm)
= less disruption = lower cost @ £10m/km
60 – 200 passengers

Flexible:
On-street with traffic as low floor tram cars,
or dedicated rail with platforms.
Overhead Line / On-board Battery / Flywheel /
Hydrogen or Biomethane-powered

Climate-friendly:
Steel on steel: energy efficient, non-polluting



transportdesigninternational.com



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

Dorchester Transport Connector

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.

T57 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>

T57 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

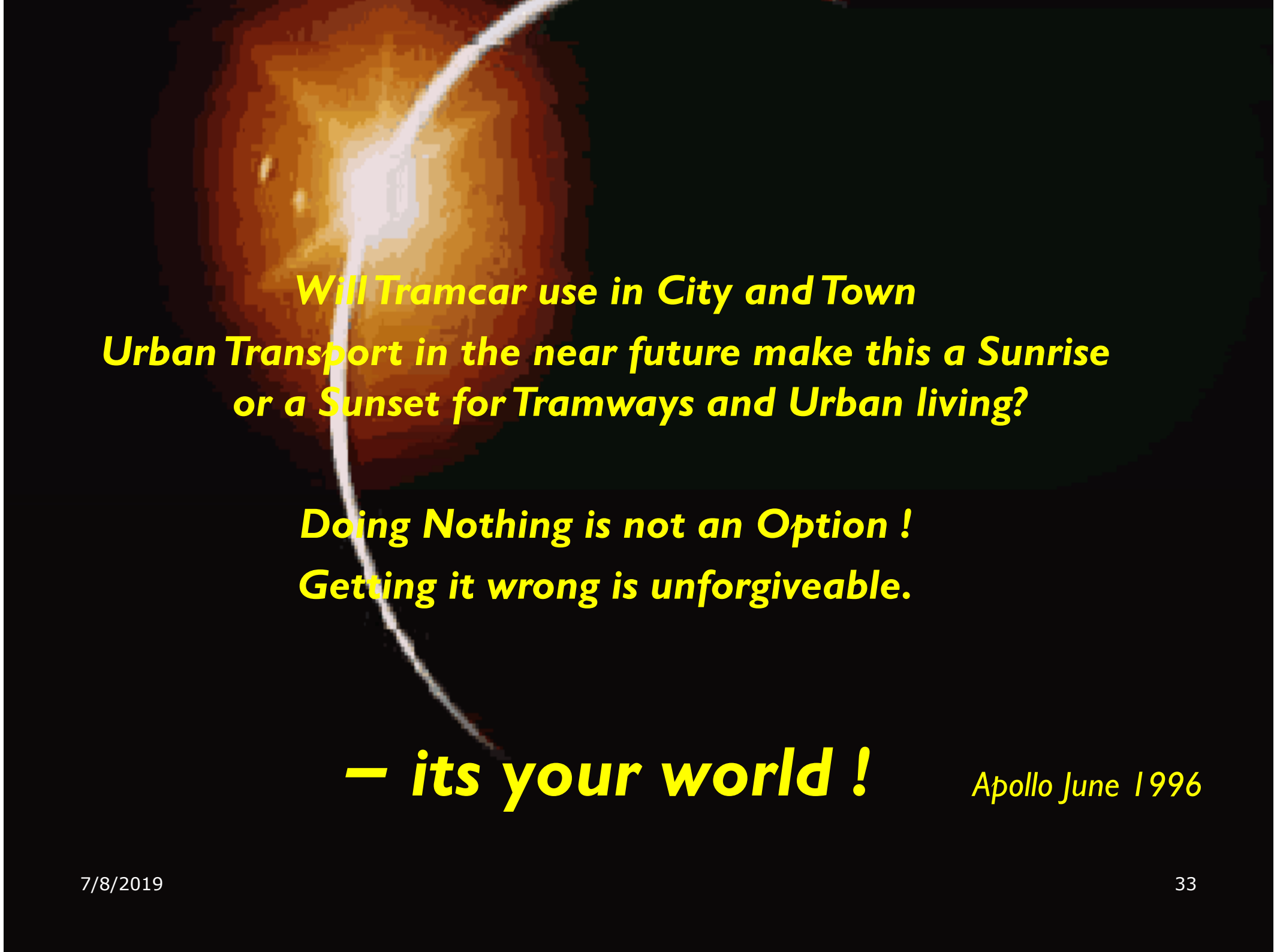
Be willing to revise the route to support developments

Get the bus, rail and highway authorities on side

DTAG, 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