

Why VLR?



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To address:

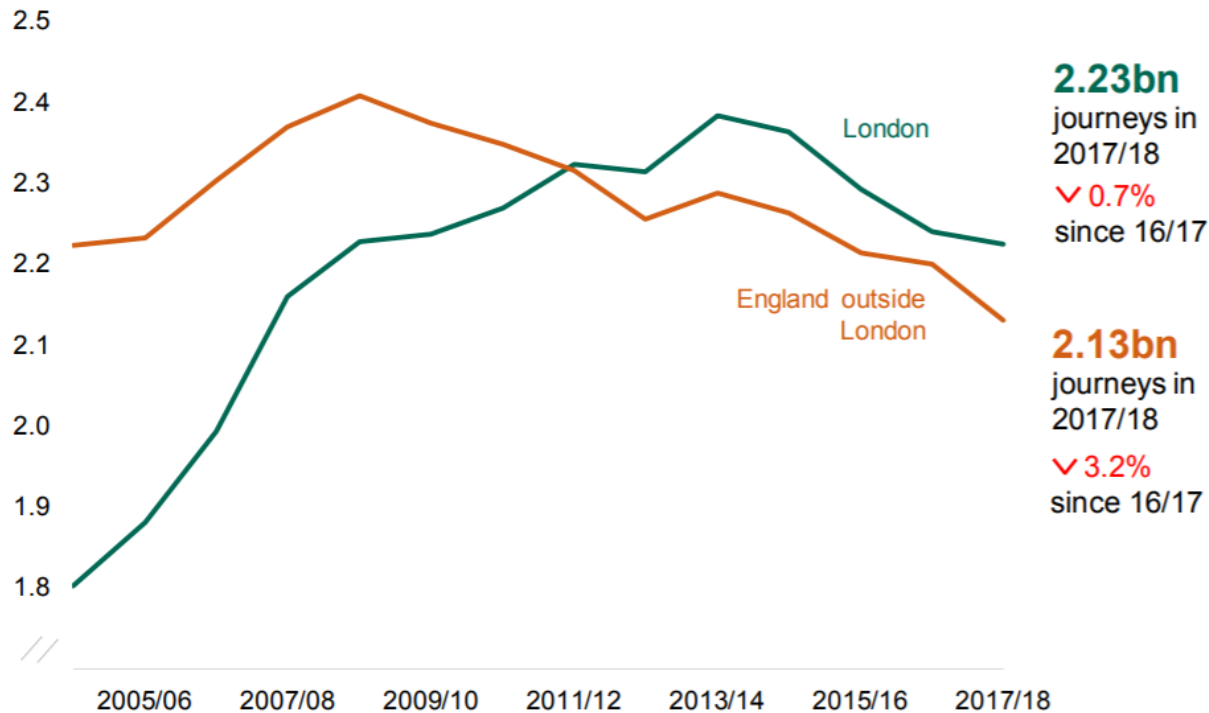
- Climate Change
- Air Quality
- Higher density development/sustainable urban development
- Economic development and the Industrial Strategy
- The city's attractiveness as a place in which to live, work, study and invest.



An attractive affordable alternative to the car is required!

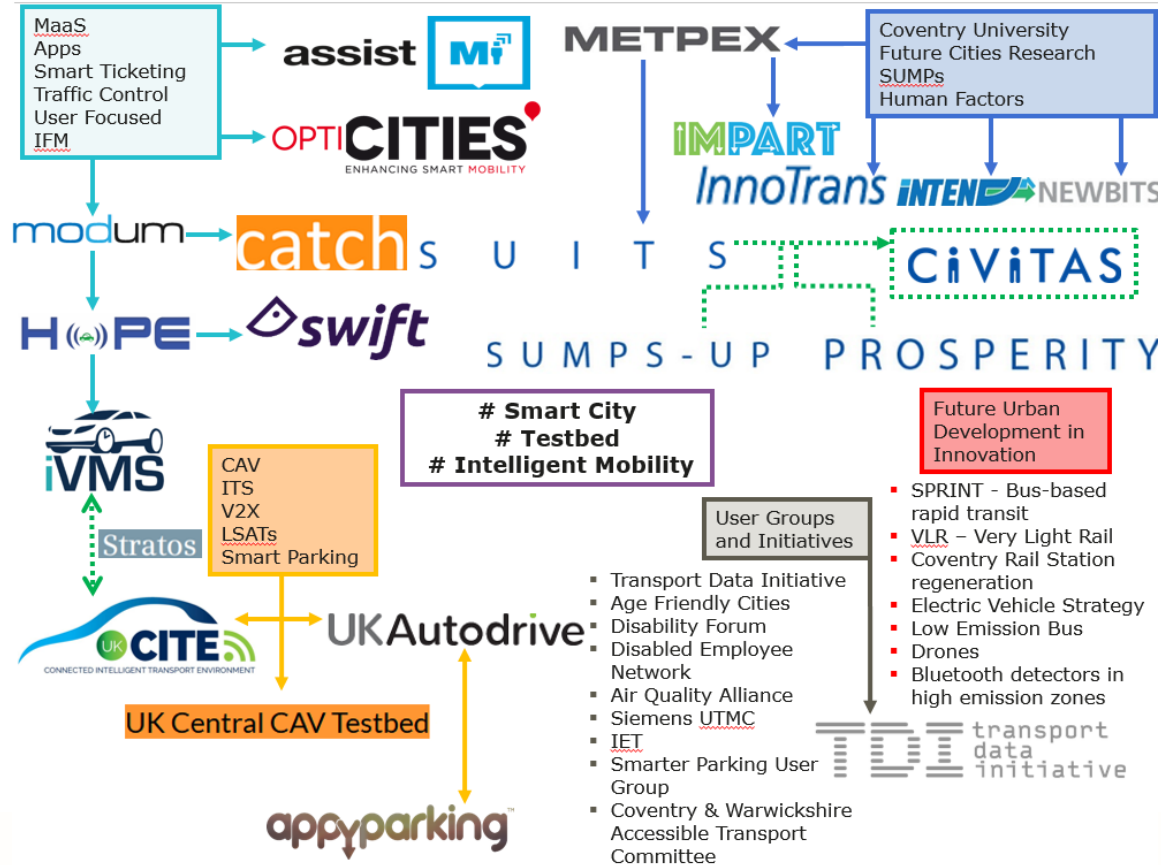
Decline in National Bus Patronage

Passenger journeys on local bus services (billion)



Source: DfT Annual Bus Statistics 2017/18

VLR will be part of an integrated system - CCC / WMCA Collaboration



Overarching Objectives for VLR

Affordable Light Rail System:

- Average cost of conventional system is £35m-£60m/km
- **TARGET COST FOR VLR IS £10M/KM**

Support WM Industrial Strategy/SEP:

- Advanced Manufacturing and Engineering, by directing advanced engineering supply chain participants toward future market exploitation in VLR;
- Logistics and Transport Technologies, by working with local businesses to develop a novel, affordable and internationally attractive light rail system; and
- Low Carbon and Environmental Technologies, e.g. For example – by further developing battery technology and lightweight vehicle design

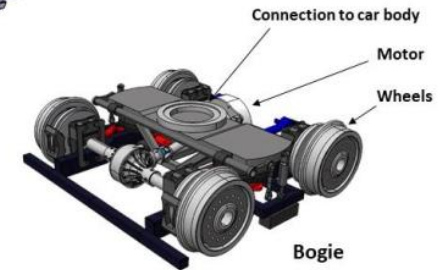
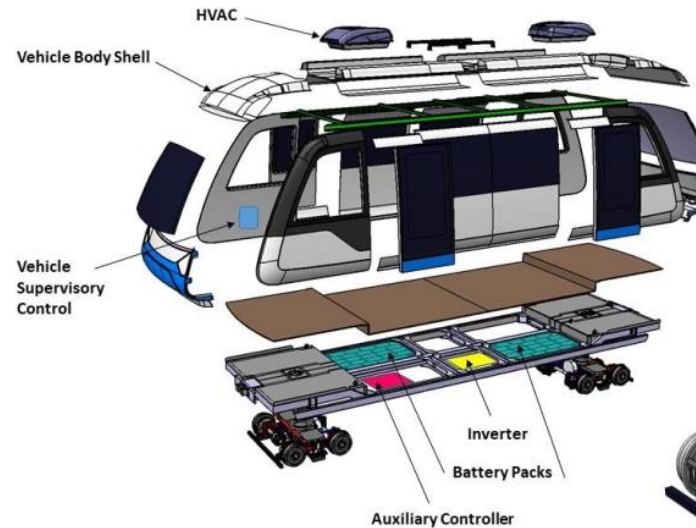
VLR Research & Development

The R&D is split into four work streams:

- **Vehicle –(WMG)** design and construction of a lightweight Demonstrator Plus vehicle, including a battery propulsion system
- **Track – (WMG and DMBC)** production of an innovative low cost shallow track form at Dudley VLRNIC which can be installed with minimal disruption to utilities' equipment
- **Route – (CCC)** route development, business case and Transport & Works Act Order
- **Operations –(TFWM)** system operations, passenger information and communications

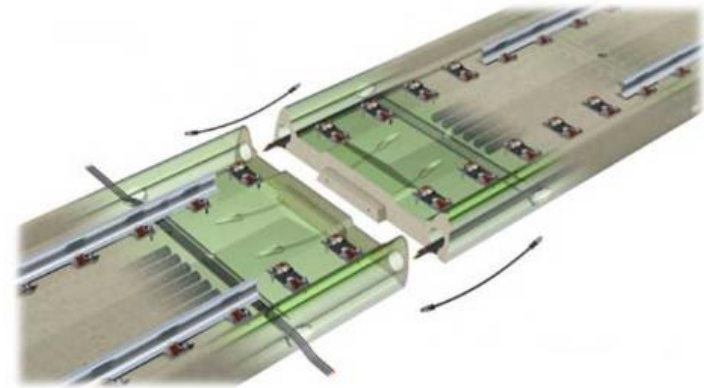
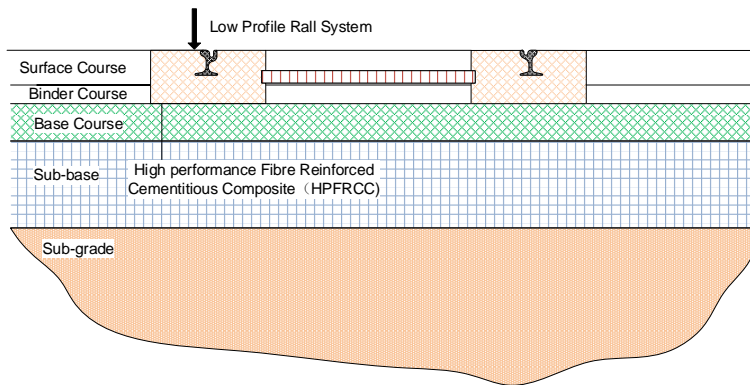
Vehicle Principles:

- self-propelled
- battery powered
- rapid charging technology
- lightweight design
- much lower axle load compared with conventional tram
- ultimately autonomous operation at a high frequency in order to provide a “turn up and go” service
- ability to negotiate tight geometry



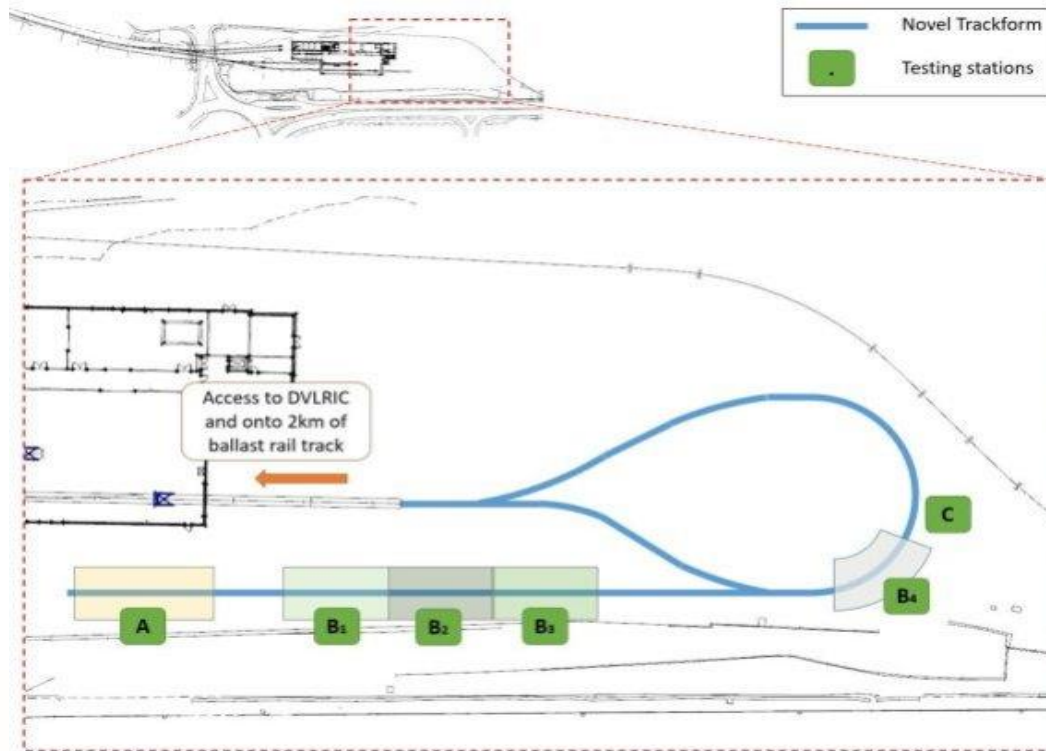
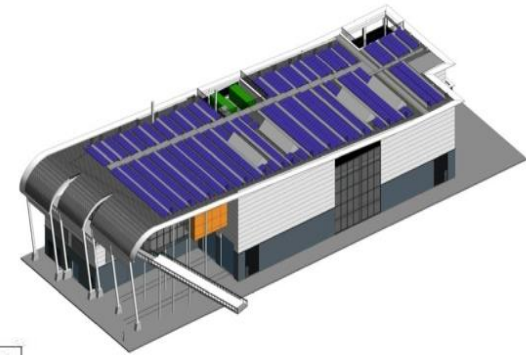
Track Principles :

- resilient, long life shallow trackform (circa 250mm)
- minimal excavation, laid over existing utilities – easy removal to allow utility repairs
- precast trackform manufacture off site – high quality, minimal disruption on site

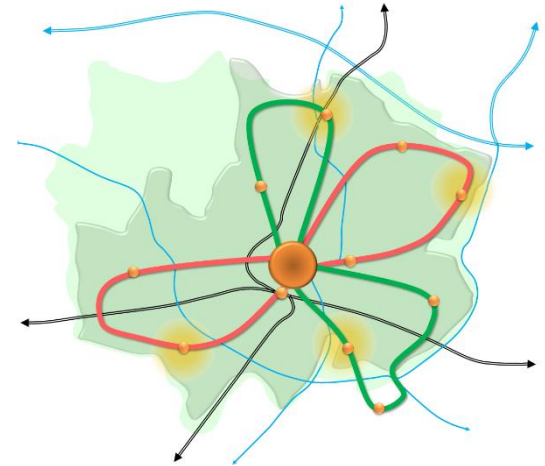


VLR National Innovation Centre - Dudley

The testing of the VLR Demonstrator Plus vehicle and track will be undertaken at the Very Light Rail National Innovation Centre (VLRNIC)



First Route in Coventry 2024



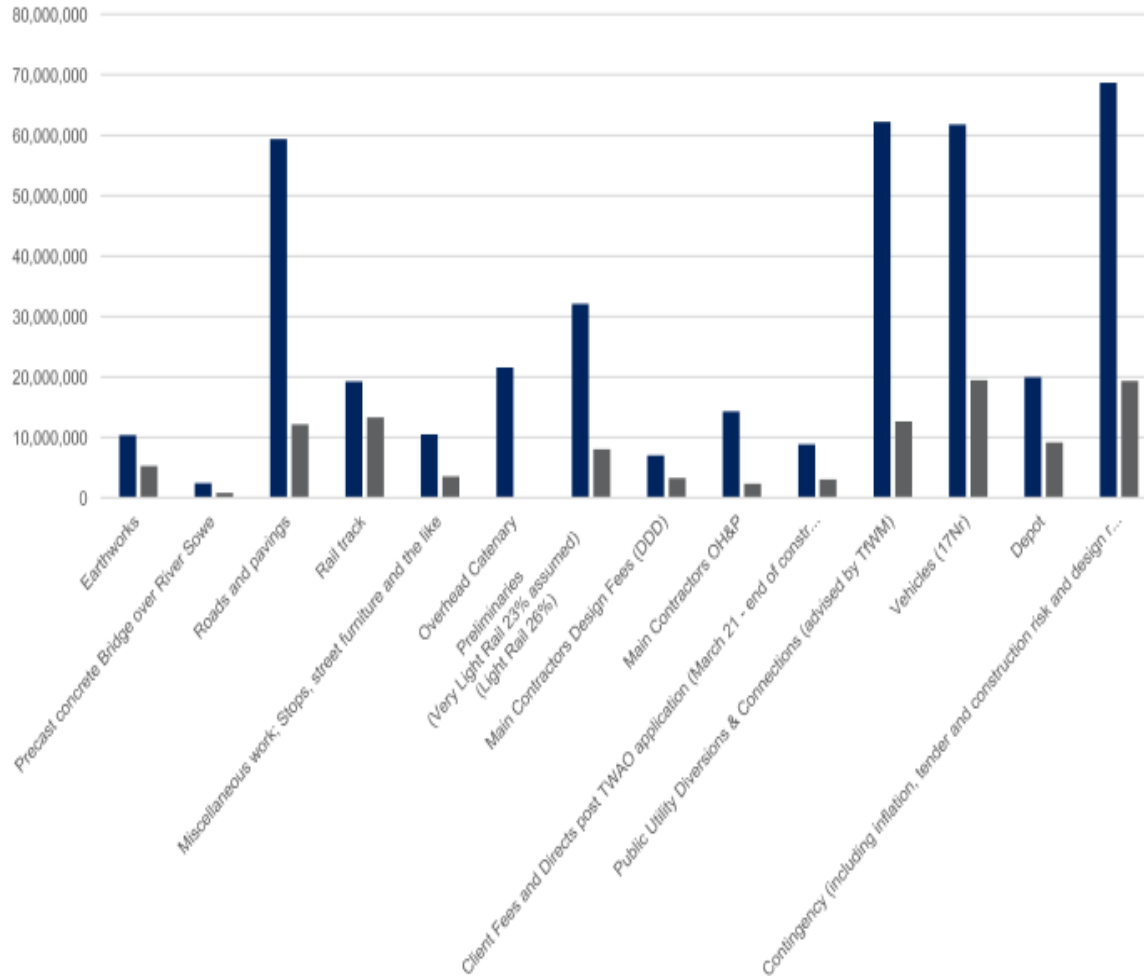
Two potential routes have been assessed for feasibility, economic benefits and costs:

- City Centre to Warwick University via the railway station
- **Railway station to University Hospital Coventry and Warwickshire (UHCW)**

These routes connect major employment sites, development sites and potential strategic park and ride sites with the city centre and the railway station.

VERY LIGHT RAIL VS LIGHT RAIL

Light Rail vs Very Light Rail



Long Term Benefits of VLR:



- Affordable urban rail solution compared to light rail trams – both during route construction and then during operation
- Vehicles and track designed to maximise participation of local supply chains in manufacture and construction – jobs for the region
- Significant transfer of low-cost technology from the automotive sector
- West Midlands becomes a VLR Centre of Excellence
- Zero emissions propulsion without the need for overhead electric supplies
- Lower cost vehicles running more frequently to provide ‘turn up and go’ service
- A means of encouraging and accelerating modal shift from cars. Based on model outputs the car mode share in Coventry is forecast to reduce by 4% as a result of the introduction of VLR in the UHCW corridor.

R&D Funding Opportunities

Alternative Funding Opportunities for R&D	Date of Meeting	Outcome/ comment
Meet the Engineer Event	12 th June 2019	Presented VLR to potential investors. Follow up meetings organised with Innovate UK and being arranged with Productiv.
Innovate UK	17 th July 2019	Recognition that no calls to date have been relevant for VLR. Innovate UK advised that we prepare a briefing paper to outline Calls required to suit VLR. Briefing paper being prepared by WMG for submission to Innovate UK.
Productiv	tbc	Meeting to be scheduled as Productiv are a Coventry based company that bring Green Technologies to the market and can assist with funding bids.
Joint Venture	Various soft market testing	CCC currently working on a commercial strategy and have meetings scheduled with DfT to progress this further.
DfT	5 th July 2019	DfT very interested in scheme and are a potential source of R&D investment.

First Route Funding Opportunities

Alternative Funding Opportunities for First Route	Date of Meeting	Outcome/ comment
Joint Venture	Various soft market testing	CCC currently working on a commercial strategy and have meetings scheduled with DfT to progress this further.
DfT	5 th July 2019	DfT suggested funding for first route could be provided if match funding is available.
Developers	8 th July (Urban and Civic) 10 th July (Segro) June 2019 (Arcus)	Commercial land/housing developers keen to bring forward VLR and willing to contribute to first Route Construction.
Land Value Capture	N/A	Land value capture is a policy approach that enables communities to recover and reinvest land value increases that result from public investment and other government actions. Also known as “value sharing,” it's rooted in the notion that public action should generate public benefit. LVC to be explored.
Workplace Levy	N/A	To be explored
Developer Contributions	N/A	To be explored
Prudential Borrowing against Farebox Revenue	N/A	To be explored

The following organisations have shown interest in VLR:

- Transport for West Midlands
- West Midlands Combined Authority
- Liverpool City Council
- Derby City Council
- Leeds City Council
- Glasgow (city centre to airport shuttle)
- Cirencester Town Council
- Isle of Wight Council (for the Island Line)
- Midlothian Council
- HS2 Architects for Toton Station (developing a scheme to connect Toton HS2 to East Midlands Airport and Derby)
- Birmingham Airport (potential shuttle to nearby HS2 station)
- Halifax (Nova Scotia)
- Perth (Australia)
- Black Country Consortium
- Arcus Infrastructure Partners
- Urban and Civic
- Arnold White Estates
- Old Oak and Park Royal Development Corporation
- Eversholt Rail (interest in leasing vehicle fleets and currently an investor in the Revolution VLR Railcar project which is targeted at 'twig and branch' routes on the national rail network)
- Network Rail
- Arriva and Northern Rail
- UHCW

The following organisations have provided letters of support for the VLRNIC project:

- The WMCA Mayor
- Arcus
- Avid
- BCLEP
- Birmingham City University
- Big Bear Plastic Products
- Coventry CC
- Cummins
- Eversholt Rail
- First Group
- HVM Catapult
- Innovate UK
- KTN
- Northern
- Network Rail
- Peter Wilkinson (DfT)
- RDM
- RSSB
- Siemens Mobility
- Segro
- Southampton University
- TDI
- TfWM
- Transcal
- Urban & Civic
- Wolverhampton University

The major milestones are:

- July 2019: First route in Coventry confirmed with TAG SOBC
- October 2019: Outline design for first route commissioned
- Summer 2020: NR Test Track at Dudley VLRNIC site
- Autumn 2020: Demonstrator vehicle available for testing
- Winter 2020: Novel Test Track and Road constructed for subsequent integrated system testing
- Spring 2021: Submit TWAO
- Summer 2021: VLR NIC Building constructed
- Summer 2023: confirmation of Transport and Works Act Order and Full Business Case approval
- Winter 2024: first phase of Coventry route open to passengers

Any Questions?

