



To: Business, Economy and Enterprise Scrutiny Board (3)

Date: 21st August 2024

Subject: Coventry Very Light Rail Update

1 Purpose of the Note

- 1.1 To provide an overview of the governance agreed with the Department for Transport (DfT) and West Midlands Combined Authority (WMCA) for the Very Light Rail Regional Programme, including Coventry Very Light Rail (CVLR).
- 1.2 To provide an update on the current status of the CVLR Programme.

2 Recommendations

- 2.1 The Business, Economy and Enterprise Scrutiny Board (3) are recommended:
 - 1) To note the progress with the delivery of the CVLR Programme and the next steps on the Project.
 - 2) Identify any further recommendations for the Cabinet Member for Jobs, Regeneration and Climate Change.

3 Information and Background

- 3.1 CVLR has the potential to transform public transport by providing an affordable urban rail-based system that will not only offer a solution for Coventry but could benefit many towns and cities world-wide in the drive to combat climate change.
- 3.2 The vision for CVLR was set out in the Connecting Coventry, Coventry's Strategic Transport Investment Strategy, approved by Cabinet in 2017.
- 3.3 Funding was initially secured through WMCA Devolution Deal (£12.46m) and Coventry and Warwickshire Local Enterprise Partnership (CWLEP) (£2.2m) to initiate the CVLR R&D programme to develop a prototype vehicle and novel trackform.
- 3.4 Since 2017, CVLR has been documented in other Cabinet reports as follows:
 - Cabinet: 2018 Transportation and Highway Maintenance Capital Report - 6th March 2018
 - Cabinet: Coventry Very Light Rail - 12th October 2021
 - Cabinet: Transportation and Highway Maintenance Capital Programme - 15th March 2022
 - Cabinet: City Region Sustainable Transport Settlement - 6th September 2022

- 3.5 In 2022, a Very Light Rail Regional Programme (VLRRP) Strategic Business Outline Case (SOBC) was submitted to WMCA and was approved by WMCA Board on 13th January 2023 with specific financial terms and conditions and a requirement to deliver the CVLR programme in four stage gates. This means that certain deliverables need to be achieved at each stage gate before the funding is released for the next phase of the programme.
- 3.6 This report sets out the agreed assurance process for the VLRRP which is being funded through the City Region Sustainable Transport Settlement (CRSTS) and the process agreed with the DfT/ WMCA to release funding for CVLR which has an allocation of £40.5m and remains a retained scheme (with DfT having final say on the release of funding) due to its value and Research & Development (R&D) nature.
- 3.7 The 3 projects within the VLRRP are as follows and the amount allocated to each of these through the approved SOBC submission is highlighted:
- Coventry Very Light Rail (CVLR) scheme promoted by Coventry City Council (CCC) (£40.5m allocated **£35m originally approved at SOBC with funding for CVLR Stage Gate 1 and Stage gate 2 released (£15.1m)**)
 - Dudley Very Light Rail National Innovation Centre (VLRNIC) promoted by the Black Country Innovative Manufacturing Organisation (BCIMO) and Dudley Council (£12m allocated **£1.2m approved at SOBC**)
 - Mass Transit Options Appraisal study which is to include an assessment of urban VLR promoted by Transport for West Midlands (TfWM) (£5m allocated **£600k approved at SOBC**)
- 3.8 CVLR is being delivered in 4 stage gates, as approved by WMCA Board on 13th January 2023. At the time WMCA / DfT released the funding for Stage Gate 1 only (£8.99m) and recommended that a robust assurance process be established before funding could be released for the next stages of delivery.
- 3.9 The funding for Stage Gate 2 (£6.1m) was released by DfT in December 2023, following completion of Stage Gate 1 outputs.
- 3.10 The process agreed with DfT for funding release is set out in Appendix 1, sets out the evidence to be presented to pass each stage gate. This process, along with governance at a regional level, will be explained at Board together with an update on the CVLR programme (Appendix 2 to the Briefing Note).
- 3.11 A further Cabinet report will be tabled at Cabinet in Autumn 2024, which will provide a programme update and seek approval to enter into contract to construct a City Centre Demonstrator.

4 Matters for Consideration

- 4.1 The VLRRP is not a traditional transport delivery programme. It is deemed a R&D programme by DfT and as such a bespoke assurance process has been put in place and agreed with DfT which is explained in Appendix 1 to the Briefing Note.
- 4.2 The CVLR element of the VLRRP remains a retained scheme by DfT, due to its value and R&D nature. This means that DfT are the ultimate decision makers on whether CRSTS funding is released or not.

- 4.3 Prior to funding release for Stage Gate 3, technical, safety and commercial review will take place through an Independent Review Panel (IRP) which has been procured by CCC through its R&D framework.
- 4.4 The IRP consists of 4 qualified technical specialists (Rolling Stock, Track, Case for Safety and Commercial) that have been appointed following a robust procurement process through Coventry's R&D framework. The Terms of Reference for the IRP are available and their CV's are available upon request.
- 4.5 The IRP will review evidence and make recommendations to the IRP Board, which includes membership of Executive Director of Transport for the West Midlands (TfWM).
- 4.6 The commercial equity and economic benefits from CVLR will be reassessed during Stage Gate 4, when CAPEX costs are known following the installation of the CVLR City Centre Demonstrator.
- 4.7 It should be noted that due to the R&D nature of the CVLR programme, it is accepted by all parties that the Stage Gates set out in 2022 are subject to change. Any change is dealt with through a robust change control process.
- 4.8 The economic benefits of rail-based mass transit are well documented, but a report summarising the benefits of urban rail can be provided upon request.
- 4.9 An update on the status of the CVLR programme is provided below and will be tabled at Board (Appendix 2 to the Briefing Note).

CVLR Programme Update

5 CVLR Track Update

- 5.1 The CVLR track development programme has successfully delivered three full-system pilot installations:
 - University of Warwick [15 m of straight track | construction July 2022]
 - Whitley [36 m of track | construction Feb 2023]
 - VLRNIC [40 m of track | construction August 2023]
- 5.2 The installation at the University of Warwick provided the opportunity to carry out the first full-scale and detail installation of the system. A variety of configurations and materials were trialled to help optimise design. The installation was carried out by CCC's DLO with support from a rails-specialist contractor.
- 5.3 The second pilot installation at CCC's Whitley Depot was utilised to implement lessons learnt from the first installation and increase the complexity of alignment of track. In addition, the installation includes a state-of-the-art structural performance monitoring system. Over the past 18 months, the system has been measuring the impact of every road-going vehicle and lorry travelling over the track, with over a million vehicle axles now having passed over the track to date.
- 5.4 The final pilot installation, at VLRNIC Dudley, was focused on creating a test track to test the performance of the CVLR vehicle, bringing the vehicle and track together. The 60 m test track included the tightest vertical and horizontal curvatures that the CVLR track was designed to achieve and successfully implement various

optimizations following lessons learned at the Whitley installation. Instrumentation is in place to gather data on vibrations, noise and track movement when the CVLR vehicle passes through the loop, and that data is being used to assess the track performance.

- 5.5 Using the data gathered from these three test sites, the CVLR project team is now looking at ways in which the trackform can be further improved. Evidence indicates that the track has performed well, and that it could potentially be used to support heavy light rail systems as well as the CVLR vehicle. This would open up other potential markets for the track, such as being used for extensions to the Midlands Metro.
- 5.6 Consequently, TfWM have identified funding within their CRSTS allocation to carry out further R&D to develop the CVLR trackform to be capable of supporting heavier trams, such as those operating on Midlands Metro. The scope of this further work is currently being agreed between TfWM / CCC and WMG.
- 5.7 If this work proves that the CVLR track can be used on conventional LR systems, this would open up a wider market with significant interest already expressed in the CVLR system, such as from Transport for London and West Yorkshire, who are keen to understand if the CVLR track could be used with heavier tram vehicles to support extensions of existing tram networks.
- 5.8 The Council has the intellectual property rights to many aspects of the vehicle and the trackform, and the potential for the CVLR system to generate an income stream for the Council as well as providing a transport system for the city is an active workstream within the CVLR programme.

6 CVLR Vehicle Update

- 6.1 The CVLR prototype vehicle has been undergoing significant testing since May 2022 at the Very Light Rail National Innovation Centre (VLRNIC) in Dudley.
- 6.2 During March and April 2024, the Council, together with the team from VLRNIC, hosted several events to showcase the CVLR system and the VLRNIC to key Stakeholders and politicians. Rides on the vehicle were undertaken with approximately 30 dignitaries.
- 6.3 It has completed approximately 400km km of performance testing and has completed 2000 laps of the 15 m radius loop specifically built to replicate the type of tight corner that can be expected within historic city centres such as Coventry.
- 6.4 Following the testing, components from the vehicle, such as the brakes and bogies, have been removed and analysis is underway to understand how components have performed under robust testing and what improvements need to be made to optimise the safety of the vehicle in operation in highway conditions.
- 6.5 In addition, crash testing has taken place in simulation, and it is now understood what improvements need to be made to the vehicle structure to protect the driver and passengers in the event of an incident.
- 6.6 The improvements required are yet to be fully costed, but the outcome of the testing, and recommendation for next steps in terms of developing the vehicle, will be presented in a report to Cabinet in Autumn 2024.

7 CVLR City Centre Demonstrator Route

- 7.1 To date, work has been underway to prepare the city for the installation of the CVLR City Centre Demonstrator Route.
- 7.2 A City Centre Traffic Management Plan was initiated in 2022, and this is being progressively implemented with the introduction of bus gates, amendments to the restricted parking zone (RPZ) and introduction of a red route to allow for easier enforcement of parking restrictions, with the aim of benefitting bus services as well as facilitating the CVLR City Centre Demonstrator.
- 7.3 The Traffic Regulation Orders for the amendment of the RPZ and the introduction of the red route and Greyfriars Bus Gate were advertised on 8th August and are currently out to consultation.
- 7.4 The next stage is to deliver a city centre cycleway which will be segregated from road traffic and reduce the risks to cyclists once the CVLR City Centre Demonstrator is fully installed.
- 7.5 The cycleway would run between Pool Meadow and Queen Victoria Road, connecting into existing routes as well as an improved route across Greyfriars Green which is under construction.
- 7.6 The City Centre Demonstrator route will be constructed from the Rail Station to the former Ikea building in 2 phases, with a short section on Greyfriars and Queen Victoria Road programmed for construction in early 2025. Planning approval for the route has been applied for, with Cabinet approval being sought in Autumn 2024.
- 7.7 Once these approvals are in place Coventry can enter into a contract to construct the City Centre Demonstrator. The tender process is underway, the outcome of which will be presented to Cabinet for consideration in Autumn 2024.

8 Health Inequalities Impact

- 8.1 CVLR will be a zero-emission mode of public transport fully accessible to all once proof of concept has been achieved.

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