Public report

Cabinet report

Cabinet 12 October 2021
Council 18 October 2021

Name of Cabinet Member:
Cabinet Member for Jobs, Regeneration and Climate Change – Councillor J O'Boyle

Ward(s) affected:
City-wide

Director Approving Submission of the report:
Director of Transportation and Highways

Title: Coventry Very Light Rail

Is this a key decision?
Yes - the proposals involve financial implications in excess of £1m per annum and are likely to have a significant impact on residents or businesses two or more electoral wards in the city.

Executive Summary:

Coventry's Strategic Transport Investment Strategy 'Connecting Coventry', approved by Council in January 2017, aims to maximise the economic potential of the city through investment in transport infrastructure to support growth and jobs. It set out an ambitious £620m programme over the next ten years to improve the resilience of the road network, ensuring connectivity to job opportunities, expansion of railway capacity, including Coventry Very Light Rail (CVLR) and linking key development and employment sites.

A progress report in March 2018 provided an update on how the strategy had progressed and sought further approvals to take forward the schemes in the Strategy to delivery. A further report will be tabled at today's Cabinet to provide an update on Coventry's Transport Strategy, and to report on the City Region Sustainable Transport Settlement submission recently approved by the West Midlands Combined Authority (WMCA) for submission to Government. Crucially, this makes provision for securing funding for the CVLR project for the 2022-27 period, subject to Government approval.

This report provides a brief progress update on CVLR, a flagship project for the Council. The project is supported by Transport for West Midlands (TfWM) and has gained national and global interest. Appendix 1 outlines the VLR vision, progress to date, next steps and evidence of progress. To showcase the city's position as a world class centre for innovation, it is proposed to bring forward delivery of a City Centre CVLR Demonstrator. The CVLR team will explore the viability of delivering the infrastructure required to operate a city demonstrator between the Railway Station and Pool Meadow.

The purpose of this report is to outline the capital investment required to deliver the first route, the funding opportunities currently identified, together with the project's funding requirements for the 2021/22 financial year.

Recommendations:

Cabinet is requested to recommend that Council:

1) Approve up to £3.2m from corporate reserves to CVLR programme activities to maintain programme which is working towards a delivery of a first route for Coventry at the earliest opportunity.

2) Subject to approval of recommendation 1), delegate authority to the Director of Finance, in consultation with the Cabinet Member for Jobs, Regeneration and Climate Change, to determine the final allocation from corporate resources once the outcome of funding bids are known.

3) Delegates authority to the Director of Transportation and Highways, following consultation with the Leader of the Council and the Cabinet Member for Jobs, Regeneration and Climate Change, to finalise and negotiate the terms of, and enter into, the relevant legal agreements as well as any associated documents deemed necessary pursuant to the procurements in relation to the CVLR activities.

Council is requested to:

1) Approve the allocation of up to £3.2m corporate reserves to CVLR programme activities to maintain programme which is working towards a delivery of a first route for Coventry at the earliest opportunity.

2) Subject to approval of recommendation 1), delegate authority to the Director of Finance, in consultation with the Cabinet Member for Jobs, Regeneration and Climate Change, to determine the final allocation from corporate resources once the outcome of funding bids are known.

3) Delegate authority to the Director of Transportation and Highways, following consultation with the Leader of the Council and the Cabinet Member for Jobs, Regeneration and Climate Change, to finalise and negotiate the terms of, and enter into, the relevant legal agreements as well as any associated documents deemed necessary pursuant to the procurements in relation to the CVLR activities.

List of Appendices included:

Appendix 1: VLR vision, progress to date, next steps and evidence of progress.

Background papers:
None

Other useful documents

Council: Implementing the Devolution Agreement – Provision for Mayoral West Midlands Combined Authority 31 May, 2016
Cabinet: City Centre South 24 January, 2017
Cabinet: Connecting Coventry Strategic Transport Investment Programme 24 January, 2017
Cabinet: 2018/19 Transportation and Highway Maintenance Capital Report, 6 March 2018
Cabinet: Coventry Transport Strategy, 12 October 2021

Has it been or will it be considered by Scrutiny?

No

Has it been or will it be considered by any other Council Committee, Advisory Panel or other body?

No

Will this report go to Council?

Yes – 18 October 2021

Report title: Coventry Very Light Rail (CVLR)

1. Context (or background)

1.1 Coventry is a dynamic and rapidly growing city where transport investment is needed to keep pace with expected change. In 2004 the city's population was under 300,000. It has grown steadily since to 365,000 and is forecast to reach over 415,000 in the next 20 years. Furthermore, in the current Local Plan period up to 2031, nearly 50,000 jobs to meet the needs of our growing city will be required.

1.2 In order to make the step change in transport provision that is needed to deliver this growth and to tackle climate change it was agreed at Cabinet in January 2017 that an innovative rapid transit network is required to enable residents to access jobs, education and training opportunities across the city. None of the currently available rapid transit solutions available were deemed suitable, either on the grounds of cost or their ability to provide a real alternative to the car. From this challenge the Coventry Very Light Rail project has been developed.

1.3 CVLR is being developed as a complete solution: vehicle, track and associated infrastructure. It is being designed to fully integrate with existing transport systems and to exploit new technologies including 5G to ensure the entire journey – door to door - is provided as a seamless experience.

1.4 CVLR has the potential to generate a new manufacturing sector in the city and to provide job opportunities for local people. In conjunction with the initiatives outlined in the Coventry Transport Strategy Report, CVLR will provide excellent access for all to those, and other, job opportunities.

1.5 In March 2017 £2.4m of Growth Deal Funding was secured from Coventry and Warwickshire Local Enterprise Partnership (CWLEP) to support the Council in researching and developing a suitable light rail vehicle and also exploiting the advances in light weighting in the automotive sector pioneered by WMG at the University of Warwick.

1.6 A Strategic Outline Business Case was also submitted to the WMCA in Summer 2017 to secure further funding to initiate research into a high-quality light rapid transit system to provide the step change required in transport provision. £12.2m of a £55m Devolution Deal funding allocation was awarded in December 2017, which included a £3.6m contribution to Dudley's Very Light Rail National Innovation Centre (DVLRNIC), where the VLR vehicle and innovative track form will be tested. Both Coventry City Council and Dudley Metropolitan Borough Council are working with WMG, who are market leaders in VLR research and development, and have the necessary technical expertise to turn CVLR from concept into reality. The state-of-the-art facility at Dudley will provide an important asset to the Coventry VLR project to enable testing and evaluation to take place in a state-of-the-art research environment.

1.7 In August 2020 a further £1.8m from the Getting Building Funding was secured via the CWLEP to invest in Dudley Very Light Rail National Innovation Centre (DVLRNIC) facilities to support CVLR testing. This is due to commence on site in December 2021.

1.8 In addition to the above grants, Westfield (https://westfieldavs.com/) led a consortium bid (partnership between Westfield, Nexor, BCIMO, CCC and WMG) securing funding from Innovate UK to trial their Autonomous Control System (ACS) on the Coventry VLR prototype. The project is known as 5G – CAT (Connected Autonomous Train). This is excellent news for CVLR as it potentially enables autonomy to be brought forward earlier

than the current expectation (2035) which will improve the commercial business case significantly.

1.9 With the current secured funding of £16.4 million, the CVLR programme will achieve the following:

- a prototype vehicle which has undergone eight weeks Site Acceptance and 12 months Durability Testing
- a detailed track design with component testing complete
- feasibility work to determine the first route for Coventry, including extensive surveys, and an outline business case and economic impact assessment to support funding bid submissions
- Operations and Maintenance (O&M) input and Independent Competent Person input into the R&D via TfWM
- A retaining wall, workshop, equipment, platform and halt to support the CVLR R&D at DVLRNIC.

1.10 To date the CVLR programme has achieved the following:

- the prototype vehicle has been assembled, with remote control equipment installed on the vehicle. The vehicle is currently undergoing factory acceptance testing and will then undergo site acceptance testing at DVLRNIC.
- the track initial R&D phase is almost complete with an approved concept design, components tested at a laboratory.
- route feasibility work is underway. An invitation to tender for the first route outline design and ongoing O&M support is being prepared and is scheduled to be released subject to Cabinet/ Council approval of the recommendations in this report.
- improving the commercial case for the first route is an ongoing activity, with the outcome from an initial study to assess the commercial benefit of a first route extension to a Park and Ride at Ansty Park indicating an uplift in passenger demand for the extended service. Further route development/ commercial work is now required.
- DVLRNIC now has an operational test track, charging facilities, appropriate tools and equipment required for CVLR testing, as well as a secure workshop to host the CVLR vehicle during the testing phase.

2. Options considered and recommended proposal

Option 1 - Recommended – Commit corporate Council resources of up to £3.2m to enable the project progress to be maintained.

2.1 When WMCA approved £12.2m funding in 2017, the Council had an allocation of £55m for VLR development through the Devolution Deal at the time. In July 2019 CCC submitted a Strategic Outline Business Case to draw down a further £7.8m from the allocation, but unfortunately WMCA could not commit further funds to VLR at the time due to their cap on investment at £801m. Additional funding for VLR did not fall within the £801m allocation. Therefore, WMCA was unable to approve the £7.8m funding application and consequently, a Change Request was submitted to WMCA to reprofile the allocation to deliver the outputs currently agreed.

2.2 Consequently, it was necessary to review the programme and secure alternative funding to maintain the outstanding momentum on the project. New funding bids have been submitted totalling £93 million as detailed in Appendix 2 to the report, but to date, no further funding has yet been secured.

2.3 The current programme timescale for the first CVLR route in Coventry is late 2025, but it is currently envisaged that a City Centre Demonstrator (Rail Station to Pool Meadow) could be delivered much sooner, subject to regulatory approvals. The feasibility of delivering this first part of the route is being investigated. This would provide a great opportunity to showcase the new technology, promote CVLR and generate commercial interest in the project. It would also promote Coventry as a city of innovation thereby encouraging inward investment and promoting jobs growth. The project team are working with DfT, WMG and TfWM to develop options for delivering the City Centre Demonstrator, together with an operating strategy. Critically the demonstrator route would be able to then form part of any future route between the railway station and city centre.

2.4 The total capital investment cost of the scheme (including spend to date) through to implementation of the first route is currently estimated to be approximately £140 million.

2.5 The existing secure CVLR funding of £16.4 million is either spent or committed as illustrated by Table 1 below:

Table 1 summary table of funding bid for, secured/committed, unsecured and spend to date

Funding Application	**Secured and Committed**	**Unsecured**	**Spend to Date**
Growth Deal R&D Phase 1	£2,460,000		£2,460,000
WMCA R&D Phase 1	£12,204,821		£10,669,065
Getting Building Fund	£1,765,800		£915,064
LUF		£3,200,000	
CRSTS R&D and Consenting Phase 2		£26,800,000	
CRSTS First Route Delivery Phase 3		£63,000,000	
Total	**£16,430,975**	**£93,000,000**	**£14,044,129**

2.6 The outcome of the Levelling up Fund bid is expected to be known imminently, however the outcome of the CRSTS bid is not expected to be known until March 2022.

2.7 Funding of £3.172 million is essential in 2021/22 to deliver the following activities as summarised below

- enable progression of the business and commercial case for the first route
- enable the procurement of the Outline Design Concept and Operations and Maintenance input for the first route
- progression of the track workstream to enable Test Track facilities of the new track design to be procured and constructed. It is anticipated the £1.7m allocated to R&D will enable test track facilities to be inserted into the loop at DVLRNIC to enable integrated system testing and cornering trials to take place. Further test facilities will be constructed across the entrance to Whitley depot to assess the impact of HGV movements on the track.

2.8 The Council currently have applications for grant funding to support CVLR activities, the outcome of such bids are still to be known. .

2.9 The recommended approach is to approve the funding so that momentum can be maintained and the benefits for Coventry and beyond are realised at the earliest opportunity.

Option 2 – Do not commit Council resources and wait for external resource to become available

2.10 It has been considered whether the project could be paused until the outcome of funding bids is known. However, this option is not recommended for the following reasons:

- the programme and benefits from the scheme will be delayed
- key personnel will be lost
- critical information will not be available to support the R&D
- Coventry and the West Midlands will lose the benefits (including supporting the Industrial Strategy) arising from developing the technology in the region
- Coventry and the West Midlands could lose its position as Leaders of the urban VLR R&D programme
- significant costs would be incurred for remobilisation at a later time.

3. Results of consultation undertaken

3.1 If the 2023 City Centre Demonstrator is deemed feasible, a public engagement event will take place in 2022, with formal consultation to follow as part of the Transport and Works Act Order process required for the full first route delivery.

4. Timetable for implementing this decision

4.1 Subject to approval, activities required to continue to deliver the CVLR Programme will be implemented immediately upon approval. The first activity being the release of the invitation to tender for the outline design concept. This will be followed by a programme of activity to enable test track facilities to be constructed at the earliest opportunity to progress the R&D programme.

5. Comments from Director of Finance and Director of Law and Governance

5.1 Financial implications

5.1.1 The required capital investment cost through to the delivery of the first route is estimated at £140m. Of this, £16.4m has been secured and committed from a combination of the CWLEP and the WMCA. Further funding bids of £93m have been submitted.

5.1.2 The outcome of funding bids will be known this year and in March 2022

5.1.3 There is a requirement to commit up to £3.2m imminently to maintain momentum.

5.1.4 The corporate contribution if approved will be put forward as part of the minimum 15% match required for City Region Sustainable Transport Settlement bid submission. This would improve the chances of a successful outcome of the regional bid, within which CVLR is one of the highest priorities.

5.2 Legal implications

The project team delivering CVLR will work alongside legal team to ensure compliance and mitigation of any legal risks associated with this report.

On approval of funding, procurement at appropriate stages of scheme development, consultancy support and construction will be let in line with both the Councils Rules for Contracts and the Public Contract Regulations 2015, in close consultation with the Council's Procurement Services with approval being reviewed by Place and Corporate Procurement Panel and Procurement Board at the necessary financial values.

6. Other implications

6.1 How will this contribute to the Council Plan (www.coventry.gov.uk/councilplan/)?

CVLR contributes to the Council Plan by addressing the Council's core aims;

- Economic prosperity – the Council is working to establish the city and wider region as a world-class business investment location by supporting urban public transport connectivity, developing significant supply chain opportunities and providing a focus for driving up skill levels, by focusing on the development of VLR technology in the UK. Furthermore, the CVLR scheme is anticipated to accelerate proposed development within the corridor.

- Tackling inequalities – CVLR will provide enhanced access to opportunities within the defined CVLR corridor, as well as across other parts of Coventry via public transport interchange.

- Improving Accessibility - the aim of CVLR is to connect areas of high travel demand at either end of a route; as well as serving the primary nodes along the corridor. This will therefore enhance accessibility to jobs and education and improve accessibility to health care.

- Tackling Climate Change - VLR will help address the 'Net Zero' target for transport, as it is zero emission at point of use and will be an attractive public transport mode to encourage modal shift.

6.2 How is risk being managed?

A robust governance structure is in place to manage risk. A programme risk register is established which highlights key risks and put in place appropriate mitigation.

6.3 What is the impact on the organisation?

Coventry City Council requires a CVLR Team dedicated to the delivery of CVLR. Once this has been achieved, the Council could potentially license the CVLR system and expertise to other councils nationally and internationally. This is a marketable commodity which could generate future revenue income for the Council.

6.4 Equality Impact Assessment (EIA)

The CVLR Programme will improve economic outcomes and transport in the area. No adverse impact on any group protected under the Equalities Act is anticipated in this decision.

6.5 Implications for (or impact on) climate change and the environment

CVLR has significant advantages over conventional public transport systems:

- there are no tailpipe emissions, and no brake and rubber dust (as a result of steel wheel on rail) and therefore all point of use transport emissions are eliminated

- there is no visually intrusive (and expensive) overhead line equipment (as there is with conventional light rail)
- CVLR will be a very quiet mode of travel; and will be much better than other solutions in terms of noise emissions
- its permanence of way provides users with confidence that the transport provision will be long term and therefore encourages modal shift

As CVLR will reduce levels of demand for car travel, there are likely to be significant environmental benefits associated with a lower number of vehicles and the mitigation of congestion (when emissions are significantly higher than free-flow conditions).

6.6 Implications for partner organisations?

Coventry City Council will work closely with Transport for West Midlands through scheme development and delivery.

Coventry City Council is also working with a number of other partners including Dudley Metropolitan Borough Council, WMG at the University of Warwick and the Black Country Manufacturing Organisation (BCIMO); the legal entity managing DVLRNIC.

The partner organisations and the region is set to benefit from the CVLR programme as follows;

- high value training, apprenticeship and job opportunities in the West Midlands – associated with design, construction and information technology
- innovative Research & Development capability for light rapid transit, which can be exported to other areas of the UK and abroad
- a substantially lower cost system, that is capable of moving large numbers of people (potentially up to 1,200 per hour)
- new technologies – including the potential for autonomous operation for either the “last mile” or even the whole route
- an affordable and flexible system which can be implemented in areas where passenger demand is lower than can be supported by conventional trams (e.g. Midland Metro)
- reduced levels of traffic congestion within the West Midlands by offering a high-quality public transport alternative to the car
- A low emission environmentally friendly form of mass transit – with no tailpipe emissions or visually intrusive overhead line equipment
- High density development along urban VLR corridors and around stops

Report author(s):

Name and job title:
Colin Knight
Director of Transport and Highways

Service:
Transportation and Highways

Tel and email contact:
Email: Colin.Knight@coventry.gov.uk
Tel: 024 7683 4001

Enquiries should be directed to the above person.

Contributor/approver name	Title	Service	Date doc sent out	Date response received or approved
Contributors:				
John Seddon	Head of Transport and Innovation	Transportation and Highways	13.9.21	15.9.21
Nicola Small	Senior Programme Manager	Transportation and Highways	14.9.21	15.9.21
Michelle Salmon	Governance Services Officer	Law and Governance	15.9.21	15.9.21
Gurbinder Singh Sangha	Corporate and Commercial Lead Lawyer	Law and Governance	13.9.21	15.9.21
Helen Williamson	Lead Accountant	Finance	13.9.21	15.9.21
Names of approvers for submission: (officers and members)				
Phil Helm	Finance Manager	Finance	15.9.21	21.9.21
Oluremi Aremu	Major Projects Lead Lawyer	Law and Governance	15.9.21	22.9.21
Colin Knight	Director of Transportation and Highways	-	13.9.21	15.9.21
Councillor J O'Boyle	Cabinet Member, Jobs, Regeneration and Climate Change	-	15.9.21	21.9.21

This report is published on the council's website: www.coventry.gov.uk/councilmeetings

Appendix 1: VLR Vision and Progress to Date

Coventry City Council (CCC) and Dudley Metropolitan Borough Council (DMBC) are collaborating to help establish the West Midlands as a world-class business investment location by supporting urban public transport connectivity, developing significant supply chain opportunities and providing a focus for driving up skill levels, focusing on the development of Very Light Rail (VLR) technology in the UK.

Coventry Programme: The Coventry VLR programme, which has secured £16.4m to date[1], will:

- Use the latest innovations in the regional automotive sector to create a very light weight mass transport rail solution, comprising a state-of-the-art vehicle and innovative track system that is relatively simple and cost-effective to construct (cost per kilometre of c.£10million).
- Deliver a first route for Coventry linking the Rail Station, City Centre, and University Hospital, with an operational section in place by late 2025.
- Develop an integrated VLR system blueprint that will be commercially available to other towns and cities across the UK and globally.

Dudley Programme: The Dudley programme, which has secured £24m to date, will deliver a new, national innovation centre and test track facilities at Castle Hill, in Dudley. Launch and operation of the new centre will be undertaken by the newly formed Black Country Innovative Manufacturing Organisation (BCIMO).
The primary aim of the innovation centre is to facilitate the manufacturing supply chain and market development for integrated VLR systems, using the Coventry VLR system as a blueprint for the urban market, through:

- Applied R&D to help progress the 'building blocks' of VLR systems from low to high Technology Readiness Level (TRL) and Manufacturing Readiness Level (MRL), accelerating technology development and the realisation of VLR's potential.
- The creation of a vibrant UK manufacturing supply chain for VLR technologies (powertrain, vehicle and supporting infrastructure, including track, power transfer and signalling) safeguarding jobs and enabling economic growth within the Black Country and the West Midlands.
- Catalysing market development to ensure the spread of VLR systems across the UK and overseas, to include the transfer of VLR technology to lower the cost of more conventional rail operations.

There are significant benefits through the combined Coventry VLR and Dudley programmes, which are captured in an Economic Impact Assessment. In brief, the benefits are as follows:

- A low emission environmentally friendly form of mass transit as part of an integrated Future Mobility solution. Battery-powered, with no tailpipe emissions or costly overhead power lines.
- High value training and job opportunities in the West Midlands and UK – associated with design, construction, and information technology.
- Innovative R&D capability for light rapid transit, which can be commercially exported to other areas of the UK and abroad.
- New technologies – including the potential for autonomous operation and development of complementary "last mile" solutions.

[1] Funding secured via Coventry and Warwickshire (C&W) LEP (£2.46m Growth Deal) West Midlands Combined Authority (WMCA) (£12.2m Devolution Deal) and CWLEP (£1.8m Getting Building Fund). The outstanding funding required to deliver the programme is detailed on page 5 of the West Midlands Recovery Plan: https://www.wmca.org.uk/media/3975/west-midlands-economic-recovery-our-ask-and-offer-hd-spreads.pdf

- Reduced levels of traffic congestion across the UK where VLR is implemented, by offering a high-quality affordable public transport alternative to the car.

CVLR Progress (as of 13/9/2021)

Coventry Vehicle Progress:

- WMG leading the vehicle design, together with their partners Transport Design International.
- Manufacture of the demonstrator vehicle commenced July 2020 at the build site, NP Aerospace.
- Significant progress has been made on vehicle assembly, with Factory Acceptance testing underway.

Next actions include:

- Completion and factory acceptance testing of the demonstrator vehicle in late 2021.
- Site acceptance testing of the demonstrator vehicle at Dudley from December 2021. This will use the centre's test track 1 (TT1) facility. Testing will evaluate acceleration, cruising, braking and endurance, as well as the vehicle's cornering behaviour, including noise and vibration, on tight 15m radius curves.

Coventry Track Progress:

- WMG leading Track R&D project, together with their partners Ingerop/Rendel.
- Design concept has been selected and slabs have been manufactured at the School of Engineering at the University of Warwick.
- Laboratory testing of component parts is underway

Next actions include:

- The manufacture of additional slabs for Test Track facilities
- Securing funding to build Test Track facilities

Dudley National Innovation Centre Progress:

- BCIMO was launched in September 2020
- Trackwork, contractor for the construction of test track 1 (TT1), commenced on site in June 2020 and construction of TT1 and including loop is complete. The Test Track comprises a 2.2km conventional ballasted track which can carry any type of rail vehicle (heavy, light or very light) and 15m radius loop to allow for Coventry vehicle cornering trials.
- Glegg Construction, contractor for the construction of the centre, commenced on site in October 2020 and remains underway. The facilities will include a triple-height engineering hall, research laboratories, conference and seminar rooms, and offices for 45 people, alongside exhibition spaces and an auditorium.
- DMBC and CCC worked in partnership to secure Getting Building Funding for the VLR project, part of which has funded the workshop to house the Coventry vehicle during the testing period and Capital Equipment required by the project.

Next actions include:

- Centre build to complete March 2022.
- Ongoing negotiations with DfT for the remaining funding for operation costs for the BCIMO.

Photos (March 2021)

Coventry Vehicle Assembly:

Prototype Supply Chain (*67% of material spend in the UK):