
Report to: Transport Committee

Date: 13 March 2020

Subject: **Leeds City Region Mass Transit**

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Is this a key decision?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is the decision eligible for call-in by Scrutiny?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Does the report contain confidential or exempt information or appendices?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If relevant, state paragraph number of Schedule 12A, Local Government Act 1972, Part 1:	

1. Purpose of this report

- 1.1. On the 6 February 2020, the Combined Authority endorsed a report which provided an update on Leeds City Region Mass Transit. The purpose of this report to Transport Committee is to:
- Note the conclusions of the advanced urban transit market testing into Mass Transit 21st Century technologies.
 - Note that following the endorsement by the Combined Authority, early preparatory work to plan for mass transit across the Leeds City Region continues.

2. Information

- 2.1. To support the development of the emerging connectivity strategy and investment programme, Transport Committee considered a report in November 2018 which opened a conversation about how mass/urban transit could play a role in meeting the future needs of the region. The paper outlined how mass transit can support the region's aims of raising productivity,

delivering inclusive growth, and addressing the climate emergency through clean growth, all of which are underpinned by a 21st Century transport system.

- 2.2. The emerging connectivity plan is set in the context of the Combined Authority's adopted West Yorkshire Transport Strategy 2040 and focusses on West Yorkshire, but also talks to both the Leeds City Region and Transport for the North agendas. In addition to the development work for mass transit, the connectivity plan will also bring together and integrate the inputs from a range of workstreams, which include, the Leeds City Region HS2 Growth Strategy, Local Cycling and Walking Investment Plan, West Yorkshire District Bus Network Reviews, Future Mobility Strategy, Transforming Cities Fund submissions, as well as the rail connectivity vision.
- 2.3. The National Infrastructure Commission are providing expert challenge to help the Combined Authority develop the new connectivity plan, which will inform funding asks to government for transport improvements in the city regions.

Latest Position regarding Mass Transit

- 2.4. Mass transit also continues to be regularly reported in the press. Mass transit for this region was highlighted as a key Conservative manifesto pledge, as well as being supported by Labour and the Liberal Democrats in the recent general election. The Conservatives also announced in December a £4.2 billion fund for mass transit¹, which referenced the Leeds City Region as a potential beneficiary. The Combined Authority February 2020 paper² provides further background, context and information around the work to date.
- 2.5. With announcements possible around future funding of mass transit, an update on the latest position will be provided at the Transport Committee meeting.

Advanced Urban Transit Technologies: Market Testing / Call for Evidence

- 2.6. The market testing has been a key tool to establish the views of industry about how mass transit technologies are anticipated to change by the late 2020s/early 2030s.
- 2.7. The feedback received will help the Combined Authority develop/design an advanced urban transit system which is best in class, to ensure the system meets the region's priorities of raising productivity, delivering clean and inclusive growth and delivering a 21st century transport system.
- 2.8. The market testing is also a key milestone in ensuring the private sector is influencing from the earliest stages the design and scope of any transit scheme in the region. It is being undertaken in partnership with Universities of Leeds and Huddersfield (who are experts in this field) and is targeted towards

¹ <https://www.bbc.co.uk/news/election-2019-50651235>

² <https://westyorkshire.moderngov.co.uk/documents/s14791/Item%2011%20-%20Leeds%20City%20Region%20Mass%20Transit.pdf>

all promoters, manufacturers, suppliers, constructors, engineers, system developers and operators of urban transit systems from across the world.

- 2.9. Following consideration by Transport Committee and LEP Board, a market testing prospectus was published in August 2019 on the Combined Authority website and posed a range of discussion questions, for example including:
- Whether new Urban Transit systems should be designed for autonomous vehicle operation?
 - The skills programmes which are required to be in place to maximise the opportunity around development and delivery of an Urban Transit system?
 - The prospects of delivering a zero emission system (such as hydrogen or battery power operation) to help address climate change?
 - The opportunities for inward investment and the scale of Urban Transit system which would be required in Leeds City Region for a manufacturer to set up a new assembly or manufacturing base for Urban Transit vehicles in this region?
- 2.10. Around 120 organisations are taking part in the market testing, from sectors including monorail/pod/bus/tram/train manufacturers and operators and consultancies as well as interested stakeholder groups. Organisations from across the world are taking part and have provided responses.
- 2.11. The Combined Authority in February 2020 noted that the full feedback would be reported to the March 2020 Transport Committee meeting.
- 2.12. The full market testing response document is now available for discussion through the Combined Authority website³. The report solely summarises the points made by the respondents. The key messages received and highlighted in the market testing report published on the website include:

Propulsion Technologies

- In the short to medium term, respondents suggest battery technologies are likely to be the most viable option, and it is increasingly realistic to plan for end-to-end systems which do not require overhead wires for many routes. However, care needs to be given in the planning stages to ensure detailed consideration is given regarding provision of overhead wires as it still provides an effective, proven technology and contributors suggest that it may have other advantages such as reducing carbon and reducing cost.
- Responses suggested that Hydrogen is at the early stages of being utilised in mass transit systems and it is a possible solution, if (a) it is readily available as a by-product of industry (b) Hydrogen does not need transporting to the mass transit vehicle depot (c) if costs of producing/using Hydrogen can be addressed. Unless there is a really significant change in Central Government policy, the challenges

³ <https://www.westyorks-ca.gov.uk/urban-transit/>

associated with hydrogen will continue to present a significant barrier to it becoming a realistic solution over the next decade.

Autonomously Operated Mass Transit Systems

- Transit technologies already exist for autonomous operations, but only in a fully segregated environment (for example, Docklands Light Railway)
- Respondees suggest that transit systems which require some interface with cars/pedestrians are very likely to move towards greater autonomy (through provision of driver aids) but the vehicle will continue to require a driver over the next decade due to standards, safety and certification challenges. Legislation could change, but there remain challenges over acceptability.
- It was also suggested that autonomous cars are not a solution to relieving congestion - they are likely to make congestion worse. It is important to plan for these possible eventualities and put in place management systems which address any possible negative impacts on mass transit's ability to alleviate congestion.
- Several technology and manufacturer contributors suggested that with 5G technology there is the opportunity over the next decade for the mass transit vehicle to be driven/controlled by a driver located in a control centre, rather than in the vehicle cab. This would potentially save on numbers of drivers required but there remain significant safety certification challenges which would need to be addressed.

Mass Transit and addressing the Climate Emergency

- Almost all respondents highlighted that Mass Transit is a small part of the overall solution to addressing the climate emergency. Regardless of how much mass transit is provided, responses strongly suggested that meaningfully managing down car demand is essential to any impact on reducing congestion, cutting carbon and improving air quality.
- Industry was keen to highlight that regardless of whether a tram, bus or other type of vehicle solution is provided, many responses said it is essential that the transit solution is separated (or 'segregated') from general car traffic. It is this separation from general car traffic which will deliver the journey reliability and faster journey times which is required for the system to provide a realistic alternative to the car.
- As part of an integrated transport strategy, respondents suggested that bus, light rail and heavy rail all have an important role. The choice between modes is dependent on level of capacity required and the ambitions of the region. Many of the respondents highlighted that almost all major cities with comparable populations are said to be investing in a combination of bus, bus rapid transit and light rail to help address climate change.
- Passenger taste/demand will continue to change faster than assets are renewed, so respondents suggest it is essential to build in flexibility and redundancy (e.g. to extreme weather, which in future may be normal).

- 2.13. A range of other key messages are highlighted in the full document which is on the website⁴. Respondee also advised to avoid the temptation to innovate for innovations sake – ‘don’t reinvent the wheel’. It was suggested to look to purchase an existing bus or light rail chassis which can be ‘customised’ to meet local needs (for example the design of the front end, colours, seat layout).

Next Steps

- 2.14. The evidence and opinions received through the market testing report will be used to inform and shape the vehicle technologies considered in the transit Strategic Outline Business Case which is currently in development. As the business case develops, the next steps would include engagement with local communities to consider the best routes and the blend of transit technologies (which could include bus rapid transit and light rail/tram) that are best required to meet their needs.
- 2.15. Further reports ahead of any engagement will be brought to the Transport Committee in the coming months.

3. Clean Growth Implications

- 3.1. A net zero carbon advanced mass transit system for West Yorkshire will need to help address the climate emergency and improve air quality, through:
- Utilising zero emission at source vehicles, powered by green electricity
 - Being designed to reduce road space for cars, coupled with disincentivising car trips into dense urban areas
 - Integrated with rail, and bus to encourage mode shift from car

4. Inclusive Growth Implications

- 4.1. An inclusive and advanced mass transit system would be:
- Integrated public transport: buses & ‘uber type vehicles’ feed mass transit, rather than compete against it
 - 100% accessible: can be used by disabled people, buggy users, cyclists etc
 - Open every day, serving communities of greatest economic need across the region.
 - A high capacity transit system: so everyone who needs to get to work can do so in comfort
 - Inclusive and affordable: could have more innovative fare options – but beyond farebox, has to be paid for through other sources of revenue

5. Financial Implications

- 5.1. There are no direct financial implications from the report, but to note that mass transit is anticipated to be high cost but also deliver high value for the region.

⁴ <https://www.westyorks-ca.gov.uk/urban-transit/>

- 5.2. Paragraph 2.5 sets out that funding for development work is required from Central Government in order to accelerate delivery of the Mass Transit proposals.

6. Legal Implications

- 6.1. The market testing is being undertaken through a formal procurement process called a 'prior information notice' ('PIN'). This ensures a level playing field for all industry suppliers. However, the market testing should not be viewed as a procurement; it is an opportunity for the Combined Authority and its partners to talk with industry to develop and design an advanced urban transit system.

7. Staffing Implications

- 7.1. Mass transit is continuing to be developed by the Transport Policy team within the Combined Authority, with support from district partners.

8. External Consultees

- 8.1. Subject to endorsement from the Combined Authority, public engagement on mass transit is proposed to take place during 2020. A further report is proposed to be brought to both Transport Committee and the Combined Authority regarding engagement around Mass Transit.

9. Recommendations

- 9.1. Transport Committee notes the emerging conclusions from the advanced urban transit market testing.
- 9.2. Transport Committee notes that the Combined Authority endorsed further early preparatory works be undertaken to plan for mass transit across the Leeds City Region.

10. Background Documents

6 February 2020: West Yorkshire Combined Authority – “Leeds City Region Mass Transit”: Agenda Item 11:

<https://westyorkshire.moderngov.co.uk/ieListDocuments.aspx?CId=133&MId=837&Ver=4>

11. Appendices

None