This report seeks approval for a new Metro and Local Rail Strategy; summarises the outline business cases for Metro fleet renewal and continuation of essential renewal of the Metro infrastructure; sets out the key features of the draft specification for new Metro fleet; and considers the broad options for future operating arrangements to deliver the Metro system.

RECOMMENDATIONS

It is recommended that the Committee:

a) Approves the proposed ‘Metro and Local Rail Strategy’;

b) Adopts the outline business cases for the replacement of the Metrocar fleet and associated infrastructure, and for the programme of essential renewal of the Metro infrastructure; and

c) Notes progress towards the development of a specification for the new Metrocars, along with the identification of future operating models.
1. **Background Information**

1.1 The North East Devolution Agreement commits to:

“The Combined Authority producing a business case, for consideration by Government, for investment in the Metro network to 2030, including the upgrade of the Metro fleet, potential expansion, and future integration of the Metro with the rail network”.

2. **Metro and Local Rail Strategy**

2.1 At its meeting on 17 May 2016 the Leadership Board approved the objectives of a new Metro and Local Rail Strategy. These are:

(a) To provide Metro and Local Rail services that are reliable, accessible and comfortable with high levels of customer satisfaction, within available resources;

(b) To grow the Metro and Local Rail network and their modal share as part of an integrated public transport network; and

(c) To achieve value for money.

2.2 The Metro and Local Rail Strategy considers the future expansion of rail services in the North East by combining the Metro system with Local Rail services, and operation over a more extensive network of local railway lines. It also sets the context for the current investment need in the Metro system, including a new fleet of trains and arrangements for operating them, and continuation of the programme of essential asset renewals.

2.3 The new Metro fleet is a key enabler of longer-term ambitions for expansion. This is because the current fleet can only operate where lines are electrified to 1500V DC (i.e. the current Metro network), and requires a method of signalling protection between Sunderland and Pelaw that constrains Network Rail’s line speeds and capacity. Nexus plans to specify a more versatile fleet for the future to overcome these limitations.

2.4 Nexus has recently produced a brochure entitled ‘Metrofutures: the combined future of Metro and local rail in the North East’, as a prelude to the strategy. The brochure was developed in consultation with Heads of Transport from all seven constituent councils.

2.5 This brochure is attached at Appendix A. The full strategy expands on the contents of the brochure and is available to view at: [www.nexus.org.uk/businesscases](http://www.nexus.org.uk/businesscases).
The Leadership Board is recommended to approve this strategy and to use to guide further development of local rail services. Should that approval be granted, officers will carry out further work regarding the identification of suitable options for expansion in liaison with local planners, and will commission feasibility and economic appraisal work.

The Transport North East Committee (TNEC) will be invited to review the proposed strategy at its meeting on 15th July, and feedback from TNEC will be provided verbally to the Leadership Board at its meeting.

Outline business cases

Outline business cases have been developed for the replacement of the Metrocar fleet and associated infrastructure, along with the continuation of funding for essential renewal of the Metro infrastructure. The outline business cases set out the strategic importance that Metro plays within the region and make the argument that without investment the system will begin to fail, with negative impacts on the local economy and the NECA’s objectives.

For fleet replacement there is an investment need of an estimated £536.7m to cover the cost of a new fleet and upgrading associated infrastructure. As well as improved reliability and an upgraded passenger environment, this will allow the benefits of regenerative braking to be realised together with the provision of new depot facilities in order to allow more efficient and effective maintenance regimes to be implemented.

For the essential renewal of the Metro infrastructure there is an investment need of an estimated £518.5m over 15 years, although it should be noted that 37% of this relates to new signalling, necessary to allow the safe movement of trains across the network.

Economic appraisal work indicates initial adjusted benefit-to-cost ratios (BCRs) of 2.22 for fleet renewal, and 6.09 for the essential renewal of the Metro infrastructure. Both of these BCRs are considered to represent high value for money.

An executive summary of the outline business cases can be found at Appendix B, and the strategic outline business cases themselves can be viewed at www.nexus.org.uk/businesscases.

The Leadership Board is recommended to adopt these outline business cases. If that is the case the government will be formally provided with the outline business cases and asked to respond to them. Nexus will then work with the Department for Transport (DfT) to produce final business cases with a view to achieving a high level of understanding over funding options for fleet replacement and essential renewals by December 2016.
4. **Metrocar Fleet Specification**

4.1 Work has commenced on the development of a specification for the new fleet. In December 2014 consultants were appointed to develop a high level specification which takes account of the unique nature of the Metro system, such as the voltage used for traction energy, the height of tunnels and bridges, weight restrictions that are placed on some structures and the alignment of the track which in places exhibits tight bends and curves.

4.2 The intention is that the Metrocars will continue to draw traction energy using the current 1500V DC system, but will be ‘future proofed’ with dual voltage capability to allow operations at 25kV AC (the common form of overhead electric traction on Network Rail’s system).

4.3 The fleet will remain ‘high floor’ and will meet Rail Vehicle Accessibility Regulations (RVAR) for the ‘step-gap’ between the platform and the train. The trains will be designed to meet Network Rail’s crashworthiness standards to operate between Pelaw and South Hylton, and this is likely to include a driver’s cab which spans the full width of the Metrocar.

4.4 Whereas today’s Metrocars normally operate in pairs with no ability for passengers or staff to move between the two cars, it is possible that in future the train will be connected by open gangways from end to end. This is a common feature in modern ‘Metro’-style rolling stock, and can increase perceptions of security and comfort.

4.5 Subject to achievement of funding for the upgrading of overhead line equipment and electrical sub-stations, it is also proposed that the new fleet should benefit from regenerative braking. This allows waste energy generated when braking to be recycled into traction energy, thus reducing operational costs and improving Metro’s environmental credentials.

4.6 The specification can be viewed at [www.nexus.org.uk/businesscases](http://www.nexus.org.uk/businesscases), and will be further developed over the next few months and will be subject to a consultation in the autumn where the public will be asked for their views on design options such as temperature, accessibility requirements, safety and security features, seating configuration and luggage (and bicycle) storage space.

4.7 The supply market, in particular train manufacturers and operators, will also be asked to input into development of the specification in order to benefit from experience elsewhere in the world, which has the potential to reduce production costs and increase innovation.
5. Operating model

5.1 The current concession agreement with DB Regio Tyne and Wear Limited will end on 31 March 2017, after which all aspects of the Metro’s operation will be performed directly by Nexus until March 2019. In order to deliver Metro services in future, Nexus is focusing on two broad options for future operating arrangements from 2019:-

- A ‘design, build and maintain’ arrangement with a rolling stock manufacturer, with all other functions delivered by Nexus; and
- An arrangement with a train operating company through which rolling stock is supplied, maintained and operated.

5.2 The guiding principle that Nexus has used in order to reach these options, is that, rather than adopting any existing pre-determined template for an operating model, the public and private sectors should each carry out the activity that they are best placed to perform. Nexus has carried out a review of the operation of the Metro system using its own experience in order to reach these two options. There are however likely to be variations on the above options, and potentially wholly new options that should be considered.

5.3 It is intended that engagement with interested parties (including the supply market, Metro’s workforce, and the government) will take place over the remainder of this calendar year, in order to help inform these and other options for the shape of the future operating model. The way in which funding is secured both for the replacement of the fleet and to underpin future operations will have a significant influence.

5.4 The final decision over the shape of the future operating model, along with the scope of any related future contractual arrangements will be for the Leadership Board to take.

6. Next Steps

6.1 The government will be formally provided with the outline business cases and asked to respond to them. Nexus then will work with the Department for Transport (DfT) to produce final business cases with a view to achieving a high level of understanding over funding options for fleet replacement and essential renewals by December 2016.

6.2 Consultation with passengers, stakeholders and the market will take place over coming months to help inform the development of the fleet specification.

6.3 Engagement with interested parties (including the supply market, Metro’s workforce, and the government) will take place over the remainder of this
calendar year, in order to help determine the shape of the future operating model.

7. Potential Impact on Objectives

7.1 The Metro and Local Rail Strategy, and the business cases for investment to deliver aspects of it, support the priorities set out in the Strategic Economic Plan and the North East Devolution deal.

7.2 The strategy and business cases further develop NECA’s objectives for Metro and local rail as set out in the Transport Manifesto “Our Journey – A 20 year Transport Manifesto for the North East”, in particular the section entitled “Local Rail and Metro – driving economic growth”.

7.3 The Metro and Local Rail strategy is designed to achieve a wide range of objectives by improving local connectivity to generate economic growth and improve equality of opportunity, as well as achieving modal shift to sustainable transport choices.

8. Finance and Other Resources

8.1 Taken together, the outline business cases require a significant package of investment in the order of £1bn in the Metro system through to 2035. Around two-thirds of this investment is to replace significant assets i.e. the trains and the signalling system, both of which will be in excess of forty years old at the time of their replacement and therefore well beyond their intended design life.

8.2 Whilst significant financial support is sought from central government, at this point in time it is unclear how much the government is prepared to commit to. However both outline business cases exhibit strong, positive benefit-to-cost ratios and represent high value for money.

8.3 It is likely that a local funding contribution will be required, but the extent to which this will be required is not clear at this stage in discussions with DfT. Various scenarios will need to be investigated, including the scope for private sector investment, capital contributions from the Single Pot devolution fund, as well as the potential for creating headroom in Metro’s operational budget in order to service debt charges and/or other forms of investment.

8.4 Further updates will be provided as negotiations with DfT progress. The submission of the outline business cases is the start of this process.

9 Legal

9.1 Aspects of the Metrocar specification will be governed by legislative and regulatory requirements and rail standards which pertain to the operation of a rail system.
Consultation with the rolling stock supply market and train operating companies will formally commence over the summer to help inform the specification.

A formal period of public consultation on the specification will take place in the autumn, and will include passengers, Trades unions, and other relevant stakeholders.

The Metro and Local Rail strategy has built on previous work carried out for the ‘Metro 2030 Strategy’, which involved public consultation.

There are no human rights impacts of this report.

The new fleet of Metrocars will be compliant with the Rail Vehicle Accessibility Regulations 2010 (RVAR).

There are significant risks associated with not progressing this work. Work undertaken by SNC Lavalin (formally Interfleet) suggested without significant investment the current fleet of Metrocars would be unable to operate the peak service by 2021, with declines in service provision thereafter. Additionally assessments undertaken by Nexus indicate that without investment in track and signalling, speed restrictions would need to be introduced in early 2020’s with partial closures of sections of Metro in the mid-2020s.

The level of local funding required to support this work is currently unclear and may have implications on other Nexus/NECA budgets.

Management of risk for both projects will be in accordance with Nexus established risk management processes. Nexus corporate risk register is considered quarterly by the Tyne and Wear Sub-Committee.
10.5 **Crime and Disorder**

Aspects such as CCTV and other safety interventions will be incorporated as appropriate into the Metrocar specification to assist in limiting crime and disorder on the Metro network.

10.6 **Environment and Sustainability**

Subject to funding the new fleet of Metrocars will be able to achieve greater energy efficiency through exploiting regenerative braking capabilities common on new fleets.

11 **Background Documents**

The outline business cases referred to in this report can be found at [www.nexus.org.uk/businesscases](http://www.nexus.org.uk/businesscases)

12 **Links to Plans in the Policy Framework**

These outline business cases reflect priorities set out in the Transport Manifesto and the Strategic Economic Plan.

13 **Appendices**

Appendix A: Metrofutures brochure

Appendix B: Executive Summary of Outline Business Cases

14 **Contact Officers**

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15 **Sign off**

- Head of Paid Service
- Monitoring Officer
- Chief Finance Officer

Use ✓