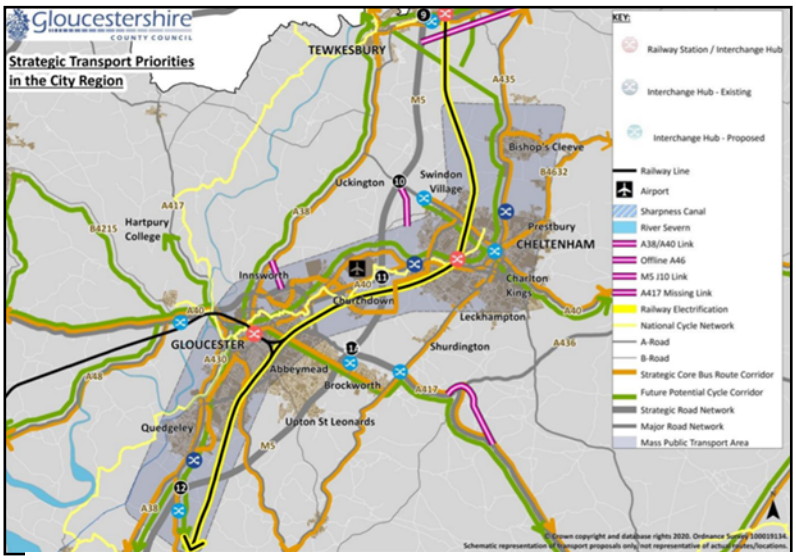
Gloucestershire Economic Growth Scrutiny Committee	
Report Title:	Mass Rapid Transit update
Meeting Date:	21 July 2022
Chair:	Cllr Matt Babbage
Presenting Officer:	Luisa Senft-Hayward, Transport Planning Team Leader
Purpose of Report:	To consider the work undertaken to date, in terms of developing the case for supporting transport decarbonisation through mass rapid transit.
Planned Dates	Options Appraisal Report – July 2023 Strategic Outline Case – c.July 2024
Background documents:	Adopted Gloucestershire Local Transport Plan (LTP) (2020-2041) https://www.gloucestershire.gov.uk/transport/gloucestershires-local-transport-plan-2020-2041/gloucestershire-ltp-2020-2041/ Gloucestershire's Climate Change Strategy https://www.gloucestershire.gov.uk/planning-and-environment/climate-change/greener-gloucestershire-climate-action/our-vision/gloucestershires-climate-change-strategy/ Gloucestershire Bus Service Improvement Plan gcc-bsip-final-2910-accessible.pdf (gloucestershire.gov.uk)
Appendices	*n/a*
Recommendations	To note the clear need to decarbonise transport in Gloucestershire, and the central role of a Mass Rapid Transit system to achieve the modal shift to public transport required to meet Gloucestershire's carbon reduction targets.

1. Background

1.1 Mass transit refers to new types of urban-specific transportation, including bus rapid transit (BRT), light rail transit (most commonly trams) and very/ultra-light rail. These are all (mostly) segregated transport systems designed for urban areas. They are relatively inexpensive compared to constructing heavy rail lines but are more efficient/reliable and are designed to transport greater numbers of people than standard bus services.

1.2 The need for a mass transit system in Central Gloucestershire was identified in Gloucestershire's draft Industrial Strategy (2019) and further developed in Gloucestershire's Transport Plan (2021), which also identified a potential Mass Public Transit Area, and the recently published Gloucestershire Bus Service Improvement Plan (BSIP).



Gloucestershire's Local Transport Plan 2041: Strategic Transport Priorities in the Cheltenham and Gloucester City Region

1.3 Since then, Gloucestershire County Council have undertaken a pre-feasibility study, and a feasibility study (both at GCC cost). These have provided a foundation on which to build future development stages for a mass transit system. These also provided evidence that it was worth pursuing further stages, and hence GCC applied for funding from GEGJC to support the Options Appraisal Report (OAR) and Strategic Outline Case (SOC). These are required core steps in delivering any transport scheme, as part of the DfT's WebTAG (Transport Appraisal Guidance) process.

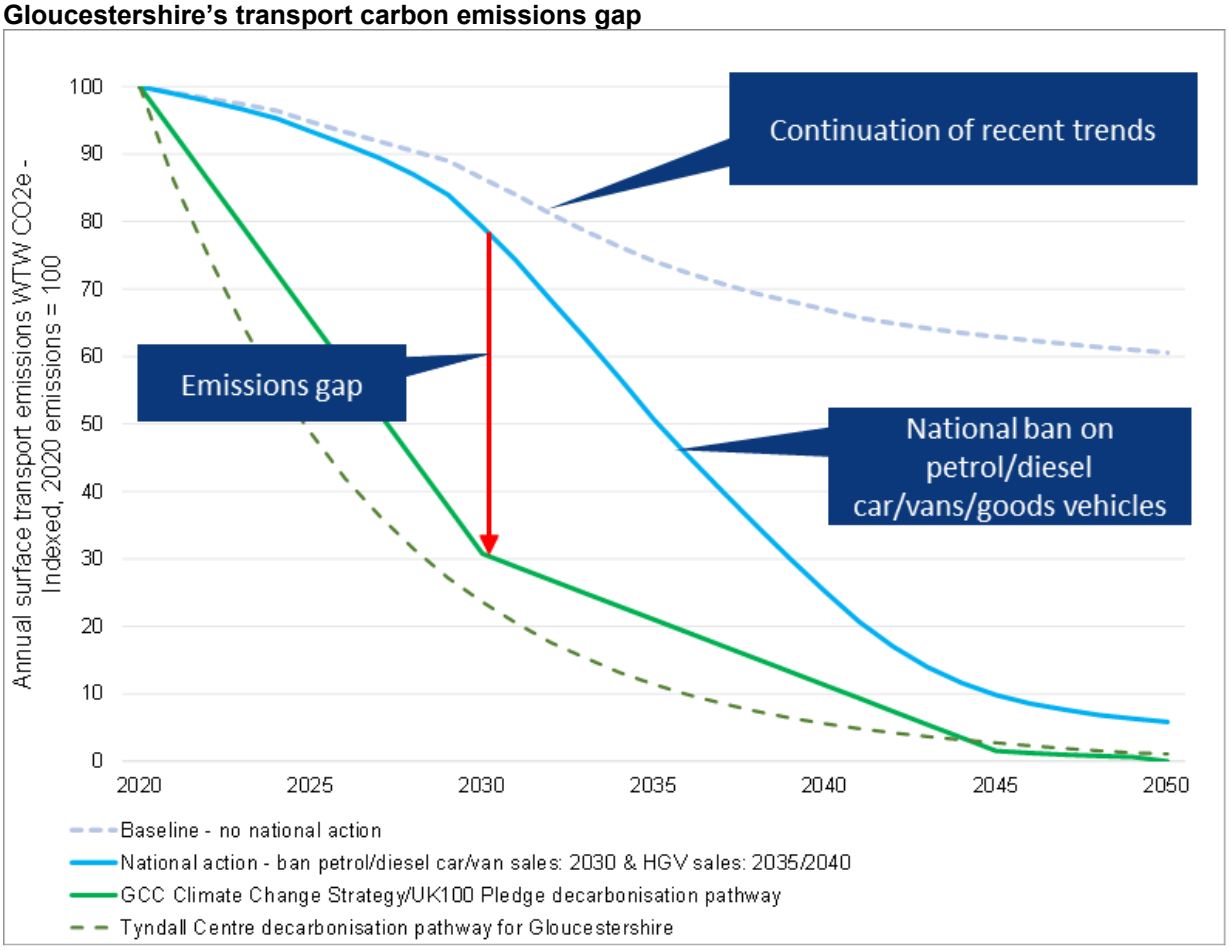
2. Strategic Context

2.1 <u>Climate Change</u>

2.1.1 GCC's recent carbon reduction pathway (phase 1) study identified the scale of intervention needed for Gloucestershire to meet its transport carbon reduction targets. The graph below shows Gloucestershire's emission gap (the difference between Gloucestershire's carbon reduction targets and currently forecast trends).

The blue dotted line shows carbon emissions if current traffic trends continue. This line is brought down by taking into consideration the impacts of the Government sales ban for petrol and diesel cars, as indicated by the blue solid line. This solid blue line can be compared to the solid green line, which represents GCC's carbon reduction targets. The red arrow between these two solid lines identifies Gloucestershire's 'emission gap' in 2030. For information and context, the dotted green line shows a view of academic experts at the Tyndall Centre for Climate Change Research on the rate of decarbonisation required to stay within Gloucestershire's remaining CO^2 budget which would leave an even bigger emissions gap.

Gloucestershire's transport carbon emissions gap



2.1.2 By analysis average trip length by mode and comparing this to carbon emissions based on trip length, the phase 1 carbon transport carbon reduction report concludes that bus and rail have the most potential to serve trips of the length that contribute most to carbon emissions, clearly indicating the need for a substantial shift to public transport modes. Although the majority of journeys are under 5km and hence easily transferable to bikes,s cooters an walking, it is the longer journsy, over 20km, that make up 60% of carbon emissions, and these journeys are the ones that are less easily transferred to active modes. For these journeys the bus is the most likely viable alternative, so this needs to see dramatic improvements in service.

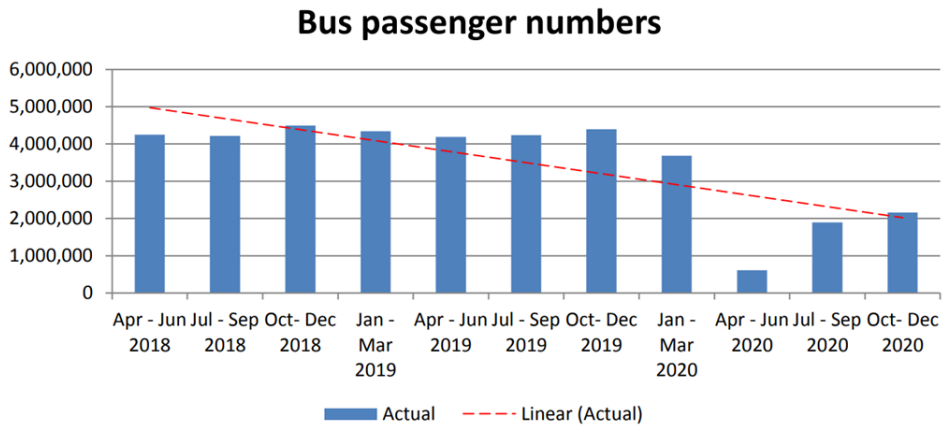
2.1.3 To illustrate the scale of change needed to meet the GCC target to reduce CO2 emissions by 80% by 2030, and assuming that we use all possible areas of change (rather than focusing on just one), closing the Gloucestershire transport carbon emissions gap would require changes that would in total lead to reductions similar to those that may be achieved with the below sketched scenario. Please note that this is an illustrative scenario only.

- A reduction in average trip length by 7.5% (0.6 miles);
- A reduction of 7.5% of car trips (3 trips/month each);
- Ride sharing for an extra 2.5% of car travel;
- An increase in active travel by 300%;
- An increase in public transport use by 100%;
- Eco-driving with a smoothed speed on 75% of car km; and
- A 100% increase in car km by EV.

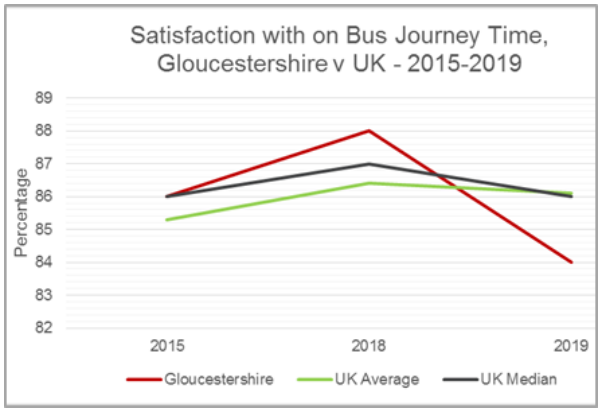
It should be noted that these are not set targets, but figures that are meant to illustrate and provide a feel for the scale of change needed by 2030. Higher achievement in one area would offset lower achievement in another area. **The ambition to increase public transport use by 100% can therefore be interpreted as a minimum requirement,** with an even larger shift to public transport required, should other intervention areas not be as successful as indicated above.

2.2 Public Transport in Gloucestershire today

2.2.1 The last census data available (2011) clearly shows that both, rail, and bus use is significantly below the UK average. Since then, bus patronage has been roughly flat before a dramatic fall due to the covid 19 related lockdown. Today, passenger numbers still down c.20% on average in Gloucestershire compared to 2019.



2.2.2 The reason for the relatively low number of bus passengers in Gloucestershire are complex and at least partly related to the more rural character of the county. However, recent data also clearly indicates that bus service reliability in Gloucestershire is decreasing in recent years and satisfaction with bus journey time in Gloucestershire is falling and was below the UK average and median in 2019. Journey time and bus service reliability are also a constantly recurring theme in bus service operator consultation processes as the main barriers to growth. Congestion in urban areas can severely impact the reliability of bus services; it extends journey times and means commercial investment tends to be an attempt to maintain service frequency in the face of increasing congestion rather than improving the service.

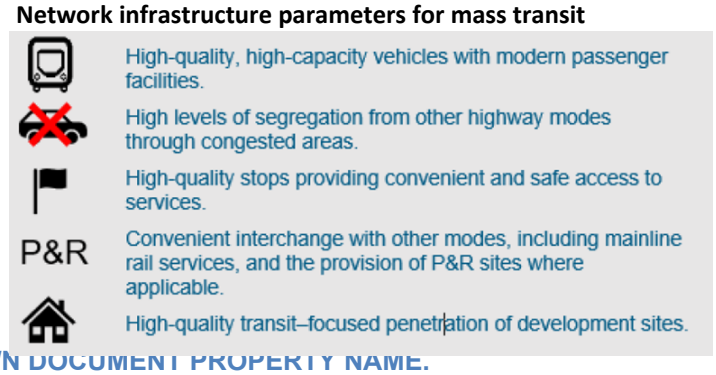


2.3 Public transport vision for Gloucestershire

2.3.1 To deliver on Gloucestershire's climate change ambitions and to address the challenges Gloucestershire's public transport services face, Gloucestershire's BSIP proposes the development of a 'spoke and hub' model, where less frequent and demand responsive bus services feed into a core high frequency express bus network. Interchange hubs will allow the express bus services to be connected to the more rural lower frequency or demand responsive buses. These express bus routes need to have significantly improved journey times and reliability to stay attractive for people, including those travelling from rural areas into towns.

2.3.2 A Central Severn Vale Mass Rapid Transit scheme at the core of the express bus network will ensure that services are protected from congestion and delay and thus contribute to the overall attractiveness of the entire public transport offer. Bus services from all over Gloucestershire will be able to enter the MRT corridor when they get to the more congested sections of their route thus protecting travellers from delay on these sections of their journey.

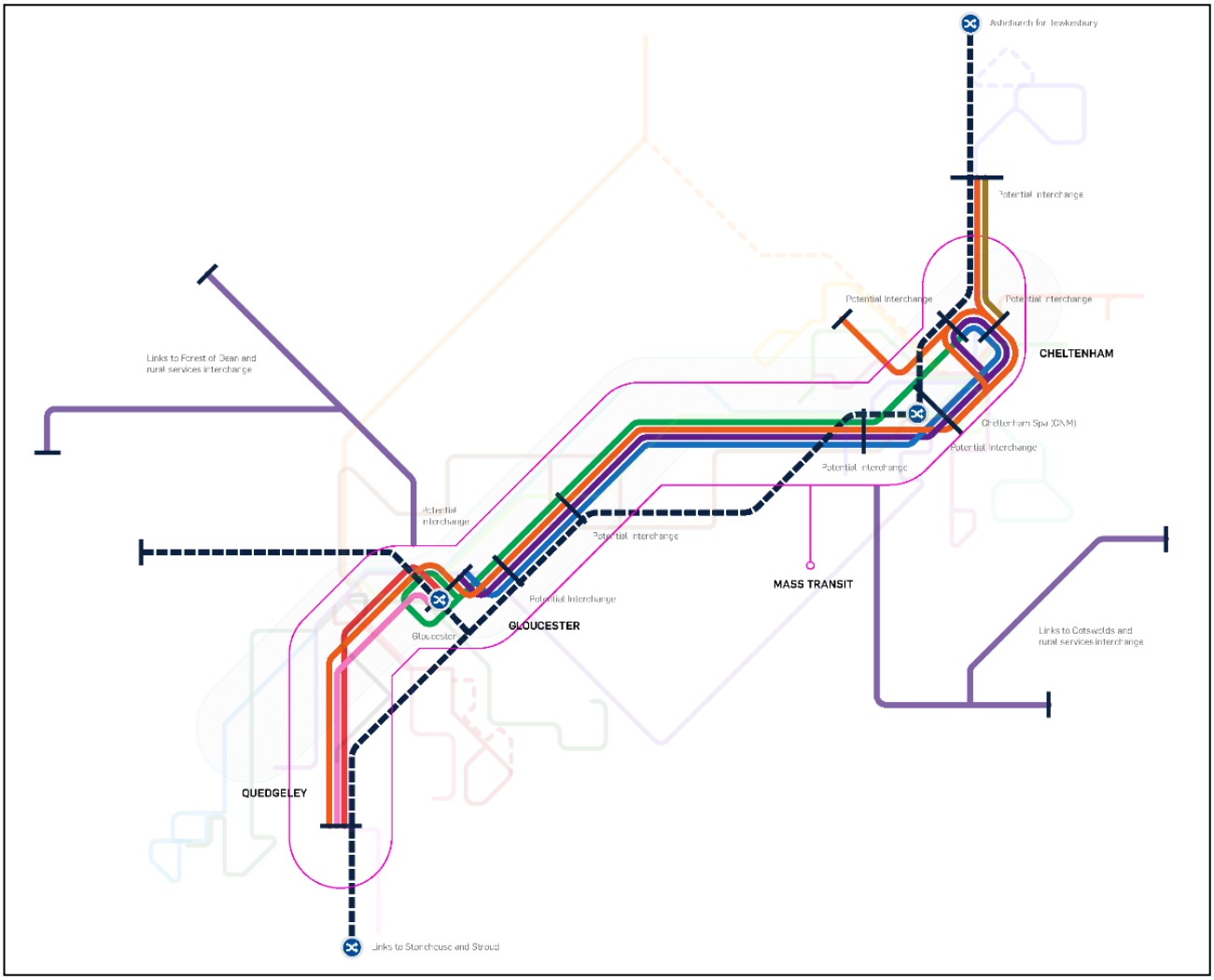
2.3.3 For mass transit to be successful it needs to compete successfully for passengers with other modes and generate new trips. To achieve this, the following parameters were identified defining of what a mass



transit system would need to provide.

2.3.4 By improving bus reliability and journey time for all travellers in Gloucestershire a Mass Rapid Transit scheme will make the overall public transport offer in Gloucestershire more attractive, making it a much-needed focal point for a new public transport network in Gloucestershire that delivers on Climate Change objectives, enables growth, and supports the economy.

Gloucestershire Bus Route Map (Draft)



The schematic figure above indicates how the central bus and mass transit scheme will reach out and connect in with the rural areas surrounding central Gloucestershire. Bus services that cover rural areas will have either clear, fast interchanges between rural and mass transit systems, or these buses will also be able to switch onto the segregated mass transit bus system, and hence make rapid progress into central areas for employment, education and services.

3. Mass Rapid Transit work to date

3.1 Pre-feasibility study

3.1.1 A Pre-feasibility study was completed in 2021. The Pre-feasibility study explored transport challenges in Central Gloucestershire and provided an initial overview of how a mass transit system could provide a potential solution to these challenges by improving sustainable connectivity in the area. The Pre-feasibility study concluded that the implementation of a mass transit system within Central Gloucestershire offers a flexible model to support sustainable growth.

3.1.2 The strategic evidence review identified several broad corridors where there may be sufficient demand to introduce mass transit as a viable solution:

- South West Gloucester to Gloucester city centre.
- Gloucester to Cheltenham.
- Cheltenham town centre to North West Cheltenham (potential extensions into North West and West Cheltenham development sites).
- Cheltenham town centre to Bishops Cleeve (potential extension to Ashchurch).

3.1.3 An early viability assessment at Pre-feasibility stage concluded that:

- Bus Rapid Transit (BRT) in some form has the potential to be viable within the area assuming that a range of BRT-type features can be delivered, including potentially high levels of segregation from traffic congestion, high levels of services and quality vehicles and associated infrastructure.
- Light Rapid Transit (LRT), based on fixed route rail technology is unlikely to be viable, primarily due to scheme costs. However, this option may need to be reconsidered in due course if it can be proven that changes in technology (for example Ultra-Light Rail) can significantly reduce costs.

3.1.4 The early viability assessments also suggested that mass transit would be best delivered alongside very strong supporting measures, especially in respect of high levels of transit-orientated development. Integration between large scale land use planning and transport provision has the potential to significantly increase ridership and transport revenues and user benefits as well as providing enhanced social, educations, and economic opportunities for the residents of the area.

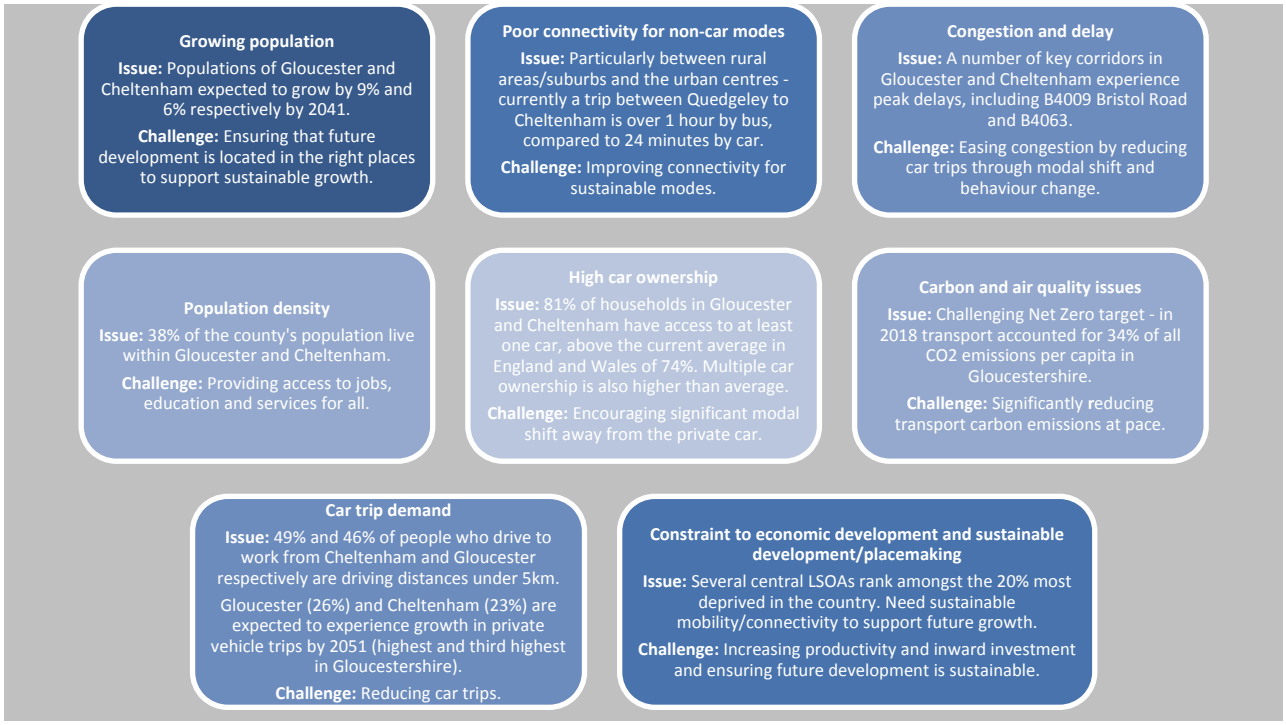
3.2 Feasibility study

3.2.1 The Feasibility study further developed the assessment of mass transit as a potential solution to the transport challenges in Central Gloucestershire. It explored and considered the following:

- Policy context and integration with the wider programme of GCC schemes, including the developing BSIP.

- Demand assessments and relationship to planned and emerging growth scenarios – to support sustainable growth and carbon reduction.
- Engineering and environmental constraints.
- Operational and financial aspects – including funding requirements
- Issues and Challenges facing transport in Gloucestershire (see figure below)

3.2.2 Once the Feasibility Study has GCC internal sign off (July 2022), then it will be distributed to relevant stakeholders, including GEGJC and GEJSC.



4. Engagement for Mass Transit scheme

4.1 Engagement has been undertaken with key internal stakeholders during the Feasibility stage:

- Gloucestershire Chief Executives
- Gloucestershire Strategic Directors
- Leadership Gloucestershire
- GCC Senior Officers
- Joint Economic Growth Committee

4.2 The main purpose of this engagement has been to inform these key stakeholders on project progress and next steps, and to identify any challenges/risks to mass transit at an early stage.

4.3 A stakeholder group, consisting of representatives from the county, districts and GFirst LEP), has also been established during this stage and will be engaged in the next stages of work.

5. Next steps

5.1 The next step following sign off of the Feasibility study will be to begin the process of developing a Strategic Outline Case (SOC), the first stage of DfT's transport business case process. Before developing a business case a strategic assessment will be undertaken as per the DfT's guidance to confirm that the proposal is strategically aligned.

5.2 This assessment work will be undertaken in close collaboration with the stakeholder group established at Feasibility stage and will consider a long list of options for addressing the transport issues and challenges in Central Gloucestershire, covering different modes including mass transit and policy interventions, drawing on the Decarbonisation work being undertaken by GCC and the policy context.

5.3 More in-depth stakeholder engagement will also be undertaken, including focussed public engagement on the potential options and early engagement with the Western Gateway Sub-National Transport Body and the Department for Transport (DfT) around potential funding opportunities.

5.4 The option generation and sifting process of the strategic assessment will identify a rationalised long list, likely to be focused on potential public transport interventions, to be taken forward to SOC stage.

5.5 Stages of scheme development (stages in bold are funded through the £850K City Region Board funding approved by the GEGJC in May 2022):

- Pre-feasibility – completed
- Feasibility Study - completion in July 2022
- **Strategic assessment and initial option assessment – 2022**
- **Strategic Outline Case (SOC) – 2023/24**
- Subsequent stages of business case development (Outline Business Case, Full Business Case and related design and engagement) – 2024 - 2027
- Construction – 2027 at the earliest but need to be operational before 2030 in order to contribute to closing Gloucestershire's emissions Gap.

6. Conclusion

6.1 In addition to connecting the urban centres and supporting internal trips within Central Gloucestershire, mass transit cand help support rural-urban linkages through well-located interchange hubs (as identified in the network concept). This would enable residents from other districts in the county to travel to an

appropriate interchange hub, at which point they would mode-shift to mass transit, ensuring their travel into Central Gloucestershire is fast and efficient, and connecting them to jobs and services in the urban centres. GCC are commissioning an interchange strategy to support this process (expected to be completed in 2022), but indicative modelling undertaken for this Feasibility study shows that mass transit increases public transport demand overall and generates a strong increase in bus and mass transit P&R demand, especially when demand management measures are introduced (up to 1% mode share in 2041 compared to 0.1% mode share for bus P&R without mass transit).

6.2 Mass transit could also help support sustainable growth in Central Gloucestershire through enabling development with public transport as the primary transport mode. The adopted Joint Core Strategy (JCS) for Gloucester, Cheltenham and Tewkesbury sets out planned growth to 2031, with planned growth concentrated in Central Gloucestershire. Beyond this, further growth in Central Gloucestershire is expected, with the districts currently undertaking a Joint Core Strategy Review (now known as the Joint Spatial Plan, with consultation expected later in 2022). There is an opportunity to consider how mass transit could support the principle of sustainable development for both allocated and future growth in Gloucestershire.