

ITEM NO. 8C

GM LOCAL ENTERPRISE PARTNERSHIP BOARD

SUBJECT: Metrolink Phase 3 Evaluation – Early Findings

DATE: 14 July 2016

FROM: Interim Transport Strategy Director; Metrolink Director, TfGM

1. INTRODUCTION AND BACKGROUND

- 1.1 In order to demonstrate what has been achieved through the recent expansion of Metrolink, TfGM has been carrying out a series of initial monitoring and evaluation activities in relation to Metrolink Phase 3. This report concerns the early findings from that evaluation activity, the headline findings of which are provided in this GMCA report, with Annex 1 presenting the Executive Summary to a fuller research report, which TfGM has prepared.
- 1.2 The coverage of the evaluation framework has been determined in conjunction with the Department for Transport, with Greater Manchester and national audiences in mind. Executing an in-depth series of evaluation activities is a DfT funding condition and the findings are to be published on the internet.
- 1.3 Evaluation activity is ongoing and the early findings presented here will be augmented with further results as the system matures and wider benefits emerge, particularly in relation to impacts on the Greater Manchester economy. These further results will be published in four years' time.
- 1.4 The purpose of this report is to share the early findings with LEP members and to invite feedback on issues arising.

2. HEADLINE FINDINGS AND ISSUES ARISING

- 2.1 The positive headline findings from the report are:
 - the alignments and stops have been delivered, with minor variations, as planned (as explained in section 3.1 of the full report);
 - the additional seating and standing capacity has increased public transport capacity into the city centre by 5% (section 3.2);

- costs have been managed within the overall capital budgets for the programmes (section 3.3);
- a wide range of lessons have been learnt and documented for TfGM and wider light rail industry benefit (section 4);
- door-to-door accessibility to destinations such as employment, healthcare and further education has improved markedly (section 5.1);
- the formation of a Disability Design Reference Group to advise on all stages – from stop design to infrastructure once in service – has embedded accessibility in the Phase 3 provision (section 5.2);
- usage on the Oldham and Rochdale Line relative to the last full year of the heavy rail service in 2008/09 has increased by more than three-fold (section 8.2); and
- statistical analysis by the Nationwide Building Society has found that proximity to a Metrolink stop, or train station, has a significant impact on property values (section 8.3).

2.2 A key finding from the report relates to the patronage figures relative to the original 2006-2010 business case forecasts (section 7.1 of the full report). Taking into consideration that some lines have opened relatively recently, patronage is at around half (48%) of the level it had been expected to reach. However, it is important for Members to note that the majority of the variance can be explained due to a variety of factors including:

- internal Metrolink factors, such as the fact that tram frequencies are yet to reach business case levels on some lines; and
- external factors, such as depressed economic growth.

2.3 As Members will recognise, these factors are likely to have depressed demand. Some of these are temporary in nature, others connected to external factors (e.g. economic growth). A further review of these factors will form part of the ongoing monitoring and evaluation activity to be reported at the next stage, which will also be informed by a greater depth of patronage data than was available to inform this initial “early findings” report prior to the system reaching maturity.

2.4 The full research report sets out the ongoing development of the network operation, including the Shaw to Exchange Square service now in place and more frequent services to come post-completion of the Second City Crossing, on which good progress is being made and which is an essential component to offer higher service levels. In addition, both Greater Manchester and Northern Powerhouse measures are set to boost economic growth and hence patronage.

2.5 While the report is entirely about Phase 3 of Metrolink, it may be noted that the factors that explain the patronage outcomes observed reinforce the validity of the business case process for Metrolink schemes such as the

Trafford Park Line, for which benefits remain well in excess of overall costs under a number of scenarios.

- 2.6 The full research report of Phase 3 monitoring and evaluation early findings has now been published on the GMCA and TfGM websites.

3. RECOMMENDATIONS

- 3.1 LEP members are recommended to note and comment on the main findings presented in this report, including Annex 1, the Executive Summary of the early findings report.

Simon Warburton

Interim Transport Strategy Director, TfGM

ANNEX 1: EXECUTIVE SUMMARY OF EARLY FINDINGS REPORT (DIRECT EXTRACT)

Introduction

- 1.1 This one year after monitoring and evaluation report focuses on three extensions to the Metrolink network that form part of the Phase 3 programme of works. These are the extensions to Oldham and Rochdale town centres, East Didsbury and Ashton-under-Lyne. There is also some coverage, albeit limited coverage due to it only having opened relatively recently, of findings in relation to the Airport Line.
- 1.2 With the completion of the Second City Crossing in 2017, Transport for Greater Manchester will have successfully delivered by far the largest expansion of any modern tram network in the United Kingdom.
- 1.3 The report is a 'one year after' report as it relates to evidence collected up to one year after the last part of Phase 3 that the Department for Transport contributed funding towards came into operation. As such, the report presents early evidence from the initial period of operation of the expanded network.
- 1.4 Where possible, in order to enable the Department of Transport to understand the results of central government investment, findings are reported separately by line.
- 1.5 The short-term nature of this initial report means that it offers more in terms of scheme outputs rather than outcomes, which are inevitably still emerging and subject to short-term exogenous factors. The initial findings reported in this one year after report will be augmented by further monitoring and evaluation activity in the coming years. This further work will cover the areas included in this report and, in addition, the study of longer-term issues such as impacts on the economy. These will be made available in a 'five years after' report in 2019, i.e. five years after the last extension part-funded by the DfT came into operation.

Network expansion

- 1.6 Approval and funding of Metrolink Phase 3 was secured in a number of stages. Phase 3A, comprising the conversion of the Oldham-Rochdale heavy rail 'Loop Line' and extension to Chorlton (both funded in part by the DfT), together with the East Manchester extension to Droylsden (funded locally) formed the initial component of the expansion programme. Phase 3A was awarded initial approval in 2006 in the DfT major scheme business case process, with full approval in 2008. The DfT-supported programme was extended in 2010 through the award of full approval of further extensions to Ashton-under-Lyne and East Didsbury.

- 1.7 A new operations and maintenance contract was awarded in 2007. Subsequently, a bespoke Metrolink Phase 3 design, construct and maintain contract for the new extensions was awarded in 2008.
- 1.8 Both the Metrolink Phase 3 design, construct and maintain contract and the operations and maintenance contract were designed to enable subsequent expansion of the programme. The DfT supported schemes and the Droylsden extension have also been augmented by further locally funded expansion. This has included extensions to Manchester Airport via Wythenshawe, a loop off the Phase 3A Oldham and Rochdale Line passing through Oldham town centre, an extension from Rochdale railway station to Rochdale town centre, and lastly, a new route across Manchester city centre, the Second City Crossing.
- 1.9 Prior to the development of the Phase 3 extensions, a programme of capacity and renewal works was agreed with DfT in 2005. As a consequence the Phase 3 programme was procured against a background of significant investment and works to the existing Metrolink system. Among other items, investment included the first of a new-to-Metrolink type of tram, track replacement on the Bury and Altrincham Lines, a new signalling and control system, and accessibility improvements to existing Metrolink stops.
- 1.10 Other external funding has enabled additional Metrolink development. The most notable example of this has been the MediaCityUK extension, comprising a spur off the existing line to Eccles via Salford Quays. This short extension was a significant factor in the BBC's decision to locate its new northern headquarters in Salford Quays. The level of commercial development at MediaCityUK simply would have not been possible without the enhanced public transport capacity provided by this Metrolink extension.
- 1.11 Locally funded additions to Metrolink Phase 3 have included a programme of park and ride facilities. These have comprised a mixture of new sites and expansion of existing, heavily used facilities. In the case of Hollinwood and Derker, new car parks integral to the Phase 3A scheme have been augmented by local funding to provide significantly larger capacity. Furthermore, using local resources the tram fleet has been expanded beyond that originally anticipated to enable the original set of trams to be retired, enabling more efficient operation than a mix of new and old trams would have allowed for.
- 1.12 As noted earlier, the Phase 3 programme has, and continues to be, delivered under a bespoke design, construct and maintain contract – supported by a delivery partner. The combination of this contract with the operation and maintenance contract has provided the necessary flexibility to augment the programme as new funding streams were confirmed.
- 1.13 Weekday service frequencies of at least 5 trams per hour on all of the Phase 3 extensions have contributed significantly to the connectivity of the

transport network in Greater Manchester. Passenger numbers have increased on all the new lines even though the core of the system is affected by works associated with the construction of the Second City Crossing. Higher service frequencies are planned to be introduced following completion of the Second City Crossing and as passenger demand requires.

- 1.14 In due course, once the Second City Crossing is complete in 2017, the Phase 3 programme will deliver an increase in passenger capacity of all public transport (bus, rail and Metrolink) into the regional centre of almost 10%, relative to the without-Phase 3 situation. At the time when this report was prepared in 2015, the increase in overall public transport capacity into the city centre was 5%, compared to a without-Phase 3 scenario.
- 1.15 In the future the infrastructure provided by Phase 3 has the potential to support further capacity increases over time, including the proposed Trafford Park Line services, the operation of double trams in response to growing passenger demand and the introduction of tram-train routes.

Initial findings

- 1.16 Despite the complexity of the overall programme described above, Metrolink Phase 3 has been delivered within overall budget and on schedule. The report notes that there are variances contained within the relevant budget of £764 million, relating to the part of the programme elements that the DfT has contributed to, but any changes in cost have been allowed for through adoption of best practice risk management techniques and the delivery of offsetting cost savings.
- 1.17 The major line openings were achieved on schedule. In the event, however, the timing of sub-sections varied from the dates that were published originally. This was due in part to the scale of technical change and system integration issues in relation to existing Metrolink systems. These challenges included a new signalling and control system.
- 1.18 As the earlier technical and integration challenges were overcome, and with the benefit of experience and lessons learnt during the course of the programme, delivery subsequently accelerated. Airport Line services were able to commence over a year ahead of the published date. This demonstrated the value of the continuing contract arrangements that permitted an experienced team to retain knowledge and apply it as the project expanded.
- 1.19 In terms of initial impacts, the report illustrates the strategic significance of the Metrolink extensions, where for each of the key destination types of employment, further education and healthcare, there is a significant increase in public transport accessibility at a Greater Manchester level.
- 1.20 In the case of the corridors benefiting from the extensions, half of the population in the corridors experience an increase in public transport

accessibility to employment and healthcare of 10% or more. This means that there is a 10% or greater reduction in the overall time required to access a range of each type of opportunity. For further education, over a third of the population experience an increase in public transport accessibility of 10% or more. Over 180,000 people in the corridors have benefited from this scale of increase in public transport accessibility.

- 1.21 In the case of deprived communities, the improvement in accessibility is more marked than for the corridor population as a whole.
- 1.22 From another perspective, the ability of Metrolink to attract people out of their cars, observed from Phases 1 and 2 of Metrolink development, has been confirmed in the case of Phase 3. Initial findings at this early stage are that a quarter of all trips on the new extensions would have been made by car if the option of travelling by tram had not been available.
- 1.23 Furthermore, across Phase 3 survey findings indicate that over a quarter of new park and ride users would have otherwise driven all the way to their destination and a further 4% would not have made their trip at all had the parking spaces not been provided.
- 1.24 The period since 2006 has seen dramatic changes in the economic background following the 2008 start of the recession, against which the Metrolink Phase 3 programme has been delivered. While the programme's delivery has supported the Greater Manchester economy, the various scheme business cases were based on pre-recession rates of economic growth, development activity and growth in employment. The report analyses the effects of lower than anticipated economic growth and other factors on out-turn patronage.
- 1.25 Other factors considered in relation to patronage development related to the nature of business cases developed prior to the Second City Crossing case, namely that they only considered committed expansion of the Metrolink network. For this reason, the business cases for the extensions covered in this report did not take account of the potential effects on Metrolink services of the construction of the Second City Crossing or other system enhancement works. This has affected service frequencies in particular.
- 1.26 Patronage figures are nevertheless an important measure of progress towards delivering eventual longer-term outcomes. Patronage figures for the most recent year of operation have been compared to the figures that were expected at this stage of maturity of the Phase 3 network. Patronage for 2014/15 was found to be approximately half the level that had been anticipated by this time (in the original business cases).
- 1.27 Further analysis was carried out in order to understand this difference. Part of the overall difference was attributed to factors external to Metrolink and related to the relative weakness of the economy in recent years; these factors include suppressed growth in regional GVA and in city centre

employment, plus significant developments that have yet not materialised along the corridors in comparison to the original business cases.

- 1.28 The remainder of the difference that it has been possible to explain to date relates to the technical development of Metrolink services on the Phase 3 network; these are primarily service frequencies and tram speeds. Frequencies will be improved in the future, once the Second City Crossing is operational. Tram speeds will also be improved in the future, as the network will be stable for a number of years, allowing opportunities to tighten up run times to be taken up. Other factors that have affected capacity in the recent years, such as periods of city centre closure and single line running relating to the Second City Crossing, will also be lifted and will enable a more extensive range of marketing activity to take place.
- 1.29 In the meantime, patronage has been growing across the Phase 3 network. In the case of the Oldham and Rochdale Line, patronage has more than tripled since Metrolink's introduction, in comparison to the last full year of operation of the Oldham Loop rail service.

Conclusions

- 1.30 Some of the main positive lessons learnt in relation to delivery of Phase 3, obtained through interviews of the delivery team, were that:
- the appointment of a contractor with an ability to extend services offered enabled the retention of knowledge for the benefit of efficiently delivering an expanding programme of works;
 - the decision to appoint a delivery partner and create an integrated delivery team allowed for an effective mix of public and private sector resources, scaled to the phases of the programme, to be deployed;
 - secondment of delivery team staff into utilities companies enabled accelerated agreement and delivery of utility diversion works;
 - mirroring the structure of the contractors' team via the delivery team structure enhanced working relationships and the monitoring of progress;
 - creation of a Disability Design Reference Group meant that opportunities to make the network fully accessible were exploited at all stages of design and delivery;
 - development of go-live procedures to enable all necessary tasks to be completed assisted in the active management of the run-up to opening new sections; and
 - development of a computer-based driver training simulator halved the time it took for drivers to become familiar with new routes.
- 1.31 Other lessons learnt observations that require further reflection were that:

- the impacts of suppressed economic growth and development activity have had a negative impact on outturn patronage performance in the initial period of operation, not anticipated at the business case stage; and
- success in securing funds for further expansion of the Metrolink network, beyond that taken account of in earlier-stage business cases, has meant that disruptive short-term operational impacts of further network expansion were again not anticipated in the original business cases prior to the Second City Crossing business case.

1.32 To sum up, the report presents interim findings in relation to the implementation of Metrolink Phase 3. In overall terms, the programme has been delivered on time and on budget. Early indications are that the system's expansion is beginning to generate the benefits anticipated, which is encouraging. The 'five years after' report will revisit the areas covered by this report as well as examining longer-term impacts, such as those on the economy of Greater Manchester.