

Milton Keynes City Council

MK MRT SOBC

Strategic Outline Business Case (SOBC) – EXECUTIVE SUMMARY

Final | March 2023

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 287425-00

Ove Arup & Partners Limited
8 Fitzroy Street
London
W1T 4BJ
United Kingdom
arup.com

The Strategic Outline Business Case for a Mass Rapid Transit (MRT) system in Milton Keynes

This note sets out a summary of the business case for Mass Rapid Transit (MK MRT), and some suggested next steps. It was written by the Arup-Atkins team that worked on the business case, alongside the MKCC Director of Planning and their team.

The Milton Keynes Strategy for 2050 identified the need for an MK MRT network, that is, a public transport system with frequent services, capable of carrying many passengers, and with competitive ticket prices. Building on the 2050 Strategy, this work was carried out between May 2022 and March 2023, and established the Strategic Outline Business Case (SOBC) for the project.

In summary, we conclude that there is a strong business case for the project. We recommend that MKCC proceed with the MK MRT scheme (referred to in the business case documents as “BRT lite”) for commencement of operations around 2028, with the potential for some benefits to be realised earlier. The next steps in spring and summer 2023 include development of an outline business case (OBC) and public consultation.

The proposed MK MRT system

Milton Keynes has a road network and low density urban form that allows for convenient door-to-door travel by motor car, but this has led to an under-use of public transport, and in-turn to an under-provision of bus services. As a result, it is now difficult for non-car owners to access the opportunities for employment, health and education across the city. If nothing is done, car journey times are expected to increase by 14% by 2031, and the number of car journeys are expected to increase by 35% by 2045, equivalent to an additional 166,000 vehicle trips per day. This will make congestion worse, and mean that demand for parking spaces may outstrip supply. At the same time, Milton Keynes’ population is set to increase by 50% by 2050, and meeting the resulting travel demand with additional road building and allocating land away from housing and employment and towards car parking is not a feasible option.

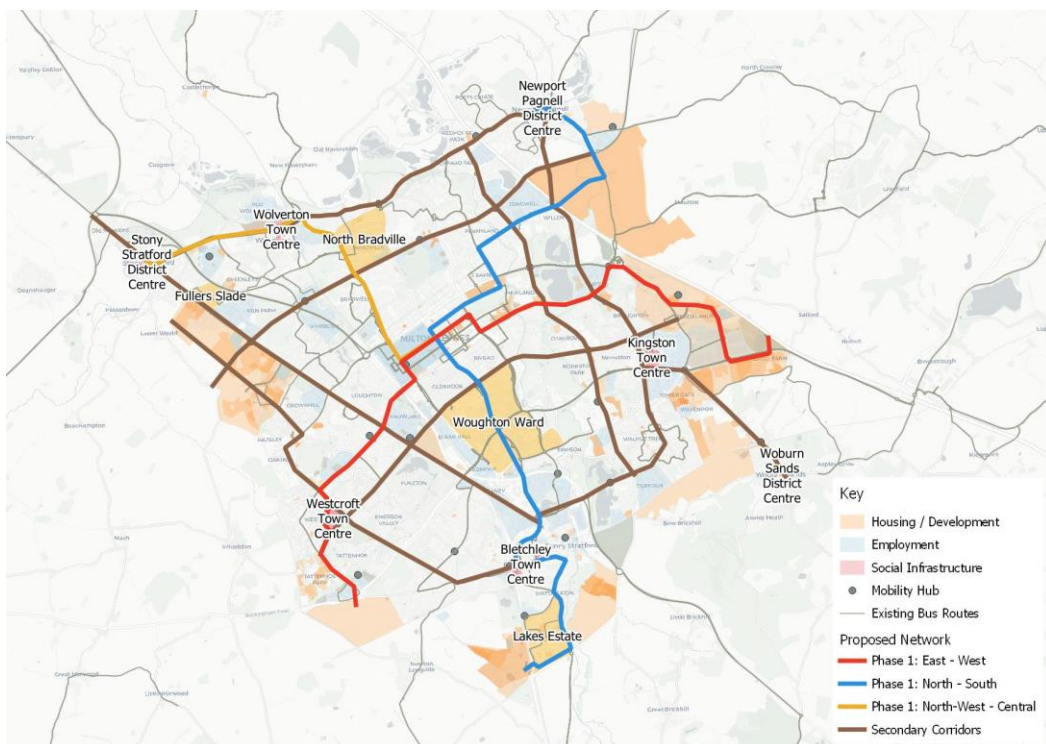


Figure 1: MK MRT Phase 1 network (red, blue, yellow) and secondary corridors (brown)

Instead, the proposed Phase 1 MK MRT system will be a public transport network around 50km in length served by modern electric vehicles that will be tram-like in appearance (e.g. “trackless tram”), and will operate on substantially segregated infrastructure, serving branded, improved stops that are better integrated with their communities.

The strategic outline business case assessment considered other options, including greater segregation for the MRT, and light rail based options, but these delivered little by way of additional journey time benefits for significant additional costs, and the extra passenger capacity they would provide is not expected to be needed until later. The option remains to convert the system to light rail when required (e.g. in the 2040s or 50s, once ridership builds).



Figure 1 Trackless tram example in Abu Dhabi (source: Arup)

The case for MK MRT

As the backbone of a wider public transport system, MK MRT will initially stretch over five points of the city, linking Stony Stratford, Newport Pagnell (and MK East), Glebe Farm, Bletchley (and the Lakes) and Tattenhoe, to CMK. It will be capable of deployment into secondary corridors in due course, and in the meantime will be complemented by a re-modelled feeder bus network that will serve local destinations, as well as the Redway active travel network.

The MK MRT will offer a step-change in public transport quality and provision, and will be similar in passenger experience to bus rapid transit systems on the continent, and the Belfast Glider in the UK. In summary, the MK MRT is expected to:



Contribute to sustainable growth. MK MRT will support new housing developments across the city that are expected to accommodate 30,000-35,000 new homes by 2050. MK MRT will directly serve the developments at MK East, the East and South-east growth areas, and the areas close to the Lakes estate, and will support the densification of new developments from 35 to 45 dwellings per hectare, delivering more homes, and embedding sustainable lifestyles.



Support a thriving local economy. The MK MRT scheme is expected to be used by over 2m passengers per annum. It will generate over £800m worth of economic benefits, has a rate of return of £4 for every £1 invested, and will support an increase of 50,000-90,000 jobs in Milton Keynes by 2050. The MK MRT will become a symbol of a growing, youthful city, and will be a marketing tool for investment in the city.



Promote sustainable outcomes. The MK MRT will be a fully electrified system, likely making use of end-of-route and overnight charging. Where possible, the vehicles and the depot will be constructed from sustainable materials, and will be re-used or recycled at the end of their service life. The scheme will include initiatives to discourage car parking, and the MK MRT will remove 20,000 car km from the city’s roads each day, reducing carbon by 15,000 tonnes per year, and improving both local air quality and noise levels.



Support liveable communities. The MK MRT will improve connectivity for existing, and new residents within strategic, or major new growth areas. It will offer a high quality, reliable journey experience, operating on a substantially segregated route, and therefore will not be susceptible to increases in traffic congestion over time. Journey times by MRT will be up to one-third, or up to 15 minutes faster than today’s equivalent bus journey, for a typical journey from suburb to centre.



Deliver accessible mobility for all. Through new stops and low floor vehicles, MK MRT will provide a truly accessible transport system. MK MRT will better link non-car users to the opportunities of CMK and beyond, and will be affordable, with the fares broadly equivalent to current bus fares. New stops will be equipped with branded shelters, CCTV, improved lighting, ticket machines, help points, real-time information and safer well-lit walking routes so that people, including women and those using the system after dark, will feel safer, and will be more

likely to access the system on foot. The stops will act as community nodes, offering interchange between MK MRT, walking, cycling and new mobility.

The capital costs of the scheme are approximately £200m in 2022 prices (inclusive of 25% contingency). Analysis suggests that although local sources, including increases in parking revenue, fares revenue from the new system, and a council tax precept could be used to fund the operational costs, and make a contribution towards capital costs, the bulk of the capital costs would have to come from central government, or another funding source.

Next steps with MK MRT

To have the MK MRT operational by 2028 will require a significant step up in resources on behalf of MKCC, and its potential suppliers, including the local bus provider. It will likely require bus franchising powers, which will be confirmed in the next development phase. The scheme itself requires further design and development, in terms of finalisation of routes, of infrastructure investment, and of business case. We suggest that the immediate next phases, starting in spring / summer 2023 should include:

- Development of an Outline Business Case, to include more developed estimates of costs and benefits, confirmation of routes, infrastructure required, funding sources and legal powers required.
- Discussions with DfT and DLUHC on potential funding contributions from transport and housing infrastructure-fund-style sources, and permission. Note that in theory, MKCC can meet around half of the costs of the MK MRT by changes to parking fees and other income sources, so it may be possible to progress with a version of the scheme even without additional funding. The Secretary of State for Transport will also need to approve bus franchising powers, if required.
- Stakeholder engagement and public consultation on the scheme, and the potential funding sources. This must include conversations with developers to secure the uplift in densification on sites near the MK MRT stops.
- Market testing. Discussions and initial market testing with the supply market, including constructors, existing bus operators, vehicle manufacturers, and potential suppliers of finance including UKIB, PWLB and private sector financiers.
- Consideration of the other schemes within the 2050 Strategy that might be integrated and / or have a dependency on MK MRT, including the C-CAV autonomous guided public transport scheme.
- Review governance and reconfirm Project Board - confirm members, roles and responsibilities of the MK MRT Project Board to ensure that there is clear accountability and a balanced mix of members. We would recommend considering adding members from the user and supplier side as per PRINCE2 Project Management best practice.
- Review governance and reconfirm Project Board. MKCC may consider setting up a separate delivery organisation or department that will also raise the funds. From our experience with other cities, the MK MRT is expected to require 5-10 internal FTEs and 10-30 external FTEs at its peak (excluding construction / operations staff).

In summary, the MK MRT system is expected to make a significant contribution to the realisation of the 2050 Strategy. It will contribute to a more sustainable, liveable and accessible city, with more opportunities for all. Moreover, the next few years offer a window of opportunity to deliver MK MRT before city-wide congestion becomes endemic, and before car dependency is baked in to new developments. As such, our recommendation is to move forward with MK MRT at a pace.

Contact:

Matthew Dillon
Director

e: matthew.dillon@arup.com

Adriana Moreno Pelayo
Associate

e: adriana.morenopelayo@arup.com

Ove Arup & Partners Ltd
8 Fitzroy Street London W1T 4BJ
United Kingdom
arup.com