

Rapid Transit System For North Essex

From vision to plan

1 July 2019

Executive summary

Introduction

The Garden Communities Charter states that 'garden communities will be planned around a step change in integrated and sustainable transport system for the North Essex area, which will put walking, cycling and public transit systems at the heart of the development, and be delivered in a timely way to support the communities as they grow.'

The charter explains that this means:

- an integrated approach between land use and transport planning;
- seeking a modern and rapid forms of public transport;
- introducing sustainable transport early within the development of garden communities; and
- providing a green infrastructure including safe, convenient and attractive walking and cycling routes.

This report provides a strategic plan detailing what such a rapid transit system for North Essex could look like, and how it can be delivered and afforded. There is a firm belief that the vision is achievable and will contribute significantly to wider policy objectives related to climate change and air pollution, providing healthy and active choices, and sustainable economic growth.

Technological revolution

The UK is at the cusp of a revolution in technological solutions and personal transport choices¹ within which there is key role for rapid transit in successful towns. The fundamental challenge is to create the space to enable public transit to be rapid and reliable. If this is achieved, then transit solutions can evolve in response to innovation as and when it becomes practical to do so.

For North Essex, it is proposed that rapid transit aims towards introducing a system akin to a trackless tram. This combines the advantages of light rail with the practicality and flexibility of bus rapid transit. The system can be built up incrementally, growing alongside the garden communities. It adapts readily to early adoption of autonomous vehicle technology and, in time, the main

¹ <http://www.demand.ac.uk/commission-on-travel-demand/>

trackless trams would co-ordinate with automated pods to take passengers to final destinations.



Examples of rapid transit solutions and the desired level of segregation
Sources: CRRR TEC, railexpress.com.au/Sydney Inner West Council

Routes

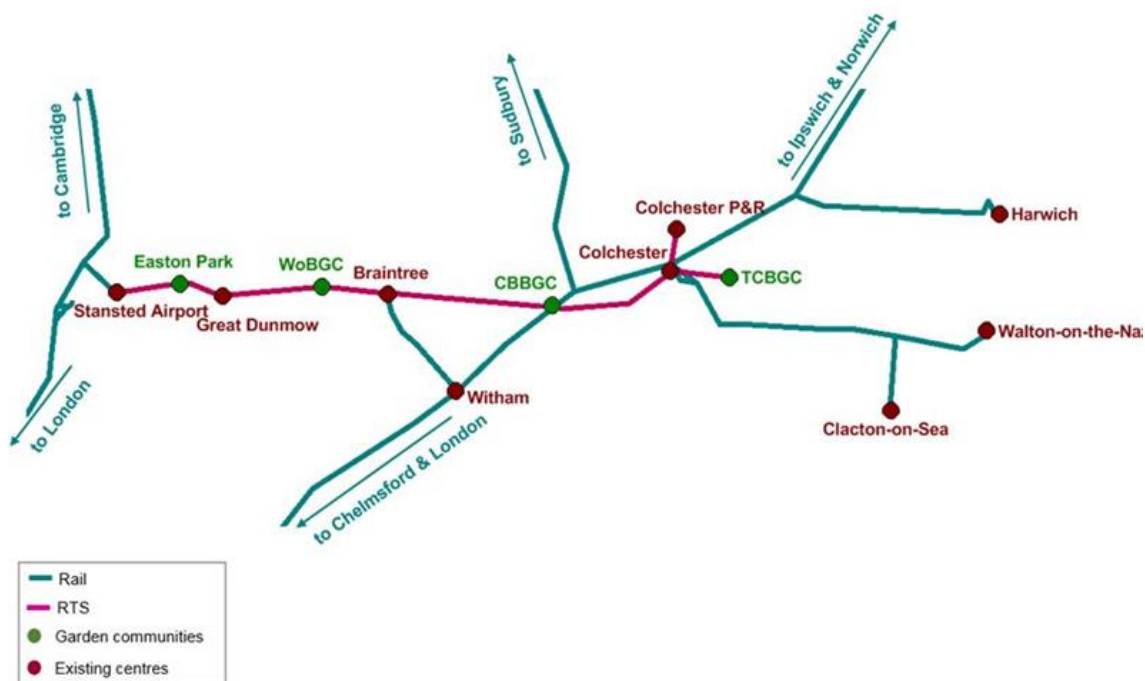
Trackless trams are a recent development which have been used in Zhuzhou, China. The aim will be to create a route network connecting key destinations across North Essex, which can be used by rapid transit vehicles and trackless trams, or equivalent technological solutions, once such systems are readily available. A key advantage of the strategy to develop a rapid transit route network is its adaptability to different technologies.

The dedicated routes, oftentimes alongside cycle lanes, will either be segregated or provide high levels of priority for rapid transit over other traffic. The latter arrangement would be used at locations where, for example, local access is needed. It is forecast that rapid transit will, over time, provide a genuinely practicable and attractive transport choice for many key destinations across North Essex and contribute to a virtuous circle of increasing sustainable travel. Prior to 2033 it is not expected that rapid transit vehicles will be driverless; it is only post 2033 that fully autonomous vehicles are expected to become a possibility.

This report identifies how the first four RTS routes can be incrementally created to deliver the space, priority and segregation required. It is expected that after

the first four routes are established the network of destinations served would expand.

- **Route 1** connects Tendring Colchester Borders Garden Community, a potential eastern park and ride site, the university, the main rail station, the hospital and the existing Colchester northern park and ride site;
- **Route 2** connects Colchester Braintree Borders Garden Community, a potential western park and ride site, the town centre and the rail station;
- **Route 3** is being planning jointly with Uttlesford District Council and connects Stansted with Braintree via the West of Braintree Garden Community; and
- **Route 4** connects Braintree and the Colchester Braintree Borders Garden Community, and in doing so connects the two subsystems that would have been created.



Rapid Transit Network

Integration with transport and planning policy

To ensure success and the step change in public transport use implied by the vision, however, the report also identifies the principles for the image, quality and service standards which will guide design and operations. Furthermore,

those complementary measures and policies with which it is necessary for rapid transit to be co-ordinated are discussed, including:

- access to stops to maximise the catchment of potential users;
- road space reallocation to public transport and active modes;
- parking supply and demand changes including park and ride;
- interchanges and secondary services;
- ticketing and information; and
- following best practice for accessible and inclusive design.

Viability

Given the routes, stop configurations and expectation of complementary measures, a transport model has been used to estimate the likely patronage on a rapid transit system at different stages of its development. The estimates have been adjusted to reflect pessimistic and optimistic futures, for example on the success of complementary measures.

The report shows that the capital cost is related to the amount of contribution that can be expected from garden communities in North Essex. Although contributions from central government sources are being sought in order to accelerate implementation and maximise benefits for all. Furthermore, reflecting the appeal of route choices that have been made, the rapid transit system is shown to be operationally viable from 2033, able to cover both maintenance and operational revenue costs.

Conclusion

While there is much detailed work still to follow, it is hoped that this report provides a clear strategic plan to create a world class rapid transit system for North Essex - reimagining public transport affordably, swiftly and practicably - and so exceeding the aspirations embedded in the vision for garden communities in North Essex.