

CAUSE

Infrastructure First

The 'Metro' Concept



North Essex needs:

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Infrastructure First

Infrastructure first: A vision and strategic plan for North Essex which prioritises infrastructure and economic growth. We must make use of spare infrastructure capacity and encourage sustainable transport solutions to reduce car-dependency. This has not happened with the garden communities project. Infrastructure & employment have been an afterthought.

The right locations: To promote sustainable patterns of development, with housing well related to jobs and services, and served by public transport & cycling or walking. However, instead of thinking along these lines, our councils respond to calls for sites.

The right scale: Development should be on a more human scale. The huge garden communities proposed by the authorities take too long to build, are too costly in terms of land control costs & infrastructure, and too large to be walkable. Instead, we should create compact, walkable developments with jobs & services, connected to urban centres by public transport & cycling/walking. Poundbury, in Dorset, is a good example.

Transport context: Council transport goals

¹ Colchester Issues & Options 2015 *“The main transport issue location ... of new development ...to reduce the need to travel; and new communities ...planned ...to influence a change in people’s travel behaviour, towards more sustainable modes of transport.”*

Colchester Local Plan objective (SA scoping report 2014) *“4. To achieve more sustainable travel behaviour, reduce the need to travel and reduce congestion.”*

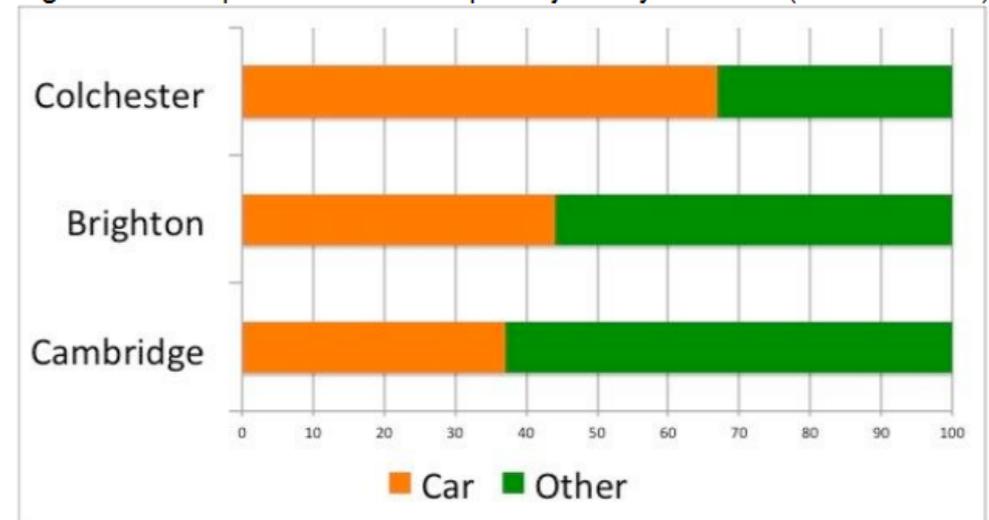
Tending Issues and Options 2015 *“ ...actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations that are or can be made sustainable.”*

Tending Sustainability Appraisal Scoping Report June 2015 *“One of the challenges to future development in Tending is to minimise the dominance of the car as a main mode of travel.”*

Tending Local Plan 2007 *“Changes ...should ...reduce the number and length of journeys by car and provide for improved public transport, pedestrian, and cycle movement.”*

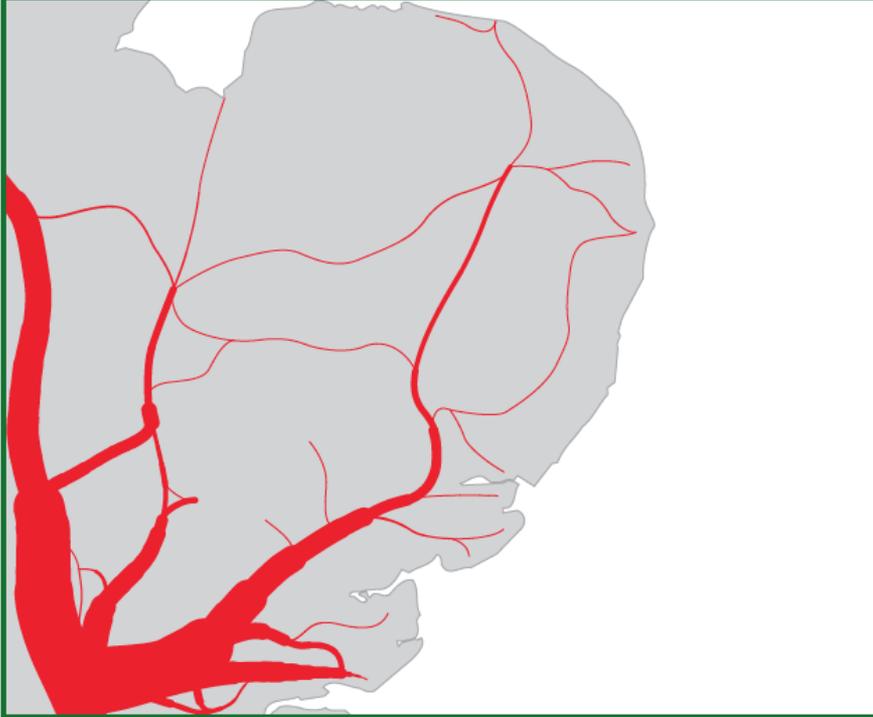
Essex County Council’s Cabinet Member for Highways and Transportation, Cllr Rodney L Bass: *“Essex County Council is committed to promoting sustainable transport”* Essex CC press release 10th July 2015

Figure 2 Comparison of mode split of journeys to work (2011 Census)



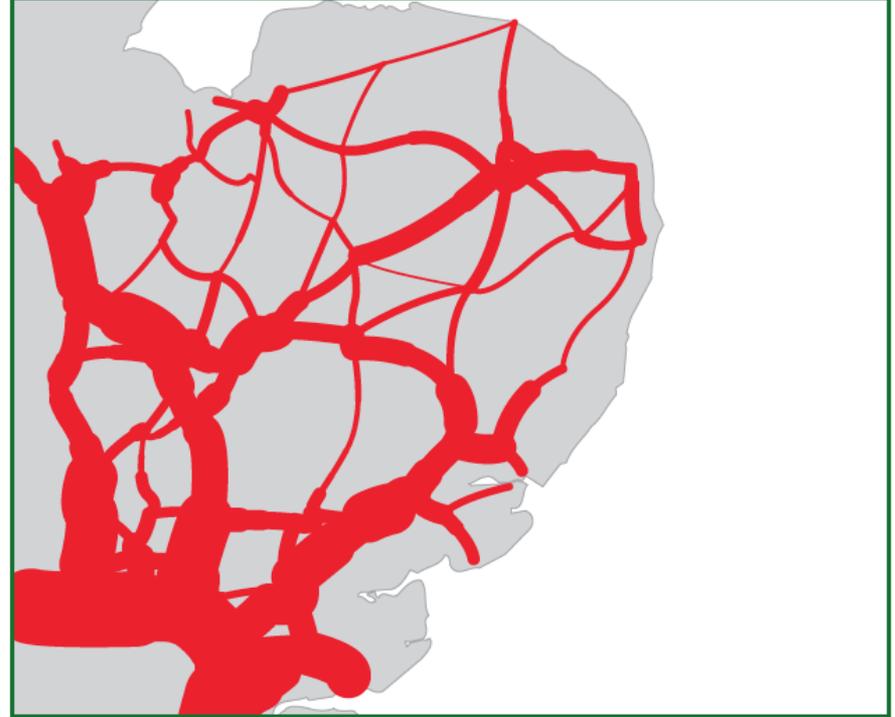
Transport context: Rail & road usage

Figure 2.1: Rail usage in Anglia*



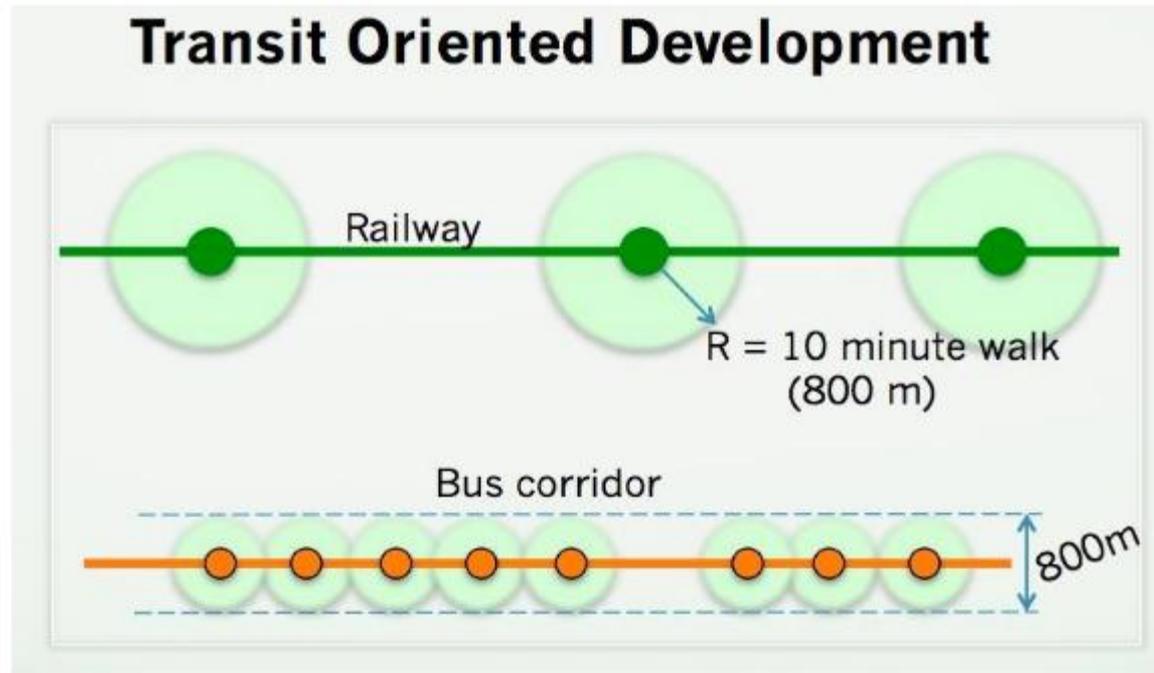
*derived from origin - destination data year to March 2013

Figure 2.2: Trunk road usage in Anglia outside the M25 †



†traffic counts from <http://www.dft.gov.uk/traffic-counts>

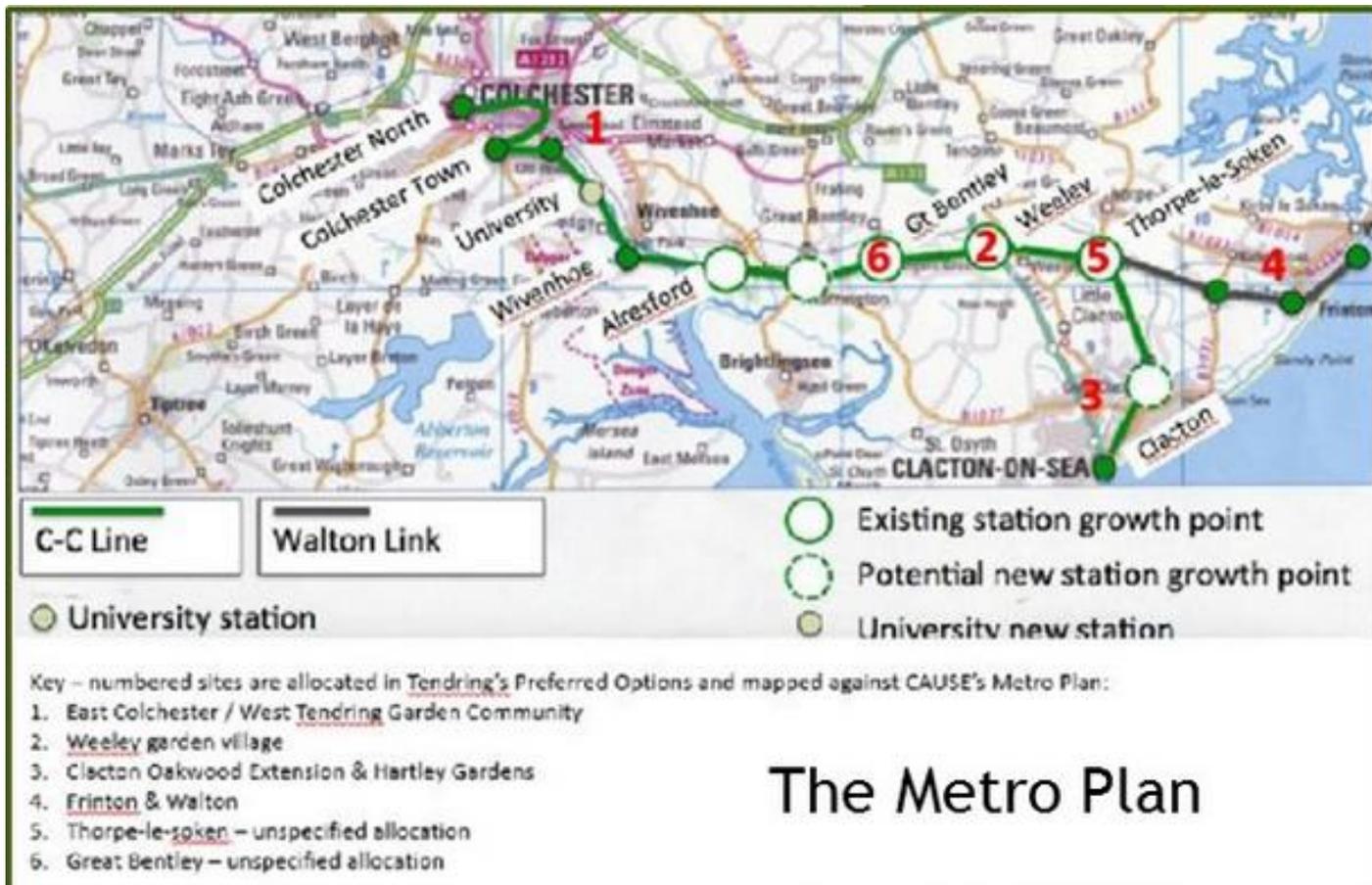
North Essex solution?



A further principle on which the scenario is based is to achieve a high mode share of trips by the sustainable modes (walking, cycling and public transport) and a correspondingly low share of trips by car. This must include mode switch away from car by existing residents, as well as low car use by the new residents, in order to avoid serious additional congestion on the road network as the population grows.

The 'Metro' concept:

This is a concept put forward as a way of doing things differently. It is not a plan to be foisted on unwilling communities. Clearly there are transport benefits to the villages if they wish to accept development in return for a 'metro' service but that is something for those who live there to decide. Each village along the line should be asked for opinions and those opinions listened to.



Infrastructure first

The Colchester-Clacton line is an under-used asset, with spare capacity, worth around £1bn. The North Essex authorities have talked of needing up to £2bn to provide a mass rapid transit system from scratch. This one is sitting, waiting...

With minimal investment, the electrified Colchester-Clacton line has the potential to offer a service every 15 minutes. This is the 'holy grail' service level to encourage use of public transport instead of car use.

Much of Tendring's proposed development in the Preferred Options and Call for Sites is already at or near settlements along the line. The Metro concept requires any development to be within walking distance of a station (within 800m). Developments around the stations would become communities in their own right, offering lower order services. Higher order services would be accessed via the metro line, as often the case on the continent.

Could it work elsewhere in north Essex?

The Metro concept could equally apply on the Braintree to Witham line, if a passing loop is installed (or perhaps with some clever timetabling). In the long-term there is scope to electrify the service on the Marks Tey – Sudbury line.

Bus rapid transit can also form the backbone of a transit-oriented development system, but only in a situation where the buses are not running in traffic. They must be segregated onto bus-ways or their own bus lane.

What if...?

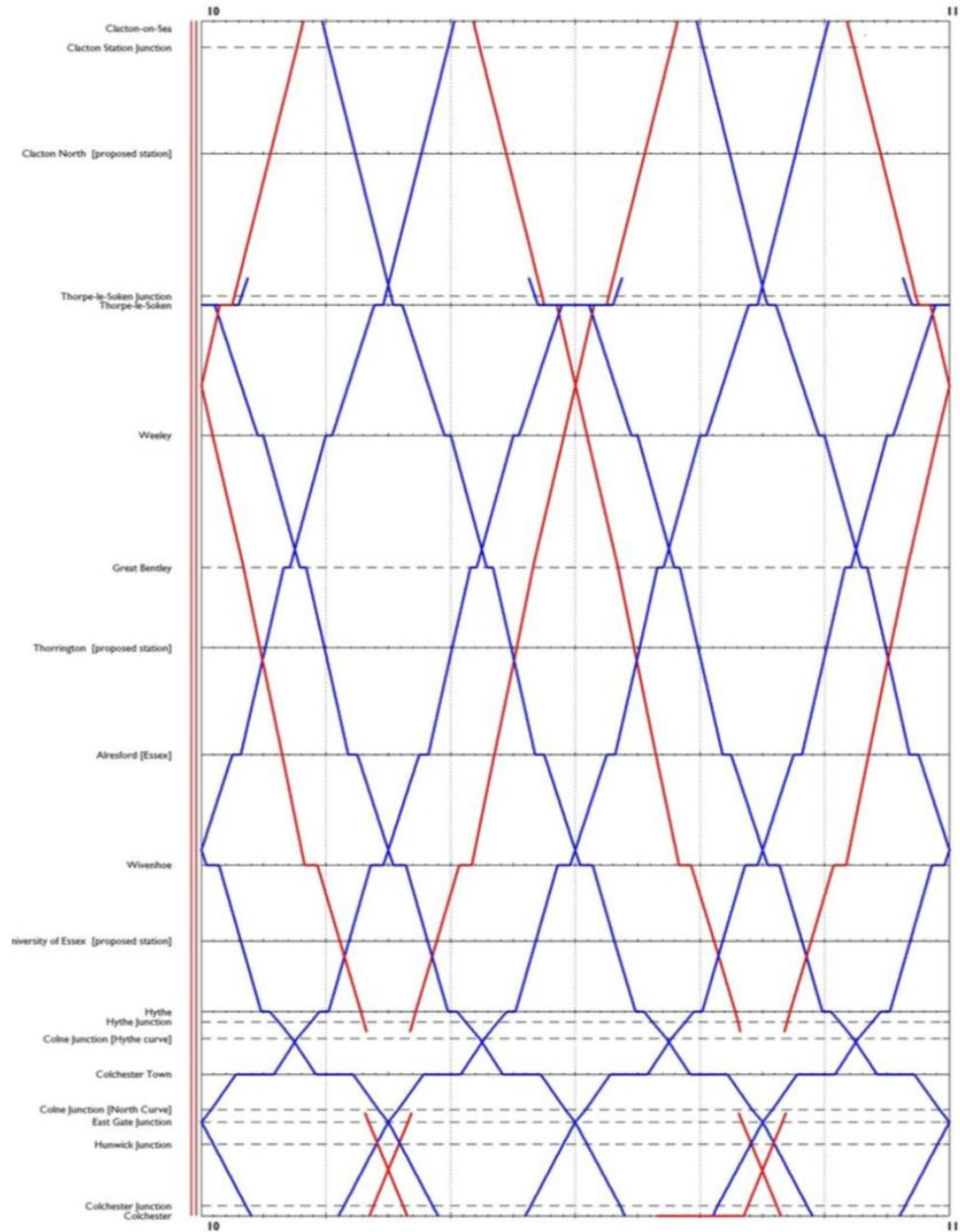
...instead of focusing on brand new 'mass rapid transit', the authorities choose simply to focus investment on the line to improve public transport between the coast and Colchester. They have put in a bid to government for £100m to re-route the A12 simply to create a bigger curve to contain 8,000 more homes at 'West Tey'. This is a bid which brings no benefit to anyone – existing residents or new residents.

What if instead they chose to change the bid to one to improve the service on the Colchester-Clacton line and Braintree-Witham line, and create two mass rapid transit systems?

North Essex transport: bus connections

Table 2 Bus routes with potential for high frequency and rail integration

Bus route description	Existing route number (main service)	Potential interchange stations and growth areas served
Colchester - Wivenhoe	62	Wivenhoe station
Colchester - Brightlingsea	87	Alresford station
Colchester - Clacton	76	Elmstead Town, Weeley station
Colchester – Clacton via Great Bentley	77/79	Elmstead Town, Great Bentley station
Manningtree - Clacton	2	Weeley station, Little Clacton
Harwich - Clacton	3, 4	Thorpe-le-Soken station



Rail practicalities: 4 trains per hour?

The basic timetable is an hourly regional train between Clacton and London, calling on the branch at Thorpe-le-Soken and Wivenhoe (and not running into the Town station), and an hourly all-stations local train between Walton and Colchester that runs into and reverses at Town. The local arrives at Thorpe before the regional and then follows it in order to offer faster journeys for Walton line passengers and connections between Clacton and the smaller intermediate stations. Extra services operate in the peak, partly because a large rolling-stock depot is located at Clacton.

This is a thin service for an electrified, double-track railway, but it reflects the modest population around the intermediate stations and the demographics of an area with an unusually high proportion of elderly people. It is undesirable for this to continue because it does not make optimal use of an expensive asset.

Usage of the intermediate stations is currently rather poor, but they are quite well located for the villages they serve and/or have sizeable sites suitable for housing within their walking catchments. They therefore offer the potential for generating additional travel on the line while averting development at sites that would add to road congestion.

The promising starting point for four trains per hour is an under-used asset ripe for enhancement rather than a project requiring extensive and expensive new build. Two trains/hour could be doubled to four using rolling stock that otherwise stands idle between the peaks. It is envisaged that the second local would run from and to Clacton, leaving the Walton spur with an hourly service.

Rail practicalities cont/d

The only constraint is the need for careful planning at the two junctions on the direct line where a train running into Colchester Town and reversing to run eastwards may conflict with a westbound regional train and where frequent or lengthy closures of East Gate Level Crossing must be avoided for the sake of traffic circulation within Colchester. Analysis of timetabling options indicates that evolution of the service could go further to offer two regional trains and four local trains/hour, although it must be stressed that this is intimately dependent on decisions about the overall structure of the GEML timetable.

The pattern would be two locals between each pair of regionals with one serving Clacton and thereby giving that section four trains/hour and the other serving Walton half-hourly. With the existing type of trains and none of the extra stations this could provide an attractive offer. There would be one requirement for an infrastructure upgrade and one potential operational problem.

In order to secure connections at Thorpe-le-Soken from Clacton into a local and from Walton into a regional (as now) and to do so in the two directions simultaneously (which is a necessary function of an integrated timetable) the disused platform and the third line would have to be restored, but this would hardly be a major project. The operational problem is that even it currently closes about six to eight times in each morning peak hour, sometimes for some minutes. Replacement with a bridge is impossible in a dense urban environment. It is envisaged that the restored northern line would have an independent connection to the Walton branch and a crossover at its centre to enable the two Walton trains to occupy the northern side of the island together. The third platform would offer flexibility in the event of out-of-course running. There would also need to be provision for bi-directional ('wrong-line') running for about 2 km west of Thorpe.

Rail practicalities: new stations?

New stations could be considered along the line. This would require new rolling stock that, through faster acceleration and sharper braking, could absorb the loss of time and the extra dwell time.

❑ **UNIVERSITY:** On the outskirts of Colchester lies the campus of the University of Essex. The railway passes along its southern edge, and a station there, although away from the centre of the campus, could be convenient for many journeys by staff and students. Moreover it could have substantial benefits by facilitating good employment opportunities for people along a line which runs through an area much in need of economic regeneration.

❑ **CLACTON NORTH:** Clacton station serves the town centre and holiday area well – its size attests the town's one-time popularity for seaside breaks and could readily accommodate a resurgence of rail's modal share, given an attractive service – but the town has spread to the north and a new station 3.5 km from the terminus has been proposed to improve access. Clacton North is a matter of not compromising the short turnrounds that the outline timetable suggests are possible. University of Essex is a matter of retaining the crucial timings at Thorpe and at the Colchester junctions.

❑ **THORRINGTON:** The third possible new station would serve sites for housing at Thorrington, between Great Bentley and Alresford (the original station there was closed in 1957). Thorrington is similar to Clacton, but as an intermediate stop between two quite close existing stations (which would prevent trains reaching linespeed) it would have the largest effect and would be difficult to justify unless the scale of housing development were exceptionally large (and therefore unlikely to be locally acceptable).

In the longer term, a possible mitigation to consider is the '**tram-train**' concept. Tram-trains are vehicles built to run both as traditional trams and on mainline railways amongst conventional 'heavy-rail' trains. This allows them to offer highly flexible services, typically connecting relatively low-density areas with large town centres and their principal stations.

Rail practicalities: possible passenger numbers...

Figure 3 Existing rail passengers (2013-2014, source: ORR)

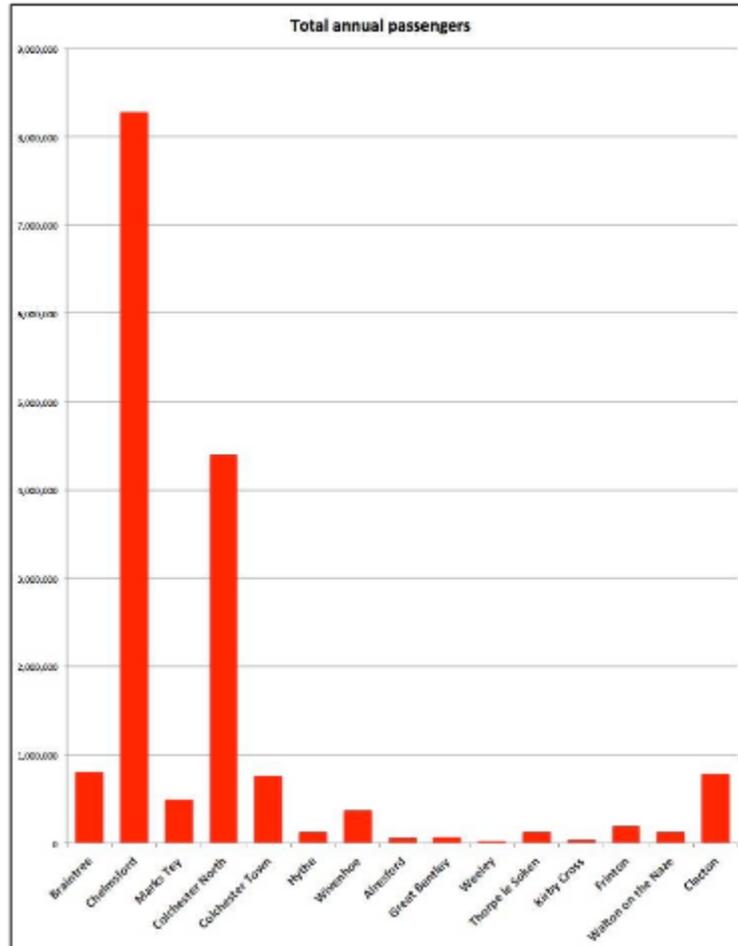
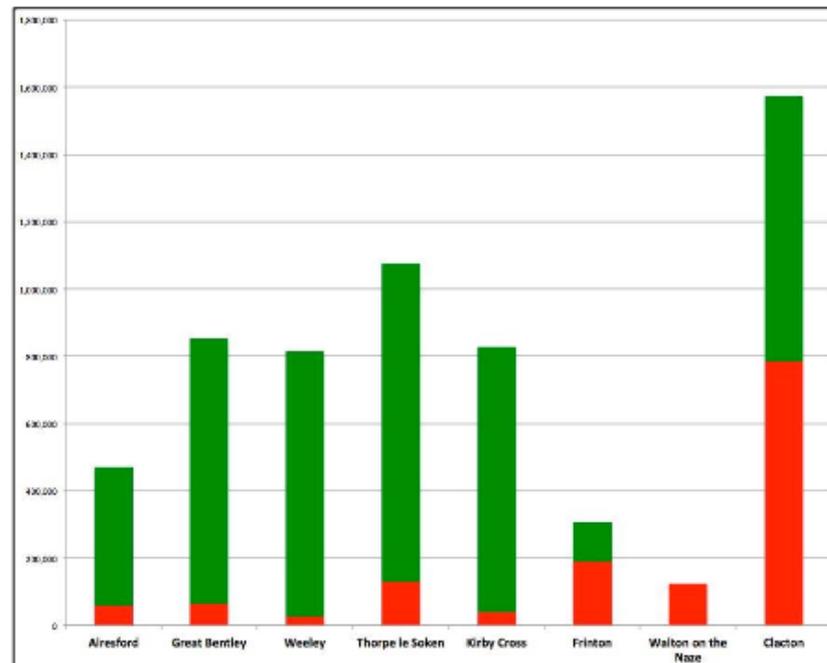
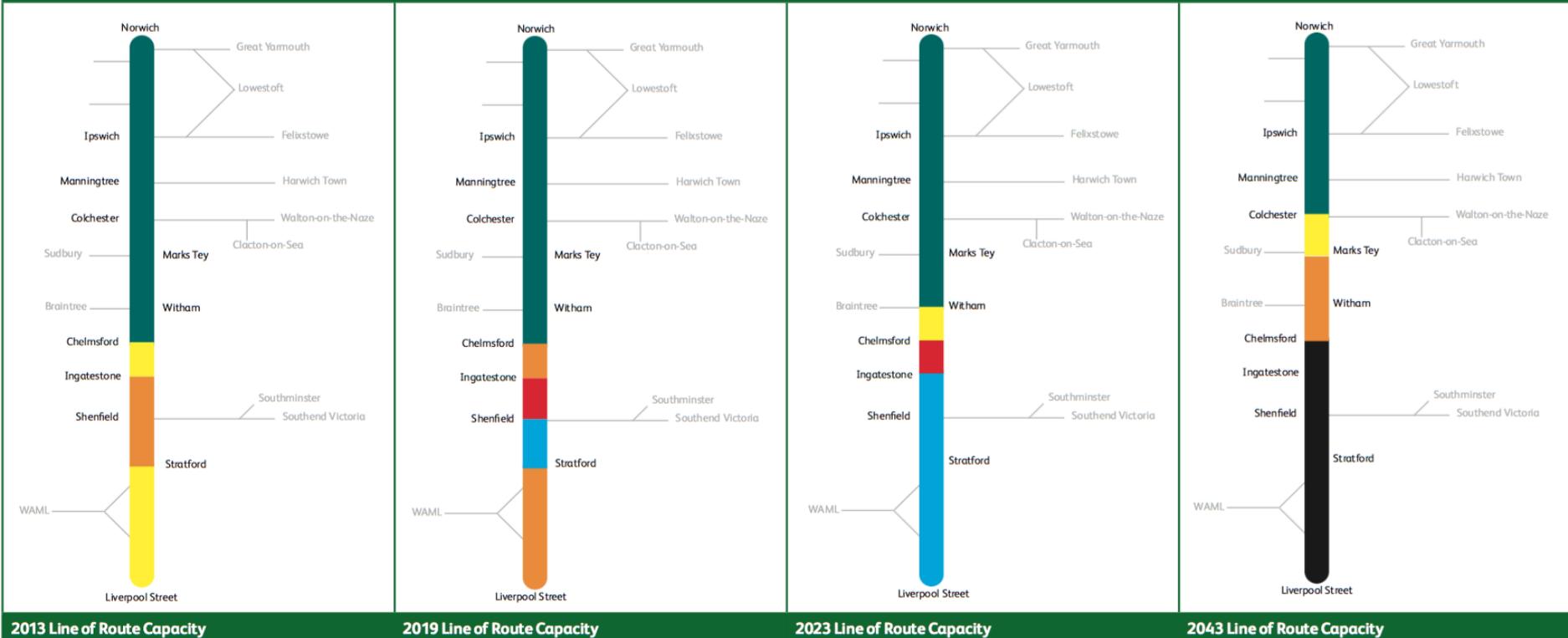


Figure 6 Estimated uplift in passenger demand generated by the Clacton line (in green) arising from station area housing growth, including a new station at Clacton North. Total annual passengers.



Rail practicalities: why the GEMML can't be a Metro line

Figure 3.4: Average load factor of all services on the main line between Norwich and London Liverpool Street via Chelmsford in 2013, 2019, 2023 and 2043



2013 Line of Route Capacity

2019 Line of Route Capacity

2023 Line of Route Capacity

2043 Line of Route Capacity

■ Seats available - up to 70% seats taken
 ■ Seats busy - up to 70% - 85% seats taken
 ■ Seats full - standing on some trains (85% - 100% taken)
 ■ Standing: 0 - 40% of standing capacity used
 ■ Standing: 40% - 100% of standing capacity used
 ■ Standing: >100% of standing capacity used

CAUSE has been assisted by:



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