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Great Eastern Main Line Study

GEML Task Force conference – 1 February 2019

Overview



- The GEML study – purpose and scope
- Strategic questions
- Growth assumptions and options
- Services needed in the future
- Enhancement choices
- Other considerations
- Taking things forward

Great Eastern Main Line Study



Study Objectives:

- To review growth and demand forecasts for services on the route in the medium and long term
- Consider future train services expected on the route
- Understand the order and timing of future investment in the route to meet desired services
- Identify any other interventions that are likely to be needed

Governance

- Forms part of Network Rail's *Continuous Modular Strategic Planning*
- Facilitated by Network Rail but developed and overseen by a *Project Board* consisting of the County Councils, Department for Transport, Greater Anglia and New Anglia LEP.
- A study *Rail Working Group* including other TOCs and FOCs has been set up to input to the study and consult with.
- The *GEML Task Force* has been reported to and consulted with during the development of the study.



Strategic Questions

What are the priorities and timescales for identified rail infrastructure capacity enhancement between London and Norwich?

- How does the introduction of new rolling stock on this corridor impact on priorities for rail infrastructure investment?
- What is the current view on rail growth between London and key centres on the Great Eastern Main Line (GEML)?
- How does the future timetable planning assumptions impact on the ordering of capacity interventions?
- What is the current stage of development and timescales/phasing for delivery for schemes on this corridor?
- Is there any additional infrastructure required not previously identified?

Great Eastern Main Line established priorities today



Existing schemes:

- Crossrail
- Delivery of Norwich in 90 mins/Ipswich in 60 mins
- New trains arriving soon
- Beaulieu Park HIF bid
- Digital signalling/Traffic Management
- Liverpool Street station capacity enhancement (2021)



Existing recommendations (Anglia Route Study):

Bow Junction remodelling, Witham Loops and Trowse swing bridge

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Passenger Growth Forecasts

1. 'Baseline' growth

- Forecasts have been estimated using DfT's WebTAG guidance
- Focuses on GDP, employment and population growth factors but takes a broader national approach not considering specific local factors.

2. 'Higher' growth

- Uses the baseline growth with the addition of local housing growth provided by County Councils focusing on Chelmsford, Colchester, Ipswich and Norwich
- Factors influencing growth include CEBR* higher London Employment growth for flows to/from London.

*Centre for Economics and Business Research

Passenger Growth Forecasts

	Past* 10 CAGR** 2006/07-2016/17	Baseline Passenger Growth Forecasts				High Passenger Growth Forecasts			
		2018-2024 CAGR	2024-2029 CAGR	2029-2033 CAGR	2033-2043 CAGR	2018-2024 CAGR	2024-2029 CAGR	2029-2033 CAGR	2033-2043 CAGR
All Day Passenger (Growth to/from these stations)									
Colchester	0.6%	2.2%	2.2%	2.2%	1.2%	3.1%	3.1%	3.1%	1.9%
Chelmsford	1.9%	2.0%	2.0%	2.0%	1.2%	3.1%	3.1%	3.1%	1.8%
Norwich	4.3%	2.5%	2.5%	2.5%	1.2%	3.1%	3.1%	3.1%	1.7%
Ipswich	4.3%	2.3%	2.3%	2.3%	1.1%	3.3%	3.3%	3.3%	1.7%
Passenger Growth to LST*** 0800-0859		1.7%	1.7%	1.7%	1.1%				

*Historic passenger growth rates based on ORR footfall data

**CAGR refers to the compound annual growth rate. This is the rate of passenger growth assumed per annum to/from each station

***LST refers to London Liverpool Street Station

- Growth is expected to be between 2-2.5% per year for baseline growth and 3.1-3.3% for higher growth over the next 15 years for different location on the GEML.

Impact of expected growth

- Assessment of services arriving/departing Liverpool Street on a weekday between 8-9am and leaving between 5-6pm
- Assumptions for 2020 timetable and rolling stock (only committed changes)
- Up to 22 trains per hour (tph) currently run to and from London Liverpool Street
- Consideration of 2033 and 2043 years growth
- Identification of additional services likely to be needed
- Enhancements required to fulfil the additional services required.

Rolling stock comparison



	% change in seats from old rolling stock	Example services into London Liverpool Street (AM peak)
Suburban	17% - 36% increase in seating	164 – 305 extra seats
Inter-city	22% increase in seating (but up to 40%)	139 extra seats (but up to 219 seats)

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Impact of new rolling stock



% (Approx.) of services into London Liverpool Street that require passengers to stand

2033 (Peak 0800-0859)		2043 (Peak 0800-0859)	
Current rolling stock	New rolling stock	Current rolling stock	New rolling stock
83%	52%	100%	71%

- A significant capacity increase provided by new rolling stock
- Potentially reduces the need for 2 additional services into London Liverpool Street in the morning peak by 2033 (from Colchester and Ipswich)
- Capacity interventions would be required much sooner without new rolling stock.

Locations where capacity challenges could arise



Baseline Growth

2024	2029	2033	2043
Colchester – London (AM)	Colchester – London (AM)	Manningtree - Colchester – London (AM)	Manningtree - Colchester – London (AM)
	Stratford – Chelmsford (PM)	Stratford – Chelmsford (PM)	London – Stratford – Chelmsford – Ipswich (PM)
		Billericay – Stratford (AM)	Billericay – Stratford (AM)

Baseline growth Key

- Option A
- Option B only
- Indicates continuation (AM) AM peak (0800-0859) (PM) PM peak (1700-1759)

Higher Growth

2024	2029	2033	2043
Colchester – London (AM)	Colchester – London (AM)	Manningtree – Colchester – London (AM)	Ipswich – Manningtree – Colchester – London (AM)
	Billericay – Stratford (AM)	Billericay – Stratford (AM)	Billericay – Stratford – London (AM)
	Stratford – Chelmsford (PM)	London – Stratford - Chelmsford – Ipswich (PM)	London – Stratford - Chelmsford – Ipswich (PM)

Higher growth Key

- Option A
- Option B only
- Indicates continuation (AM) AM peak (0800-0859) (PM) PM peak (1700-1759)

Identified service increases to meet capacity challenges

2 approaches considered:

A – Minimum intervention (max use of existing services, potential passenger disbenefit)

B – Greater intervention (additional service to ensure no journey time disbenefit)

Service	Current Frequency	Total Frequency (if changed) for Baseline Growth			
		2024	2029	2033	2043
Chelmsford – London (AM)	2			3	
Clacton – London (AM)	3	4			
Harwich Town – London (AM)	1			2	
Southend Victoria – London (AM)	6			7	
Witham – London (AM)	2				3
London – Ipswich (PM)	3				4
London – Witham (PM)	1		2		

Service	Current Frequency	Total Frequency (if changed) for Higher Growth			
		2024	2029	2033	2043
Chelmsford – London (AM)	2		3		
Clacton – London (AM)	3	4			
Ipswich – London (AM)	1			2	
Southend Victoria – London (AM)	6		7		
Witham – London (AM)	2				3
London – Ipswich (PM)	3			4	
London – Witham (PM)	1		2		3
London – Harwich Town (PM)	0				1

Key
 Option A
 Option B
 Indicates continuation
 (AM) AM peak (0800-0859)
 (PM) PM peak (1700-1759)

Baseline Growth

Key
 Option A
 Option B
 Indicates continuation
 (AM) AM peak (0800-0859)
 (PM) PM peak (1700-1759)

Higher Growth

Potential infrastructure options



Future enhancement options that may be required for the GEML	Driver for scheme
Bow Junction remodelling	Required to provide any additional services to and from London Liverpool Street.
Loops between Chelmsford and Witham (Beaulieu Park Station scheme option)	To provide additional services between Shenfield and Witham without changes to service calling patterns and journey times.
Loops south of Colchester and Shenfield to Colchester headway reduction accompanied by 3 or 4 tracking solution from Chelmsford - Shenfield	To provide additional services between Shenfield and Colchester without changes to service calling patterns and journey times.
Haughley Junction doubling	To meet forecast rail freight demand from the Port of Felixstowe and reliability of passenger services.
Ipswich to Haughley Junction – 3 or 4 track solution	To support the provision of an hourly fast service between London and Norwich in 90 minutes and increase the reliability of passenger and freight services.

- Consider further development of Bow Junction remodelling scheme following the monitoring of the impact of new train capacity and short term growth. Platform capacity at London Liverpool street to be assessed.
- Consider further timetable and service options review for the route between Shenfield and Colchester. Potential as part of the development of Beaulieu Park station to identify wider opportunities.
- Completion of Outline Business Case for Haughley Junction track doubling and delivery subject to further development and funding.
- Further timetable assessment to identify 'trade offs' of providing an hourly fast Ipswich/Norwich service.

GEML stations



- Recent passenger growth at stations has been reviewed.
- Growth at Chelmsford and Colchester has been proportionally lower than at Ipswich and Norwich and lower than smaller stations.
- Chelmsford and Colchester stations have been observed in peak hours to understand reasons for lower growth.
- The study identifies issues such as platform widths, general congestion and wider issues such as ease of parking at other nearby stations.
- Subject to funding it is proposed the further stations analysis is carried out to consider possible improvements.

Other considerations



The study identifies capacity challenges and options for further development and future planning. Other issues to consider include:

- Increased service impact on level crossings
- Full capability of new rolling stock including speed and impact on growth once introduced
- Opportunities for service options from new stations such as Beaulieu Park
- Issues with congestion at stations along the GEML including surrounding access.

Next steps

- The initial study is expected to be drafted during February and March
- A further Project Board is expected in late March for review
- Task Force members to review the study before completion
- Working with the DfT on the potential publication and timing.

Thank you.