

Braintree Branch Line Improvements – Feasibility Study		Agenda No: 8	
<p>Corporate Priority: Housing and transport meet local needs Business is encouraged and the local economy prospers</p> <p>Report presented by: Jon Hayden – Director for Sustainable Development</p> <p>Report prepared by: Juliet Strathern – Senior Policy Planner</p>			
Background Papers: - Braintree Branch Line Capacity Improvement (Fast Track GRIP 2)		Public Report	
<p>Options:</p> <ul style="list-style-type: none"> - To seek support for the project from Network Rail and the train operator. - Continue to request that the project is included in future franchise bids. - To investigate costs and benefits of undertaking a ‘Socio Economic Study’ and report these to the LDF panel in due course for decision on whether to fund the study from Growth Area Funding. - To investigate resolution of the congestion resulting from the use of the mainline freight loop (down). 		<p>Key Decision: NO</p>	
<p>Executive Summary: Network Rail was commissioned in July 2010 to undertake a feasibility study into increasing the frequency of services on the Braintree Branch Line.</p> <p>The study concludes, <i>‘that it appears feasible in principle to provide a 30 minute train service between Witham and Braintree through the introduction of a static loop. However, the introduction of this service can only be achieved if the following significant issues / constraints are resolved through negotiation and agreement with the various stakeholders:</i></p> <ul style="list-style-type: none"> - re casting of the railway timetable to provide train paths on the branch and, in the wider context of the main timetable, paths to Liverpool Street, - resolution of the congestion associated with platforming of trains at Witham (Platform 4), particularly during the morning and evening peaks. - resolution of the congestion resulting from the use of the mainline freight loop (Down). - Support for the project from, amongst others, Dept for Transport and National Express East Anglia’. <p><u>Summary of Options</u></p>			
Option		Estimate	Timescale
Speed Increase	South of White Notley; minor track re alignment to generate 30 second time saving	£0.3M	Included in options below.

Static Loop	South of White Notley; around 550m loop to pass trains	£9.4M	3.5 years from commencing detailed feasibility study to project completion.
Static Loop at White Notley station	At White Notley; around 550m loop to pass trains. Includes new platform, footbridge, level crossing alterations, land purchase	£16.55M*	3.5 years from commencing detailed feasibility study to project completion.
Dynamic Loop	Through White Notley; length around 3.8km. Includes a new platform, footbridge, level crossing alterations, land purchase.	£70M (Based on the above)	3.5 years from commencing detailed feasibility study to project completion. This assumes a blockade approach is taken whereby the branch is closed for a month.

*opportunities may exist to reduce cost through de-scoping and derogation.

Network Rail has advised that a further separate study would be required by independent consultants to determine the socio economic benefits of the passing loop.

The study mentions Beaulieu Park and states, *'whilst this potential development is very much in its infancy, and subject to a number of external factors affecting its funding etc, it may have a bearing on the viability of the Braintree service improvement proposal and vice versa'*.

Decision:

- It is recommended that Members note the findings and costs of the final report, and support points 3 and 4 of the conclusion of the study, **3. Resolution of the congestion resulting from the use of the mainline freight loop (down)** **4. Support for the project from, amongst others, Dept for Transport and National Express East Anglia.**
- To continue to request that the project is included in future franchise bids.
- To approve officers to investigate costs and benefits of undertaking a 'Socio Economic Study' and report these to the LDF panel in due course for decision on whether to fund the study from Growth Area Funding.

Purpose of Decision:

To inform Members of the findings of the final study prepared by Network Rail.

Corporate implications	
Financial:	The cost of the study was £37,000 and this is being financed by Growth Area Funding as agreed by the Council's LDF Panel.
Legal:	None.
Equalities/Diversity	None.
Customer Impact:	Improvements to the Braintree branch line will benefit residents in the catchment area of the line and also provide economic benefits for Braintree.
Environment and Climate Change:	Improved train services may discourage car journeys.
Consultation/Community Engagement:	None.
Risks:	Risks associated with carrying out the study are limited. The main risk relates to the deliverability of proposals that are identified in the study.
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Background

1. At present the frequency of services on the Braintree branch line is limited because it is single track. As a result the minimum interval between services is about 45 minutes in the peak hours. An hourly service operates outside of peak hours. As a result many people within the catchment area of stations on the branch line prefer to drive to stations on the mainline where there is a great frequency of service. The limited frequency of services is also a constraint on Braintree's economic development. It has therefore been an objective of the Council for sometime to investigate the feasibility of improvements to the line to enable a greater frequency of train service to be achieved.
2. The award of Growth Area Funding to the Council provided resources for a study to be carried out, which Network Rail were commissioned to undertake in August 2010.
3. During initial discussions between Network Rail and Braintree District Council a project proposal was jointly produced which set out the criteria for the project, 'the project will increase the frequency of the passenger service by providing a 12 car loop to enable a shuttle service to operate between the current hourly service, thus providing a half hourly service on the Braintree branch Line'.
4. Network Rail using the data in the above project proposal, identified the following deliverables of the study:
 - An estimate of the price for implementing the Project.
 - An estimate of the programme for implementing the Project.
 - A proposed scope of works, inclusive of outline drawing where applicable.
 - A summary of the known project risks identified in the Project.
 - An estimate of the price and programme for developing the Project to the next stage of development.
 - A summary of the contractual agreements that will be required to take the Project through the next stages of development.

Findings of the Study

5. The study identified options to increase the frequency of the train service between Braintree and Witham and the infrastructure required. The main methods considered during the study were line speed improvements and provision of a static loop. In addition, the provision of new platforms at Witham and / or Braintree was also briefly considered.

6. Line Speed Increase

The following were identified as the most likely constraints on raising line speed:

- Track geometry; cant / deficiency / radius
- Track components limitations
- Track configuration – switches and crossings
- Track condition – usually as a result of embankment / formation issues
- Level Crossings
- Signalling

The study identified that south of White Notley Station the track radii on the 3 curves are such that the line speed could be increased by 10mph to 60mph through an increase in cant or deficiency which is likely to require lengthening of

transitions. The rail and sleeper condition is adequate. This equates to a point to point time saving of 0.5 minutes. Track slue / tamp 3178m = £303k.

The study identified that it would not be possible to increase line speed on other parts of the route, due to tight track radii and inadequate track formation condition.

7. Provision of a Static Loop

A detailed timetabling study (*based on May 2010 timetable*) was commissioned alongside this 'engineering' study. As the train service between Braintree and Witham is more frequent during peak hours than off peak, the timetabling study is only able to identify a location for a static loop (*between White Notley and Cressing*) which is feasible in the off peak, assuming peak services remain as existing. The engineering study identified two possible locations for the static loop, option 2 (*on 'down' side of the existing single line, on Braintree side of White Notley*) corresponded to the location identified in the timetabling study. Although, option 1 (*bi directional loop being provided on Witham side of White Notley*) is preferred from an engineering point of view due to no significant cost difference and because there are known formation/drainage problems to the Braintree side of White Notley, it does not provide the capacity improvement sought based on the May 2010 timetable.

8. Provision of a static loop at White Notley station

At a high level the study looked at the implications of providing the static loop at White Notley Station. Whilst this option is feasible at a considerable additional cost, estimated to be in the order of approximately £7.15m it does pose a number of issues which would need to be investigated further.

9. Dynamic Loop

The option of providing a dynamic loop was excluded from the study remit due to cost, however, a high level review of the main issues of providing a dynamic loop were detailed:

- It would pass over White Notley Level Crossing which would need to have a risk assessment carried out to determine if any additional safety / control measures were necessary.
- There appears to be sufficient space within Network Rail's boundary at White Notley Station to provide additional track, however, if an additional platform is required land would need to be purchased from adjacent property (garden).
- Under bridge would need to be assessed to ensure structural integrity for the new line.
- Provision of a dynamic loop would be in order of five times more expensive than the static loop plus additional costs for station works at White Notley.

10. New platforms at Witham and / or Braintree

A new platform at Witham would need to be constructed alongside the existing platform 4 line. However, as this point of the station is in a cutting there is insufficient space between existing infrastructure, station buildings, access and adjacent land boundary.

A new platform at Braintree would be constructed on the 'down' side. There is a previously abandoned track formation 150m from the buffer stop towards Witham

which could accommodate a platform. However, after that point the track is on an increasingly steep embankment with insufficient width to locate additional track and platform.

11. Beaulieu Park

The study states *'The FastTrack team are aware of the potential development of a new station on the mainline at Beaulieu Park. Whilst this potential development is very much in its infancy, and subject to a number of external factors affecting its funding etc, it may have a bearing on the viability of the Braintree service improvement proposal and vice versa'*.

12. Conclusions of the Study

- It is possible to raise the speed by 10mph on part of the route south of White Notley, which would give a point to point time saving of 0.5 minutes at a cost of approximately £303k.
- A static loop can be provided either before or after White Notley. From an engineering perspective the Witham side of White Notley (option 1) is the preferred location. However, the timetable study has identified that the location of the loop needs to be between White Notley and Cressing (option 2). Provision of the loop is estimated to be £9.4m.
- The timetable study has raised the issue that a static loop is not viable in peak without alteration to the existing services as such a static loop only provides the solution in the off peak.
- A dynamic loop would provide the opportunity to create additional service in the peak and off peak. However, a number of services block access to and from branch line during evening peak and one such service blocks access in morning peak. This would mean additional services to and from Braintree could not run during the peak, discounting the dynamic loop. The dynamic loop would also be more expensive at £70m.
- The static loop at White Notley station is feasible. However, it would incur considerable additional cost and pose a number of issues which would need to be investigated further.
- It appears feasible, in principle, to provide a 30 minute train service between Witham and Braintree through introduction of a static loop. However, the following significant issues/constraints are to be resolved through negotiation and agreement with various stakeholders: 1. Re-casting of railway timetable to provide train paths on the branch and in wider context of main timetable, paths to Liverpool Street. 2. Resolution of the congestion associated with platforming of trains at Witham (platform 4) particularly during morning and evening peaks. 3. Resolution of the congestion resulting from the use of the mainline freight loop (down) 4. Support for the project from, amongst others, Dept for Transport and National Express East Anglia.

13. Recommendations of the Study

1 A further separate study would be required by consultants to determine the socio – economic benefits of the passing loop.

2 A more detailed timetable study is undertaken at the next GRIP stage to consider the platform issue at Witham and whether there are any opportunities to recast the timetable to reduce conflicts, although this would require reconsideration against the rail timetable as a whole.

3 Braintree District Council engages with the team at Network Rail looking at freight use of the Down Passenger Loop at Witham to determine the impact / synergies of the proposals for the Braintree Branch service.

4 The proposal is discussed with the DfT and other stakeholders to establish its viability, bearing in mind other proposals in the locality, and harness support for the scheme.

Officer Conclusions

Funding is not currently available for the provision of the static loop- which is estimated as £9.4M.

Officers will investigate costs and benefits of undertaking a 'Socio Economic Study' and report these to the LDF panel in due course for decision on whether to fund the study from Growth Area Funding.

Officers will continue to seek support for the project from Network Rail and the train operator and requesting that the project is included in future franchise bids.

Recommendations that points 3 and 4 of the study conclusion should be supported by the Council.