

13 February 2017

Harriet Gale

fyi-request-5330-808ba2be@requests.fyi.org.nz

Dear Ms Gale

**Local Government Official Information and Meetings Act 1987 (LGOIMA)**

**CAS-480701-R1P6N0**

Thank you for contacting Auckland Transport (AT) on 05 January 2017 requesting the following information:

**Has any advice/reports been prepared for AT or by AT about how to improve train travel times and operational efficiencies of the EMU's, and if yes could I please be provided said reports?**

**Train Travel Time**

Dating back to 2015, a joint venture was in place with both KiwiRail and Siemens. A key output of this, was to deliver to the Auckland Network, improvements to both track and signalling.

AT's involvement in this was as client/end user. The summary list of projects discussed and reviewed at this time, includes:

- #3a: Line Speed Increase NAL South (Westfield Junction to Newmarket)
- #3b: Line Speed Increase OBL South (Westfield Junction to Newmarket)
- #3c: Line Speed Increase NBL (Newmarket to Britomart)
- #8: Sarawia St in-fill balise (Reduction in delays approaching 203 signal)
- #9a: 304 Signal approach clearing removal (eliminates risk of Up EMUs stalling at Neutral section).
- #9b: 204 Signal approach clearing removal (eliminate the need for trains to slow to 20/km).

The Line Speed increase projects listed above would require both signalling and changes to ETCS; whereas the other projects listed would require signalling changes. Signalling changes would set up the signalling system for faster line speeds. The line speed increases can be made either:

- At the same time as the signalling changes, or;
- At some later date, or;
- In sections, to suit other requirements.

For the projects to increase line speed, it is intended to retain the option to carry out the signalling and ETCS changes at separate times. This allows for other ETCS changes related to possible curve speed increases to be carried out at the same time to reduce overall costs.

If the ETCS changes were to be delivered at the same time as the signalling interlocking changes there would be a project management and commissioning cost saving but no significant design or testing saving.

This information identifies the recommended packaging of the signalling changes to provide the best value for AT and KiwiRail in delivering the changes that have been identified to improve train performance from Onehunga to Britomart.

Packaging a number of signalling interlocking changes together provides significant economies of scale.

Modelling has been completed by KiwiRail to establish the journey time savings for the NAL South, OBL East and NBL that will be enabled by the line speed increases.

Other interlocking and ETCS changes may be required for the Western, Eastern and Southern Lines depending on the extent of the track speed changes that are adopted. These will be addressed as separate packages of work and will be the subject of later reports.

The net benefit in journey time savings if the ETCS is also changed to lift the speeds is estimated to be:

Southern Up Services ~70sec

Southern Down Services ~35sec

Onehunga Up Services ~65sec

Onehunga Down Services ~35sec

Western Up Services ~30sec

Western Down Services ~20sec

Eastern/Manukau services are not affected.

304 signal approach clearing removal (eliminate risk of Up EMUs stalling at neutral section) which will also provide journey time savings per ETCS fitted train.

204 signal approach clearing removal (eliminate the need for trains to slow to 20km/h) which will provide journey time savings per ETCS fitted train.

Parnell will provide signalling required for the new Parnell station stop. The station stop will tend to negate the journey time savings provided, through the speed increase on the Newmarket Branch.

Modifying the level crossings to support higher speed operation will result in the level crossing alarms operating for longer until the trains start running at the higher speed. The time between implementing the interlocking changes and modifying the ETCS should be kept as short as possible

Project	Description	Signalling Changes	ETCS Changes	Benefit	Signalling Cost	ETCS Cost
#3a	Line Speed Increase NAL South (Westfield junction to Newmarket)	Y	Y	Journey time. 10sec Up, 15sec Dn		
#3b	Line Speed Increase OBL East (Penrose to Onehunga)	Y	Y	Journey time. 15sec Both		
#3c	Line Speed Increase NBL (Newmarket to Britomart)	Y	Y	Journey time. 20sec Both. But addition of Parnell stn will negate.		
#8	Sarawia St in fill balise (reduce delays approaching 203 signal)	Y	Y	Journey time. 10sec per train crossing to P1.		
#9a	304 signal approach clearing removal (eliminate risk of Up EMUs stalling at neutral section)	Y		Eliminate stalling and disruption risk.		

### EMU Operational efficiencies

CAF have recently undertaken timed tests in the depot for different opening and closing options – for the time from wheel stop till power is back onto the traction motors.

It can be achieved in 20 seconds, plus the actual door open time depending on the open and close method. A modification has been implemented that has further reduced the time required to make the traction loop by 2 seconds – which is a good improvement to bank.

We trust the information has addressed the matters raised however, should you believe that we have not responded appropriately to your request, you have the right in accordance with section 27(3) of the LGOIMA to make a complaint to the Office of the Ombudsman to seek an investigation and review in regard to this matter.

If you have any further queries please contact Auckland Transport on 09 355 3553 quoting Official Information request number CAS-480701-R1P6N0.

Yours sincerely



Brendon Main  
Group Manager AT Metro Operation