Network Impact Assessment

Bus Network

The A105 Bus Journey Time Assessment report will be submitted alongside this TSSR.

In the absence of VISSIM modelling OM have agreed that contained within this report is an appropriate methodology to assess bus journey time impacts, however:

- There is an increased margin of error in the delay results calculated by LinSig at junctions where DoS is above 90%. This is applicable in the proposed scenario at the following junctions: 32/018, 32/230, 32/021
- The absolute change in delay value as represented in the results table cannot be guaranteed to a high degree of accuracy.
- Results are not as accurate as if VISSIM modelling had been carried out (however a VISSIM model of this network would have been very difficult to validate given the large distances between signalised junctions).

Note: Additional ARCADY modelling of the existing Zebra crossings on the south side of the Edmonton Green roundabout was carried out to accurately measure the existing northbound and southbound delay experienced on approach and exit to the roundabout due to pedestrian demand at these crossings. These ARCADY results have been used in calculating base bus delay through these Zebra crossings.

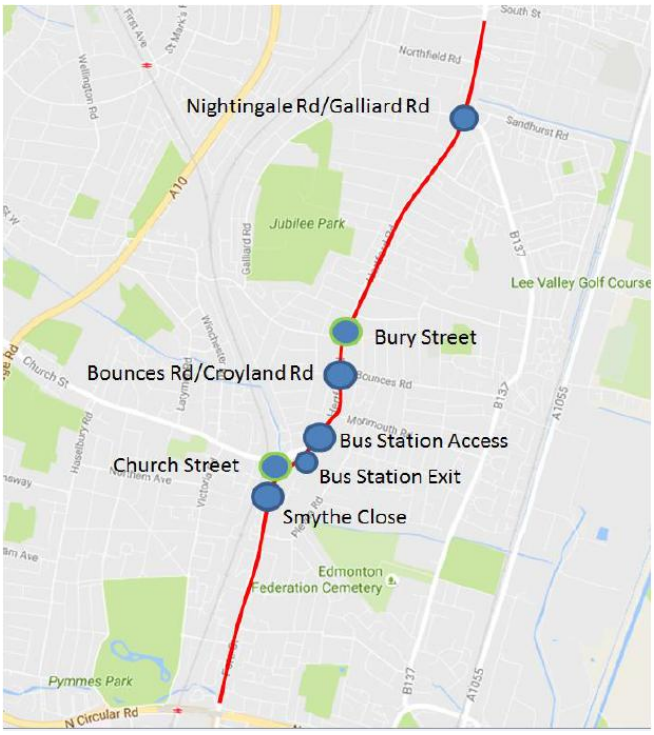

Figure 1: A1010 South Corridor

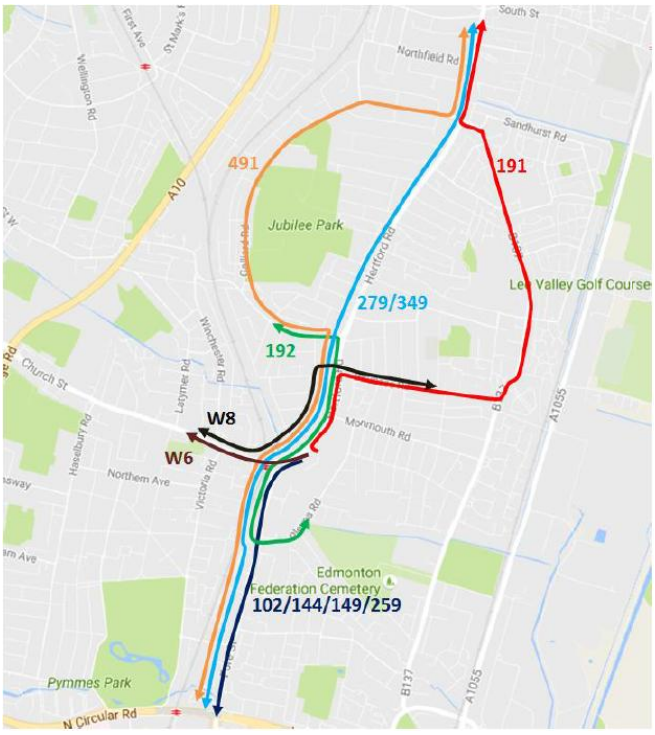

Figure 2: A1010 South Bus Routes

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Bus Route		Change with proposals	
		AM	PM
102	Northbound	41.2	31.0
	Southbound	-9.2	-20.7
144	Northbound	41.2	31.0
	Southbound	-9.2	-20.7
149	Northbound	41.2	31.0
	Southbound	-9.2	-20.7
191	Northbound	-14.8	-42.7
	Southbound	44.1	-66.1
192	Northbound	26.9	-16.0
	Southbound	56.9	51.9
259	Northbound	41.2	31.0
	Southbound	-9.2	-20.7
279	Northbound	54.3	-11.9
	Southbound	-16.0	-4.1
349	Northbound	54.3	-11.9
	Southbound	-16.0	-4.1
491	Northbound	97.8	65.6
	Southbound	66.0	77.0
W8	Eastbound	-6.9	-23.6
	Westbound	73.5	-7.0
W6	Eastbound	28.0	26.5
	Westbound	43.3	73.6

Table 1: Average change in delay per bus by route

Routes 279/349

- These routes are identical within the scope of the A1010 S scheme area.
- These routes travel through every junction which has been modelled and so are the most suitable routes to use when considering the full impact of this scheme on the entire stretch of the A1010 south.
- The stretch of the A1010 covered by these routes within the scheme area is almost three km.
- These routes will likely experience around 60 seconds additional delay in the northbound direction during the AM peak. This is largely due to the increase in delay experienced on the A1010 Hertford Road northbound approach to 32/021 where flare capacity has been removed in the proposed design.
- Journey times on these routes may remain stable in the northbound direction during the PM peak, mainly due to the improvement in journey times northbound through 32/018. As Croyland Road is converted to one way access only this allows for simpler staging at this junction. Therefore junction capacity increases.
- Journey times on these routes are predicted to remain stable in the southbound direction during both AM and PM peak periods.

Routes 102/144/149/259

- These routes are identical within the scope of the A1010 S scheme area.
- These routes travel from the Edmonton Green Bus Station south towards the junction of A1010 / A406 (and vice versa in the opposite direction).
- The stretch of the A1010 covered by these routes within the scheme area is approximately one km
- These routes will likely experience at least 30 seconds additional delay in the northbound direction during both the AM and PM peak periods. This is largely due to the increase in delay experienced whilst turning right into the bus station at 32/195.
- These routes are predicted to experience a slight improvement in journey times in the southbound direction. This is largely due to the journey time improvements experienced travelling southbound through 32/194 and 32/053.

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Route 191

- Route 191 travels from the Edmonton Green Bus Station north towards the junction of A1010 / A110 (and vice versa in the opposite direction).
- Route 191 enters or leaves the A1010 at Bounces Road and Nightingale Road respectively dependent on the direction of travel.
- Route 191 does not travel much distance on the A1010 however the delay increase or journey time improvement is measured on an approximate 2.5 km stretch of the route.
- Route 191 will likely experience at least 30 seconds additional delay in the southbound direction during the AM peak period. This is largely due to the increase in delay experienced whilst exiting from Bounces Road back onto the A1010.
- Route 191 is predicted to experience an improvement in journey times in the southbound direction during the PM peak. This is largely because A1010 Hertford Road southbound at 32/018 is less congested during the PM vs AM peak (after losing a lane compared to existing) so it is possible to allocate more green time to Bounces Road which reduces delay on this approach.
- The result for Route 191 in the northbound direction which shows a journey time improvement is not accurate because there is no reliable LinSig output for the delay which will be experienced by vehicles travelling northbound on A1010 Hertford Road which turn right into Bounces Road.

Route 192

- Route 192 enters or leaves the A1010 at Bury Street and Plevna Road respectively dependent on the direction of travel.
- The stretch of the A1010 covered by Route 192 within the scheme area is approximately one km.
- Route 192 will likely experience around 60 seconds additional delay in the southbound direction during both the AM and PM peak periods. This is largely due to the increase in delay experienced whilst exiting from Bury Street as a result of the signalisation of the existing give way roundabout.
- Route 192 may experience around 30 seconds additional delay in the northbound direction during the AM peak. This is largely due to the increased delay experienced on the A1010 Hertford Road travelling northbound into the new signalised junction 32/230.
- In the PM peak Route 192 may experience a slight improvement in northbound journey times. This is largely due to the PM journey time improvements experienced northbound through 32/194 and 32/053.

Route 491

- Route 491 travels through all modelled signalised junctions within the A1010 S scheme scope but enters or leaves the A1010 at Bury Street and Galliard Road respectively dependent on the direction of travel.
- Route 491 travels for an approximate 1.5 km along the A1010 within the scheme area however the delay increase or journey time improvement is measured on a stretch of the route almost four km in length.
- Route 491 will likely experience over 60 seconds additional delay in the southbound direction during both the AM and PM peak periods. This is largely due to the increase in delay experienced whilst exiting from Bury Street as a result of the signalisation of the existing give way roundabout.
- Also in the northbound direction Route 491 will likely experience over 60 seconds additional delay. The cause of this is largely the increase in delay experienced whilst exiting from Galliard Road at 32/021.

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Route W8

- Route W8 enters or leaves the A1010 at Bounces Road and Church Street respectively dependent on the direction of travel.
- The stretch of the A1010 covered by Route W8 within the scheme area is only about 500 m.
- Route W8 will likely experience over 60 seconds additional delay in the south-westbound direction during the AM peak. This is largely due to the increase in delay experienced while exiting from Bounces Road.
- During the PM peak bus journey times may remain stable in the south-westbound direction, mainly due to the improvement in delay out of Bounces Road at 32/018. This only occurs during the PM peak when A1010 Hertford Road southbound at 32/018 is less congested vs the AM peak (after losing a lane compared to existing) so more green time can be allocated to Bounces Road reducing delay.
- Route W8 is predicted to experience a slight improvement in journey times in the north-eastbound direction during both the AM and PM peak periods.

Route W6

- Route W6 travels from the Edmonton Green Bus Station west along Church Street (and vice versa in the opposite direction), travelling through the proposed Edmonton Green signalised roundabout.
- Route W6 will likely experience about 30 seconds additional delay in the eastbound direction during both the AM and PM peak periods. This is largely due to the increase in delay experienced whilst turning right into the bus station at 32/195.
- In the westbound direction bus journey times will likely increase by more than 30 seconds during the AM peak and by more than 60 seconds in the PM peak period. This is largely due to the increase in delay experienced whilst exiting the bus station and travelling around the Edmonton Green proposed signalised roundabout towards Church Street.