

## **WELLINGBOROUGH TOWN CENTRE AREA ACTION PLAN – SUMMARY OF TRAFFIC MODELLING FOR PREFERRED OPTION**

### **Introduction**

Atkins have run the North Northamptonshire Traffic Model to consider the impact that the Wellingborough Town Centre Area Action Plan Preferred Option has on the Town Centre Highways network. The model considered the impact of the preferred land use options for two highways infrastructure options in the year 2021.

The highway infrastructure options considered are as follows:

- 1) Keep Church Street as existing with do-minimum strategic highways improvements (Baseline option).
- 2) Church Street bus-only, divert car traffic via Queen Street, Herriotts Lane and a new link through West End DIY (Option 5 from the Transport Options Paper).

For each highways infrastructure option two sub-options were modelled: with and without modal shift, equivalent to a 20% reduction in development single occupancy car trips and a 5% reduction in non-development single occupancy car trips. Impacts for both the morning and evening peaks were considered, so overall eight scenarios were modelled.

- i) Baseline option without modal shift – AM peak
- ii) Option 5 without modal shift – AM peak
- iii) Baseline option with modal shift – AM peak
- iv) Option 5 with modal shift – AM peak
- v) Baseline option without modal shift – PM peak
- vi) Option 5 without modal shift – PM peak
- vii) Baseline option with modal shift – PM peak
- viii) Option 5 with modal shift – PM peak

While this modelling has some merit in determining what improvements can be made to mitigate the impacts of the proposed option, the Saturn model is too coarse to assess level of detail we are investigating. It lacks the ability to deal with traffic management effects at the detailed level and so actual performance could well be better than the model suggests.

### **Overall Town-wide Network Performance**

#### *Morning Peak*

Total vehicle hours increase in Option 5 to 1847 hrs from 1836 hrs for the baseline with no modal shift. With modal shift, total vehicle hours decrease in Option 5 to 1743 hrs from 1745 hrs in the baseline. However, these are changes of less than 1% and therefore not significant when considered against the accuracy of the model.

Total vehicles kilometres increase for Option 5 to 80153 km from 79962 km for the baseline with no modal shift. With modal shift, total vehicle kilometres increase to 77368 km for

Option 5 from 77235 km in the baseline. Similarly these are changes of less than 1% and therefore not significant, but an increase may be anticipated since the journey distance for motor vehicles around the town centre is increased.

Average speed across the network decreases for Option 5 to 43.4 km/h from 43.6 km/h for the baseline with no modal shift. With modal shift, average speed increases to 44.4 km/h for Option 5 from 44.3 km/h in the baseline. Similarly these are changes are not significant.

#### *Evening Peak*

Total vehicle hours decrease in Option 5 to 2015 hrs from 2026 hrs for the baseline with no modal shift. However, this is a decrease of 0.5% and therefore not significant. With modal shift, there is no change in total vehicle hours at 1895 hrs.

Total vehicles kilometres decrease for Option 5 to 85240 km from 85402 km for the baseline with no modal shift. With modal shift, total vehicle kilometres decrease to 82057 km for Option 5 from 82160 km in the baseline. These are changes of less than 0.5% and therefore not significant.

Average speed across the network increases for Option 5 to 42.3 km/h from 42.2 km/h for the baseline with no modal shift. With modal shift, average speed decreases to 43.3 km/h for Option 5 from 43.4 km/h in the baseline. Similarly these are changes are not significant.

### **Town Centre Network**

#### *Journey Times*

Journey times have been measured for six routes across and around the town centre. These included:

- 1) Oxford Street / Croyland Road to Swansgate;
- 2) Harrowden Road / Gold Street to Wellingborough station;
- 3) Finedon Road / Cross Road to Morrison's;
- 4) London Road / Irthlingborough Road to Church Street;
- 5) Silver Street / Oxford Street to Silver Street / Oxford Street (for buses); and
- 6) Silver Street / Oxford Street to Silver Street / Oxford Street (for cars).

The key issue with respect to journey times relates to the bus journey time (Route 5). In the morning peak, Option 5 shows a bus journey time of 214 seconds without modal shift and 206 seconds with modal shift. These are reductions of 72 and 69 seconds respectively compared to the baseline scenario. In the evening, Option 5 results in journey times of 208 seconds without modal shift and 206 seconds with modal shift. These are both reductions of 28 seconds. This demonstrates that Option 5 is beneficial for bus journey times.

For the other routes, Option 5 also demonstrates some benefit in journey times for Route 2 and has a neutral effect on Routes, 3, 4 and 6. Only for Route 1 does Option 5 cause a notable increase in journey times (approximately 70%).

### *Junction Capacity*

Junction stresses have been assessed at 17 key junctions within the Town Centre. In the morning, all junctions operate within capacity for both highways options and with or without modal shift. In the evening, the Victoria Road / Midland Road junction is over capacity in both baseline scenarios. However, introducing Option 5 has a beneficial effect on this junction so that it operates just within capacity. The other junctions all operate within capacity.

Overall there are four junctions at which Option 5 has a detrimental effect, but it should be noted that these all still operate within capacity and so considering all junctions, the effect of Option 5 compared to the baseline is neutral. The generally good performance of the Town Centre junctions suggests that traffic may be being metered at junctions outside the Town Centre. Another factor is that the model included NCC's proposed strategic highways improvements that would discourage through traffic from using the Town Centre.

### **Conclusions**

The modelling exercise has shown that there is no difference between Option 5 and the baseline highways network in terms of the town-wide network. This is to be expected since Saturn is not capable of dealing with detailed changes to traffic management. Option 5 has demonstrated a beneficial impact for bus journey times through the Town Centre and although there is an increase in journey times from the west of the town to Swansgate, in general terms Option 5 does not have a detrimental impact on journey times. Similarly, all the key junctions in the Town Centre operate within capacity with either highways option and in particular Option 5 has a beneficial impact on the worst-performing junction, Victoria Road / Midland Road.