

Wheat Quarter, Broadwater Road, Welwyn Garden City

TECHNICAL NOTE 5

Vehicle trip rate review (Sensitivity Test)

1. Introduction

- 1.1. Entran prepared a Transport Assessment (TA) dated January 2018 in support of a planning application for the regeneration of the former Shredded Wheat Factory, known as the Wheat Quarter. Section 12 of the TA set out the predicted vehicle trip generation associated with the proposed development. The methodology for deriving the vehicle trips was based on the Transport Assessment for the approved development, prepared by Transport Planning Associates (TPA) in 2015. That methodology formed the basis on which planning permission was granted in August 2017 for a mixed-use development on this site. The agreed methodology was far more detailed than a conventional assessment of the TRICS database and resulted in a very precise, site related analysis. The same methodology was therefore followed in the January 2018 TA.
- 1.2. Notwithstanding the above WHBC and HCC requested further information in respect of three aspects of the trip generation assessment:
 - Trip-suppression due to reduced parking provision
 - Proportion of adult working population
 - Internal linked trips
- 1.3. This Technical Note has therefore been prepared to review these three areas of the trip rate analysis and should be read in conjunction with the January 2018 TA.

2. Trip-suppression due to reduced parking provision.

- 2.1. Section 7 of the TA set out the proposed parking provision based on predicted parking demand for the proposed development. It examined two specific areas in greater detail than the previous application. It referenced the Census data for vehicle ownership by household type in the vicinity of the application site; it also identified that the original application included Car Club spaces over and above the anticipated car ownership levels, and therefore made no allowance for the effect of the proposed Car Club on household vehicle ownership levels and consequent parking demand.
- 2.2. In August 2018, Technical Note 4 was submitted, entitled 'Parking strategy'. It provided further detailed research on the effects of Car Clubs on household vehicle ownership, but it also explained in further detail the need for lower parking provision where spaces are unallocated (in accordance with the 2007 DCLG research paper '*Residential Car Parking Research*').
- 2.3. Section 12 of the TA identified that the proposed development would be providing residential parking at a ratio of 88% compared to the extant consent, and therefore applied 12% suppression to the residential trip assumptions to take account of the slight reduction in overall parking provision. HCC queried whether a full 12% would result if, for example, the approved scheme was providing a greater number of spaces for the same number of vehicles simply due to them being allocated rather than unallocated. If the full 12% reduction was due to this change then that argument would be true; however, an element of the lower parking provision is due to the influence of the Car Club on vehicle ownership.



- 2.4. Appendix B of TN4 is a research paper by University of the West of England (UWE) (Centre for Transport and Society) and the Carplus/Bikeplus charity (now CoMoUK) entitled “*Car Clubs in New Developments: A review of experience and good practice in low car and car free developments (2003-2014)*” (April 2016). It states that, as expected, “*Relieving parking pressure, or enabling development to occur in areas of parking pressure, are two key advantages of car club provision, mentioned in case studies*”, but it goes on to state that their research found that “*in addition to car club members being less likely to own a car, they are also more likely to use public transport, and walk and cycle. Train travel among car club members is more than double the average across the UK, with bus use around a third higher than the average. Car club members are also around three times more likely than the average person across the UK to be a regular cyclist.*” [TN4, Appx B, p14]
- 2.5. It is therefore evident that if vehicle usage for the development includes the proposed Car Club vehicles, rather than just the private vehicles (or TRICS survey sites without car clubs) then overall trip rates would be lower. A review of the research papers cited in the UWE document shows a wide range of lower vehicle usage amongst car club members but in each case the reduction is far greater than 12%.
- 2.6. Section 5 of TN4 suggests a flexible approach to Car Club provision, with an initial 3% provision, but allowing for up to 6% provision subject to demand. If we assume a reasonable future mid-point of 4.5% Car Club provision (meaning provision based on 4.5% of unit numbers) that would equate to 30 Car Club vehicles in the south site and 38 in the north site (See TN4, Tables 5.1 and 5.2). That would compare to 379 residents’ spaces in the south site and 435 in the north site. That would mean that 8% of vehicles used by residents would be Car Club vehicles.
- 2.7. Given the above, a robust assessment would assume that the residential trip rates associated with households with a private vehicle would only experience a low level of trip-suppression, but that vehicle trips associated with those households who use Car Club vehicles as their first or second car, would be much lower. The residential trip rate would therefore only be suppressed by 6% rather than the 12% used in the TA. If this alternative level of suppression is applied to the predicted residential trips, the result would be to replace Table 12.4 from the TA with Table 2.1 below.

Table 2.1 – Proposed scheme residential vehicle trips (6% suppression)

Use	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Resi	0	310	310	288	0	288
School	0	145	145	0	0	0
Other	41	162	202	291	436	727
Total	41	618	659	579	436	1015

- 2.8. When compared to Table 12.4, the difference in gross residential trips would be as shown in Table 2.2 below.

Table 2.1 – Residential vehicle trips (difference when applying 6% rather than 12% suppression)

Use	AM Peak			PM Peak		
	Arr	Dep	Total	Arr	Dep	Total
Resi	0	20	20	19	0	19
School	0	9	9	0	0	0
Other	3	11	13	19	28	47
Total	3	40	43	38	28	66



- 2.9. This demonstrates that if limited suppression is applied due to a general reduced level of parking provision (assuming the same level of general vehicle ownership) but some level of suppression is applied to take account of reduced vehicle use by Car Club members, the difference equates to 43 additional trips in the AM peak and 66 additional trips in the PM peak. These are gross figures and do not take account of linked trips.

3. Proportion of working adult population

- 3.1. As stated above, the trip rate methodology used in the January 2018 TA was based on the method used in 2015 to assess the travel demand associated with the approved development. Clearly, it would have been very difficult for WHBC or HCC to compare net change in travel demand between the extant consent and the current proposal if an entirely different method had been used to calculate travel demand. For this reason, peak hour vehicle trips were calculated based on the predicted resident population, the likely working population, the journeys to work and then the non-work peak hour journeys. This is the same method as previously approved; however, WHBC has requested further information about this method of assessment.
- 3.2. The predicted resident population was shown in table 12.1 of the TA. This information was based on ONS Census data, provided by EPDS Consultants who were appointed by the applicant to investigate the residential population to inform discussions with WHBC in respect of development impact on areas such as health and education.
- 3.3. The approved methodology then required an assessment of the working population. Table 12.2 of the TA listed the expected number of residents as being 2625, of whom 1856 would be aged between 16-74. It then referred to 7.8% of the adult population as working from home and 29.8% being unemployed. These two percentage figures were taken directly from the approved 2015 TA. However, WHBC has queried the figure of "29.8% unemployed". It appears that some confusion has been generated by the term 'unemployed' as WHBC state that the unemployment rate is 3.6%. A more accurate description for Table 12.2 would have been 'not in employment'. WHBC also state that the rate of economic inactivity is 15.3%. However, there is some discrepancy in the use of these figures as both rates referred to by WHBC relate to the resident population of working age (16-64) whereas the 'not in employment' figure used by TPA in 2015 related to the adult population (16-74). The unemployment rate is somewhat irrelevant as it only relates to those registered as unemployed, whereas the figure for economic inactivity is a closer reflection but still takes no account of adults aged 65-74, or other groups such as students with part time jobs. When groups such as retired adults, students (FE and HE), home-makers and job-seekers are all taken into account the figure for 'adults not in employment' used by TPS in 2015 appears to be correct.
- 3.4. It is important to note, that those not in employment are still taken into account in the predicted vehicle trips for the development. Table 12.3 of the TA lists vehicle trips associated with the consented scheme and Table 12.4 uses the same methodology for the current proposal. Those tables use journeys to work for the 'residential trip rates' but also include 'school' journeys and 'other' journeys so that peak hour trips by those not in employment are still taken into consideration.

4. Internal linked trips

- 4.1. The proposed development is a mixed-use scheme including new homes, employment, leisure and retail facilities. The TA states at paragraph 12.22 "*The proposed mixed-use development includes a significant resident population who will be the primary users of many of the non-residential uses on the north site. It goes without saying that the employment uses (B1) and the arts centre will attract journeys from the wider community, but with a new population of 2600 residents, many of the trips associated with the commercial and community uses will originate within the development itself.*"
- 4.2. This is clearly a reasonable statement; however, the TA did not state explicitly that there would also be internal linked trips between the non-residential uses. For example, many of the retail trips (convenience store, sandwich shop etc) are likely to originate from the employment or leisure uses. Similarly, many of those using the gym will either be residents or employed on the site. These internal linked trips have no effect on the external highway network and so the transport effects of the proposed development cannot be considered to be a simple sum of all of the parts.



- 4.3. The traffic impact of the development is therefore based on the 'primary' trips, being a sole journey to the site from an external origin (trip attraction), or a sole journey from the site to an external origin (trip generation). For the purpose of a robust assessment, all residential journeys were deemed to be primary traffic generation, even though some of them would in fact be internal trips to the non-residential uses. Reasonable assumptions were then applied to the non-residential uses to assess the likely primary trip attraction once the internal trips from the residential uses, and all other non-residential uses, had been taken into account. The residual primary trip attraction was shown in Table 12.6 of the TA.
- 4.4. The phraseology used in paragraph 12.22 of the TA could infer that the primary trips listed in Table 12.6 only take account of linked trips with the new residential accommodation. That would be incorrect; Table 12.6 shows the predicted primary trips for each of the non-residential uses once reasonable deductions have been made for the 2600 new residents on site, *and* all the other complementary and inter-related non-residential uses. Given this more detailed explanation, it is clear that the residual primary trips listed in Table 12.6 are reasonable. It is also clear that by making no deductions from the residential trip generation to take account of the internal linked trips, the assessment of external impact can be considered to be robust.

5. Combined vehicle trips

- 5.1. Section 12 of the TA concludes with Table 12.7 showing the combined residential and commercial traffic generation. The combined figure takes account of internal linked trips to the non-residential uses but assumes that all residential trips are primary traffic generation on the external highway network. This is a robust assumption and takes no account of reduced residential vehicle trips due to internal links with the employment, retail and leisure uses. Table 12.7 compared the proposed scheme with the extant consent and is replicated below as Table 5.1.

Table 5.1 – Combined residential and commercial traffic generation (T12.7 from the TA)

	AM	PM
Approved scheme	728	1046
Proposed scheme	704	1035
Net change	-24	-11

- 5.2. This showed a minor reduction in vehicle trips when compared to the extant consent.
- 5.3. If the revised residential trips from Table 2.1 were applied, the resultant total traffic generation would increase by 7% (+43Am, +66PM). The amended comparison table would therefore be as shown in Table 5.2 below.

Table 5.2 – Combined residential and commercial traffic generation (Sensitivity Test)

	AM	PM
Approved scheme	728	1046
Proposed scheme	747	1101
Net change	+19	+55

- 5.4. This sensitivity test results in a nominal increase in traffic when compared to the extant consent rather than a nominal reduction; however, the conclusion that 'traffic generation would be broadly similar to the consented scheme' remains valid. Importantly, the nominal net increase in traffic would be less than daily variation on any part of the highway network and therefore imperceptible to other highway users.



6. Summary and conclusion

- 6.1. The Transport Assessment (TA) submitted in support of the planning application for the Wheat Quarter included a methodology for deriving the vehicle trips based on the Transport Assessment for the approved development, prepared by Transport Planning Associates (TPA) in 2015. That methodology formed the basis on which planning permission was granted in August 2017 for a mixed-use development on this site. The agreed methodology was far more detailed than a conventional assessment of the TRICS database and resulted in a very precise, site related analysis. The same methodology was therefore followed in the January 2018 TA.
- 6.2. Notwithstanding the above WHBC and HCC requested further information in respect of three aspects of the trip generation assessment:
 - Trip-suppression due to reduced parking provision
 - Proportion of adult working population
 - Internal linked trips
- 6.3. This Technical Note examines these three areas and concludes that the figures used for the adult working population and internal linked trips for the non-residential uses are correct and robust. However, an adjustment has been made to the level of suppression that should be applied to residential vehicle trips as a result of suppressed parking provision. The adjusted figures result in an increase of 7% additional residential peak hour vehicle trips.
- 6.4. This adjustment to the predicted residential vehicle trips results in the proposed development generating a nominal increase in traffic when compared to the extant consent rather than a nominal reduction; however, the conclusion that 'traffic generation would be broadly similar to the consented scheme' remains valid. Importantly, the nominal net increase in traffic would be less than daily variation on any part of the highway network and therefore imperceptible to other highway users. The conclusions of the January 2018 TA therefore remain valid.