



Dereham Local Plan Transport Study

Addendum

Transport Addendum 1

WYG
Executive Park
Avalon Way
Anstey
Leicester
LE7 7GR

A094136

7th March 2017

Copyright © WYG EPT Ltd 2017



Contents

1	Introduction.....	1
2	Key Issues Raised	2
3	Assessment of Key Issues	3
4	Conclusions.....	20



1 Introduction

1.1 PREAMBLE

1.1.1 WYG was commissioned by Breckland Council to carry out a study of the transport impacts of proposed and potential land-use developments in Dereham and the surrounding area. The Dereham Transport Study Report has been adopted by the Council to support the Local Plan process.

1.1.2 Following this adoption various comments have been received by Breckland Council in response to the contents of the Transport Study report and WYG were asked to clarify certain issues that have been raised and make recommendations about further study work that may be required.

1.1.3 This addendum report is structured as follows:

- Section 2 – Summary of Key Issues Raised
- Section 3 – Assessment of Key Issues
- Section 4 – Conclusion



2 Key Issues Raised

2.1.1 Representations have been made to Breckland Council that relate to the Dereham Local Plan Transport Study report that WYG produced in support of the Local Plan process. The key issues raised have been reviewed and can be summarised as follows:

	Key Issue
1	Definition of the Study Brief is inconsistent and excludes some congested junctions
2	An assessment of conditions during the Saturday traffic peak has not been carried out
3	The road safety assessment does not consider vulnerable or non-motorised users
4	The forecast vehicle trip rates are inconsistent with trip rates for consented schemes and the rates are too low
5	The forecast distribution of trips does not take into account development in locations outside of Dereham
6	Future year traffic growth forecasts have been updated since the study was completed
7	Individual junction models have been used rather than an area-wide transport model
8	Proposed mitigation measures have not been adequately presented or tested and no alternative options have been assessed
9	Cost estimates of the mitigation measures exclude some significant additional costs



3 Assessment of Key Issues

3.1.1 This section presents an assessment of the key issues raised in relation to the Local Plan Transport Study.

STUDY BRIEF

3.1.2 The study brief included an assessment of the road infrastructure in and around the town and the key junctions were identified in the brief. One of the issues raised is the scope of the original study and whether the assessment should include additional junctions and time periods, e.g. Saturday traffic. Clearly more data and analysis would not be a bad thing but the question is whether additional assessment work would have a material impact on the findings of the baseline assessment and the additional impacts of development.

3.1.3 The brief that was set out at the start of the study was considered to be proportional to the extent of the transport issues. It was recognised that Transport Assessments will be required to support every individual development proposal but this study was intended to quantify the high level, cumulative impacts of the proposals on the highway network. The approach was to apply a consistent approach to all the proposed development sites but it was not intended to be a Transport Assessment that dealt with all the issues for every individual site. The Highway Authority were involved in developing the scope of work and they were satisfied that it was proportionate.

ASSESSMENT DAYS OF THE WEEK

3.1.4 There have been comments on the use of weekday peak hour traffic surveys that were used within the transport study and that an assessment of capacity during the Saturday peak period is also required.

3.1.5 The initial scope was designed and agreed with the Highway Authority to assess the key junctions at the busiest times. Weekday peaks are generally considered to be the worst case for the throughput of traffic and congestion so the data collection was targeted at these times. There are 10 weekday peaks during a standard week and only one Saturday peak so this is where the data collection effort and the capacity assessments were focussed.

3.1.6 Due to the concerns raised about the lack of capacity on a Saturday additional data has been collected that shows the variation in traffic flow at a number of links on the network across a whole



week, in order to quantify the differences between weekday and weekend traffic volumes. Surveys were carried out on 7 of the key links in the town (2nd-8th December 2016) that feed into the busiest part of the road network to the south of the town centre (Yaxham Road (3 survey sites), South Green Road, Station Road the A47 slip roads.

3.1.7 Roads carry traffic volumes that can fluctuate significantly between different days of the week and hours within the day and the busiest time periods can occur on different times each day. In addition, the survey sites can also show different patterns of traffic movements to each other, even at the same times of day and each direction of travel can also have a different pattern, even at the same site. We have extracted data that is considered to be representative of 'typical' conditions within the constraints of the data that is available. The use of data gathered in December is not ideal but it was considered that the data would show the relationship between Saturday and weekdays and that the effect of Christmas is still relatively limited on the 3rd December.

3.1.8 Figures 1 to 3 show peak hour traffic volumes at the surveys sites on different days, Figures 4-17 show traffic daily volumes at each site and Figure 18 shows the combined traffic volumes at all the surveyed sites. The main conclusions to be drawn from the data are:

- Total traffic volumes across the whole day on a Saturday were approximately 90% of the average weekday volume
- Half of the peak hour traffic volumes were significantly higher on a weekday than on a Saturday (7 out of 14 sites) while five of the sites had similar traffic volumes on a Saturday and a weekday
- Two links out of the 14 surveyed had significantly higher traffic volumes on Saturday than during the weekday peak. These were on Station Road Northbound and Yaxham Road Southbound, south of Greens Road heading towards the Tesco Roundabout
- Looking at individual survey sites gives fluctuating results in terms of traffic volumes at different times on different days but when the total traffic volume travelling through the network is considered for each hour it shows that the Saturday peak volume was lower than the weekday peak hours. Figure 18 shows the combined traffic volumes observed at all of the survey sites. It shows that the Saturday peak hour (11am) had 93% of the weekday peak traffic volume. There is an element of double counting in these figures because some vehicles will be counted at more than one site, but that effect is the same on each day and does not affect the comparison between different days.

Figure 1: Weekday AM Peak Hour Link Flows

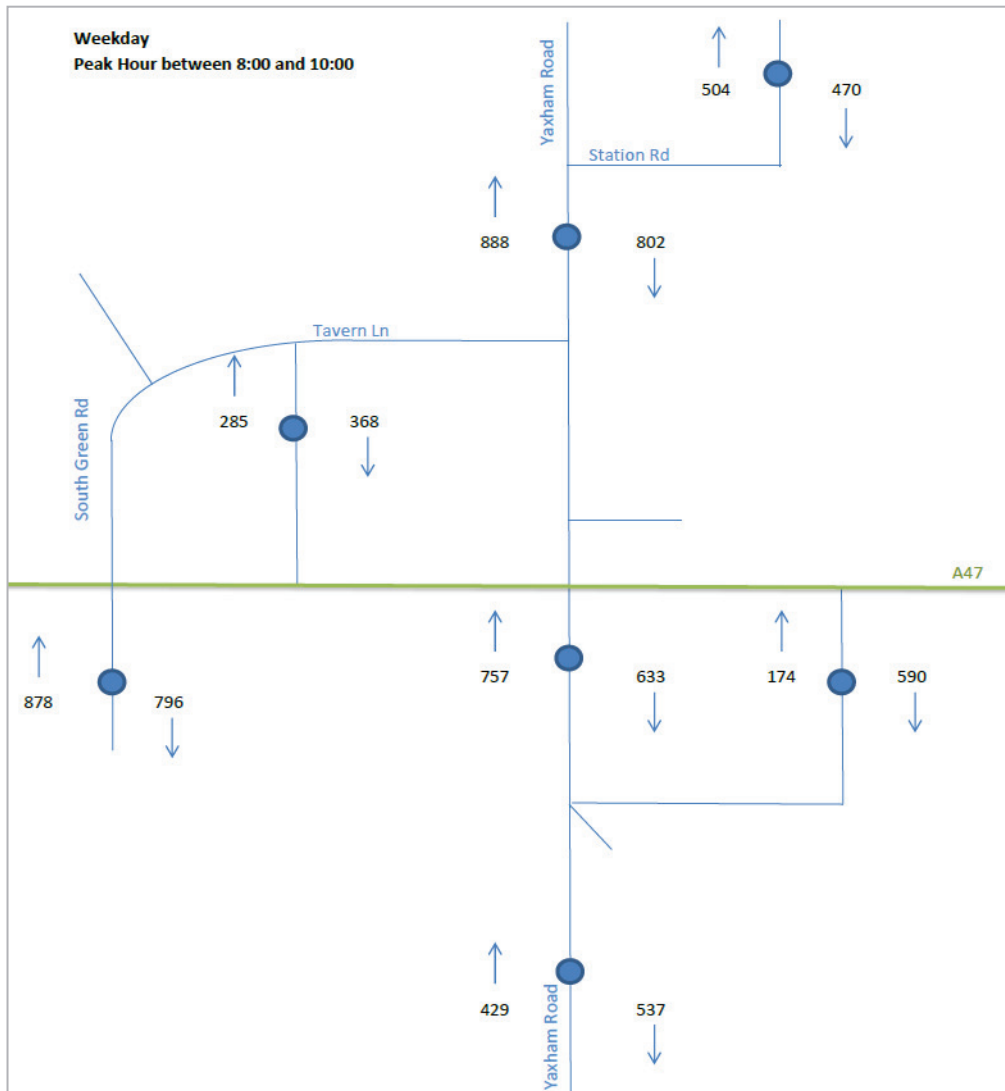


Figure 2: Weekday PM Peak Hour Link Flows

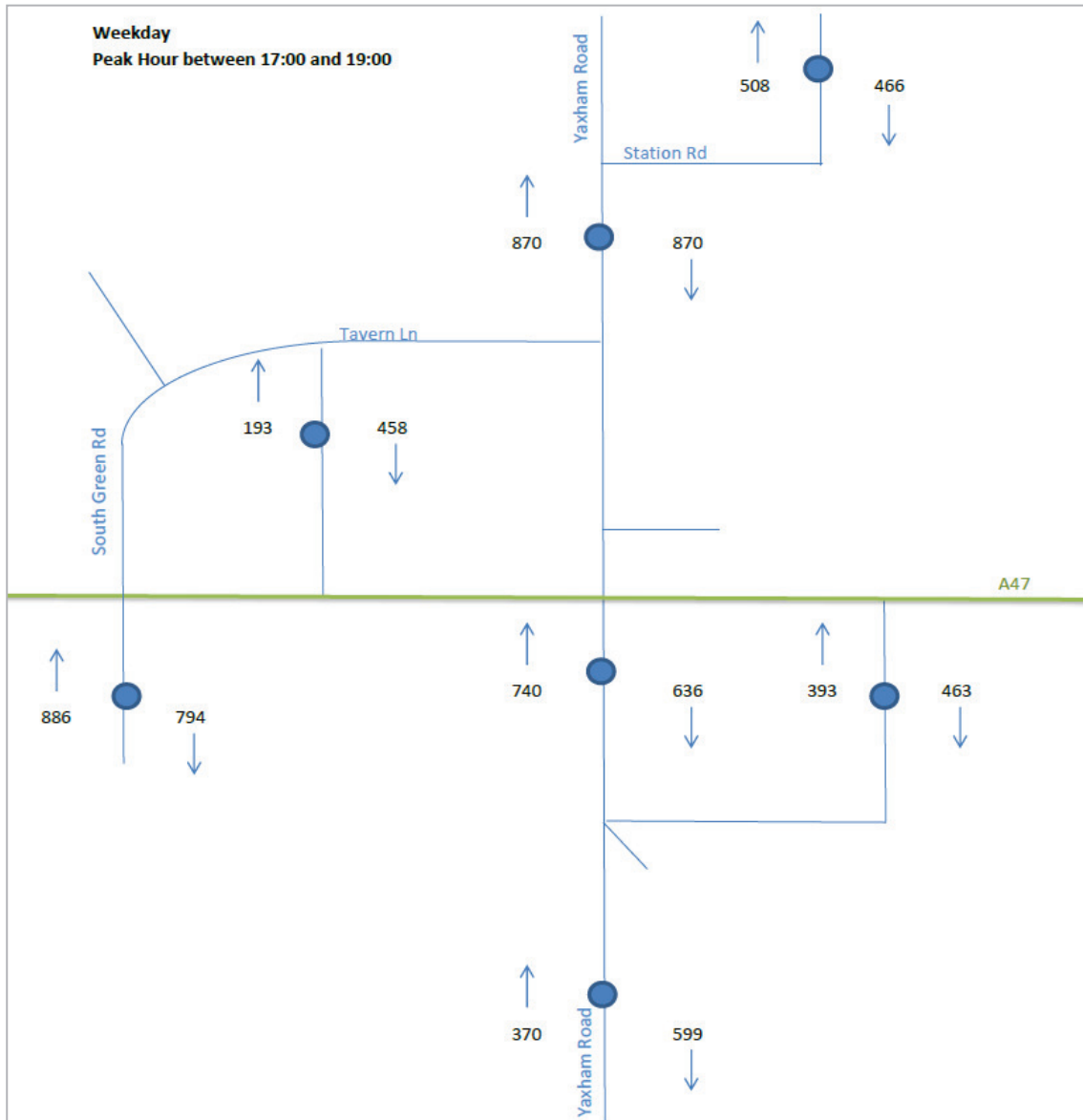
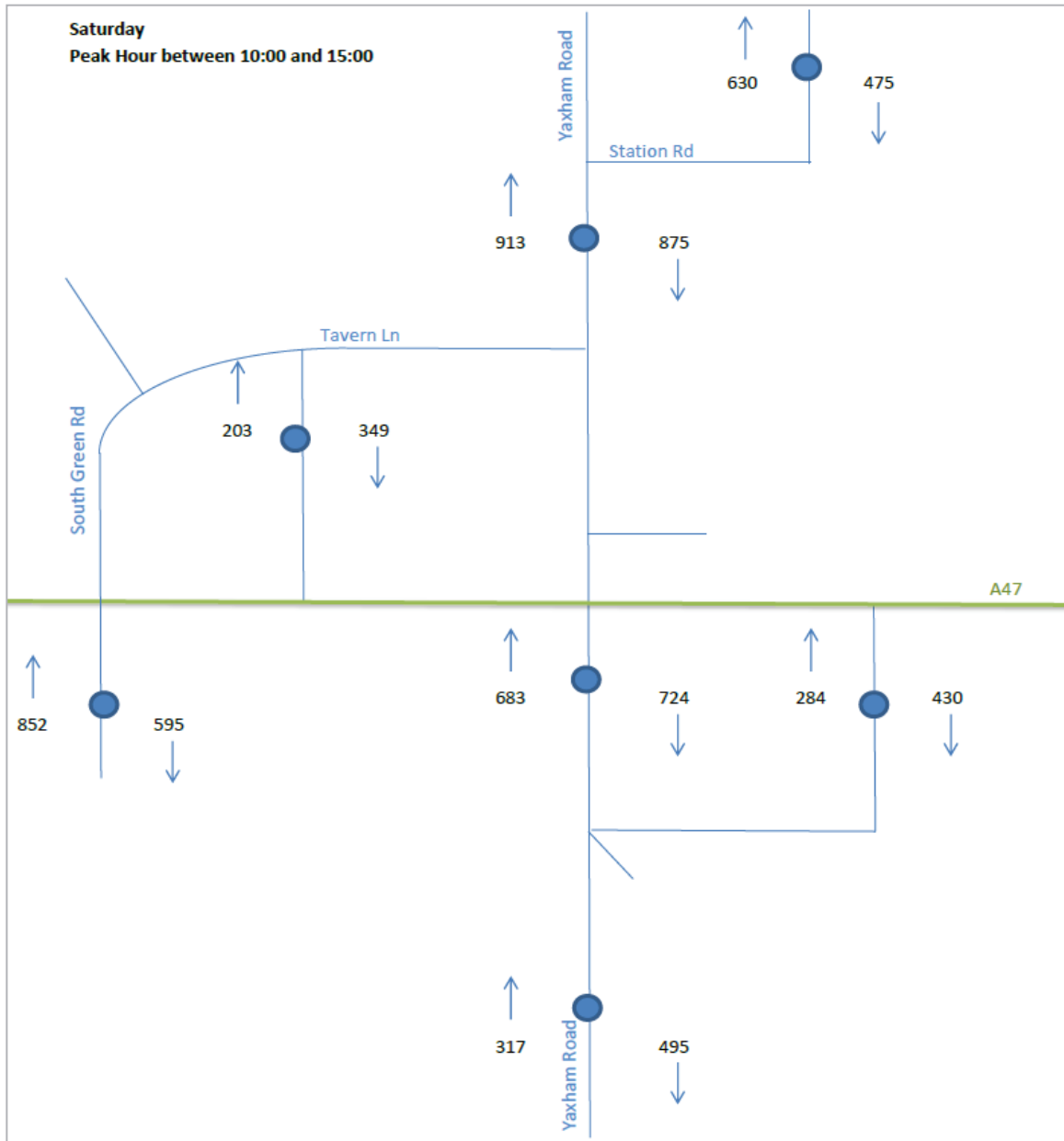


Figure 3: Saturday Peak Hour Link Flows





- 3.1.9 The previous figures show where traffic volumes were higher and lower on the Saturday and weekdays. Most links are either higher on a weekday or have a similar volume but two links are significantly higher on a Saturday (Station Road northbound (630) and Yaxham Road southbound (724)). The Yaxham Road figures could reflect the demand to access Tesco and/or Lidl on a Saturday but when all traffic entering the Tesco roundabout is combined it shows that the weekday peak is higher than Saturday because of the higher volumes on the A47 slip road and Yaxham Road to the south.
- 3.1.10 The combined traffic volumes presented in Figure 18 reduce the effects of all the variations between times of day, survey sites and directions to provide an overall comparison of each day of the week. It clearly shows that the Saturday peak is lower than both weekday peaks.
- 3.1.11 On this basis the recommendation is that the weekday junction capacity assessments that were carried out in the Local Plan Transport Study are an adequate base from which to develop mitigation measures for the additional traffic that will be generated by the proposed development. A Saturday highway capacity assessment would be informative but is not essential at this stage of the process. It is unlikely that the traffic volumes on a Saturday would require a significantly different set of junction mitigation measures because the traffic volumes are lower. The traffic signal timings could be adjusted in response to the different pattern of traffic movements on a Saturday.
- 3.1.12 One potential issue is the mini-roundabout junction of Station Road and Yaxham Road. Figure 5 shows that the volume of southbound traffic on Station Road at midday on weekdays and Saturday is lower than the rest of the working day. There are a number of reasons why this might have occurred and one explanation is that traffic cannot get through Station Road at midday because of congestion at the mini-roundabout. However, it is not clear why it does not occur during the weekday peak periods so there may be an alternative explanation. Further surveys of traffic volume and queues at this junction may show that additional capacity or facilities for pedestrians are required at the junction. New surveys would need to be done at a neutral time of year (e.g. March-June) to confirm this and a more detailed Transport Assessment would be expected to explore this issue in more detail.



Figure 4: Station Road Northbound Link Flows

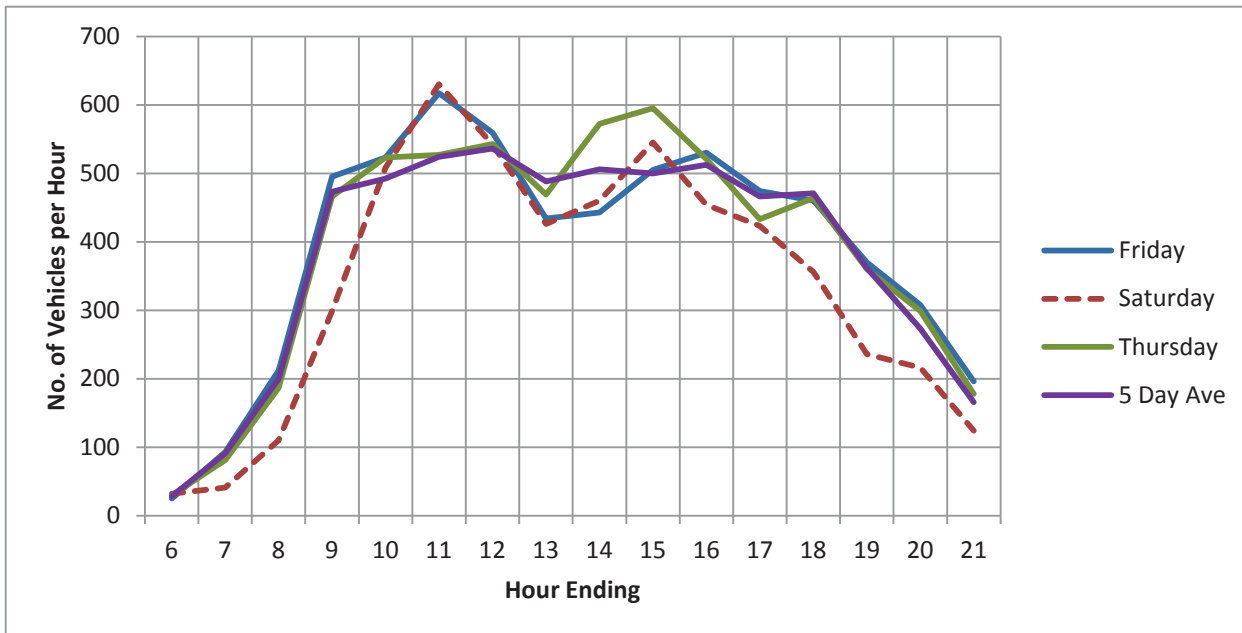


Figure 5: Station Road Southbound Link Flows

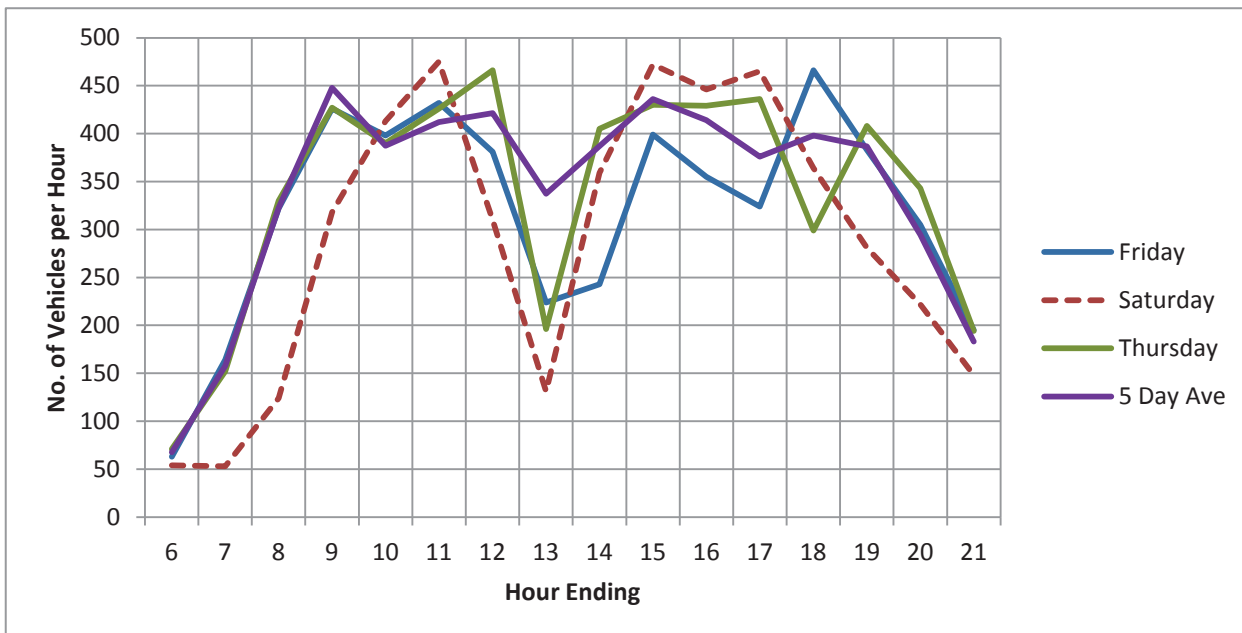




Figure 6: Yaxham Road North Northbound Link Flows

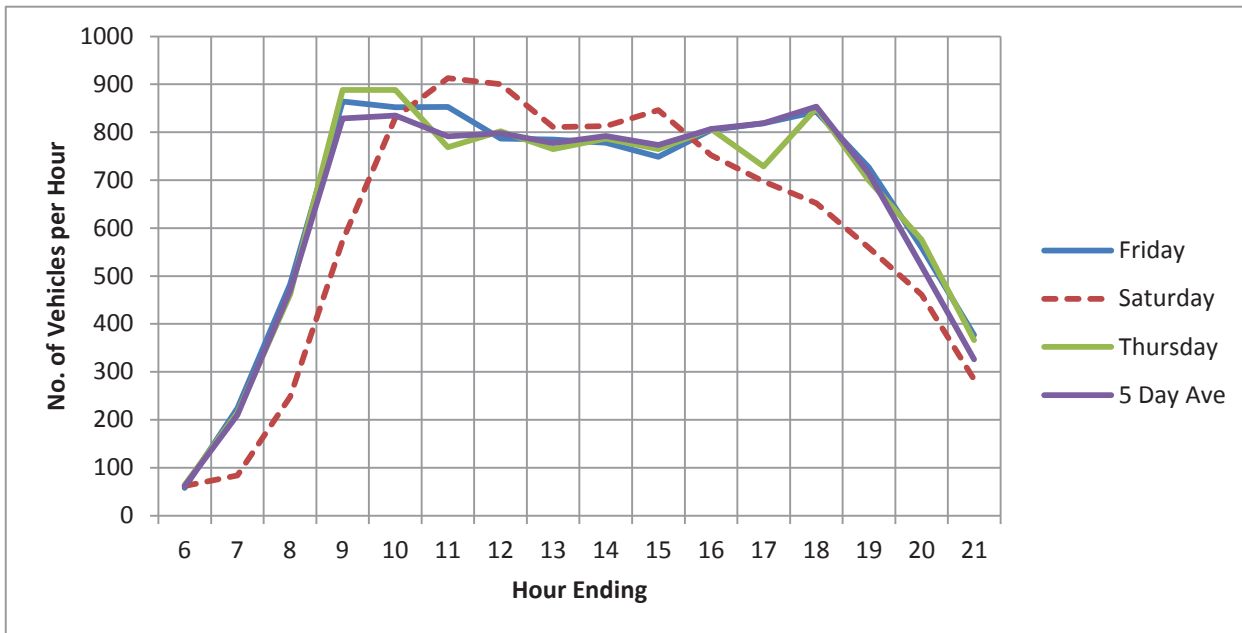


Figure 7: Yaxham Road North Southbound Link Flows

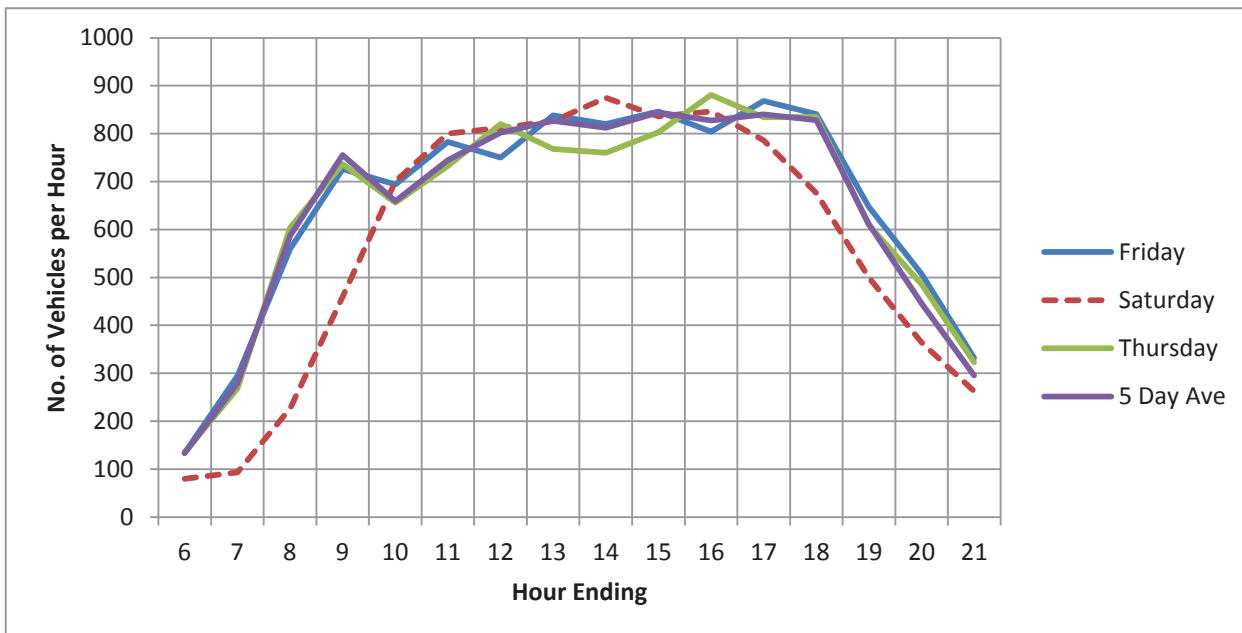




Figure 8: A47 Eastbound Slip Roads Northbound Link Flows

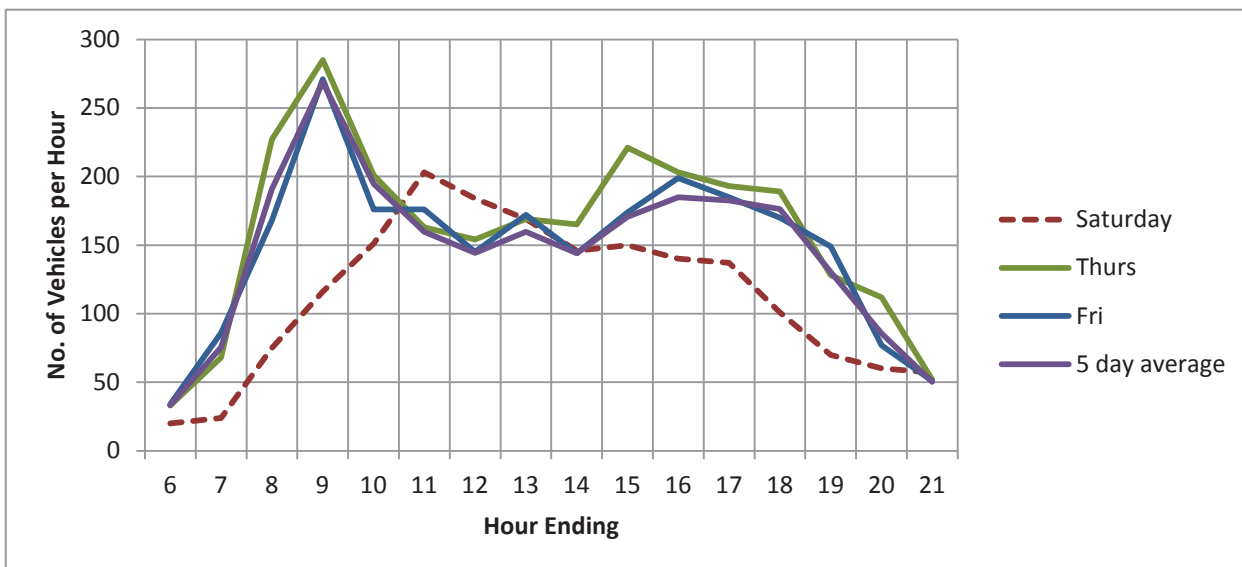


Figure 9: A47 Eastbound Slip Roads Southbound Link Flows





Figure 10: South Green Road Northbound Link Flows

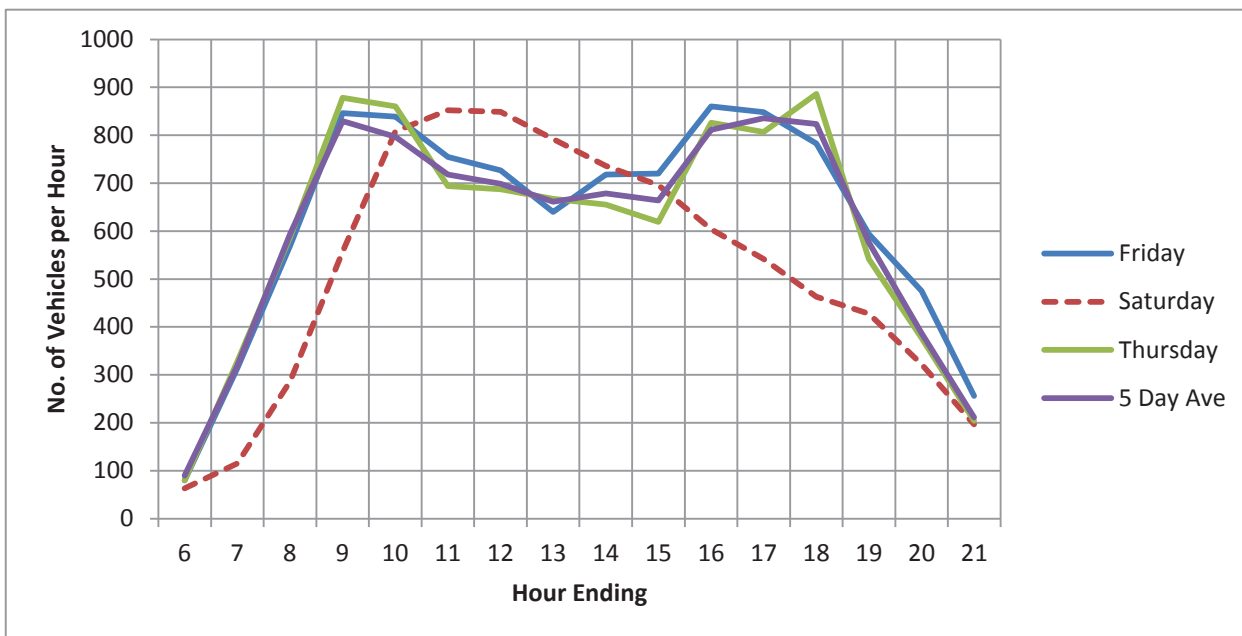


Figure 11: South Green Road Southbound Link Flows

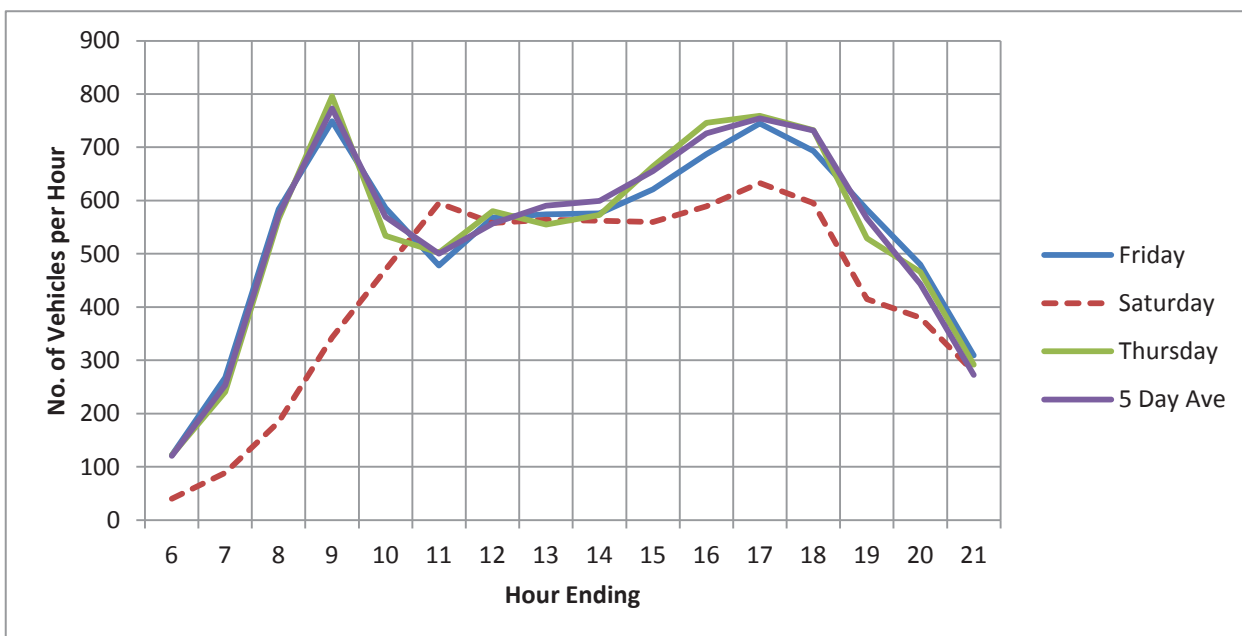




Figure 12: Yaxham Road Central Northbound Link Flows

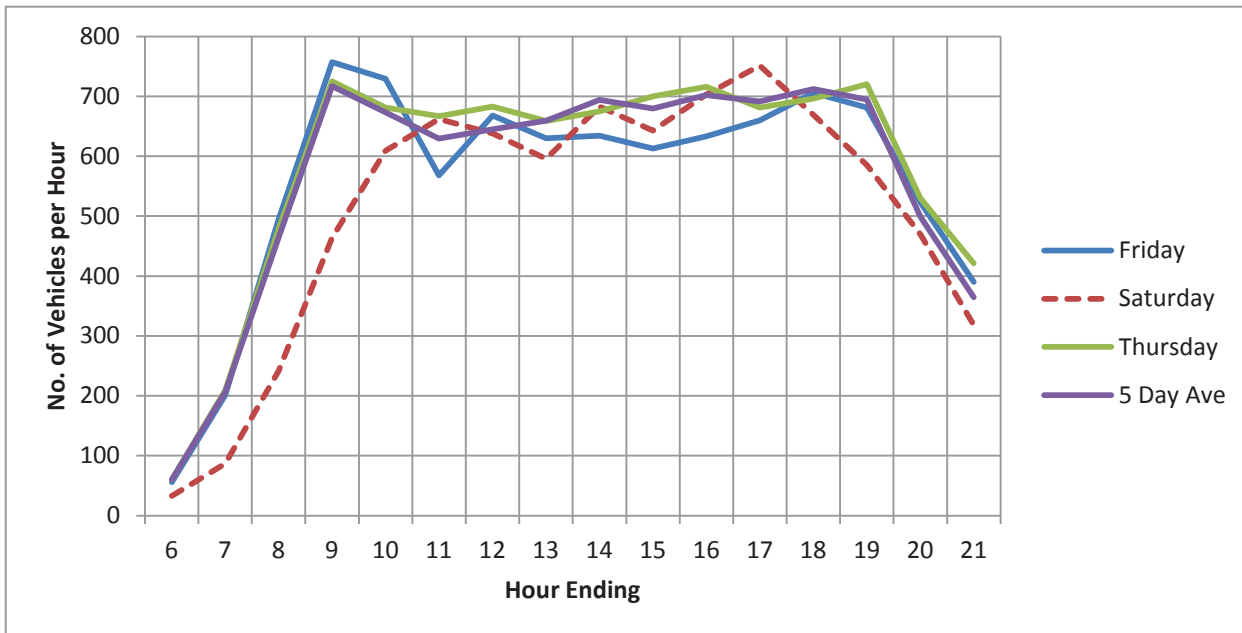


Figure 13: Yaxham Road Central Southbound Link Flows

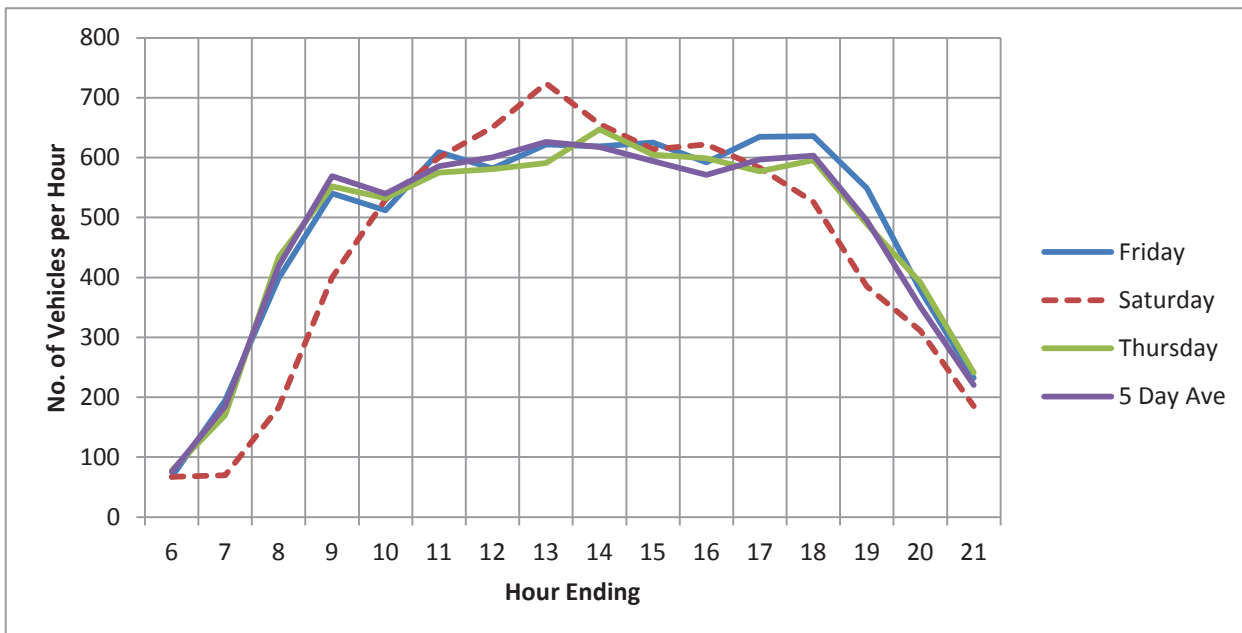




Figure 14: A47 Westbound Slip Roads Northbound Link Flows

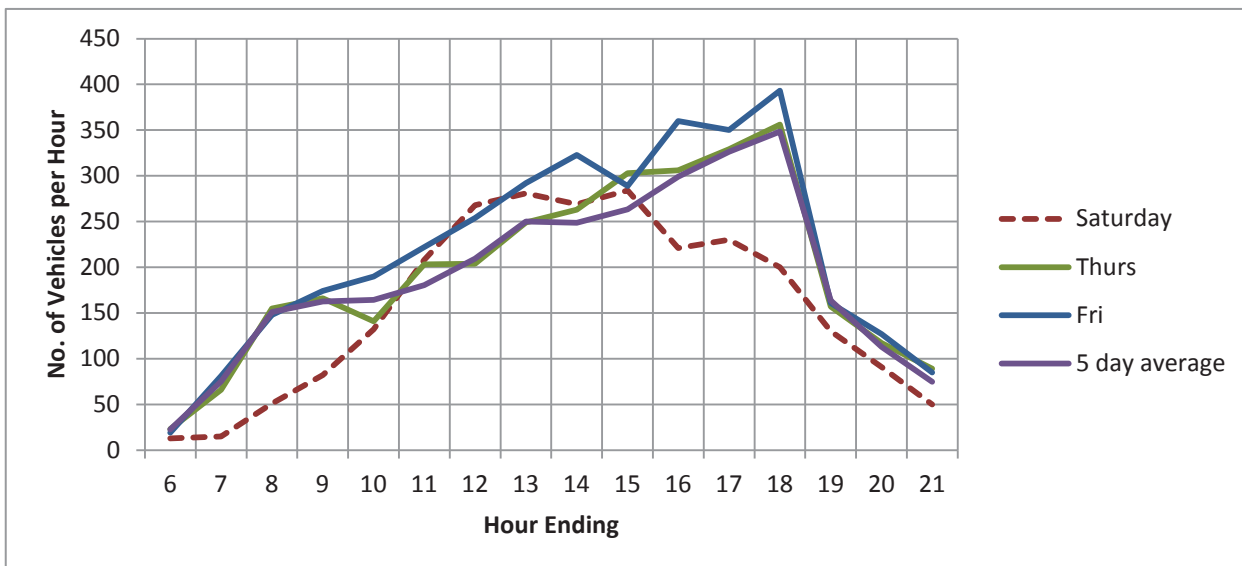


Figure 15: A47 Westbound Slip Roads Southbound Link Flows

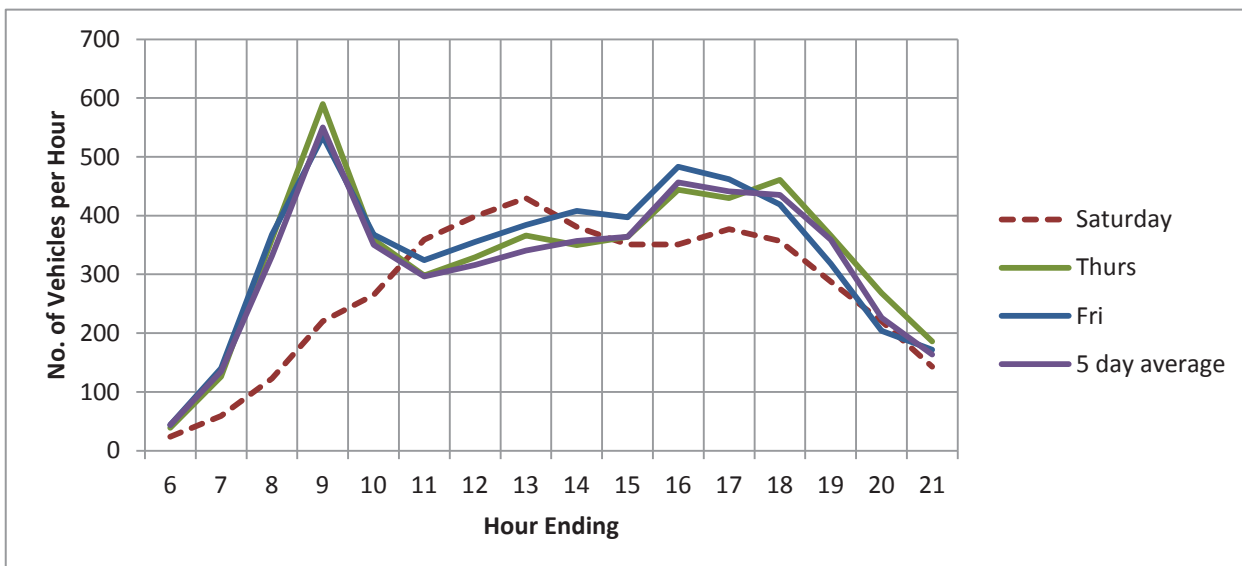


Figure 16: Yaxham Road South, Northbound Link Flows

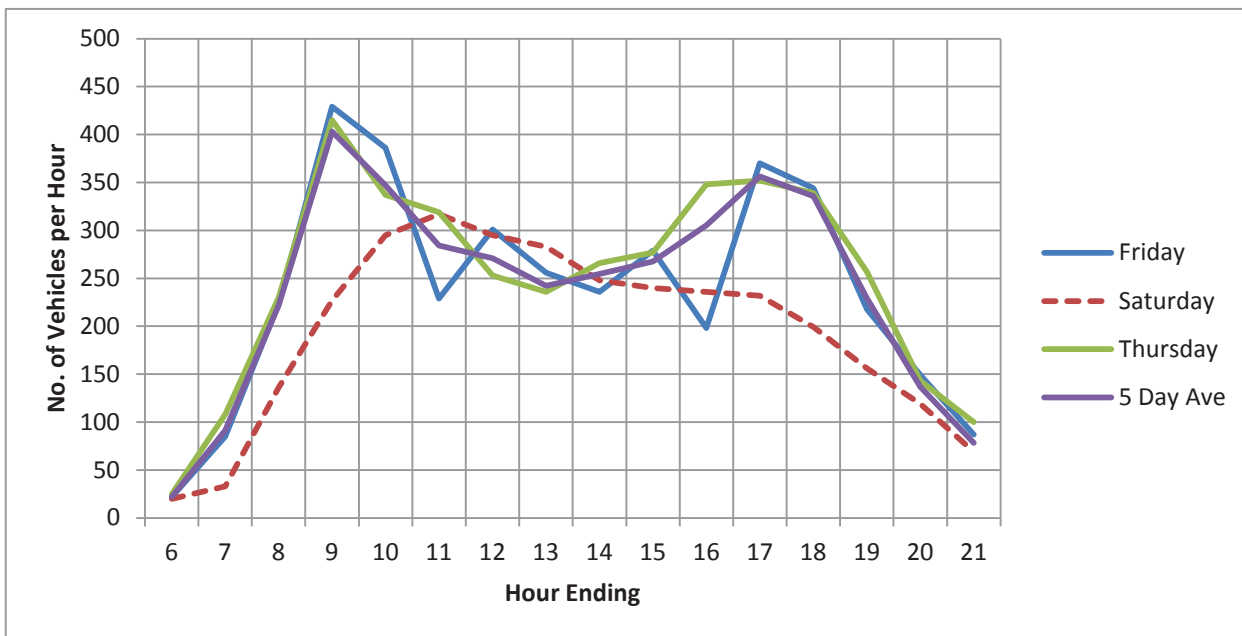


Figure 17: Yaxham Road South, Southbound Link Flows

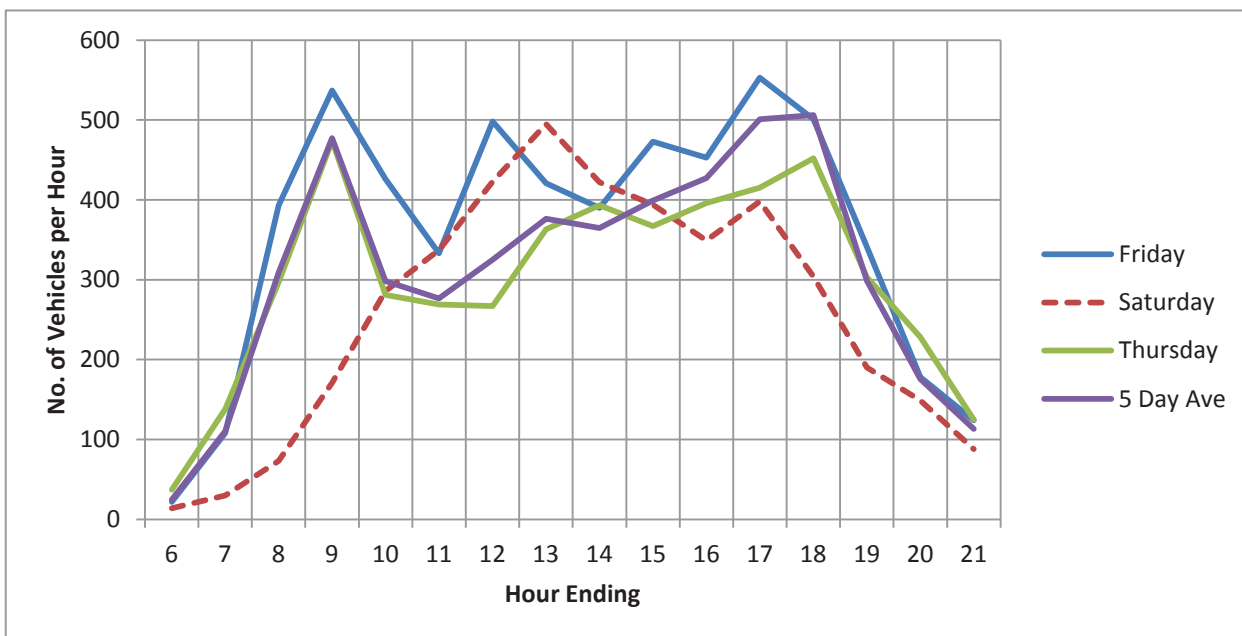
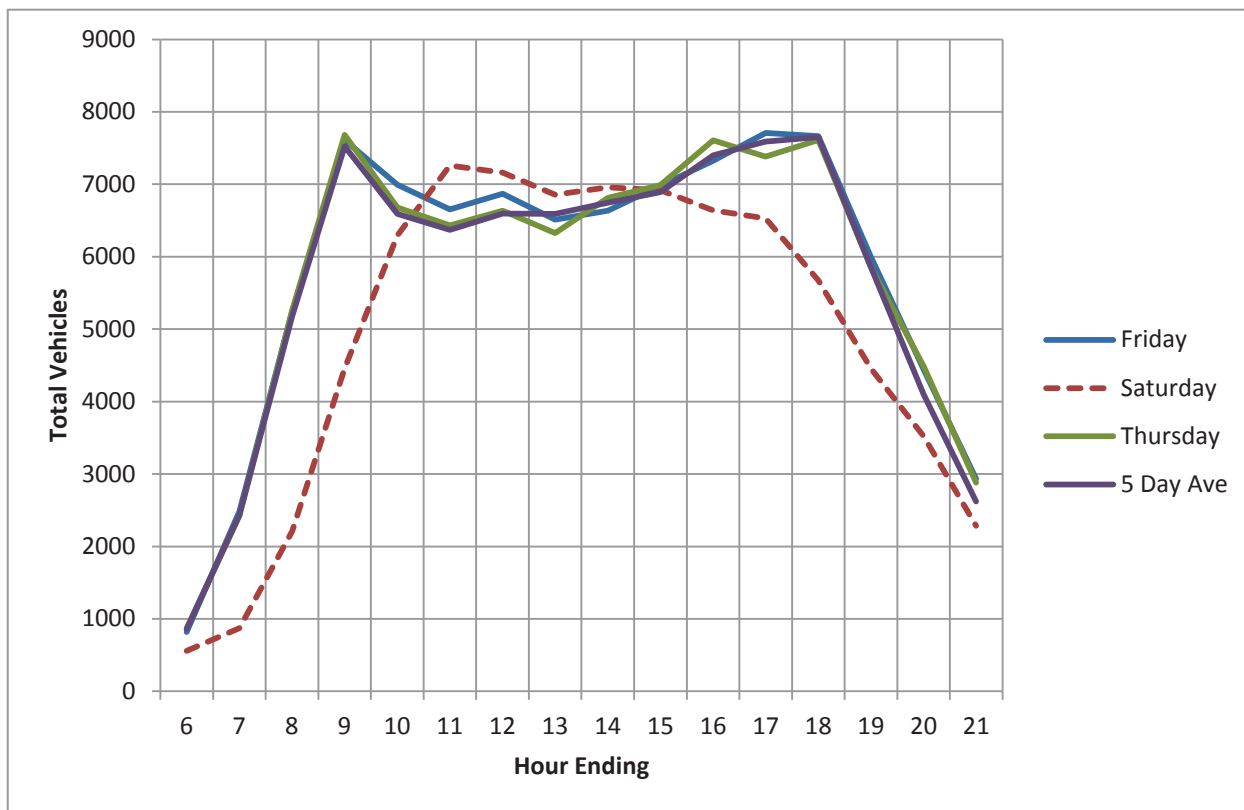


Figure 18: Combined Traffic Volumes at all survey sites



ROAD SAFETY

3.1.13 The study is a strategic transport study and an assessment of road safety was not included in the study Brief. It was decided to provide a high level assessment of road safety issues and the detail regarding the existing road safety issues was limited to the number of accidents that occurred over a five year period on each of the key links in the study area in Dereham and Mattishall. These are summary figures and the report did not present all the accidents that occurred on the other roads in the town or highlight those accidents involving vulnerable road users. This information is available and can be presented if required. Road safety issues on the highway, site access and within each site will be addressed for each individual site allocation and planning application at the appropriate stage of development.



FORECAST VEHICLE TRIP RATES

- 3.1.14 The same trip rates were used across all of the potential sites to ensure consistency of approach and to be fair to each site. Some sites have already proposed trip rates in their Transport Assessments but these are all different from each other so as a strategic study it was decided to use consistent trip rates across all sites rather than the specific ones for each site. NCC also agreed that the use of 85th percentile trip rates would not be necessary across all sites. By definition, a wide range of sites is more likely to generate average trip rates than 85th percentile ones and NCC were satisfied with this approach.
- 3.1.15 The Transport Study did state that the vehicle trip rate calculations taken from the TRICS database of previous developments excluded examples from Greater London, but the calculations presented in Appendix D showed that the sample of sites used did include examples from Greater London. The trip rates that we used in the report were approved by NCC and those figures excluded the London sites. Appendix shows the wrong sample of sites. There is a discrepancy between the text and the Appendix but the approved rates have been used throughout the report.

FORECAST DISTRIBUTION OF TRIPS

- 3.1.16 There was some criticism of the way that the forecast trips were assumed to distribute across the road network and that proposed growth had not been taken account of.
- 3.1.17 The proposed distribution of traffic uses existing Census (2011) data to forecast which directions and routes people are likely to use in the future. The distribution has not been adjusted to take into account every possible housing development that may be built in the future because there is no certainty about whether they will be built and at what year they will be built. It is considered that the Census data provides a more reliable assessment of the location of development than different potential future year forecasts would. The numbers of potential houses involved are small compared to the existing housing and other development, so the impact of different land use assumptions would be minor and the distribution would also need to be adjusted for every future year scenario.

BACKGROUND TRAFFIC GROWTH

- 3.1.18 The original forecasts of background traffic growth were extracted from the Department of Transport forecasts that were relevant to this area at the time of the study (DfT Area Ref. 33UB2), taken from their TEMPro software (v6.2). A new version of TEMPro was launched by the DfT in



August 2016 (v7.0) that forecasts much lower traffic growth, across the country as well as in Breckland. The changes in traffic growth forecasts that apply are shown in Table 1:

Table 1: TEMPro Traffic Growth Forecasts

Years		TEMPro v6.2	TEMPro v7.0
2015-2021	AM	4.6%	2.6%
	PM	5.0%	2.6%
2015-2026	AM	13.4%	7.1%
	PM	14.4%	7.0%
2015-2036	AM	28.1%	9.8%
	PM	30.5%	9.5%

3.1.19 The table shows that the latest traffic growth forecasts are significantly lower than those used in the original study. This means that the future year traffic forecasts could be somewhat lower than originally thought. The impact of this change on junction capacity and the potential mitigation measures could be quantified if necessary. It does mean that the proposed junctions are likely to have lower traffic volumes in the future than originally forecast and thus they will have more capacity.

JUNCTION MODELLING APPROACH

3.1.20 The study Brief highlighted the need to assess the impacts of development at key junctions but did not propose a strategic traffic model that covered the whole town or a specific area of the town. Although it is recognised that there would be benefits from the development of an area-wide transport model it is not considered to be essential or proportionate to produce such a model to support the Local Plan process. The highway authority was satisfied that the approach taken was superior to previous cumulative transport assessment work in the town and did not recommend that an area wide model should be produced instead.

MITIGATION MEASURES

3.1.21 Various alternative mitigation measures (e.g. sustainable transport and signing schemes) have been proposed in the representations that could provide some benefits by reducing demand or redirecting traffic but they are very unlikely to provide the scale of additional capacity or modal shift that will be required to mitigate the effects of the level of development that has been proposed. A package of sustainable transport solutions will be required from each development at the planning application



stage but there will inevitably be a need for additional highway capacity, given the presence of the existing capacity constraints.

COST ESTIMATES

- 3.1.22 The preliminary cost estimates provided for the mitigation measures include contingency and optimism bias uplifts that are appropriate for schemes at this early stage of development. Contingency was assumed to be 15% of the capital cost and optimism bias was assumed to be 44%, in line with Department for Transport guidance. Assumptions have also been included for the cost of redirecting underground utilities for two of the proposed schemes but more investigation will be required at the next stage of design to produce a cost estimate for utilities with a higher level of confidence.

- 3.1.23 The largest mitigation scheme was the proposed signalised roundabout at the Tavern Lane/Yaxham Road junction and the cost estimate excluded the cost of the land that would be required for construction of that junction and any compulsory purchase process that might be required. Further work will be required to establish a cost estimate for the land required at the next stage of scheme development to establish what the land cost element is likely to be for this scheme.



4 Conclusions

- 4.1.1 This Addendum to the Dereham Local Plan Transport Study has explained the background to the key assumptions that were made within the study and used new traffic survey data to assess some of the issues that have been raised in relation to the study.
- 4.1.2 The Brief for the Transport Study was considered to be proportionate to support the Local Plan process. It was a strategic study that aimed to clarify the cumulative effects of the potential developments at key junctions on the road network. As such it does not include capacity assessments at every junction on the network, but the relevant Transport Assessments that will need to be prepared for each individual site are expected to include such calculations. Junctions were modelled individually as opposed to using an area-wide model. A strategic, area-wide model and study of the whole town and highway network would be possible and more thorough but is not considered to be essential for a Local Plan study. NCC agreed with the scope and methodology of the study at the outset.
- 4.1.3 In terms of highway capacity assessments, there is concern that the assessments that were carried out for the weekday peak periods do not address the traffic problems that arise on a Saturday. The study focussed on the peak periods that occur every weekday morning and evening, rather than the single Saturday peak period. As a result, new data was collected to quantify the difference between Saturday traffic volumes and weekday volumes.
- 4.1.4 The results show that conditions are busy during the Saturday midday peak, but there is no evidence to suggest that Saturdays are busier than the weekday peaks. Therefore the mitigation measures that have been proposed are likely to be adequate to cope with Saturday traffic volumes. The results of the recent surveys did indicate that Station Road could be congested at midday on weekdays and Saturday, potentially caused by traffic queues at the Station Road / Yaxham Road mini-roundabout. It is recommended that additional surveys of the operation and capacity of this junction will need to be assessed in more detail in the Transport Assessments for the development sites.
- 4.1.5 The Department for Transport have released updated future traffic growth forecasts since the study was produced. The forecasts of growth are significantly lower than the previous version. This suggests that the amount of traffic using the local network in the future may be somewhat lower



than was originally calculated and that the proposed mitigation measures will have more capacity than expected.

- 4.1.6 In terms of the mitigation measures that have been proposed, the study focussed on providing highway capacity to mitigate the cumulative impacts of the forecast traffic. Other schemes will also be required to ensure that the sites can be accessed by all modes and to reduce the impact of the proposals where possible. However, it must be recognised that there is a limit to the potential of public transport and active travel modes and that the sites will generate significant traffic and that capacity will need to be increased.
- 4.1.7 The scheme cost estimates did exclude land costs because that was beyond the scope of the study and will be subject to important local issues and discussions. Land costs will need to be added when further design work has been carried out. Contingencies were included in the cost estimates to cover the potential costs of underground utilities, general contingencies and optimism bias.