

ASDA Waterloooville PFS Proposals

ASDA Stores Limited

Transport Statement



ASDA WATERLOOVILLE PFS PROPOSALS

Description: **Transport Statement**

Date: **10 May 2013**

Project Manager: **Keith McGillivray**

Project Director: **Allan Spence**

SIAS Limited
37 Manor Place
Edinburgh EH3 7EB
UK

tel: 0131-225 7900
fax: 0131-225 9229
admin@sias.com
www.sias.com



ASDA WATERLOOVILLE PFS PROPOSALS

CONTENTS :

	Page
1 INTRODUCTION	1
1.1 Background	1
1.2 Purpose of Report	1
1.3 Consultation	1
2 PROPOSED DEVELOPMENT	2
2.1 Introduction	2
2.2 Site Location	3
2.3 PFS Location and Layout	4
2.4 Swept Path Analysis	7
3 PFS TRIP GENERATION	8
3.1 Introduction	8
3.2 Hourly Demand during Peak Trading	8
3.3 Fuel-only Trips	8
3.4 TRICS Analysis	8
3.5 Store GFA and Effect on Customer Car Parking	11
3.6 Effects on External Junction Capacity and Connecting Pedestrian Walkway	12
4 SUMMARY AND CONCLUSION	13
4.1 Summary	13
4.2 Conclusion	13



ASDA WATERLOOVILLE PFS PROPOSALS

FIGURES :

	Page
Figure 2.1 : ASDA Waterloooville - General Location Plan	3
Figure 2.2 : ASDA Waterloooville - Proposed PFS Location Within the ASDA Site	4
Figure 2.3 : ASDA Waterloooville - Proposed PFS Layout	5
Figure 2.4 : ASDA Waterloooville - Proposed PFS with Road Alterations	6
Figure 2.5 : ASDA Waterloooville - Swept Path Analysis of Articulated Tanker Vehicle	7

ASDA WATERLOOVILLE PFS PROPOSALS

TABLES :

	Page
Table 3.1 : Weekday and Weekend PFS Trip Rates (06:00–22:00) (From TRICS)	9
Table 3.2 : Weekday and Weekend PFS Trip Generation (06:00–22:00) (From TRICS)	9
Table 3.3 : Weekday and Weekend New PFS Trip Generation (06:00–22:00) (From TRICS)	10
Table 3.4 : Weekday and Weekend PFS - Total New Trips on Road Network (06:00–22:00)	11



1 INTRODUCTION

1.1 Background

ASDA Stores Limited (ASDA) operates a food store at Portland Road in Waterlooville, Havant. The store is open between 07:00–23:00 from Monday to Friday, between 07:00–22:00 on Saturday and between 10:00–16:00 on Sunday.

ASDA has stated its intention to incorporate a petrol filling station (PFS) at the store, and appointed HLM Architects (HLM) to prepare the design. The proposals involve the construction of a four-pump PFS facility on a portion of the land in the northern car park.

The proposed PFS will operate a card-only pay at pump system; there will be no customer kiosk or associated retail offer. The proposed PFS will replicate the operational characteristics of equivalent facilities which have been incorporated into more than 80 ASDA stores throughout the United Kingdom.

SIAS Limited (SIAS) was appointed by HLM in April 2013 to provide transportation advice and prepare a Transport Statement to be submitted with the Planning Application required to deliver the PFS and associated facilities.

1.2 Purpose of Report

This Report discusses the design and operation of the proposed PFS and explains the consideration that has been given to accommodating the proposed PFS adjacent to an existing food store, including the management of car and pedestrian-based customer trips and the access requirements of articulated tanker vehicles.

The Report also sets out the anticipated trip generation of the proposed PFS and its operational characteristics, concluding that the proposals will not have a detrimental effect on the adjoining public road network.

1.3 Consultation

Pre-application correspondence was entered into by DLA Piper (Victoria Hughes) with Havant Borough Council (HBC) in December 2012. Specific matters raised by HBC in relation to transportation were as follows:

- Additional information concerning amount of floorspace in the existing store and the total number of parking spaces, in the context of the impact on the highway network
- The relationship between the proposed PFS and the approved line of the pedestrian walkway linking the site to Maurepas Way (A3) and the Major Development Area (MDA) to the west/northwest beyond
- The potential for greater pedestrian/vehicular conflict beside one of the internal crossing points of the connecting pedestrian walkway to the MDA

Discussion relating to each of these areas is included in subsequent subsections of this Report.



2 PROPOSED DEVELOPMENT

2.1 Introduction

The development proposals comprise the installation of a PFS with associated adjustments to the customer car park at the ASDA food store at Portland Road in Waterloooville. ASDA's business rationale for including a PFS at the Waterloooville store is to provide a more complete offer to existing customers.

The proposals will result in a minor reconfiguration of the site layout in the northern car park, with the resultant loss of 45 customer car parking spaces. No adjustments are proposed to the store access or service yard areas.

The proposed PFS will include a total of four pumps with filling positions located either side of each pump, giving a total of eight filling positions. It will operate an at-pump card payment system, meaning it will not be possible for customers to pay with cash. Given that customers will be required to pay for their fuel at the pump, there will be no remote kiosk or accompanying shop facility. Further, there will be no BIO or Super fuel provided and no LPG offer.

On the basis that drivers can pay at the pump, the length of time spent at the proposed PFS is likely to be less than that in a conventional PFS, where drivers either have to walk or drive to a kiosk to make payment. The pay-at-pump model has been favoured by ASDA on the basis that it best manages the throughput of customer demand.

Despite the absence of a staffed kiosk, ASDA is committed to a forecourt management strategy that ensures a trained member of staff will attend the PFS for 60hrs each week to monitor its operation. The attendant will offer assistance to customers who are unfamiliar with the PFS format, or who may require assistance with mobility.



2.2 Site Location

The store is located immediately to the northwest of the town centre of Waterlooville, approximately 2 kilometres west of J3 of the A3(M) motorway. Land to the north, east and south of the store is predominantly commercial and employment in use, comprising town centre shops, a retail park and other community facilities. The A3 dual carriageway, Maurepas Way, forms the western and northern boundary to the store. Land to the west contains a mixture of agricultural land and other green space.

Vehicle access to the store car park is taken directly from Maurepas Way (A3), the major road running through the town. Access to the proposed PFS will be taken by the same means.

Bus stops are located to the south of the store on London Road, and to the east on Hambledon Road. A general location plan is shown in Figure 2.1.

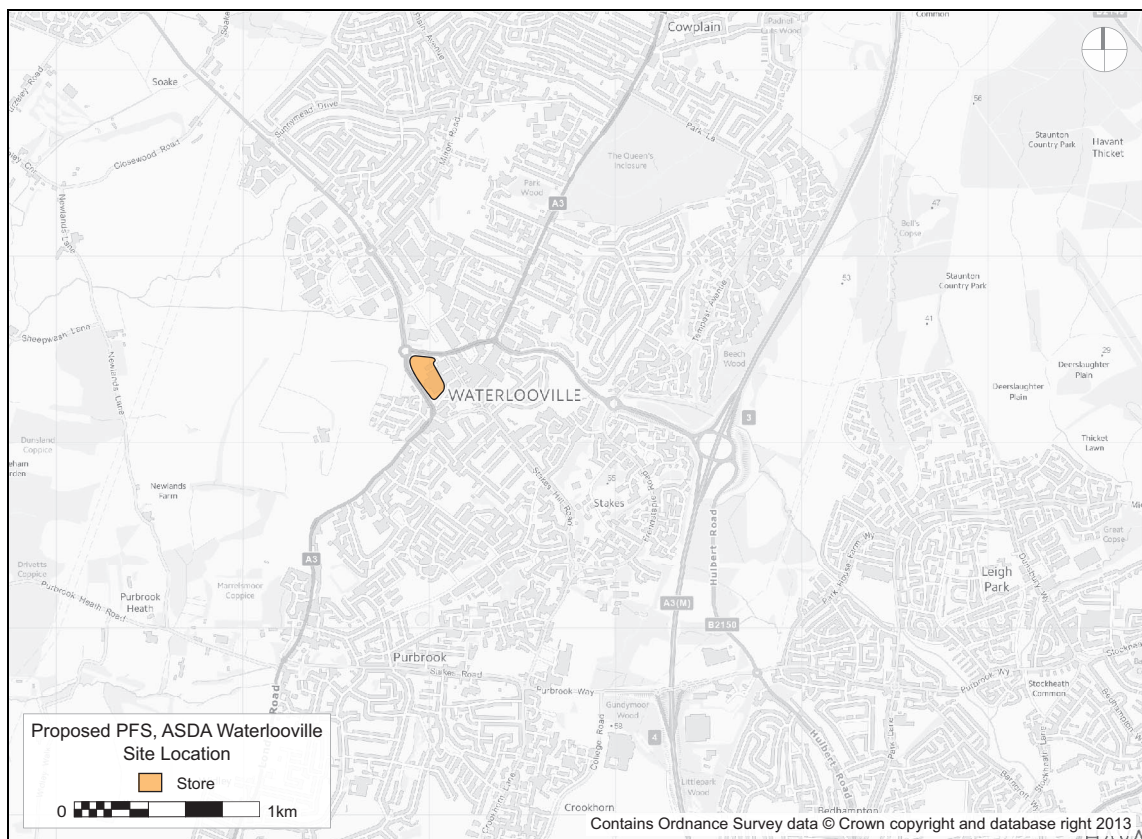


Figure 2.1 : ASDA Waterlooville - General Location Plan

2.3 PFS Location and Layout

The PFS will be located in the northern car park, at the western boundary of the site by Maurepas Way (A3), with access taken from inside the car park. The location of the proposed PFS, in the context of the site in general, is shown in Figure 2.2.

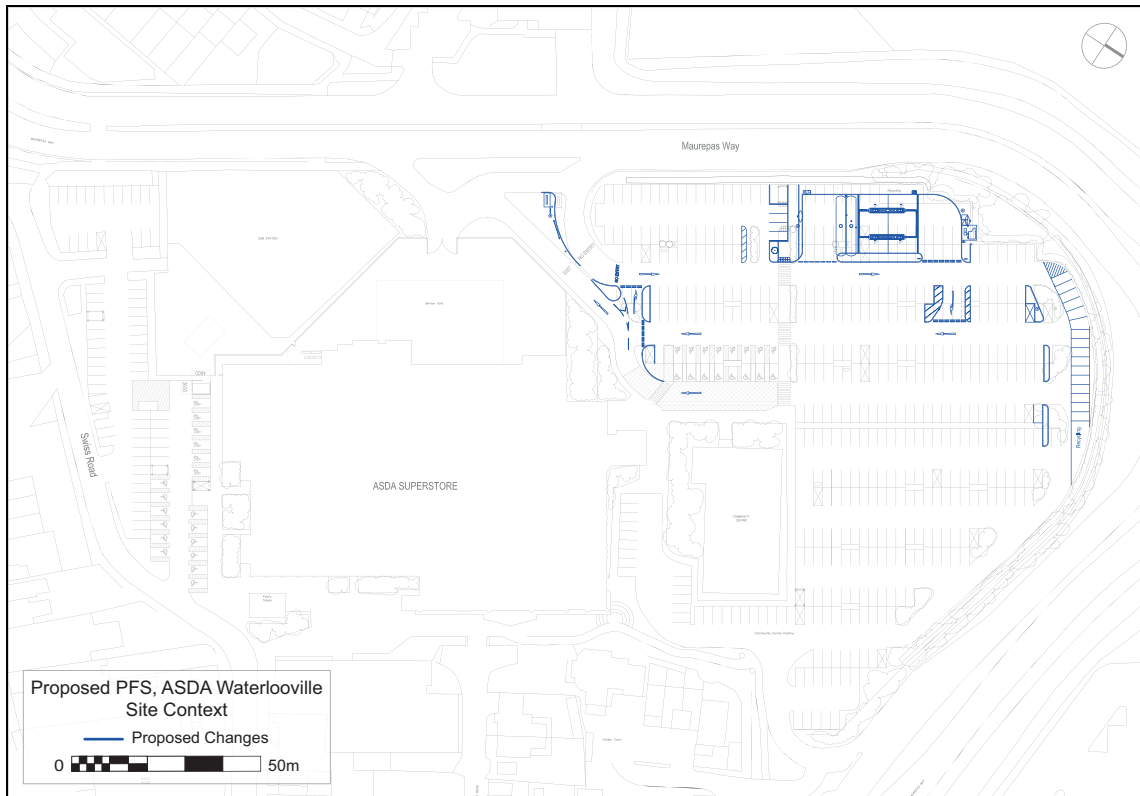


Figure 2.2 : ASDA Waterlooville - Proposed PFS Location Within the ASDA Site

The layout of the proposed PFS is shown in Figure 2.3.

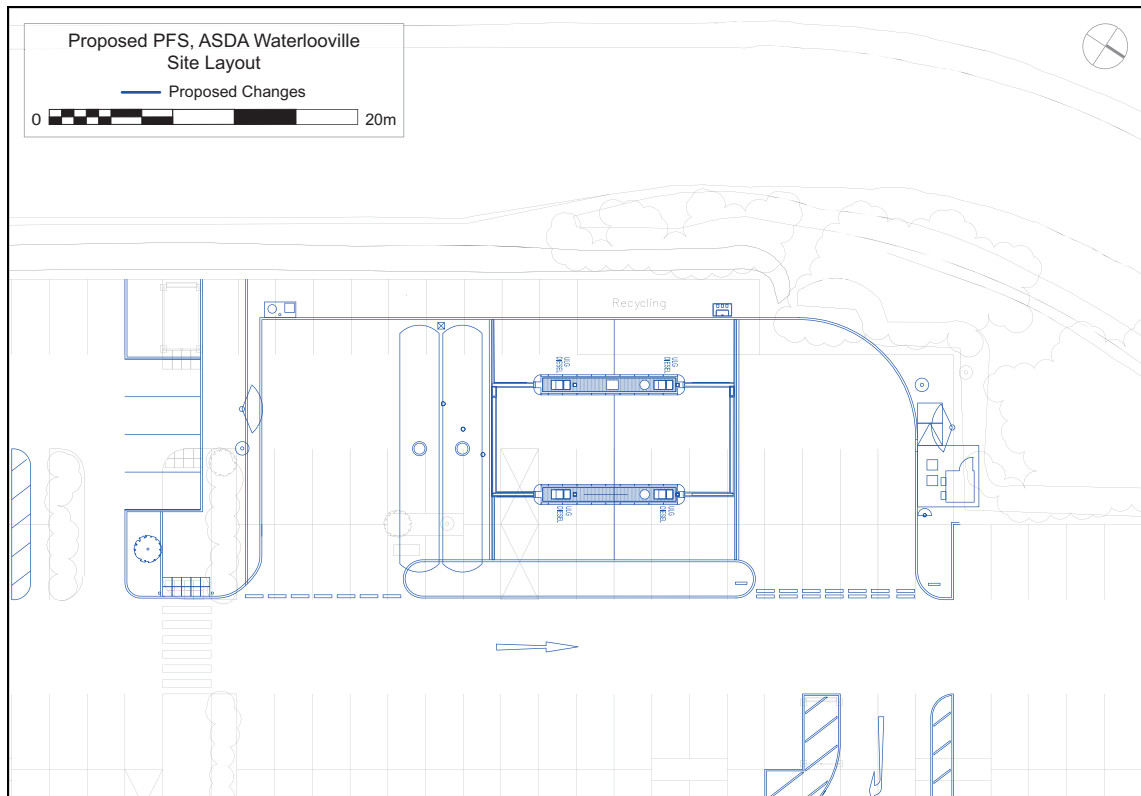


Figure 2.3 : ASDA Waterloooville - Proposed PFS Layout

The access road into the car park and internal layout will be subject to minor adjustments to accommodate the proposed PFS and improve circulation in the car park. The proposals cater for customers who choose to obtain fuel before visiting the store, or for customers who only wish to buy fuel.

Existing arrangements for store delivery vehicles will not be affected by the proposals.

A development in the MDA that has planning consent to the west of the store requires the dual carriageway to be amended to include a toucan crossing, and amends the access into the store from a diverge lane to a diverge taper. This planned new crossing facility over Maurepas Way (A3) will provide a connection to an existing pedestrian route through the ASDA car park, which will provide a link from the future development to the town centre.

This connection is maintained alongside the proposed layout, as illustrated in Figure 2.4.

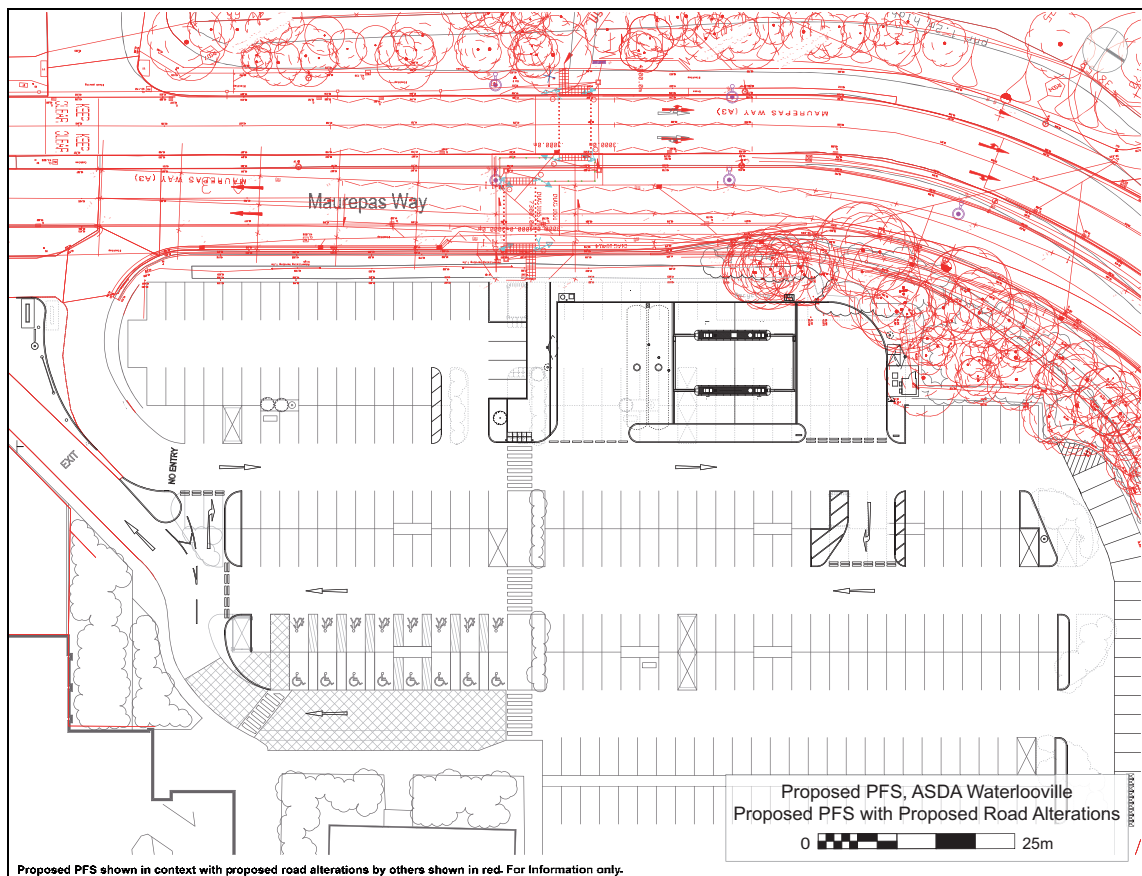


Figure 2.4 : ASDA Waterlooville - Proposed PFS with Road Alterations

2.4 Swept Path Analysis

AutoTrack swept path assessments have been undertaken to determine that the proposed PFS design can accommodate appropriate vehicle manoeuvres. Figure 2.5 shows the swept path requirements for articulated tanker vehicles through the proposed PFS, and demonstrates that vehicles can successfully manoeuvre within the proposed design.

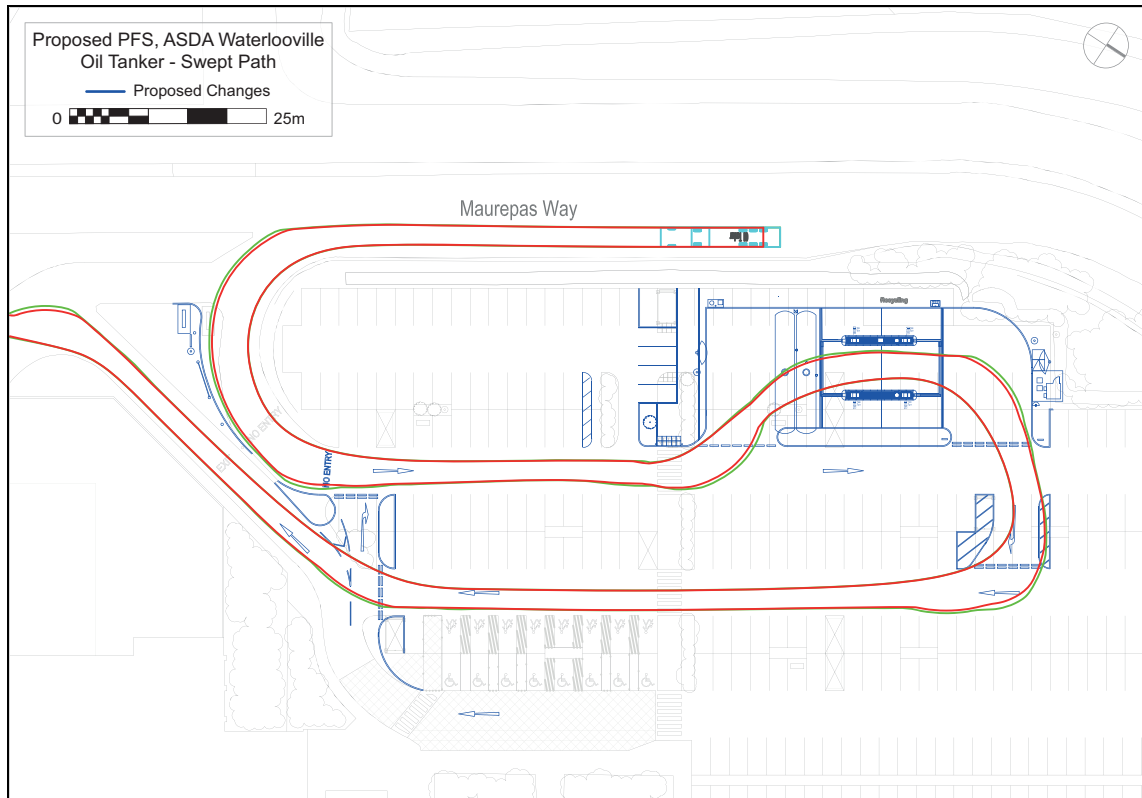


Figure 2.5 : ASDA Waterloooville - Swept Path Analysis of Articulated Tanker Vehicle

The fuel storage design minimises the number and occurrence of fuel delivery trips. In addition, ASDA's fuel delivery strategy enables a flexible approach to be taken for the arrival time of tanker deliveries. Through liaison between the store manager and delivery driver, it would be expected that deliveries would be scheduled to occur outside periods of peak demand. This need not mean that deliveries were required to occur during out of hours periods.

3 PFS TRIP GENERATION

3.1 Introduction

In order to quantify the maximum likely trip generation, ASDA has supplied data relating to existing petrol facilities of the same design as is proposed at Waterloooville. The forecasts have been derived by ASDA using data from comparable sites throughout the UK.

Additional analysis based on the TRICS trip rate database is presented in subsection 3.4. This data is included to supplement the ASDA-specific forecast and to provide details of the likely trip generation under typical day-to-day conditions.

3.2 Hourly Demand during Peak Trading

ASDA anticipates that the peak hourly demand during the peak trading week in a year is expected to be 93 cars. This value represents the likely maximum number of vehicles that will be expected to visit the PFS during its busiest period in the year and takes into account the anticipated average fill in litres and the expected total delivery volume in litres per week.

Typical demands outside the peak trading period will of course be lower, as set out in subsection 3.4.

3.3 Fuel-only Trips

Additional data provided by ASDA suggests that typically over 70% of transactions at store PFS facilities are associated with an existing shopping trip, with the remaining PFS transactions (approximately 30%) made by customers who use the PFS but do not use the store.

The application of this split to the anticipated peak PFS demand at the Waterloooville store would suggest that of the 93 trips, 65 trips ($93 \times 0.7 = 65$) would be existing customers diverted via the PFS prior to, or following, a trip to the store.

The remaining 28 trips ($93 \times 0.3 = 28$) would be considered to be fuel-only trips that have no current association with the store and would therefore be new trips to the ASDA.

In the peak hour of the peak trading week of the year (i.e. the maximum uplift in trip making that is anticipated) it is therefore anticipated that a maximum of 28 additional trips would occur as a result of the proposed PFS.

A forecast of the likely trip generation for typical day-to-day conditions is presented in subsection 3.4.

3.4 TRICS Analysis

Petrol Filling Stations are listed as land-use category 13 in TRICS. Sub land-use categories are included for stand-alone petrol filling stations and those which have an associated retail outlet.

A key characteristic of the proposed PFS for Waterloooville is that it will be fully automatic with no associated retail outlet; all fuel transactions will be paid for using an at-pump card payment system.



The TRICS sub-category for stand-alone PFS sites (with no associated retail) is considered to best match the characteristics of the proposed development, however, for the sake of completeness, data is presented to show the trip rates and resulting trip generation for PFS facilities with and without associated retail.

Table 3.1 shows the arrival trip rates for petrol filling stations with and without associated retail outlets. Information is provided for each hour between 06:00–22:00.

Table 3.1 : Weekday and Weekend PFS Trip Rates (06:00–22:00) (From TRICS)

Time	Weekday		Weekend	
	With Retail	Stand-alone	With Retail	Stand-alone
06:00-07:00	4.56	1.50	2.45	2.67
07:00-08:00	9.14	7.17	5.68	3.69
08:00-09:00	9.75	7.83	7.58	5.38
09:00-10:00	9.20	7.43	9.41	7.41
10:00-11:00	9.28	7.02	11.50	8.37
11:00-12:00	9.48	6.87	11.56	7.68
12:00-13:00	10.68	7.10	13.27	7.25
13:00-14:00	9.70	7.10	11.63	7.36
14:00-15:00	9.50	7.01	10.32	6.36
15:00-16:00	10.22	7.21	10.27	6.21
16:00-17:00	10.25	7.03	11.65	5.43
17:00-18:00	11.52	8.06	11.42	5.12
18:00-19:00	11.23	7.69	12.35	4.46
19:00-20:00	9.64	6.27	10.59	5.50
20:00-21:00	8.53	4.16	7.38	2.94
21:00-22:00	5.00	3.49	5.36	-

A total of eight petrol filling positions will be provided at the proposed PFS for WaterlooVille. Application of these trip rates gives rise to the trip generation values shown in Table 3.2.

Table 3.2 : Weekday and Weekend PFS Trip Generation (06:00–22:00) (From TRICS)

Time	Weekday		Weekend	
	With Retail	Stand-alone	With Retail	Stand-alone
06:00-07:00	37	12	20	21
07:00-08:00	73	57	45	29
08:00-09:00	78	63	61	43
09:00-10:00	74	59	75	59
10:00-11:00	74	56	92	67
11:00-12:00	76	55	92	61
12:00-13:00	85	57	106	58
13:00-14:00	78	57	93	59
14:00-15:00	76	56	83	51
15:00-16:00	82	58	82	50
16:00-17:00	82	56	93	43
17:00-18:00	92	65	91	41
18:00-19:00	90	62	99	36
19:00-20:00	77	50	85	44
20:00-21:00	68	33	59	24
21:00-22:00	40	28	43	-



The results in Table 3.2 show the typical total trip generation that would be expected for a PFS with eight filling positions. As discussed in subsection 3.3, in the context of a PFS at an existing ASDA store, it is expected that 70% of the vehicles would be associated with existing shopping trips to the store; the number of new trips to the proposed PFS is only expected to account for 30% of the total trips to the facility.

Table 3.3 shows the total number of new trips that would be generated on the basis the total trips shown in Table 3.2.

Table 3.3 : Weekday and Weekend New PFS Trip Generation (06:00–22:00) (From TRICS)

Time	Weekday		Weekend	
	With Retail	Stand-alone	With Retail	Stand-alone
06:00-07:00	11	4	6	6
07:00-08:00	22	17	14	9
08:00-09:00	23	19	18	13
09:00-10:00	22	18	23	18
10:00-11:00	22	17	28	20
11:00-12:00	23	16	28	18
12:00-13:00	26	17	32	17
13:00-14:00	23	17	28	18
14:00-15:00	23	17	25	15
15:00-16:00	25	17	25	15
16:00-17:00	25	17	28	13
17:00-18:00	28	19	27	12
18:00-19:00	27	18	30	11
19:00-20:00	23	15	25	13
20:00-21:00	20	10	18	7
21:00-22:00	12	8	13	-

It is considered that the characteristics of the proposed PFS will be more aligned with those identified in the tables as stand-alone as the proposed PFS will not have an associated kiosk or car parking facilities.

Based on the values presented in Table 3.3, the maximum number of additional vehicles attracted to the site will be 19 vehicles during the peak hour on a weekday (08:00–09:00 and 17:00–18:00) and 20 vehicles during the peak hour on a weekend (10:00–11:00).

Conventionally, when determining the total number of new trips to a new retail development, a trip reduction factor is applied to cater for the likelihood that pass-by trips will occur, i.e. trips already on the network. In this case, SIAS has assumed a pass-by rate of 30% for weekdays and 10% for weekends.

The results in Table 3.4 show the number of new trips that might be expected to be attracted to the proposed PFS, so should be considered as additional trips on the adjacent road network.



Table 3.4 : Weekday and Weekend PFS - Total New Trips on Road Network (06:00–22:00)

Time	Weekday		Weekend	
	With Retail	Stand-alone	With Retail	Stand-alone
06:00-07:00	8	3	5	6
07:00-08:00	15	12	12	8
08:00-09:00	16	13	16	12
09:00-10:00	15	12	20	16
10:00-11:00	16	12	25	18
11:00-12:00	16	12	25	17
12:00-13:00	18	12	29	16
13:00-14:00	16	12	25	16
14:00-15:00	16	12	22	14
15:00-16:00	17	12	22	13
16:00-17:00	17	12	25	12
17:00-18:00	19	14	25	11
18:00-19:00	19	13	27	10
19:00-20:00	16	11	23	12
20:00-21:00	14	7	16	6
21:00-22:00	8	6	12	-

On this basis, the maximum number of additional trips on the road network as a result of the proposed PFS is likely to be 14 in the weekday peak hour (17:00–18:00) and 18 in the weekend peak hour (10:00–11:00).

3.5 Store GFA and Effect on Customer Car Parking

The store has a gross floor area (GFA) of 60,154 sq.ft (approx. 5,588 sq.m), which is unaffected by the proposals. HBC, like Hampshire County Council and the District and Borough Councils within Hampshire, have adopted the *Hampshire Parking Strategy and Standards* (Spring 2002). For a new store of this size a parking limit of 399 spaces would apply (1 space per 14 sq.m). These standards are consistent with national guidelines.

The existing customer car park at Waterlooville has 538 spaces, including all parent and child and disabled user spaces. The proposals will result in a reduction of 45 spaces, leaving a revised total capacity of 493 spaces.



3.6 Effects on External Junction Capacity and Connecting Pedestrian Walkway

The majority of vehicle trips associated with the completed PFS will be existing ASDA trips which already feature on the local road network. The remainder of trips will be made by users who do not currently visit or use the ASDA store. This latter category of trip will be composed of trips which are either already present on Maurepas Way (A3) and adjacent streets or are new to the local road network, in theory having been attracted to the store specifically following the introduction of a PFS.

As indicated in subsection 3.3, it is forecast that with the completed PFS in place, the worst case scenario is that a maximum of 28 additional vehicles will be added to the entry and exit flows at the main store access during the peak hour of the peak trading period of the year. Given the likelihood that this forecast includes pass-by trips, it represents an over-estimate of additional trip-making activity on the road network as a whole. It is reasonable to assume that up to 30% will be pass-by trips.

It can be further assumed that the distribution of additional trips would be broadly based on the existing traffic patterns to and from the store, which is composed of trips that approach from the south using London Road (A3) and Rockville Drive; or from the north/east using Maurepas Way (A3)/Hulbert Road (B2150) and Hambledon Road (B2150). The maximum expected uplift of 28 additional vehicles would be distributed to/from the north, east and south thereby diluting the overall impact of the additional traffic.

The arrival and departure of additional trips would be dispersed throughout the course of an hour, meaning that the effect of fuel-only trips on the operation of the access junction would be minimal. This example considers the peak hour of the peak trading week of the year; outside this period there will be fewer trips associated with the completed PFS.

The completed PFS will sit within the re-configured store car park alongside the connecting pedestrian walkway, with parking bays near-by and associated pedestrian activity continuing around. Conditions in the car park are unlikely to materially change given the expected trip making patterns. For example, the consistent level of activity will continue to safeguard low speeds and drivers will remain alert to pedestrians in the roadway.

It can be concluded that the traffic impact of the proposals on external junction capacity and connecting pedestrian walkway will be negligible.

As noted in subsection 1.1, the proposed PFS replicates a layout that is successfully in use elsewhere in the UK. The design ensures that there is stacking capacity leading in to the forecourt. This will reduce the likelihood that cars waiting to use a pump will queue back towards the access road.



4 SUMMARY AND CONCLUSION

4.1 Summary

The design of the PFS balances the requirements of existing ASDA customers arriving by car/non-car based travel modes and users of the adjoining road network, with the operational and access requirements of the proposed PFS. In particular, SIAS has considered the demand characteristics associated with PFS customers and the need for articulated delivery vehicles to access and manoeuvre in the facility. Swept path analysis has been undertaken using AutoTrack to determine the spatial requirements of articulated delivery vehicles.

The proposals do not have any bearing on the provision for pedestrians and bus users who access the food store.

Details are provided in this Report of the methodology and data used to determine the maximum trip generation of the PFS. Data obtained from ASDA provides an indication of the likely operational characteristics of the PFS during the peak hour of the peak trading week in the year. These have been used to determine the maximum number of additional trips attracted to the site under peak trading conditions following the introduction of a PFS, i.e. a worst case scenario (subsection 3.2 and subsection 3.3).

A supplementary TRICS assessment has been undertaken (subsection 3.4) that indicates that under typical operating conditions, the total number of additional vehicles attracted to the site during the peak hour would be 19 vehicles on a weekday and 20 vehicles at the weekend (Table 3.3).

4.2 Conclusion

Additional trips made in the peak hour, under typical day-to-day conditions, have been calculated as follows:

- TRICS analysis (weekday):
65 in/65 out (Table 3.2)
- Disaggregation of existing ASDA trips and new trips (weekday):
19 in/19 out ($65 \times 0.3 = 19$) (Table 3.3)
- Application of weekday pass-by rate:
14 in/14 out ($19 \times 0.70 = 14$) (Table 3.4)
- **Total number of new trips in and out (weekday): 14 in/14 out**

- TRICS analysis (weekend):
67 in/67 out (Table 3.2)
- Disaggregation of existing and new trips (weekend):
20 in/20 out ($67 \times 0.3 = 20$) (Table 3.3)
- Application of weekend pass-by rate:
18 in/18 out ($20 \times 0.90 = 18$) (Table 3.4)
- **Total number of new trips in and out (weekend): 18 in/18 out**



On the basis of the TRICS data for stand-alone PFS sites used in this assessment (subsection 3.4), the expected number of new car trips attracted to the proposed PFS under typical conditions would be 14 during the weekday peak hour and 18 during the weekend peak hour.

The ASDA peak trading forecast has been included to serve as an estimate of the absolute maximum number of additional trips under infrequent peak trading conditions, such as at Christmas—that is to say, a worst case scenario. The anticipated peak PFS demand at the Waterlooville store under these conditions is estimated at 93 trips, with 65 ($93 \times 0.7 = 65$) being existing customers, and the remaining 28 ($93 - 65 = 28$) being new trips to the store. Application of the standard pass-by assumptions would result in 20 new trips during the weekday ($28 \times 0.7 = 20$) and 25 new trips at the weekend ($28 \times 0.9 = 25$).

The proposals will result in a minor reconfiguration the site layout, with the resultant loss of 45 customer car parking spaces.

The addition of a PFS is proposed as a means of making the offer to existing ASDA customers more comprehensive. ASDA has a number of mechanisms and initiatives at its disposal that it would employ should the operation of the PFS affect access to the customer car park.

It is considered that the traffic impact of the proposals in the ASDA site, and on the adjoining road network, will be negligible.

