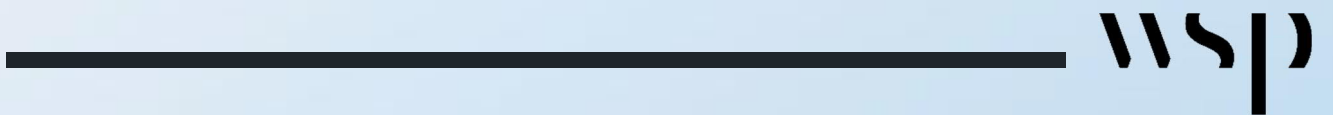


Appendix I

Thorneydown TA Assumptions



6. ASSESSMENT METHODOLOGY

6.1. INTRODUCTION

- 6.1.1. This section investigates the number of vehicular trips likely to be generated by the proposed temporary car park on event days, and assesses the distribution of these trips throughout the local road network.
- 6.1.2. It is important to note that the proposed temporary car park is not intended to be used continuously throughout the year, but sporadically to cater for events between April and October being hosted at the Ageas Bowl. As the proposed temporary car park is not intended to be used more than 12 times a year, the impact event traffic has upon the local road network cannot be considered as severe in the long term. In addition, not all events will be held on week day, which is generally when the highway network experiences the greatest levels of usage. For example, based on Table 2 there will be two concerts held on a weekend plus up to five international cricket games per year, which could account approximately 50% of the car parks use.
- 6.1.3. It is also important to note that the purpose of the development proposal from the transport perspective is to provide a temporary car park facility that replaces the previous facility at Peace Haven. The implementation of the proposed temporary car park is not intended to impact upon the number of visitors to the Ageas Bowl.

6.2. VEHICULAR TRIP GENERATION

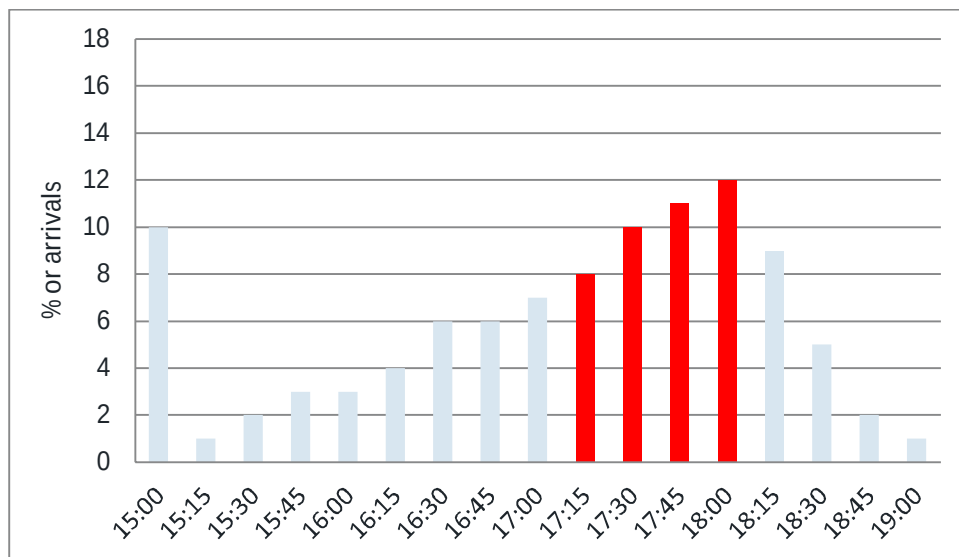
- 6.2.1. As outlined in the development proposals, it is anticipated that the proposed temporary car park will cater for approximately 1,300 vehicles and be used only on event days where the capacity exceeds 15,000 spectators. Out of the 1,300 spaces, 900 will be provided as a replacement to those being lost at the Peace Haven Park and Stride site. This proposed temporary car park is also intended to account for lost Park and Ride provisions at the Hamble Lane, Bursledon site. Taking account of approximate attendances presented in **Table 2**, this means that the proposed temporary car-park will only be used for the following events:
- International Cricket; and
 - Concerts.
- 6.2.2. For T20 games, where the attendances are approximately 7,000, the proposed temporary car park will not be used, with the Ageas Bowl instead using existing car parking facilities. This means the development proposals will not generate any additional trips for these events.
- 6.2.3. To calculate the trip generation associated with the temporary car park a review has been undertaken of ticket holder post-code information and arrival patterns provided by Hampshire Cricket Club for previous events held at the Ageas Bowl. This review allowed WSP to estimate the number of vehicles arriving at the Ageas Bowl, when they arrived and the likely route choice from origin, as explained in further detail in **Section 5.2**. In all cases, however, it has been assumed that the car park will reach its full capacity of 1,300 vehicles.
- 6.2.4. When calculating trip generation, the like-for-like replacement of spaces from the Peace Haven park-and-stride site has been taken into account, along with the fact that these spaces will continue to be accessed via Botley Road. Therefore to avoid double counting of ingress trip generation, an assessment has only been undertaken of the 400 cars that will enter the site via A27 Moorgreen

Road. This is because the 900 vehicles that enter the site via Botley Road / Marshall Drive already use Botley Road to access the Peace Haven car park in the existing situation and therefore the proposed access arrangements / traffic conditions do not alter existing trip generation at this location.

ARRIVAL PROFILES

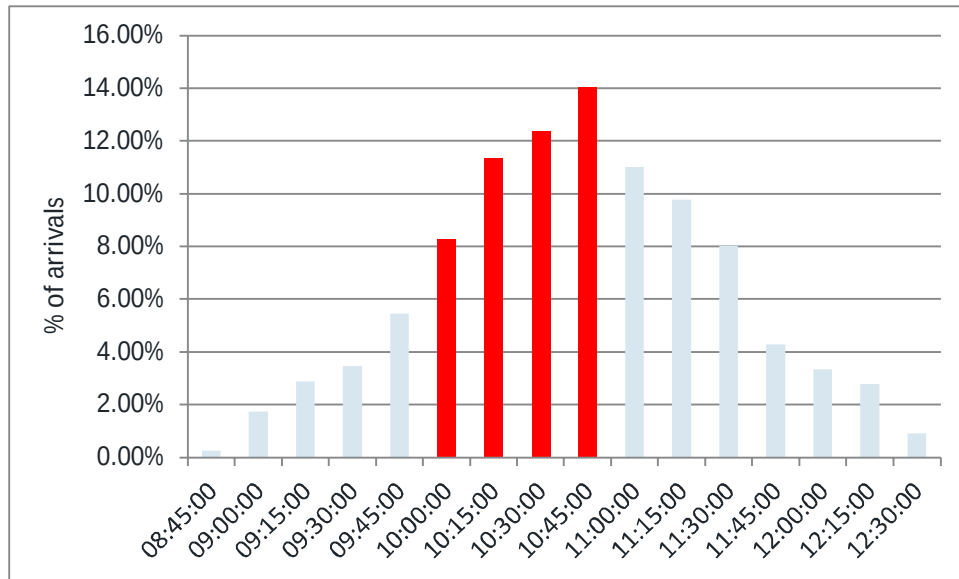
- 6.2.5. Arrival times are distributed normally over the ingress period. As such, the arrival pattern for the car park will be spread over the ingress period, with the maximum arrival rate in any one hour period considerably less than the total car park occupancy. The distribution of arrival times over the various ingress periods have been supplied by the Ageas Bowl and based upon ticket entry times.
- 6.2.6. Approximate attendee arrival times for concerts are outline in **Figure 5**.

Figure 5 – Concert arrival profile



- 6.2.7. Approximate spectator arrival times for Test Match Day One are presented in **Figure 6**.

Figure 6 – Test Match arrival profile



- 6.2.8.** Analysis of previous ticket entry data in **Figure 5** and **Figure 6** found the following peak hours for spectator arrivals:
- International Cricket Match: 10:00 – 11:00, which accounted for 46.8% of total spectators arriving at the car park; and
 - Concert: 17:15 – 18:15, which accounted for 41.0% of total spectators arriving at the car park.
- 6.2.9.** These percentages were applied to the car park capacity (1,300 vehicles) in order to estimate the total number of vehicles arriving within the peak hour. Applying the directional split estimated from post code data to the number of peak hour arrivals gave the estimated peak hour demand for each car park entrance.
- 6.2.10.** An outline of the expected peak hour demand for each access of the proposed temporary car park is provided within Table 6.

Table 6 – Entry trip generation

		Entry Distribution	
		International Cricket (10:00 – 11:00)	Concert (17:15 – 18:15)
Peak Hour Arrivals (% of total)		46.08% (600 vehicles)	41.00% (533 vehicles)
Directional Split	North Entrance (Marshall Drive)	415 vehicles	369 vehicles
	West Entrance (A27 Moorhill Road)	185 vehicles	164 vehicles

EGRESS PROFILES

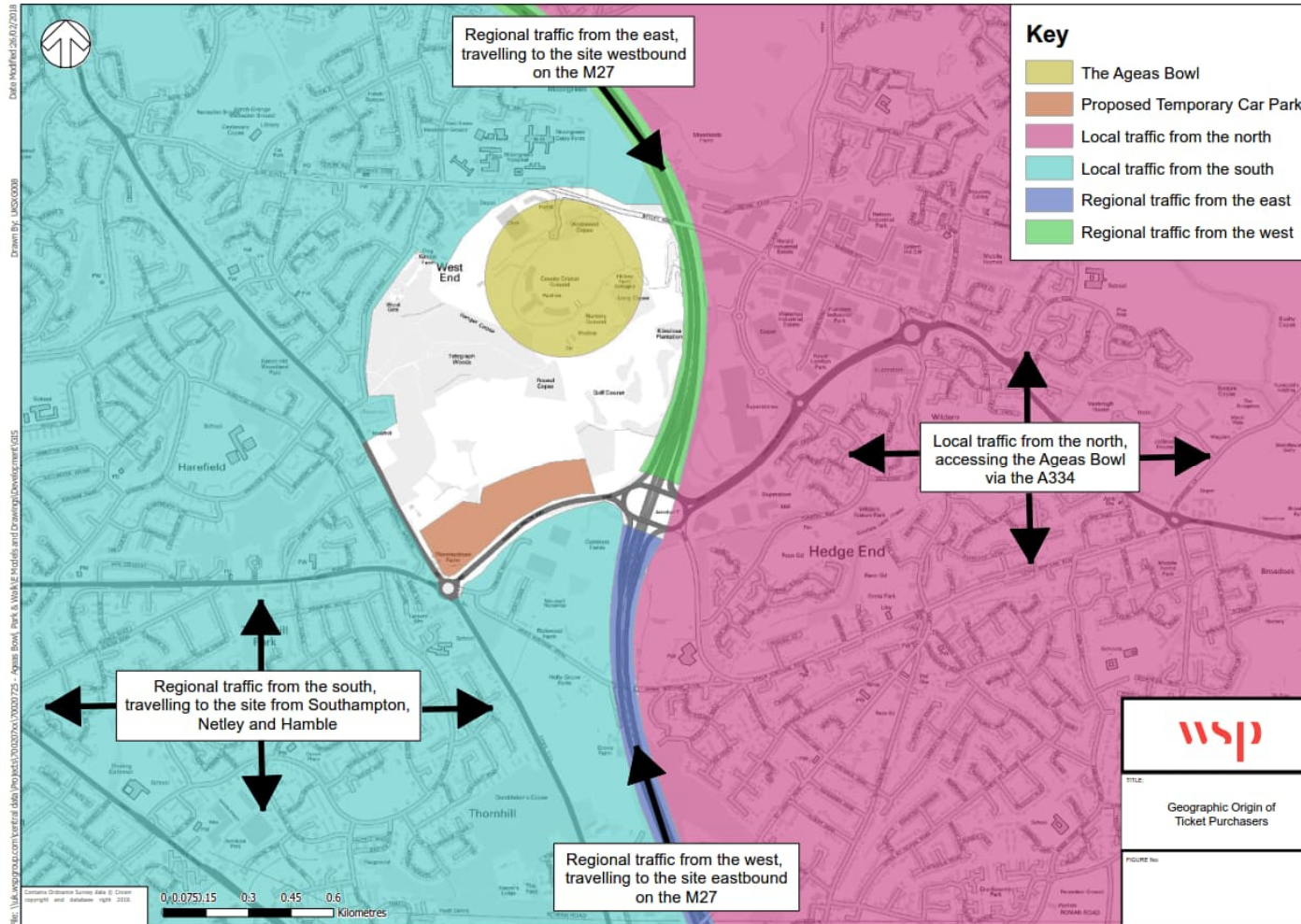
- 6.2.11. For egress trip generation, it has been assumed that all 1,300 vehicles within the temporary car park exit via the A27 Moorgreen Road. To provide a robust assessment, while also taking into account early departures, it has been assumed that 1,000 vehicles exit the site in one-hour after an event has ended. This is the equivalent of 17 vehicles per minute exiting the site.
- 6.2.12. It is proposed that the entirety of traffic leaving the proposed temporary car park will exit via the A27 Moorhill Road access on a left out only basis.
- 6.2.13. In terms of outbound journeys, the same geographic distribution was used as for inbound journeys, given that it is reasonable to assume that vehicles would leave in same direction from which they originated.

6.3. DISTRIBUTION AND ASSIGNMENT

DISTRIBUTION AND ASSIGNMENT OF ARRIVALS

- 6.3.1. The average geographic distribution of ticket purchasers was calculated based upon the home postcodes of ticket purchasers for the following past events held at the Ageas Bowl:
 - England v West Indies ODI (Friday 29th September 2017);
 - England v Pakistan ODI (Wednesday 24th August 2016); and
 - England v Sri Lanka ODI (Tuesday 5th July 2016).
- 6.3.2. All UK non-mainland home postcodes were excluded from analysis on the basis that these spectators would not travel to the venue by car. Furthermore, all UK mainland postcodes that were located within a 2km radius of a railway station were excluded from analysis under the assumption that these spectators would travel via rail and ride services.
- 6.3.3. The remaining postcodes were then sorted into four categories based upon the route they were likely to take to the Ageas Bowl. The four categories are outlined in **Figure 7**, and can be described as follows:
 - Traffic from the west (those travelling to the Ageas Bowl eastbound on the M27);
 - Traffic from the north (those travelling to the Ageas Bowl on the local road network via the A334);
 - Traffic from the east (those travelling to the Ageas Bowl westbound on the M27); and
 - Traffic from the south (those travelling to the Ageas Bowl on the local road network from Southampton, Netley and Hamble).
- 6.3.4. Postcode data was unavailable for concert and International Test Match events and thus the average geographic distribution of ticket purchasers from the aforementioned ODI's has been used for all scenarios.

Figure 7 – Geographic origin of ticket purchasers





6.4. TRAFFIC COUNT DATA

- 6.4.1. WSP commissioned Traffic Survey Partners Ltd to undertake Manual Classified Count (MCC) surveys at Kanes Hill Roundabout. Traffic surveys were undertaken in order to gain an understanding of the current operation of the local road network in the area surrounding the proposed A27 Moorhill Road access.
- 6.4.2. The MCC surveys were undertaken for the following dates / time periods:
- Friday 29th September 2017:
 - 10:00 – 12:00;
 - 17:00 – 19:00; and
 - 22:00 – 23:45.
 - Saturday 30th September 2017:
 - 10:00 – 12:00;
 - 17:00 – 19:00; and
 - 22:00 – 23:45.
- 6.4.3. It should be noted that a One Day International cricket match (England v West Indies) was held at the Ageas Bowl on Friday 29th September 2017. Traffic surveys were undertaken on an event day in order to undertake a robust assessment of the possible impact on the road network through the double counting of event day traffic.
- 6.4.4. Queue lengths were also captured for all arms of the junction in question at one minute intervals during all periods surveyed. The full results of the MCC surveys and queue length surveys are included in **Appendix B**.
- 6.4.5. An Automatic Traffic Count (ATC) survey was commissioned for A334 Charles Watts Way for a continuous seven day period commencing on Friday 29th September 2017. The full results of the ATC survey have been included in **Appendix C**. The ATC data provides the number of vehicles and the speeds over the full survey period. Speeds were recorded for vehicles travelling in both directions and 85th percentile speeds for all vehicles over each hour.
- 6.4.6. The ATC data was examined in order to identify any variations in daily observed counts and to establish traffic flow conditions on a typical day. It was found that the data captured by MCC broadly aligns with that found in the ATC.

6.5. ASSESSMENT PERIODS

- 6.5.1. Following the analysis outlined above, both the ingress and egress periods of an international cricket match and a concert have been assessed. The assessment time periods are outlined in **Table 7**.

Table 7 – Assessment Time Periods

	Ingress		Egress	
	International Cricket	Concert	International Cricket	Concert

Weekday	10:00 – 11:00	17:15 – 18:15	18:00 – 19:00	22:00 – 23:00
Weekend day	10:00 – 11:00	17:15 – 18:15	18:00 – 19:00	22:00 – 23:00

6.6. BACKGROUND TRAFFIC GROWTH

- 6.6.1. Observed 2017 traffic flows were converted into forecast 2018 and 2027 future year traffic flows using calculated TEMPRO growth factors for the relevant census ward (Eastleigh 009: E02004720). The TEMPRO growth factors used in this assessment are outlined in **Table 8**.

Table 8 – TEMPRO growth factors

Growth Factor	Weekday			Saturday
	Inter Peak	PM Peak	Off Peak	All Day
2017 – 2018	1.015515	1.014264	1.012562	1.014314
2017 - 2027	1.148256	1.134342	1.125237	1.139509

6.7. ADDITIONAL BACKGROUND EVENT TRAFFIC

- 6.7.1. In order to conduct a robust assessment the additional traffic generated by additional on-site car parks was added to the calculated traffic flow.
- 6.7.2. As discussed in paragraph **3.2.3**, on-site car parks are generally reserved for VIP's, Golden Debentures, hospitality guests and accessible parking. The proposals put forward within this report do not impact upon the current function of existing on-site car parks and as such all vehicles accessing these facilities will enter via the north entrance as is currently the case.
- 6.7.3. Analysis of data collated from previous international cricket event TMP's found that the highest typical demand placed upon on-site car parks is 580 vehicles. The arrival profiles set out in
- 6.7.4. **Table 6** and the geographic distribution discussed in **Section 6.2** were applied to estimate traffic generated by on-site parking and its likely route. This additional traffic was then added to calculated traffic flow and traffic generated by the proposed temporary car park before being assessed.

6.8. SENSITIVITY TESTS

- 6.8.1. In order to ensure a robust assessment, junction assessments have been undertaken for both a scenario in which smart ticketing is in place, and one in which the origin of traffic entering the car park follows the average geographic distribution of ticket purchasers.
- 6.8.2. Undertaking an assessment of a scenario in which the entry point used by arriving traffic is not managed by smart ticketing allows for a robust assessment of the possible impact event traffic may have on the local road network.