

**LAND SOUTH OF WARMWELL  
ROAD  
CROSSWAYS**

**TRANSPORT APPRAISAL AND COMPARISON  
OF ALTERNATIVE SITE**



**MARCH 2013**



# **LAND SOUTH OF WARMWELL ROAD CROSSWAYS**

## **TRANSPORT APPRAISAL AND COMPARISON OF ALTERNATIVE SITE**

**PREPARED FOR**

**MAJOR GENERAL BOND**

**FMW CONSULTANCY LIMITED**

**TRYM LODGE**

**1 HENBURY ROAD**

**WESTBURY-ON-TRYM**

**BRISTOL**

**BS9 3HQ**

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## 1 INTRODUCTION

- 1.1 FMW Consultancy have been appointed, on behalf of the owner of land to the south of Warmwell Road in Crossways, to consider transport issues associated with the proposed allocation of this land in the draft West Dorset, Weymouth and Portland Local Plan (for ease referred to henceforth as WDLP).
- 1.2 The draft WDLP was published for consultation in June 2012, and proposed that land be allocated in Crossways for the building of 1200 to 1500 homes, along with 7.2 hectares of employment land. Three broad areas within Crossways were identified:
- Land to the north beyond Woodsford Fields and south of the railway, primarily for residential, but with some employment/community use
  - Land to the south-east of Warmwell Road, for a mix of residential, employment and community uses
  - Land to the south-west, for employment purposes
- 1.3 Following a consultation period, in 2013 a revised set of allocations were proposed, whereby the amount of housing in Crossways overall was 700 units. This reduction in proposed housing at Crossways was offset by a proposal for around 1000 residential units and 3 Ha of employment land at a site on land to the south east of Dorchester, separated from the town by the A35 bypass.
- 1.4 Whilst this transport appraisal report focuses on issues relating to the land south of Warmwell Road, it also covers some items that are applicable to the other proposed land allocations in Crossways. David Tucker Associates (DTA) produced a Transport Accessibility Appraisal report in October 2012, which provided a review of the transport implications of the originally proposed residential and employment sites at Crossways. The report was undertaken on behalf of their client, who controls the areas referenced above to the north and south-west of Crossways, and the northern site is subdivided into two parcels (Woodsford Fields and West of Frome Valley Road). However, their report referred to the 'fourth site' (south of Warmwell Road) in some detail as well, as their work focused on wider accessibility issues relating to Crossways. This appraisal report therefore utilises and reports on a number of the

- points made in the DTA report, and does not seek to replicate work already done, but to interpret and set the findings in context.
- 1.5 As part of the WDLP consultation process, a number of alternative sites were put forward by various landowners. Of these alternative sites, the one of potential relevance when considering the proposed allocation at Crossways is the North Dorchester site, which was argued as being suitable for the same amount of residential/employment development as Crossways, and is being promoted as an alternative to the Crossways allocation. As part of this alternative site proposal, Peter Finlayson Associates (PFA) produced a 'Transport Sustainability & Accessibility Comparison and Traffic Modelling' report, which seeks to compare the transport issues relating to the Crossways and North Dorchester sites. However, it should be noted that the North Dorchester alternative site received a number of negative responses as part of the consultation process, and since it was first proposed, the site to the south east of Dorchester has been included as part of the emerging development strategy for the area.
- 1.6 Nevertheless, this report provides some critique of the PFA report, as that document included various transport-related assessments, and also where relevant this appraisal report compares the different transport approaches adopted by the DTA and PFA reports.
- 1.7 The structure of this report is summarised below:
- Section 2: Describes the existing transport issues in Crossways overall;
  - Section 3: Provides information on specific transport and access issues associated with the South of Warmwell Road site;
  - Section 4 Details some of the issues associated with the proposed site at South East Dorchester, and the alternative site at North Dorchester;
  - Section 5: Assesses the trip rate and distribution approaches taken by DTA/PFA, and discusses the traffic impacts;
  - Section 6: Provides a summary and conclusions.

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## 2 CROSSWAYS LOCAL PLAN ALLOCATION

2.1 The revised Local Plan proposal has put forward four different parcels of land for allocation in Crossways. Two of these are located in the north of the village, just to the south of the railway line. A third parcel is sited in the southern part of Crossways, to the south of the B3390 Warmwell Road. These three sites are being put forward for primarily residential-based development. The final site in Crossways is located on the western edge, and is being suggested for employment purposes. The four sites which are proposed to be allocated are shown in Figure 2.1.

### Local Road Network

2.2 The B3390 road runs in a south-west/north-east alignment through the village, and forms the southern boundary of the settlement at present. To the north-east of Crossways the road crosses the Dorchester – Poole railway line in the vicinity of Moreton railway station, and continues for another 6km or so through the settlement of Affpuddle. A little to the north of here it connects with the A35 trunk road at a grade-separated junction. To the south-west of Crossways the B3390 passes through the village of Warmwell, and just beyond it connects with the A352 at a roundabout. The B3390 operates with a 40mph speed limit throughout Crossways village.

2.3 Dick O' Th' Banks Road acts as a local residential route in the northern part of Crossways, connecting with the B3390 to the north-east of Crossways. To the west it intersects with the 'western link road' which currently forms the western edge of the village, and this road then proceeds in a westerly direction to the north of the sand and gravel quarries.

2.4 The local highway network is illustrated in Figure 2.1.

### Community Facilities

2.5 There is a convenience store located on the B3390, to the south-west of the Five Ways junction, immediately opposite the Warmwell Road site. There is another shop on Mount Skippet Way, just to the north of the B3390, and there is also a library and community/youth centre nearby. A relatively new primary school (Frome Valley First School) is located in the northern part of the village. A village hall is located to the

south of the B3390, on the road that leads to Moign Combe, and enclosed by the Warmwell Road site.

### **Public Transport**

- 2.6 Moreton railway station is located to the north-east of the village, around 800m beyond the Dick O' Th' Banks/B3390 junction. The station is served by an hourly train between Weymouth and London Waterloo, which also calls at Dorchester, Poole, Bournemouth, Southampton, Winchester and Basingstoke, amongst other stations. The service calls at different stations depending on the time of day, and in the peak hours some of the services do not call at as many stations, allowing a faster journey time to London, whereas later at night the service stops at some additional stations.
- 2.7 In the peak hours the station is served by additional trains, giving a half-hourly frequency at these times. From Moreton it is a 7 minute journey to Dorchester, and around 20 minutes to Weymouth. To the east, Poole can be reached in around 20 minutes, Bournemouth in 30 minutes, and Southampton in around 1 hour 20 minutes. Journey times to London Waterloo are more dependent on the stopping pattern of the train, but the faster trains can reach Waterloo in around 2 hours 35 minutes from Moreton. The last train from Waterloo back to Moreton on a weekday is the 2135 service.
- 2.8 There is a small car park at the station, comprising six spaces plus one disabled bay, although there are some marked out bays which are not currently accessible due to the presence of bollards and boulders, and there is also an informal parking area adjacent to the B3390. There are three cycle stands on the London platform. The station is not manned but has a self-service ticket machine. There is a continuous footway on the B3390 between the station and Crossways.
- 2.9 A regular bus service runs between Crossways and Dorchester, operated by Damory Coaches to a generally hourly frequency. The service routes via Broadmayne and West Knighton and enters Crossways from the north-west, travelling via Dick O' Th' Banks Road, the B3390 and Mount Skippet Way, before returning for Dorchester to the north-west. The service operates Monday to Saturday daytime, with the final service from Dorchester departing at 1745. The route of the bus is illustrated on Figure 2.1.

- 2.10 There is a Dorset County Council (DCC) school transport service that runs between Crossways and Puddletown St Mary's Middle School.

### **Pedestrians and Cyclists**

- 2.11 There are generally footways on the residential roads in Crossways, although the B3390 currently only has footway on its north-western side. There is no footway on the western link road. There are no specific cycling routes in the settlement, although most roads are conducive to cycling journeys.

### **Transport Improvements**

- 2.12 The potential number of trips arising from the proposed allocations is clearly significant, especially when viewed in the light of Crossways current population of a little over 2000 people. It is the case that a number of improvements would likely be required to enhance the accessibility of the settlement.
- 2.13 It is suggested that the bus service for the community would need improving, ideally to a frequency of at least every 30 minutes. This would involve discussions with local operators, and DCC, in order to understand how additional frequency could best be achieved. It may be that new routes within the expanded settlement would be appropriate.
- 2.14 The status of the existing B3390 would need to be addressed as well, in order that this does not sever the community, and to provide good quality links to the railway station. An initial discussion with highways officers at DCC has revealed a willingness for the speed limit of this road to be reduced to 30mph, subject to the introduction of local facilities and frontage development. It would also be appropriate to consider the provision of a cycleway on this road, in order to encourage sustainable mode trips to the railway station, and this is discussed further in Section 3.
- 2.15 The western link road does not currently have footways, and it may be appropriate for a footway to be provided on at least its eastern side, in order to allow connections between the proposed new housing areas in the north and south of the village. There is evidence that the existing verge on the eastern side of the road already experiences pedestrian use.



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- 2.16 The presence of a railway station in relatively close proximity of the site is a positive benefit arising from the allocation proposals, although it may be necessary to improve infrastructure and facilities at the station. This could include items such as increased car parking and cycle stands.
- 2.17 As work on the allocated sites continues it will be necessary to look at junctions on the local road network in further detail, and to undertake traffic modelling, the results of which may suggest some local road improvements are required.

### 3 SOUTH OF WARMWELL ROAD SITE

- 3.1 This section of the report considers some site-specific issues relating to the land parcel to the South of Warmwell Road.
- 3.2 The site is of a reasonably regular shape, apart from an 'indent' in the north-central part of the site resulting from an existing area of employment, and this largely splits the site into two, although there is a strip of around 60m width that means the two parts of the site are continuous. The site is shown in Figure 2.1.

#### **Vehicular Access**

- 3.3 As a result of the requirement for an area of Suitable Alternative Natural Greenspace (SANG) between the two parts of the site, it will not be possible for a through-vehicular route to be routed between the two parcels, and thus the two parts will both need to have vehicular access direct from the B3390. As the eastern parcel is larger, and with consideration to public transport opportunities, it is considered that two access junctions should be provided in the eastern half of the site.
- 3.4 An indicative access strategy for the site is illustrated in Figure 3.1. The western half is to be accessed via a simple priority junction with the B3390, between the western link road and the Hybris Business Park, at the point where an existing road leads south towards the village hall. The existing road will need widening in order to accommodate a 6m road into the site.
- 3.5 In the eastern part of the site, there are a number of dwellings that front onto Warmwell Road which are not within the client's ownership, and thus there is not continuous frontage with the B3390. It therefore seems logical to have the two eastern accesses either side of the existing buildings. Figure 3.1 shows a simple priority junction to the west of the farm buildings, with a potential pedestrian signalled crossing a little to the east of the junction, in order to maximise two-way crossing opportunities of the B3390. In addition, a mini-roundabout junction is illustrated further east, just to the west of the B3390/Five Ways junction. A mini-roundabout at this location could act as a speed-reducing feature, and given the amount of development, it may well offer a reasonably balanced split of traffic, appropriate for such a roundabout. By having two accesses in the eastern parcel a loop road could

be provided through this part of the site. The access strategy described here and illustrated in Figure 3.1 is a potential approach, although the final access strategy would need further discussion to ascertain other site constraints, and to take on board any views of the highway authority.

### **Pedestrian and Cycling Facilities**

- 3.6 The site will need to have a network of footpaths and cycle-friendly links, in order to encourage sustainable travel modes, the exact location of which will be partly dependent on the position of various land-uses within the site. Whilst it is not possible for a vehicular access route between the two halves of the site, it is proposed that there would be footway/cycleway connections between the two halves.
- 3.7 Footway links will need to connect from the site onto the B3390 at various locations, in order to encourage permeability with the existing Crossways settlement, although the site is well-placed for access to local facilities, especially in comparison with the northern sites. This can also be reinforced by the design and location of frontages onto the B3390. It is intended that the B3390 be reduced to a 30mph limit through Crossways as part of the overall development proposals. It will nevertheless be desirable to provide facilities for enhanced pedestrian access across the B3390, and this could include pedestrian crossing facilities, such as a pedestrian signalled crossing (as illustrated in Figure 3.1), as well as more informal facilities, such as dropped kerb crossings/central islands. However, the required pedestrian crossing facilities can be provided relatively easily, and they can be placed so as to minimise walk routes from the site to local facilities.
- 3.8 The provision of a cycleway on the B3390 (ideally of at least 3m width) is desirable, and whilst such a facility would provide a strategic function for the overall Crossways sites, it is discussed here as it is in very close proximity to the Warmwell Road site. The DTA report suggested that a cycleway could be provided on the northern/western side of the B3390, and that it could commence from the Dick O' Th' Banks Road junction. Having a cycleway on this side of the road would probably make most sense taking consideration of Crossways as a whole, although it would be more beneficial for it to extend southwards adjacent to the Warmwell Road site, and potentially as far

as the Oaklands Park residential estate, which is near the proposed employment allocation in Crossways, and a recently consented B1 employment use.

- 3.9 Further investigation would be required as to the feasibility of providing such a cycleway link between Crossways and the railway station, including the availability of highway land. Any new cycle facility on the B3390 would also need to consider the level crossing at Moreton station, and potentially extend a short distance towards the rail station as well.

### **Public Transport**

- 3.10 It is difficult to fully assess bus issues for this site in isolation, as any extended/diverted/new services should be considered from a Crossways-wide perspective. However, as parts of the site would be greater than a 400m walk from the existing bus route on the B3390 it may be that the additional bus services could loop through the eastern part of the site in order to increase accessibility.
- 3.11 Appropriate bus stop infrastructure can be provided for the stops local to, or within, the site. The location of crossing facilities of the B3390 will need to take account of the location of bus stops and walk routes.

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## 4 ALTERNATIVE SITES IN DORCHESTER

- 4.1 When the WDLP land allocation was first presented there were no major sites included in Dorchester, and consequently landowners of an area in North Dorchester sought to promote their site as an alternative to development at Crossways. The site they put forward for allocation is located in north-east Dorchester, to the north of the Dorchester Meadows biodiversity area, and to the west of the A35 trunk road. In the most recent version of the emerging WDLP, a site in south-east Dorchester has been put forward for some of the housing allocation. This section therefore seeks to broadly assess the issues relating to both of the Dorchester sites.
- 4.2 The centre of the North Dorchester site is around 1.5km from the centre of Dorchester, based on the indicative pedestrian/cycle links shown on the development concept plan submitted as part of their alternative site documentation. This plan indicates that vehicular access to the site could be taken from a new junction on the A35, to the north of the Stinsford Hill roundabout.
- 4.3 Whilst the site is being promoted as North Dorchester, and is within a distance of up to 2km of the centre of Dorchester, the presence of the Dorchester Meadows biodiversity area will effectively act as a barrier to the site, and means it would not be part of the continuous built-up area of Dorchester. It is considered that development in this location would feel remote, and could effectively function as a completely separate settlement.

### **PFA Report**

- 4.4 As set out in Section 1, PFA were commissioned to undertake a transport appraisal report on behalf of the North Dorchester developers. This report discusses a number of issues relating to the North Dorchester alternative site, including local facilities, census travel to work information for Dorchester, trip rates, and traffic modelling results from the Dorchester SATURN Traffic Model.
- 4.5 The report mentions that there are emerging proposals for a Park and Ride adjacent to the site, although it is not clear how this might be delivered.
- 4.6 Information on the methodology and outcomes arising from PFA's traffic modelling work is outlined in the following section.

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### **South East of Dorchester site**

- 4.7 In the most recent version of the WDLP an area of land to the south-east of Dorchester has been identified as potentially being suitable for the provision of around 1000 homes and 3 ha of employment land. The land in question is bordered to its west and north-west by the A35 trunk road, and is sited to the south of the Max Gate junction. The land is therefore separated from Dorchester by the busy A35 road, and it thus suffers from similar locational issues to the North Dorchester site.
- 4.8 The site is located around a 2km walk from the central shopping areas of Dorchester, and whilst the WDLP states that a pedestrian/cycleway bridge over the A35 would be required with this land allocation, it is clearly some distance from central areas of Dorchester, and cannot therefore be said to automatically enjoy the benefits that may normally arise from a land allocation in a town of the size of Dorchester.

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## 5 TRAFFIC ASSESSMENT AND COMPARISON

5.1 This section of the report considers the alternative methodologies used for assessing potential trip rates and development trips, by the DTA and PFA reports, and reports on the implications of the traffic modelling work reported in the PFA report. It also presents some alternative data that has been produced by FMW. The numerical data in this section is based on the original, more intensive, development allocations for Crossways.

### **DTA Trip Assessment Methodology**

5.2 DTA used the TRICS database for the basic production of trip rates for the residential and employment land-uses, although it is not stated in the text what parameters were chosen. The residential TRICS results show a car modal share of 50% in the AM peak, and 60% in the PM peak. These have been compared with data obtained from the National Travel Survey, which showed the car modal share in TRICS were higher than the NTS figures, and a resulting adjustment factor was produced, in order to break down the residential trip rates into the main trip purposes of shopping/personal, leisure, commuting/business and education.

5.3 FMW has interrogated the Census Travel to Work data for the Owermoigne ward for the resident population, and has determined a 2001 figure of 74% modal share for car drivers, although in the longer term, and with the addition of community facilities in Crossways, it is predicted that this figure would decrease.

5.4 The quantum of residential development on which DTA's trip generation has been based is 1270 housing units, made up of 400 units at Woodsford Fields, 170 at Frome Valley Road, and 700 at the south of Warmwell Road, although it is not clear from where these splits have been derived. For the 7.2 ha employment land-use, it has been assumed that 40% of the area would be covered in terms of floor space, thus resulting in 28,800m<sup>2</sup> of employment use, and DTA have stated that they have used the Business Park category in TRICS. The DTA report assumes development assumptions as per the original WDLP allocations for Crossways.

5.5 It is not entirely clear how the adjustment factors have been applied in order to produce Table 10 in their report, nor how the trips have been split into the four trip

purposes. The employment trip rates and generation have been directly taken from TRICS. The table below summarises the predicted vehicular trips for the peak hours.

Land Use	AM Peak Hour (0800-0900)			PM Peak Hour (1700-1800)		
	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential	190	527	717	483	290	773
Employment	440	78	518	57	372	429

**Table 5.1: DTA Forecast Trip Generation for Crossways**

- 5.6 The DTA report indicates that trips have been distributed on the network according to trip purpose. The commuting/business trips have been distributed according to the information for the ward as contained in the Census Journey to Work data. Education distribution has been based on primary trips being internal to Crossways, and middle/higher education using Puddletown/Dorchester. As the Crossways sites are more than three miles from the nearest secondary schools, all Crossways pupils would be eligible for free bus travel, and this is likely to result in a lower modal split for car travel than would otherwise be the case. The DTA report indicates that shopping trip distribution has been based on the West Dorset Rural Functionality Study, and that 50% of trips area assumed to be Dorchester. This study has not been assessed, and thus it is not possible to test the reasonableness of this approach. Leisure trips have been distributed according to the average of the shopping and commuting trips.
- 5.7 The trips have been distributed on the network by splitting the surrounding area into six zones, plus a local zone centred on Crossways. The zone boundaries have been based on the census output boundaries, according to output areas shown to have trips from the local ward. Matrix tables have been produced showing the forecast trips associated with the proposed development, that are travelling to and from each of the seven zones identified, sub-divided into residential and employment trips. The report states that around 20-25% of generated trips will be retained in Crossways, although it is not entirely clear how this figure has been derived.



- 5.8 In summary, the broad approach adopted by DTA to trip generation and distribution appears to be reasonable, although there are some areas where it is not clear how figures have been produced, or where certain assumptions have come from.

### **PFA Trip Assessment Methodology**

- 5.9 Given the fact that the Crossways locations are already proposed for allocation, the PFA report considers trip generation for the Crossways sites, as well as their alternative location in North Dorchester. As the PFA report was produced prior to Land to the South East of Dorchester being identified for allocation in WDLP, that land allocation (and its transport impacts) is not discussed within the PFA report, and the level of allocation assumed for Crossways is as the original WDLP strategy.
- 5.10 PFA have based their residential trip generation on 1500 homes, i.e. the upper limit of the original allocation for Crossways. For the employment land-use, they have assumed GFA will be 30% of the total site area, thus amounting to 21,600m<sup>2</sup>.
- 5.11 PFA's trip rates have been taken from TRICS, although no outputs are provided, and it is not entirely clear which parameters have been selected, although the report states "...taking into account the location of public transport facilities and the provision of local amenities". PFA present trip rates/generations for the residential/employment sections, with different trip rates produced for the Crossways/North Dorchester locations. The residential trip rates used for Crossways are 7% higher than North Dorchester, whilst the employment rates are 13% higher at Crossways. Whilst differences in trip rates can be expected between different locations, a detailed explanation for the difference between trip rates used should be provided, and the location of the North Dorchester site as being relatively remote from the rest of Dorchester should be considered as part of the assessment process.
- 5.12 The below table indicates PFA's forecast for the total number of residential/employment trips in each peak hour, with the figures in brackets indicating their forecasts for the Crossways sites.

	<b>AM Peak 2-way N Dorchester (Crossways)</b>	<b>PM Peak 2-way N Dorchester (Crossways)</b>
Residential	892 (956)	1013 (1098)
Employment	387 (436)	337 (398)

**Table 5.2: PFA Forecast Trip Generation for North Dorchester (and Crossways)**

- 5.13 The above residential figures are somewhat higher than those forecast by DTA (and shown in Table 5.1), although this difference can be anticipated given the different numbers of housing units in the two assessments. Similarly, PFA's assessment of the number of employment trips is lower than DTA's forecast, which is consistent with the different building to GFA ratios they have adopted.
- 5.14 The Dorchester SATURN Traffic Model (DTM) has been used for undertaking the traffic forecasting, and it is assumed that the above trips have been input into appropriate zones within the model, although this is not detailed.

#### **FMW Trip Assessment Methodology**

- 5.15 As a result of some of the uncertainty noted above regarding the different trip rate methodologies utilised by DTA and PFA in their calculations, FMW have interrogated the TRICS database to come up with their own set of trip rates.
- 5.16 For both the residential and employment trip rates, sites in London and Ireland were excluded, in order to obtain the most appropriate rate.
- 5.17 The residential calculation used a dwelling range of 150-491 units, in order to try and match the parcel sizes being considered, noting that 491 was the highest size still remaining in the TRICS database. One Edge of Town Centre site was then excluded, leaving 11 sites. A Car Ownership selection of 1.1 to 1.5 cars per household was chosen (comparing well with the West Dorset average of 1.29), and this resulted in five sites ultimately being used for the residential trip rate assessment.
- 5.18 The employment trip rate was obtained by using the Business Park category and selecting a GFA range of between 10-50,000m<sup>2</sup>, resulting in five sites being used in the assessment.

- 5.19 The resulting residential rates are broadly comparable with those quoted in Table 7 of DTA's report, being marginally lower than DTA in the AM peak, but a little higher in the PM peak. The FMW rates are lower than PFA's in both peak hours
- 5.20 FMW's employment trip rates are lower than DTA's in both peak hours e.g. in the AM peak 1.8/100m<sup>2</sup> for DTA and 1.6 for FMW. They are also lower than PFA's employment trip rates, and there is a relatively large difference in forecast trip rates in comparison to PFA's presented trip rates for the Crossways site. There are various different parameters that can be excluded and refined in TRICS, and which can help to explain differences in trip rates.
- 5.21 The below table calculates the number of vehicular trips arising from the FMW trip rates, based on 1500 housing units (the maximum number outlined in the original WDLP) and 25,200m<sup>2</sup> of employment (representing the 'halfway' position between the assumed GFA detailed by DTA/PFA). The below table also includes the total forecast trips assumed by DTA and PFA for comparison purposes (as taken from Tables 5.1 and 5.2 above), although differences can be expected between the three sets of results arising from the various points noted above. For ease, the PFA trip generation figures in the below table represent the average of their figures for the North Dorchester and Crossways calculations.

Consultant	AM Peak Hour (2-way)			PM Peak Hour (2-way)		
	Residential	Employment	Total	Residential	Employment	Total
FMW	810	393	1203	975	318	1293
DTA	717	518	1235	773	429	1202
PFA	924	412	1336	1056	367	1423

**Table 5.3: FMW Trip Generation and Comparison with Other Consultants**

- 5.22 Whilst the above table illustrates differences between the amounts of traffic forecast to be generated as a result of the proposals, the numbers of trips are within a reasonable range of each other.
- 5.23 FMW have also considered the potential trip distribution that could be expected by the Crossways allocations, using journey to work data obtained from the 2001 Census. Whilst patterns can be expected to have changed a little in that period, and

the developments may further change patterns, it can be used as a useful guide in helping to understand potential trip distribution from the sites.

- 5.24 It is anticipated that up to 20% of trips would be internal to the local area, and thus this would comprise primary school trips and local employment. The largest external trip destination is likely to be Dorchester, and it is predicted that around 30% of trips from the site would head there, the majority of which would travel via the A352/Alington Avenue (Max Gate) roundabout.
- 5.25 It is forecast that just over 15% of the traffic would head both north and south on the B3390. To the north around 7% of trips would then travel east on the A35 towards Poole and Bournemouth, and other local destinations would likely include Wool (and the Winfrith Technology Park), Bovington Camp, and Weymouth (via the A353). A number of these destinations would be reached by local roads off the B3390.
- 5.26 Whilst the above traffic distribution has been based on census work trips from the Owermoigne ward to other local wards, and will thus relate more to the residential than employment aspects of the site, it should give a reasonable idea of potential traffic distribution from the site, although this can be considered in more detail as the site progresses in more detail.

### **Traffic Impact Assessment**

- 5.27 The DTA report did not undertake traffic or junction modelling on the impacts of Crossways on the local road network, although it did include some qualitative comments on potential impacts.
- 5.28 The majority of external trips are to Dorchester, and much of this traffic would utilise the West Stafford bypass. Whilst the proportional increase in flow may be relatively high, the actual increase in flows will not be so high as to result in them exceeding capacity. DTA state that some minor improvements may be required on the route.
- 5.29 In terms of the strategic highway network the DTA report says that the proposed level of development would not have a significant impact on the trunk road section between Crossways and Dorchester. It also reports a response from the Highways

- Agency that there may be some impact at the Max Gate junction in Dorchester, and thus there may need to be improvement at this location.
- 5.30 The PFA report has used the DTM to assess the potential traffic impacts of the two alternative sites, using a forecast test year of 2026. However, relatively little detail is provided on the DTM, and in particular its scope and network detail, and whether it has sufficient detail within the Crossways area to be able to be used to accurately forecast development impacts.
- 5.31 The PFA report focuses on ten key junctions on the highway network, and briefly reports on the impacts on each of these for the alternative developments. A table is also included in the report which shows the net traffic flow through each of the junctions as a result of the two predicted developments. An amended version of the table is reproduced below, which instead shows the difference in flow at the A road junctions between the two competing sites. Figures in brackets indicate a higher flow generated by Crossways, whereas otherwise North Dorchester is forecast to have a higher flow through the junction.

Junction	Additional flows through Junction from North Dorchester development (additional Crossways flows)	
	AM peak (0800-0900)	PM peak (1700-1800)
A35/Stinsford Hill	194	194
A352/Allington Avenue	(448)	(647)
A35/A352	(22)	43
A35/A354	(70)	46
A35/A37/B3150	(1)	(53)
A37/B3147	194	198

**Table 5.4: PFA Forecast Additional Flows through Key Junctions by North Dorchester development (and by Crossways)**

- 5.32 The above table reports the differences as presented in Table 5.10 of the PFA report, and does not interpret or analyse the results, which is not possible without having access to the modelling files. The table does show a significantly higher level of flow arising from Crossways at the A352/Alington Avenue junction, although this can partly be explained as this would be the first junction reached in Dorchester for most traffic

heading from Crossways. However, it should be noted that DTA’s assessment suggests increases in flow of more like 430 two-way vehicles at this location as a result of the Crossways allocation. Whilst the above table focuses on A road junctions it can be expected that overall the North Dorchester site would generate a greater number of development trips that would impact on Dorchester’s existing roads (that experience peak time congestion), than would be the case with the Crossways allocations.

- 5.33 An assessment of the potential traffic generation of the proposed South East of Dorchester allocation has been made, using the FMW trip rates given above. The quantum of development is 1000 housing units and 3 ha of employment land.

Land-use	AM Peak	PM Peak
Residential	540	650
Employment	468	378
Total	1008	1028

**Table 5.5: FMW Forecast Vehicular Trip Generation (two-way) for South East of Dorchester site**

- 5.34 Whilst the south-east of Dorchester allocation does not go into detail about how the site would connect with the local highway network, it is assumed that a significant proportion of the site’s traffic would route via the Max Gate roundabout or the nearby junction with the A35. It is likely that only people heading to local destinations, or east on the A352, would not route via the Max Gate junctions, and it could be expected to be of the order of 80% of trips. This would equate to around 800 trips, which is higher than the PFA forecast of the traffic that Crossways would generate based on the original land allocation. Given the presence of the Alington Avenue (Max Gate) junction in close proximity to the South East Dorchester site and the potential amount of trips passing through the junction, significant highway improvements may be required in order for the South East Dorchester site to be acceptable from a highways perspective.
- 5.35 PFA also report on the potential operational impacts arising from the developments, stating that at only one location would there be considerably more impact arising from

North Dorchester than Crossways. This is the B3150/B3143 junction, which is suggested as needing highway improvements. However, it is not clear what the scope is for junction improvements at this location, as there are houses around the junction and a hump-backed bridge over the River Frome is in close proximity, and thus there may be environmental constraints related to any junction improvements. The PFA commentary states that the A352/Alington Avenue junction is operating close to its capacity on some arms, and the presence of South-East Dorchester site so close to the junction can be expected to result in some operational issues.

- 5.36 There are queries relating to some of the assumptions used in the PFA modelling work, and it would be necessary to look at matters in more detail before being able to confirm a number of the points made. The Alington Avenue junction is reported to be operating near to its capacity in the future assessment year, for both tested scenarios.
- 5.37 It is the case that junction modelling will subsequently need to be undertaken specifically related to the Crossways development, and this will need to consider local roads, including link capacity at appropriate locations.

#### **Dorset CC – Areas of Potential Highway Concern**

- 5.38 As part of the discussions relating to the potential traffic impacts of development at Crossways, information has been supplied by DCC (as the local highway authority) relating to junctions and locations of possible concern, which would need to be looked at in more detail as the sites progress. The list of areas of concern was provided at the time when the larger Crossways allocation was being proposed, and if this level of development were not to transpire this could mean that fewer junctions would need to be considered, or at least the likelihood of operational issues at them would diminish. Some commentary on the potential traffic implications is provided below, although the numbers quoted also relate to the fuller Crossways allocation. The email from DCC relating to areas that will need to be fully considered is included as Appendix A.
- 5.39 There are a number of locations listed on the B3390 to the north of the site that would potentially need to be analysed, and this may require some highway link capacity assessment. DTA's report (Figures 7 and 8) suggests of the order of 230 two-way vehicles would be generated in each highway peak hour, on the B3390 to the north of

- 
- Moreton. Whilst this may proportionally be a fairly significant increase in flow, it is unlikely to result in capacity concerns. In addition, the increase in flow is unlikely to result in significant delays at the Moreton level crossing, which experiences a half-hourly train frequency in the peak hours.
- 5.40 The anticipated traffic flow on the B3390 to the south of Crossways is forecast to be only marginally higher, with around 240-260 two-way movements in the highway peak hours.
- 5.41 The impact of new development on Dick O' Th' Banks Road would need to be carefully considered, as this is a relatively quiet residential road. However, it is forecast that the South of Warmwell Road site should not really be generating any flows on this link.
- 5.42 Traffic assessment would be required at the traffic light junction at Lewell Bridge, which is on the main route into Dorchester from Crossways. The final area identified by DCC as needing investigation is the A35/Max Gate junction, although both the Alington Avenue roundabout and A35 priority junctions are not recorded as requiring improvement in PFA's traffic assessment summary, although as noted above, improvements may well be required should the South East Dorchester allocation proceed..



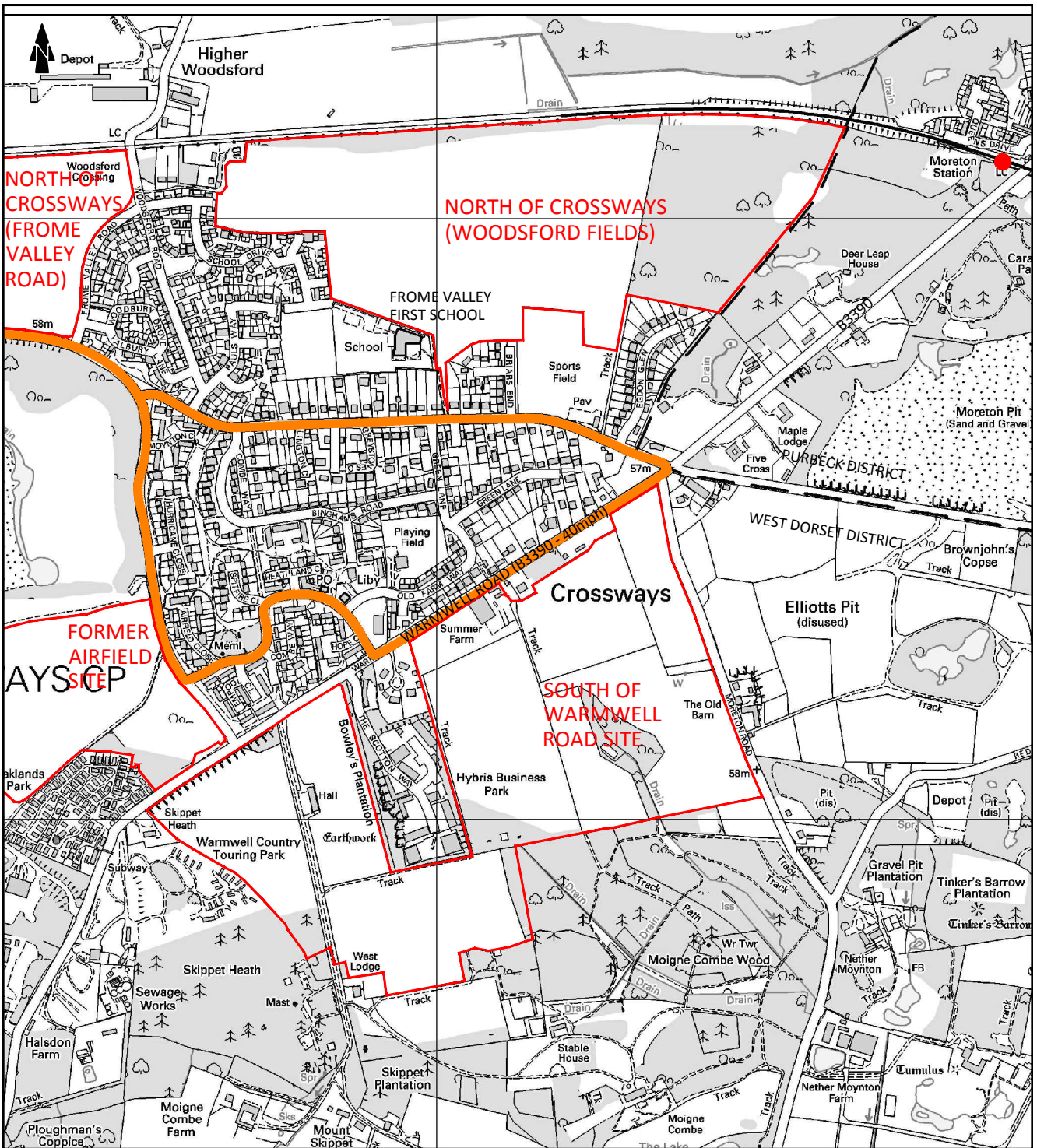
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## 6 SUMMARY AND CONCLUSIONS




- 6.1 This report considers transport issues and impacts relating to a proposed allocation of residential and employment land at a number of different sites in Crossways, Dorset, although it considers specific issues at the site to the south of Warmwell Road. The report was originally produced when an allocation of up to 1500 houses was being proposed for Crossways, although more recent versions of the emerging WDLP have suggested this figure could be halved, and an additional site has emerged on land to the south-east of Dorchester.
- 6.2 David Tucker Associates (DTA) have previously undertaken some transport accessibility work related to the Crossways developments (although with more of a focus on the northern/western land parcels), and their work is reviewed and commented on within this report.
- 6.3 Whilst Crossways only has a population of slightly over 2000 there are plans for a potentially significant increase in housing and employment facilities that will help to achieve a 'critical mass' in making the settlement capable of offering a number of facilities for residents. Crossways benefits from a railway station (at Moreton) in relatively close proximity, and there is an existing bus service that could be enhanced in order to serve the development areas to a higher frequency. Measures could be introduced to the B3390 through Crossways to help reduce speeds to achieve a reduction in speed limit, and it would also be beneficial to introduce a cycle lane to the railway station. The south of Warmwell Road site is located in a key location within the village, close to shops and other local facilities.
- 6.4 An alternative site was put forward for allocation instead by the owners of land at North Dorchester. Peter Finlayson Associates (PFA) has undertaken transport work associated with this site, and for the Crossways site. This work has also been considered and reviewed within this report. Whilst the North Dorchester site is closer to the centre of Dorchester, it is still some distance from the centre of Dorchester, and is closer to the busy A35 trunk road.
- 6.5 The potential site on land to the south-east of Dorchester that has been put forward in the latest version of the WDLP is also remote from Dorchester, and it will be difficult

- for it to become an integrated part of the town. This site is also in close proximity to the A35 junctions around Max Gate, which are forecast to have operational problems.
- 6.6 PFA and DTA have both presented information on the likely traffic generation/distribution assumed for Crossways (PFA also looking at North Dorchester). Whilst both have used the TRICS database and the Census Journey to Work figures, DTA have looked into trip purpose in more detail and have considered the breakdown of trips by different trip purposes, based on information from the National Travel Survey. The advantage of factoring the 2001 Census and considering trip purpose is that it can look ahead to the future situation where Crossways would be a significantly larger community, and have different patterns to that arising from the census. FMW have also undertaken their own trip generation assessment using TRICS, although there are not significant differences between the three sets of predicted trip generation.
- 6.7 PFA has undertaken some traffic assessment based on the Dorchester SATURN model that suggests broadly similar impacts between North Dorchester and Crossways sites, other than one signalised junction that would likely need some improvement as a result of any North Dorchester development, although this should be caveated against a number of queries made as to their approach, and the need for more detailed assessment of the traffic modelling assumptions. Detailed traffic modelling will subsequently need to be provided for locations in the vicinity of the Crossways sites, including junctions on the B3390, and on the western link road on the route to Dorchester.

## FIGURES




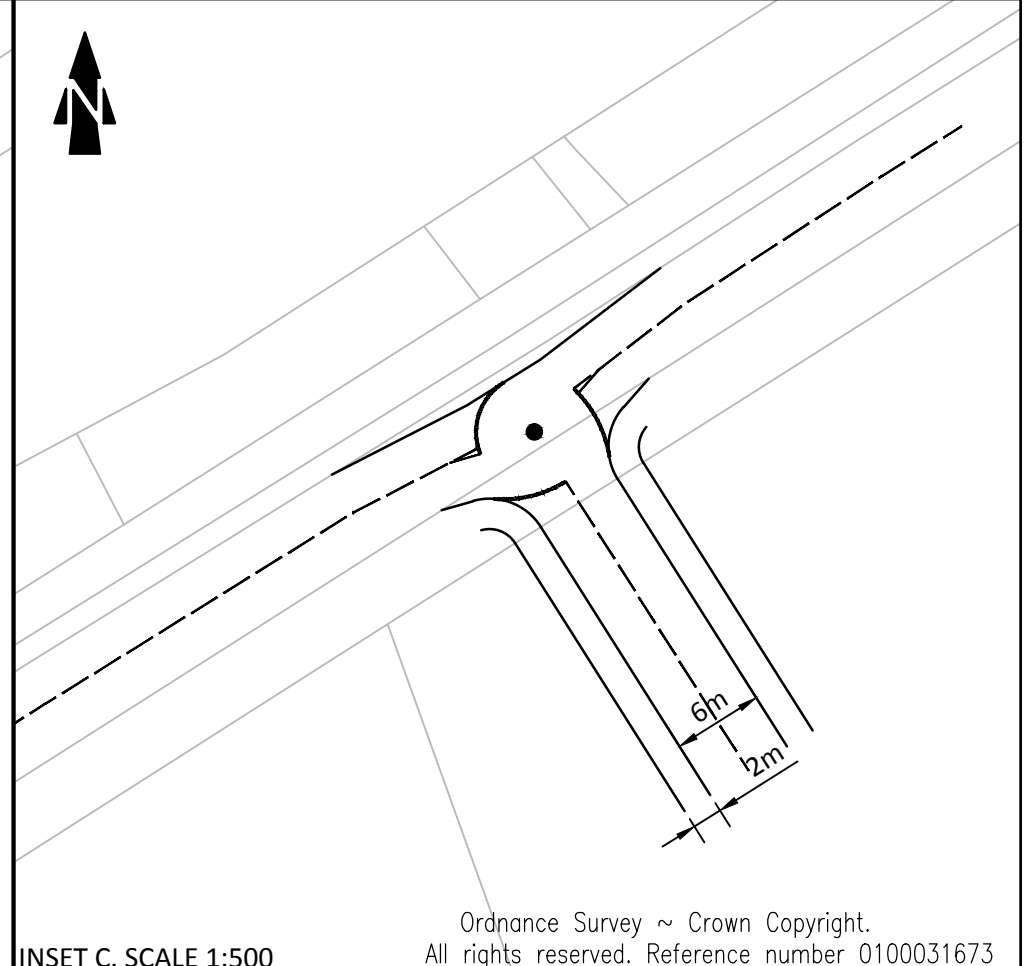
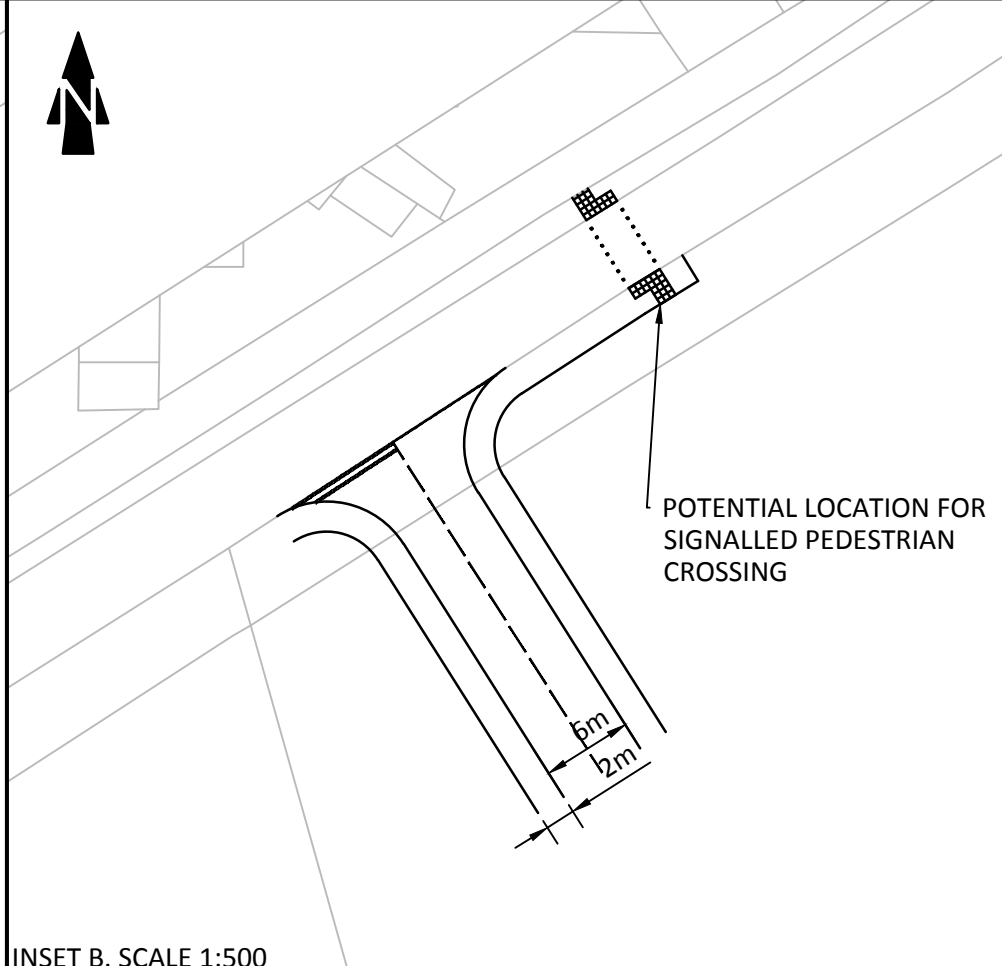
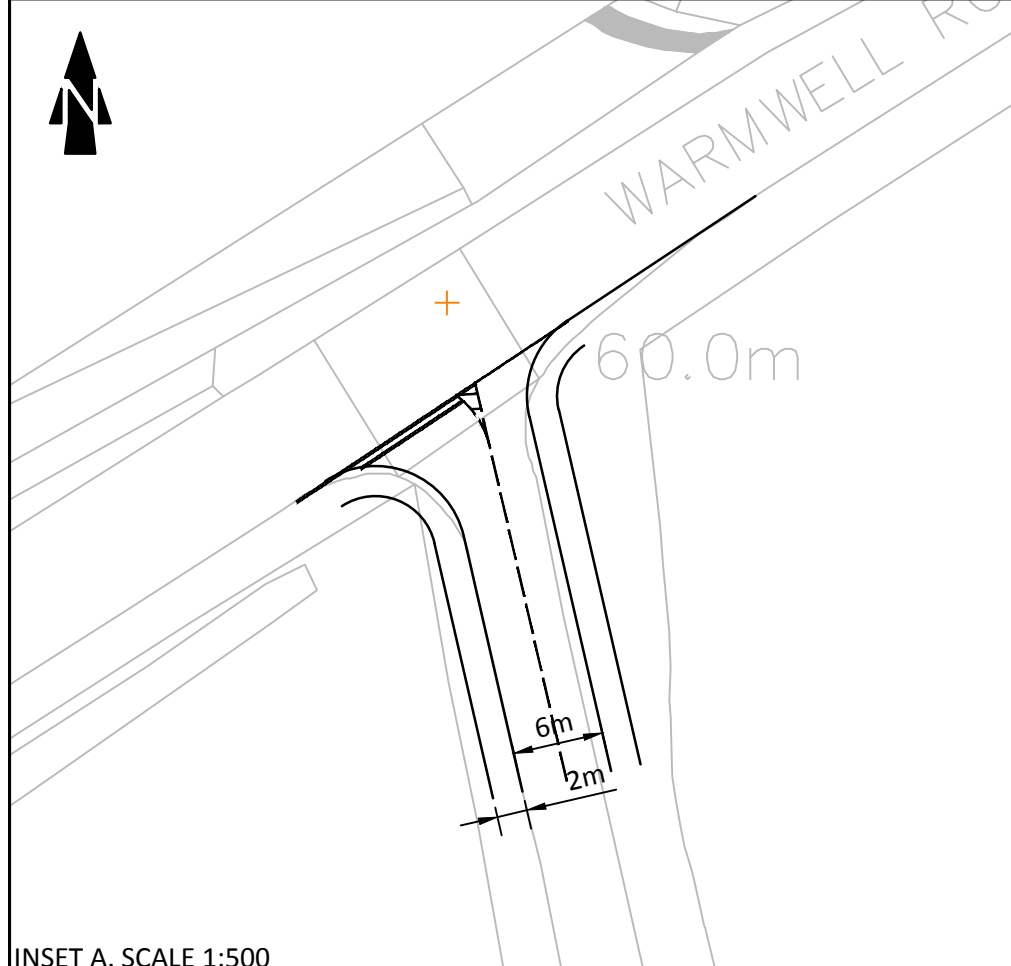
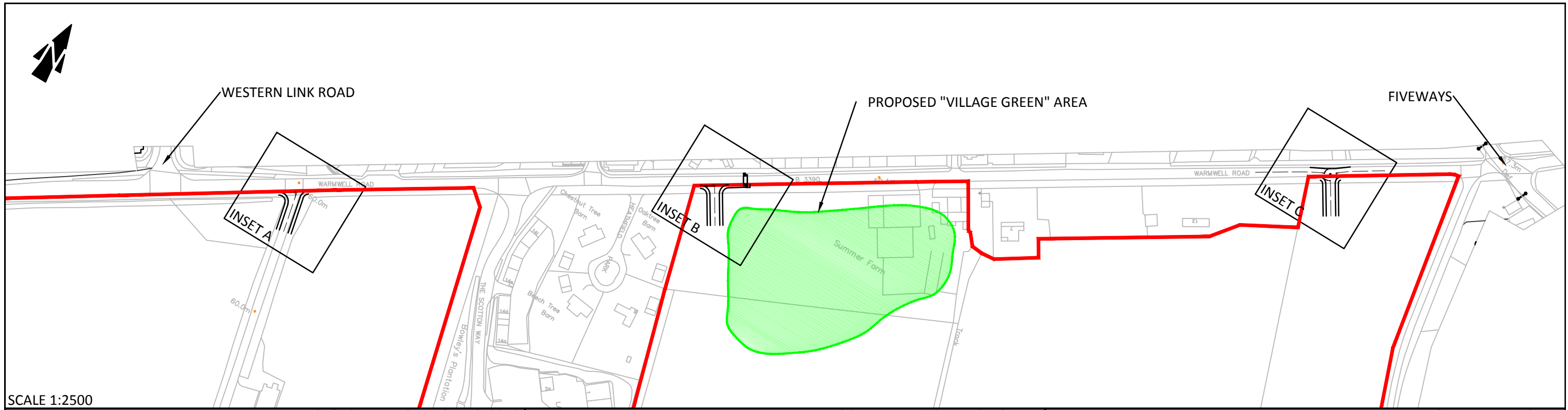
**KEY**

-  101 BUS ROUTE
-  PROPOSED DEVELOPMENT ALLOCATIONS
-  RAILWAY STATION

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TITLE: **LOCATION PLAN AND EXISTING TRANSPORT SITUATION**

	PROJECT: <b>WARMWELL ROAD, CROSSWAYS</b>		DRAWING STATUS: <b>PRELIMINARY</b>	
	DATE: 2012/12/17	PROJECT No: <b>FMW0985</b>	DRAWING NO: <b>FIG 1</b>	REV: <b>-</b>
BY: MM	CHECKED: MP	REVISIONS:		
TEL: +44 (0)117 959 6464				
FAX: +44 (0)117 959 6465				



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REV	DATE	BY	DESCRIPTION	CHK	APD
A	8/1/13	MM	PEDESTRIAN CROSSING ADDED. CROSSING 2 RELOCATED	MP	MP

DRAWING STATUS: DRAFT

**FMW** consultancy

Trym Lodge, 1 Henbury Road, Westbury-on-Trym, Bristol BS9 3HQ  
Tel: +44 (0)117 959 6464 Fax: +44 (0)117 959 6465  
enquiries@fmwconsultancy.co.uk

CLIENT: MAJOR GENERAL BOND

PROJECT: LAND SOUTH OF WARMWELL ROAD  
CROSSWAYS

TITLE: INDICATIVE SITE  
ACCESS STRATEGY  
FIGURE 3.1

SCALE @ A3: AS SHOWN	CHECKED: MP	APPROVED: MP
CAD FILE: FMW0985_SK01	DESIGN-DRAWN: MM	DATE: 2012-12-20
PROJECT No: FMW0985	DRAWING No: SK01	REV: A

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## APPENDICES

## Jeremy Higgins

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**From:** i.madgwick@dorsetcc.gov.uk  
**Sent:** 14 November 2012 08:39  
**To:** sjt@dtatransportation.co.uk  
**Cc:** Jeremy Higgins; S.M.McGowan@dorsetcc.gov.uk  
**Subject:** Crossways.

Simon/Jeremy

Thank you for a useful meeting yesterday - just a quick note to confirm the additional identified areas of highway concern :-

B3390 Traffic through Affpuddle

B3390 Traffic through Warmwell

B3390 Moreton Level Crossing

B3390 Hurst Bridges

B3390 Waddock Cross

Dick o'th' Banks Road, Crossways

Lewell Bridge (under bridge on the way to Dorchester)

A35 Trunk Road junction at Max Gate - Dorchester

Sue and I are happy to work with all parties to complete an agreed submission

Regards  
Ian M.

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